



Date:

County of San Diego, Planning & Development Services  
**COMMERCIAL BUILDING CODE PLAN CHECK**  
BUILDING DIVISION

**Plan check correction list for commercial,  
public accommodation, and multi-family housing projects**

<b>RECORD ID:</b>	<b>OWNER:</b>
<b>RESULT:</b>	
Plan Reviewer:	Phone/email:

- B. PLAN REQUIREMENTS**
- C. SITE REQUIREMENTS**
- D. ALLOWABLE BUILDING HEIGHT**
- E. ALLOWABLE BUILDING AREA**
- F. TYPE OF CONSTRUCTION**
- G. EXTERIOR WALLS**
- H. OCCUPANCY/USE SEPARATION**
- I. MEANS OF EGRESS**
- J. FIRE-RATED AND SMOKE-RESISTANT ASSEMBLIES**
- K. FIRE PROTECTION SYSTEMS**
- L. SAFETY GLAZING**
- M. PARTITION WALLS AND SUSPENDED CEILINGS**
- N. ROOF ASSEMBLIES**
- O. WILDFIRE-RESISTIVE CONSTRUCTION REQUIREMENTS**
- P. ELECTRICAL, PLUMBING, AND MECHANICAL REQUIREMENTS**
- Q. ENERGY EFFICIENCY REQUIREMENTS**
  - NONRESIDENTIAL PROJECTS
  - LOW-RISE RESIDENTIAL PROJECTS
- R. GREEN BUILDING REQUIREMENTS**
  - NONRESIDENTIAL PROJECTS
  - RESIDENTIAL PROJECTS
- S. VERTICAL DESIGN REQUIREMENTS**
- T. LATERAL DESIGN REQUIREMENTS**
- U. FOUNDATION DESIGN REQUIREMENTS**
- V. SUPPLEMENTAL ADDITION AND ALTERATION REQUIREMENTS**

**W-1B. SITE ACCESSIBILITY AND EXTERIOR ROUTES OF TRAVEL (CBC 11B)**

**SITE ACCESSIBILITY**

**EXTERIOR ROUTES OF TRAVEL**

**HAZARDS**

**SIGNAGE**

**W-2B. PARKING AND PASSENGER DROP-OFF AND LOADING ZONES (CBC 11B)**

**SCOPING**

**DIMENSIONS AND CONFIGURATION**

**IDENTIFICATION AND SIGNAGE**

**PASSENGER DROP-OFF AND LOADING ZONES**

**W-3B. CURB RAMPS (CBC 11B)**

**GENERAL REQUIREMENTS**

**DIMENSIONS AND SLOPES**

**W-4B. RAMPS (CBC 11B)**

**GENERAL REQUIREMENTS**

**WIDTH**

**SLOPES**

**LANDING DIMENSIONS AND CONFIGURATION**

**SURFACE MATERIAL**

**EDGE PROTECTION**

**HANDRAILS AND EXTENSIONS**

**W-5B. ENTRANCES, EXITS, AND INTERIOR ROUTES OF TRAVEL (CBC 11B)**

**ACCESSIBLE MEANS OF EGRESS**

**ENTRANCES AND EXITS**

**BUILDINGS REQUIRING ELEVATOR OR RAMP ACCESS**

**INTERIOR ROUTES OF TRAVEL**

**MISCELLANEOUS REQUIREMENTS**

**SIGNAGE**

**W-6B. DOORS AND GATES (CBC 11B)**

**GENERAL REQUIREMENTS**

**DIMENSIONS AND CLEARANCES**

**HARDWARE**

**AUTOMATIC AND POWER-ASSISTED DOORS**

**W-7B. STAIRWAYS (CBC 11B)**

**GENERAL REQUIREMENTS**

**WIDTH**

**TREADS AND RISERS**

**HAZARDS**

**HANDRAILS AND EXTENSIONS**

**AREAS OF REFUGE**

**EXTERIOR AREAS FOR ASSISTED RESCUE**

**SIGNAGE**

**W-8B. ELEVATORS AND PLATFORM LIFTS (CBC 11B)**

**SCOPING**

**ELEVATOR CARS**

**CAR CONTROLS AND INDICATORS**

**ELEVATOR LANDING SIGNAGE, CONTROLS, AND INDICATORS**

**ELEVATOR LANDING TWO-WAY COMMUNICATION**

**AREAS OF REFUGE**

**SIGNAGE**

**PLATFORM LIFTS**

**W-9B. TOILET FACILITIES (CBC 11B)**

**SCOPING**

**SINGLE-ACCOMMODATION TOILET FACILITIES**

**MULTI-ACCOMMODATION TOILET FACILITIES**

**TOILETS**

**GRAB BARS**

**URINALS**

**LAVATORIES**

**ACCESSORIES**

**SIGNAGE**

**ALTERNATIVE DIMENSIONS FOR CHILDREN'S FACILITIES**

**ADULT CHANGING FACILITIES**

**W-10B. SHOWER, BATHING, AND LOCKER ROOM FACILITIES (CBC 11B)**

**TURNING SPACE**

**SHOWERS**

**BATHTUBS**

**LOCKER ROOMS AND DRESSING AREAS**

**SIGNAGE**

**W-11B. DRINKING FOUNTAINS AND BOTTLE FILLING STATIONS (CBC 11B)**

**SCOPING**

**PEDESTRIAN PROTECTION**

**"LOW" DRINKING FOUNTAIN DIMENSIONS AND FEATURES**

**"HIGH" DRINKING FOUNTAIN DIMENSIONS AND FEATURES**

**BOTTLE-FILLING STATIONS**

**W-12B. MISCELLANEOUS ELEMENTS (CBC 11B)**

**SINKS**

**KITCHENS AND KITCHENETTES**

**LOCKERS**

**AUTOMATED TELLER MACHINES**

**DEPOSITORIES, VENDING MACHINES, CHANGE MACHINES, MAIL BOXES, AND FUEL DISPENSERS**

**WASHING MACHINES AND CLOTHES DRYERS**

**PUBLIC TELEPHONES**

**ELECTRIC VEHICLE CHARGING STATIONS**

**W-13B. ALARMS (CBC 11B)**

**VISIBLE ALARMS**

**AUDIBLE ALARMS**

**FIRE ALARM BOXES**

**W-14B1. ASSEMBLY USES (CBC 11B)**

**RESTAURANT, DINING, AND BAR FACILITIES**

**AUDITORIUMS, ASSEMBLY HALLS, AND THEATERS**

**RELIGIOUS FACILITIES**

**STADIUMS, GYMNASIUMS, AND SPORTS-SPECTATOR FACILITIES**

**W-14B2. BUSINESS AND OFFICE USES (CBC 11B)**

**BUSINESS AND PROFESSIONAL OFFICES**

**POLICE STATIONS, FIRE STATIONS, AND COURTROOMS**

**W-14B3. EDUCATIONAL USES (CBC 11B)**

**LIBRARIES AND STUDY AREAS**

**W-14B4. HEALTH CARE USES (CBC 11B)**

**GENERAL REQUIREMENTS**

**WAITING ROOMS**

**EXAM ROOMS**

**PATIENT ROOMS**

**W-14B5. MERCANTILE AND RETAIL USES (CBC 11B)**

**MERCHANDISE AND SERVICE AREAS**

**SALES AND SERVICE COUNTERS**

**CHECK-OUT AISLES**

**POINT-OF-SALE DEVICES**

**AUTOMATED TELLER MACHINES**

**FITTING ROOMS**

**W-14B6. HOTEL, MOTEL, AND OTHER TRANSIENT LODGING USES (CBC 11B)**

**GENERAL REQUIREMENTS**

**GUEST ROOMS AND SUITES**

**ASSOCIATED AMENITIES AND FACILITIES**

**W-14B7. STORAGE, WAREHOUSE, AND FACTORY USES (CBC 11B)**

**SELF-SERVICE STORAGE FACILITIES**

**WAREHOUSES**

**FACTORIES**

**W-14B8. RECREATIONAL AND OUTDOOR USES (CBC 11B)**

**GENERAL REQUIREMENTS**

**SWIMMING POOLS, WADING POOLS, AND SPAS**

**SPORT ACTIVITY AREAS**

**EXERCISE FACILITIES**

**PLAY AREAS**

**OUTDOOR AREAS**

**W-15B. EXISTING AND HISTORICAL BUILDINGS (CBC 11B)**

**EXISTING BUILDINGS**

**HISTORICAL BUILDINGS**

**X-1A. CODE APPLICABILITY, SITE ACCESSIBILITY, AND EXTERIOR ROUTES OF TRAVEL (CBC 11A)**

**CODE APPLICABILITY**

**SCOPING**

**SITE ACCESSIBILITY**

**EXTERIOR ROUTES OF TRAVEL**

**HAZARDS**

**SIGNAGE**

**SITE IMPRACTICALITY**

**X-2A. PARKING FACILITIES (CBC 11A)**

**DIMENSIONS AND CONFIGURATION**

**IDENTIFICATION AND SIGNAGE**

**X-3A. CURB RAMPS (CBC 11A)**

**DIMENSIONS AND SLOPES**

**X-4A. RAMPS (CBC 11A)**

**RAMP RUNS**

**SURFACE MATERIAL**

**LANDING DIMENSIONS AND CONFIGURATION**

**EDGE PROTECTION**

**HANDRAILS AND EXTENSIONS**

**X-5A. ENTRANCES, EXITS, AND INTERIOR ROUTES OF TRAVEL (CBC 11A)**

**ACCESSIBLE MEANS OF EGRESS**

**ENTRANCES AND EXITS**

**INTERIOR ROUTES OF TRAVEL**

**OPERABLE WINDOWS**

**MISCELLANEOUS REQUIREMENTS**

**SIGNAGE**

**X-6A. DOORS AND GATES (CBC 11A)**

**GENERAL REQUIREMENTS**

**DIMENSIONS AND CLEARANCES**

**HARDWARE**

**X-7A. STAIRWAYS (CBC 11A)**

**GENERAL REQUIREMENTS**

**TREADS AND RISERS**

**HAZARDS**

**HANDRAILS AND EXTENSIONS**

**SIGNAGE**

**X-8A. ELEVATORS AND PLATFORM LIFTS (CBC 11A)**

**SCOPING**

**ELEVATOR CAR DIMENSIONS**

**ELEVATOR DOORS**

**ELEVATOR CAR CONTROLS AND INDICATORS**

**ELEVATOR LOBBY CONTROLS AND INDICATORS**

**ELEVATOR LANDING TWO-WAY COMMUNICATION**

**AREAS OF REFUGE**

**SIGNAGE**

**PLATFORM LIFTS**

**X-9A. COMMON-USE TOILET FACILITIES (CBC 11A)**

**SCOPING**

**SINGLE-ACCOMMODATION TOILET FACILITIES**

**MULTI-ACCOMMODATION TOILET FACILITIES**

**TOILETS**

**GRAB BARS**

**URINALS**

**LAVATORIES**

**ACCESSORIES**

**SIGNAGE**

**X-10A. COMMON-USE SHOWER AND BATHING FACILITIES (CBC 11A)**

**SCOPING**

**SHOWERS**

**BATHTUBS**

**SIGNAGE**

**X-11A. DRINKING FOUNTAINS (CBC 11A)**

**SCOPING**

**PEDESTRIAN PROTECTION**

**DIMENSIONS AND FEATURES**

**X-12A. PUBLIC TELEPHONES (CBC 11A)**

**SCOPING**

**VOLUME-CONTROL TELEPHONES**

**TEXT TELEPHONES (TTY)**

**DIMENSIONS AND CLEARANCES**

**X-13A. ALARMS (CBC 11A)**

**VISIBLE ALARMS**

**AUDIBLE ALARMS**

**FIRE ALARM BOXES**

**X-14A. COMMON-USE AMENITIES (CBC 11A)**

**LAUNDRY ROOMS**

**SEATING, TABLES, AND COUNTERS**

**STORAGE FACILITIES**

**SWIMMING POOLS**

**PARTICIPATION AREAS**

**X-15A. DWELLING UNITS (CBC 11A)**

**SCOPING**

**ACCESSIBLE ROUTES**

**DOORS**

**KITCHENS**

**BATHROOM SCOPING**

**BATHROOM MANEUVERING SPACE**

**BATHTUBS**

**SHOWERS**

**TOILETS**

**LAVATORIES**

**LAUNDRY APPLIANCES**

**MISCELLANEOUS**

**Y. ADDITIONAL REQUIREMENTS**



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Plan Reviewer:	Phone/email:

**A. GENERAL REQUIREMENTS**

1. Each of the items on this list requires correction **before a permit will be issued**. The approval of plans and specifications does not permit the violation of any section of the building code, county ordinances, or state law. The following plan check may contain errors and omissions. Every effort has been made to perform a thorough review, however, any life safety items missed remain subject to further comments. (See the 2025 California Building Code 105.4)
2. Each of the items on this list requires correction **before a plan change will be issued**. The approval of plans and specifications does not permit the violation of any section of the building code, county ordinances, or state law. The following list does not necessarily include all errors and omissions. (See the 2025 California Building Code 105.4)
3. The following supplements are attached and considered part of this review:
  - a. County of San Diego Storm Water Intake Form
  - b. County of San Diego Standard Project Storm Water Quality Management Plan
  - c. Sample stormwater Best Management Practices (BMP) presentation (PDS #272)
  - d. Eave construction guidance document (PDS #198)
  - e. Special inspection summary (PDS #006)
  - f. List of approved special inspection agencies and construction material testing laboratories
  - g. Other: \_\_\_\_\_
4. **Please read your Conditions of Approval list.** Conditions may include items such as: Fire District Approval, DPW Flood Control, DPW Driveway Review, etc. We recommend reviewing these conditions **early** in the project design stage to determine potential requirements. We also advise satisfying the "Structural Approval" (i.e., this building code review) and "Planner Approval" conditions (if required) **before** submitting your plans to the fire district for approval stamps. Additionally we recommend you retain all previously reviewed sets until permit issuance.
5. Plan revisions must be made by printing new sheets incorporating the necessary modifications. Please slip revised sheets into the complete sets as needed provided the original sheets are returned. Revisions made with pen or pencil, by crossing out or taping on information, or by using white-out are not allowed.
6. Changes to scope of work such as square footage, addition/removal of structures, etc. may require a plan change. Please see a PDS Permit Technician to determine any requirements; you may need approval from Zoning/Engineering and updated documents (e.g., agency clearance letter, fire mitigation, etc.).
7. The following set(s) **must** be returned with the new/revised sets at recheck:
  - a. Previously plan-checked and stamped set(s) dated \_\_\_\_\_.
  - b. Red-marked set(s) dated \_\_\_\_\_. Red marks on plans are part of this comments list.
8. **Plans will not be accepted for recheck** unless you submit the **original correction list** – copies not accepted – and a **complete response list** per the following:

- a. Provided item-by-item responses on separate **8-1/2-inch by 11-inch** sheet(s); **do not mark** responses on the original correction list
  - b. Clearly and specifically indicating **where and how** each correction item has been addressed; vague responses, such as "Done" or "See plans," are unacceptable.
  - c. Clearly and specifically indicating **any additional changes made to project** beyond responses to correction items
9. If plan check result is shown as "recheck by appointment", the intention is to sign off and approve the plan check at this appointment. The appointment is for a design professional, not a permit expediter, and a response list must be carefully prepared with this objective in mind. Also see Comment A.9.
10. Plans may be required to be submitted and logged-in for recheck due to:
- a. Insufficient progress
  - b. Changes
  - c. Lost red-marked set, or lack of response letter
  - d. Other: \_\_\_\_\_
11. A second opinion is available on any interpretation or correction provided and will not affect the level of customer service you receive. **We ask you to provide your interpretation of the code along with any health or safety concerns that the interpretation may cause and how this will affect your project.** The second opinion will come from one of our senior staff or a supervisor who will have a chance to take a deeper look at supporting documentation on both sides of the issue. This may occur at the counter or require a few days for proper research and understanding of the intent of the code in question. After the second opinion you can always follow up with our Building Official for a final opinion.
12. For your information, this plancheck expires on \_\_\_\_\_.

## B. PLAN REQUIREMENTS

1. Specify on plans that the **"project will comply with the following building codes and associated County of San Diego amendments"**, and also list the following codes:
  - a. 2025 California Building Code (CBC)
  - b. 2025 California Green Building Standards Code (CalGreen)
  - c. 2025 California Electrical Code (CEC)
  - d. 2025 California Mechanical Code (CMC)
  - e. 2025 California Plumbing Code (CPC)
  - f. 2025 California Fire Code (CFC)
  - g. 2025 California Building Energy Efficiency Standards (CBEES)
  - h. 2025 California Wildland Urban Interface Code (CWUIC)
2. Provide / revise **"Scope of Work"** describing the project and identifying structures included on this permit.
3. Scope of work in County permit system is: \_\_\_\_\_,  
but the plans do not match the scope of work as follows: \_\_\_\_\_.  
After clarification, you may need to complete a Plan Change Form (PDS 652) and go to the Permit Center check-in counter to start the plan change process.
4. Provide fully **dimensioned plot plan** drawn to scale and **indicating the following**:
  - a. Lot dimensions with property lines and any easements identified
  - b. Size and use of each structure on the lot
  - c. Dimensions from structures to property lines (measured at right angles to structures)
  - d. Dimensions between structures (measured at right angles to structures)
5. Plans are incomplete. Plan check will proceed with submittal of complete plans. Use this list as a guide in preparing plans.
6. The plans must be prepared using accepted drafting procedures and practice. We recommend you retain the services of an experienced design professional to help you prepare your plans and respond to the corrections on this list.
7. Provide on structural plans a **basis of structural design summary** per the following (CBC 1603.1):
  - a. If basis of design is **structural calculations**, summary shall include:
    - o *Note on plans*: "Basis of design of structures is structural calculations using design parameters per California Building Code chapter 16 and ASCE 7."
    - o Specify Building risk category per CBC 1604.5
    - o Specify design roof live load per CBC Table 1607.1

- Specify design floor live load per CBC Table 1607.1
  - Wind design data:
    - Specify basic design wind speed per CBC 1609.3
    - Specify ASD design wind speed per CBC 1609.3.1
    - Specify exposure category per CBC 1609.4
  - Seismic design data:
    - Specify seismic importance factor per ASCE 7 Table 1.5-2
    - Specify site class per ASCE 7 20.3
    - Specify mapped spectral response acceleration parameters, SS and S1, per CBC 1613.2
    - Specify design spectral response acceleration parameters, SDS and SD1, per CBC 1613.2
    - Specify seismic design category per CBC 1613.2
    - Specify seismic force-resisting system type per ASCE 7 12.2.1
    - Specify seismic response coefficient, CS, per ASCE 7 12.8.1.1
    - Specify response modification coefficient, R, per ASCE 7 Table 12.2-1
- b. If basis of design is **conventional light-frame construction per CBC 2308**, summary shall include:
- *Note on plans*: "Basis of design of structures is conventional light-frame construction using design parameters per California Building Code section 2308."
  - Specify design roof live load per CBC 1607.1
  - Specify design floor live load per CBC 1607.1
  - Wind design data:
    - Basic design wind speed specified per CBC 1609.3
    - Specify ASD design wind speed per CBC 1609.3.1
    - Specify exposure category per CBC 1609.4
  - Seismic design data:
    - Specify site class per ASCE 7 20.3
    - Specify mapped spectral response acceleration parameters, SS and S1, per CBC 1613.3.1
    - Specify design spectral response acceleration parameters, SDS and SD1, per CBC 1613.3.4
    - Specify seismic design category per CBC 1613.3.5
8. Provide on structural plans a **basis of soil design summary** per the following (CBC 1803.1, CRC R106.1):
- a. If basis of design is a **geotechnical report**, summary shall include:
- *Note on plans*: "The basis of soil design values is geotechnical report dated \_\_\_\_\_ by (engineer/firm preparing report)."
  - Specify the allowable vertical bearing pressure per the geotechnical report
  - Specify the allowable lateral bearing pressure per the geotechnical report
  - Specify other soil properties, such as retaining wall parameters, per the geotechnical report as applicable.
- b. If basis of design is **CBC presumptive load-bearing values**, summary shall include:
- *Note on plans*: "The basis of soil design values is California Building Code Table 1806.2."
  - Specify the class of materials per CBC Table 1806.2
  - Specify the allowable vertical bearing pressure per CBC Table 1806.2
    - Exception:** A geotechnical report may be required for assumed values greater than 1,500 psf **or** where the building official has reason to doubt soil classification or design value
  - Specify the allowable lateral bearing pressure per CBC Table 1806.2
    - Exception:** A geotechnical report may be required for assumed values greater than 100 psf/ft **or** where the building official has reason to doubt soil classification or design value
9. Provide two sets of **structural calculations** -- addressing all applicable CBC 1605 load combinations -- prepared, stamped, and signed by California-licensed civil engineer, structural engineer, or architect for:
- a. Vertical load supporting system
  - b. Lateral load (wind/seismic) resisting system
  - c. Retaining walls
  - d. Glass guardrail systems
  - e. Other: \_\_\_\_\_
10. All sheets of the plans must bear the stamp and wet or electronic signature of a California-licensed civil engineer, structural engineer, or architect. (California Business and Professions Code section 5537 with exceptions, CBC 107.1 with exception, and CBC 107.3.4).
11. **Special inspection** required for the following:
- a. Field welding (CBC 1705.2.1)
  - b. Steel frame **with nondestructive testing of seismic force-resisting elements per AISC 341** (CBC 1705.2.1, CBC 1705.12.1, CBC 1705.13.1)
  - c. High-strength bolting **with nondestructive testing of seismic force-resisting elements per AISC 341** (CBC 1705.2.1, CBC 1705.12.1, CBC 1705.13.1)

- d. Cold-formed steel framing (CBC 1705.2.1, CBC 1705.11.2, CBC 1705.12.3)  
**Exception:** Projects meeting appropriate exception criteria of CBC 1705.11.2, CBC 1705.12.1, or CBC 1705.12.3
- e. High-strength concrete (1705.3)
- f. Post-installed concrete anchors (CBC 1705.3)
- g. Structural slabs (CBC 1705.3)
- h. Pre-stressed/post-tensioned slabs (CBC 1705.3)  
**Exception:** Non-structural pre-stressed slabs supported directly on the ground and where the effective concrete pre-stress is less than 150 psi
- i. Masonry (CBC 1705.4)
- j. Structural wood elements -- e.g., shear walls, diaphragms, drag struts, braces -- of main lateral force-resisting system (CBC 1705.12.2)  
**Exception:** Wood shear walls, shear panels, and diaphragms, including nailing, bolting, anchoring, and other fastening to other components of the **wind force-resisting system**, where the specified fastener spacing at **panel edges** is more than 4 inches on center (CBC 1705.11.1)  
**Exception:** Wood shear walls, shear panels, and diaphragms, including nailing, bolting, anchoring, and other fastening to other components of the **seismic force-resisting system**, where the fastener spacing of the **sheathing** is more than 4 inches on center (CBC 1705.12.2)
- k. Driven deep foundations (CBC 1705.7)
- l. Cast-in-place deep foundations (CBC 1705.8)
- m. Helical pile foundations (CBC 1705.9)
- n. Fabricated items (CBC 1705.10)
- o. Sprayed fire-resistant materials (CBC 1705.14)
- p. Mastic and intumescent fire-resistant coatings (CBC 1705.15)
- q. Exterior insulation and finish systems (EIFS) (CBC 1705.16)
- r. Fire-resistant penetrations and joints in Risk Category III or IV buildings (CBC 1705.17)
- s. Smoke-control systems (CBC 1705.18)
- t. Installation and anchorage of mechanical and electrical components (CBC 1705.12.6):
- o Electrical equipment for emergency standby power systems
  - o Other electrical equipment in structures in Seismic Design Category E or F
  - o Piping systems or ductwork designed to carry hazardous materials
  - o Vibration isolation systems with 1/4-inch or less clearance required between support frame and restraint
  - o Ductwork, piping systems, and structural supports for mechanical and electrical equipment where fire sprinkler systems are installed to verify one of the following: minimum clearances per ASCE 7 Section 13.2.3; nominal clearance not less 3-inches provided between fire sprinkler system drops and sprigs and: structural members not used collectively or independently to support the sprinklers; equipment attached to the building structure; and other systems' piping. Special inspection of minimum clearances is not required where flexible sprinkler hose fittings are used.
- u. Other: \_\_\_\_\_
12. Specify special inspector name/firm and phone number (as approved by the City of San Diego). Complete PDS #006 **special inspection summary** (or equivalent) and make a permanent part of the plans.
13. Provide **large, clear** note on **cover sheet or plot plan**: "**Special inspection required. See special inspection form (or equivalent) on sheet \_\_\_\_\_.**"
14. Clearly distinguish on plans between proposed (new), as-built (non-permitted), and existing (permitted) construction.
15. Note on plans: "As-built construction shall be made accessible for inspection by a PDS Building Inspector. Some elements, such as reinforced concrete, may require a combination of access and a certification report. Any required certification reports are not a substitute for County inspection."
16. Provide **certification report(s)** per the following:
- a. Each report shall include:
- o Test results, photos, and other evidence supporting certification. Specify measures/test performed for certification with hidden construction verified by testing and/or destructive examination.  
**Exception:** Any code-required **plumbing or gas line tests shall be performed** with a PDS Building Inspector present.
  - o Each report shall indicate the certifying parties that have visited job site and **list date(s) of job-site visit(s)**.
  - o Each report shall include statement confirming the as-built construction **complies with the code(s)** applicable to the project **and matches the construction** detailed on the submitted building plans
  - o Each report shall indicate **if mitigation and/or repairs are needed to achieve compliance. Specify and**

**detail on plans such mitigation and/or repairs.**

- b. Report(s) addressing **structural/life-safety elements** shall be produced, signed, and stamped by California-licensed Civil Engineer, Structural Engineer, or Architect
- c. Report(s) addressing **electrical elements** shall be produced, signed, and stamped by California-licensed Electrical Engineer or Electrical Contractor  
**Exception:** A California-licensed Civil Engineer, Structural Engineer, or Architect may prepare, stamp, and sign a certification report for as-built electrical elements provided those elements have been evaluated per item B.16.c by a California-licensed Electrical Engineer or Electrical Contractor, whose name and license number is specified in the certification report
- d. Report(s) addressing **plumbing elements** shall be produced, signed, and stamped by California-licensed Plumbing Contractor  
**Exception:** A California-licensed Civil Engineer, Structural Engineer, or Architect may prepare, stamp, and sign a certification report for as-built plumbing elements provided those elements have been evaluated per item B.16.d by a California-licensed Plumbing Contractor, whose name and license number is specified in the certification report
- h. Report(s) addressing **mechanical elements** shall be produced, signed, and stamped by California-licensed Mechanical Engineer or Warm-Air Heating, Ventilating and Air-Conditioning Contractor  
**Exception:** A California-licensed Civil Engineer, Structural Engineer, or Architect may prepare, stamp, and sign a certification report for as-built mechanical elements provided those elements have been evaluated per item B.16.e by a California-licensed Mechanical Engineer or Warm-Air Heating, Ventilating and Air-Conditioning Contractor, whose name and license number is specified in the certification report

- 17. Specify on plans the floor areas (square footages) of each proposed or existing building.
- 18. Provide complete dimensions on floor plans.
- 19. Name, label, and specify on floor plans the **use of each room or space**.
- 20. Specify on plans the **CBC occupancy classification for each room or space**.
- 21. **Change of occupancy or use** requires existing building or space to comply with the use or occupancy requirements of the current code. (California Existing Building Code 506.1)  
**Exception:** Building official **may** allow changes of use or occupancy without code upgrades if new use is less hazardous, based on life and fire risk, than existing occupancy.  
**Exception:** The building need not be made to comply with Chapter 16 of the California Building Code unless required by the California Existing Building Code section 506.4.
- 22. Specify on plans the **CBC occupancy classification and use** of any existing rooms or spaces adjoining proposed construction.
- 23. Specify on plans the **CBC Type of Construction for each building**.
- 24. Specify on plans, as applicable, the type of **automatic sprinkler system** – NFPA 13, NFPA 13R, or NFPA 13D – installed in the building and whether the system is proposed or existing.
- 25. Specify on plans, as applicable, the type of **fire alarm system** – manual and/or automatic – installed in the building and whether the system is proposed or existing.
- 26. Provide on plan itemized **hazardous material inventory** including the following to assess potential hazardous occupancy classification (CBC 307):
  - a. Material name
  - b. Material category per CBC Table 307.1(1) and/or CBC Table 307.1(2)
  - c. Maximum proposed quantity (in pounds, gallons, or cubic feet as applicable) per control area
  - d. Maximum allowable quantity per CBC Table 307.1(1) and/or CBC Table 307.1(2) per control area with any increases specified
- 27. Where **licensed 24-hour care facility** proposed, provide the following to verify CBC occupancy classification:
  - a. Data table on plans specifying number of ambulatory, nonambulatory, bedridden, and elderly clients
  - b. At each bedroom location on floor plans, note indicating number of clients and client status -- ambulatory, nonambulatory, bedridden, or elderly -- proposed for housing in that bedroom
  - c. Copy of state license indicating approved number of clients and each client status
  - d. Verification no restraint practiced – including locked doors preventing egress – unless building meets all requirements for I-3 occupancy (CBC 435.2.1)  
**Exception:** Licensed 24-hour care facilities practicing restraint may be housed in one-story buildings of type

28. Additional **special provisions** apply for the following:
- a. Covered mall and open mall buildings per CBC 402
  - b. High-rise buildings per CBC 403
  - c. Atriums per CBC 404
  - d. Underground buildings per CBC 405
  - e. Motor-vehicle related occupancies per CBC 406
  - f. Medical care facilities per CBC 407
  - g. Detention facilities per CBC 408
  - h. Motion-picture projection rooms per CBC 409
  - i. Stages, platforms, and technical production areas per CBC 410
  - j. Special amusement buildings per CBC 411
  - k. Aircraft-related occupancies per CBC 412
  - l. Combustible storage per CBC 413
  - m. Hazardous materials per CBC 414
  - n. H-1, H-2, H-3, H-4, and H-5 occupancies per CBC 415
  - o. Application of flammable finishes per CBC 416
  - p. Live/work units per CBC 419
  - q. Hydrogen fuel gas rooms per CBC 421
  - r. Ambulatory care facilities per CBC 422
  - s. Children's play structures per CBC 424
  - t. Winery caves per CBC 446
  - u. Public libraries per CBC 449
  - v. K-12 school facilities and E occupancy day care per CBC 452
  - w. Large family day-care homes per CBC 455
  - x. Group C organized camp per CBC 450
  - y. Group L laboratory suites per CBC 453

29. Coordinate wall/partition callouts on floor plans with **wall legend**.

30. Foundation and framing plans **shall be the same orientation** as floor plans.

31. Provide **legend/definitions for all symbols**, shaded areas, etc., used on plans.

32. Remove all "not for construction" notes from plans prior to issuance.

33. Coordinate **sheet index** with plans.

## C. SITE REQUIREMENTS

### 1. **SITE INSPECTION Requirements:**

- a. Per your **CONDITIONS OF APPROVAL, site inspection** required. Post site identification cards and call for initial SITE INSPECTION as instructed in your conditions. Additional correction items may apply based on the results.
- b. **Accela Parcel Land Query** indicates there is an open grading permit for this parcel. Therefore, no site inspection required. See any **grading permit** requirements below.
- c. In response to the results of a site inspection, submit a report from a California licensed Civil or Geotechnical Engineer. Each report shall indicate the dates the certifying parties have visited the job site and address the following (as applicable):
  - o Grading plans and a grading permit are required when there will be 200 or more cubic yards of earth moved or when there will be a cut or fill eight feet or more in vertical height, measured from the toe of the slope to the top of the slope. (See San Diego County Grading Ordinance Section 87.202.) Provide earthwork quantities with calculations and exhibit to confirm no grading permit required.
  - o A compaction report is required when fill soils of 12" in depth or greater are on the site.
  - o A geotechnical investigation is required for any questionable soil. Address geotechnical conditions as applicable per CBC 1803.4 such as soil classification, questionable soil, expansive soil, etc. Provide recommendations for foundation design, retaining wall design, soil bearing capacity, etc.

- d. If earthwork quantities and calculations are accepted in support of exempt grading, then earthwork can commence prior to building permit issuance. Provide a compaction report or geotechnical report (as applicable).
    - o Provide 2 copies of any required Soils or Compaction reports. Compaction reports more than 5 years old shall include an update letter by a California-licensed civil engineer.
    - o Foundation elements (e.g., footings, slab thickness, reinforcement, moisture barrier, etc.) shall comply with all recommendations made in Soils or Compaction report.
  - e. Subject to further evaluation or comments from a County Building Inspector regardless of any accepted report.
2. Project located in **Alquist-Priolo Earthquake Fault Zone**. Provide geotechnical report prepared, stamped, and signed by California-licensed civil engineer demonstrating proposed building(s) will not be constructed across trace of active fault.
3. **Grading permit** required from PDS Land Development and DPW Private Development Construction Inspection. Provide the following documentation:
    - c. Pass rough grading inspection and provide DPW Grading Inspection Results
    - d. Compaction Report (2 copies). Compaction reports more than 5 years old shall include an update letter by a California-licensed civil engineer.
4. **Soils report** required (2 copies). (CBC 1803)
5. **Compaction report** required (2 copies). Compaction reports more than 5 years old shall include an update letter by a California-licensed civil engineer.
6. Note on cover sheet or plot plan: "All proposed buildings, structures, additions, modifications to buildings/structures must comply with the approved location, as shown on the County approved Plot Plan. At the discretion of the County, the property owner may be required to provide proof of current placement of each on the parcel. This may include a stamped and signed **setback certificate** prepared by a California licensed surveyor or civil engineer. (County Building Code 91.1.107.2)"
8. Note on cover sheet or plot plan: "Per LD pre-review form, This project gains access from a County maintained road and an **application** for a **Right of Way (ROW) permit** was created prior to the issuance of the building permit. Begin processing the ROW **permit** 8 weeks prior to anticipated Final Inspection Approval. Coordinate with the land development counter at **rowpermitcounter@sdcounty.ca.gov**.  
Applicant Signature: \_\_\_\_\_"
9. Provide **itemized impervious surface area information** on stormwater Best Management Practices (BMP) plan or plot plan. Coordinate with total entered on County of San Diego Storm Water Intake Form.
    - a. Dimensions of all **impervious** elements – including building roofs, driveways, paved walkways, patios, patio covers, and decks – to enable calculation and verification of the surface area of each element
      - o Impervious areas from **other open building permits**. For example, ground mount solar, swimming pools, patio covers, etc.
    - b. Distinguish between new/replaced **impervious** surface area and existing **impervious** surface area
    - c. "**Existing**" **driveway**: There are four possible ways a driveway can be permitted, (1) Building Permit; (2) Grading Permit; (3) Clearing Permit; (4) Agricultural Use. Even though County Building Code Section 91.1.105.2 exempts driveways no more than 30" above grade from permit, this is contingent upon the driveway having been constructed as supplementary to an issued permit. If not "existing", driveway must be considered as new/replaced impervious surface area. Provide one of the following to verify driveway is existing:
      - o Proof that the driveway was constructed as supplementary to a **previously issued permit**.
      - o Proof that the driveway was constructed as supplementary to an **established agricultural use**.
    - d. **Provide table** determining cumulative new/replaced **impervious** surface area and cumulative existing **impervious** surface area on entire parcel, and **coordinate** with totals entered on County of San Diego Storm Water **Intake Form** (see PDS #272 for guidance)
    - e. Provide table indicating surface area of each constructed pervious element (see PDS #272 for guidance)
    - f. For any constructed **pervious** elements, provide on plans **all of the following** (for more information on pervious element design and strategies, please consult the **County of San Diego BMP Design Manual**):
      - o Manufacturer and product specifications
      - o Pervious element slope and direction of slope
      - o Cross-section of product assembly with complete dimensions and detailing
      - o Specific maintenance program – e.g., debris removal, vacuum sweeping twice per year, re-setting pavers as needed – to ensure product assembly remains pervious.

- *Note on plans* : "Constructed pervious surfaces shall not be sealed."
  - a. Provide table determining cumulative land disturbance for all soil disturbance occurring **under this permit**. Include items such as septic fields, grading, buildings(s), covered areas, decks, walkways, driveways, fence and retaining wall footings, etc.
  - b. Provide table determining cumulative land disturbance for all soil disturbance occurring **under other open permits on this site**. Include items such as ground mount solar, swimming pools, patio covers, etc.
  - c. Provide table determining cumulative land disturbance due to any **proposed landscaping under this permit or any other open permits on this site**.
    - For proposed landscaping areas **over 2500 sf**, provide Landscape Documentation Package.
    - For proposed landscaping areas **between 500 sf and 2500 sf**, provide Landscape Certificate of Completion Checklist.
    - For proposed landscaping areas **less than 500 sf**, no landscape permit required but must be included as disturbed area on the table.
11. **After the sets have been approved and stamped by the fire district**, PDS Building plan reviewer shall confirm that no additional impervious area or land disturbance was required.
12. Completely fill out a **stormwater INTAKE form** (2 copies).
- a. Project identification information and applicant's signature
  - b. Total new/replaced impervious area
  - c. Total existing impervious area
  - d. Total area disturbed by the project
  - e. Waste Discharger Identification Number (WDID) (obtained from State Water Resources Control Board and required when total area of land disturbance is 1 acre or more **or** project is part of a common development with land disturbance of 1 acre or more)
  - f. County records indicate this parcel is part of an **EXISTING PDP** (SATISFIED OR NOT SATISFIED):
    - **Property Summary Report** indicates EXISTING PDP (SATISFIED OR NOT SATISFIED)
    - **Accela Parcel Land Queries** indicate there are PDS Building records that are OPEN or ISSUED with a status of PDP in the GEO CODES and Building Inspector Comments.
  - g. This parcel is part of an existing PDP designated as **SATISFIED**:
  - h. This parcel is part of an existing PDP designated as **NOT SATISFIED**:  
This parcel is already a PDP therefore the Standard SWQMP form does not apply.
  - i. Project type determination: Standard Project or Priority Development Project
13. The **impervious area** is close to requiring a stormwater **Priority Development Project (PDP)**. Note the following on cover sheet or plot plan:
- a. New or replaced impervious area is within 95% of 10,000 sf (9,500 sf). Any additional impervious area may require a stormwater Priority Development Project (PDP)
  - b. Redevelopment project impervious area is within 95% of 5,000 sf (4,750 sf) on a site with 10,000 square feet or more of existing impervious surface. Any additional impervious area may require a stormwater Priority Development Project (PDP)
  - c. New or replaced impervious area within a hillside area with minimum 25% natural slope and creating or replacing 5,000 square feet or more of impervious surface"
  - d. New or redeveloped driveway and/or road creating or replacing 5,000 square feet or more of impervious surface"
  - e. New or redevelopment project discharging directly to an Environmentally Sensitive Area (ESA) and creating or replacing 2,500 square feet or more of impervious surface"
14. The **land disturbance** of this project is close to requiring a stormwater **Priority Development Project (PDP)** and a **Construction General Permit** from the State Water Resources Control Board, including a current WDID number. Note all of the following on cover sheet or plot plan:
- "a. Disturbed area shown is within 90% of an acre (39,204 sf). Any work outside the scope of the construction drawings may require a Waste Discharger Identification Number (WDID) directly from the State Water Resources Control Board. Contact: stormwater@waterboards.ca.gov (866) 563-3107."
  - "b. The perimeter of the land disturbance must be clearly staked as per the approved plans."
  - "c. DPW Watershed Protection Program requires a meeting with the owner and contractor no later than Foundation inspection. Contact: BMP.Program@sdcounty.ca.gov."
15. Project qualifies as a **Priority Development Project (PDP)** per the criteria below. For your convenience and information,

the attached PDP compliance handout includes some options that would not require the signature of an engineer and that may possibly reduce the PDP Storm Water Quality Management Plan (SWQMP) requirements. Share this information with your stormwater engineer for consideration of options. Submittal of a PDP SWQMP to **PDS Land Development** is required as follows: **A typical PDP SWQMP submittal package through PDS Land Development requires two copies of a drainage study (even if not required in any residential grading process), two copies of the site plan with impervious areas, two copies of a topographic map, two copies of the PDP SWQMP, a Financially Responsible Party application, and a financial deposit. All of these requirements have to be verified and/or determined at the PDS Land Development counter.**

- a. Project creating or replacing 10,000 square feet or more of impervious surface
- b. Redevelopment project creating or replacing 5,000 square feet or more of impervious surface on a site with 10,000
- c. New or redeveloped hillside area with minimum 25% natural slope and creating or replacing 5,000 square feet or
- d. New or redeveloped driveway and/or road creating or replacing 5,000 square feet or more of impervious surface
- e. New or redevelopment project discharging directly to an Environmentally Sensitive Area (ESA) and creating or
- f. Total land disturbance exceeds 1 acre (43,560 sf), and you must also obtain a Waste Discharger Identification
- g. County records indicate project site is PDP-NOT-SATISFIED: This parcel is part of a larger stormwater Priority Development Project (PDP) for multiple parcels, including this parcel. It is already established that the individual parcels are a PDP, such that the regular stormwater INTAKE and STANDARD forms do not apply in this case. The term "NOT-SATISFIED" means that, until now, there was not enough information to establish compliance of the individual parcels. Now, submittal of a parcel-specific PDP SWQMP is required per the description above.

16. Provide stormwater Best Management Practices (BMP) plan **coordinated** with Priority Development Project Storm Water Quality Management Plan (PDP SWQMP) approved by PDS Land Development covering proposed scope of work and
- a. If a PDP SWQMP under a related Land Development Referral (LDREFL) record type, **include the BMP Plan and Drainage Management Areas (DMA) plan** from the approved PDP SWQMP document stamped by PDS Land Development. This BMP Plan must show all structural BMP's, construction BMP's, and post-construction (source control and site design) BMP's, and must be coordinated with the rest of the approved PDP SWQMP document. The BMP Plan must already cover the proposed scope of work under this building permit.

o Note on cover sheet or plot plan: "This project is a Stormwater Priority Development Project and requires the submittal of a Mid-Construction Inspection Form and an Attachment #10 BMP IV Package.

- b. If any other stormwater record types, once available, you only need to bring a **photocopy of the PDP SWQMP cover sheet** that has the approval stamp and signature.

17. Completely fill out a **stormwater STANDARD form**. (2 copies). Pay extra attention to filling out all parts of Tables 1 and 3 of the form, including checking off appropriate boxes indicating the stormwater Best Management Practices (BMP)
- a. Project identification information and applicant's signature
  - b. Proposed erosion control BMPs per Table 3
  - c. Proposed energy dissipater (as needed where run-off is concentrated) per Table 3
  - d. Proposed sediment control BMPs per Table 3
  - e. Proposed BMPs preventing off-site tracking of sediment per Table 3
  - f. Proposed site management BMPs per Table 3
  - g. Proposed source control BMPs per Table 2
  - h. Proposed site design BMPs per Table 1

18. Provide a **stormwater Best Management Practices (BMP) Plan** with current legend.

- a. Indicating general direction of site drainage
- b. Identifying location of proposed erosion control BMPs per Standard Project SWQMP
- c. Identifying location of proposed energy dissipater per Standard Project SWQMP
- d. Identifying location of proposed sediment control BMPs per Standard Project SWQMP
- e. Identifying location of proposed BMPs preventing off-site tracking of sediment per Standard Project SWQMP
- f. Identifying location of proposed site management BMPs per Standard Project SWQMP
- g. Identifying location of proposed source control BMPs per Standard Project SWQMP
- h. Identifying location of proposed site design BMPs per Standard Project SWQMP
- i. Coordinate between the stormwater BMP's indicated in the STANDARD form (particularly those in Tables 1 and 3 of the STANDARD form), and those to be shown on the BMP Plan with current legend.

19. County records indicate an **existing Structural BMP** - e.g., bioretention areas, infiltration areas, biofiltration areas - on the project site. **Specify on BMP plan** the location of the installed Structural BMP(s) to confirm no encroachment by proposed construction. For more information on the installed Structural BMP(s), email [Bmp.Program@sdcounty.ca.gov](mailto:Bmp.Program@sdcounty.ca.gov) or visit our website at <https://www.sandiegocounty.gov/stormwater> and then go to "Maintaining My Structural BMP".

#### D. ALLOWABLE BUILDING HEIGHT

1. Indicate **grade plane** – i.e., average finished ground level adjoining the building at exterior walls – on all building elevations.

**Exception:** Where finished ground level slopes away from exterior walls, grade plane shall be calculated using the lowest points between the building and the lot line or, if the lot line is more than 6 feet from the building, the lowest points between the building and points 6 feet from the building

2. Dimension **building height** – measured vertically from grade plane to the average height of the highest roof surface – on all building elevations.

3. Each enclosed level of the building will be **considered a story unless** the level meets **all listed criteria** for **one of the following**:

a. Basement (CBC 202):

- Story above is not more than 6 feet above grade plane
- Story above is not more than 12 feet above the finished ground level at any point

b. Mezzanine (CBC 505.2):

- Aggregate area of mezzanine(s) shall not exceed one-third the floor area of the room or space in which the mezzanine is located

**Exception:** Aggregate area of mezzanine(s) in buildings of type I or type II construction equipped with an NFPA 13 sprinkler system and approved emergency voice/alarm communication system per CBC 907.5.2.2 shall not exceed one-half the floor area of the room or space

**Exception:** Aggregate area of mezzanine(s) in buildings of type I or type II construction for special industrial occupancies per CBC 503.1.1 shall not exceed two-thirds the floor area of the room or space in which the mezzanine is located

**Exception:** Aggregate area of mezzanine(s) within a dwelling unit that is located in a building equipped throughout with an approved automatic sprinkler system in accordance with CBC 903.3.1.1 or 903.3.1.2 shall not be greater than one-half of the floor area of the room, provided that

- The mezzanine shall be open to the room in which such mezzanine is located, except for enclosed closets and bathrooms;
- The opening to the room shall be unobstructed except for walls not more than 42-inches in height, columns, and posts;
- Exceptions to CBC 505.2.3 shall not be permitted.

- For a room or space containing both mezzanine and equipment platform, the aggregate area of the two raised floor levels shall not be greater than two-thirds of the floor area of that room or space in which they are located. The area of the mezzanine shall not exceed the area determined in accordance with CBC 505.2.1.

- Open and unobstructed to the room or space in which the mezzanine is located

**Exception:** Walls maximum 42 inches in height, columns, and posts

**Exception:** Mezzanines where occupant load of aggregate area of enclosed space does not exceed 10

**Exception:** Mezzanines with an aggregate floor area of enclosed space not greater than 10% of the mezzanine area

**Exception:** Mezzanines with two or more means of egress

**Exception:** Mezzanines with two or more exits or access to exits in occupancies other than H and I, no more than two stories above grade plane, and equipped throughout with an NFPA 13 sprinkler system

**Exception:** Mezzanines used for control equipment in industrial facilities and glazed on all sides

c. Equipment platform (CBC 505.3):

- Unoccupied, elevated, and used exclusively for mechanical systems or industrial process equipment
- Includes associated elevated walkways, stairs, alternating tread devices, and ladders necessary to access the platform
- Aggregate area of equipment platform(s) shall not exceed two-thirds the floor area of the room or space in which the platform is located
- Combined aggregate area of equipment platforms and mezzanines shall not exceed two-thirds the floor area of the room or space in which they are located. The area of the mezzanine shall not exceed the area determined in accordance with CBC 505.2.1.

d. Occupied roofs (CBC 503.1.4):

- An occupied roof or portion thereof is allowed provided the occupancy of the roof is also permitted for the story immediately below the roof by CBC Table 504.4.

**Exception:** The occupancy located on an occupied roof shall not be limited to the occupancies allowed on

the story immediately below the roof where the building is equipped throughout with an automatic sprinkler system per CBC 903.3.1.1 or 903.3.1.2, AND occupant notification per CBC 907.5 is provided in the area of the occupied roof.

**Exception:** Assembly occupancies are allowed on roofs of open parking spaces of Type I or Type II construction per the exception to CBC 903.2.1.6.

- o The area of an occupied roof shall not be included in the building area as regulated by CBC 506.

e. Enclosures over occupied roof areas (CBC 503.1.4.1):

- o Elements or structures enclosing the occupied roof areas shall not extend more than 48-inches above the surface of the occupied roof.

**Exception:** Penthouses constructed per CBC 1510.2, and towers, domes, spires, and cupolas constructed per CBC 1510.5.

4. Specify on plans any proposed height and/or story **increases**. (CBC 504.3, CBC 504.4)

5. Building exceeds the following **CBC 504 limits**:

- a. Allowable height above grade plane
- b. Allowable number of stories

## E. ALLOWABLE BUILDING AREA

1. Provide on plans an **allowable building area analysis** including the following:

- a. Specification of any proposed area increase per CBC 506.2 for automatic sprinkler system
- b. Specification of any proposed area increase per CBC 506.3 for building frontage
- c. For single-occupancy, one-story buildings: Calculation of allowable building area per CBC 506.2.1
- d. For mixed-occupancy, one-story buildings: Calculation of allowable building area per CBC 506.2.2
- e. For single-occupancy, multistory buildings: Calculation of total allowable building area and allowable building area per story per CBC 506.2.3
- f. For mixed-occupancy, multistory buildings: Calculation of total allowable building area and allowable building area per story per CBC 506.2.4
- g. Indication of any buildings on same lot considered as portions of single building per CBC 705.3
- h. Indication of any fire wall – \_\_\_\_\_ hour-rated per CBC Table 706.4 and constructed per item J.2 – dividing construction into portions considered as separate buildings per CBC 706.1
- i. Indication of any buildings qualifying for unlimited area per CBC 507
- j. Indication of any conditions qualifying for special provisions of CBC 510

2. Building exceeds the following **CBC 506 limits**:

**Exception:** Mezzanine area need not be included in building area (CBC 505.2)

**Exception:** Basements need not be included in total allowable building area, provided the total area of such basements do not exceed the area permitted for a building with no more than one story above grade plane. (CBC 506.1.3)

- a. Allowable building area per story
- b. Total allowable building area

## F. TYPE OF CONSTRUCTION

1. Building elements in **type I and type II construction** shall be noncombustible. (CBC 602.2)

**Exception:** Combustible materials allowed per CBC 603.1

2. Detail the following **fire-rated structural assemblies** required for compliance with proposed type \_\_\_\_ construction per CBC Table 601:

- a. Structural frame: \_\_\_\_ hour-rated construction required (specify CBC Table 721.1(1) assembly number or cite reference to alternate approved assembly) with detailing per CBC 704
- b. Exterior bearing walls: \_\_\_\_ hour-rated construction required (specify CBC Table 721.1(2) assembly number or cite reference to alternate approved assembly)
- c. Interior bearing walls: \_\_\_\_ hour-rated construction required (specify CBC Table 721.1(2) assembly number or cite reference to alternate approved assembly)
- d. Floor construction: \_\_\_\_ hour-rated construction required (specify CBC Table 721.1(3) assembly number or cite reference to alternate approved assembly)
- e. Roof construction: \_\_\_\_ hour-rated construction required (specify CBC Table 721.1(3) assembly number or cite reference to alternate approved assembly)
- f. Corner guards or noncombustible jacket not less than 5 feet above finished floor for fire-rated structural members subject to vehicular impact (CBC 704.9)

**Exception:** Concrete columns in open or enclosed parking garages

- g. Any penetrations protected per item J.8

3. **Licensed 24-hour residential care facilities** require 1-hour-rated construction throughout for the following (CBC 435):

- a. R-2.1 occupancies
- b. R-3.1 occupancies where nonambulatory clients housed above the first story **and** building has more than two stories **or** more than 3000 square feet above the first story
- c. R-4 occupancies where nonambulatory clients housed above the first story **and** building has more than 3000 square feet above the first story **or** houses more than 16 clients above the first story
- d. R-4 occupancies housing nonambulatory elderly clients

## G. EXTERIOR WALLS

1. Dimension on the plot plan the location of any **assumed imaginary lines** between buildings on the same lot. (CBC 705.3)

**Exception:** Buildings on the same lot considered as single building per item E.1

2. Dimension on the plot plan the following **fire separation distances** (FSD), measured at right angles to the building face:

- a. Distances between building exterior walls and adjacent property lines (CBC 202)

**Exception:** Distance may be measured to centerline of adjacent street, alley, or public way

- b. Distances between building exterior walls and assumed imaginary lines per item G.1 (CBC 705.3)

3. Exterior walls with a **fire separation distance** (FSD) of \_\_\_\_\_ feet shall be minimum \_\_\_\_\_ hour-rated and constructed per item J.1 (CBC Table 602)

4. Exterior wall requires **parapet** constructed per item J.1. (CBC 705.11)

**Exception:** Exterior walls not required to be fire-rated

**Exception:** Exterior walls of building with not more than 1,000 square feet on any floor

**Exception:** Exterior walls with fire separation distance allowing at least 25% unprotected opening area per CBC Table 705.8

**Exception:** Exterior walls terminating at minimum 2-hour-rated roofs of exclusively noncombustible materials, including the deck/slab and supporting construction

**Exception:** Maximum 1-hour-rated exterior walls terminating at underside of roof sheathing, deck, or slab with roof and supporting construction meeting **all of the following**:

- a. Where roof/ceiling framing elements are parallel to the wall, such framing and supporting construction shall be minimum 1-hour-rated for minimum 4 feet for R and U occupancies and minimum 10 feet for other occupancies, measured from the interior side of the wall.
- b. Where roof/ceiling framing elements are not parallel to the wall, the entire span of such framing and supporting construction shall be minimum 1-hour-rated.
- b. Openings in the roof shall not be located within 5 feet of 1-hour-rated exterior wall for R and U occupancies and within 10 feet for other occupancies, measured from the interior side of the wall.

**Exception:** In R-2 and R-3 occupancies of type III, IV, or V construction, exterior walls terminating at underside of roof sheathing or deck with roof meeting **one of the following**:

- a. Roof sheathing or deck constructed of approved noncombustible materials or fire-retardant-treated wood for minimum 4 feet from wall.
- b. Roof protected with 5/8-inch type X gypsum board directly beneath underside of roof sheathing or deck, supported by a minimum of 2-inch nominal ledgers attached to sides of roof framing members for minimum 4 feet from wall.

5. Area of unprotected and/or protected **exterior wall openings** shall be within **CBC Table 705.8 limits**.

6. **Projections** extending beyond an exterior wall (e.g., cornices, eave overhangs, exterior balconies, and similar projections extending beyond the exterior wall) shall comply with the following:

**Exception:** Projections between buildings on the same lot considered as single building per item E.1

- a. Minimum distance from line used to determine fire separation distance per item G.2 (CBC Table 705.2):

- o Fire separation distance of 0 feet to less than 2 feet: **Projections not allowed**
- o Fire separation distance of greater than 2 feet to less than 3 feet: 24 inches.
- o Fire separation distance of greater than 3 feet to less than 5 feet to less than 30 feet: 24 inches plus 8 inches for every foot of fire separation distance beyond 3 feet or fraction thereof.
- o Fire separation distance of 5 feet or greater: 40 inches

- b. Projections from type I or type II construction shall be noncombustible materials (CBC 705.2.1)

**Exception:** Combustible materials allowed by CBC 705.2.3.1 and CBC 705.2.4, with limitations to combustible exterior wall coverings per CBC 1405.1.

- c. Combustible projections extending within 5 feet of line used to determine fire separation distance per item G.2

shall be minimum 1-hour-rated construction, heavy-timber construction per CBC 2304.11, fire-retardant-treated wood, or as permitted by CBC 705.2.3.1.

**Exception:** Type VB construction allowed for combustible projections in R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet.

## H. OCCUPANCY/USE SEPARATION

1. In buildings containing **more than one occupancy**, each portion of the building shall comply with at least one of the following:

a. **Separated occupancies:** Separation between \_\_\_\_\_ and \_\_\_\_\_ occupancies requires \_\_\_\_\_ hour-rated fire barrier and/or horizontal assembly constructed per item J.3 (CBC Table 508.4, CBC 711.2.4.1)

b. **Nonseparated occupancies:** Separation not required between \_\_\_\_\_ and \_\_\_\_\_ occupancies where entire nonseparated area complies with most restrictive provisions applicable to each occupancy for **all of the following** (CBC 508.3):

**Exception:** R occupancies require separation per item H.3

**Exception:** H, I, and L occupancies require separation per CBC Table 508.4

o Allowable building height area per section D

o Allowable building area per section E

o Fire protection per section K

c. **Accessory occupancies:** Separation not required between \_\_\_\_\_ main occupancy and \_\_\_\_\_ accessory occupancy where aggregate area of accessory occupancy does not exceed 10% of the building area of that story **and** accessory occupancy's allowable area in CBC Table 503

**Exception:** R occupancies require separation per item H.3

**Exception:** H, I, and L occupancies require separation per CBC Table 508.4

2. Area labeled \_\_\_\_\_ qualifies as an **incidental use** per CBC Table 509 and shall comply with the following:

**Exception:** Incidental use areas within and serving a dwelling unit

a. Separated from remainder of building with \_\_\_\_\_ hour-rated **fire barrier** and/or horizontal assembly constructed per item J.3 (CBC 509.4, CBC 711.2.4.5)

b. Protected by automatic sprinkler system

c. Where CBC Table 509 permits an automatic sprinkler system **without a fire barrier**, incidental use separated from remainder of building by **smoke-proof construction** meeting **all of the following**:

o Walls extending from top of foundation or floor assembly below

o Any air-transfer openings in walls protected with smoke damper per item J.10

o Self- or automatic-closing doors actuated upon detection of smoke

o No air transfer openings in doors

o No undercutting of door in excess of clearance allowed per NFPA 80

d. Shall not exceed 10% of the building area of that story

3. Dwelling units and sleeping units shall be **isolated from each other and from other occupancies contiguous** to them with fire partitions and/or horizontal assemblies constructed per item J.5. (CBC 420, CBC 708, CBC 711)

**Exception:** Separation of dwelling unit and its adjacent private garage may comply with CBC 406.3.4

4. **Licensed 24-hour care facilities** – R-2.1, R-3.1, and R-4 occupancies – shall comply with the following per CBC 435:

a. In R-3-1 occupancies, bedridden clients shall not be housed above or below the first story

b. Smoke barriers – constructed per item J.6 – required in the following:

o R-2.1 occupancies housing bedridden clients or with individual floor areas over 6000 square feet

o R-4 occupancies with individual floor areas over 6000 square feet

c. Any required smoke barriers shall divide floor as equally as possible with maximum 22,500 square feet and maximum 200 feet travel distance in any smoke compartment

5. **Vertical openings** shall be contained within a **shaft enclosure** constructed per item J.7. (CBC 712)

**Exception:** Vertical openings created by unenclosed stairs or ramps allowed per item I.31

**Exception:** In other than I-2, I-2.1, and I-3 occupancies, a floor opening complying with **all of the following**:

a. Does not connect more than two stories

b. Does not contain a stairway or ramp required for egress

c. Does not penetrate a horizontal assembly separating fire areas or a smoke barrier separating smoke compartments

d. Not concealed within the construction of a wall or floor/ceiling assembly

e. Not open to a corridor in an R or I occupancy

- f. Not open to a corridor on nonsprinklered floors
- g. Separated from floor openings and air transfer openings serving other floors by construction conforming to shaft enclosure per item J.7

**Exception:** Vertical openings between a mezzanine and the floor below

**Exception:** Unconcealed vertical openings totally within an individual residential dwelling unit and connecting four stories or less

**Exception:** Approved masonry chimneys where annular space fireblocked at each floor level per item J.11

**Exception:** Vertical openings protected by floor fire doors meeting 712.1.13.1

**Exception:** Automobile ramps in open parking garages constructed per CBC 406.5 or enclosed parking garages constructed per CBC 406.6

**Exception:** Vertical openings in elevator hoistways in open parking garages constructed per CBC 406.5 or enclosed parking garages constructed per CBC 406.6

**Exception:** Vertical openings for mechanical exhaust or supply duct systems in open parking garages constructed per CBC 406.5 or enclosed parking garages constructed per CBC 406.6 where duct system is contained within and serves only the parking garage

**Exception:** Atriums in other than H occupancies

**Exception:** In other than I-2, I-2.1, and I-3 occupancies and where equipped with NFPA 13 automatic sprinkler system, escalator openings protected per CBC 712.1.3.1 and CBC 712.1.3.2

**Exception:** Vertical openings in I-3 occupancies in accordance with CBC 408.5

**6. Elevators and dumbwaiters** shall comply with the following:

- a. When required by item H.5, elevators and dumbwaiters shall be contained within a shaft enclosure constructed per item J.7 (CBC 712)
- b. An enclosed elevator lobby – separating the elevator shaft enclosure doors from each floor with fire partitions constructed per item J.4 – shall be provided at each floor where an elevator shaft enclosure connects more than two stories in A, E, H, I, L, R-1, R-2, and R-2.1 occupancies and more than three stories in all other occupancies (CBC 3006.2, CBC 3006.3)

**Exception:** Enclosed elevator lobbies not required at elevators not required to be located in a shaft per item H.5

**Exception:** In other than A, E, H, I, L, R-1, R-2, and R-2.1 occupancies, enclosed elevator lobbies not required where building equipped with NFPA 13 or NFPA 13R automatic sprinkler system

**Exception:** Enclosed elevator lobbies not required at level(s) of exit discharge equipped with an NFPA 13 automatic sprinkler system

**Exception:** Enclosed elevator lobbies not required where additional doors provided at hoistway opening and meeting CBC 716.5.3.1 smoke and draft control requirements

**Exception:** Smoke partitions constructed per CBC 710 acceptable in lieu of fire partitions where building equipped with NFPA 13 or NFPA 13R automatic sprinkler system and any openings and duct penetrations protected per item J.4

**Exception:** In other than I-2 occupancies, enclosed elevator lobbies not required where elevator hoistway is pressurized per CBC 909.21

**Exception:** Enclosed elevator lobbies not required where elevator serves only open parking garage constructed per CBC 406.5

**Exception:** Enclosed elevator lobbies not required where hoistway door is 45-minute-rated and hoistway door opening is protected by a listed and labeled smoke containment system complying with ICC ES AC 77

**7. Refuse, recycling, and laundry chutes** shall comply with the following:

**Exception:** Chutes serving and contained within a single dwelling unit

**Exception:** Chutes in I-2 and I-2.1 occupancies shall comply with NFPA 82, chapter 5

- a. Contained with a shaft enclosure constructed per item J.7 and not used for any other purpose (CBC 713.13.1)
- b. Access openings into chutes shall be located in rooms or compartments enclosed by minimum 1-hour-rated fire barriers and/or horizontal assemblies constructed per item J.3 and not located in corridors (CBC 713.13.3)
- c. Discharge into an enclosed room separated from the remainder of the building by fire barriers and/or horizontal assemblies constructed per item J.3 (CBC 713.13.4)

**Exception:** Refuse chutes may not terminate in an incinerator room

**I. MEANS OF EGRESS**

- 1. Provide independently calculated occupant loads, **based on the floor area of each function having different occupant load factor within each occupiable space**, per CBC Table 1004.5 occupant load factor(s) and applicable gross/net floor area. Round up each occupant load to a **whole number** based on maximum floor area allowed per occupant.(CBC 1004.3)

- a. Occupant load **at individual spaces** with CBC Table 1004.1.2 occupant load factor(s) and applicable gross/net floor area specified at each space

**Exception:** Occupant load for fixed seating areas shall be calculated per CBC 1004.6

- b. Intended egress routes with cumulative occupant load specified **at exit doors, corridors, stairways, and intervening rooms**
- c. **Overall** occupant load of building
2. Assembly, classroom, dining, drinking, and/or similar space labeled \_\_\_\_\_ shall have **occupant load posted in conspicuous place** near main exit or exit-access doorway from space. (CBC 1004.9)
3. Building requires \_\_\_\_\_ **exits from** \_\_\_\_\_ **story**. (CBC 1006.3, CBC Table 1006.3.2, CBC Table 1006.3.3(1), CBC Table 1006.3.3(2))
4. **Space** labeled \_\_\_\_\_ requires \_\_\_\_\_ **exits**. (CBC Table 1006.2.1)
5. Egress from **licensed 24-hour care facilities** -- R-2.1, R-3.1, and R-4 occupancies -- also shall comply with CBC 435.8 provisions.
6. Provide complying **exits** from the following spaces (CBC 1006.2.2):
- a. Boiler, incinerator, and furnace rooms more than 500 square feet with fuel-fired equipment exceeding 400K BTUs:
    - o Minimum two exits (one may be fixed ladder or alternating tread device)
  - b. Refrigeration machinery rooms more than 1000 square feet
    - o Minimum two exits (one may be fixed ladder or alternating tread device)
    - o All portions of machinery room within 150 feet of an exit
    - o Exit and exit access doorways shall swing in the direction of egress travel, regardless of occupant load served.
  - c. Refrigerated rooms or spaces more than 1000 square feet
    - o Exit and exit access doorways shall be tight fitting and self-closing.
    - o Minimum two exits
    - o All portions of unsprinklered refrigerated room within 150 feet of an exit
    - o Egress allowed through adjoining refrigerated rooms
  - d. Group I-4 facilities, rooms, or spaces where care is provided for more than 10 children of age 2 1/2 years or less:
    - o Minimum two exits or exit access doorways.
7. Dimension between exits or exit-access doors from \_\_\_\_\_ shall be **at least one-half the maximum overall diagonal** of area served (measured in straight line between exits or exit-access doors). (CBC 1007.1.1)

**Exception:** Separation may be **one-third the maximum overall diagonal in sprinklered buildings**

**Exception:** Where interior exit stairways are interconnected by a 1-hour **fire-rated corridor**, the required exit separation shall be **measured along the shortest line of travel within the corridor**

8. Exit separation required by item I.7 **must be maintained to exit discharge**. (CBC 1007.1.1)
9. **Exit access travel distance** from space labeled \_\_\_\_\_ exceeds allowable values per CBC Table 1017.2, measured from the most remote point of each room, area, or space along the natural and unobstructed path of horizontal and vertical egress travel to entrance to an exit (CBC 1017.3, CBC 1017.3.1).
10. Egress from space labeled \_\_\_\_\_ **may not pass through space** labeled \_\_\_\_\_. (CBC 1016.2)
11. **Common path** of egress travel: Exit access route from space labeled \_\_\_\_\_ must offer **two** separate and distinct paths to **two** exits before occupants travel \_\_\_\_\_ feet. (CBC 1006.2.1, CBC Table 1006.2.1)

**Exception:** Assembly seating **common path** of travel distance shall comply with CBC 1029.8

12. Dimension minimum 44-inch **corridor width** or as required for occupant load served. (CBC 1005.1, CBC 1020.2)

**Exception:** Minimum 24-inch corridor width acceptable for access to mechanical, plumbing, or electrical systems or equipment

**Exception:** Minimum 36-inch corridor width acceptable when serving occupant load less than 50

**Exception:** Minimum 36-inch corridor width acceptable within a dwelling unit

**Exception:** Minimum 72-inch corridor width required in E occupancies when serving occupant load of 100 or more

13. Where more than one exit or exit access doorway is required, **corridor dead ends** may not exceed 20 feet. (CBC 1020.4)

**Exception:** Maximum 50 feet in B, E, F, M, R-1, R-2, R-2.1, R2.2, S, and U occupancies with an NFPA 13 sprinkler system

**Exception:** Dead-end corridor length not limited where dead-end length is less than 2.5 times dead-end width

14. **Fire-rated corridors** required for the following (**CBC Table 1020.1**):

**Exception:** Corridors in E occupancies where each room used for instruction has at least one door opening directly to the exterior and rooms used for assembly have at least one half of the required means of egress opening directly to the exterior

**Exception:** Corridors contained within a dwelling unit or sleeping unit in an R occupancy

**Exception:** Corridors in open parking garages

**Exception:** Corridors in B occupancy spaces requiring only a single means of egress per CBC 1006.2

**Exception:** Corridors within suites in I-2 or I-2.1 occupancies provided with an automatic sprinkler system throughout and constructed per CBC 407.4.4 or CBC 407.4.5

**Exception:** Corridors adjacent to the exterior walls of buildings shall be permitted to have unprotected openings on unrated exterior walls where unrated walls are permitted by CBC Table 602 and unprotected openings are permitted by CBC Table 705.8.

**Exception:** Corridors within Group I-3 occupancies that comply with intervening spaces, see CBC 408.1.2.2.

**Exception:** Corridors in B occupancies serving spaces requiring only one exit per CBC Table 1015.1

**Exception:** Corridors in open parking garages

a. Unsprinklered A, B, F, M, S and U occupancies with corridor occupant load greater than 30

b. A occupancies requiring rated corridors per (CBC 1029, CBC 1029.3)

c. Unsprinklered E occupancies with corridor occupant load greater than 10

**Exception:** E occupancies where each room used for instruction has at least one door opening directly to the exterior at ground level **and** each room used for assembly purposes has at least 50% of the required exit doors opening directly to the exterior at ground level

d. Unsprinklered I-4 occupancy (CBC Table 1020.1).

e. Sprinklered R-1, R-2, R-3, R-3.1, and R-4 occupancies with corridor occupant load greater than 10

**Exception:** Corridors contained within a dwelling unit or sleeping unit

f. Sprinklered I-3 and R-2.1 occupancies with corridor occupant load greater than 6 (CBC Table 1020.1)

**Exception:** Corridors within I-2 or I-2.1 suites with automatic sprinkler system throughout and meeting CBC 407.4.3.5 or CBC 407.4.3.6

g. Sprinklered H-4, H-5, and L occupancies with corridor occupant load more than 30

h. Sprinklered H-1, H-2, and H-3 occupancies (CBC Table 1020.1)

15. **Fire-rated corridors** required by item I.14 shall be protected by **fire partitions** constructed per item J.4 (CBC 1020.1):

16. **Fire-rated corridors** required by item I.14 shall be **continuous** from point of entry to exit with no intervening rooms (CBC 1020.6)

**Exception:** Foyers, lobbies, or reception rooms constructed per item J.4 as required for corridors shall not be considered as intervening rooms

**Exception:** Enclosed elevator lobbies allowed by CBC 1016.2, item 1, shall not be considered as intervening rooms

**Exception:** In fully sprinklered office buildings, corridors may lead through enclosed elevator lobbies if all areas of the building have access to at least one required exit without passing through the elevator lobby

17. Dimension **aisle and aisle accessway width** per CBC 1018 from spaces containing seats, tables, furnishings, or displays.

18. Specify width, height, and operation type of **all doors**. (CBC 1010)

19. All **egress doors** – including those provided in excess of number required – must meet the following (CBC 1005.1, CBC 1010.1 with exceptions, CBC 11B-404.2.7, CBC 1010.1.1.1 for allowable projections into clear width with exceptions):

a. Minimum 32-inch clear width (at least one door leaf providing this width at double doors)

b. Maximum 48-inch door leaf on swinging doors

c. Minimum 6-foot-8-inch clear height

d. Hardware minimum 34 inches and maximum 44 inches above finished floor

20. **Exit door** \_\_\_\_\_ from space labeled \_\_\_\_\_ does not provide adequate **clear width** to serve occupant load shown on egress plan. (CBC 1005.1)
21. Loss of **exit door** \_\_\_\_\_ from space labeled \_\_\_\_\_ reduces available **capacity** to less than 50% required capacity. (CBC 1005.5)
22. *Note on plans:* "Egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort." (CBC 1010.1.9)
23. **Egress doors** shall be side-hinged swinging or pivoted. (CBC 1010.1.2)
- Exception:** Private garages, office areas, factory areas, and storages areas with an occupant load of 10 or fewer
- Exception:** Doors within or serving a single dwelling unit in R-2 and R-3 occupancies
- Exception:** Doors serving bathroom within R-1 sleeping unit
- Exception:** In other than H occupancies, revolving doors per CBC 1010.1.4.1
- Exception:** In other than H occupancies, horizontal sliding doors per CBC 1010.1.4.3
- Exception:** In other than H occupancies, manually operated horizontal-sliding doors acceptable in areas with an occupant load of 10 or less
- Exception:** Power-operated doors per CBC 1010.1.4.2
24. **Exit doors** – including those provided in excess of number required – shall **swing in direction of egress** when serving an occupant load of 50 or more or an H occupancy. (CBC 1010.1.2.1)
25. **Door** \_\_\_\_\_ from space labeled \_\_\_\_\_ reduces **required dimension(s)** as follows (CBC 1005.7.1, CBC 1010.1.6):
- a. Door in fully open position reduces required width of egress component by more than 7 inches
  - b. Door in any position reduces required width of egress component by more than 50%.
- Exception:** Doors within R-2 dwelling units or sleeping units
26. The space labeled \_\_\_\_\_ does not meet egress provisions for **special doors**. (CBC 1010.1.4)
- a. Revolving door
  - b. Power-operated door
  - c. Horizontal-sliding door
  - d. Access-controlled egress door
27. Specify on door schedule **panic hardware or fire exit hardware** at each door – including those provided in excess of number required – serving the following (CBC 1010.1.10):
- a. Rooms/spaces with an occupant load of 50 or more in the following:
    - o A occupancies
      - Exception:** Main exit of A occupancy meeting provisions of item I.28
      - Exception:** Electromagnetically locked doors per CBC 1010.1.9.9 in A and E occupancies
    - o Assembly areas not classified as A occupancies
    - o E, I-2, or I-2.1 occupancies
  - b. H occupancies
  - c. Electrical rooms with 800-amp or more equipment, width of 6 feet or more, and containing overcurrent devices, switching devices, or control devices
28. Specify on door schedule any **locking or latching hardware**. Locks or latches only allowed for the following (CBC 1010.1.9.3):
- a. Main doors(s) of the following occupancies/uses may have key-operated locking device(s) where sign posted on egress side adjacent to or on door(s) stating "THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED":
    - o B, F, M, and S occupancies
    - o Places of religious worship
    - o A occupancies with occupant load of 300 or less
  - b. Doors from individual dwelling/sleeping units in R occupancies with occupant load of 10 or less
  - c. Places of detention or restraint
29. **Emergency Egress:** Provide at least one **emergency escape and rescue opening** at each basement and sleeping room below the fourth story above grade in R-3 and R-4 occupancies, and R-2 occupancies located in stories with only one exit or access to only one exit as permitted in CBC Tables 1006.3.3(1) and 1006.3.3(2), complying with the following (CBC 1030):
- Exception:** R-1 and R-2 occupancies of type I, type IIA, type IIIA, or type IV construction and equipped with NFPA 13 sprinkler system

**Exception:** Basements with ceiling height of less than 80 inches

**Exception:** Basements without habitable spaces and having no more than 200 square feet in floor area

**Exception:** R-2.1 occupancies meeting the requirements for delayed egress per CBC 1010.1.9.8 may have operable windows that are breakable in sleeping rooms permanently restricted to a maximum of 4-inch open position.

**Exception:** Basements and sleeping rooms that have an exit door or exit access door that opens directly into a public way or to a yard, court, or exterior exit balcony that opens to a public way.

**Exception:** Within individual dwelling and sleeping units in R-2 and R-3 occupancies where the building is equipped throughout with an automatic sprinkler system installed per CBC 903.3.1.1, 903.3.1.2, or 903.3.1.3, provided that the basement has one of the following:

o One means of egress, and one emergency escape and rescue opening.

o Two means of egress.

o In R-2.2 occupancies, a certified fire escape is acceptable as a secondary means of egress for existing buildings for this section of the code.

**Exception:** In R-2.2 occupancies, a certified fire escape is acceptable as a secondary means of egress for existing buildings for this section of the code.

- a. Minimum 5.7-square-foot net clear opening area

**Exception:** Minimum 5.0-square-foot net clear opening area acceptable for grade-level room

- b. Minimum 24-inch net clear opening height

- c. Minimum 20-inch net clear opening width

- d. Bottom of clear opening maximum 44 inches above floor

- e. Operational from inside the room and without use of key, tool, special knowledge or effort, or force greater than that required for normal operation of opening

- f. Opening directly to public way or yard/court opening to public way

- g. Where escape/rescue opening sill height is below grade level, window well provided per CBC 1030.5

- h. Emergency escape and rescue openings, and any exit doors, shall be maintained free of any obstacles, other than those allowed by CBC 1030.1.1, and shall be operational from inside the room without the use of keys or tools.

**Exception:** R-1 occupancies provided with a monitored fire sprinkler per CBC 903.2.8 and designed per NFPA 13 may have openable windows permanently restricted to a maximum 4-inch open position.

- i. Bars, grills, grates, or any similar window opening control devices complying with ASTM F2090 shall be permitted for use on windows serving as a required emergency escape and rescue opening, provided that the release mechanism shall be maintained operable at all times, and shall be equipped with an approved exterior release device for use by the fire department only when required by the authority having jurisdiction. (CBC 1030.1.1)

- j. Where security bars (burglar bars) are installed on emergency escape and rescue windows or doors, on or after July 1, 2000, such devices shall comply with California Building Standards Code, Part 12, Chapter 12-3, and other applicable provisions of Part 2.

30. **Interior exit stairways** -- i.e., protected egress elements considered as exits -- shall comply with the following:

- a. Enclosed within minimum 1-hour-rated fire barrier and/or horizontal assembly constructed per item J.3 (CBC 1023.2)

**Exception:** Enclosure fire rating shall be at least equivalent to fire rating of any floor penetrated by enclosure

**Exception:** Minimum 2-hour rating required when connecting four stories or more (counting basements but not counting mezzanines)

**Exception:** Exterior walls of interior exit stairways may have fire rating required by item G.3 **but** any non-rated walls exposed to other parts of the building at an angle of less than 180 degrees shall be protected by minimum 1-hour-rated exterior walls and minimum 3/4-hour-rated openings within 10 feet horizontally of non-rated interior exit stairway walls or unprotected openings **and** extending from ground to point minimum 10 feet above topmost landing of stairway or to the roof line, whichever is lower.

- b. Used exclusively for egress (CBC 1023.1)

- c. Leading directly to building exterior (CBC 1023.1)

**Exception:** Maximum 50% of required interior exit stairways may meet exit discharge exceptions of item I.33

**Exception:** Interior exit stairways extending to building exterior by exit passageway meeting **all of the following**:

- o Separated from building – including interior exit stairway – by minimum 1-hour-rated fire barrier and/or

horizontal assembly constructed per item J.3 (CBC 1023.3.1, CBC 1024.3)

**Exception:** Separation from interior exit stairway not required where there are no other openings into the exit passageway

- o Minimum 44-inch unobstructed width (CBC 1024.2)

**Exception:** Minimum 36-inch unobstructed width acceptable in exit passageways serving an occupant load of less than 50

- o Exit passageways on level of exit discharge shall terminate at an exit discharge per item I.33
- o Exit passageways on other than level of exit discharge shall terminate at an exit
- o Openings in exit passageway limited to those necessary for exit access to exit passageway from normally occupied space and egress from exit passageway
- o Elevators may not open into an exit passageway
- o Penetrations into and openings through exit passageway are prohibited

**Exception:** Required exit doors

**Exception:** Through penetrations – provided they do not communicate between exit passageways – protected per item J.8 by equipment and ductwork necessary for independent pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication, and electrical raceway serving the exit passageway and terminating at maximum 16-square inch steel box.

**Exception:** Membrane penetrations protected per item J.8

- d. Openings in interior exit stairways limited to those providing access into or egress from interior exit stairway (CBC 1023.4)

**Exception:** Unprotected exterior openings

- e. Elevators may not open into interior exit stairways (CBC 1023.4)

- f. Penetrations into or through an exit passageway, or into or through interior exit stairways and ramps, are prohibited (CBC 1023.5, CBC 1024.6)

**Exception:** Required exit doors

**Exception:** Communication openings or penetrations protected per item J.8, provided that they shall not occur between adjacent interior exit stairways and ramps, whether protected or not, for the following (CBC 1023.5, CBC 714):

- o Equipment and ductwork necessary for independent ventilation or pressurization
- o Fire protection systems
- o Security systems
- o Two-way communication systems
- o Electrical raceway for fire department communication systems
- o Electrical raceway serving the interior exit stairway and ramp, and terminating at a steel box not exceeding 16 square inches.

**Exception:** Membrane penetrations protected per item J.8

- j. Equipment and ductwork serving interior exit stairways/ramps shall comply with **one of the following** (CBC 1023.6):

- o Located exterior to the building and directly connected to interior exit stairway by ductwork within shaft enclosure constructed per item J.7
- o Where located within interior exit stairway, intake air shall be taken directly from outdoors and exhaust air discharged directly to outdoors, or such air shall be conveyed through ducts within shaft enclosure constructed per item J.7
- o Where located within building, separated from remainder of building, including other mechanical equipment, by complying shaft enclosure constructed per item J.7

31. **Exit access stairways or ramps** – i.e., interior stairways or ramps that are not required interior exit stairways or ramps per item I.30 – shall be located in a shaft enclosure meeting item J.7. (CBC 1019.3)

**Exception:** In other than I-2, I-2.1, I-3, and R-2.1 occupancies, exit access stairways serving, or atmospherically communicating between, only two stories may be unenclosed

**Exception:** In other than I-2, I-2.1, I-3, and R-2.1 occupancies, exit access stairways meeting **all of the following**:

- a. Building equipped with NFPA 13 automatic sprinkler system.
- b. Area or floor opening between stories does not exceed twice the horizontal projected area of the exit access stairway/ramp.
- c. Opening protected by draft curtain and closely spaced sprinklers per NFPA 13.
- d. In other than B and M occupancies, limited to openings that do not connect more than four stories.

**Exception:** Exit access stairways may be unenclosed if serving and contained within a single R-1, R-2, R-2.1, R-3, or R-3.1 occupancy dwelling or sleeping unit and connecting four stories or less

**Exception:** Exit access stairways may be unenclosed if located within an atrium per CBC 404

**Exception:** Exit access stairways may be unenclosed if located in an open parking garage and serving only the garage

**Exception:** Exit access stairways may be unenclosed if located between balcony, gallery, or press box and main assembly floor in occupancies such as theaters, places of religious worship, auditoriums, and sports facilities

**Exception:** In I-3 occupancies, exit access stairways may be unenclosed if constructed per CBC 408.5

32. **Horizontal exits** designed as part of means of egress system shall comply with the following:

- a. Horizontal exit shall not serve as the only exit from a portion of a building (CBC 1026.1)
- b. Where two or more exits required, maximum one-half of the total number of required exits and maximum one-half of the total required exit width shall be via horizontal exits.

**Exception:** Maximum two-thirds of the total number of required exits via horizontal exits acceptable in I-2 occupancies.

**Exception:** All required exits via horizontal exits acceptable in I-3 occupancies with at least 6 square feet of accessible space per occupant provided on each side of horizontal exit for total number of occupants in adjoining compartments.

- c. Separation between building or refuge areas connected by horizontal exit shall be provided by **one of the following** (CBC 1026.2):

**Exception:** No fire rating required at horizontal exit between building and above-grade pedestrian walkway constructed per CBC 3104, provided minimum 20 feet distance between connected buildings.

- o Minimum 2-hour-rated fire wall constructed per item J.2
- o Minimum 2-hour-rated fire barrier and/or horizontal assembly constructed per item J.3

- d. Any duct or air-transfer openings protected with **smoke damper** per item J.10 (CBC 717.5.1.1)
- e. Horizontal exit separation shall extend vertically through all levels of building unless terminating at minimum 2-hour-rated floor assemblies with no unprotected openings (CBC 1026.2)

- f. Horizontal exit assembly shall be continuous from exterior wall to exterior wall to divide completely the floor served (CBC 1026.2)

- g. Horizontal exit shall lead to a refuge area meeting **all of the following** (CBC 1026.4):

- o Adequate to accommodate the original occupant load of refuge area plus the occupant load anticipated from adjoining compartment
- o Anticipated occupant load from adjoining compartment based on capacity of horizontal exit doors entering refuge area
- o Minimum 3 square feet of net floor area for each occupant accommodated

**Exception:** Larger net floor area per occupant required per CBC 1026.4 in I-2 and I-3 occupancies.

- o Minimum 3 square feet of net floor area for each occupant accommodated

- h. Refuge area shall include exits adequate to accommodate original occupant load and need not accommodate occupant load from adjoining compartments (CBC 1026.4)

- i. At least one exit from refuge area shall lead directly to exterior or to an interior exit stairway (CBC 1026.4)

**Exception:** I-3 occupancies

- j. Refuge area exits shall not require the occupants of an adjoining compartment to return through that compartment (CBC 1026.4)

33. Exits shall **discharge** per **all of the following** (CBC 1028):

- a. Exit discharge shall be at grade or shall provide a direct path of egress travel to grade
- b. Exit discharge shall not reenter building.

**Exception:** Maximum 50% of required interior exit stairways may use the following configurations:

- o Interior exit stairway may egress through area on level of exit discharge if **all of the following** are met:

- Path of egress from interior exit stairway/ramp to an exterior exit door is free and unobstructed **and** such exit is readily visible and identifiable from the point of termination of the interior exit stairway

- Entire area of the level of the exit discharge is separate from areas below by construction at least equivalent to fire rating of interior exit stairway

- Egress path from interior exit stairway – plus all portions of level of exit discharge with access to egress path – protected throughout by NFPA 13 or 13R automatic sprinkler system.

**Exception:** Non-sprinklered areas separated from egress path with construction at least equivalent to fire rating of interior exit stairway/ramp.

- o Interior exit stairway may egress through a vestibule if **all of the following** are met:

- Maximum 10-foot depth from exterior of building

- Maximum 30-foot length

- Entire area of vestibule separated from areas below by construction at least equivalent to fire rating of interior exit stairway

- Vestibule area separated from remainder of level of exit discharge by construction at least equivalent to approved wired glass in steel frames

- Vestibule area used only for means of egress
  - Vestibule area exits directly to the outside
- c. Capacity of exit discharge shall not be less than required discharge capacity of exits served
- d. Exit discharge shall be sufficiently open to exterior to minimize accumulation of smoke and toxic gases
- e. Egress courts serving as portion of exit discharge shall comply with the following:
- Minimum 44-inches wide or as otherwise required by CBC 1005.1
  - Minimum 7 feet of unobstructed height for full required width
    - Exception:** Encroachments per CBC 1005.7
    - Any reduction in width shall be gradual and accomplished with minimum 36-inch-high guard creating not more than 30-degree angle with respect to axis of egress court along path of egress travel
    - Where an egress court is less than 10 feet in width, the egress court walls shall be minimum 1-hour fire-rated with 3/4-hour opening protection
      - Exception:** Egress courts serving occupant load of fewer than 10
- f. Exit discharge shall provide a direct and unobstructed access to a public way
- Exception:** Safe dispersal areas meeting CBC 1028.5 criteria
34. Exterior egress elements shall comply with the following (CBC 1021, CBC 1027):
- a. **Exterior egress balconies:**
- Satisfy corridor requirements for width, headroom, and dead ends
  - Separated from interior of building by walls and opening protection required for corridors
    - Exception:** Separation not required where balcony served by at least two stairs and dead-end travel condition does not require travel past unprotected opening to reach stair
  - Long side minimum 50% open, with open area above guards distributed to minimize accumulation of smoke/gas
  - Located minimum 10 feet from adjacent lot lines and other buildings on same lot without exterior wall protection
- b. **Exterior exit stairways and ramps:**
- Open on at least one side, with minimum 35 square feet of aggregate open area adjacent to each floor level and intermediate landing and located minimum 42 inches above floor/landing level
  - Adjoining open areas shall be yards, courts, or public ways
  - Located minimum 10 feet from adjacent lot lines and other buildings on same lot without exterior wall protection
  - Separation from interior of building per CBC 1027.6
35. Provide **stairway dimensions** complying with the following on floor plans and building sections (CBC 1011):
- a. Minimum 44-inch clear width or as required for occupant load served (CBC 1011.2)
- Exception:** Minimum 36-inch clear width acceptable for stairways serving occupant load of less than 50
- b. Minimum 6-foot-8-inch headroom (CBC 1011.3)
- c. Landing width (perpendicular to the direction of travel) equivalent to stairway width
- d. Landing depth (parallel to the direction of travel) equivalent to stairway width (up to 48 inches)
- e. Maximum 12-foot vertical rise between floor levels or landings (CBC 1011.8)
36. **Door** \_\_\_\_\_ from space labeled \_\_\_\_\_ reduces required **dimension(s)** as follows (CBC 1011.6):
- a. Door in fully open position projects more than 7 inches into stairway landing
- b. Door in any position reduces required landing width by more than 50%
37. Dimension stairway **risers and treads** complying with the following (CBC 1011.5.2):
- a. Minimum 4-inch and maximum 7-inch riser height
- b. Minimum 11-inch tread depth
38. **Winding stairways** allowed as means of egress only for the following (CBC 1011.5.3, CBC 1011.9, CBC 1011.10):
- a. **Curved** stairways per the following:
- Minimum 11-inch tread depth at 12 inches from inside edge and minimum 10-inch tread at any point within stairway clear width
  - Smallest radius at twice required stairway width
- b. **Spiral** stairways per the following:
- Serving dwelling units or space not more than 250 square feet with maximum 5 occupants
  - Minimum 26-inch clear width
  - Minimum 6-foot-6-inch headroom
  - Maximum 9-1/2-inch riser height
  - Minimum 7-1/2-inch tread depth at 12 inches from inside edge

39. Detail stairway **risers and treads** complying with the following (CBC 1011.5.5):
- a. Solid risers
    - Exception:** Openings not allowing passage of 4-inch-diameter sphere allowed between treads if stairway does not serve as accessible means of egress
    - Exception:** Open risers acceptable in spiral stairways complying with item I.38
  - b. Risers vertical or sloped under tread above at maximum 30 degrees from vertical
  - c. Maximum 1-1/4-inch nosings beyond the tread below
  - d. Maximum 9/16-inch radius of curvature at nosings
  - e. Maximum 9/16-inch beveling of nosings
40. Dimension and detail stairway **handrails** complying with the following (CBC 1011.11, CBC 1014):
- a. Provided on each side of stairway
    - Exception:** Handrails acceptable on one side of spiral stairways
    - Exception:** Aisle stairs per CBC 1029.13
  - b. Intermediate handrails provided as needed such that all portions of required stairway width within 30 inches of handrail
  - c. Located at uniform height minimum 34 inches and maximum 38 inches vertically above tread nosings
  - d. Maximum 4-1/2-inch projection into required stairway width
  - e. Continuous for full length of stairway flight
  - f. Extending minimum 12 inches horizontally beyond top riser
  - g. Sloping for depth of one tread beyond bottom riser (plus horizontal extension if required per CBC 11A or CBC 11B)
    - Exception:** Aisle handrails need only comply with CBC 1029.13
  - h. Minimum 1-1/2-inch clearance between handrails and adjacent walls
  - i. Grip size and shape per CBC 1014.3
41. Provide coordinated **details** specifying the following **stairway elements** designed for CBC Table 1607.1 stair live loads:
- a. Stringer sizes
  - b. Landing joists and beams
  - c. Hangers
42. Walls and soffits within enclosed usable **spaces beneath stairways** shall be minimum 1-hour rated or required rating of stairway enclosure. (CBC 1011.7.3)
43. When usable **space provided beneath grandstands and bleachers**, such spaces shall be separated from seating above with 1-hour-rated fire barrier and horizontal assembly. (CBC 1029.1.1.1)
- Exception:** Tickets booths of less than 100 square feet
  - Exception:** Toilet rooms
44. Provide **guard** complying with the following at any **open-sided walking surface** – including mezzanines, balconies, decks, stairs, ramps, and landings – located more than 30 inches vertically above adjacent floor or grade within 36 inches horizontally of open-side edge (CBC 1015):
- a. Minimum 42-inches high above walking surface
    - Exception:** Minimum 34 inches for guard at open side of stairs in R-3 occupancies and within individual R-2 dwelling units
    - Exception:** Minimum 34 inches and maximum 38 inches for guard also serving as handrail on open side of stairs in R-3 occupancies and within individual R-2 dwelling units
    - Exception:** Assembly seating per CBC 1029.16
  - b. Openings in guard may not allow passage of 4-inch-diameter sphere
    - Exception:** From 36-inch to 42-inch guard height, openings may not allow passage of 4-3/8-diameter sphere
    - Exception:** Triangular openings formed by riser, tread, and bottom rail of guard may not allow passage of 6-inch-diameter sphere
    - Exception:** In areas not open to the public within I-3, F, H, or S occupancies, openings may not allow passage of 21-inch-diameter sphere
    - Exception:** Within individual dwelling and sleeping units in R-2 and R-3 occupancies, openings may not allow passage of 4-3/8-diameter sphere
    - Exception:** Assembly seating per CBC 1015.4, exception 5
45. Provide **guard** complying with the following where mechanical equipment or roof hatch opening located within 10 feet of a roof edge or open side of walking surface more than 30 inches above adjacent floor or grade (CBC 1015.6, CBC 1015.7):
- a. Minimum 42-inches high above walking surface

- b. Openings in guard may not allow passage of 21-inch-diameter sphere
46. Provide coordinated **connection details** specifying the following for glass **guardrail systems** (CBC 1607.8.1, CBC 2407.1):
- Glass shall be tempered
  - Glass thickness (any structural glass designed with safety of factor of 4 considering CBC 1607.8.1 guardrail loads)
  - Member sizes designed for CBC 1607.8.1 guardrail loads
  - Means of connection (member-to-member and guardrail to supporting structure) for CBC 1607.8.1 guardrail loads
47. In R-1, R-2, and R-3 occupancies, **operable windows located more than 72 inches above** adjacent finished grade or surface below, the lowest part of the clear window opening shall be minimum 36 inches above the finished floor. (CBC 1015.8)
- Exception:** Windows with openings not allowing passage of 4-inch-diameter sphere when in largest opened position
- Exception:** Windows provided with fall prevention devices or window opening limiting devices meeting ASTM F 2090
48. Indicate on electrical plans **illumination** along egress paths of minimum 1 foot-candle at walking surface, including along (exterior) paths of travel for exit discharge from each exit to the public way. (CBC 1008.2, CBC 1008.2.3)
- Exception:** U occupancies
- Exception:** A occupancy aisle accessways
- Exception:** R-1, R-2, R-3, and R-3.1 occupancy dwelling units and sleeping units
- Exception:** R-2.1 and R-4 sleeping units
- Exception:** May be reduced to minimum 0.2 foot-candle in auditoriums, theaters, concert halls, or similar occupancies provided illumination automatically restored upon activation of fire alarm system
- Exception:** For exit discharge, illumination shall not be required where the path of travel meets both of the following:
- o Path of exit discharge is illuminated from the exit to a safe dispersal area complying with CBC 1028.5.
  - o A dispersal area shall be illuminated to a level not less than 1-footcandle at the walking surface.
49. Indicate on electrical plans **emergency power for illumination** of the following (CBC 1008.3):
- Any room or space requiring two or more means of egress
  - Corridors in areas requiring two or more means of egress
  - Exit access stairways and ramps in areas requiring two or more means of egress
  - Interior exit access stairways and ramps in buildings requiring two or more means of egress
  - Interior exit stairways and ramps in buildings requiring two or more means of egress
  - Exit passageways in buildings requiring two or more means of egress
  - Vestibules and areas on the level of discharge used for exit discharge per item I.33 in buildings requiring two or more means of egress
  - Exterior landings for exit doors leading directly to the exit discharge from buildings requiring two or more means of egress
  - Electrical equipment rooms
  - Fire command centers
  - Fire pump rooms
  - Generator rooms
  - Public restrooms with area greater than 300 square feet
  - Group I-2 and I-2.1 exit discharge stairways, ramps, aisles, walkways, and escalators leading to a public way or to a safe dispersal area per CBC 1028.5
  - Operation of a patient room smoke detector in Group I-2 and R-2.1 occupancies shall not include a positive alarm sequence feature.
  - In Group I-2 occupancies, failure of a single lamp in a luminaire shall not reduce the illumination level under emergency power to less than 0.2 footcandle (CBC 1008.3.5).
50. Indicate on egress plan location of the following **signage** and coordinate with electrical plans as applicable (CBC 1011):
- Illuminated exit signs** at the following:
    - Exception:** Exit signs not required in rooms or spaces requiring only one exit
    - Exception:** Main exterior exit doors or gates obviously and clearly identifiable as exits
    - Exception:** U occupancies and within individual dwelling or sleeping units in R-1, R-2, R-3, or R-3.1 occupancies
    - o Where path of egress not immediately visible to occupants

- At intervening exit doors
- Within 100 feet of all points in corridors
- b. **Tactile signs** at the following locations **when illuminated exit signage required or provided:**
  - At each grade-level exterior exit door
  - At each exit door leading to grade-level exterior exit door via stair, ramp, exit enclosure, or horizontal exit
  - At each exit door from interior room or area required to have illuminated exit sign
- c. Floor-level exit signs per CBC 1013.7 in interior corridors of A, E, I, and R-2.1 occupancies and all areas serving guest rooms of R-1 hotel occupancies
- d. Path marking per CBC 1013.8

## J. FIRE-RATED AND SMOKE-RESISTANT ASSEMBLIES

1. Fire-rated **exterior wall** assemblies shall comply with the following:
  - a. Provide wall details – coordinated with floor plans and building sections – specifying CBC Table 721.1(2) assembly number or reference number for alternate approved assembly
  - b. Walls shall be rated for fire exposure per the following (CBC 705.5):
    - For A, E, H, I, L, and R occupancies, walls shall be rated for exposure to fire **from both sides**
    - For other than A, E, H, I, L, and R occupancies, walls with a fire separation distance of 10 feet or less shall be rated for exposure to fire **from both sides**
    - For other than A, E, H, I, L, and R occupancies, walls with a fire separation distance of more than 10 feet shall be rated for exposure to fire **from the inside**
  - c. Required parapets shall meet **all of the following** (CBC 705.11):
    - Fire rating equivalent to rating of supporting wall
    - Extending minimum 30 inches above the point where roof surface and wall intersect
 

**Exception:** Where roof slopes toward parapet at slope greater than 2:12, parapet shall extend to the same height as any portion of the roof within a fire separation distance where protected openings required per CBC Table 705.8, but never less than 30 inches above the point where roof surface and wall intersect
    - Noncombustible face – including counterflashing and coping materials – for uppermost 18 inches of any side adjacent to a roof surface
  - d. Doors:
    - \_\_\_\_\_-hour-rated per CBC Table 716.1(2)
    - Latching and self- or automatic-closing (CBC 716.2.6, CBC 716.2.6.1 with exceptions)
    - Sidelights and transoms prohibited.
 

**Exception:** See CBC Table 716.1(2) for exceptions.
    - Door vision panels per CBC Table 716.1(2)
  - e. Windows:
    - \_\_\_\_\_-hour-rated per CBC Table 716.6
  - f. For each building or structure on the same lot with fire separation distance (FSD) of less than 15 feet based on an imaginary line between them, minimum 3/4-hour fire protection rating provided in every opening located less than 15 feet vertically above the roof of each adjacent building or structure (CBC 705.8.6)
 

**Exception:** Buildings on the same lot considered as single building per item E.1

**Exception:** Opening protective not required where roof assembly of adjacent building meets criteria of CBC 705.8.6, exception 1.
  - g. Any penetrations protected per item J.8
  - h. Any joints protected per item J.9
  - i. Any duct or air-transfer openings protected with **fire damper** per item J.10 (CBC 717.5.6)
2. **Fire walls** shall comply with the following:
  - a. Provide wall details – coordinated with floor plans and building sections – specifying CBC Table 721.1(2) assembly number or reference number for alternate approved assembly
  - b. Maintain sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall for the duration of time indicating by the wall fire rating (CBC 706.2)
 

**Exception:** Assemblies constructed as double fire walls per NFPA 221

**Exception:** In Seismic Design Categories D through F, where double fire walls are used in accordance with NFPA 221, floor and roof sheathing not exceeding 3/4 inch thickness shall be permitted to be continuous through the wall assemblies of light frame construction.
  - c. Constructed of approved noncombustible materials
 

**Exception:** Type V construction
  - d. Horizontal continuity:
    - Continuous from exterior wall to exterior wall (CBC 706.5)
    - Extending at least 18 inches beyond the exterior surface of exterior walls (CBC 706.5)

**Exception:** Fire wall may terminate at interior surface of **combustible** exterior sheathing or siding if exterior wall minimum 1-hour-rated with 3/4-hour-rated openings for minimum 4 feet horizontally on both sides of fire wall

**Exception:** Fire wall may terminate at interior surface of **noncombustible** exterior sheathing, siding, or finish extending minimum 4 feet horizontally on both sides of fire wall

**Exception:** Fire wall may terminate at interior surface of **noncombustible** exterior sheathing where building on each side of fire wall is protected by NFPA 13 or NFPA 13R automatic sprinkler system

- o Where fire wall intersects exterior walls, the configuration shall comply with **one of the following** (CBC 706.5.1):

**Exception:** Exterior wall intersections at fire walls forming an angle equal to or greater than 180

- Exterior walls on both sides of fire wall shall be minimum 1-hour-rated for minimum 4 feet on each side of the intersection with 3/4-hour-rated openings where opening protection required by CBC Table 705.8

- Buildings or spaces on both sides of fire wall shall assume imaginary lot line at the fire wall and extending beyond the exterior of the fire wall, with exterior wall and opening protection provided per CBC 705.5 and CBC 705.8

- o Extending to outer edge of horizontal projecting elements – e.g., balconies, roof overhangs, canopies, marquees – located within 4 feet of the fire wall (CBC 706.5.2)

**Exception:** Horizontal projecting elements **without concealed spaces**, provided the exterior wall located behind and below the projecting element is minimum 1-hour-rated exterior wall with 3/4-hour-rated openings for a distance on both sides of the fire wall of not less than the depth of projecting element

**Exception: Noncombustible** horizontal projecting elements **with concealed spaces**, provided minimum 1-hour-rated wall extends through concealed space **and** projecting element separated from building by minimum 1-hour-rated wall for a distance on both sides of the fire wall of not less than the depth of the projecting element (wall need not extend under projecting element where building exterior wall is minimum 1-hour-rated with 3/4-hour-rated openings for a distance on both sides of the fire wall of not less than the depth of the projecting elements)

**Exception:** For **combustible** horizontal projecting elements **with concealed spaces**, the fire wall need only extend through the concealed space to the outer edge of the projecting element if the exterior wall located behind and below the projecting element is minimum 1-hour-rated exterior wall with 3/4-hour-rated openings for a distance on both sides of the fire wall of not less than the depth of projecting element

e. Vertical continuity:

- o Extending from foundation to termination point at least 30 inches above both adjacent roofs (CBC 706.6)

**Exception:** Maximum 2-hour-rated fire walls may terminate at underside of roof sheathing, deck, or slab, provided **all of the following** are met:

- Minimum 1-hour-rated lower roof within 4 feet of fire wall
- Minimum 1-hour-rated elements supporting rated lower roof for entire span/length of such supporting elements
- No openings in roof within 4 feet of fire wall

**Exception:** Fire walls may terminate at the underside of **noncombustible** roof sheathing, deck, or slab, provided no openings in roof within 4 feet of fire wall

**Exception:** In buildings of type III, IV, or V construction, fire walls may terminate at the underside of **combustible** roof sheathing or decks, provided **all of the following** are met:

- No openings in roof within 4 feet of fire wall
- Roof assembly meets **one of the following**:
  - Roof sheathing or deck constructed of fire-retardant wood for minimum 4 feet on both sides of fire wall
  - Roof protected with minimum 5/8-inch type X gypsum board directly beneath underside of roof sheathing or deck and supported by minimum 2-inch nominal ledgers attached to sides of roof framing members for minimum 4 feet on both sides of fire wall.

**Exception:** Where fire wall serves as an exterior wall for a building and separates buildings with different roof levels, fire wall shall terminate at a point minimum 30 inches above the lower roof level, provided **one of the following** is met:

- Minimum 1-hour-rated exterior wall (rated from both sides) with 3/4-hour-rated openings for minimum 15 feet above lower roof
- Minimum 1-hour-rated lower roof within 10 feet of fire wall **and** minimum 1-hour-rated elements supporting rated lower roof for entire span/length of such supporting elements **and** no openings in roof within 10 feet of fire wall

**Exception:** Where fire wall serves as an interior wall for a building and the roof on one or both sides slopes

toward the fire wall at a slope greater than 2:12, the fire wall shall extend to a height equal to the height of the roof located 4 feet from the fire wall plus an additional 30 inches

- f. Combustible framing entering into fire walls shall comply with the following (CBC 706.7):
  - o Adjacent combustible members entering into a concrete or masonry fire wall from opposite sides shall have minimum 4-inch clearance between embedded ends
  - o Where combustible member frame into hollow walls or walls of hollow units, hollow spaces shall be solidly filled with noncombustible materials approved for fireblocking for the full thickness of the wall and for minimum 4 inches above, below, and between the structural members
- g. Each opening limited to maximum 156 square feet (CBC 706.8)

**Exception:** Opening size not limited where both buildings equipped with NFPA 13 automatic sprinkler system
- Exception:** Openings prohibited at fire walls constructed along lot lines
- h. Aggregate width of openings limited to maximum 25% of the length of the fire wall (CBC 706.8)

**Exception:** Openings prohibited at fire walls constructed along lot lines
- i. Doors:
  - o \_\_\_\_\_-hour-rated per CBC Table 716.1(2)
  - o Latching and self- or automatic-closing with actuation by smoke detectors or loss of power (CBC 716.2.6, CBC 716.2.6.1 with exceptions)
  - o Sidelights and transoms prohibited
  - o Door vision panels per CBC Table 716.1(2)

**Exception:** Door vision panels per CBC 716.5.8.1.2.1 in doors serving horizontal exits
- j. Windows prohibited
- k. Any penetrations protected per item J.8
- l. Any joints protected per item J.9
- m. Any duct or air-transfer openings protected with **fire damper** per item J.10 (CBC 717.5.1)

3. **Fire barriers** and associated horizontal assemblies shall comply with the following:

- a. Walls:
  - o Provide wall details – coordinated with floor plans and building sections – specifying CBC Table 721.1(2) assembly number or reference number for alternate approved assembly
  - o Extending from top of foundation or floor/ceiling below to underside of floor/roof sheathing/deck/slab above and securely attached thereto (CBC 707.5)

**Exception:** Interior exit stairway/ramp enclosures, exit access stairway/ramp enclosures, and shaft enclosures may terminate at a top enclosure of the same fire rating as the top-most floor penetrated by the enclosure, but not less than the required fire rating of the enclosure (CBC 713.12)

**Exception:** Voids created at the intersection of a fire barrier and a non-fire-rated roof assembly shall be filled with an approved and secured material or system resisting the passage of fire and hot gases
  - o Continuous through concealed space (CBC 707.5)
  - o Supporting construction of equal or greater fire rating (CBC 707.5.1)

**Exception:** Rated supporting construction not required for maximum 1-hour fire barriers at incidental use areas in type IIB, IIIB, or VB construction

**Exception:** Maximum 2-hour rating acceptable for supporting construction of fire barriers separating tank storage per CBC 415.8.2.1, but not less than rating required by CBC Table 601 for construction type
- b. Floors/ceilings:
  - o Provide horizontal assembly details – coordinated with floor plans and building sections – specifying CBC Table 721.1(3) assembly number or reference number for alternate approved assembly

**Exception:** Ceiling membrane not required in 1-hour-rated floor/ceiling assemblies over unusable crawlspaces
  - o Continuous through concealed spaces (CBC 711.2.2)
  - o Supporting construction of equal or greater fire rating (CBC 711.2.3)

**Exception:** Rated supporting construction not required for horizontal assemblies of maximum 1-hour-rated incidental use areas in type IIB, IIIB, or VB construction
- c. Each opening limited to maximum 156 square feet (CBC 707.6)

**Exception:** Opening size not limited where both buildings equipped with NFPA 13 automatic sprinkler system

**Exception:** Opening size not limited where opening protective is fire door serving enclosure for interior exit stairway or exit access stairway

**Exception:** Opening size not limited where opening protective is fire door in a fire barrier separating an interior exit stairway or exit access stairway from an exit passageway

**Exception:** Opening size not limited where opening protective has been tested to ASTM E119 or UL 263 and has fire rating not less than fire rating of wall

- d. Aggregate width of openings limited to maximum 25% of the length of the wall (CBC 707.6)
- Exception:** Aggregate width of openings not limited where opening protective is fire door serving enclosure for interior exit stairway or exit access stairway.
- Exception:** Aggregate width of openings not limited where opening protective is fire door in a fire barrier separating an interior exit stairway or exit access stairway from an exit passageway.
- Exception:** Aggregate width of openings not limited where opening protective has been tested to ASTM E119 or UL 263 and has fire rating not less than fire rating of wall.
- Exception:** Aggregate width of openings not limited in atrium separation walls.
- e. Doors:
- \_\_\_\_\_-hour-rated per CBC Table 716.1(2)
  - Self- or automatic-closing with actuation by smoke detectors or loss of power (CBC 716.2.6, CBC 716.2.6.1)
 

**Exception:** Heat-activated closing devices acceptable between shaft enclosures and refuse/recycling/laundry chute termination rooms (CBC 713.13.1)
  - Sidelights and transoms prohibited
 

**Exception:** Maximum 3/4-hour-rated sidelights and transoms acceptable in maximum 1-hour-rated fire barriers associated with separated occupancies, incidental uses, control areas, and fire areas
  - Door vision panels per CBC Table 716.1(2)
 

**Exception:** Door vision panels per CBC 716.2.5.1.2.1 in doors serving horizontal exits
- f. Windows prohibited
- g. Any penetrations protected per item J.8
- h. Any joints protected per item J.9
- i. Any duct or air-transfer openings of fire barriers protected with the following (CBC 717.5.2):
- In other than A, E, H, I, L, and R occupancies, **fire damper** per item J.10
 

**Exception:** Fire dampers not required at penetrations by minimum 26-gage steel ducts of maximum 1-hour-rated fire barriers where **all of the following** apply:

    - Located in other than H occupancies
    - Buildings equipped with NFPA 13 automatic sprinkler system
    - Duct system continuous from air-handling equipment to air outlet and inlet terminals

**Exception:** Fire dampers not required at penetrations tested per ASTM E 119 or UL 263 as part of the fire barrier assembly

**Exception:** Fire dampers not required at ducts used as part of approved smoked control system per CBC 909 and where use of fire damper would interfere with system operation
  - In A, E, H, I, L, and R occupancies, **fire damper** and **smoke damper** per item J.10
 

**Exception:** Fire dampers not required at penetrations tested per ASTM E 119 or UL 263 as part of the fire barrier assembly

**Exception:** Fire and smoke dampers not required at ducts used as part of approved smoked control system per CBC 909 **and** where use of fire or smoke damper would interfere with system operation
- j. Any duct or air-transfer openings of horizontal assemblies protected with the following:
- Through penetrations (CBC 717.6.1):
    - **Fire damper** per item J.10 installed at the floor line
 

**Exception:** Ducts within shaft enclosures constructed per item J.7

**Exception:** In other than I-2, I-2.1, and I-3 occupancies, ducts connecting not more than two stories and with penetration protection per item J.8

**Exception:** Ducts penetrating three floors or less and meeting **all of the following**:

      - Duct contained within cavity of wall
      - Duct constructed of minimum 26-gage steel
      - Duct shall open into only one dwelling unit or sleeping unit
      - Duct shall be continuous from the dwelling unit or sleeping unit to the exterior of the building.
    - Duct shall not exceed 4-inch nominal diameter and total area of such ducts shall not exceed 100 square inches in any 100 square feet of floor area.
    - Annular space around duct shall be filled with materials preventing passage of flame and hot gases sufficient to ignite cotton waste when subjected to ASTM E 119 or UL 263 time-temperature fire conditions under minimum positive pressure differential of 0.01 inch of water at location of penetration for time period equivalent to fire rating of wall.
    - Any grille openings in ceiling protected with **ceiling radiation damper** per item J.10
  - Membrane penetrations shall be protected by one of the following (CBC 717.6.2):
    - Shaft enclosure constructed per item J.7
    - Where a duct or diffuser with no duct penetrates the ceiling, **ceiling radiation damper** per item J.10 installed at ceiling line

**Exception:** Ceiling radiation dampers not required if tests in accordance with ASTM E 119 or UL 263 demonstrate ceiling radiation damper not necessary to maintain fire rating of assembly

**Exception:** Ceiling radiation dampers not required where exhaust duct penetrations protected per item J.8 are located within the cavity of a wall and do not pass through another dwelling unit or tenant space

4. **Fire partitions** protecting rated **corridors and elevator lobbies** shall comply with the following:

a. Walls:

- Provide wall details – coordinated with floor plans and building sections – specifying CBC Table 721.1(2) assembly number or reference number for alternate approved assembly
- Minimum 1-hour fire rating (CBC 708.3 with exceptions, CBC Table 1020.1)
- Continuity: Extending from foundation/floor below to underside of floor/roof sheathing/deck/slab above **or** to fire-rated floor/ceiling assembly above **or** to fire-rated roof/ceiling assembly above (CBC 708.3, CBC 708.4, CBC Table 1020.1)

**Exception:** Exceptions regarding some crawl space, corridor wall, and tenant space separations per CBC 708.4.

- Supporting construction of equal or greater fire rating (CBC 708.4.1)

**Exception:** Exceptions regarding some Type IIB, IIIB, and VB construction per CBC 708.4.1.

- In **combustible** construction where fire partition is not continuous to sheathing/deck/slab above, the space between the ceiling and sheathing/deck/slab above shall be fireblocked per item J.11 or draftstopped per item J.12 at the partition line (CBC 708.4.2)

**Exception:** Exceptions regarding some automatic fire sprinkler installations, some sleeping or dwelling unit separations, some R-2 occupancy scenarios, and R-3 occupancies with fewer than three dwelling units per CBC 708.4.2.

b. Doors:

- 20-minute-rated (CBC Table 716.1(2))

**Exception:** 45-minute rating required for sidelights and transoms

- Self- or automatic-closing with activation by smoke detection or power loss (CBC 716.2.6, CBC 716.2.6.1)

- Smoke- and draft-control assembly with louvers prohibited and air leakage per CBC 716.2.2.1.1.

c. Windows:

- 45-minute-rated (CBC Table 716.1(3))

- Cumulative glazing area of fire-rated windows shall not exceed 25% of the area of a common wall with any room (CBC 716.3.2.1.2)

d. Any penetrations protected per item J.8

e. Any joints protected per item J.9

f. Any duct or air-transfer openings protected with the following (CBC 717.5.4):

- In other than A, E, I, and R occupancies, **fire damper** and **smoke damper** per item J.10

**Exception:** In other than H and L occupancies, fire dampers not required where **any of the following** apply:

- Corridor walls in buildings equipped with an NFPA 13 or NFPA 13R automatic sprinkler system and duct protected as through penetration per item J.8

- Duct system constructed of approved materials per California Mechanical Code and duct penetrating wall meets **all of the following**:

- Duct shall not exceed 100 square inches
- Duct shall be constructed of minimum 0.0217-inch-thick steel
- Duct shall not have openings that communicate between the corridor and adjacent rooms or spaces
- Duct shall be installed above a ceiling
- Duct shall not terminate at wall register in fire-rated wall
- Minimum 12-inch-long by 0.06-inch-thick steel sleeve shall be secured to both sides of wall and all four sides of sleeve with minimum 1.5-inch by 1.5-inch by 0.06-inch steel retaining angles and #10 screws, with the annular space between the steel sleeve and wall opening filled with mineral wool batting on all sides

- Penetrations by minimum 26-gage steel ducts of maximum 1-hour-rated fire barriers in buildings equipped with NFPA 13 automatic sprinkler system and duct system continuous from air-handling equipment to air outlet and inlet terminals

**Exception:** Smoke dampers not required where building equipped with approved smoke control system per CBC 909 **and** smoke dampers not necessary for operation and control of the system

**Exception:** Smoke dampers not required in corridor penetrations where duct is constructed of minimum 0.019-inch-thick steel and there are no duct openings serving the corridor

- In A, E, I, and R occupancies, **fire damper** and **smoke damper** per item J.10

**Exception:** Fire dampers not required in corridor penetrations where duct constructed of minimum 0.019-

inch-thick steel **and** protected as through penetration per item J.8 **and** no duct openings serve the corridor

**Exception:** Fire dampers not required if duct system constructed of approved materials per California Mechanical Code and duct penetrating wall meets **all of the following:**

- For other than I-2 occupancies, duct shall not exceed 100 square inches
- Duct shall be constructed of minimum 0.0217-inch-thick steel
- Duct shall not have openings that communicate between the corridor and adjacent rooms or spaces
- Duct shall be installed above a ceiling
- Duct shall not terminate at wall register in fire-rated wall
- Minimum 12-inch-long by 0.06-inch-thick steel sleeve shall be secured to both sides of wall and all four sides of sleeve with minimum 1.5-inch by 1.5-inch by 0.06-inch steel retaining angles and #10 screws, with the annular space between the steel sleeve and wall opening filled with mineral wool batting on all sides

**Exception:** Smoke dampers not required where building equipped with approved smoke control system per CBC 909 **and** smoke dampers not necessary for operation and control of the system

**Exception:** Smoke dampers not required in corridor penetrations where duct is constructed of minimum 0.019-inch-thick steel and there are no duct openings serving the corridor

5. **Fire partitions** and associated horizontal assemblies isolating **dwelling units and sleeping units** from each other and from other occupancies contiguous to them shall comply with the following:

a. Walls:

- Provide wall details – coordinated with floor plans and building sections – specifying CBC Table 721.1(2) assembly number or reference number for alternate approved assembly
- Minimum 1-hour fire rating (CBC 708.3 with exceptions, CBC Table 1020.1)
- Continuity: Extending from foundation/floor below to underside of floor/roof sheathing/deck/slab above **or** to fire-rated floor/ceiling assembly above **or** to fire-rated roof/ceiling assembly above (CBC 420.2, CBC 708.3 with exceptions, CBC 708.4)

**Exception:** 30-minute fire rating acceptable if building equipped throughout with NFPA 13 automatic sprinkler system

**Exception:** Fire partition need not extend into crawlspace below where floor above crawlspace has minimum 1-hour fire rating

- Supporting construction of equal or greater fire rating (CBC 708.4.1)

**Exception:** Exceptions regarding some sleeping and dwelling unit separations per CBC 708.4.1.

- In **combustible** construction where fire partition is not continuous to sheathing/deck/slab above, the space between the ceiling and sheathing/deck/slab above shall be fireblocked per item J.11 or draftstopped per item J.12 at the partition line (CBC 708.4.2)

**Exception:** Exceptions regarding some automatic fire sprinkler installations, some sleeping or dwelling unit separations, some R-2 occupancy scenarios, and R-3 occupancies with fewer than three dwelling units per CBC 708.4.2.

- Airborne sound insulation class rating between adjacent dwelling units, sleeping units, and public/common areas of not less than 50, or not less than 45 if field tested, for airborne noise where tested per ASTM E90 (provide details specifying Gypsum Association assembly number or alternate listed assembly) (CBC 1206)

**Exception:** Alternatively, the sound transmission class of walls, partitions, and floor-ceiling assemblies shall be established by engineering analysis based on a comparison of walls, partitions, and floor-ceiling assemblies having sound transmission class rating per ASTM E90. Penetrations or openings in construction assemblies shall be insulated or otherwise treated to maintain the required ratings. This requirement does not apply to entrance doors; however, such doors shall be tight fitting to the frame and sill.

b. Floors/ceilings:

- Provide horizontal assembly details – coordinated with floor plans and building sections – specifying CBC Table 721.1(3) assembly number or reference number for alternate approved assembly
- Minimum 1-hour fire rating (CBC 708.3, CBC 711.2.4.3)
- Continuous between exterior wall(s) and/or fire partition(s) (CBC 420.3, CBC 711.2.2)

**Exception:** 30-minute fire rating acceptable if building equipped throughout with NFPA 13 automatic sprinkler system

**Exception:** Ceiling membrane not required in 1-hour-rated floor/ceiling assemblies over unusable crawlspaces

- Supporting construction of equal or greater fire rating (CBC 711.2.3)

**Exception:** Rated supporting construction not required in type IIB, IIIB, or VB construction

- Airborne sound insulation with minimum 50 STC rating **and** impact sound insulation with minimum 50 IIC

rating between adjacent dwelling units, sleeping units, and public/common areas (provide details specifying Gypsum Association assembly number or alternate listed assembly) (CBC 1206.2, CBC 1206.3)

**Exception:** 45 STC or 45 IIC acceptable if field-tested

c. Doors:

- o 45-minute-rated (CBC Table 716.1(2))

**Exception:** 20-minute fire rating acceptable if 30-minute fire partition assembly allowed

- o Self- or automatic-closing with activation by smoke detection or power loss (CBC 716.2.6)

**Exception:** Self- or automatic closers not required in fire doors within common walls separating R-1 sleeping units

d. Any penetrations protected per item J.8

e. Any joints protected per item J.9

f. Any duct or air-transfer openings protected with **fire damper** per item J.10 (CBC 717.5.4)

**Exception:** Fire dampers not required in corridor penetrations where duct constructed of minimum 0.019-inch-thick steel **and** protected as through penetration per item J.8 **and** no duct openings serve the corridor

**Exception:** Fire dampers not required if duct system constructed of approved materials per California Mechanical Code and duct penetrating wall meets **all of the following:**

- o For other than I-2 occupancies, duct shall not exceed 100 square inches
- o Duct shall be constructed of minimum 0.0217-inch-thick steel
- o Duct shall not have openings that communicate between the corridor and adjacent rooms or spaces
- o Duct shall be installed above a ceiling
- o Duct shall not terminate at wall register in fire-rated wall
- o Minimum 12-inch-long by 0.06-inch-thick steel sleeve shall be secured to both sides of wall and all four sides of sleeve with minimum 1.5-inch by 1.5-inch by 0.06-inch steel retaining angles and #10 screws, with the annular space between the steel sleeve and wall opening filled with mineral wool batting on all sides.

**Exception:** Fire damper not required if duct meets **all of the following:**

- o Duct contained and located within cavity of a wall
- o Duct constructed of minimum 0.0187-inch-thick steel
- o Duct opens into only one dwelling unit or sleeping unit and is continuous from the unit to the exterior of the building
- o Duct shall not exceed 4-inch nominal diameter and total area of such ducts shall not exceed 100 square inches in any 100 square feet of floor area
- o Material used to fill remaining annular space shall prevent passage of flame and hot gases sufficient to ignite cotton waste when subjected to ASTM E 119 or UL 263 time-temperature fire conditions under minimum positive pressure differential of 0.01 inch of water at location of penetration for time period equivalent to fire rating of wall
- o Grille openings located in ceiling of fire-rated floor/ceiling or roof/ceiling assembly shall be protected by ceiling radiation damper per item J.10

6. **Smoke barriers** shall comply with the following:

a. Walls:

- o Provide wall details – coordinated with floor plans and building sections – specifying CBC Table 721.1(2) assembly number or reference number for alternate approved assembly

- o Minimum 1-hour fire rating (CBC 709.3)

**Exception:** Smoke barriers constructed of minimum 0.10-inch-thick steel in I-3 occupancies.

- o Forming effective membrane from top of foundation or floor/ceiling below to underside of floor/roof sheathing/deck/slab above (CBC 709.4)

- o Extending from outside wall to outside wall (CBC 709.4)

**Exception:** Smoke barriers for elevator lobbies

**Exception:** Smoke barriers for areas of refuge

- o Continuous through concealed space (CBC 709.4)

**Exception:** Smoke barrier walls not required in interstitial spaces where such spaces are designed and constructed with ceilings providing resistance to passage of fire and smoke equivalent to that provided by smoke barrier walls

- o Supporting construction of equal or greater fire rating (CBC 709.4)

**Exception:** Rated supporting construction not required in type IIB, IIIB, or VB construction.

b. Doors:

- o 20-minute-rated (CBC Table 716.1(2))

**Exception:** 45-minute rating required for sidelights and transoms

- o Self- or automatic-closing with actuation by smoke detectors or loss of power (CBC 716.2.6)

- o Smoke- and draft-control assembly with louvers prohibited and air leakage per CBC 717.5.5

c. Windows:

- o 45-minute-rated (CBC Table 716.1(3))
- o Cumulative glazing area of fire-rated windows shall not exceed 25% of the area of a common wall with any room (CBC 716.3.2.1.2)

d. Any penetrations protected per item J.8

e. Any joints protected per item J.9

f. Any duct or air-transfer openings protected with **smoke damper** per item J.10 (CBC 717.5.5)

**Exception:** Smoke dampers not required where openings in ducts limited to single smoke compartment and ducts are constructed of steel

7. **Shaft enclosures** shall comply with the following:

a. Constructed as fire barriers and/or horizontal assemblies per item J.3 (CBC 713.2)

b. Fire rating per **one of the following** (CBC 713.4):

- o Minimum 2-hour rating where connecting four stories or more
- o Minimum 1-hour rating where connecting fewer than four stories

c. Shafts not extending to the bottom of the building shall comply with **one of the following** (CBC 713.11):

- o Enclosed at the lowest level with construction of the same fire rating as the lowest floor through which the shaft passes, but never less than rating required for the shaft enclosure
- o Terminate in a room having a use related to the purpose of the shaft and separated from the remainder of the building by fire barriers and/or horizontal assemblies constructed per item J.3 with fire rating and opening protection at least equal to protection required for the shaft enclosure

**Exception:** Room separation not required if there are no openings in or penetrations of the shaft enclosure to the interior of the building except at the bottom, with the bottom of the shaft closed off around the penetrating items with materials allowed for draftstopping per item J.12 **or** the room provided with an automatic sprinkler system

**Exception:** Shaft enclosures containing a refuse chute or laundry chute shall not be used for any other purpose and shall terminate in a room per item H.7

**Exception:** Room separation and protection at bottom of shaft not required if there are no combustibles in the shaft and no openings or other penetrations through the shaft enclosure to the interior of the building

- o Protected by approved fire dampers installed in accordance with their listing at the lowest floor level within the shaft enclosure

d. Shafts not extending to the underside of the roof sheathing, deck, or slab of the building shall be enclosed at the top with construction of the same fire rating as the top-most floor penetrated by the shaft, but not less than the required fire rating of the shaft enclosure

e. Any penetrations protected per item J.8

f. Any joints protected per item J.9

g. Any duct or air-transfer openings protected with the following (CBC 717.5.3):

- o **Fire damper and smoke damper** per item J.10.

**Exception:** Minimum 3-hour-rated fire dampers required for fire barriers with 3-hour rating or higher

**Exception:** Fire dampers not required at penetrations meeting **one of the following:**

- Steel exhaust subducts extending minimum 22 inches vertically in exhaust shaft, provided there is continuous airflow upward to the outside
- Fire dampers not required at penetrations tested per ASTM E 119 or UL 263 as part of the shaft enclosure assembly
- Fire dampers not required at ducts used as part of approved smoke control system per CBC 909 **and** where use of fire damper would interfere with system operation
- Fire dampers not required in parking garage exhaust or supply shafts separated from other building shafts by minimum 2-hour-rated construction

**Exception:** In B and R occupancies equipped with an NFPA 13 automatic sprinkler system, smoke dampers not required at penetrations meeting **all of the following:**

- Kitchen, clothes dryer, bathroom, and toilet room exhaust opening installed with steel exhaust subducts with minimum 26-gage wall thickness
- Subducts extend at least 22 inches vertically
- Exhaust fan installed at upper terminus of shaft and power continuously per CBC 909.11 to maintain upward airflow to the outside

**Exception:** Smoke dampers not required in parking garage exhaust or supply shafts separated from other building shafts by minimum 2-hour-rated construction

**Exception:** Smoke dampers not required at ducts used as part of approved smoke control system per CBC 909 **and** where use of smoke damper would interfere with system operation

**Exception:** Fire and smoke dampers not required in kitchen and clothes dryer exhaust systems

8. **Penetrations** of fire-rated assemblies shall comply with the following:

- a. Dissimilar Materials: **Noncombustible** penetrating items shall not connect to **combustible** items beyond the point of firestopping unless it can be demonstrated the fire-resistance integrity of the fire-rated assembly is maintained (CBC 714.4.3, CBC 714.5.3)
- b. Flexible ducts and air connectors shall not pass through any fire-rated assembly (CBC 717.7)
- c. Through penetrations of walls (CBC 714.4.1):
  - Provide penetration details – coordinated with floor plans and/or fire-rated wall details – indicating **manufacturer, product, and listing number** of through penetration firestop system **or** fire-rated assembly tested with proposed penetration
  - Through penetration firestop system shall have an **F rating** of not less than required fire rating of wall penetrated, based on testing in accordance with ASTM E 814 or UL 1479 with a positive pressure differential of 0.01 inch of water
  - Through penetration firestop system shall be approved for applicable wall materials, penetrating materials, and penetration configuration

**Exception:** Where steel, ferrous, or copper pipes/tubes/conduits penetrate concrete or masonry fire-rated walls, the annular space between the penetrating item and the fire-rated wall may be protected per **all of the following**:

- Concrete, grout, or mortar installed for the full thickness of wall or thickness to achieve the required fire rating
- Maximum 6-inch nominal diameter penetrating item
- Maximum 144-square-inch opening in wall
- Material used to fill remaining annular space shall prevent passage of flame and hot gases sufficient to ignite cotton waste when subjected to ASTM E 119 or UL 263 time-temperature fire conditions under minimum positive pressure differential of 0.01 inch of water at location of penetration for time period equivalent to fire rating of wall

d. Membrane penetrations of walls (CBC 714.4.2):

- Provide penetration details – coordinated with floor plans and/or fire-rated wall details – indicating **manufacturer, product, and listing number** of membrane penetration firestop system **or** fire-rated assembly tested with proposed penetration
- Membrane penetration firestop system shall have an **F rating** of not less than required fire rating of wall penetrated, based on testing in accordance with ASTM E 814 or UL 1479 with a positive pressure differential of 0.01 inch of water
- Membrane penetration firestop system shall be approved for applicable wall materials, penetrating materials, and penetration configuration

**Exception:** Membrane penetrations of maximum 2-hour-rated walls by steel electrical boxes are acceptable if **all of the following** are met:

- Maximum 16-square-inch electrical boxes
- Maximum 100-square-inch aggregate area of membrane openings in any 100 square feet of wall area
- Maximum 1/8-inch annular space between wall membrane and electrical box
- Electrical boxes on opposite sides of the wall separated by **one of the following**:
  - Minimum 24-inch horizontal distance where the wall is constructed with individual noncommunicating stud cavities
  - Horizontal distance not less than depth of wall cavity if filled with loose-fill, rock wool, or slag mineral wool insulation
  - Solid fireblocking per item J.11
  - Listed putty pads protecting both boxes with manufacturer and listing number specified on plans
  - Other listed materials and methods detailed on plans with manufacturer and listing number specified

**Exception:** Membrane penetrations by listed electrical boxes of any material are acceptable if **all of the following** are met:

- Manufacturer and listing number of electrical box specified on plans
- Maximum 1/8-inch annular space between wall membrane and electrical box
- Electrical boxes on opposite sides of the wall separated by **one of the following**:
  - Minimum horizontal distance as specified by electrical box listing
  - Solid fireblocking per item J.11
  - Listed putty pads protecting both boxes with manufacturer and listing number specified on plans
  - Other listed materials and methods detailed on plans with manufacturer and listing number specified

**Exception:** Membrane penetrations by electrical boxes of any size or type listed as part of a proposed fire-rated assembly are acceptable if assembly manufacturer and listing number specified on plans

**Exception:** Membrane penetrations by boxes other than electrical boxes are acceptable if penetrating items and annular space between wall membrane and box are protected by approved membrane penetration firestop system having F rating and T rating of not less than required fire rating of wall penetrated, based on testing in accordance with ASTM E 814 or UL 1479 with a positive pressure differential of 0.01 inch of water

**Exception:** Annular space created by the penetration of an automatic sprinkler, provided it is covered by a metal escutcheon plate

e. Through penetrations of horizontal assemblies (CBC 714.5.1):

- Provide penetration details – coordinated with floor plans and/or fire-rated horizontal assembly details – indicating **manufacturer, product, and listing number** of through penetration firestop system **or** fire-rated assembly tested with proposed penetration
- Through penetration firestop system shall have an **F rating and T rating** of minimum 1 hour but not less than required fire rating of horizontal assembly penetrated, based on testing in accordance with ASTM E 814 or UL 1479 with a positive pressure differential of 0.01 inch of water

**Exception:** Floor penetrations contained and located within the cavity of a wall above the floor or below the floor do not require a T rating

**Exception:** Floor penetrations by floor drains, tub drains, or shower drains contained and located within the concealed space of a horizontal assembly to not require a T rating

- Through penetration firestop system shall be approved for applicable horizontal assembly materials, penetrating materials, and penetration configuration

**Exception:** Where steel, ferrous, or copper pipes/tubes/conduits or concrete/masonry items penetrate a single fire-rated horizontal assembly – or multiple horizontal assemblies if maximum 6-inch nominal diameter penetrating items and maximum aggregate opening area of 144 square inches in any 100 square feet of floor area – the annular space between the penetrating item and the fire-rated horizontal assembly may be protected by materials prevent passage of flame and hot gases sufficient to ignite cotton waste when subjected to ASTM E 119 or UL 263 time-temperature fire conditions under minimum positive pressure differential of 0.01 inch of water at location of penetration for time period equivalent to fire rating of the horizontal assembly.

**Exception:** Where steel, ferrous, or copper pipes/tubes/conduits with maximum 6-inch nominal diameter penetrate a single fire-rated horizontal assembly – or multiple horizontal assemblies if maximum aggregate opening area of 144 square inches in any 100 square feet of floor area – the annular space may be filled with concrete, grout, or mortar for the full thickness of the horizontal assembly or thickness to achieve the required fire rating.

**Exception:** Membrane penetrations by electrical boxes of any material listed as part of a proposed fire-rated assembly are acceptable if assembly manufacturer and listing number specified on plans.

f. Membrane penetrations of horizontal assemblies (CBC 714.5.2):

- Provide penetration details – coordinated with floor plans and/or fire-rated horizontal assembly details – indicating **manufacturer, product, and listing number** of membrane penetration firestop system **or** fire-rated assembly tested with proposed penetration
- Membrane penetration firestop system shall have an **F rating and T rating** of minimum 1 hour but not less than required fire rating of horizontal assembly penetrated, based on testing in accordance with ASTM E 814 or UL 1479 with a positive pressure differential of 0.01 inch of water
- Membrane penetration firestop system shall be approved for applicable horizontal assembly materials, penetrating materials, and penetration configuration

**Exception:** Where steel, ferrous, or copper pipes/tubes/conduits or concrete/masonry items penetrate a single fire-rated horizontal assembly – or multiple horizontal assemblies if maximum 6-inch nominal diameter penetrating items and maximum aggregate opening area of 144 square inches in any 100 square feet of floor area – the annular space between the penetrating item and the fire-rated horizontal assembly may be protected by materials prevent passage of flame and hot gases sufficient to ignite cotton waste when subjected to ASTM E 119 or UL 263 time-temperature fire conditions under minimum positive pressure differential of 0.01 inch of water at location of penetration for time period equivalent to fire rating of the horizontal assembly.

**Exception:** Ceiling membrane penetrations of maximum 2-hour-rated horizontal assemblies by steel electrical boxes are acceptable if **all of the following** are met:

- Maximum 16-square-inch electrical boxes
- Maximum 100-square-inch aggregate area of membrane openings in any 100

square feet of ceiling area

- Maximum 1/8-inch annular space between ceiling membrane and electrical box

**Exception:** Membrane penetrations by electrical boxes of any size or type listed as part of a proposed fire-rated assembly are acceptable if assembly manufacturer and listing number specified on plans

**Exception:** Membrane penetrations by listed electrical boxes of any material are acceptable if **all of the following** are met:

- Manufacturer and listing number of electrical box specified on plans
- Maximum 1/8-inch annular space between ceiling membrane and electrical box

**Exception:** Annular space created by the penetration of an automatic sprinkler, provided it is covered by a metal escutcheon plate

**Exception:** **Noncombustible** items cast into concrete building elements and not penetrating both top and bottom surfaces of the element

**Exception:** The ceiling membrane of maximum 2-hour-rated horizontal assemblies may be interrupted with the double wood top plate of a wall assembly sheathed with type X gypsum board, provided all penetrations of double top plates are protected as for a through penetration of the horizontal assembly **and** the ceiling membrane is tight to the top plates.

9. **Joints** installed in fire-rated assemblies shall comply with the following (CBC 715):

**Exception:** Walls permitted to have unprotected openings

**Exception:** Roofs where openings are permitted

**Exception:** Floors within a single dwelling unit

**Exception:** Floors where joint is protected by shaft enclosure constructed per item J.7

**Exception:** Mezzanine floors

**Exception:** Control joints not exceeding 0.625-inch width and tested in accordance with ASTM E 119 or UL 263

**Exception:** Floors within atriums where the space adjacent to the atrium is included in the volume of the atrium for smoke-control purposes

**Exception:** Floors within malls

**Exception:** Floors and ramps within open parking garages constructed per CBC 406.5 and closed parking garages constructed per CBC 406.6

- Provide **joint details** – coordinated with floor plans and/or fire-rated assembly details – indicating **manufacturer, product, and listing number** of fire-resistant joint system
- Fire-resistant **joint system** – tested per ASTM E 1966 or UL 2079 – shall resist the passage of fire for a time period not less than the fire rating of the assembly in which it is installed (CBC 715.1, CBC 715.3)
- Fire-resistant **joint system** shall be approved for applicable assembly materials and joint configuration
- Where fire-rated floor or floor/ceiling assemblies are required, **voids** created at the intersection of such assemblies with exterior curtain wall assemblies **shall be sealed** with an approved system – tested per ASTM E 2307 – to provide an F rating for a time period not less than the fire rating of the floor assembly (CBC 715.4)

**Exception: Voids** created at the intersection of such floor assemblies and exterior curtain wall assemblies where the vision glass extends to the finished floor level **may be sealed with an approved material** to prevent the interior spread of fire and capable of preventing passage of flame and hot gases sufficient to ignite cotton waste where subjected to ASTM E 119 time-temperature fire conditions under a minimum positive pressure differential of 0.01 of water column for a time period not less than the fire rating of the floor assembly

10. **Dampers** shall comply with the following:

- Fire dampers (CBC 717.3.1, CBC 717.3.2.1, CBC 717.3.3.1)

- Provide fire damper details – coordinated with floor plans and/or fire-rated assembly details – indicating **manufacturer, product, and listing number** of fire damper system tested per UL 555 and specifying **all of the following**:

- Minimum 1.5-hour fire rating

**Exception:** Minimum 3-hour-rated fire rating required for fire assemblies with 3-hour rating or higher

- Whether system is dynamic or static
- Means of actuation
- Installation position
- Airflow direction
- Fire damper access
- Fire damper opening identification

- Fire damper actuation devices shall meet one of the following:

- Operating temperature approximately 50°F above the normal temperature within the duct system, but not less than 160°F
  - Operating temperature not more than 350°F where located in a smoke control system per CBC 909
- b. Smoke dampers (CBC 717.3.1, CBC 717.3.2.2, CBC 717.3.3.2)
- Provide smoke damper details – coordinated with floor plans and/or fire-rated/smoke-resistant assembly details – indicating **manufacturer, product, and listing number** of smoke damper system tested per UL 555S and specifying **all of the following**:
    - Class I or Class II leakage ratings with minimum 250°F elevated temperature rating
    - Means of actuation
    - Installation position
    - Airflow direction
    - Smoke damper access
    - Smoke damper opening identification
  - Smoke damper actuation devices shall meet **one of the following**:
    - Where smoke damper installed within a duct, a smoke detector shall be installed in the duct within 5 feet of the damper with no air outlets or inlets between the detector and the damper.
    - Where smoke damper installed above doors in a smoke barrier, a spot-type detector listed for releasing service shall be installed on either side of the smoke barrier door opening.
    - Where smoke damper installed within an air transfer opening in a wall, a spot-type detector listed for releasing service shall be installed within 5 feet horizontally of the damper.
    - Where smoke damper installed in a corridor wall or ceiling, the damper may be controlled by a smoke detection system installed in the corridor.
    - Where total-coverage smoke detector system provided within areas served by a HVAC system, smoke dampers may be controlled by a smoke detection system.
- c. Corridor dampers (CBC 717.3.1, CBC 717.3.2.4, CBC 717.3.3.5)
- Provide corridor damper details – coordinated with floor plans and/or fire-rated/smoke-resistant assembly details – indicating **manufacturer, product, and listing number** of smoke damper system tested per UL 555 and UL 555S and specifying **all of the following**:
    - Minimum 1-hour fire rating
    - Class I or Class II leakage ratings with minimum 250°F elevated temperature rating
    - Means of actuation
    - Installation position
    - Airflow direction
    - Corridor damper access
    - Corridor damper opening identification
  - Corridor damper actuation devices shall meet the actuation requirements for fire dampers **and** smoke dampers
- d. Ceiling radiation dampers (CBC 717.3.1, CBC 717.3.3.4)
- Provide ceiling radiation damper details – coordinated with floor plans and/or fire-rated assembly details – indicating **manufacturer, product, and listing number** of ceiling radiation damper system tested per UL 555C and specifying means of actuation

11. In combustible construction, **detail** installation of **fireblocking** per the following to cut off concealed draft openings, both vertical and horizontal:

- a. **Fireblocking** shall consist of **any of the following** materials (CBC 718.2.1):
- 2-inch nominal lumber.
  - 2 thicknesses of 1-inch nominal lumber with broken lap joints.
  - 1 thickness of 0.719-inch wood structural panels with joints back by 0.719-inch wood structural panels.
  - 1 thickness of 3/4-inch particleboard with joints backed by 3/4-inch particleboard.
  - 1/2-inch gypsum board.
  - 1/4-inch cement-based millboard.
  - Batts or blankets of mineral wool, mineral fiber, or other approved materials installed in such a manner as to be securely retained in place
  - Cellulose insulation installed as tested for the specific application.
- b. **Fireblocking** shall be installed at **all of the following** locations:
- Vertically at ceiling and floor levels and horizontally at intervals not exceeding 10 feet in concealed spaces of stud walls and partitions, furred spaces, and parallel rows of studs or staggered studs (CBC 718.2.2).
  - Interconnections between concealed vertical stud wall or partition spaces and concealed horizontal spaces created by floor joists/truss (CBC 718.2.3).
  - Between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings, and cove ceilings (CBC 718.2.3).

- Concealed spaces between stair stringers at the top and bottom of the run (CBC 718.2.4).
- Openings around vents, pipes, ducts, chimneys and fireplaces at ceiling and floor levels (using material approved to resist free passage of flame and products of combustion – specify listing number) (CBC 718.2.5).
- Between attic spaces and chimney chases for factory-built chimneys and fireplaces (CBC 718.2.5).
- Maximum intervals of 20 feet – with no open space exceeding 100 square feet – in concealed spaces of exterior wall finish and other exterior architectural elements (CBC 718.2.6).
- In the spaces between the floor slab and underside of wood flooring where wood sleepers used such that no open spaces under the flooring exceed 100 square feet or communicate between rooms (CBC 718.2.7).

12. In combustible construction, **detail** installation of **draftstopping** per the following to subdivide floor/ceiling and/or attic assemblies:

a. **Draftstopping** shall consist of **any of the following** materials (CBC 718.3.1):

- Minimum 1/2-inch gypsum board
- Minimum 3/8-inch wood structural panel
- Minimum 3/8-inch particleboard
- Minimum 1-inch nominal lumber
- Cement fiber board
- Batts or blankets of mineral wool or glass fiber
- Other approved materials adequately supported

b. **Draftstopping** shall be installed in **floor/ceiling assemblies** per the following (CBC 718.3, CBC 708.4.2 with exceptions):

- **Above and in line** with dwelling/sleeping unit separation in R-1 occupancies, R-2 occupancies with three or more dwelling units, R-3 occupancies with two dwelling units, and R-4 occupancies (CBC 718.3)

**Exception:** Draftstopping not required in buildings equipped with an NFPA 13 automatic sprinkler system.

**Exception:** Draftstopping not required in buildings equipped with an NFPA 13R automatic sprinkler system, provided sprinklers also installed in concealed space where draftstopping omitted.

- **In other than R** occupancies where horizontal floor area exceeds 1,000 square feet (CBC 718.3)

**Exception:** In other than A, E, H, I, L, and R-2.1 occupancies, draftstopping not required in buildings equipped with an NFPA 13 automatic sprinkler system

**Exception:** In A, E, H, I, and L occupancies, the area between draftstops may be maximum 3,000 square feet with maximum 100-foot dimensions between draftstops in buildings equipped with an NFPA 13 automatic sprinkler system

c. **Draftstopping** shall be installed in **attic assemblies** per the following:

- **Above and in line** with dwelling/sleeping unit separation walls not extending to roof sheathing in attics, mansards, overhangs, or other concealed roof spaces in R-1 occupancies and R-2 occupancies with three or more dwelling units (CBC 718.4).

**Exception:** Where corridor walls provide a dwelling/sleeping unit separation, draftstopping only required above one of the corridor walls.

**Exception:** Draftstopping not required in buildings equipped with an NFPA 13 automatic sprinkler system.

**Exception:** In R-2 occupancies not exceed four stories above grade plane, attic space may be subdivided by draftstops into areas maximum 3,000 square feet or above every two dwelling units, whichever is smaller.

**Exception:** Draftstopping not required in buildings equipped with an NFPA 13R automatic sprinkler system, provided sprinklers also installed in concealed space where draftstopping

- **In other than R** occupancies such that any attic area or horizontal concealed space does not exceed 3,000 square feet (CBC 718.4)

**Exception:** In other than A, E, H, I, L, and R-2.1 occupancies, draftstopping not required in buildings equipped with an NFPA 13 automatic sprinkler system.

**Exception:** In A, E, H, I, L, and R-2.1 occupancies, the area between draftstops may be maximum 9,000 square feet with maximum 100-foot dimensions between draftstops in buildings equipped with an NFPA 13 automatic sprinkler system.

13. Specify **interior wall and ceiling finish** for all spaces on plans. Space labeled \_\_\_\_\_ required to have class \_\_\_\_\_ finish per CBC Table 803.13.

## K. FIRE PROTECTION SYSTEMS

1. Provide an automatic sprinkler system per the following (CBC 903, CB 903.3, CBC 904):

- a. NFPA 13. (CBC 903.3.1.1)
  - b. NFPA 13R. (CBC 903.3.1.2)
  - c. NFPA 13D. (CBC 903.3.1.3)
2. Provide **standpipe system** per CBC 905.
  3. Provide the following **fire alarm system(s)** per CBC 907:
    - a. Manual
    - b. Automatic
  4. Smoke alarms: In Group R occupancies, indicate **smoke alarms/detectors** – interconnected and hard-wired with battery back-up – in the following locations on floor plans or utility plans (CBC 907.2.10):
 

**Exception:** Smoke detectors shall not be located within areas specified in CBC 907.2.10.8.

    - a. Within each sleeping room.
    - b. Outside each separate sleeping area in immediate vicinity of bedrooms.
    - c. In every room within R-1 occupancies on path of egress from sleeping room to door leading from sleeping unit.
    - d. On each story within dwelling/sleeping unit.
  5. Carbon monoxide alarms: In Group I-2, I-4, and R occupancy dwelling/sleeping units, and in some classrooms of E occupancies per CBC 915.2.3, indicate **carbon monoxide alarms** – interconnected and hard-wired with battery back-up – in the following locations on floor plans or utility plans (CBC 915.2):
    - a. Outside each separate sleeping area in immediate vicinity of bedroom(s).
    - b. On every occupiable level of a dwelling unit, plus any basements.
    - c. Within any bedroom with a fuel-burning appliance located within that bedroom or its attached bathroom.
    - d. Within each sleeping unit.
    - e. Within each E occupancy classroom with signal automatically transmitted to an on-site location staffed by school personnel.
 

**Exception:** E occupancies with occupant load of 30 or fewer.
  6. Provide **smoke/heat vents** per CBC 910.2 and 910.3, and/or mechanical smoke removal system per CBC 910.4 for the following (CBC 910.2):
    - a. Buildings containing high-piled combustible storage
    - b. Undivided areas of F-1 or S-1 occupancy exceeding 50,000 s.f.

## L. SAFETY GLAZING

1. Specify **tempered glass** at the following locations requiring safety glazing (CBC 2406.4):
  - a. Glazing in swinging, sliding, and bi-fold doors
 

**Exception:** Glazed openings through which a 3-inch-diameter sphere is unable to pass

**Exception:** Decorative glazing

**Exception:** Glazing used as curved glazed panels in revolving doors
  - b. Glazing within 24-inch arc of door in closed position and within 60 inches of floor or walking surface
 

**Exception:** Glazing with intervening wall or barrier between door and glazing

**Exception:** Within R-2 and R-3 dwelling units, glazing in walls on latch side of and perpendicular to plane of door in closed position

**Exception:** Where door accesses closet or storage area maximum 3 feet in depth

**Exception:** Decorative glazing
  - c. Glazing adjacent to showers, bathtubs, hot tubs, swimming pools, and saunas and within 60 inches – vertically and horizontally -- of standing/walking surface
  - d. Glazing adjacent to stairways, ramps, and intermediate landings within 60 inches vertically and 36 inches horizontally of the travel surfaces
 

**Exception:** Where horizontal rail installed on accessible side of glazing at minimum 34 inches and maximum 38 inches above walking surface
  - e. Glazing adjacent to bottom stair landings within 60 inches vertically of landing surface and within 60-inch horizontal arc less than 180 degrees from bottom tread nosing
 

**Exception:** Glazing protected by complying guard and minimum 18 inches from guard
  - f. Glazing within 36 inches horizontally of walking surfaces per all of the following:
 

**Exception:** Where horizontal rail installed on accessible side of glazing at minimum 34 inches and maximum 38 inches above walking surface

**Exception:** Decorative glazing:

    - o Exposed area of individual pane minimum 9 square feet
    - o Bottom edge of glazing within 18 inches of floor
    - o Top edge of glazing more than 36 inches above floor

## M. PARTITION WALLS AND SUSPENDED CEILING

1. **Detail** the following **partition wall connections**:
  - a. Detail connection to roof/ceiling/floor above with any partitions attached to suspended ceilings laterally braced to building structure
  - b. Detail connection to slab/floor below
2. Provide complete **details** indicating the following for **suspended ceiling systems** (ASCE 7 13.5.6.2.2):

**Exception:** Alternative connection detailing acceptable for **listed** suspended ceiling systems.

  - a. Heavy duty T-bar grid system
  - b. Runner and cross-runner sizes and spacing
  - c. Vertical wires and compression struts connecting suspension runners and cross-runners to building structure
  - d. Perimeter support per **all of the following**:
    - o Minimum 2-inch closure angles
    - o Two adjacent ends of ceiling grid attached to closure angles
    - o At ends opposite those attached to closure angles, ends of ceiling grid resting upon and free to slide on closure angles
    - o At ends free to slide on closure angles, minimum 3/4-inch clearance between ends of ceiling grid and walls
  - e. For uninterrupted ceiling areas exceeding 1000 square feet, lateral bracing to building structure
  - f. For uninterrupted ceiling areas exceeding 2500 square feet, seismic separation joints
  - g. Connection of lighting fixtures, electrical conduits, and cable trays supported by building structure
  - h. Minimum 2-inch rings/sleeves/adapters for sprinkler heads and allowing minimum 1-inch movement in all horizontal directions

## N. ROOF ASSEMBLIES

1. Specify roof material and underlayment.
2. Specify ICC, UL, or equivalent listing report number, manufacturer, and model for roofing material (tile, metal, built-up, etc.).
3. *Note on roof plan or elevations:* "Roofing shall have a class A fire rating." (County Building Code 92.2.R902 and County Building Code 92.1.1505.1)

**Exception:** Class B rating acceptable for buildings not located in a wildland-urban interface fire area **and** not classified as R-3 or U occupancy
4. In roof area additions or alterations involving more than 50% of a structure's existing roof area or 2,500 square feet – whichever is less – the structure's entire roof covering – new and existing – shall meet item N.3. (County Building Code 92.1.1505.1)
5. Specify roof pitch.
6. Specify on plans layer-by-layer assembly of any built-up roofing systems – include coordinated assembly number from manufacturer's listing report – to verify required fire rating achieved at roof pitch proposed.
7. Roof pitch is not adequate for roof type specified (CBC 1507). Provide minimum pitch of \_\_\_\_\_.
8. Specify 1/4:12 minimum roof pitch for drainage on roof plan **or** design to support accumulated water. (CBC 1611.3)
9. **Detail** primary and secondary (overflow) roof drainage per the following with location of each roof drainage element indicated on roof plan (CBC 1502.2, CPC 1101.12):
  - a. **Primary roof drainage** per **one of the following**:
    - o Roof drains sized per CPC Table D 101.1 -- provide calculation on roof plan -- and located at low point of roof
    - o Scuppers sized per CPC Table D 101.1 -- provide calculation on roof plan -- and placed level with roof surface in adjacent walls or parapets
  - b. **Secondary (overflow) roof drainage** with same capacity as primary roof drainage per **one of the following**:
    - o Roof drains with maximum height to prevent roof ponding and minimum 2 inches above low point of roof
    - o Scuppers with minimum 4-inch opening dimension and inlet elevation preventing roof ponding
  - c. Primary and secondary (overflow) roof drainage with **separate outlets**

10. Indicate on plans **approved waterproof decking material** for balconies/decks over interior spaces (CBC 1503.1). Specify manufacturer and ICC, UL, or equivalent listing report number.
- If deck or balcony is exposed to exterior weather conditions the following apply:
    - a. Where balcony or other elevated walking surfaces are exposed to water from direct or blowing rain, snow, or irrigation, and the structural framing is protected by an impervious moisture barrier, the construction documents shall include details for all elements of the impervious moisture barrier system. The construction documents shall include manufacturer's installation instructions (CBC 107.2.7)
    - b. Add a note to the framing plans "ALL ELEMENTS OF THE IMPERVIOUS MOISTURE BARRIER SYSTEM SHALL NOT BE CONCEALED UNTIL INSPECTED AND APPROVED." (CBC 110.3.8.1)
      - Exception:** Where special inspections are provided in accordance with Section 1705.1.1, Item 3.
    - c. Design deck and balconies for uniform live load of 1.5 times live load of the area served. Not required to exceed 100 psf (CBC Table 1607.1)
    - d. Add a detail to the plans that shows how positive drainage will occur at the deck (CBC 2304.12.2.5)
    - e. Add a note to the framing plans "THE IMPERVIOUS MOISTURE BARRIER SYSTEM PROTECTING THE STRUCTURE SUPPORTING FLOORS SHALL PROVIDE DRAINAGE OF WATER THAT INFILTRATES THE MOISTURE-PERMEABLE FLOOR TOPPING."
    - f. Provide a ventilation calculation for all enclosed deck and balconies exposed to weather that shows a net free cross ventilation area not less than 1/150 of the area of each separate space. (CBC 2304.12.2.6).
11. Indicate on roof plan location and size of **attic vents** per the following:
- a. Minimum net free vent area per the **greater of the following**:
    - o Minimum 1 s.f. of net free vent area required for every 150 s.f. of attic area (**provide calculation on roof plan**) (CBC 1202.2)
      - Exception:** Net vent area of 1/300 attic area acceptable provided **BOTH of the following** conditions are met (as applicable):
        - Install a Class I or Class II vapor retarder on the warm-in-winter side of ceiling in climate zone 14 and 16.
        - Install between 40% and 50% of the required net free vent area a maximum of 3 feet below the ridge or the highest point of the space (measured vertically), with the balance of the required ventilation provided by eave or cornice vents. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3-feet below the ridge or highest point of the space shall be permitted.
      - Exception:** Unvented attics complying with CBC 1202.3.
      - o For multi-family projects with a whole-house fan, **provide calculation on roof plan** of net free vent area using cfm value from CF1R form (assuming minimum 1 s.f. net free vent area per 750 cfm airflow). Applies to the isolated attic space where the whole-house fan is located. (CBEES 150.1(c)12)
    - b. Vents positioned to provide cross ventilation to each attic area
12. Specify on roof plan the following for **each skylight** (CBC 2405):
- a. Size and location
  - b. Glazing material
  - c. Manufacturer and ICC, UL, or equivalent listing report number
  - d. Screening as required per CBC 2405.3 or listing report

## O. WILDFIRE-RESISTIVE CONSTRUCTION REQUIREMENTS

**Exception:** This section not applicable to new or remodeled building located outside wildland-urban interface fire area as defined in County Consolidated WUI Code 96.2.202 definitions.

**Exception:** Group U accessory structures not exceeding 120 square feet in floor area where located not less than 50 feet from applicable buildings. (CWUIC 501.1)

**Exception:** Group U agricultural buildings not less than 50 feet from applicable buildings. (CWUIC 501.1)

**Exception:** New accessory buildings and miscellaneous structures, such as awnings and canopies, complying with CWUIC 504.11.

**Exception:** Group C occupancy special buildings conforming to the limitations specified in CBC 450.4.1

**Exception:** Manufactured Homes and Commercial Modulares shall comply with the following Ignition-Resistant requirements:

- a. A unit manufactured on or after September 1, 2008 requires an ignition-resistant construction system. Provide evidence of the Construction System Certification Label (Title 25 4214)

- b. A unit manufactured before September 1, 2008 shall have both of the following: (1) an existing asphalt composition roof, or metal roof covering and, (2) Title 24, Part 7 compliant attic ventilation. Provide evidence of compliance.
  - c. Note on plans: "Underfloor areas to be enclosed with a non-combustible exterior covering (stucco, cement fiber board, etc.) per the California Wildland-Urban Interface Code."
1. Note on plans: Where there is a void under the roof covering (**space between the roof covering and combustible roof decking**) it shall comply with the following (CWUIC 504.2.1):
    - a. Bird stops shall be used at the eaves where the profile fits, to prevent the entry of debris at the eave.
    - b. Hip and ridge caps shall be mudded in to prevent intrusion of fire or embers.
    - c. Plus one of the following:
      1. A 72 lb. (32.7 kg) cap sheet complying with ASTM D3909 Standard Specification for "Asphalt Rolled Roofing (Glass Felt) Surfaced with Mineral Granules," shall be installed over the roof deck.
      2. A listed and labeled roof underlayment that has been tested as part of the roof assembly in accordance with ASTM E108 or UL 790 for Class A fire classification shall be installed in accordance with the underlayment manufacturer's installation instructions and listing.
  2. Note on plans: **Exposed valley flashings** shall be constructed with not less than 0.019-inch (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley. (CWUIC 504.2.2)
  3. Note on plans: **Gutters** and **downspouts** shall be constructed of noncombustible material. Gutters shall be provided with an approved means to prevent the accumulation of leaves and debris in the gutter and shall be non-combustible. (County Consolidated WUI Code 96.2.504.4)
  4. Note on plans: **Operable skylights** shall be protected by a noncombustible mesh screen and the dimensions of the openings in the screen shall not exceed 1/8 inch. (CWUIC 504.8.2)
  5. Note on plans: **All vents** (roof, foundation, combustion-air, etc.) shall resist the intrusion of flames and embers. (CWUIC 504.10) Gable-end and dormer vents shall be located not less than 10 feet from lot lines. Underfloor ventilation openings shall be located as close to grade as practical. (CWUIC 504.10.3) Where an addition, alteration, or roof modification takes place, non-compliant WUI vents shall be upgraded and/or retrofitted to resist the intrusion of flames and embers. (County Consolidated WUI Code 96.2.504.10.4)
  6. Specify vent manufacturer on plans: **Ventilation openings** for enclosed attics, eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, underfloor ventilation openings, and vent openings in exterior walls and exterior doors shall comply with one of the following: (CWUIC 504.10)
    - a. Ventilation openings shall be fully covered with Wildfire Flame and Ember Resistant vents approved and listed by the California State Fire Marshal, or WUI vents, tested in accordance with ASTM E2886, to demonstrate compliance with all the following requirements:
      1. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
      2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
      3. The maximum temperature of the unexposed side of the vent shall not exceed 662 degrees Fahrenheit (350 degrees Celsius).
    - b. Vents that are installed on a sloped roof, such as dormer vents, shall comply with all of the following
      1. Vents shall be covered with a mesh where the dimensions of the mesh therein shall be a minimum of 1/16 inch and shall not exceed 1/8 inch in diameter.
      2. The vent and mesh material shall be noncombustible.
      3. The vent and mesh material shall be corrosion resistant.
  7. **Detail eaves, soffits, and fascias.** Refer to guidance document PDS #198 and requirements below. (County Consolidated WUI Code 96.2.504.3)
 

**Exception:** Eave construction on an addition may match the existing structure provided that the square footage of the addition does not exceed 50% of the existing structure or 2,500 square feet, whichever is less.

    - a. **PROTECTION OF ENCLOSED EAVES.** The exposed underside of enclosed roof eaves and soffits shall be protected on the exposed underside by one or more of the following:
      1. Noncombustible material
      2. 2-inch nominal dimension lumber when tongue and grooved.
      3. Materials approved for not less than 1-hour fire resistance-rated construction on the exterior side, as tested in accordance with ASTM E119 or UL263
    - b. **PROTECTION OF OPEN EAVES.** The exposed roof deck on the underside of unenclosed roof eaves shall consist of one or more of the following:
      1. Noncombustible material
      2. 2-inch nominal dimension lumber when tongue and grooved.

3. Materials approved for not less than 1-hour fire resistance-rated construction on the exterior side, as
  4. The exterior portion of a 1-hour fire-resistance-rated exterior assembly, as tested in accordance with ASTM E119 or UL 263, applied to the underside of the roof deck designed for exterior fire exposure, including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
  - c. **FACIAS**. Shall be ignition-resistant building materials, fire-retardant-treated wood labeled for exterior use and complying with Section 2303.2 of the California Building Code, materials approved for not less than 1-hour fire-resistance-rated construction or 3-inch (51 mm) nominal dimension lumber.
8. Specify **exterior wall coverings** complying with the following (County Consolidated WUI Code 96.2.504.5):
- Exception:** Exterior wall covering on an **addition** may match the existing structure provided that the square footage of the addition does not exceed 50% of the existing structure or 2,500 square feet, whichever is less, unless the exterior wall covering is wood shingle or shake, in which case the exterior wall covering on the addition shall be fire-retardant, pressure-treated wood shingles or shakes. All other provisions of this section shall apply to the addition.
  - Exception:** Repair or replacement of 50% or more of an existing exterior wall shall require **the entire wall** to meet all wildfire requirements
- a. Noncombustible material (stucco, cement fiber board, masonry, etc.)
  - b. A minimum of 6 inches of metal flashing or noncombustible material applied vertically on the exterior of the wall shall be installed at the ground, decking and roof intersections.
9. **Enclose underfloor areas** to the ground with noncombustible material. (CWUIC 504.6)
10. **Specify exterior glazing on window and door schedules** for exterior windows, window walls and glazed doors, windows within exterior doors, and skylights per any of the following: (County Consolidated WUI Code 96.2.504.8):
- a. Multilayered glazed panels with at least **two panes of tempered glass** complying with Section 2406 of the California Building Code. Skylights/solar tubes shall be tempered glass per listing report or modified subject to field inspection.
  - b. Glass block units
  - c. Glazing with a fire-protection rating of not less than 20 minutes when tested according to NFPA 257 or UL 9, and shall be exempt from the hose stream test.
  - d. Provide **large, clear note on cover sheet or plot plan**: "For wildfire compliance, multilayered glazed panels will now require **TWO PANES** of tempered glass"
11. **Specify on door schedule** exterior doors per any of the following: (County Consolidated WUI Code 96.2.504.9):
- a. Noncombustible construction
  - b. Solid-core wood not less than 1¾ inches thick
  - c. The exterior door shall be constructed of solid core wood that complies with the following requirements:
    1. Stiles and rails shall not be less than 1 3/8 inches thick
    2. Raised panels shall not be less than 1¼ inches thick, except for the exterior perimeter of the raised panel that shall be permitted to taper to a tongue not less than 3/8 inch thick
  - d. Have a fire protection rating of not less than 20 minutes when tested according to NFPA 252, UL 10B or UL 10C.
12. Note on plans for **garage doors** (CWUIC 504.9):
- a. Automatic garage door openers for vehicle doors serving a residential building shall be equipped with a battery backup function.
  - b. Exterior garage doors shall resist the intrusion of embers by preventing gaps between doors and door openings, at the bottom, sides and tops of doors, from exceeding 1/8 inch. Gaps between doors and door openings shall be controlled by one or more of the following methods:
    1. Weather-stripping products with tensile strength and flammability rating per CWUIC 504.9.2.
    2. Door overlaps onto jambs and headers.
    3. Garage door jambs and headers covered with metal flashing.
13. **Detail patio cover, carport, and trellis construction**, with all **exposed elements** complying with **any of the following** (County Consolidated WUI Code 96.2.504.7):
- a. Heavy timber construction
  - b. Noncombustible material
  - c. Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side, as tested in accordance with ASTM E119 or UL 263

- d. The exterior portion of a 1-hour fire-resistance-rated exterior assembly, as tested in accordance with ASTM E119 or UL 263, applied to the underside of the ceiling assembly, including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
- e. The underside of a floor projection assembly that meets the performance criteria in Section 504.7.2 when tested in accordance with the test procedures set forth in ASTM E2957
- f. The underside of a floor projection assembly that meets the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3
- g. Modified heavy timber (minimum 2x exterior grade tongue-and-groove sheathing, 4x6 rafters/beams, 6x6 posts/columns, 3x blocking)

14. **Detail deck, balcony, and exterior stair construction**, with all exposed elements complying with the following (County Consolidated WUI Code 96.2.504.7):

**Exception:** Deck repair or replacement involving 50% or more of the existing deck or 1,000 square feet of deck area, whichever is less, shall require the entire deck to meet all requirements of this item.

a. **Framing** (any of the following):

**Exception:** Structural supports of decks, balconies, and similar projections skirted from floor level to ground level with noncombustible material

- o Heavy timber construction
- o Noncombustible material
- o Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side, as tested in accordance with ASTM E119 or UL 263
- o The exterior portion of a 1-hour fire-resistance-rated exterior assembly, as tested in accordance with ASTM E119 or UL 263, applied to the underside of the ceiling assembly, including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
- o The underside of a floor projection assembly that meets the performance criteria in Section 504.7.2 when tested in accordance with the test procedures set forth in ASTM E2957
- o The underside of a floor projection assembly that meets the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3
- o Modified heavy timber (minimum 2x exterior grade tongue-and-groove sheathing, 4x beams/joists/stringers/treads, 6x6 posts/columns, 3x blocking)
- o A minimum of a 6-inch metal flashing, applied vertically on the exterior of the wall, shall be installed at all deck-to-wall intersections.

b. **Walking surface** material (any of the following):

- o Material that complies with the performance requirements of Section 504.7.3.3 when tested in accordance with ASTM E2632 and ASTM E2726
- o Material that complies with the performance requirements of both SFM Standard 12-7A-4 and Section 503.2.4
- o Noncombustible material
- o Any material that complies with the performance requirements of SFM Standard 12-7A-4A and any attached exterior wall covering is noncombustible or ignition-resistant building materials.
- o Any material that complies with the performance requirements of Section 504.7.3.4 when tested in accordance with ASTM E2632 and any attached exterior wall covering is noncombustible or ignition-resistant building materials.

15. Note on plans: Paints, coatings, stains, or other surface treatments are **not an approved method** of protection for any wildfire-resistive construction requirement. (CWUIC 503.2.5)

**P. ELECTRICAL, PLUMBING, AND MECHANICAL REQUIREMENTS**

1. Provide adequate natural or artificial **lighting** in all spaces per CBC 1204 and 1205.
2. *Note on plans:* "The project will comply with the County of San Diego lighting ordinance."
3. Provide adequate natural or mechanical **ventilation** of all spaces per CBC 1202 and CBEES 120.1.
4. Building requires the following per CPC Table 422.1:
  - a. All-gender restroom.
  - b. Separate gender restrooms
 

**Note:** All single-user restrooms shall be labeled on plans as all-gender.
  - c. Drinking fountain(s)
5. Indicate on plans location of mechanical units and water heaters.

6. For each prefabricated fireplace, wood stove, or pellet stove: :
  - a. **Note on plans:** "**Gas fireplaces** are required to be listed and must be direct-vent sealed-combustion type (applies to new buildings only) (CalGreen 4.503.1)"
  - b. **Note on plans:** "**Wood stoves and pellet stoves** are required to be listed and must comply with U.S. EPA New Source Performance Standards (NSPS) and have permanent label indicating they are certified to meet emission limits (CalGreen 4.503.1
  - c. **Note on plans:** "**Chimney shrouds** are part of the approved fireplace assembly (CRC R1004.1)"
7. **Masonry fireplaces** must be constructed per county details (make completed PDS #180 a permanent part of plans) or engineered design with coordinated structural details and calculations. Listed masonry type products shall comply with the requirements of the listing report. (CRC R1001)

## Q. ENERGY EFFICIENCY REQUIREMENTS

### NONRESIDENTIAL PROJECTS

1. Provide complete **energy efficiency** compliance documentation demonstrating design compliance with the **2025 California Building Energy Efficiency Standards (CBEES)** for nonresidential and hotel/motel buildings. Design shall be coordinated with the building plans (CBEES 100.0)
  - Exception:** 1 occupancies
  - Exception:** Qualified historic buildings, except lighting compliance per CBEES 140.6(a)3Q required
2. Proposed design shall comply with energy efficiency requirements applicable to **climate zone** \_\_\_\_\_. (CBEES 100.1)
3. **Existing** buildings and their envelopes -- including shell buildings and unconditioned spaces -- **occupied and conditioned for the first time** shall comply as new construction. (CBEES 100.0(a), CBEES 141.0)
4. The following energy efficiency **compliance forms** shall be completed and made a permanent part of plans (CBEES 10-103):
  - a. Mandatory certificates of compliance:
    - NRCC-CXR-01-E: Design review kickoff (required for newly constructed buildings)
    - NRCC-CXR-02-E: Construction documents (required for newly constructed buildings)
    - NRCC-CXR-03-E **or** NRCC-CXR-04-E: Simple HVAC **or** complex mechanical systems (required for newly constructed buildings)
    - NRCC-CXR-05-E: Design review signature page (required for newly constructed buildings)
    - NRCC-ELC-01-E: Electrical power distribution
    - NRCC-SRA-01-E: Solar-ready areas
    - NRCC-SRA-02-E **or** NRCC-SPV-01-E **or** NRCC-STH-01-E: Minimum solar zone area worksheet **or** solar photovoltaic system **or** solar water heating system
  - b. Performance certificates of compliance:
    - NRCC-PRF-01-E: Performance calculations covering building envelope, mechanical system, domestic hot water, indoor lighting of conditioned spaces, and select covered processes
  - c. Prescriptive certificates of compliance:
    - NRCC-ENV-01-E: Envelope component approach
  - d. Supplemental certificates of compliance:
    - NRCC-ENV-02-E: Fenestration worksheet (required for prescriptive submittals to complete NRCC-ENV-01-E)
    - NRCC-ENV-03-E: Solar Reflectance Index (required for prescriptive submittals using SRI in lieu of emittance/reflectance to complete NRCC-ENV-01-E)
    - NRCC-ENV-04-E: Daylit zone worksheet (required for prescriptive submittals in buildings with three or fewer stories and having enclosed conditioned space > 5000 s.f. directly under a roof with ceiling height > 15 feet and designed lighting density of 0.5 watts per s.f or greater)
    - NRCC-ENV-05-E: Fenestration certificate label (required for submittals where NFRC label certificates not available)
    - NRCC-ENV-06-E: Area weighted average calculation worksheet (required for prescriptive submittals where envelope features use weighted-area compliance to complete NRCC-ENV-01-E)
    - NRCC-PRC-01-E: Process compliance forms and worksheets
5. Regardless of whether Prescriptive or Performance compliance approach is used, Mandatory requirements apply. (CBEES 100.0(e)(2)(B)(ii))
6. Energy efficiency compliance forms shall be signed by **all of the following** (CBEES 10-103):
  - a. Energy efficiency documentation author

b. Project designer or owner

7. **Building orientation** indicated on NRCC-ENV-01-E form shall match orientation shown on plot plan. (CBEES 100.1)

8. **Glazing areas** indicated on NRCC-ENV-01-E form shall match floor plan. (CBEES 100.1)

9. Proposed design as indicated on NRCC-ENV-01-E form shall comply with the following **glazing measures**:

a. Prescriptive (CBEES 140.3(5), CBEES Table 140.3-B):

o Maximum U-factor:

**Exception:** 0.47 for replacement glazing per CBEES Table 141.0-A

**Exception:** Hotel/motel facilities per CBEES Table 140.3-C

**Exception:** Chromogenic glazing shall comply with CBEES 140.3(a)5B exception

- Fixed windows: 0.36
- Operable windows: 0.46
- Curtainwalls or storefronts: 0.41
- Glazed doors: 0.45
- Swinging exterior doors: 1.45
- Non-swinging exterior doors: 0.70
- Glass curb-mounted skylights: 0.58
- Glass deck-mounted skylights: 0.46
- Plastic curb-mounted skylights: 0.88

o Maximum Relative Solar Heat Gain Coefficient (RSHGC) per CBEES Table 140.3-B:

**Exception:** 0.31 for replacement glazing per CBEES Table 141.0-A, with exemption for maximum 150 s.f. of replacement glazing **or** maximum 50 s.f. of added glazing **or** maximum 50 s.f. of added skylight area

**Exception:** Hotel/motel facilities per CBEES Table 140.3-C

**Exception:** Window assemblies with built-in shading methods with RSHGC calculated per CBEES Equation 140.3-A

**Exception:** Maximum RSHGC = 0.56 for windows forming display perimeter on exterior walls of first story.

**Exception:** Chromogenic glazing shall comply with CBEES 140.3(a)5C exception.

- Fixed windows: 0.25
- Operable windows: 0.22
- Curtainwalls or storefronts: 0.26
- Glazed doors: 0.23
- Glass curb-mounted skylights: 0.25
- Glass deck-mounted skylights: 0.25
- Plastic curb-mounted skylights: No limit

o Minimum Visible Transmittance (VT) per CBEES Table 140.3-B

**Exception:** Exemption for maximum 150 s.f. of replacement glazing **or** maximum 50 s.f. of added glazing **or** maximum 50 s.f. of added skylight area

**Exception:** Hotel/motel facilities per CBEES Table 140.3-C

**Exception:** Windows complying with CBEES Equation 140.3-B

- Fixed windows: 0.42
- Operable windows: 0.32
- Curtainwalls or storefronts: 0.46
- Glazed doors: 0.17
- Glass curb-mounted skylights: 0.49
- Glass deck-mounted skylights: 0.49
- Plastic curb-mounted skylights: 0.64

o Maximum total glazing area = 40% of gross exterior wall area or 6 feet times display perimeter, whichever is greater

o Maximum total west-facing glazing area = 40% of gross west-facing exterior wall area or 6 feet times west-facing display perimeter, whichever is greater

o Maximum skylight area = 5% of gross exterior roof area

10. Proposed design as indicated on NRCC-ENV-01-E form shall comply with the following **roof/ceiling insulation measures**:

a. Mandatory (CBEES 120.7(a)):

**Exception:** Alterations where roof is exposed to the roof deck shall comply with minimum insulation requirements of CBEES 141.0(b)2Biii.

- o Metal building: Maximum U-factor = 0.098 per applicable CBEES joint appendix table.
- o Wood-framed and others: Maximum U-factor = 0.075 per applicable CBEES joint appendix table.

- o Insulation shall not be placed on top of a suspended ceiling with removable ceiling panels.
  - Exception:** Conditioned spaces with a combined floor area no greater than 2,000 s.f. in an otherwise unconditioned building when the average height of the space between the ceiling and roof over these conditioned space is greater than 12 feet

b. Prescriptive (CBEES 140.3(a)1B, CBEES Table 140.3-B):

**Exception:** Hotel/motel buildings per CBEES Table 140.3-C

- o Metal building: Maximum U-factor = 0.65 per applicable CBEES joint appendix table
- o Wood-framed and others:
  - **Climate zone 7** projects: Maximum U-factor = 0.067 per applicable CBEES joint appendix table.
  - **Climate zone 10, 14, and 15** projects: Maximum U-factor = 0.039 per applicable CBEES joint appendix table.

11. Proposed design as indicated on NRCC-ENV-01-E form shall comply with the following **wall insulation measures**:

**Exception:** Minimum R-13 insulation required in demising partitions between conditioned and enclosed unconditioned spaces per CBEES 110.8(f)

a. Mandatory (CBEES 120.7(b)):

**Exception:** Alterations shall comply with minimum insulation requirements of CBEES 141.0(b)1B.

- o Metal building: Maximum U-factor = 0.113 per applicable CBEES joint appendix table
- o Metal-framed: Maximum U-factor = 0.151 per applicable CBEES joint appendix table
- o Light mass walls (heat capacity  $\geq 7$  and  $< 15$ ): Maximum U-factor = 0.440 per applicable CBEES joint appendix table for 6-inch or greater hollow core CMU
- o Heavy mass walls (heat capacity  $\geq 15$ ): Maximum U-factor = 0.690 per applicable CBEES joint appendix table for 8-inch or greater hollow core CMU
- o Wood-framed and others: Maximum U-factor = 0.110 per applicable CBEES joint appendix table
- o Spandrel panels and glass curtain walls: Maximum U-factor = 0.280 per applicable CBEES joint appendix table
- o Demising walls:
  - Wood-framed walls: Maximum U-factor = 0.099 per applicable CBEES joint appendix table
  - Metal-framed walls: Maximum U-factor = 0.151 per applicable CBEES joint appendix table

b. Prescriptive (CBEES 140.3(a)2, CBEES Table 140.3-B):

**Exception:** Hotel/motel buildings per CBEES Table 140.3-C

- o Metal building:
  - **Climate zone 7** projects: Maximum U-factor = 0.113 per applicable CBEES joint appendix table
  - **Climate zone 10 and 14** projects: Maximum U-factor = 0.061 per applicable CBEES joint appendix table
  - **Climate zone 15** projects: Maximum U-factor = 0.057 per applicable CBEES joint appendix table
- o Metal-framed:
  - **Climate zone 7** projects: Maximum U-factor = 0.098 per applicable CBEES joint appendix table
  - **Climate zone 10, 14, and 15** projects: Maximum U-factor = 0.062 per applicable CBEES joint appendix table
- o Light mass walls (heat capacity  $\geq 7$  and  $< 15$ ):
  - **Climate zone 7** projects: Maximum U-factor = 0.440 per applicable CBEES joint appendix table
  - **Climate zone 10, 14, and 15** projects: Maximum U-factor = 0.170 per applicable CBEES joint appendix table
- o Heavy mass walls (heat capacity  $\geq 15$ ):
  - **Climate zone 7** projects: Maximum U-factor = 0.690 per applicable CBEES joint appendix table
  - **Climate zone 10** projects: Maximum U-factor = 0.650 per applicable CBEES joint appendix table
  - **Climate zone 14 and 15** projects: Maximum U-factor = 0.184 per applicable CBEES joint appendix table
- o Wood-framed and others:
  - **Climate zone 7** projects: Maximum U-factor = 0.110 per applicable CBEES joint appendix table
  - **Climate zone 10 and 14** projects: Maximum U-factor = 0.059 per applicable CBEES joint appendix table
  - **Climate zone 15** projects: Maximum U-factor = 0.042 per applicable CBEES joint appendix table

12. Proposed design as indicated on NRCC-ENV-01-E form shall comply with the following **raised-floor insulation measures**:

a. Mandatory (CBEES 120.7(c)):

**Exception:** Alterations shall comply with minimum insulation requirements of CBEES 141.0(b)1C

- o Raised mass (minimum 3-inch lightweight concrete over metal deck): Maximum U-factor = 0.269 per

applicable CBEES joint appendix table

o Others: Maximum U-factor = 0.071 per applicable CBEES joint appendix table

b. Prescriptive (CBEES 140.3(a)4, CBEES Table 140.3-B):

**Exception:** Hotel/motel buildings per CBEES Table 140.3-C

o Raised mass (minimum 3-inch lightweight concrete over metal deck):

▪ **Climate zone 7 and 10** projects: Maximum U-factor = 0.269 per applicable CBEES joint appendix table

▪ **Climate zone 14 and 15** projects: Maximum U-factor = 0.092 per applicable CBEES joint appendix table

o Others:

▪ **Climate zone 7 and 10** projects: Maximum U-factor = 0.071 per applicable CBEES joint appendix table

▪ **Climate zone 14 and 15** projects: Maximum U-factor = 0.039 per applicable CBEES joint appendix table

13. Specify on **building sections** the R-values of the following **insulation assemblies** – cavity and/or continuous as applicable – as indicated on NRCC-ENV-01-E form:

a. Roof/ceiling

b. Wall

c. Raised-floor

d. Slab-perimeter (if required per performance method)

14. The following **nominal framing depths** will be required in order to accommodate cavity insulation as indicated on NRCC-ENV-01-E form:

a. Roof rafters: \_\_\_\_\_ nominal depth to accommodate \_\_\_\_\_ cavity insulation

b. Stud walls: \_\_\_\_\_ nominal depth to accommodate \_\_\_\_\_ cavity insulation

15. Note on building sections for **climate zone 7** projects: “Class I or Class II **vapor retarder** shall be installed on the interior side of framed walls.” (CBC 1405.3.1)

**Exception:** Basement walls.

**Exception:** Below-grade portion of any wall.

**Exception:** Construction where moisture or its freezing will not damage its materials.

**Exception:** Class III vapor retarder acceptable per CBC 1405.3.2 on interior side of framed walls where minimum R-10 insulated sheathing applied over 2x4 framing or minimum R-15 insulated sheathing applied over 2x6 framing.

16. Proposed design as indicated on NRCC-ENV-01-E form shall comply with the following **cool roof measures**:

**Exception:** Existing roofs with 50% or less **and** 2000 s.f. or less of roof area altered.

a. Prescriptive (CBEES 140.3(a)1Ai):

**Exception:** Hotel/motel facilities per CBEES 140.3(a)1Aii

**Exception:** If aged solar reflectance value not available from Cool Roof Rating Council, aged value shall be determined by CBEES 110.8(i)2 equation using initial solar reflectance

**Exception:** Roof areas covered by building-integrated photovoltaic panels or solar thermal panels are exempt

o Steep-sloped roofs (i.e., greater than 2:12 slope):

▪ Minimum thermal emittance = 0.75

**Exception:** Roofing with minimum SRI = 16 calculated per NRCC-ENV-03-E worksheet

▪ Minimum **aged** solar reflectance = 0.20

**Exception:** Roofing with minimum SRI = 16 calculated per NRCC-ENV-03-E worksheet

o Low-sloped roofs (i.e., 2:12 or less slope):

**Exception:** Roof assemblies with thermal mass of minimum 25 psf are exempt

▪ Minimum thermal emittance = 0.75

**Exception:** Roofing with minimum SRI = 75 calculated per NRCC-ENV-03-E worksheet

▪ Minimum **aged** solar reflectance = 0.63

**Exception:** A lesser aged solar reflectance is allowed provided the roof/ceiling assembly meets trade-off values of CBEES 140.3

**Exception:** Roofing with minimum SRI = 75 calculated per NRCC-ENV-03-E worksheet

b. Performance (CBEES 110.8(i)):

o Roofing products not certified by Cool Roof Rating Council shall assume the following values:

**Exception:** Solar Reflectance Index (SRI) calculated per NRCC-ENV-03-E worksheet may be used as alternative

▪ Asphalt shingles: 0.75 thermal emittance, 0.08 **aged** solar reflectance

▪ Other roofing products: 0.75 thermal emittance, 0.10 **aged** solar reflectance

17. For projects with cool roofing indicated on NRCC-ENV-01-E form, specify the following **cool roof product information** on roof plans (CBEES 110.8(i)):
- Cool Roof Rating Council (CRRC) product ID number
  - Manufacturer brand
  - Product model
  - Product color
18. Provide **large, clear** note on **plot plan**: “Properly completed and signed Certificates of Installation (NRCI) and Certificates of Acceptance (NRCA) shall be provided to the inspector in the field.” (CBEES 10-103)

## LOW-RISE RESIDENTIAL PROJECTS

19. Provide complete **energy efficiency** compliance documentation demonstrating design compliance with the **2025 California Building Energy Efficiency Standards (CBEES)** for low-rise residential buildings. Design shall be coordinated with the building plans. (CBEES 100.0)
20. Proposed design shall comply with energy efficiency requirements applicable to **climate zone** \_\_\_\_\_. (CBEES 100.1)
21. The following energy efficiency **compliance forms** shall be completed and made a permanent part of plans (CBEES 10-103):
- Prescriptive certificate of compliance:
    - CF1R-NCB-01-E (applies to newly constructed buildings and additions greater than 1000 s.f.)
    - CF1R-ADD-01-E (applies to additions up to 1000 s.f.)
    - CF1R-ADD-02-E (may be used for additions up to 300 s.f. with no HERS verification required)
    - CF1R-ALT-01-E (applies to alterations)
  - Performance certificate of compliance:
    - CF1R-PRF-01-E
22. Regardless of whether Prescriptive or Performance compliance approach is used, Mandatory requirements apply. (CBEES 100.0(e)(2)(D)(ii))
23. Energy efficiency compliance forms shall be signed by **all of the following** (CBEES 10-103):
- Energy efficiency documentation author
  - Project designer or owner
24. **Building orientation** indicated on CF1R form shall match orientation shown on plot plan. (CBEES 100.1)
25. **Glazing areas** indicated on CF1R form shall match floor plan. (CBEES 100.1)
26. Proposed design as indicated on CF1R form shall comply with the following **glazing measures**:
- Mandatory (CBEES 150.0(q)):
    - Maximum U-factor = 0.58
      - Exception:** Fenestration area of up to 10 s.f. or 0.5% of conditioned floor area – whichever is greater – is exempt
      - Exception:** Fenestration area of up to 30 s.f. is exempt for dual-glazed greenhouse or garden windows
  - Prescriptive (CBEES 150.1(c)3, CBEES Table 150.1-A, CBEES 150.2(a)1, CBEES 150.2(b)1):
    - Maximum U-factor = 0.32
      - Exception:** Up to 3 s.f. of new glazing area in doors is exempt
      - Exception:** Up to 3 s.f. of new tubular skylight area with dual-pane diffusers is exempt
      - Exception:** Maximum U-factor of 0.55 acceptable for up to 16 s.f. of new skylight area
      - Exception:** Maximum U-factor of 0.40 acceptable for up to 75 s.f. of replacement glazing
      - Exception:** Maximum U-factor of 0.55 acceptable for replacement skylights
    - Maximum Solar Heat Gain Coefficient (SHGC) = 0.25
      - Exception:** Window assemblies with built-in shading methods with SHGC calculated per CF1R-WKS-03-E worksheet
      - Exception:** Up to 3 s.f. of new glazing area in doors is exempt
      - Exception:** Up to 3 s.f. of new tubular skylight area with dual-pane diffusers is exempt
      - Exception:** Maximum SHGC of 0.30 acceptable for up to 16 s.f. of new skylight area
      - Exception:** Maximum SHGC of 0.35 acceptable for up to 75 s.f. of replacement glazing
      - Exception:** Maximum SHGC of 0.30 acceptable for replacement skylights
    - Maximum total glazing area = 20% of conditioned floor area
      - Exception:** In additions greater than 700 s.f. and up to 1000 s.f., new glazing area may be larger of 175 s.f. or 20% of addition’s conditioned area

**Exception:** In additions greater than 400 s.f. and up to 700 s.f., added glazing area may be larger of 120 s.f. or 25% of addition's conditioned area

**Exception:** In additions up to 400 s.f., added glazing area may be larger of 75 s.f. or 30% of addition's conditioned area

**Exception:** Alterations adding maximum 75 s.f. of glazing are exempt

- o Maximum total west-facing glazing area = 5% of conditioned floor area

**Exception:** In additions greater than 700 s.f. and up to 1000 s.f., added west-facing glazing area may be 70 s.f.

**Exception:** In additions up to 700 s.f., added west-facing glazing area may be 60 s.f.

**Exception:** Alterations adding maximum 75 s.f. of glazing are exempt

27. Proposed design as indicated on CF1R form shall comply with the following **roof/ceiling insulation measures:**

- a. Mandatory per **one of the following** (CBEES 150.0(a)):

**Exception:** Where existing attic roof space is not large enough to accommodate required R-value, the entire accessible space shall be filled with insulation except 1-inch air space maintained between insulation and roof sheathing.

- o Minimum R-22 between wood framing members (installed at ceiling level for vented attics and ceiling or roof level for unvented attics).

**Exception:** Minimum R-19 between wood framing members in alterations.

- o Maximum U-factor = 0.043 per applicable CBEES joint appendix table (installed at ceiling level for vented attics and ceiling or roof level for unvented attics)

**Exception:** Maximum U-factor = 0.054 in alterations

- b. Prescriptive (CBEES 150.1(c)1A, CBEES Table 150.1-A):

**Exception:** Additions of 700 s.f. or less

- o If **any** space conditioning equipment and ducts located in ventilated attic:

- **Climate zone 7:** Minimum R-30 ceiling insulation between attic and conditioned space

- **Climate zones 10, 14, and 15** per **one of the following** options:

- Option A:

- ^ Minimum R-38 ceiling insulation between attic and conditioned space

- ^ Continuous insulation installed above roof rafters and in contact with roof deck: Minimum R-6 (with air space between roofing and roof deck) **or** minimum R-8 (no air space between roofing and roof deck)

- Option B:

- ^ Minimum R-38 ceiling insulation between attic and conditioned space

- ^ Insulation installed between roof rafters and in contact with roof deck: Minimum R-13 (with air space between roofing and roof deck) **or** minimum R-18 (no air space between roofing and roof deck)

- o If **all** space conditioning equipment and ducts located in conditioned space and confirmed by HERS verification:

- **Climate zones 7 and 10:** Minimum R-30 ceiling insulation between attic and conditioned space

- **Climate zones 14 and 15:** Minimum R-38 ceiling insulation between attic and conditioned space

28. Proposed design as indicated on CF1R form shall comply with the following **wall insulation measures:**

- a. Mandatory per **one of the following** (CBEES 150.0(c)):

- o Minimum R-13 between 2x4 wood studs

**Exception:** Existing walls with minimum R-11

- o Minimum R-19 between 2x6 or larger wood studs

- o Maximum U-factor = 0.102 per applicable CBEES joint appendix table between other 2x4 framing assemblies

- o Maximum U-factor = 0.074 per applicable CBEES joint appendix table between other 2x6 or larger framing assemblies

**Exception:** Minimum R-13 acceptable on inside of rim joists in multi-story buildings

- b. Prescriptive (CBEES 150.1(c)1B, CBEES Table 150.1-A):

**Exception:** Demising walls between conditioned and unconditioned space – e.g., between dwelling and garage – need only meet mandatory requirements

- o Framed walls in **climate zone 7** per **one of the following:**

**Exception:** Minimum R-15 between 2x4 wood studs and minimum R-19 between 2x6 wood studs acceptable in additions 700 s.f. or less per CBEES 150.2(a)1B

- Minimum R-13 between 2x4 wood studs at 16" o.c. plus minimum R-5 continuous
- Minimum R-19 between 2x6 wood studs at 16" o.c. plus minimum R-2 continuous
- Maximum U-factor = 0.065 per applicable CBEES joint appendix table

- o Framed walls in **climate zones 10, 14, and 15** per **one of the following:**

**Exception:** Minimum R-15 between 2x4 wood studs and minimum R-19 between 2x6 wood studs

acceptable in additions 700 s.f. or less per CBEES 150.2(a)1B

- Minimum R-13 between 2x4 wood studs at 16" o.c. plus minimum R-10 continuous
- Minimum R-19 between 2x6 wood studs at 16" o.c. plus minimum R-5 continuous
- Maximum U-factor = 0.051 per applicable CBEES joint appendix table
- Above-grade mass walls per **one of the following**:
  - Minimum R-13 installed on inside surface of wall
  - Minimum U-factor = 0.070 per applicable CBEES joint appendix table installed on inside surface of wall
  
  - Minimum R-8 installed on outside surface of wall
  - Minimum U-factor = 0.125 per applicable CBEES joint appendix table installed on outside surface of wall
- Below-grade mass walls in **climate zones 7 and 10** per **one of the following**:
  - Minimum R-13 installed on inside surface of wall
  - Minimum U-factor = 0.070 per applicable CBEES joint appendix table installed on inside surface of wall
  
  - Minimum R-5 installed on outside surface of wall
  - Minimum U-factor = 0.200 per applicable CBEES joint appendix table installed on outside surface of wall
- Below-grade mass walls in **climate zones 14 and 15** per **one of the following**:
  - Minimum R-13 installed on inside surface of wall
  - Minimum U-factor = 0.070 per applicable CBEES joint appendix table installed on inside surface of wall
  
  - Minimum R-10 installed on outside surface of wall
  - Minimum U-factor = 0.100 per applicable CBEES joint appendix table installed on outside surface of wall

29. Proposed design as indicated on CF1R form shall comply with the following **raised-floor insulation measures**:

- a. Mandatory and prescriptive per **one of the following** (CBEES 150.0(d), CBEES 150.1(c)1C):
  - Minimum R-19 between wood framing members
  - Maximum U-factor = 0.037 per applicable CBEES joint appendix table

30. Specify on **building sections** the R-values of the following **insulation assemblies** – cavity and/or continuous as applicable – as indicated on CF1R form:

- a. Roof/ceiling
- b. Wall
- c. Raised-floor
- d. Slab-perimeter (if required per performance method)

31. The following **nominal framing depths** will be required in order to accommodate cavity insulation as indicated on CF1R form:

- a. Roof rafters: \_\_\_\_\_ nominal depth to accommodate \_\_\_\_\_ cavity insulation
- b. Stud walls: \_\_\_\_\_ nominal depth to accommodate \_\_\_\_\_ cavity insulation

32. **Detail** on plans the following for any **continuous insulation assemblies**:

- a. Continuous insulation of the roof deck: Structural connection of roofing material to framing considering insulation layer between
- b. Continuous insulation outside exterior walls: Structural connection of exterior finish material – e.g., stucco, siding – to framing considering insulation layer between

33. *Note on building sections for **climate zone 14** projects*: “Class I or Class II **vapor retarder** shall be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.” (CBEES 150.0(g)2)

34. Proposed design as indicated on CF1R form shall comply with the following **radiant barrier measures**:

- a. Prescriptive (CBEES 150.1(c)2, CBEES Table 150.1-A):
  - Exception**: Alterations not proposing added radiant barrier to qualify for cool roof exception per item Q.38
  - Radiant barrier shall be installed below the roof deck and on all gable-end walls
    - Exception**: Radiant barrier not required in climate zone 10, 14, or 15 if complying with prescriptive roof/ceiling insulation Option B per item Q.31

35. For projects with radiant barrier indicated on CF1R form, *provide **large, clear** note on **roof plan or elevations***: “Radiant barrier is required.”

36. Proposed design as indicated on CF1R form shall comply with the following **cool roof measures**:
- a. Prescriptive (CBEES 150.1(c)11, CBEES 150.2(b)1H):
    - Exception:** Additions of 300 s.f. or less
    - Exception:** Alterations replacing 50% or less of roofing
    - Exception:** Areas with building-integrated photovoltaic panels or solar thermal panels
    - Exception:** Roof assemblies with minimum 25 psf thermal mass over roof membrane
  - o Steep-sloped roofs (i.e., greater than 2:12 slope) on **climate zones 10, 14, and 15** projects:
    - Exception:** Existing/modified assemblies with R-38 roof/ceiling insulation **or** radiant barrier **or** no ducts in attic **or** existing ducts insulated and sealed with HERS verification **or** minimum R-2 insulation above roof deck **or** 1-inch air space between top of roof deck and bottom of roofing product **or** installed roofing product with rise-to-width ratio of 1:5 for 50% or more of roofing product width
    - Exception:** If **aged** solar reflectance value not available from Cool Roof Rating Council, aged value shall be determined by CBEES 110.8(i)2 equation using initial solar reflectance
    - Minimum thermal emittance = 0.75
      - Exception:** Roofing with minimum SRI = 16 calculated per CF1R-WKS-04-E worksheet
    - Minimum **aged** solar reflectance = 0.20
      - Exception:** Roofing with minimum SRI = 16 calculated per CF1R-WKS-04-E worksheet
  - o Low-sloped roofs (i.e., 2:12 or less slope) on **climate zone 15** projects:
    - Exception:** Existing/modified assemblies with no ducts in attic or roof deck insulation per CBEES Tables 150.2-A
    - Minimum thermal emittance = 0.75
      - Exception:** Roofing with minimum SRI = 75 calculated per CF1R-WKS-04-E worksheet
    - Minimum **aged** solar reflectance = 0.63
      - Exception:** Roofing with minimum SRI = 75 calculated per CF1R-WKS-04-E worksheet
  - b. Performance (CBEES 110.8(i)):
    - o Roofing products not certified by Cool Roof Rating Council shall assume the following values:
      - Exception:** Solar Reflectance Index (SRI) calculated per CBEES 110.8(i)3 may be used as alternative.
      - Asphalt shingles: 0.75 thermal emittance, 0.08 **aged** solar reflectance
      - Other roofing products: 0.75 thermal emittance, 0.10 **aged** solar reflectance
37. For projects with cool roofing indicated on CF1R form, specify the following **cool roof product information** on roof plans (CBEES 110.8(i)):
- a. Cool Roof Rating Council (CRRC) product ID number
  - b. Manufacturer brand
  - c. Product model
  - d. Product color
38. Specify on **cover sheet or plot plan** the **REQUIRED SPECIAL FEATURES** indicated on the CF1R form.
39. Provide **table or summary** on **cover sheet or plot plan** of the **HERS FEATURE SUMMARY** indicated on the CF1R form (CBEES 10-103):
- a. Duct sealing
  - b. Cooling system refrigerant charge
  - c. Cooling system minimum airflow
  - d. Cooling system fan efficacy
  - e. Cooling system SEER and/or EER above minimum
  - f. Indoor air quality (IAQ) mechanical ventilation
  - g. Building envelope air leakage
  - h. Quality insulation installation
  - i. Other:
40. For projects requiring HERS verification, CF1R forms must be registered with a California-approved HERS provider data registry. (CBEES 10-103)
41. Provide **large, clear** note on **cover sheet or plot plan**: **“Properly completed and signed Certificates of Installation (CF2R forms) shall be provided to the inspector in the field. For projects requiring HERS verification, the CF2R forms shall be registered with a California-approved HERS provider data registry.”** CF2R forms are available at <http://www.sdcounty.ca.gov/pds/bldg/energy-stds.html>. (CBEES 10-103)
42. Provide **large, clear** note on **cover sheet or plot plan**: **“Properly completed Certificates of Verification (CF3R forms) shall be provided to the inspector in the field for items requiring HERS verification. CF3R forms shall be registered with a California-approved HERS provider data registry.”** CF3R forms are available at <http://www.sdcounty.ca.gov/pds/bldg/energy-stds.html>. (CBEES 10-103)

## R. GREEN BUILDING REQUIREMENTS

### NONRESIDENTIAL PROJECTS

1. Indicate on plans the following **construction waste management requirements** (CalGreen 5.408.1) (for more information, please consult the County of San Diego Construction & Demolition Recycling Guide):
  - a. *Note on plans*: "A minimum of 65 percent of nonhazardous construction and demolition waste shall be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale."
  - b. *Note on plans*: "Unless verifiable documentation from a waste management company is provided demonstrating a minimum 65 percent of construction and demolition waste has been diverted from landfills, a construction waste management plan shall be maintained on site and shall identify the waste materials to be diverted from disposal, determine if waste materials will be sorted on-site or bulk mixed, identify the diversion facilities where materials collected will be taken, and specifies the amount of materials diverted shall be calculated by weight or volume, but not both."
  - c. For additions and alterations, *note on plans*: "Universal waste items, such as fluorescent lamps and ballast, thermostats containing mercury, and other California-prohibited universal waste materials, shall be disposed of properly and diverted from landfills."
  - d. *Note on plans*: "100% of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled unless such material is contaminated by disease or pest infestation."
2. Items R.3 through R.8 shall apply to newly constructed buildings, building additions of 1,000 square feet or greater, and/or building alterations with a **permit valuation of \$200,000 or above**; provisions relevant to additions and alterations shall apply only to the portions of building being added or altered **within the scope of the permitted work**. (CalGreen 301.3)
3. Provide **bicycle parking** per the following (CalGreen 5.106.4.1):
  - a. For new projects, additions, or alterations anticipated to generate visitor traffic, provide short-term bicycle parking per **all of the following**:
    - Exception**: Additions or alterations adding nine or fewer visitor vehicular parking spaces.
      - Permanently anchored bicycle racks located within 200 feet of visitors' entrance and readily visible by passers-by.
      - Accommodating number of bicycles equivalent to at least 5% of new visitor vehicular parking spaces added, minimum one two-bike capacity rack.
  - b. For new buildings with 10 or more tenant-occupants or for additions/alterations adding 10 or more tenant vehicular parking spaces, provide long-term bicycle parking per **all of the following**:
    - Secure bicycle parking for at least 5% of tenant vehicular parking spaces added, minimum one space.
    - Acceptable bicycle parking facilities shall be convenient from the street and include covered, lockable enclosures with permanently anchored bicycle racks **or** lockable bicycle rooms with permanently anchored bicycle racks **or** lockable, permanently anchored bicycle lockers.
4. In newly constructed nonresidential buildings, indicate on plans **designated electric vehicle capable spaces and electric vehicle charging stations** -- per CalGreen Table 5.106.5.3.1.
  - Exception**: Where there is not local utility power supply
  - Exception**: Locations with insufficient electrical supply
  - Exception**: Where local enforcement agency determines utility infrastructure design requirements related to implementing this provision may adversely affect the project construction cost
5. Indicate on plans readily accessible location of **trash collection area(s)** with minimum 50% of the area(s) dedicated to recycling. (Public Resources Code PRC 42911, PRC 42910-12)
6. For new buildings 10,000 square feet or more, submit building **commissioning** plan **including all of the following** to verify building systems and components meet owner's or owner representative's project requirements (CalGreen 5.410.2, CBEES 120.8):
  - Exception**: Unconditioned warehouses of any size.
  - Exception**: Within unconditioned warehouses, areas under 10,000 square feet used for offices or other conditioned accessory spaces.
  - Exception**: Initial tenant improvements under 10,000 square feet.
  - Exception**: Open parking garages or open parking garage areas within a structure.
  - a. General project information
  - b. Commissioning goals
  - c. Systems to be commissioned and plans to test per the following:
    - Explanation of original design intent

- Equipment and systems to be tested, including extent of tests
- Functions to be tested
- Conditions under which tests shall be performed
- Measurable criteria for acceptable performance
- Commissioning team information
- Commissioning process activities, schedules, and responsibilities, including plans for commissioning completion

7. Finish materials shall comply with **VOC and formaldehyde limits** per CalGreen 5.504.4.

## RESIDENTIAL PROJECTS

8. Include in plans **notes I.1 through I.15 from attached PDS #081** to indicate compliance with CalGreen mandatory residential requirements. (CalGreen 301.1)

9. For multifamily residential projects **with five or more dwelling units**, indicate on plans readily accessible location of **trash collection area(s)** with minimum 50% of the area(s) dedicated to recycling. (CalGreen 4.410.2, PRC 42911, PRC 42910-12)

10. For multifamily residential projects indicate on plans the following to support **electric vehicle charging stations** (CalGreen 4.106.4.2):

**Exception:** Locations with insufficient electrical supply

**Exception:** Where local enforcement agency determines utility infrastructure design requirements related to implementing this provision may adversely affect the project construction cost

a. Less than 20 units,

- EV Capable: 10% of total parking spaces with panel space and necessary raceways to support EV charging.
- EV Ready: 25% of total parking spaces with branch circuit and necessary raceways to accommodate EV charging, terminating in a receptacle or charger.

b. More than 20 units

- EV Capable: 10% of total parking spaces with panel space and necessary raceways to support EV charging
- EV Ready: 25% of total parking spaces with branch circuit, necessary raceways, and charging receptacles to accommodate EV charging.
- EV Chargers: 5% of total parking spaces with electric vehicle supply equipment for the purpose of EV charging.

c. At least one electrical vehicle charging space shall be located in common-use area and available for use by all residents

d. Electrical vehicle charging spaces shall be minimum 18-feet long and minimum 9-feet wide

e. One in every 25 electric vehicle charging spaces – but not less than one – shall be accessible and have minimum 8-foot-wide aisle with maximum 2.1% slope in all directions for both charging space and aisle

**Exception:** Minimum 5-foot-wide aisle acceptable if minimum 12-foot-wide charging space provided.

f. If electric vehicle chargers are installed as part of this project, required accessible electrical vehicle charging spaces shall be located adjacent to an accessible parking space meeting CBC 11A to allow use of the electric vehicle charger from the accessible parking space

## S. VERTICAL DESIGN REQUIREMENTS

1. Provide a complete roof/floor **framing plan**.

2. Structure exceeds conventional framing limits of CBC 2308.2. **Provide engineered design** per California Building Code.

3. Framing shall comply with all recommendations made in **engineering calculations**.

4. Vertical design calculations appear to be inaccurate as follows:

- a.
- b.
- c.
- d.
- e.

5. Provide **complete structural detailing** for the project.

6. Cross-reference all framing details with the appropriate plans.

7. Delete all non-applicable details from plans.
8. Specify **plywood** grade, thickness, panel span rating, and nailing for roof/floor sheathing. (CBC Table 2304.8(3)).
9. *Note on plans:* "Plywood shall be continuous under California fill."
10. Specify on framing plans the size, orientation, span, and spacing as applicable for the following **structural elements**:
  - a. Rafters
  - b. Ceiling joists
  - c. Beams
  - d. Floor joists
  - e. Headers
  - f. Posts
  - g. Columns
11. Provide two complete sets of **truss drawings and coordinate** with roof framing plan. (CBC 2303.4)
12. Identify **trusses** on roof framing plan by **file/ID/sequence number** or make **truss layout** a permanent part of plans.
13. Design trusses for bearing at **perpendicular interior shear walls**.
14. Detail 1/2-inch clearance between trusses and **non-bearing walls**.
15. Indicate on roof framing plan support for **ridge/hip/valley intersections**. (CBC 2308.7)
16. **Detail rafter-tie connections** at conventionally framed areas with connection nailing per CBC Table 2308.7.3.1.
17. Provide **metal straps** across ridge beam and rafters.
18. Specify camber requirements and combination symbol for all **glue-laminated wood members** on plans.
19. *Note on plans:* "A certificate of conformance for glue-laminated wood members is required prior to framing inspection."
20. Specify the make and model number of all proposed **truss/beam/joist hangers**.
21. Specify size and type (double stud, post, etc.) of **support for beams/headers** – 4x12 and larger – **and girder trusses**.
22. **Detail all** beam-to-post, post-to-beam, and post-to-footing **connections**.
23. Specify **stud** size and spacing for all walls. (CBC Table 2308.5.1)
24. **Balloon frame** walls of rooms with sloping ceilings (rake walls). Identify on plans any balloon-framed walls.
25. Specify on plans fasteners – including nuts and washers – for preservative-treated-wood (in all applications) and fire-retardant-treated-wood (in exterior applications) shall be of hot dipped zinc-coated galvanized steel, stainless steel, silicon bronze, or copper. (CBC 2304.10.5)
  - Exception:** Plain carbon steel fasteners in SBX/DOT and zinc borate preservative-treated wood in dry, interior environment
  - Exception:** Fasteners other than nails, timber rivets, wood screws, and lag screws may be mechanically deposited zinc-coated steel

## T. LATERAL DESIGN REQUIREMENTS

1. Provide on framing plans labeled **grid lines** to identify location of each shear wall.
2. Specify on framing plans type and length of all **shear walls** and coordinate with shear-wall schedule.
3. Provide engineered **lateral design** per *California Building Code*. Building does not meet the following **bracing requirements** of CBC 2308:
  - a. Braced wall lines not provided in perpendicular transverse and longitudinal directions per CBC Figure 2308.6.1
  - b. Shear walls not constructed per acceptable bracing methods of CBC Table 2308.6.1 and CBC Table 2308.6.3(1)
  - c. Shear walls exceed maximum height of CBC 2308.2.2
  - d. Shear walls do not meet minimum width of CBC 2308.6.4 and do not meet alternative bracing requirements of CBC 2308.6.5

- e. Braced wall line spacing exceeds 25 feet per CBC Table 2308.6.1
  - f. Insufficient cumulative shear wall length within braced wall line(s) per CBC Table 2308.6.1
  - g. Shear wall spacing within braced wall line(s) exceeds 25 feet per CBC Figure 2308.6.1
  - h. Shear walls located more than 8 feet from ends of each wall line per CBC Table 2308.6.1
  - i. Shear walls offset more than 4 feet from braced wall line(s) per CBC 2308.6.2 and CBC Figure 2308.6.1
4. Lateral design calculations appear to be inaccurate as follows:
- a.
  - b.
  - c.
  - d.
  - e.
5. Vertical Shear Distribution: Lateral design at lower level to account for shear loading from above.
6. Shear walls and lateral load resisting elements shall comply with all recommendations made in engineering calculations.
7. Total **calculated base-shear** (wind/seismic) **exceeds** the cumulative **provided capacity** of base-level shear walls. Check in each orthogonal directions.
8. **Specify** on framing plans location, type, and length of **all shear walls and coordinate** with shear-wall schedule.
9. **Shear wall types** proposed **may not be mixed** within the same braced wall line. (CBC Table 2308.6.1)
10. Specify **nail size and spacing** for all shear walls and roof/floor diaphragms. Specify any required blocking. (CBC 2306.2, CBC 2306.3)
11. The **aspect ratio** of roof/floor **diaphragms** shall not exceed the following (AF&PA SDPWS Table 4.2.4):
- a. 3:1 for unblocked wood structural panel diaphragms
  - b. 4:1 for blocked wood structural panel diaphragms
12. The **aspect ratio** of **shear walls** and shear wall segments shall not exceed the following (AF&PA SDPWS Table 4.3.4):
- a. 3.5:1 for wood structural panel shear walls with capacity reduced per SDPWS Table 4.3.4 for aspect ratios exceeding 2:1
  - b. 2:1 for other shear wall sheathing types
13. Provide **shear-transfer connection details** for shear walls (interior and exterior) at roof, floors, and foundation. Cross-reference all shear-transfer details with the appropriate plans. (CBC 2308.6.7)
14. Make **manufacturer's structural detail sheet(s)** for engineered shear panels (e.g., Strong-Wall, Hardy Frame, TJ, Shear Max, etc.) a permanent part of the plans.
15. Provide details for **interior shear walls** indicating shear transfer from roof/floor diaphragm above.
16. Provide shear-transfer details at **openings in shear walls** (force transfer, perforated, etc.) (CBC 2305.1.1)
17. Provide **drag straps** on each side of bay windows, flush beams, or other locations where plate lines are interrupted.
18. Where shear wall nail spacing 2 inches on center or less or shear wall forces exceed 350 pounds per foot, all framing members receiving edge nailing from adjoining panel edges shall be **minimum 3-inch nominal members** or double 2-inch nominal members. (AF&PA SDPWS 4.3.7.1.5)
19. Specify construction of **cripple walls** per the following (CBC 2308.5.6, CBC 2308.6.6.2):
- a. Framed with studs equivalent to studs above
  - b. If more than 4 feet high, framed with studs required for an additional story
  - c. If less than 14 inches high, framed with solid blocking
  - d. Considered an additional story and braced per CBC Table 2308.6.1
20. Specify location/type of **hold-downs** on foundation plan (grade-level hold-downs) and framing plan (upper-level hold-downs).

## U. FOUNDATION DESIGN REQUIREMENTS

- 1. Provide a complete **foundation plan**.
- 2. **Foundation elements** (e.g., footings, slab thickness, reinforcement, moisture barrier, etc.) shall comply with all recommendations made in soils/compaction report and engineering calculations.

3. Foundation design calculations appear to be inaccurate as follows:
  - a.
  - b.
  - c.
  - d.
  - e.
4. Site inspection revealed presence of expansive soils. Provide soils report with foundation design recommendations  
**Exception:** Single-story structures at locations where moderately expansive soil conditions exist may comply with the requirements for expansive soil foundation design per form PDS #065 in lieu of providing a soils report.
5. Indicate on foundation plan location and size of **underfloor vents** per the following (CBC 1202.3):
  - a. Minimum 1 foot of net vent area required for every 150 square feet of underfloor area (as demonstrated by calculation provided on foundation plan)
  - b. Located to provide adequate cross-ventilation to all underfloor areas
6. Indicate on foundation plan location of minimum 18-inch by 24-inch **access openings** to all underfloor areas. (CBC 1208.1)
7. Dimension **underfloor clearance** off grade of 18 inches for floor joists and 12 inches for floor girders **or** specify preservative-treated wood. (CBC 2304.12.1.1)
8. Dimension the following **vertical clearances** for wood framing, sheathing, and siding at exterior walls **or** specify preservative-treated wood (CBC 2304.12.1.2 through CBC 2304.12.1.5):
  - a. Minimum 8 inches for wood sill plates, studs, and sheathing above adjacent ground  
**Exception:** Preservative-treated wood sill plates required at slab-on-grade footings.
  - b. Minimum 6 inches for wood siding above adjacent ground
  - c. Minimum 2 inches for wood siding above adjacent impervious surface
9. Specify **preservative-treated** wood for any wood posts and columns. (CBC 2304.12.2.2)  
**Exception:** Posts and columns not exposed to weather **and** supported by concrete piers or metal pedestals projecting minimum 1 inch above an adjacent slab or deck **and** minimum 8 inches above adjacent exposed earth and separated from slab, deck, and exposed earth by an impervious moisture barrier
10. Detail wall **sill plate anchorage** to foundations per the following (CBC 2308.3.1, CBC 2308.3.2, CBC 2308.6.7.3):
  - a. Minimum 1/2-inch-diameter anchor bolts  
**Exception:** Minimum 5/8-inch-diameter anchor bolts required in Seismic Design Category E
  - b. Minimum 7-inch embedment into concrete or masonry
  - c. Bolts spaced maximum 6 feet on center  
**Exception:** Maximum 4 feet on center for buildings more than two stories in height
  - d. Minimum two bolts per sill plate section with one bolt located maximum 12 inches and minimum seven bolt diameters from each end of each section
  - e. Steel plate washers per the following provided between sill plate and nut of each anchor bolt:
    - o Minimum 3 inches by 3 inches by 0.229 inch
    - o If standard cut washer placed between plate washer and nut, hole in plate washer may be diagonally slotted with maximum 3/16-inch larger width than bolt diameter and maximum 1-3/4 inch slot length.
11. Provide **footing details** specifying all dimensions and reinforcement. Cross-reference all details with foundation plan.
12. Provide a **step footing** detail. (CBC 2308.6.8.3)
13. Unless otherwise specified by soils report, dimension on building sections or foundation details **minimum 7-foot horizontal distance** from bottom leading edge of footings to face of slope (i.e., distance to daylight).
14. Provide **adequate footings** under all bearing walls and shear walls.
15. Provide **adequate spread footings** under posts/columns (where required due to post/column load).
16. Specify on foundation plan **slab thickness, reinforcement, and moisture barrier**. (CBC 1805.2.1)
17. Provide coordinated details and specifications for the following elements of **concrete or masonry wall design**:
  - a. Maximum **overall height**
  - b. Maximum **height of any retained soil**
  - c. Maximum **stem wall height**
  - d. Wall type (**cantilevered or restrained**)

- e Wall material (concrete or masonry) with **required material strength**
- f. **Wall thickness**
- g. Vertical and horizontal **reinforcement**:
  - o Bar size and spacing
  - o Bar position (edge or center) with dimension from face of wall
- h. **Footing/key** dimensions and reinforcement
- i. **Means of restraint** (restrained walls)
- j. **Drainage** system behind walls retaining soil
- k. **Waterproofing** for walls retaining soil and adjacent to usable space

**V. SUPPLEMENTAL ADDITION AND ALTERATION REQUIREMENTS**

1. Provide **floor plan for existing** rooms adjacent to addition/alteration with door sizes, window sizes, and types indicated – including doors/windows to be removed – to verify compliance with light, ventilation, and egress requirements.
2. Provide **framing and/or foundation plans for existing** structure at \_\_\_\_\_ to verify existing construction adequate to support proposed added loads.
3. **Detail** means of achieving **positive connection between addition(s) and existing** construction at the following:
  - a. Plate lines (detail on framing plans)
  - b. Footings and slabs (detail on foundation plans)
4. **Detail** installation of **hold-downs and/or anchor bolts in existing** foundations. Specify manufacturer and listing number of epoxy, expansion anchors, wedge anchors, etc., as applicable.

**W-1B. SITE ACCESSIBILITY AND EXTERIOR ROUTES OF TRAVEL (CBC 11B)**

**Note:** CBC 11B accessibility requirements apply to temporary and permanent construction support facilities for uses and activities not directly associated with the actual processes of construction, including offices, meeting rooms, plan rooms, and other administrative/support functions. When portable toilet and/or bathing facilities are provided, at least one of each type shall be accessible and connected to the construction support facilities by an accessible route. During construction an accessible route shall not be required between the public way and construction support facilities if the only means of access between is a vehicular way not providing pedestrian access.

**SITE ACCESSIBILITY**

1. Identify on site accessibility plan location of the following elements as provided and distinguishing between accessible and inaccessible elements and new and existing elements (CBC 11B-402):
  - a. Buildings and facilities
  - b. Parking spaces
  - c. Passenger loading zones
  - d. Public transportation stops
  - e. Walks and sidewalks
  - f. Curb ramps
  - g. Exterior ramps
  - h. Exterior stairways
  - i. Exterior drinking fountains
  - j. Exterior public telephones
  - k. Elevators or platform lifts serving exterior routes
2. Identify on site accessibility plan the following accessible routes of travel using ■■■■■■ or equivalent symbol (CBC 11B-206.2.1, CBC 11B-206.2.2):
  - a. Between all building exterior ground-floor exits and the public way
    - Exception:** Exterior ground-floor exits serving smoke-proof enclosures, stairwells, and exit doors servicing stairs only
    - Exception:** Exits in excess of number required to be accessible per CBC 1007 and more than 24 inches above grade
  - b. Between accessible parking spaces and building or facility entrances
  - c. Between passenger loading zones and building or facility entrances
  - d. Between public streets or sidewalks and building or facility entrances
    - Exception:** Accessible route not required between site arrival points and building or facility entrance if only means of access between is vehicular way not providing pedestrian access
  - e. Between public transportation stops and building or facility entrances
  - f. Between accessible buildings, facilities, elements, and spaces on the same site
    - Exception:** Accessible route not required between accessible buildings, facilities, elements, and spaces if

only means of access between is vehicular way not providing pedestrian access

3. Accessible routes shall coincide with or be located in the same area as general circulation paths. (CBC 11B-206.3)

4. Where more than one route of travel is provided, all routes shall be accessible. (CBC 11B-206.2.1)

**Exception:** General circulation paths shall be permitted when located in close proximity to an accessible route

5. Circulation paths contiguous to vehicular traffic shall be physically separated from vehicular traffic by raising circulation paths 4 inches minimum above the area where vehicular traffic occurs. Detectable warnings alone, do not satisfy this separation requirement. At pedestrian crossings, the circulation path shall be physically separated from all vehicular traffic through the use of curb ramps or blended transitions with detectable warnings.(CBC 11B-250)

**Exception:** In alterations to existing parking facilities, physical separation may be provided with compliant detectable warnings in lieu of raised circulation paths.

## EXTERIOR ROUTES OF TRAVEL

6. Dimension on site accessibility plan minimum 48-inch-wide walks and sidewalks. (CBC 11B-403.5.1, CBC 11B-406.6)

**Exception:** Minimum 36-inch clear width at existing sidewalks with right-of-way restrictions

**Exception:** Minimum 60-inch clear width at islands or cut-through medians

7. For accessible routes less than 60-inches wide and more than 200-feet long, dimension on site accessibility plan passing spaces minimum 60 inches by 60 inches – or equivalent T-shaped intersections – at maximum 200-foot intervals. (CBC 11B-403.5.3)

8. Specify on site accessibility plan running slope of each walk and sidewalk. (CBC 11B-403.3)

9. Specify on site accessibility plan spot elevations at each walk and sidewalk to verify running slopes indicated per item W-1B.7 do not exceed 5% slope unless ramp provided per section W-4B. (CBC 11B-403.3)

**Exception:** Running slope of sidewalks shall not exceed the general grade established for the adjacent street or highway

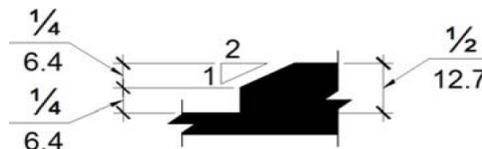
10. Specify on site accessibility plan maximum 2.1% cross slope of each accessible route. (CBC 11B-403.3)

11. Specify on site accessibility plan accessible route surfaces of stable, firm, and slip-resistant material. (CBC 11B-302.1)

12. For walks with continuous gradients, dimension on site accessibility plan minimum 5-foot-long level resting areas at maximum 400-foot intervals. (CBC 11B-403.7)

13. Identify on site accessibility plan and dimension any abrupt changes in level greater than 1/4 inch on accessible routes. (CBC 11B-303)

14. For abrupt changes in level between 1/4 inch and 1/2 inch on accessible routes, detail maximum 50% beveled slope per CBC Figure 11B-303.3. (CBC 11B-303.3)

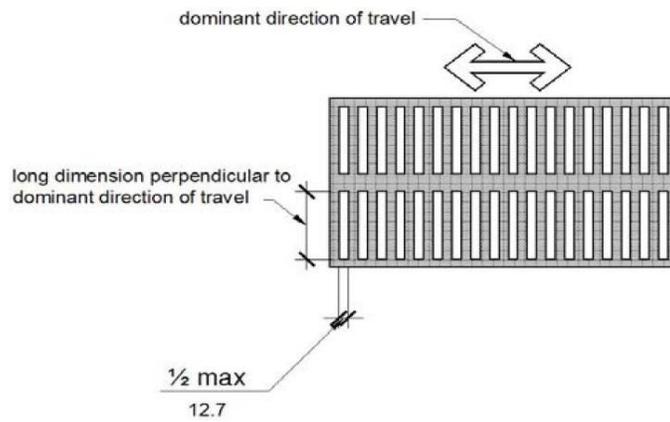


**FIGURE 11B-303.3  
BEVELED CHANGE IN LEVEL**

15. For abrupt changes in level greater than 1/2 inch on accessible routes, provide pedestrian ramp per section W-4B. (CBC 11B-303.4)

**Exception:** Changes in level served by curb ramps shall meet requirements of section W-3B

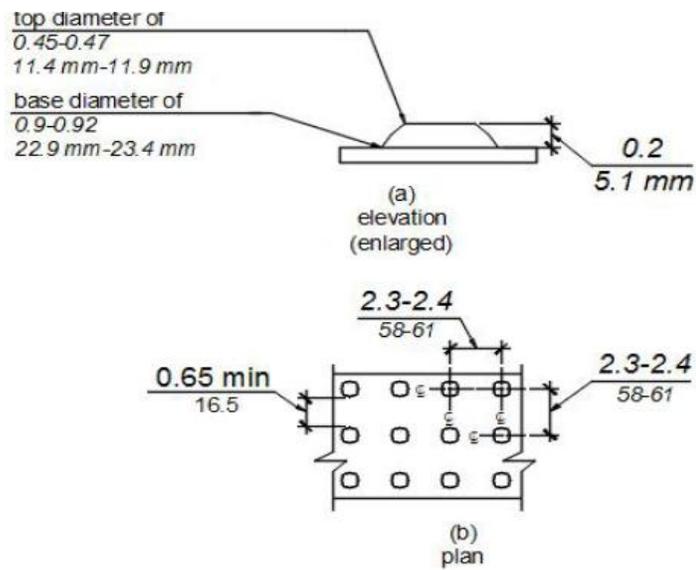
16. Identify on site accessibility plan any grates or similar openings located on accessible routes and detail maximum 1/2-inch spaces per CBC Figure 11B-302.3 with any elongated openings placed perpendicular to dominant direction of travel. (CBC 11B-302.3)



**FIGURE 11B-302.3**  
**ELONGATED OPENINGS IN FLOOR OR GROUND SURFACES**

**HAZARDS**

17. Identify on site accessibility plan and dimension any vertical drops adjacent to accessible routes. (CBC 11B-303)
18. At any accessible route with adjacent vertical drop exceeding 4 inches, detail minimum 6-inch-high warning curb. (CBC 11B-303.5)
  - Exception:** Vertical drops due to curbs between walk or sidewalk and adjacent vehicular ways
  - Exception:** Where handrail or guard provided with guide rail centered minimum 2 inches and maximum 4 inches above surface of walk or sidewalk
19. At any walk or sidewalk with adjacent vertical drop exceeding 30 inches, detail minimum 42-inch-high guardrail with openings not allowing passage of 4-inch-diameter sphere. (CBC 1013.1, CBC 1013.2)
  - Exception:** Openings not allowing passage of 4 3/8-inch-diameter sphere allowed in portions of guard 36 inches to 42 inches high
20. At any walk entering or adjoining vehicular ways without curb, railing, or barrier separation, detail continuous detectable warning strip per item W-1B.22 with 36-inch (absolute) depth for entire length/width of transition. (CBC 11B-247.1.2.5, CBC 11B-705.1.2.5)
21. At edges of any reflecting pools, detail railing, wall, warning curb per item 17 or continuous detectable warning strip per item W-1B.22. (CBC 11B-247.1.2.6, CBC 11B-705.1.2.6)
  - Exception:** Detectable warning strip depth shall be minimum 24 inches and maximum 36 inches
22. At any pedestrian islands or cut-through medians, detail continuous detectable warning strip with minimum 36-inch depth at each edge per item W-1B.22, extending the full width of the path or cut-through less maximum 2 inches on each side and separated by minimum 24-inch walking surface without detectable warnings. (CBC 11B-247.1.2.3, CBC 11B-705.1.2.3)
  - Exception:** Minimum 24-inch deep detectable warnings acceptable at pedestrian islands or cut-through medians with less than 96-inch length in direction of pedestrian travel
23. Detectable warnings required per items W-1B.19, W-1B.20, or W-1B.21 shall comply with the following (CBC 11B-705):
  - a. Including raised, truncated domes per CBC Figure 11B-705.1:
    - o Minimum 0.9-inch and maximum 0.92-inch base diameter
    - o Minimum 0.45-inch and maximum 0.47-inch top diameter
    - o 0.20-inch height
    - o Minimum 2.3-inch and maximum 2.4-inch center-to-center spacing and minimum 0.65-inch base-to-base spacing
    - Exception:** Minimum 1.6-inch and maximum 2.4-inch center-to-center spacing acceptable for domes in radial pattern.



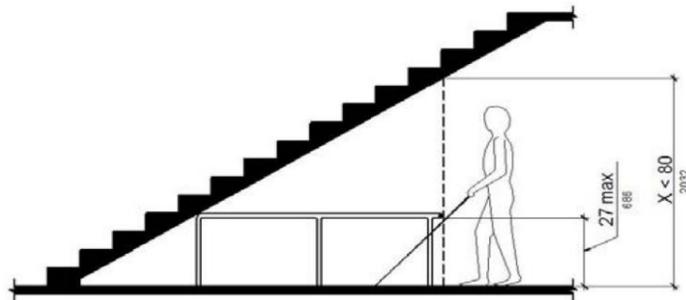
**FIGURE 11B-705.1  
SIZE AND SPACING OF TRUNCATED DOMES**

b. Yellow color – integral to surface – conforming to FS33538 of Federal Standard 595C

**Exception:** Detectable warnings at pedestrian islands and cut-through medians may contrast visually with adjacent walking surfaces, light-on-dark or dark-on-light

24. Dimension minimum 80-inch vertical clearance along all circulation paths. (CBC 11B-307.4)

25. Where circulation paths adjoin areas with less than 80-inch vertical clearance – e.g., open areas beneath stairs – detail cane-detectable barrier at maximum 27 inches above walking surface per CBC Figure 11B-307.4. (CBC 11B-307.4)



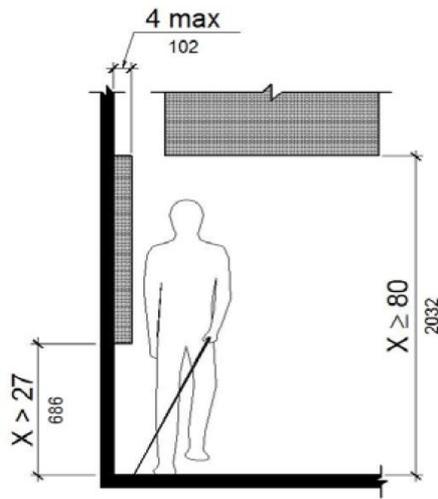
**FIGURE 11B-307.4  
VERTICAL CLEARANCE**

26. Identify on site accessibility plan any objects protruding into circulation paths and dimension to comply with the following (CBC 11B-204.1, CBC 11B-307.2, CBC 11B-307.3, CBC 11B-307.4):

a. 4-inch maximum horizontal protrusion of any wall-mounted object with leading edge between 27 inches and 80 inches above walking surface per CBC Figure 11B-307.2

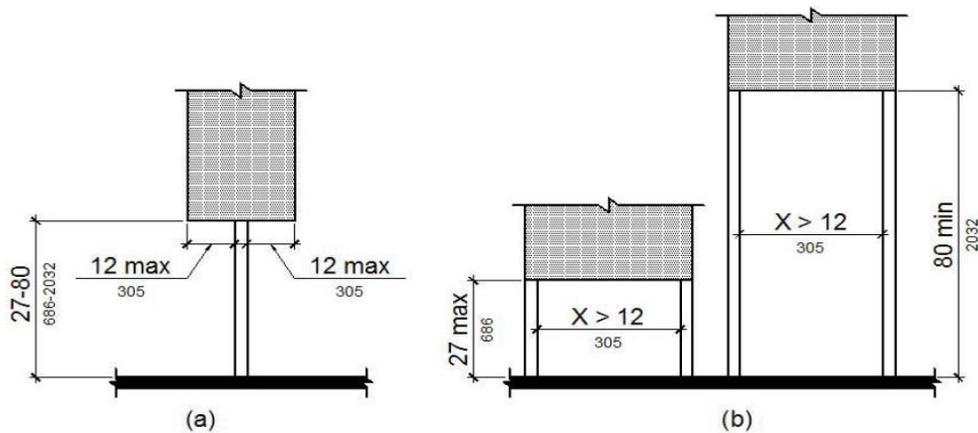
**Exception:** Maximum 4-1/2 inches for handrails

**Exception:** Door closers and door stops may be minimum 78 inches above walking surface



**FIGURE 11B-307.2  
LIMITS OF PROTRUDING OBJECTS**

- b. 12-inch maximum overhang of any post-mounted object with leading edge between 27 inches and 80 inches above walking surface per CBC Figure 11B-307.3(a)
- c. Lowest edge of sign or other object maximum 27 inches or minimum 80 inches above walking surface where mounted between posts spaced greater than 12 inches apart per CBC Figure 11B-307.3(b)



**FIGURE 11B-307.3  
POST-MOUNTED PROTRUDING OBJECTS**

- d. Where a guy support is used within either the width of a circulation path or maximum 24 inches outside a circulation path, a vertical guy brace, sidewalk guy, or similar device shall be used to prevent a hazard or overhead obstruction
- e. Protruding objects shall not reduce the required clear width of any accessible route
- f. Rounded or eased corners with minimum 1/8-inch radius for any sign or other object projecting from a post and with bottom edge less than 80 inches above walking surface

## SIGNAGE

- 27. Identify on site accessibility plan location of each exterior directional and informational sign and coordinate with signage schedule and/or details indicating the following (CBC 11B-216.3):
  - a. Sign dimensions
  - b. Character and symbol dimensions
  - c. Character, symbol, and background colors
  - d. Sign placement (e.g., post-mounted, wall-mounted)
  - e. Horizontal/vertical clearance dimensions from pedestrian ways
- 28. Specify on signage schedule and/or details visual characters on any exterior directional and informational signs complying with the following (CBC 11B-703.5):
 

**Exception:** Visual characters complying with CBC 11B-703.2 raised character requirements and accompanied by Braille per CBC 11B-703.3 need not comply with case, style, font proportion, height, or spacing provisions

  - a. Characters and background with non-glare finish

- b. Characters contrasting with background, either light characters on dark background or dark characters on light background
- c. Text shall be in a horizontal format
- d. Line spacing between baselines of separate character lines at minimum 135 percent and maximum 170 percent of character height
- e. Characters shall be uppercase or lowercase or a combination of both
- f. Characters shall be conventional in form – i.e., not italic, oblique, script, highly decorate, or of other unusual form
  
- g. Character font with uppercase letter “O” width minimum 60 percent and maximum 110 percent uppercase letter “I” height
- h. Characters with stroke thickness of uppercase letter “I” minimum 10 percent and maximum 20 percent character height
- i. Characters spaced with closest points of adjacent character minimum 10 percent and maximum 35 percent of character height
- j. Character height sized according to CBC Table 11B-703.5.5 and based on uppercase letter “I”

**TABLE 11B-703.5.5  
VISUAL CHARACTER HEIGHT**

HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 inches (1016 mm) to less than or equal to 70 inches (1778 mm)	less than 72 inches (1829 mm)	$\frac{5}{8}$ inch (15.9 mm)
	72 inches (1829 mm) and greater	$\frac{5}{8}$ inch (15.9 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1829 mm)
Greater than 70 inches (1778 mm) to less than or equal to 120 inches (3048 mm)	less than 180 inches (4572 mm)	2 inches (51 mm)
	180 inches (4572 mm) and greater	2 inches (51 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4572 mm)
greater than 120 inches (3048 mm)	less than 21 feet (6401 mm)	3 inches (76 mm)
	21 feet (6401 mm) and greater	3 inches (76 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6401 mm)

29. Specify on signage schedule and/or details pictograms on any exterior directional and informational signs complying with the following (CBC 11B-703.6):
- a. Field height of minimum 6 inches
  - b. Characters and Braille not within pictogram field
  - c. Pictograms and field with non-glare finish
  - d. Pictograms contrasting with field, either light pictogram on dark field or dark pictogram on light field
  - e. Include text descriptors complying with raised character, Braille, and mounting height provisions of CBC 11B-703

30. At each major junction where an accessible route diverges from regular circulation path, provide sign complying with item W-1B.27 and displaying International Symbol of Accessibility and indicating direction to accessible routes, entrances, and/or facilities. (CBC 11B-216.6, CBC 11B-703.7.2.1)

**W-2B. PARKING AND PASSENGER DROP-OFF AND LOADING ZONES (CBC 11B)**

**SCOPING**

- 1. Identify on site accessibility plan accessible parking spaces as required per CBC Table 11B-208.2 (**Note:** Electric vehicle charging spaces shall not be considered parking spaces) (CBC 11B-208.2):

**TABLE 11B-208.2  
PARKING SPACES**

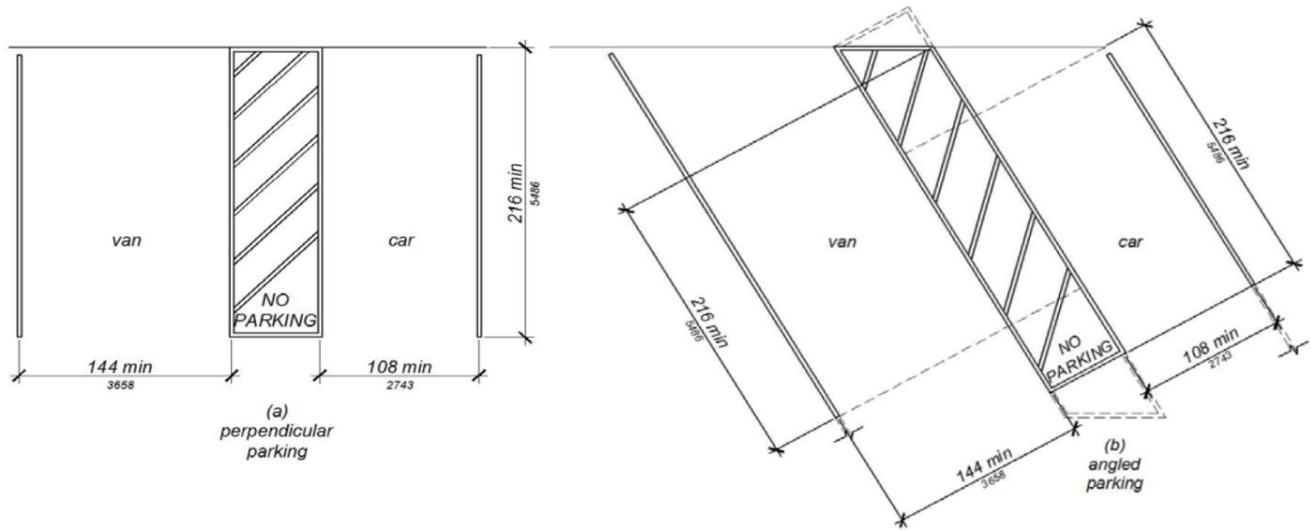
TOTAL NUMBER OF PARKING SPACES PROVIDED IN PARKING FACILITY	MINIMUM NUMBER OF REQUIRED ACCESSIBLE PARKING SPACES
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000

2. At outpatient medical facilities, provide accessible parking spaces numbering at least 10% of patient and visitor spaces provided. (CBC 11B-208.2.1)
3. At mobility rehabilitation and outpatient physical therapy facilities, provide accessible parking spaces numbering at least 20% of patient and visitor spaces provided. (CBC 11B-208.2.2)
4. Identify on site accessibility plan 1 of every 6 accessible parking spaces – or fraction thereof – as van accessible per item W-2B.11. (CBC 11B-208.2.4)
5. Identify on site accessibility plan accessible routes between parking spaces and building entrances using ■■■■■■ or equivalent symbol. (CBC 11B-208.3)
6. Accessible parking spaces serving a particular building shall be located on shortest accessible route of travel from adjacent parking to an accessible entrance. (CBC 11B-208.3.1)
7. In parking facilities not serving a particular building, accessible parking spaces shall be located on shortest accessible route to an accessible pedestrian entrance to parking facility. (CBC 11B-208.3.1)
8. Where parking serves more than one accessible entrance, disperse accessible parking spaces to serve each accessible entrance. (CBC 11B-208.3.1)
9. Accessible parking space locations shall not require persons using them to travel behind parking spaces other than their own. (CBC 11B-502.7.1)

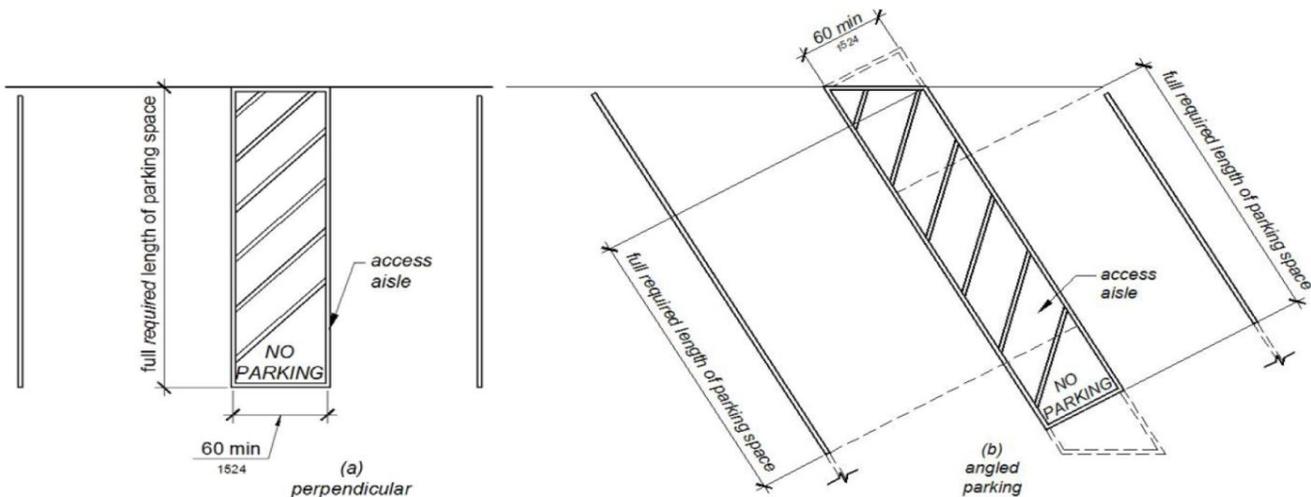
**DIMENSIONS AND CONFIGURATION**

10. Provide complete dimensions and coordinated detailing for each accessible parking space. (CBC 11B-501)
11. Dimension the following at each accessible parking space per CBC Figure 11B-502.2 and CBC Figure 11B-502.3 (CBC 11B-502.2, CBC 11B-502.3, CBC 11B-502.3.4):
  - a. Accessible standard parking spaces:
    - Minimum 108-inch-wide by minimum 216-inch-long parking stall
    - Minimum 60-inch-wide access aisle located on either side of parking stall and extending full required length of parking stall
  - b. Accessible van parking spaces
    - Minimum 144-inch-wide by minimum 216-inch-long parking stall
    - Minimum 60-inch-wide access aisle located on passenger side of parking stall and extending full required length of parking stall

**Exception:** Minimum 108-inch-wide parking stall acceptable with minimum 96-inch-wide access aisle.



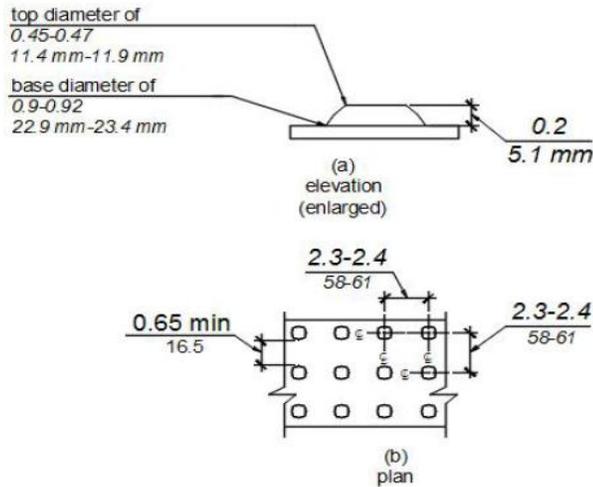
**FIGURE 11B-502.2  
VEHICLE PARKING SPACES**



**FIGURE 11B-502.3  
PARKING SPACE ACCESS AISLE**

12. Identify on site accessibility plan any obstructions overhanging accessible parking spaces, access aisles, or access routes serving them and dimension minimum 98-inch vertical clearance. (CBC 11B-502.5)
13. Specify on plans the following for surfaces of accessible parking stalls and access aisles (CBC 11B-302, CBC 11B-502.4):
  - a. Maximum 2.1% slope in all directions
  - b. No changes in level
  - c. Concrete or paved surface qualifying as firm, stable, and slip-resistant
  - d. No detectable warnings within vehicle spaces or access aisles
14. Provide bumpers or curbs at all applicable parking stalls – accessible and otherwise – where necessary to prevent vehicle encroachment into required width of adjacent accessible routes. (CBC 11B-502.7.2)
15. Where curbs separate access aisles and adjacent pedestrian ways, provide curb ramps per section W-3B with no encroachment into accessible parking stalls or access aisles. (CBC 11B-406)
16. At pedestrian ways entering or adjoining parking stalls or access aisles without curb, railing, or barrier separation, detail continuous detectable warning strip complying with the following (CBC 11B-247.1.2.5, CBC 11B-705.1.1, CBC 11B-705.1.2.5):
  - a. 36-inches (absolute) deep for entire length/width of transition
  - b. Including raised, truncated domes per CBC Figure 11B-705.1:
    - o Minimum 0.9-inch and maximum 0.92-inch base diameter
    - o Minimum 0.45-inch and maximum 0.47-inch top diameter
    - o 0.20-inch height
    - o Minimum 2.3-inch and maximum 2.4-inch center-to-center spacing and minimum 0.65-inch base-to-base spacing

**Exception:** Minimum 1.6-inch and maximum 2.4-inch center-to-center spacing acceptable for domes in radial pattern

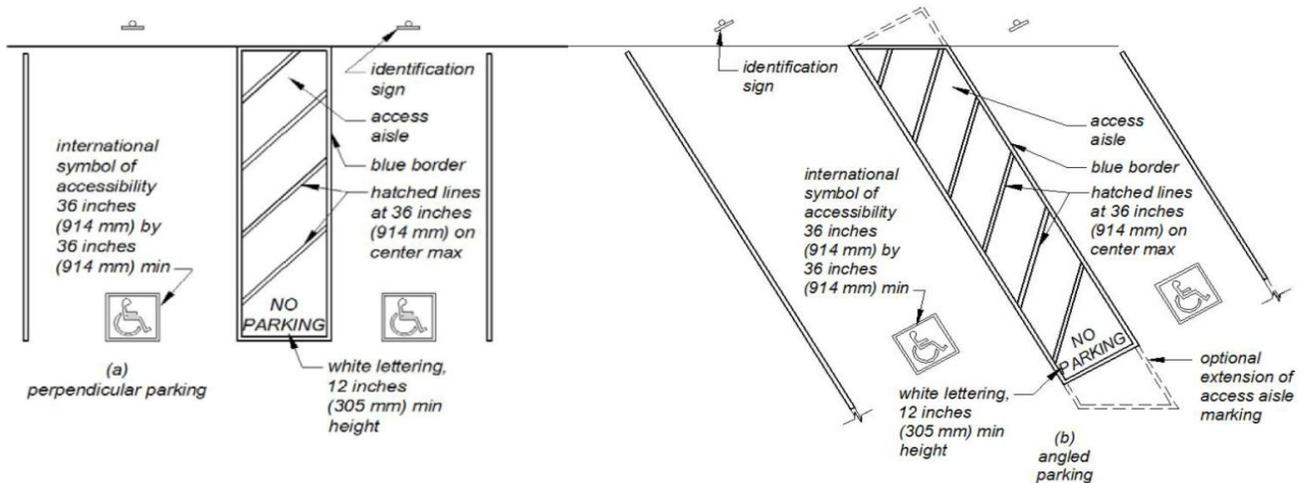


**FIGURE 11B-705.1  
SIZE AND SPACING OF TRUNCATED DOMES**

- c. Yellow color – integral to surface – conforming to FS33538 of Federal Standard 595C

**IDENTIFICATION AND SIGNAGE**

- 17. Detail surface identification complying with **one of the following** configurations at each accessible parking stall (CBC 11B-502.6.4):
  - a. Marked with International Symbol of Accessibility in white on blue background minimum 36-inches wide by minimum 36-inches high with centerline maximum 6 inches from centerline of parking stall
  - b. Parking stall outlined in blue or painted blue and marked with International Symbol of Accessibility in white or contrasting color with centerline maximum 6 inches from centerline of parking stall
- 18. Detail surface identification complying with the following at each accessible parking access aisle per CBC Figure 11B-502.3.3 (CBC 11B-502.3.3):
  - a. Blue access aisle border
  - b. Blue or white hatched lines maximum 36 inches on center within access aisle
  - c. “NO PARKING” painted on ground within access aisle in white letters minimum 12-inches high and located for visibility from the adjacent vehicular way



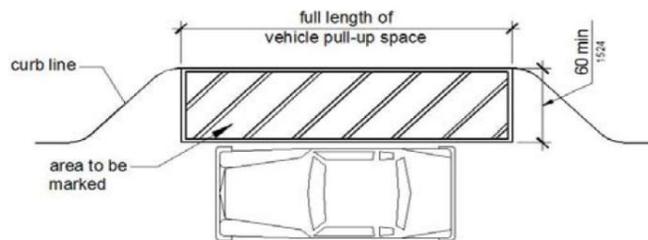
**FIGURE 11B-502.3.3  
ANGLED AND PERPENDICULAR PARKING IDENTIFICATION**

- 19. Identify on site accessibility plan location of each parking-related sign required per items W-2B.20 through W-2B.23 and coordinate with signage schedule and/or details indicating the following (CBC 11B-502.6, CBC 11B-502.8):
  - a. Sign dimensions

- b. Character and symbol dimensions
  - c. Character, symbol, and background colors
  - d. Sign placement (e.g., post-mounted, wall-mounted)
  - e. Horizontal/vertical clearance dimensions from pedestrian ways
20. Provide sign complying with the following adjacent to and visible from each accessible parking space (CBC 11B-502.6, CBC 11B-703.7.2.1):
- a. International Symbol of Accessibility symbol in white on blue background
  - b. Minimum 70 square inches
  - c. Minimum 80-inch vertical clearance above parking surface
- Exception:** Minimum 60-inch vertical clearance if not located within or adjacent to pedestrian way
- e. Reflectorized surface
21. Provide sign reading "Minimum Fine \$250" at each accessible parking space below International Symbol of Accessibility sign specified per item W-2B.20 with minimum 80-inch vertical clearance above adjacent pedestrian way. (CBC 11B-502.6.2)
22. Provide sign reading "Van Accessible" at each van-accessible parking space below International Symbol of Accessibility sign specified per item W-2B.20 with minimum 80-inch vertical clearance above adjacent pedestrian way. (CBC 11B-502.6)
23. Provide tow-away warning signs complying with the following (CBC 11B-502.8):
- a. Posted conspicuously at each parking facility entrance or adjacent to and visible from each accessible parking space
  - b. Minimum 17-inches-wide by minimum 22-inches-high
  - c. Minimum 1-inch-high lettering
  - d. Reading: *"Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or special license plates issued for persons with disabilities will be towed away at the owner's expense. Towed vehicles may be reclaimed at \_\_\_\_\_ or by telephoning \_\_\_\_\_."*
  - e. Tow-away contact information made a permanent part of sign and specified on sign detail

**PASSENGER DROP-OFF AND LOADING ZONES**

24. Provide passenger drop-off and loading zone complying with items W-2B.28 through W-2B.33 for every continuous 100 linear feet – or fraction thereof – of loading zone space provided. (CBC 11B-209.2.1)
25. At licensed medical and long-term care facilities where period of stay may exceed 24 hours, provide passenger drop-off and loading zone per items W-2B.28 through W-2B.33 with drop-off/loading zone and associated accessible route protected by canopy or roof overhang. (CBC 11B-206.4.10, CBC 11B-209.3)
26. At facilities with valet parking, provide passenger drop-off and loading zone per items W-2B.28 through W-2B.33. (CBC 11B-209.4)
27. Accessible parking space requirements per item W-2B.1 also apply to facilities with valet parking. (CBC 11B-209.4)
28. Provide complete dimensions and coordinated detailing for each passenger drop-off and loading zone. (CBC 11B-503)
29. Dimension the following at each passenger drop-off and loading zone per CBC Figure 11B-503.3 (CBC 11B-503.2, CBC 11B-503.3):
- a. Minimum 96-inch-wide vehicle pull-up space
  - b. Minimum 60-inch-wide access aisle adjacent and parallel to vehicle pull-up space
  - c. Minimum 20-foot-long vehicle pull-up space and access aisle



**FIGURE 11B-503.3**  
**PASSENGER DROP-OFF AND LOADING ZONE ACCESS AISLE**

30. Detail surface identification complying with the following at each passenger drop-off and loading zone (CBC 11B-503.3.3):
  - a. Painted access aisle border
  - b. Hatched lines at maximum 36 inches on center within access aisle border in color contrasting with access aisle surface
31. Identify overhead obstructions and dimension vertical clearances per item W-2B.12 to verify minimum 114-inch vertical clearance at vehicle pull-up space, access aisle, and at least one associated vehicular access route. (CBC 11B-503.5)
32. Specify maximum 2.1% slope in all directions at surfaces of vehicle pull-up space and access aisle. (CBC 11B-503.4)
33. Provide curb ramp per item W-2B.15 or detectable warning per item W-2B.16 between access aisle and accessible route to building entrance. (CBC 11B-406, CBC 11B-247.1.2.5)

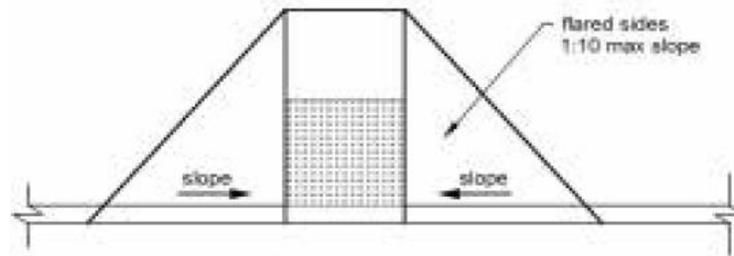
**W-3B. CURB RAMPS (CBC 11B)**

**GENERAL REQUIREMENTS**

1. Identify on site accessibility plan location of all curb ramps. (CBC 11B-406)
2. Curb ramps and flared sides shall not project into vehicular traffic lanes, parking stalls, or parking access aisles. (CBC 11B-406.5.1)
3. Specify surfaces of curb ramps and flared sides shall be stable, firm and slip-resistant. (CBC 11B-302.1, CBC 11B-405.4, CBC 11B-406.5.4)

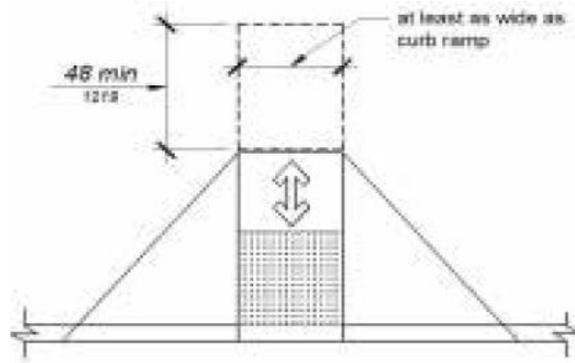
**DIMENSIONS AND SLOPES**

4. Provide complete dimensions and coordinated detailing for each curb ramp. (CBC 11B-406)
5. Detail any perpendicular curb ramps per the following (CBC 11B-406.2, CBC 11B-406.5):
  - a. Ramp run with maximum 8.3% running slope
  - b. Ramp run with maximum 2.1% cross slope
  - c. Where provided, flared sides with maximum 10% slope per CBC Figure 11B-406.2.2



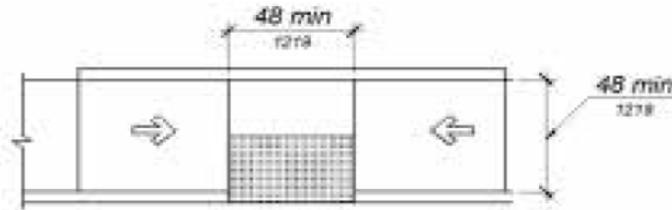
**FIGURE 11B-406.2.2  
SIDES OF CURB RAMPS**

- d. Ramp run with minimum 48-inch clear width (excluding flared sides)
- e. Level top landing minimum 48-inches deep and at least as wide as ramp run (excluding flared sides) per CBC Figure 11B-406.5.3



**FIGURE 11B-406.5.3  
LANDINGS AT THE TOP OF CURB RAMP**

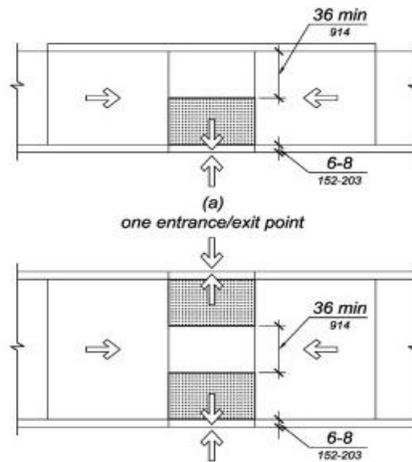
6. Detail any parallel curb ramps per the following (CBC 11B-406.3, CBC 11B-406.5):
- Ramp run(s) with maximum 8.3% running slope and in line with direction of sidewalk travel
  - Ramp run(s) with maximum 2.1% cross slope
  - Ramp run(s) with minimum 48-inch clear width
  - Minimum 48-inch by 48-inch level turning space at bottom of curb ramp per CBC Figure 11B-406.3.2



**FIGURE 11B-406.3.2  
PARALLEL CURB RAMP**

7. Detail detectable warning complying with the following at each curb ramp (CBC 11B-247.1.2.2, CBC 11B-406.5, CBC 11B-705.1):
- Extending full width of curb ramp run – excluding flared sides – less maximum 2 inches on each side
  - Extending minimum 36 inches in direction of travel
  - For perpendicular ramps, extending minimum 36 inches in direction of travel
  - For parallel ramps, comply with CBC Figure 11B-705.1.2.2.2.

**Exception:** Refer to 11B-705.1.2.2.2 for technically infeasible and existing parallel ramps.

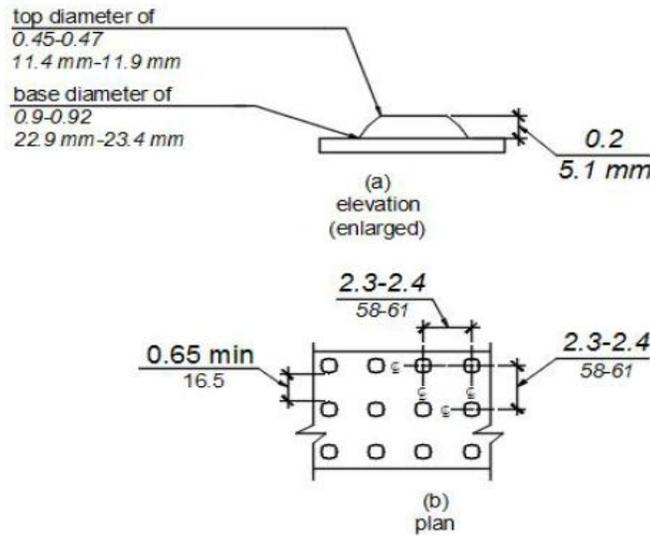


**FIGURE 11B-705.1.2.2.2 PARALLEL CURB RAMP**

- Located so the edge nearest curb is minimum 6 inches and maximum 8 inches from line at curb face

- f. Including raised, truncated domes per CBC Figure 11B-705.1:
  - o Minimum 0.9-inch and maximum 0.92-inch base diameter
  - o Minimum 0.45-inch and maximum 0.47-inch top diameter
  - o Minimum 0.18-inch and maximum 0.22-inch height
  - o Minimum 2.3-inch and maximum 2.4-inch center-to-center spacing and minimum 0.65-inch base-to-base spacing

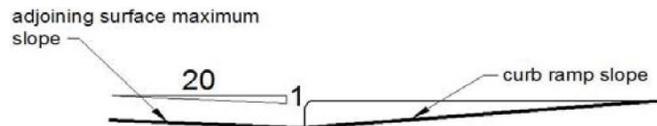
**Exception:** Minimum 1.6-inch and maximum 2.4-inch center-to-center spacing acceptable for domes in radial pattern



**FIGURE 11B-705.1  
SIZE AND SPACING OF TRUNCATED DOMES**

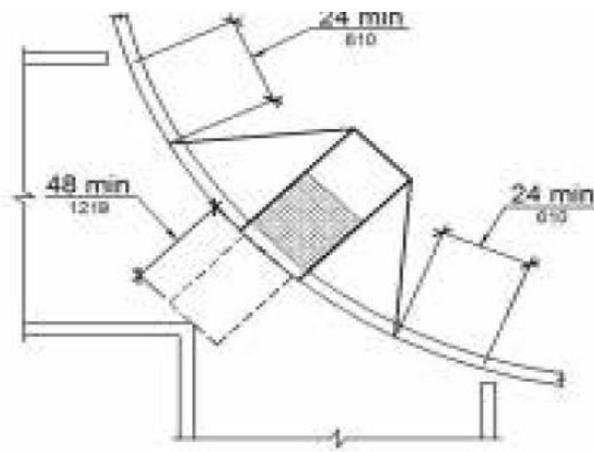
- g. Color – integral to surface – contrasting with adjacent walking surfaces, either light-on-dark or dark-on-light

- 8. Specify the following for transitions from curb ramps to adjoining walks, gutters, and streets (CBC 11B-406.5.8):
  - a. Flush and free of abrupt change
  - b. Maximum 5% counter slope of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of curb ramp per CBC Figure 11B-406.5.7



**FIGURE 11B-406.5.7  
COUNTER SLOPE OF SURFACES ADJACENT TO CURB RAMPS**

- 9. Detail and dimension any diagonal curb ramps to comply additionally with the following per CBC Figure 11B-406.5.10 (CBC 11B-506.9, CBC 11B-506.10):
  - a. Minimum 48-inch clear space at bottom of ramp within any marked crossings and outside active traffic lanes of roadway
  - b. If ramps have returned curb or other well-defined edges, such edges shall be parallel to direction of pedestrian flow
  - c. If ramps have flared sides, minimum 24-inch-long segment of straight curb required on each side of curb ramp and within any marked crossings



**FIGURE 11B-406.5.10  
DIAGONAL OR CORNER TYPE CURB RAMPS**

**W-4B. RAMPS (CBC 11B)**

**GENERAL REQUIREMENTS**

1. An accessible route with running slope exceeding 5% requires an accessible ramp. (CBC 11B-403.3)  
**Exception:** Curb ramps per section W-3B
2. Provide complete dimensions and coordinated detailing for each ramp. (CBC 11B-405)

**WIDTH**

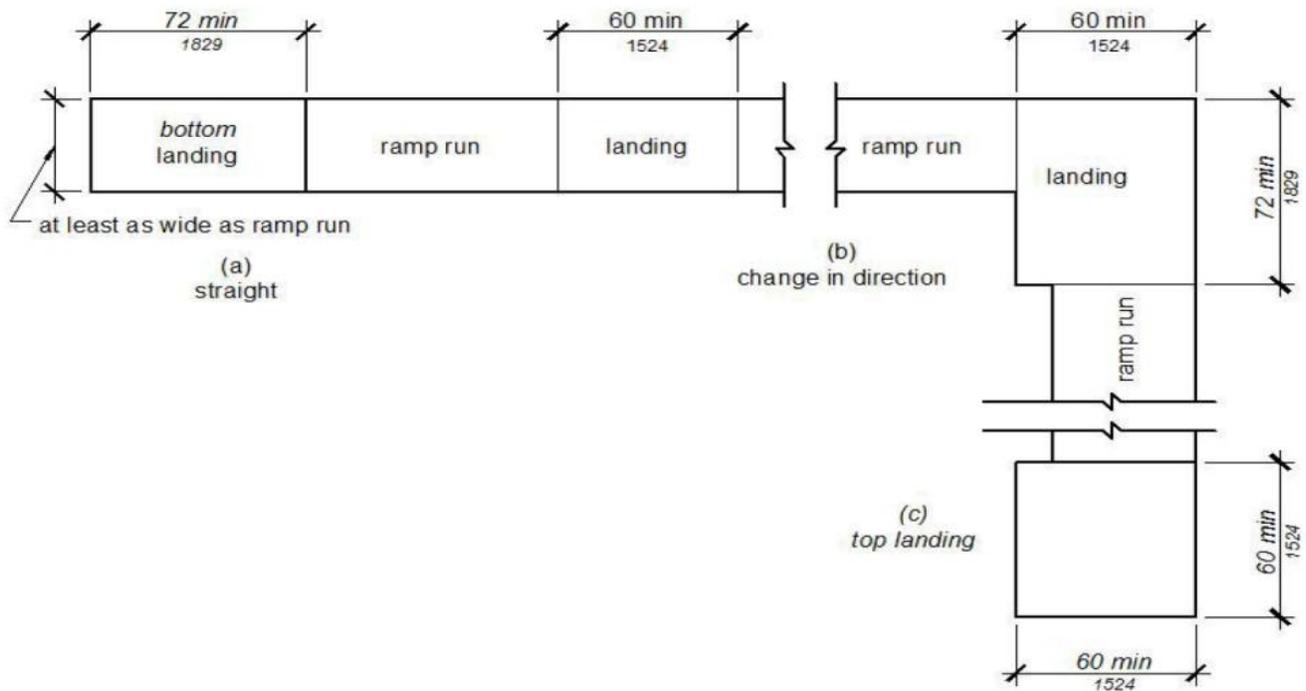
3. Dimension minimum 48-inch clear width at each ramp run. (CBC 11B-405.5)  
**Exception:** Ramp handrails may project into clear width maximum 3-1/2 inches on each side at handrail height  
**Exception:** Minimum 36-inch clear width between handrails allowed at ramps serving residential occupancies with occupant load of 50 or less  
**Exception:** Clear width of ramp runs on common-use circulation paths within employee work areas may be decreased if essential to function of work performed

**SLOPES**

4. Specify running slope for each ramp run. (CBC 11B-405.2)
5. Specify and dimension the following to verify slope(s) indicated per item W-4B.4 does not exceed 8.3% for each ramp run (CBC 11B-405.2):
  - a. Elevation at each ramp landing
  - b. Length of each ramp run between landings
6. Specify maximum 2.1% cross slope for each ramp run and landing. (CBC 11B-405.3)

**LANDING DIMENSIONS AND CONFIGURATION**

7. Dimension the following level ramp landings per CBC Figure 11B-405.7 (CBC 11B-405.6, CBC 11B-405.7):
  - a. Top landing:
    - o Minimum 60-inch length
    - o Minimum 60-inch width
  - b. Bottom landing:
    - o Minimum 72-inch length
    - o Minimum width equivalent to ramp run width
  - c. Intermediate landing(s) required at changes in direction or where elevations specified per item V-4B.5 indicate vertical rise exceeds 30 inches:
    - o Minimum 72-inch length in the direction of downward travel from the upper ramp run at any change of direction
    - o Minimum 60-inch length for other intermediate landings
    - o Minimum 60-inch width at any change of direction
    - o Minimum width equivalent to ramp run width for other intermediate landings
    - o Intermediate landings placed at intervals such that no ramp run exceeds 30-inch vertical rise



**FIGURE 11B-405.7  
RAMP LANDINGS**

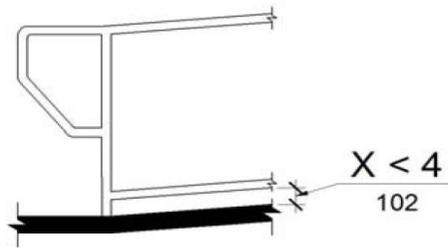
8. Dimension ramp landings providing adequate strike edge clearance per CBC 11B-404.2.4 at any doors served by the
9. Dimension ramp landings with any overlapping door/gate swings complying with the following (CBC 11B-405.7.5):
  - a. Doors/gates in any position shall not reduce the minimum landing dimension to less than 42 inches
  - b. Doors/gates in fully open position shall not reduce the required landing width by more than 3 inches

**SURFACE MATERIAL**

10. Specify ramp run and landing surfaces of stable, firm, and slip-resistant material with no changes in level, or detectable warnings, other than running slope or cross slope. (CBC 11B-302.1, CBC 11B-405.4)
11. Specify means of preventing accumulation of water on exterior ramps, landings, and approaches. (CBC 11B-405.10)

**EDGE PROTECTION**

12. At each side of ramp runs and landings not bounded by a wall, detail **one of the following** (CBC 1010.10, CBC 11B-405.9):
  - Exception:** Edge protection not required on sides of ramp landings serving adjoining ramp run or stairway.
  - Exception:** Edge protection not required on sides of ramps not required to have handrails and having flared sides with maximum 10% slope.
  - Exception:** Edge protection not required on sides of ramp landings with adjacent vertical drop-off not exceeding 1/2 inch within 10 inches horizontally.
  - a. Minimum 4-inch-high continuous guide curb
    - Exception:** Minimum 2-inch-high continuous guide curb acceptable if ramp does not serve as means of egress
  - b. Minimum 2-inch-high continuous barrier preventing the passage of 4-inch-diameter sphere per CBC Figure 11B-405.9.2



**FIGURE 11B-405.9.2  
CURB OR BARRIER EDGE PROTECTION**

13. At ramp runs or landings located more than 30 inches above adjacent floor or grade within 36 inches horizontally of open side, detail continuous guard minimum 42-inches above ramp surface with openings not allowing passage of 4-inch-diameter sphere. (CBC 1013.2, CBC 1013.3, CBC 1013.4)

**Exception:** Openings not allowing passage of 4 3/8-inch-diameter sphere allowed in portions of guard 36 inches to 42 inches high

#### **HANDRAILS AND EXTENSIONS**

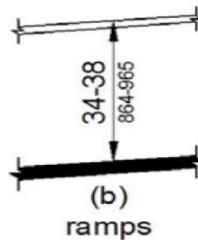
14. Provide handrail on each side of each ramp. (CBC 11B-405.8, CBC 11B-505.2)

**Exception:** Handrails not required at ramps with less than 6-inch rise or 72-inch length serving door landings.

**Exception:** Handrails not required on both sides of aisle ramps in assembly areas where handrail provided at either side or within aisle width.

**Exception:** Handrails not required at ramps immediately adjacent to fixed seating in assembly areas.

15. Dimension top of handrail gripping surface at consistent height, minimum 34 inches and maximum 38 inches above ramp surface per CBC Figure 11B-505.4(b). (CBC 11B-505.4)



**FIGURE 11B-505.4  
HANDRAIL HEIGHT**

16. Provide continuous handrails the full length of each ramp run. (CBC 11B-505.3)

**Exception:** Handrails not required to be continuous in assembly areas adjacent to seating or within aisle width.

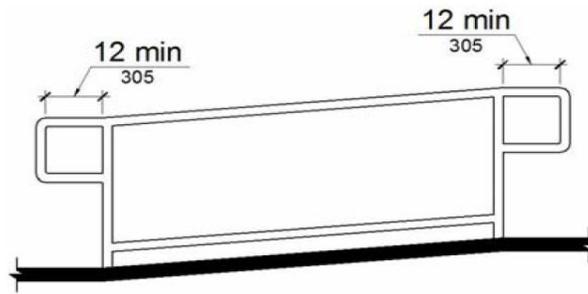
17. Provide continuous inner handrails between ramp runs at dogleg or switchback ramps. (CBC 11B-505.3)

18. Detail extensions for each handrail complying with the following (CBC 1003.3, CBC 11B-403.5, CBC 11B-505.10):

- a. Extending horizontally minimum 12 inches beyond the top and bottom of each ramp run per CBC Figure 11B-505.10.1

**Exception:** Extensions not required for continuous inner handrails at dogleg or switchback ramps.

**Exception:** Extensions not required at discontinuous handrails serving assembly seating areas.



**FIGURE 11B-505.10.1  
TOP AND BOTTOM HANDRAIL EXTENSION AT RAMPS**

- b. Extending in same direction as ramp run

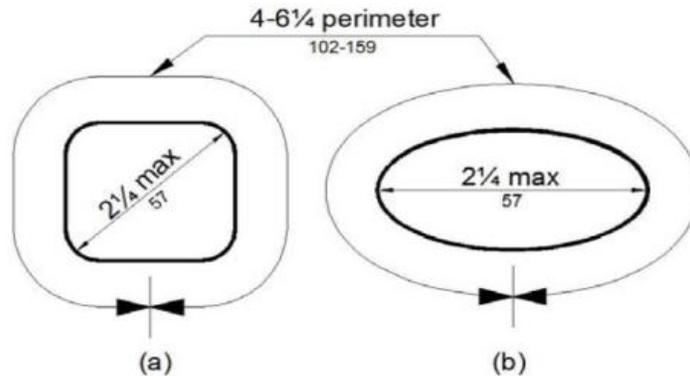
**Exception:** In alterations where extension in direction of ramp run would create a hazard, extension may be turned 90 degrees from the ramp run.

- c. Returning to a wall, guard, or landing surface, or otherwise continuous to handrail of adjacent ramp run
- d. Not protruding into required width of any adjacent route of travel

19. Where handrail extensions protrude more than 4 inches into an adjacent route of travel, detail cane-detectable rail at maximum 27 inches above landing surface. (CBC 11B-307.2)

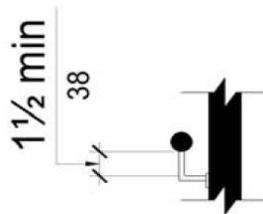
20. Detail handrail gripping surfaces complying with the following (CBC 11B-505.6, CBC 11B-505.7, CBC 11B-505.8, CBC 11B-505.9):

- a. If cross section is circular, minimum 1-1/4-inch and maximum 2-inch outside diameter per CBC Figure 11B-505.7.2(a)
- b. If cross section is non-circular, minimum 4-inch and maximum 6-1/4-inch perimeter and maximum 2-1/4-inch cross-section dimension per CBC Figure 11B-505.7.2(b)



**FIGURE 11B-505.7.2  
HANDRAIL NON-CIRCULAR CROSS SECTION**

- c. Continuous along length of handrail
- d. Unobstructed on tops or sides
- e. Not obstructed on bottoms more than 20% of handrail length
- f. Any horizontal projections minimum 1-1/2 inches below handrail gripping surface per CBC Figure 11B-505.6

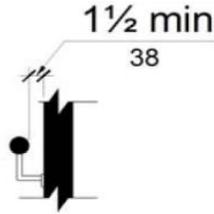


**FIGURE 11B-505.6  
HORIZONTAL PROJECTIONS BELOW GRIPPING SURFACE**

- g. Rounded edges
- h. No sharp or abrasive elements or adjacent surfaces

i. No handrail rotation within fittings

21. Detail minimum 1-1/2-inch clearance between handrail gripping surface and adjacent surfaces per CBC Figure 11B-505.5. (CBC 11B-505.5)



**FIGURE 11B-505.5  
HANDRAIL CLEARANCE**

22. For handrails located in recesses, detail recess complying with the following (CBC 11B-505.5):
- Maximum 3-inches deep
  - Extending minimum 18 inches above top of handrail

## **W-5B. ENTRANCES, EXITS, AND INTERIOR ROUTES OF TRAVEL (CBC 11B)**

### **ACCESSIBLE MEANS OF EGRESS**

1. All accessible spaces shall be served by at least as many accessible means of egress as required means of egress per CBC 1006.2 and CBC 1006.3. (CBC 1009.1, CBC 11B-207.1)

**Exception:** Alterations to existing buildings.

**Exception:** One accessible means of egress allowed from accessible mezzanine levels.

**Exception:** In assembly areas with sloped or stepped aisles, one accessible means of egress is allowed where the common path of travel is accessible and meets CBC 1028.8 provisions.

2. Each accessible means of egress shall be continuous to a public way and consist of one or more of the following (CBC 1009.2):
- Accessible routes per sections W-1B and W-5B
  - Interior exit stairways per CBC 1022 and section W-7B
  - Interior exit access stairways per CBC 1009 and section V-7B
  - Exterior exit stairways per section W-7B
  - Elevators per section W-8B
  - Platform lifts per section W-8B
  - Horizontal exits per CBC 1025
  - Ramps per section W-4B
  - Areas of refuge per sections V-7B or V-8B
  - Exterior area for assisted rescue per section W-7B

3. In buildings where a required accessible floor is four or more stories above or below a level of exit discharge, at least one accessible means of egress shall be via elevator per section W-8B. (CBC 1009.2.1)

**Exception:** In buildings equipped throughout with an automatic sprinkler system, elevator shall not be required on floors provided with a horizontal exit and located at or above the level of exit discharge

**Exception:** In buildings equipped throughout with automatic sprinkler system, elevator shall not be required on floors served by pedestrian ramp per section W-4B

### **ENTRANCES AND EXITS**

4. All entrances and exterior ground-floor exits shall be accessible. (CBC 11B-206.4.1)

**Exception:** Exterior ground-floor exits serving smoke-proof enclosures, stairwells, and exit doors serving stairs only

**Exception:** Exits in excess of those required by CBC chapter 10 and more than 24 inches above grade with directional signage posted per item W-5B.33 directing occupants to accessible exit(s)

5. Where restricted entrances are provided to a building or facility, all restricted entrances to the building or facility shall be accessible. (CBC 11B-206.4.7)

6. In existing buildings or facilities, a service entrance shall not be only accessible entrance unless it is only entrance to building or facility. (CBC 11B-206.4.8)

### **BUILDINGS REQUIRING ELEVATOR OR RAMP ACCESS**

7. In multistory buildings and facilities, provide elevator or pedestrian ramp access to each occupiable story and mezzanine. (CBC 11B-206.2.3)

**Exception:** Multistory office buildings – other than professional offices of health-care providers – and passenger vehicle service stations less than three stories high or less than 3000 square feet per story

**Exception:** Privately funded multistory buildings – other than shopping centers, shopping malls, professional offices of health-care providers, and transportation facilities – less than three stories high or less than 3000 square feet per story provided a reasonable portion of all facilities and accommodations normally sought and used by the public are accessible to and usable by persons with disabilities

8. In buildings or facilities eligible for elevator exception of item W-5B.7, floors above or below the accessible ground floor shall meet all accessibility requirements except for elevator service. (CBC 11B-206.2.3)

9. In buildings or facilities eligible for elevator exception of item W-5B.7, toilet or bathing facilities shall be provided on a level connected by an accessible route to an accessible entrance. (CBC 11B-213.1)

10. In alterations and additions to existing buildings requiring an elevator per item W-5B.7 and proposing installation of an escalator or stair where none existed previously and major structural modifications are necessary to achieve it, provide accessible route between levels served by the escalator or stair. (CBC 11B-206.2.3.1)

11. In new or existing buildings requiring an elevator per item W-5B.7 and exceeding 10,000 square feet on any floor, provide accessible vertical access via pedestrian ramp, elevator, or platform lift within 200 feet of travel of each new stair and escalator. (CBC 11B-206.2.3.2)

**Exception:** Stairs used solely for emergency egress

## INTERIOR ROUTES OF TRAVEL

12. Unless in a building or facility eligible for elevator exception of item W-5B.7, an accessible route shall connect entrances with all accessible spaces and elements within the building or facility. (CBC 11B-206.2.4)

13. Accessible routes required per item W-5B.12 shall comply with each of the following (CBC 11B-206.3):

- a. Coincide with or be located in the same area as general circulation paths
- b. Located within building interior where general circulation paths are interior
- c. Not pass through kitchens, storage rooms, restrooms, closets, or other similar spaces unless serving those spaces

14. Spaces and elements within employee work areas shall be accessible per the following (CBC 11B-203.9, CBC 11B-206.2.8, CBC 11B-403.5):

**Exception:** Common-use circulation paths within employee work areas that are an integral component of work area equipment

**Exception:** Common-use circulation paths within exterior employee work areas fully exposed to the

- a. Allow individuals with disabilities to approach, enter, and exit the employee work area
- b. Include common-use circulation paths within the employee work area

15. Where a particular story contains rooms or spaces at different floor elevations, specify floor elevations at each room and space. (CBC 11B-303)

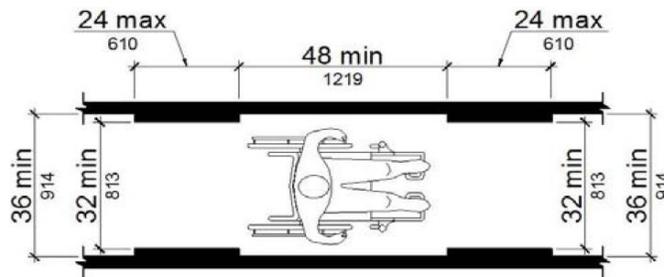
16. Floors of a particular story shall be a common level throughout unless varying levels connected by ramp(s) per section W-4B. (CBC 11B-303)

**Exception:** Changes in level up to 1/4 inch

**Exception:** Changes in level between 1/4 inch and 1/2 inch with maximum 50% slope

17. Dimension minimum 36-inch-wide clear access to all areas and within all accessible rooms and spaces. (CBC 11B-403.5.1)

**Exception:** Minimum 32-inch clear width acceptable – up to 24-inch length – where reduced width segments separated by minimum 48 inches per CBC Figure 11B-403.5.1

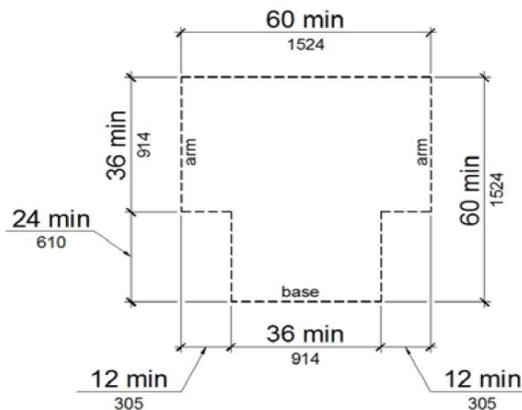


**FIGURE 11B-403.5.1  
CLEAR WIDTH OF AN ACCESSIBLE ROUTE**

**Exception:** Minimum 44-inch clear width required in corridors serving occupant load of 10 or more

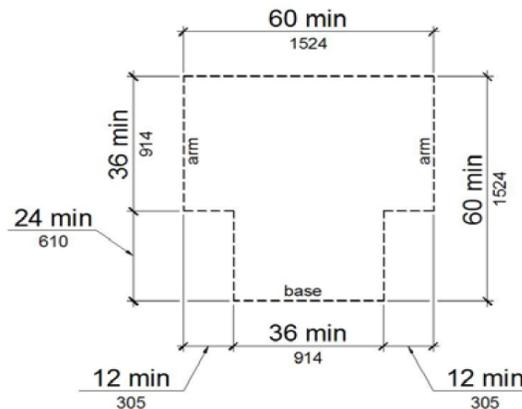
**Exception:** Minimum 44-inch clear width required in aisles serving elements on both sides

18. On accessible routes exceeding 200 feet in length, dimension wheelchair passing spaces complying with one of the following at maximum 200-foot intervals (CBC 11B-403.5.2):
- Minimum 60-inch-wide by 60-inch-long
  - T-shaped intersections per CBC Figure 11B-304.3.2



**FIGURE 11B-304.3.2  
T-SHAPED TURNING SPACE**

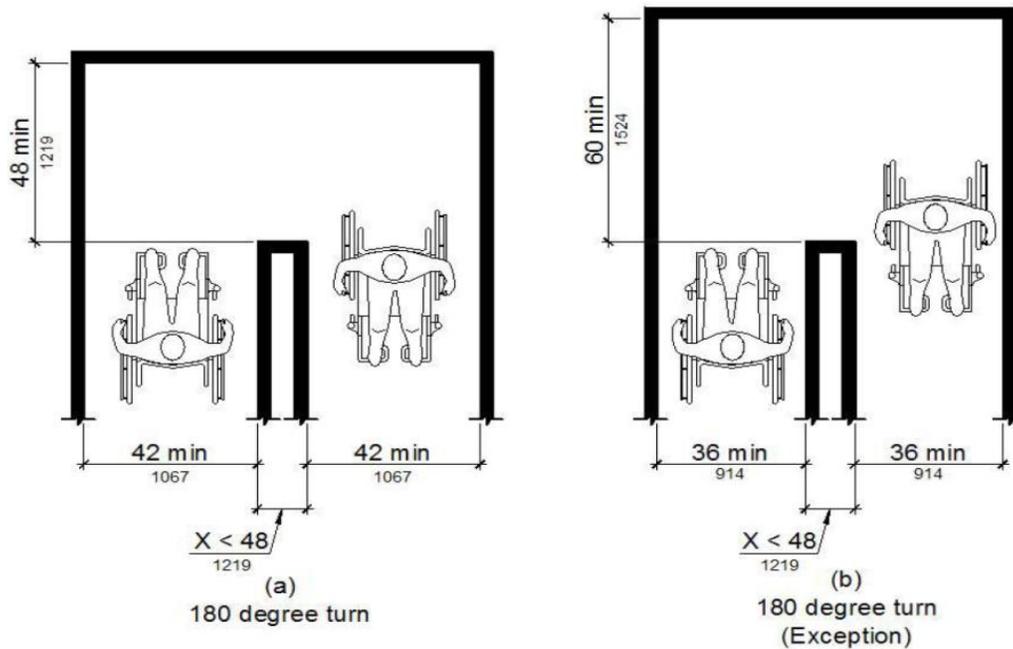
19. Dimension level wheelchair turning space complying with one of the following in all rooms and spaces (CBC 11B-304.3):
- Minimum 60-inch-diameter and may include complying knee and toe clearance
  - T-shaped space per CBC Figure 11B-304.3.2



**FIGURE 11B-304.3.2  
T-SHAPED TURNING SPACE**

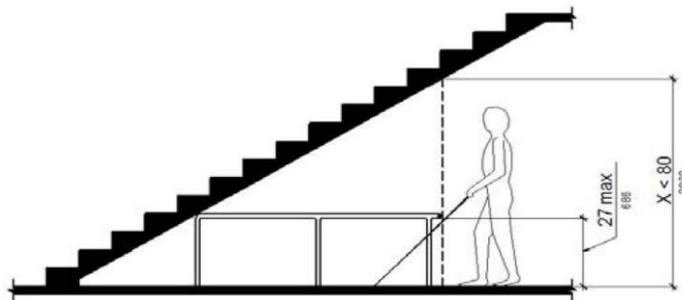
20. Dimension adequate wheelchair clearance for 180-degree turn around an element per CBC Figure 11B-403.5.2(a) or CBC Figure 11B-403.5.2(b). (CBC 11B-403.5.2)

**Exception:** Accessible routes with minimum 60-inch width



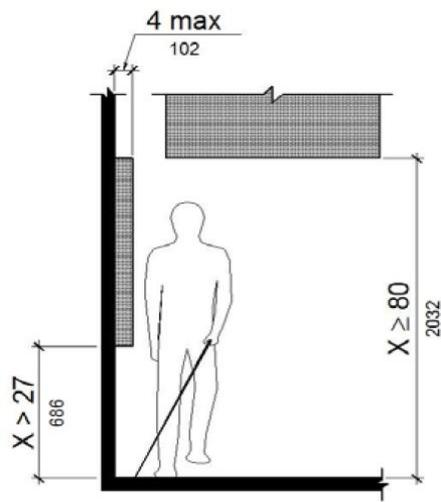
**FIGURE 11B-403.5.2  
CLEAR WIDTH AT TURN**

21. Dimension minimum 80-inch vertical clearance along all accessible routes and within all accessible spaces. (CBC 11B-307.4)
22. Provide cane-detectable barrier at maximum 27 inches above floor at areas adjoining accessible routes or spaces with less than 80 inches vertical clearance per CBC Figure 11B-307.4. (CBC 11B-307.4)



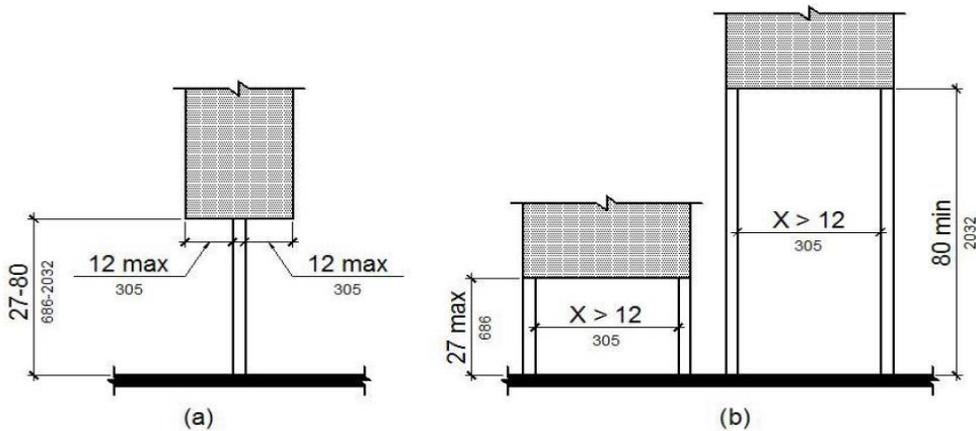
**FIGURE 11B-307.4  
VERTICAL CLEARANCE**

23. Identify on floor plans any objects projecting into circulation paths and dimension to comply with the following (CBC 11B-204.1, CBC 11B-307):
  - a. 4-inch maximum horizontal protrusion of any wall-mounted object with leading edge between 27 inches and 80 inches above walking surface per CBC Figure 11B-307.2
    - Exception:** Maximum 4-1/2 inches for handrails
    - Exception:** Door closers and door stops may be minimum 78 inches above walking surface



**FIGURE 11B-307.2  
LIMITS OF PROTRUDING OBJECTS**

- b. 12-inch maximum overhang of any post-mounted object with leading edge between 27 inches and 80 inches above walking surface per CBC Figure 11B-307.3(a)
- c. Lowest edge of sign or other object maximum 27 inches or minimum 80 inches above walking surface where mounted between posts spaced greater than 12 inches apart per CBC Figure 11B-307.3(b)

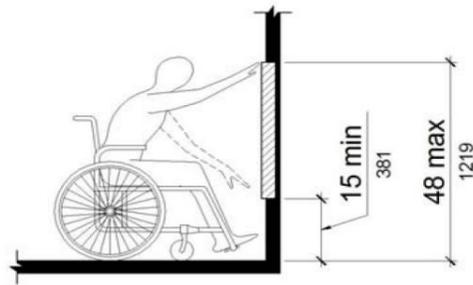


**FIGURE 11B-307.3  
POST-MOUNTED PROTRUDING OBJECTS**

- d. Protruding objects shall not reduce the required clear width of any accessible route
- e. Rounded or eased corners with minimum 1/8-inch radius for any sign or other object projecting from a post and with bottom edge less than 80 inches above walking surface

**MISCELLANEOUS REQUIREMENTS**

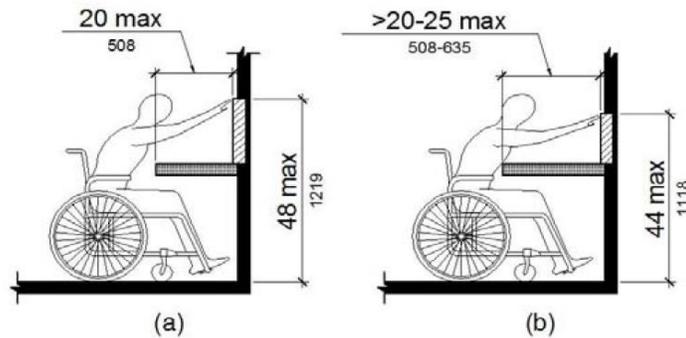
- 24. Specify reach ranges shall comply with the following as applicable (CBC 11B-308):
  - a. Unobstructed forward reach per CBC Figure 11B-308.2.1:
    - o High forward reach maximum 48 inches and low forward reach minimum 15 inches above finished floor



**FIGURE 11B-308.2.1  
UNOBSTRUCTED FORWARD REACH**

b. Obstructed high reach per CBC Figure 11B-308.2.2:

- Where reach depth maximum 20 inches, high forward reach maximum 48 inches above finished floor
- Where reach depth exceed 20 inches, high forward reach maximum 44 inches and reach depth maximum 25 inches
- Clear floor space extending beneath obstructing element for a distance not less than required reach depth over obstruction

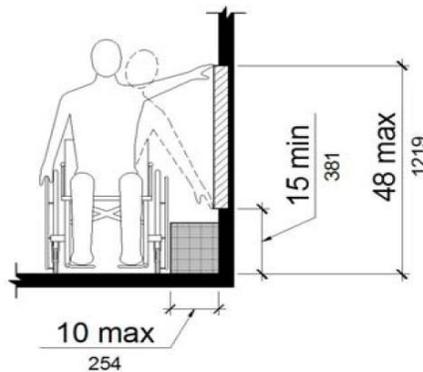


**FIGURE 11B-308.2.2  
OBSTRUCTED HIGH FORWARD REACH**

c. Where parallel approach allowed, unobstructed side reach per CBC Figure 11B-308.3.1:

**Exception:** Obstruction maximum 10-inches deep allowed between clear floor space and element reached

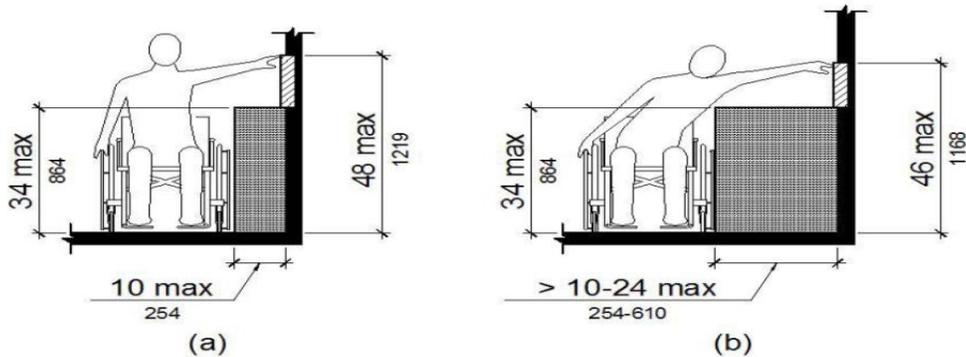
- High side reach maximum 48 inches and minimum 15 inches above finished floor



**FIGURE 11B-308.3.1  
UNOBSTRUCTED SIDE REACH**

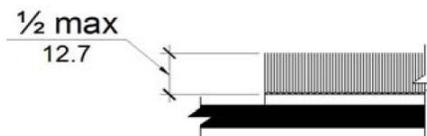
d. Where parallel approach allowed, obstructed side reach per CBC Figure 11B-308.3.2:

- Height of obstruction 34 inches maximum
- Depth of obstruction 24 inches maximum
- Where reach depth maximum 10 inches, high side reach maximum 48 inches
- Where reach depth exceeds 10 inches, high side reach maximum 46 inches and reach depth maximum 24 inches



**FIGURE 11B-308.3.2  
OBSTRUCTED HIGH SIDE REACH**

25. Specify any electrical switches or receptacle outlets shall be located within reach ranges per item W-5B.24 except low reach shall be measured to the bottom of the outlet box and high reach shall be measured to the top of the outlet box. (CBC 11B-308)
26. Specify any carpet shall comply with the following (CBC 11B-302.2):
- Maximum 1/2-inch pile height per CBC Figure 11B-302.2



**FIGURE 11B-302.2  
CARPET PILE HEIGHT**

- Securely attached
- Firm cushion, pad, or backing, or no cushion or pad
- Level loop, textured loop, level-cut pile, level-cut/uncut pile texture
- Exposed edges fastened to floor surface with trim along entire length of exposed edge
- Edge trim with maximum 1/4-inch vertical change in level or beveled change in level between 1/4 inch and 1/2 inch with maximum 50% slope

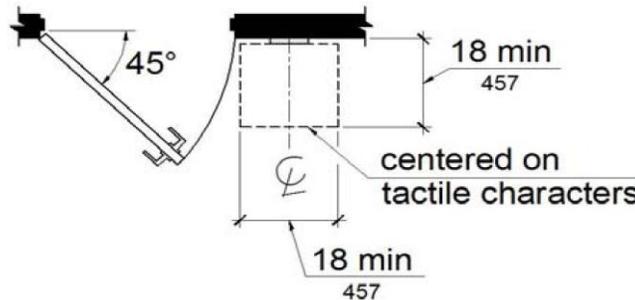
## **SIGNAGE**

27. Identify on plans location of each sign required or provided per items W-5B.28 through W-5B.32 and coordinate with signage schedule and details indicating the following (CBC 11B-703.1.1.1):
- Sign dimensions
  - Character and symbol dimensions
  - Character, symbol, and background colors
  - Braille dimensions
  - Dimension of vertical clearance above floor or ground
  - Dimension of any horizontal projection from wall
28. In existing building and facilities where not all entrances are accessible, provide signage at entrances per the following (CBC 11B-216.6):
- Signage at each accessible entrance displaying International Symbol of Accessibility  
**Exception:** Signage not required at entrances to individual rooms, suites, offices, sales or rental establishments, or other such spaces when all entrances to building or facility are accessible and persons entering building or facility will have passed through at least one entrance with complying signage  
**Exception:** Signage not required at machinery spaces frequented only by service personnel
  - Signage at each inaccessible entrance – per visual character requirements of item W-5B.33 -- indicating location of nearest accessible entrance
29. Provide sign including the following at each elevator landing, within each area of refuge, and at each exit door to an inaccessible exit (CBC 1009.10):
- International Symbol of Accessibility

b. Directions to nearest accessible exit per visual character requirements of item W-5B.33

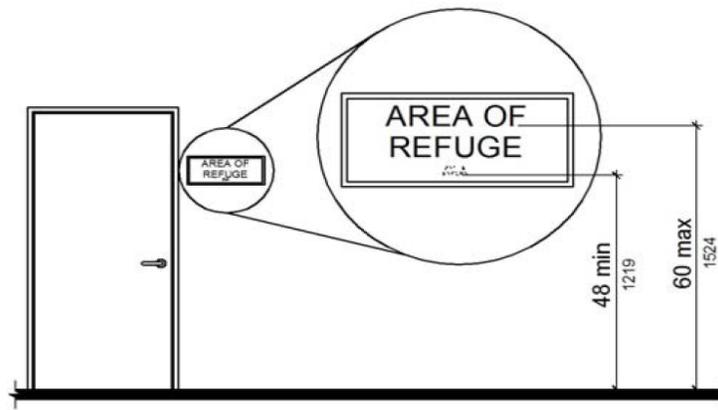
30. Provide tactile signage complying with the following at exit doors (CBC 1013.4, CBC 11B-216.4.1, CBC 11B-703.4):

- a. Each grade-level exterior exit door required to have visual exit signage shall be identified by tactile sign with word "EXIT"
- b. Each exit door leading directly to grade-level exterior exit via stairway or ramp and required to have visual exit signage shall be identified by tactile sign with the following words as applicable:
  - o "EXIT STAIR DOWN"
  - o "EXIT RAMP DOWN"
  - o "EXIT STAIR UP"
  - o "EXIT RAMP UP"
- c. Each exit door leading directly to grade-level exterior exit via interior exit stairway or exit passageway and required to have visual exit signage shall be identified by tactile sign with words "EXIT ROUTE"
- d. Each exit access door required to have visual exit signage from an interior room or area to a corridor or hallway shall be identified by tactile sign with words "EXIT ROUTE"
- e. Each exit door through a horizontal exit and required to have visual exit signage shall be identified by tactile sign with words "TO EXIT"
- f. Placed on approach side as one exits room or space
- g. Placed adjacent to door on latch side
  - Exception:** Where provided at double doors with two active leaves, signage shall be located to the right of the doors
  - Exception:** Where no wall space available on latch side of single door or right side of double doors, signage shall be located on nearest adjacent wall
- h. Located with clear floor space minimum 18 inches by 18 inches – centered on tactile characters – provided beyond arc of any door swing between closed and 45-degree-open positions per CBC Figure 11B-703.4.2



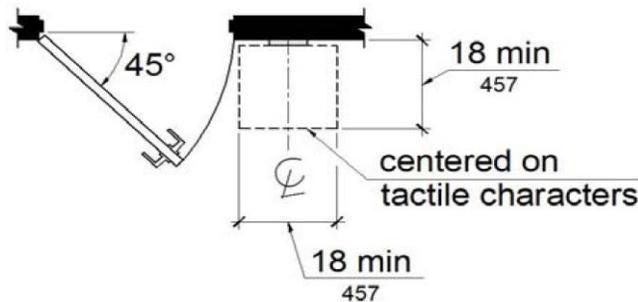
**FIGURE 11B-703.4.2  
LOCATION OF TACTILE SIGNS AT DOORS**

- i. Mounted per CBC Figure 11B-703.4.1:
  - o Minimum 48 inches from finish floor or ground surface to baseline of lowest line of Braille
  - o Maximum 60 inches from finish floor or ground surface to baseline of highest line of raised characters.



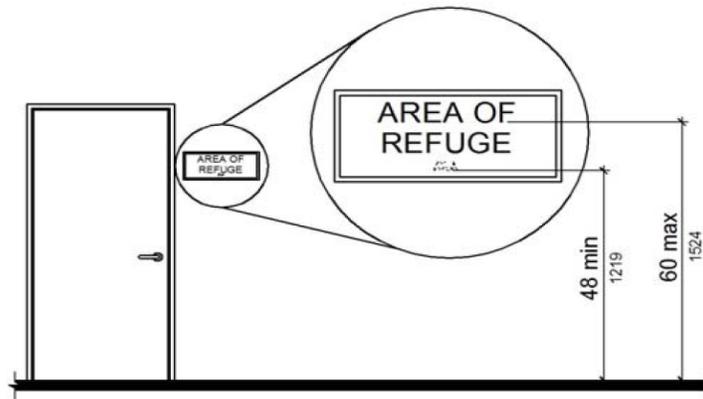
**FIGURE 11B-703.4.1  
HEIGHT OF TACTILE CHARACTERS  
ABOVE FINISH FLOOR OR GROUND**

- j. Visual characters contrasting with background, each with non-glare finish
  - k. Raised characters/symbols per item W-5B.35
  - l. Corresponding Braille per item W-5B.36 provided beneath raised characters and symbols
31. Provide tactile signage complying with the following at exit doors with delayed-egress locks (CBC 1010.1.9.7(6), CBC 11B-216.4.4, CBC 11B-703.4):
- a. Reading: "KEEP PUSHING. THIS DOOR WILL OPEN IN 15 SECONDS. ALARM WILL SOUND."
    - Exception:** In facilities housing Alzheimer's or dementia clients, a delay of 30 seconds is allowed
  - b. Placed on approach side as one exits room or space
  - c. Placed adjacent to door on latch side
    - Exception:** Where provided at double doors with two active leaves, signage shall be located to the right of the doors
    - Exception:** Where no wall space available on latch side of single door or right side of double doors, signage shall be located on nearest adjacent wall
  - d. Located with clear floor space minimum 18 inches by 18 inches – centered on tactile characters – provided beyond arc of any door swing between closed and 45-degree-open positions per CBC Figure 11B-703.4.2



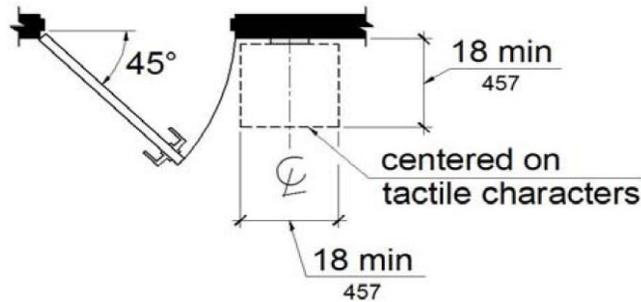
**FIGURE 11B-703.4.2  
LOCATION OF TACTILE SIGNS AT DOORS**

- e. Mounted per CBC Figure 11B-703.4.1:
  - o Minimum 48 inches from finish floor or ground surface to baseline of lowest line of Braille
  - o Maximum 60 inches from finish floor or ground surface to baseline of highest line of raised characters



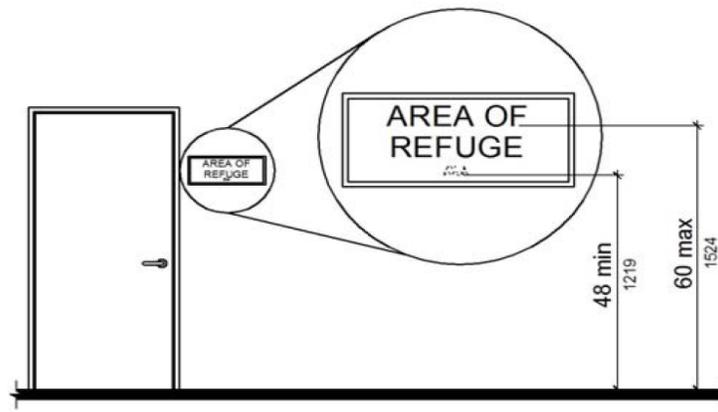
**FIGURE 11B-703.4.1  
HEIGHT OF TACTILE CHARACTERS  
ABOVE FINISH FLOOR OR GROUND**

- f. Visual characters contrasting with background, each with non-glare finish
  - g. Raised characters/symbols per item W-5B.35
  - h. Corresponding Braille per item W-5B.36 provided beneath raised characters and symbols
32. Any room identification signs shall comply with the following at each accessible room (CBC 11B-216.2):
- a. Placed on approach side as one enters room or space
  - b. Placed adjacent to door on latch side
    - Exception:** Where provided at double doors with two active leaves, signage shall be located to the right of the doors
    - Exception:** Where no wall space available on latch side of single door or right side of double doors, signage shall be located on nearest adjacent wall
  - c. Located with clear floor space minimum 18 inches by 18 inches – centered on tactile characters – provided beyond arc of any door swing between closed and 45-degree-open positions per CBC Figure 11B-703.4.2



**FIGURE 11B-703.4.2  
LOCATION OF TACTILE SIGNS AT DOORS**

- d. Mounted per CBC Figure 11B-703.4.1:
  - o Minimum 48 inches from finish floor or ground surface to baseline of lowest line of Braille
  - o Maximum 60 inches from finish floor or ground surface to baseline of highest line of raised characters



**FIGURE 11B-703.4.1  
HEIGHT OF TACTILE CHARACTERS  
ABOVE FINISH FLOOR OR GROUND**

- e. Visual characters contrasting with background, each with non-glare finish
- f. Any pictograms per item W-5B.34
- g. Raised characters/symbols per item W-5B.35
- h. Corresponding Braille per item W-5B.36 provided beneath raised characters and symbols

33. Specify on signage schedule and/or details visual characters on any directional and informational signs complying with the following (CBC 11B-703.5):

**Exception:** Visual characters complying with CBC 11B-703.2 raised character requirements and accompanied by Braille per CBC 11B-703.3 need not comply with case, style, font proportion, height, or spacing provisions.

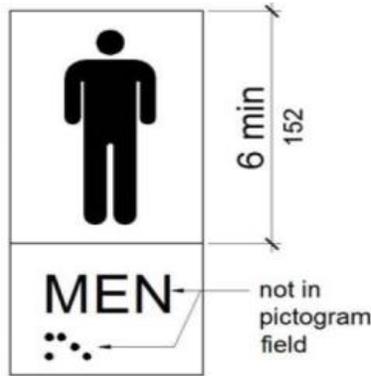
- a. Characters and background with non-glare finish
- b. Characters contrasting with background, either light characters on dark background or dark characters on light background
- c. Text shall be in a horizontal format
- d. Line spacing between baselines of separate character lines at minimum 135 percent and maximum 170 percent of character height
- e. Characters shall be uppercase or lowercase or a combination of both
- f. Characters shall be conventional in form – i.e., not italic, oblique, script, highly decorate, or of other unusual form
- g. Character font with uppercase letter “O” width minimum 60 percent and maximum 110 percent uppercase letter “I” height
- h. Characters with stroke thickness of uppercase letter “I” minimum 10 percent and maximum 20 percent character height
- i. Characters spaced with closest points of adjacent character minimum 10 percent and maximum 35 percent of character height
- j. Character height sized according to CBC Table 11B-703.5.5 and based on uppercase letter “I”

**TABLE 11B-703.5.5  
VISUAL CHARACTER HEIGHT**

HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 inches (1016 mm) to less than or equal to 70 inches (1778 mm)	less than 72 inches (1829 mm)	$\frac{5}{8}$ inch (15.9 mm)
	72 inches (1829 mm) and greater	$\frac{5}{8}$ inch (15.9 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1829 mm)
Greater than 70 inches (1778 mm) to less than or equal to 120 inches (3048 mm)	less than 180 inches (4572 mm)	2 inches (51 mm)
	180 inches (4572 mm) and greater	2 inches (51 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4572 mm)
greater than 120 inches (3048 mm)	less than 21 feet (6401 mm)	3 inches (76 mm)
	21 feet (6401 mm) and greater	3 inches (76 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6401 mm)

34. Specify on signage schedule and/or details pictograms on any exterior directional and informational signs complying with the following (CBC 11B-703.6):

- a. Field height of minimum 6 inches per CBC Figure 11B-703.6.1

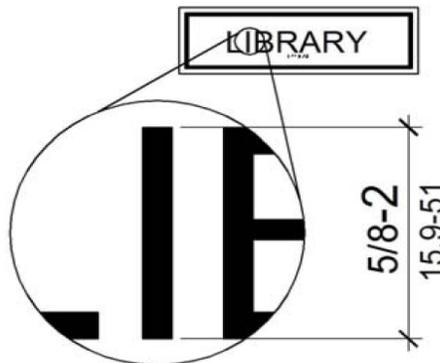


**FIGURE 11B-703.6.1  
PICTOGRAM FIELD**

- b. Characters and Braille not within pictogram field
- c. Pictograms and field with non-glare finish
- d. Pictograms contrasting with field, either light pictogram on dark field or dark pictogram on light field
- e. Include text descriptors complying with raised character, Braille, and mounting height provisions of CBC 11B-703

35. Raised characters on signage shall comply with the following (CBC 11B-703.2):

- a. Characters minimum 5/8-inch and maximum 2-inches high based on height of uppercase letter "I" per CBC Figure 11B-703.2.5



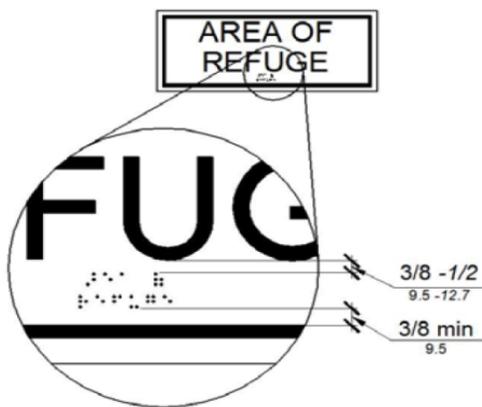
**FIGURE 11B-703.2.5  
HEIGHT OF RAISED CHARACTERS**

- b. Characters raised minimum 1/32 inch
- c. Text in horizontal format
- d. Characters sans serif and uppercase
- e. Width of uppercase letter "O" minimum 60 percent and maximum 110 percent height of uppercase letter "I"
- f. Stroke thickness of uppercase letter "I" maximum 15% height of character
- g. Spacing between individual raised characters per the following:
  - o Where characters have rectangular cross sections, minimum 1/8 inch and maximum 4 times raised character stroke width
  - o Where characters have non-rectangular cross sections, minimum 1/16 inch and maximum 4 times raised character stroke width at base of cross sections and minimum 1/8 inch and maximum 4 times raised character stroke width at top of cross sections
- h. Spacing between baselines of separate lines of raised characters of minimum 135% and maximum 170% of raised character height
- i. Characters separated minimum 3/8 inch from raised borders and decorative elements

36. Braille on signage shall comply with the following (CBC 11B-703.3):

- a. Contracted (Grade 2)

- b. Braille flush left or centered and placed minimum 3/8 inch and maximum 1/2 inch below raised characters or symbols per CBC Figure 11B-703.3.2



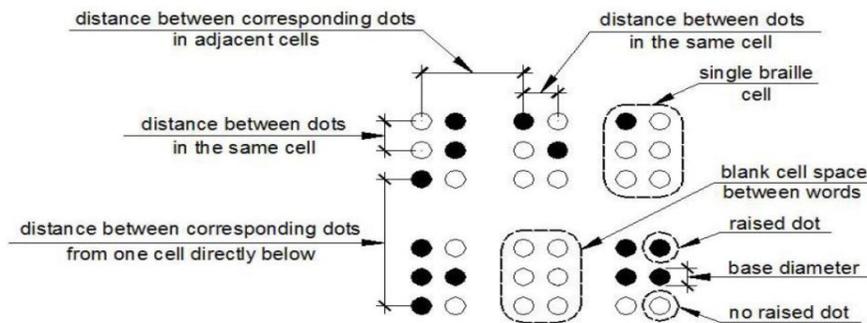
**FIGURE 11B-703.3.2  
POSITION OF BRAILLE**

- c. Braille in horizontal format
- d. When raised characters are multilined text, all Braille placed together below all raised text lines
- e. Dots domed or rounded with dimensions per CBC Table 11B-703.3.1 and CBC Figure 11B-703.3.1

**TABLE 11B-703.3.1  
BRAILLE DIMENSIONS**

MEASUREMENT RANGE	MINIMUM IN INCHES MAXIMUM IN INCHES
Dot base diameter	0.059 (1.5 mm) to 0.063 (1.6 mm)
Distance between two dots in the same cell <sup>1</sup>	0.100 (2.5 mm)
Distance between corresponding dots in adjacent cells <sup>1</sup>	0.300 (7.6 mm)
Dot height	0.025 (0.6 mm) to 0.037 (0.9 mm)
Distance between corresponding dots from one cell directly below <sup>1</sup>	0.395 (10 mm) to 0.400 (10.2 mm)

1. Measured center to center.



**FIGURE 11B-703.3.1  
BRAILLE MEASUREMENT**

## **W-6B. DOORS AND GATES (CBC 11B)**

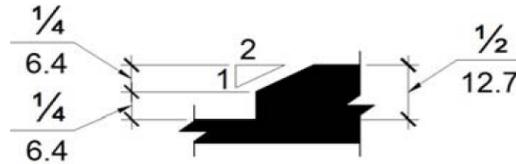
### **GENERAL REQUIREMENTS**

1. Provide door/gate schedule coordinated with floor plans and indicating the following for each door and gate (CBC 11B-206.5):
  - a. Operation type (e.g., hinged, sliding, pocket, folding, automatic, power-assisted, delayed-egress)
  - b. Nominal and clear width
  - c. Height
  - d. Opening hardware
  - e. Latch (if provided)
  - f. Closer (if provided)
2. Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route. (CBC 11B-404.2.1, CBC 11B-404.3.7)

**DIMENSIONS AND CLEARANCES**

3. Detail door thresholds complying with the following per CBC Figure 11B-303.3 (CBC 11B-303.3, CBC 11B-404.2.5):

- a. Maximum 1/2-inch change in level between landing and threshold
- b. Maximum 50% beveled slope for changes in level between 1/4 inch and 1/2 inch



**FIGURE 11B-303.3  
BEVELED CHANGE IN LEVEL**

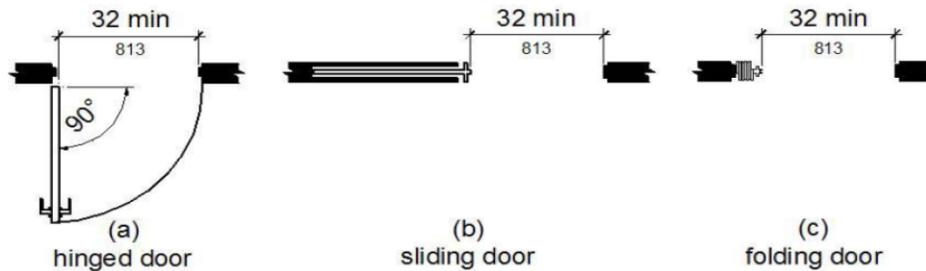
4. Provide dimensions on door and gate schedule indicating all doors and gates comply with the following (CBC 11B-404.2.2, CBC 11B-404.2.3):

- a. Minimum 32-inch clear width per CBC Figure 11B-404.2.3

**Exception:** Openings more than 24 inches deep shall provide clear opening of minimum 36 inches.

**Exception:** Doors not requiring full user passage (e.g., shallow closets) may have minimum 20-inch clear width.

- b. Where pair of doors proposed, at least one door leaf shall provide minimum 32-inch clear width with that door leaf open per CBC Figure 11B-404.2.3



**FIGURE 11B-404.2.3  
CLEAR WIDTH OF DOORWAYS**

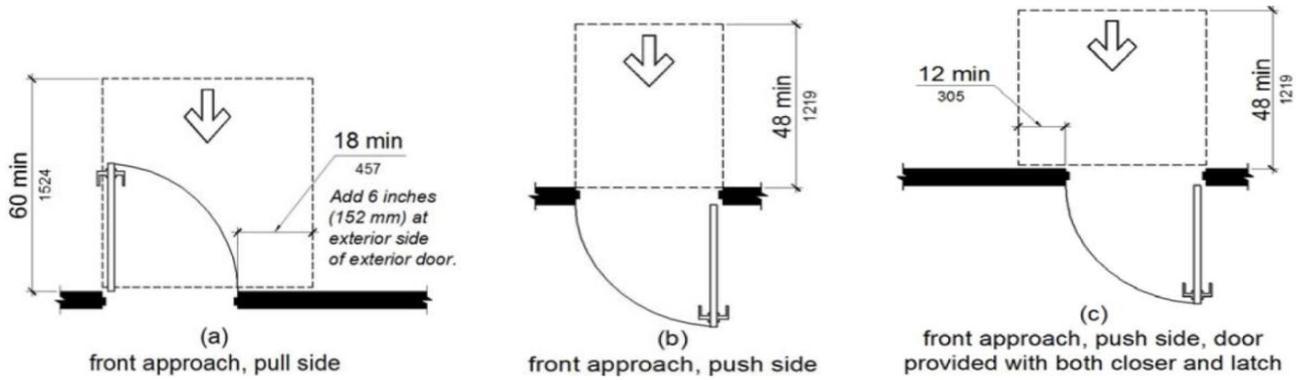
5. Dimension maneuvering clearances with no changes in level, slopes exceeding 1:48, or detectable warnings at swinging doors and gates per CBC Table 11B-404.2.4.1 and CBC Figure 11B-404.2.4.1 (CBC 11B-404.2.4.1, CBC 11B-404.3.2):

- a. Perpendicular to and on pull side of door(s)/gate(s) labeled \_\_\_\_\_
- b. Perpendicular to and on push side of door(s)/gate(s) labeled \_\_\_\_\_
- c. Parallel to and on pull side of door(s)/gate(s) labeled \_\_\_\_\_
- d. Parallel to and on push side of door(s)/gate(s) labeled \_\_\_\_\_

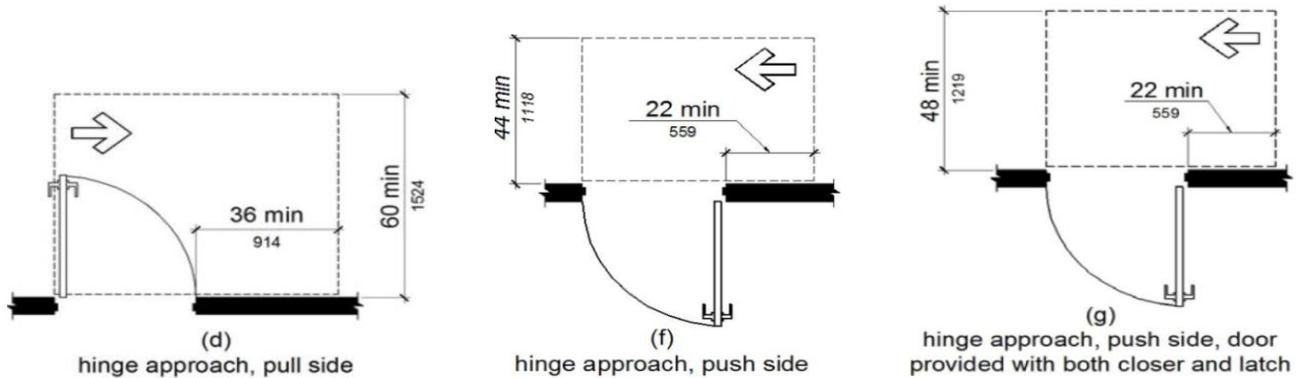
**TABLE 11B-404.2.4.1  
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES**

TYPE OF USE		MINIMUM MANEUVERING CLEARANCE	
Approach direction	Door or gate side	Perpendicular to doorway	Parallel to doorway (beyond latch side unless noted)
From front	Pull	60 inches (1524 mm)	18 inches (457 mm) <sup>5</sup>
From front	Push	48 inches (1219 mm)	0 inches (0 mm) <sup>1</sup>
From hinge side	Pull	60 inches (1524 mm)	36 inches (914 mm)
From hinge side	Push	44 inches (1118 mm) <sup>2</sup>	22 inches (559 mm) <sup>3</sup>
From latch side	Pull	60 inches (1524 mm)	24 inches (610 mm)
From latch side	Push	44 inches (1118 mm) <sup>4</sup>	24 inches (610 mm)

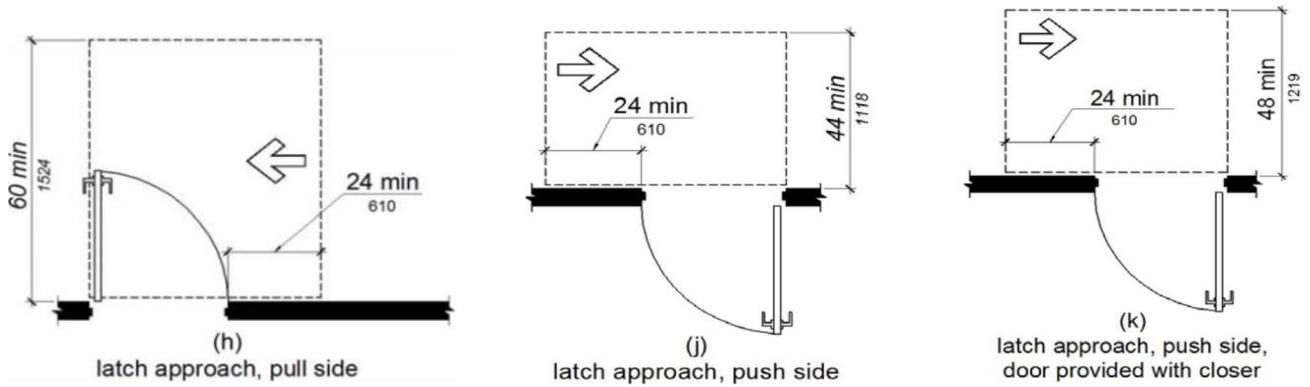
1. Add 12 inches (305 mm) if closer and latch are provided.
2. Add 4 inches (102 mm) if closer and latch are provided.
3. Beyond hinge side.
4. Add 4 inches (102 mm) if closer is provided.
5. Add 6 inches (152 mm) at exterior side of exterior doors.



**FIGURE 11B-404.2.4.1  
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES**



**FIGURE 11B-404.2.4.1  
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES**



**FIGURE 11B-404.2.4.1  
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES**

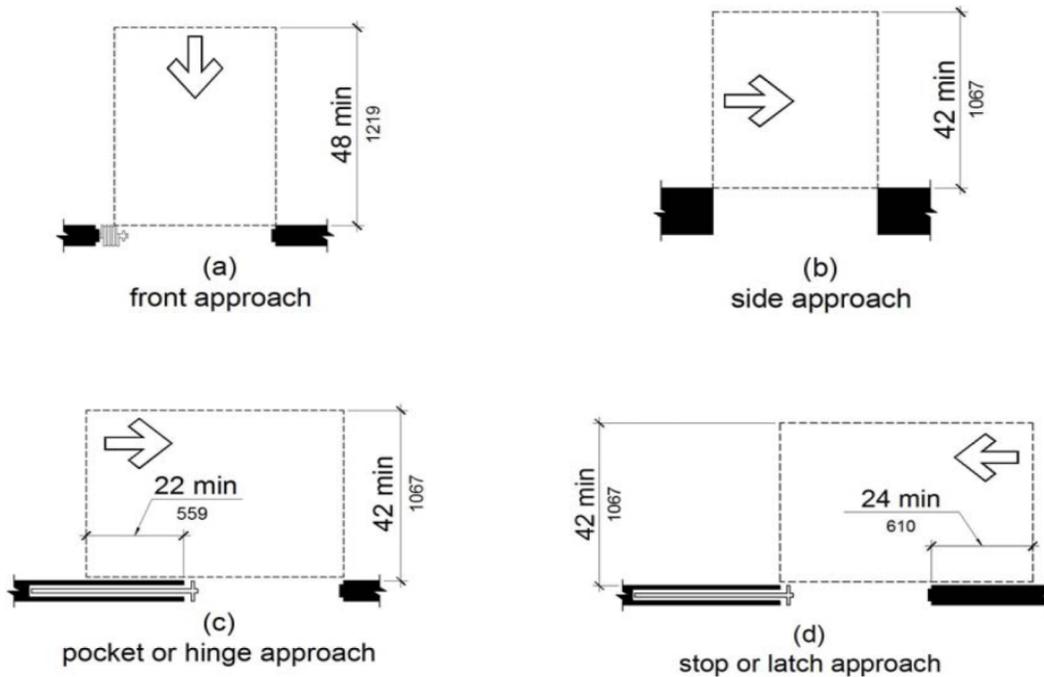
6. Dimension maneuvering clearances with no changes in level, slopes exceeding 1:48, or detectable warnings at sliding doors, folding doors, and doorways without doors/gates per CBC Table 11B-404.2.4.2 and CBC Figure 11B-404.2.4.2 (CBC 11B-404.2.4.2, CBC 11B-404.2.4.4, CBC 11B-404.3.2):

- a. Perpendicular to door(s) labeled \_\_\_\_\_
- b. Parallel to door(s) labeled \_\_\_\_\_

**TABLE 11B-404.2.4.2  
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS OR GATES, MANUAL SLIDING DOORS, AND MANUAL FOLDING DOORS**

Approach direction	MINIMUM MANEUVERING CLEARANCE	
	Perpendicular to doorway	Parallel to doorway (beyond stop/latch side unless noted)
From Front	48 inches (1219 mm)	0 inches (0 mm)
From side <sup>1</sup>	42 inches (1067 mm)	0 inches (0 mm)
From pocket/hinge side	42 inches (1067 mm)	22 inches (559 mm) <sup>2</sup>
From stop/latch side	42 inches (1067 mm)	24 inches (610 mm)

- 1. Doorway with no door only.
- 2. Beyond pocket/hinge side.

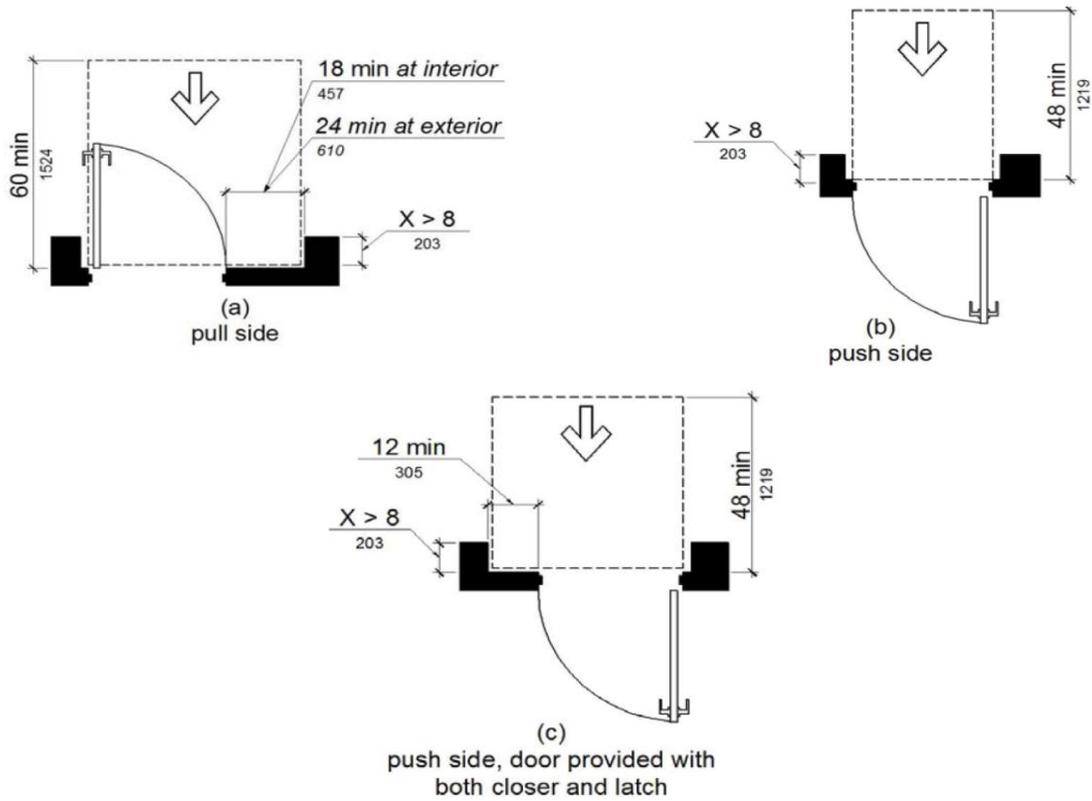


**FIGURE 11B-404.2.4.2  
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS, SLIDING DOORS, GATES, AND FOLDING DOORS**

7. Dimension maneuvering clearances with no changes in level, slopes exceeding 1:48, or detectable warnings complying

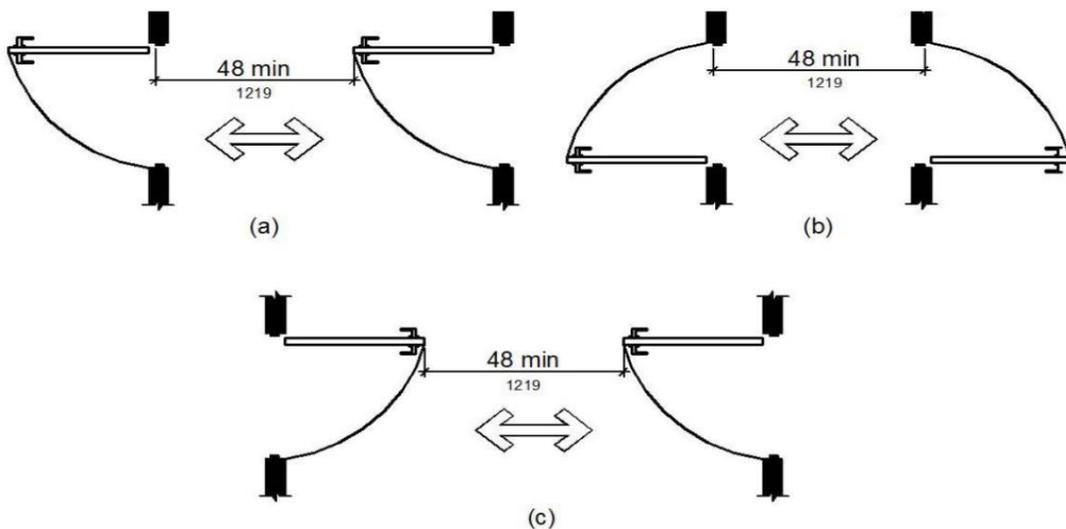
with requirements of item W-6B.5 or W-6B.6 as applicable for forward approach at the following recessed doors and gates per CBC Figure 11B-404.2.4.3. (CBC 11B-404.2.4.3)

- a. Perpendicular to and on pull side of door(s)/gate(s) labeled \_\_\_\_\_
- b. Perpendicular to and on push side of door(s)/gate(s) labeled \_\_\_\_\_
- c. Parallel to and on pull side of door(s)/gate(s) labeled \_\_\_\_\_
- d. Parallel to and on push side of door(s)/gate(s) labeled \_\_\_\_\_



**FIGURE 11B-404.2.4.3**  
**MANEUVERING CLEARANCES AT RECESSED DOORS AND GATES**

8. For consecutive doors or gates in series, dimension clearance between doors per CBC Figure 11B-404.2.6 of minimum 48 inches plus width of any doors or gates swinging into the space. (CBC 11B-404.2.6)



**FIGURE 11B-404.2.6**  
**DOORS IN SERIES AND GATES IN SERIES**

## HARDWARE

9. Specify on door/gate schedule any handles, pulls, latches, locks, and other operable parts on doors and gates complying with the following (CBC 11B-309.4, CBC 11B-404.2.7):
  - a. Minimum 34 inches and maximum 44 inches above finished floor or ground
    - Exception:** Access gates in barrier walls and fences protecting pools, spas, and hot tubs may have operable parts of latch release on self-latching devices at maximum 54 inches above finished floor or ground provided self-latching devices are not also self-locking devices and operated by means of key, electronic opener, or integral combination lock
  - b. Operable within force limits of item W-6B.12
  - c. Operable with one hand and without tight grasping, tight pinching, or twisting of the wrist
  - d. Where sliding doors in fully open position, operating hardware exposed and usable from both sides
10. Specify door and gates surfaces within 10 inches of finished floor or ground shall have smooth surface on push side extending full width of door or gate. (CBC 11B-404.2.10)
  - Exception:** Sliding doors.
  - Exception:** Doors and gates not extending within 10 inches of finished floor or ground.
  - Exception:** Tempered glass doors without stiles and having bottom rail or shoe with top leading edge tapered at minimum 60 degrees from horizontal.
11. For any doors, gates, or adjacent sidelights with glazing panels allowing viewing through the panels, dimension at least one glazed panel at maximum 43 inches above finished floor or ground. (CBC 11B-404.2.11)
  - Exception:** Glazing panels with lowest part more than 66 inches from finished floor or ground
12. Specify maximum 5 pounds of force to open any door or gate. (CBC 11B-404.2.9)
  - Exception:** Required fire doors may have minimum opening force allowed by fire jurisdiction, not to exceed 15 pounds
  - Exception:** Doors or gates with automatic or power-assist devices may be used to meet maximum force limits
  - Exception:** When one of every 8 exterior door leafs – or fraction of 8 – at a single location is a powered door per CBC 11B-404.2.9, exception 2, other exterior doors at the same location and serving the same interior space may have maximum opening force of 8.5 pounds of force with powered leaf(s) located closest to the accessible route
13. Specify doors and gates with closers or spring hinges complying with the following closing speed periods (CBC 11B-404.2.8):
  - a. Closers with minimum 5 seconds from 90-degree open position to 12-degree open position
  - b. Spring hinges with minimum 1.5 seconds from 70-degree open position to closed position

## AUTOMATIC AND POWER-ASSISTED DOORS

14. Specify any automatic doors and power-assisted doors complying with the following (CBC 11B-404.2.9, CBC 11B-404.3):
  - a. Automatic doors meet provisions of ANSI/BHMA A156.10
  - b. Power-assisted and low-energy doors meet provisions of ANSI/BHMA A156.19
  - c. Where serving an occupant load of 150 or greater, include back-up battery or back-up generator capable of powering the door a minimum 100 cycles
  - d. Not open to back check faster than 3 seconds
  - e. Where serving an occupant load of 300 or greater, provide 6-inch by 6-inch sign displaying International Symbol of Accessibility above door on both interior and exterior sides
15. Identify on plans locations of sensors, push plates, or vertical actuation bars controlling operation of automatic or power-assisted doors and verifying compliant maneuvering space and reach ranges. (CBC 11B-404.2.9)
16. Specify and detail automatic or power-assisted doors utilizing push plates or vertical actuation bars to comply with the following (CBC 11B-404.2.9):
  - a. Two push plates – upper and lower – or vertical actuation bar provided on both interior and exterior sides of door
  - b. Push plates or vertical actuation bars placed at conspicuous locations with clear space allowing forward or parallel approach with no door encroachment
  - c. Lower push plate minimum 7 inches and maximum 8 inches centerline above floor
  - d. Upper push plate minimum 30 inches and maximum 44 inches centerline above floor
  - e. Each push plate minimum 4-inches in diameter or 4-inches square
  - f. Operable portion of vertical actuation bar with bottom maximum 5 inches above floor and top minimum 35 inches above floor
  - g. Operable portion of vertical actuation bar minimum 2-inches wide

## W-7B. STAIRWAYS (CBC 11B)

### GENERAL REQUIREMENTS

1. Interior and exterior stairways shall comply with this section. (CBC 11B-210.1)

**Exception:** In alterations, stairs between levels connected by an accessible route, except striping per item W-7B.6 and handrails per items W-7B.10 through W-7B.18 shall be provided at altered stairs

**Exception:** Aisle stairs in assembly areas, except striping shall be provided per item W-7B.6

2. Provide dimensions and coordinated detailing for each stairway. (CBC 11B-504)

### WIDTH

3. Dimension minimum 48-inch clear width between handrails at exit stairways serving as accessible means of egress per CBC 1009. (CBC 1009.3, CBC 1009.7.4)

**Exception:** Stairways in buildings equipped with automatic sprinkler system

**Exception:** Stairways accessed from horizontal exit

### TREADS AND RISERS

4. Detail stair treads and risers complying with the following (CBC 11B-504.2, CBC 11B-504.3, CBC 11B-504.4):

- a. Minimum 11-inch tread depth

**Exception:** Curved stairways with winder treads are acceptable at stairs that are not part of a required means of egress

- b. Minimum 4-inch and maximum 7-inch riser height

- c. Maximum 2.1% tread slope

- d. Uniform tread width and riser height on each stairway flight

- e. Slip-resistant treads

- f. Open risers prohibited

**Exception:** On exterior stairways, maximum 1/2-inch opening allowed between base of riser and tread.

**Exception:** On exterior stairways, risers constructed of grating allowed with maximum 1/2-inch openings.

5. Detail tread nosings complying with the following per CBC Figure 11B-504.5 (CBC 11B-504.5):

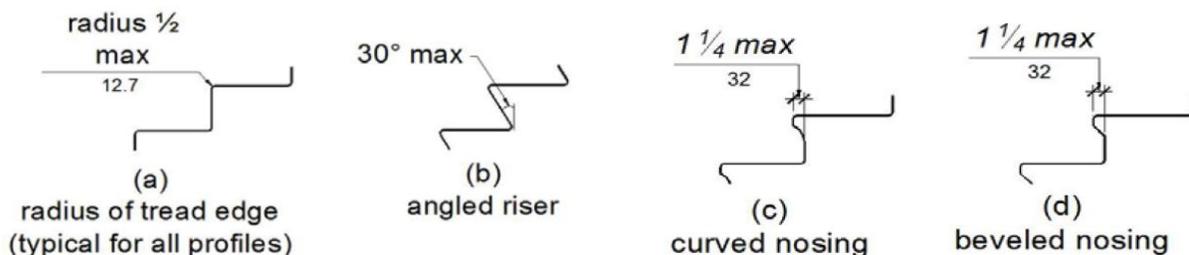
- a. Maximum 1-1/4-inch projection over tread below

**Exception:** Existing nosing projections of maximum 1-1/2 inches constructed in compliance with applicable code need not be altered retroactively

- b. Maximum 1/2-inch radius of curvature

- c. Risers vertical or sloped from underside of leading edge of tread above at maximum 30-degree angle from vertical

- d. Rounded or beveled where projecting beyond risers



**FIGURE 11B-504.5  
STAIR NOSINGS**

6. Detail visually contrasting stair striping complying with the following (CBC 11B-504.4.1):

- a. At upper approach and lowest tread of interior stairs

- b. At upper approach and all treads of exterior stairs

- c. Extending full width of approaches and treads

- d. Minimum 2-inches and maximum 4-inches wide

- e. Placed parallel to and within 1 inch of nosing edges of approaches and treads

- f. Slip-resistant

- g. Grooves shall not be used to satisfy striping requirements

## HAZARDS

7. Specify means of preventing accumulation of water on stairway treads and landings subject to wet conditions. (CBC 11B-504.7)
8. At stairway flights or landings with an adjacent vertical drop exceeding 30 inches within 36 inches horizontally, detail continuous guard minimum 42-inches high with openings not allowing passage of 4-inch-diameter sphere. (CBC 1013.2, CBC 1013.3, CBC 1013.4)
  - Exception:** Openings not allowing passage of 4 3/8-inch-diameter sphere allowed in portions of guard 36 inches to 42 inches high
  - Exception:** Triangular openings not allowing passage of 6-inch-diameter sphere allowed between riser, tread, and bottom rail
9. Where pedestrian ways adjoin areas beneath stairs with less than 80-inch vertical clearance, detail cane-detectable barrier maximum 27 inches above walking surface per CBC Figure 11B-307.4. (CBC 11B-307.4)

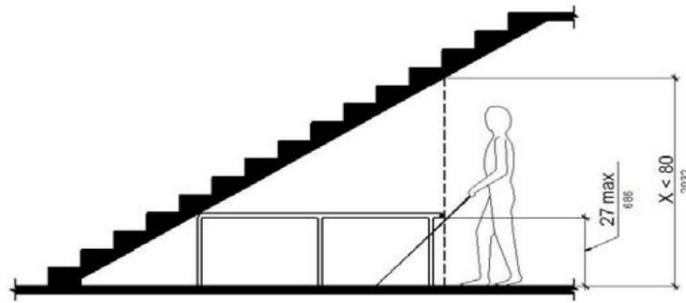


FIGURE 11B-307.4  
VERTICAL CLEARANCE

## HANDRAILS AND EXTENSIONS

10. Provide handrail on each side of each stair flight, with at least one rail perpendicular to direction of stair nosing and in direction of stair run. (CBC 11B-505.2)
11. Dimension top of handrail gripping surface at consistent height, minimum 34 inches and maximum 38 inches above stair nosings per CBC Figure 11B-505.4(a). (CBC 11B-505.4)

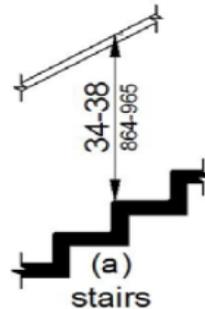
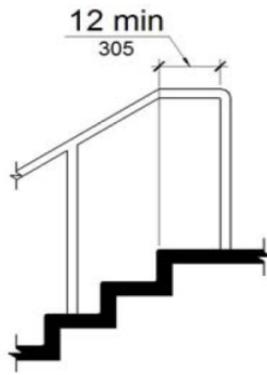


FIGURE 11B-505.4  
HANDRAIL HEIGHT

12. Provide continuous handrails the full length of each stair flight. (CBC 11B-505.3)
  - Exception:** Handrails not required to be continuous in assembly areas adjacent to seating or within aisle width.
13. Provide continuous inner handrails between stair flights at dogleg or switchback stairs. (CBC 11B-505.3)
14. Detail extensions for each handrail complying with the following (CBC 1003.3 and CBC 11B-505.10):
  - a. Extending horizontally minimum 12 inches above top stair landing beginning directly above first riser nosing per CBC Figure 11B-505.10.2.

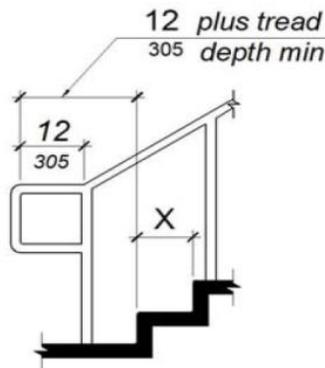


**FIGURE 11B-505.10.2  
TOP HANDRAIL EXTENSION AT STAIRS**

- b. Extending at slope of stair flight for horizontal distance equal to one tread depth beyond last riser nosing, then continuing horizontally for minimum 12 inches per CBC Figure 11B-505.10.3

**Exception:** Extensions not required for continuous inner handrails at dogleg or switchback stairs

**Exception:** Extensions not required at discontinuous handrails serving assembly seating areas



Note: X = tread depth

**FIGURE 11B-505.10.3  
BOTTOM HANDRAIL EXTENSION AT STAIRS**

- c. Extending in same direction as stair flight

**Exception:** In alterations where the extension of the handrail in the direction of the stair flight would create a hazard, the extension of the handrail may be turned 90 degrees from the direction of the stair flight

- d. Returning to a wall, guard, or landing surface, or otherwise continuous to handrail of adjacent stair flight

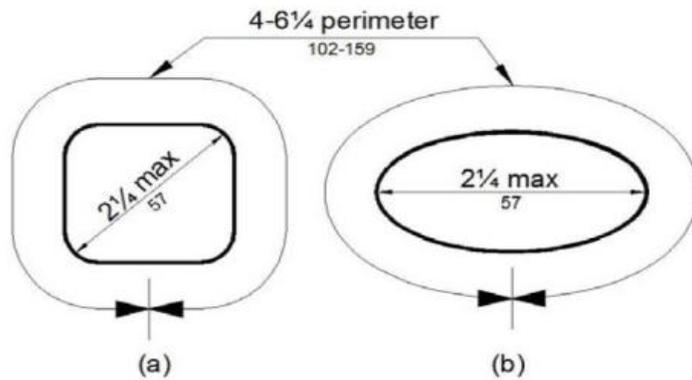
- e. Not protruding into required width of any adjacent route of travel

15. Where handrail extensions protrude more than 4-1/2 inches into an adjacent route of travel, detail cane-detectable rail at maximum 27 inches above landing surface. (CBC 11B-307.2)

16. Detail handrail gripping surfaces complying with the following (CBC 11B-505.6, CBC 11B-505.7, CBC 11B-505.8, CBC 11B-505.9):

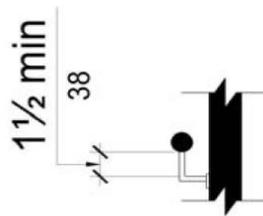
a. If cross section is circular, minimum 1-1/4-inch and maximum 2-inch outside diameter per CBC Figure 11B-505.7.2(a)

b. If cross section is non-circular, minimum 4-inch and maximum 6-1/4-inch perimeter and maximum 2-1/4-inch cross-section dimension per CBC Figure 11B-505.7.2(b)



**FIGURE 11B-505.7.2  
HANDRAIL NON-CIRCULAR CROSS SECTION**

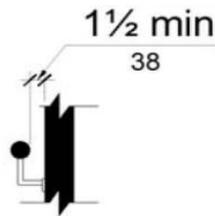
- c. Continuous along length of handrail
- d. Unobstructed on tops or sides
- e. Not obstructed on bottoms more than 20% of handrail length
- f. Any horizontal projections minimum 1-1/2 inches below handrail gripping surface per CBC Figure 11B-505.6



**FIGURE 11B-505.6  
HORIZONTAL PROJECTIONS BELOW GRIPPING SURFACE**

- g. Rounded edges
- h. No sharp or abrasive elements or adjacent surfaces
- i. No handrail rotation within fittings

17. Detail minimum 1-1/2-inch clearance between handrail gripping surface and adjacent surfaces per CBC Figure 11B-505.5. (CBC 11B-505.5)



**FIGURE 11B-505.5  
HANDRAIL CLEARANCE**

18. For handrails located in recesses, detail recess complying with the following (CBC 11B-505.5):

- a. Maximum 3-inches deep
- b. Extending minimum 18 inches above top of handrail

#### **AREAS OF REFUGE**

19. Identify on plans an area of refuge at each exit stairway and interior exit access stairway provided as an accessible means of egress per CBC 1009. (CBC 1009.3)

**Exception:** Stairways in buildings and facilities equipped with automatic sprinkler system

**Exception:** Stairways accessed from horizontal exit

**Exception:** Stairways serving open parking garages

**Exception:** Stairways in smoke-protected seating areas

**Exception:** Stairways in R-2 occupancies

20. Locate and dimension each area of refuge to comply with the following (CBC 1009.6):
- Location on accessible route from space served
  - Maximum travel distance from space served per CBC 1017
  - Accommodates one wheelchair space for every 200 occupants served, but not fewer than two wheelchair spaces

**Exception:** On floors where occupant load is less than 200, building official may allow refuge area accommodating one wheelchair space

- Each wheelchair space minimum 30-inches by 48-inches with no door encroachment
  - Access to any wheelchair space not obstructed by more than one adjoining wheelchair space
  - Wheelchair spaces do not reduce required egress width
21. Detail smoke barrier per item J.6 or horizontal exit per item I.32 between each area of refuge and remainder of story. (CBC 1009.6.4)
- Exception:** Areas of refuge located within an enclosure for exit access stairways or interior exit stairways
22. Specify two-way communication system complying with the following between each area of refuge and central control point (CBC 1009.6.5, CBC 1009.8.1):
- If central control point not constantly attended, controlled-access public telephone provided within area of refuge
  - Communication system with both audible and visible signals
  - Accessible button provided within area of refuge activating lights in both area of rescue and control point indicating rescue has been requested
  - Button provided at control point activating lights in both area of rescue and control point indicating request has been received
23. Specify instructions displayed per items W-7B.31 through W-7B.34 within each area of refuge including the following for use under emergency conditions (CBC 1009.8.2, CBC 1009.10, CBC 1009.11):
- Directions to locate other means of egress
  - Advising persons able to use stairway to do so as soon as possible, unless they are assisting others
  - Information on planned availability of assistance in use of stairs and how to summon such assistance
  - Directions for use of two-way communications system
24. Provide signage per items V-7B.31 through V-7B.34 stating "AREA OF REFUGE" at door accessing area of refuge. (CBC 1009.9)

## EXTERIOR AREAS FOR ASSISTED RESCUE

25. Identify on plans an exterior area for assisted rescue at each exterior exit stairway serving as accessible means of egress per CBC 1009. (CBC 1009.3)
26. Each exterior area for assisted rescue shall comply with the following (CBC 1009.6.3, CBC 1009.7):
- Location on accessible route from space served
  - Minimum 50% open to outside air
  - Accommodates one wheelchair space for every 200 occupants served, but not fewer than two wheelchair spaces
  - Each wheelchair space minimum 30-inches by 48-inches with no door encroachment
  - Access to any wheelchair space not obstructed by more than one adjoining wheelchair space
  - Wheelchair spaces do not reduce required egress width
27. Detail separation assemblies per the following between each exterior area for assisted rescue and interior of building served (CBC 1009.7.2):
- Minimum 1-hour-rated building exterior walls within 10 feet horizontally of landing  
**Exception:** Equivalent fire-rated construction extending out perpendicular to exterior wall minimum 4 feet at landing side
  - Fire-rated separation construction extending vertically minimum 10 feet above floor level of area for assisted rescue or roof line, whichever is lower
  - Minimum 3/4-hour-rated openings within fire-rated separation construction
28. Provide signage per items W-7B.31 through W-7B.34 stating "EXTERIOR AREA FOR ASSISTED RESCUE" at door accessing area of refuge. (CBC 1009.9)

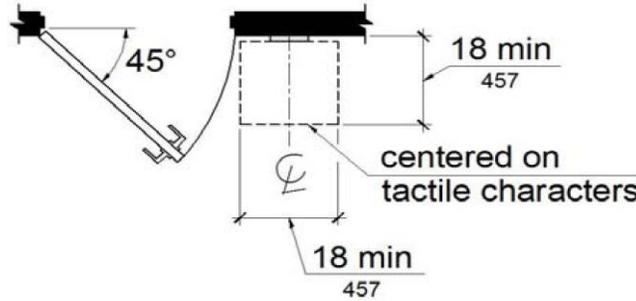
## SIGNAGE

29. Identify on plans location of each stair-related sign and coordinate with signage schedule and/or details indicating the following (CBC 11B-703.1.1.1):
- Sign dimensions

- b. Character and symbol dimensions
- c. Character, symbol, and background colors
- d. Braille dimensions
- e. Sign mounting location

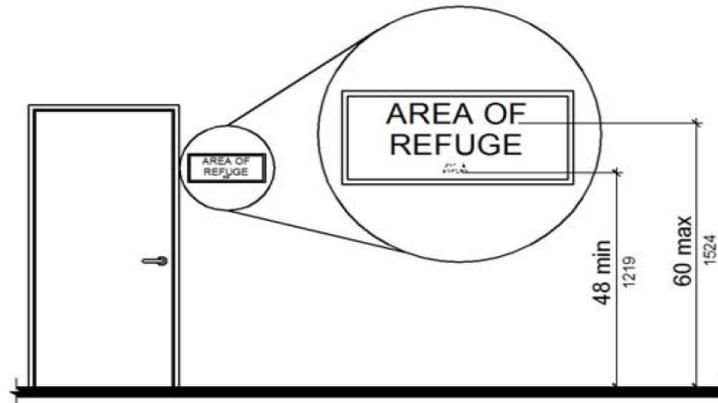
30. In all enclosed stairways in buildings two or more stories in height, provide floor identification signs complying with the following in each enclosed stairway (CBC 1023.8, CBC 11B-504.8, CBC 11B-703):

- a. Located at landing at each floor level
- b. Placed adjacent to door on latch side
- c. Located with clear floor space minimum 18 inches by 18 inches – centered on tactile characters – provided beyond arc of any door swing between closed and 45-degree-open positions per CBC Figure 11B-703.4.2



**FIGURE 11B-703.4.2  
LOCATION OF TACTILE SIGNS AT DOORS**

- d. Mounted per CBC Figure 11B-703.4.1:
  - o Minimum 48 inches from finish floor or ground surface to baseline of lowest line of Braille
  - o Maximum 60 inches from finish floor or ground surface to baseline of highest line of raised characters



**FIGURE 11B-703.4.1  
HEIGHT OF TACTILE CHARACTERS  
ABOVE FINISH FLOOR OR GROUND**

- e. At exit discharge level, includes raised five-pointed star located to left of identifying floor level with outside diameter of star at same height as raised characters
- f. Visual characters contrasting with background, each with non-glare finish
- g. Pictograms per items W-7B.32
- h. Raised characters per items V-7B.33
- i. Corresponding Braille per item V-7B.34 provided beneath pictograms and raised characters

31. Visual characters on signage shall comply with the following (CBC 11B-703.5):

**Exception:** Visual characters complying with CBC 11B-703.2 raised character requirements and accompanied by Braille per CBC 11B-703.3 need not comply with case, style, font proportion, height, or spacing provisions.

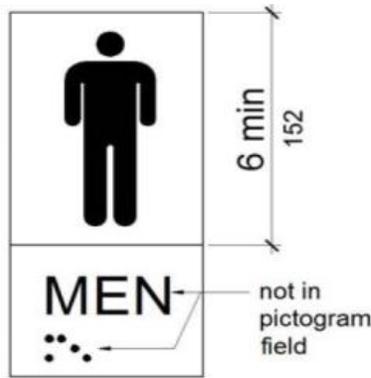
- a. Characters and background with non-glare finish
- b. Characters contrasting with background, either light characters on dark background or dark characters on light background

- c. Text shall be in a horizontal format
- d. Line spacing between baselines of separate character lines at minimum 135 percent and maximum 170 percent of character height
- e. Characters shall be uppercase or lowercase or a combination of both
- f. Characters shall be conventional in form – i.e., not italic, oblique, script, highly decorate, or of other unusual form
  
- g. Character font with uppercase letter “O” width minimum 60 percent and maximum 110 percent uppercase letter “I” height
- h. Characters with stroke thickness of uppercase letter “I” minimum 10 percent and maximum 20 percent character height
- i. Characters spaced with closest points of adjacent character minimum 10 percent and maximum 35 percent of character height
- j. Character height sized according to CBC Table 11B-703.5.5 and based on uppercase letter “I”

**TABLE 11B-703.5.5  
VISUAL CHARACTER HEIGHT**

HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 inches (1016 mm) to less than or equal to 70 inches (1778 mm)	less than 72 inches (1829 mm)	$\frac{5}{8}$ inch (15.9 mm)
	72 inches (1829 mm) and greater	$\frac{5}{8}$ inch (15.9 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1829 mm)
Greater than 70 inches (1778 mm) to less than or equal to 120 inches (3048 mm)	less than 180 inches (4572 mm)	2 inches (51 mm)
	180 inches (4572 mm) and greater	2 inches (51 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4572 mm)
greater than 120 inches (3048 mm)	less than 21 feet (6401 mm)	3 inches (76 mm)
	21 feet (6401 mm) and greater	3 inches (76 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6401 mm)

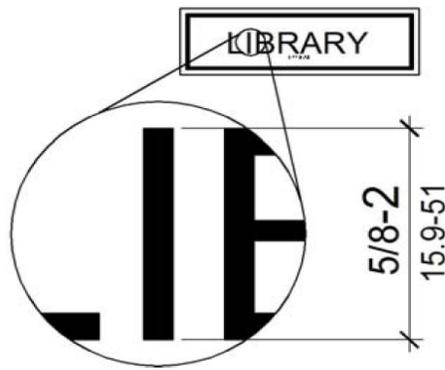
- 32. Pictograms on signage shall comply with the following (CBC 11B-703.6):
  - a. Field height of minimum 6 inches per CBC Figure 11B-703.6.1



**FIGURE 11B-703.6.1  
PICTOGRAM FIELD**

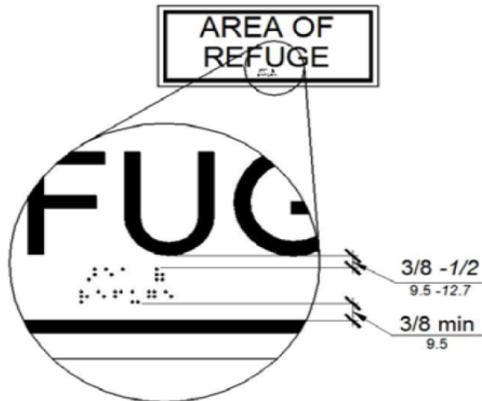
- b. Characters and Braille not within pictogram field
- c. Pictograms and field with non-glare finish
- d. Pictograms contrasting with field, either light pictogram on dark field or dark pictogram on light field
- e. Include text descriptors complying with raised character, Braille, and mounting height provisions of CBC 11B-703

- 33. Raised characters on signage shall comply with the following (CBC 11B-703.2):
  - a. Characters minimum 5/8-inch and maximum 2-inches high based on height of uppercase letter “I” per CBC Figure 11B-703.2.5



**FIGURE 11B-703.2.5  
HEIGHT OF RAISED CHARACTERS**

- b. Characters raised minimum 1/32 inch
  - c. Text in horizontal format
  - d. Characters sans serif and uppercase
  - e. Width of uppercase letter "O" minimum 60 percent and maximum 110 percent height of uppercase letter "I"
  - f. Stroke thickness of uppercase letter "I" maximum 15% height of character
  - g. Spacing between individual raised characters per the following:
    - o Where characters have rectangular cross sections, minimum 1/8 inch and maximum 4 times raised character stroke width
    - o Where characters have non-rectangular cross sections, minimum 1/16 inch and maximum 4 times raised character stroke width at base of cross sections and minimum 1/8 inch and maximum 4 times raised character stroke width at top of cross sections
  - h. Spacing between baselines of separate lines of raised characters of minimum 135% and maximum 170% of raised character height
  - i. Characters separated minimum 3/8 inch from raised borders and decorative elements
34. Braille on signage shall comply with the following (CBC 11B-703.3):
- a. Contracted (Grade 2)
  - b. Braille flush left or centered and placed minimum 3/8 inch and maximum 1/2 inch below raised characters or symbols per CBC Figure 11B-703.3.2



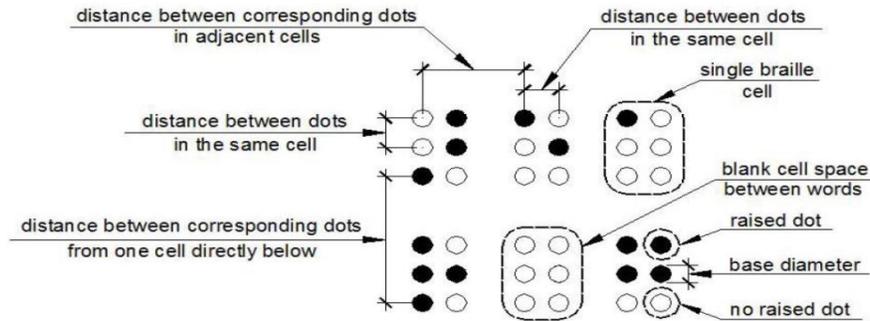
**FIGURE 11B-703.3.2  
POSITION OF BRAILLE**

- c. Braille in horizontal format
- d. When raised characters are multilined text, all Braille placed together below all raised text lines
- e. Dots domed or rounded with dimensions per CBC Table 11B-703.3.1 and CBC Figure 11B-703.3.1

**TABLE 11B-703.3.1  
BRAILLE DIMENSIONS**

MEASUREMENT RANGE	MINIMUM IN INCHES MAXIMUM IN INCHES
Dot base diameter	0.059 (1.5 mm) to 0.063 (1.6 mm)
Distance between two dots in the same cell <sup>1</sup>	0.100 (2.5 mm)
Distance between corresponding dots in adjacent cells <sup>1</sup>	0.300 (7.6 mm)
Dot height	0.025 (0.6 mm) to 0.037 (0.9 mm)
Distance between corresponding dots from one cell directly below <sup>1</sup>	0.395 (10 mm) to 0.400 (10.2 mm)

1. Measured center to center.



**FIGURE 11B-703.3.1  
BRAILLE MEASUREMENT**

**W-8B. ELEVATORS AND PLATFORM LIFTS (CBC 11B)**

**SCOPING**

1. Any elevator provided for passengers shall be located on an accessible route and comply with items W-8B.3 through W-8B.35. (CBC 11B-206.2.4 and CBC 11B-206.6)

**Exception:** In buildings or facilities meeting one of the elevator exceptions of CBC 11B-206.2.3 or allowed by item W-8B.36 to use a platform lift, a limited-use/limited-application elevator meeting CBC 11B-408 shall be allowed

2. When the only elevators provided for use by the public and employees are combination passenger and freight elevators, such elevators shall comply with items W-8B.3 through W-8B.35. (CBC 11B-407.1.1)

3. Note on plans: "All elevators shall comply with ASME A17.1, Safety Code for Elevators and Escalators." (CBC 11B-407.1)

**ELEVATOR CARS**

4. Elevator interior dimensions and door clear width shall comply with CBC Table 11B-407.4.1. (CBC 11B-407.4.1)

**TABLE 11B-407.4.1  
ELEVATOR CAR DIMENSIONS**

DOOR LOCATION	MINIMUM DIMENSIONS			
	Door clear width	Inside car, side to side	Inside car, back wall to front return	Inside car, back wall to inside face of door
Centered	42 inches (1067 mm)	80 inches (2032 mm)	51 inches (1295 mm)	54 inches (1372 mm)
Side (off-centered)	36 inches (914 mm) <sup>1</sup>	68 inches (1727 mm)	51 inches (1295 mm)	54 inches (1372 mm)
Any	36 inches (914 mm) <sup>1</sup>	54 inches (1372 mm)	80 inches (2032 mm)	80 inches (2032 mm)
Any	36 inches (914 mm) <sup>2</sup>	60 inches (1524 mm) <sup>2</sup>	60 inches (1524 mm) <sup>2</sup>	60 inches (1524 mm) <sup>2</sup>

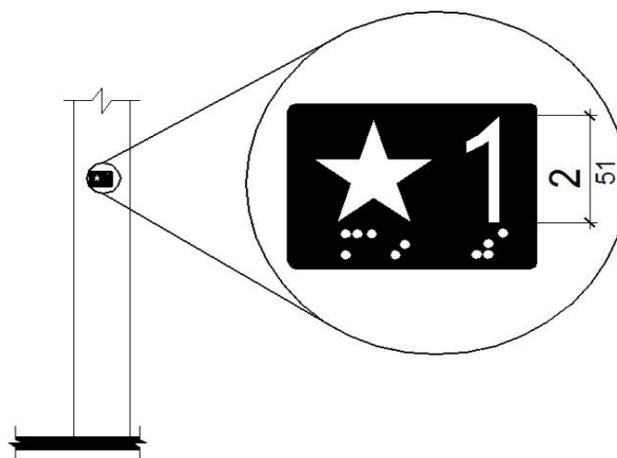
1. A tolerance of minus 5/8 inch (15.9 mm) is permitted.

2. Other car configurations that provide a turning space complying with Section 11B-304 with the door closed shall be permitted.

5. Provide support rail complying with the following on at least one wall of elevator car (CBC 11B-407.4.10):

a. Minimum 31 inches and maximum 33 inches above platform surface

- b. Ends maximum 6 inches from adjacent walls
  - c. Minimum 1-1/2-inch clearance between rail and adjacent surfaces
  - d. Smooth gripping surface
  - e. Structural adequacy of support rail, fastener, and mounting device to accommodate 250-pound point load applied at any point on the support rail, fastener, mounting device, or supporting structure
6. Specify level elevator car platform surface with no vertical changes in elevation exceeding 1/4 inch. (CBC 11B-302, CBC 11B-303, CBC 11B-407.4.2)
  7. Specify elevator car and hoistway doors complying with the following (CBC 11B-407.3):
    - a. Horizontally sliding
    - b. Opening and closing automatically
  8. Specify self-leveling feature automatically positioning elevator car platform flush with floor landings within +/- 1/2-inch tolerance under rated loading to zero loading conditions. (CBC 11B-407.4.4)
  9. Specify maximum 1-1/4-inch clearance between elevator car platform sill and hoistway landing edge. (CBC 11B-407.4.3)
  10. Specify door reopening devices complying with the following (CBC 11B-407.3.3):
    - a. Function to stop and reopen car and hoistway doors if door becomes obstructed by object or person
    - b. Capable of sensing an object or person in path of closing door at nominal 5 inches and 29 inches above finished floor
    - c. Do not require physical contact for activation, although contact may occur before door reverses
    - d. Remain effective for minimum 20 seconds
  11. Specify minimum 5-foot-candle illumination at threshold between elevator car platform and lobby landing. (CBC 11B-407.4.5)
  12. Detail floor designation signage on both jambs of elevator hoistway entrances per CBC Figure 11B-407.2.3.1 (CBC 11B-407.2.3.1, CBC 11B-703.2, CBC 11B-703.4.1):
    - a. Indicating respective floor number
    - b. Floor numbers designated by raised characters 2 inches (absolute) in height and otherwise complying with item W-8B.34
    - c. Main entry level designated by raised five-pointed star with 2-inch (absolute) outside diameter placed to left of floor-designation number and otherwise complying with item W-8B.34
    - d. Raised characters and star in **white on black background**
    - e. Corresponding Braille per item V-8B.35 beneath raised characters and symbols with "MAIN" as Braille translation for star
    - f. Mounted per the following:
      - o Minimum 48 inches from finish floor or ground surface to baseline of lowest line of Braille
      - o Maximum 60 inches from finish floor or ground surface to baseline of highest line of raised characters



**FIGURE 11B-407.2.3.1  
FLOOR DESIGNATIONS ON JAMBS  
OF ELEVATOR HOISTWAY ENTRANCE**

## CAR CONTROLS AND INDICATORS

13. Dimension elevator car controls at minimum 15 inches and maximum 48 inches above platform surface. (CBC 11B-309, CBC 11B-407.4.6)

14. Detail car control buttons complying with following (CBC 11B-407.4.6.2, CBC 11B-407.4.7):

- a. Minimum 3/4-inch-diameter control buttons raised 1/8 inch +/- 1/32 inch above surrounding surface
- b. Arranged with numbers in ascending order, reading from left to right where two or more columns of buttons provided
- c. Illuminated control buttons with square shoulders and activated by detectable mechanical motion
- d. Buttons with floor designations shall be provided with visible indicators showing a call has been registered and extinguishing when the car arrives at the designated floor
- e. Minimum 3/8-inch clear space or separation between rows of control buttons
- f. Raised characters per the following:
  - o Located immediately to left of control buttons
  - o **White on black background**
  - o Otherwise complying with item W-8B.34
- g. Raised symbols per the following:
  - o Provided for emergency stop, alarm, door open, door close, main entry floor, and phone per CBC Table 11B-407.4.7.1.3
  - o Located immediately to left of control buttons
  - o **White on black background**
  - o Otherwise complying with item W-8B.34

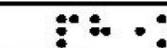
Control Button	Raised Symbol	Braille Message
Emergency Stop		 "ST"OP Three Cells
Alarm		 AL"AR"M Four Cells
Door Open		 OP"EN" Three Cells
Door Close		 CLOSE Five Cells
Main Entry Floor		 MA"IN" Three Cells
Phone		 PH"ONE" Four Cells

TABLE 11B-407.4.7.1.3  
ELEVATOR CONTROL BUTTON IDENTIFICATION

h. Corresponding Braille per item W-8B.35 beneath raised characters and symbols

15. Detail emergency control buttons complying with the following (CBC 11B-407.4.6.4):

- a. Centerlines minimum 35 inches above finished floor
- b. Emergency controls, including the emergency alarm, grouped at the bottom of the control panel

16. Specify and dimension elevator emergency two-way communication system complying with following (CBC 11B-407.4.9):

- a. Positioned minimum 15 inches and maximum 48 inches above platform surface
- b. Designated by raised symbols or characters adjacent to device, white on black background, per item W-8B.34
- c. Corresponding Braille per item W-8B.35 adjacent to device

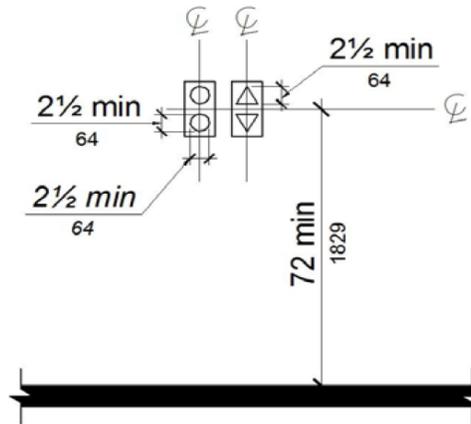
17. Specify visible and audible car position indicators within elevator car per the following (CBC 11B-407.4.8):

- a. Visible indicators located above car control panel or above car door
- b. Visible characters minimum 1/2-inch high
- c. Numerals corresponding to floors illuminating as car passes or stops at floor served by elevator
- d. Audible signal shall be automatic verbal annunciator announcing the floor at which the car is about to stop
- e. Verbal annunciator shall be 10 dB minimum above ambient, maximum 80 dB, measured at the annunciator

- f. Verbal annunciator frequency minimum 300 Hz and maximum 3000 Hz

**ELEVATOR LANDING SIGNAGE, CONTROLS, AND INDICATORS**

- 18. Provide directional signage complying with item V-8B.32 at each elevator landing indicating location of accessible means of egress and including International Symbol of Accessibility. (CBC 1007.9, CBC 1007.10)
- 19. Detail elevator call buttons complying with the following (CBC 11B-407.2.1):
  - a. Centerline positioned minimum 15 inches and maximum 48 inches above finished floor
  - b. Minimum 30-inch-by-48-inch clear floor space provided at all call controls
  - c. Minimum 3/4-inch-diameter buttons raised 1/8 inch +/- 1/32 inch above surrounding surface
  - d. Activated by a detectable mechanical motion
  - e. Button designating up direction located above button designating down direction
  - f. Include visible signals activated when each call registered and extinguished when answered
  - g. Internally illuminated with white light over entire button surface
  - h. Any keypads provided shall be standard telephone keypad arrangement
- 20. Specify visual and audible signals at each hoistway entrance complying with the following per CBC Figure 11B-407.2.2.2 (CBC 11B-407.2.2.2):
  - a. Visible signal fixtures centered minimum 72 inches above finished floor or ground
  - b. Visible signal elements minimum 2-1/2-inches high by 2-1/2-inches wide
  - c. Audible signal sounding once for up direction and twice for down direction or verbal annunciators indicating direction of car travel
  - d. Audible signal frequency of maximum 1500 Hz
  - e. Verbal annunciator frequency of minimum 300 Hz and maximum 3000 Hz
  - f. Audible signal and verbal annunciator minimum 10dB above ambient, maximum 80 dB, measured at hall call button



**FIGURE 11B-407.2.2.2  
VISIBLE HALL SIGNALS**

- 21. Specify the minimum time from notification an elevator car is answering a call until the doors of that car start to close shall meet the following provisions (CBC 11B-407.3.4):
  - a. Time (in seconds) = Distance (in feet) / 1.5, minimum 5 seconds
  - b. D = Distance from point in lobby or corridor 60 inches directly in front of farthest call button controlling that car to centerline of its hoistway door

**ELEVATOR LANDING TWO-WAY COMMUNICATION**

- 22. Specify two-way communication system at elevator landings on each accessible floor one or more stories above or below story of exit discharge. (CBC 1009.8)
  - Exception:** Elevator landing served by area of refuge with two-way communication
  - Exception:** Floor provided with exit ramp
  - Exception:** Service elevators not designated as part of accessible means of egress or serving as part of accessible route
  - Exception:** Freight elevators
  - Exception:** Private residence elevators

- 23. Specify two-way communication system complying with the following between required location and central control point

approved by fire department (CBC 1009.8.1):

- a. If central control point not constantly attended, system shall have timed automatic telephone dial-out capability to an approved monitoring location
- b. Communication system shall include both audible and visible signals

24. Specify posting of the following information adjacent to two-way communication system (CBC 1009.8.2):

- a. Directions for use of system
- b. Instructions for summoning assistance via system
- c. Written identification of location

## AREAS OF REFUGE

25. Identify on plans an area of refuge at each elevator provided **as an accessible means of egress** per CBC 1009. (CBC 1009.4)

**Exception:** Elevators in buildings and facilities equipped with automatic sprinkler system

**Exception:** Elevators without protected shaft enclosures per CBC 713

**Exception:** Elevators in smoke-protected seating areas

**Exception:** Elevators in open parking garages

**Exception:** Elevators accessed from horizontal exits

26. Locate and dimension each area of refuge to comply with the following (CBC 1009.6):

- a. Location on accessible route from space served
- b. Maximum travel distance from space served per CBC 1016
- c. Accommodates one wheelchair space for every 200 occupants served, but not fewer than two wheelchair spaces

**Exception:** On floors where occupant load is less than 200, building official may allow refuge area accommodating one wheelchair space

- d. Each wheelchair space minimum 30-inches by 48-inches with no door encroachment
- e. Access to any wheelchair space not obstructed by more than one adjoining wheelchair space
- f. Wheelchair spaces do not reduce required egress width

27. Detail smoke barrier per CBC 709 or horizontal exit per CBC 1026 between each area of refuge and remainder of story. (CBC 1009.6.4)

28. Specify two-way communication system provided per items W-8B.23 and W-8B.24 within each area of refuge and also including the following (CBC 1009.6.5, CBC 1009.8.1.1):

- a. Accessible button provided within area of refuge activating lights in both area of rescue and control point indicating rescue requested
- b. Button provided at control point activating lights in both area of rescue and control point indicating request received

29. Provide sign per the following at door accessing area of refuge (CBC 1009.9):

- a. Visual characters contrasting with background, each with non-glare finish, indicating "AREA OF REFUGE"
- b. Including International Symbol of Accessibility
- c. Illuminated where exit sign illumination required
- d. Pictograms per item W-8B.33
- e. Raised characters per item W-8B.34
- e. Corresponding Braille per item W-8B.35

30. Specify instructions displayed within area of refuge per the following for use under emergency conditions (CBC 1009.10, CBC 1009.11):

- a. Visual characters per item W-8B.32
- b. Including directions to locate other accessible means of egress
- c. Including directions for persons able to use exit stairway to do so as soon as possible, unless assisting others
- d. Include information on planned availability of assistance in supervised operation of elevators and how to summon such assistance
- e. Include directions for use of two-way communications system

## SIGNAGE

31. Visual characters on signage shall comply with the following (CBC 11B-703.5):

**Exception:** Visual characters complying with CBC 11B-703.2 raised character requirements and accompanied by Braille per CBC 11B-703.3 need not comply with case, style, font proportion, height, or

- a. Characters and background with non-glare finish
- b. Characters contrasting with background, either light characters on dark background or dark characters on light

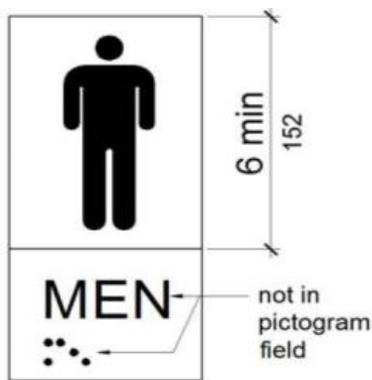
- background
- c. Text shall be in a horizontal format
- d. Line spacing between baselines of separate character lines at minimum 135 percent and maximum 170 percent of character height
- e. Characters shall be uppercase or lowercase or a combination of both
- f. Characters shall be conventional in form – i.e., not italic, oblique, script, highly decorate, or of other unusual form
- g. Character font with uppercase letter “O” width minimum 60 percent and maximum 110 percent uppercase letter “I” height
- h. Characters with stroke thickness of uppercase letter “I” minimum 10 percent and maximum 20 percent character height
- i. Characters spaced with closest points of adjacent character minimum 10 percent and maximum 35 percent of character height
- j. Character height sized according to CBC Table 11B-703.5.5 and based on uppercase letter “I”

**TABLE 11B-703.5.5  
VISUAL CHARACTER HEIGHT**

HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 inches (1016 mm) to less than or equal to 70 inches (1778 mm)	less than 72 inches (1829 mm)	$\frac{5}{8}$ inch (15.9 mm)
	72 inches (1829 mm) and greater	$\frac{5}{8}$ inch (15.9 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1829 mm)
Greater than 70 inches (1778 mm) to less than or equal to 120 inches (3048 mm)	less than 180 inches (4572 mm)	2 inches (51 mm)
	180 inches (4572 mm) and greater	2 inches (51 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4572 mm)
greater than 120 inches (3048 mm)	less than 21 feet (6401 mm)	3 inches (76 mm)
	21 feet (6401 mm) and greater	3 inches (76 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6401 mm)

32. Pictograms on signage shall comply with the following (CBC 11B-703.6):

- a. Field height of minimum 6 inches per CBC Figure 11B-703.6.1

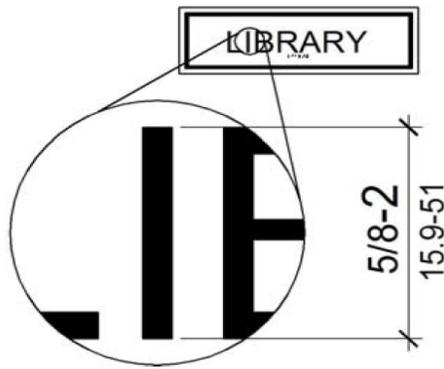


**FIGURE 11B-703.6.1  
PICTOGRAM FIELD**

- b. Characters and Braille not within pictogram field
- c. Pictograms and field with non-glare finish
- d. Pictograms contrasting with field, either light pictogram on dark field or dark pictogram on light field
- e. Include text descriptors complying with raised character, Braille, and mounting height provisions of CBC 11B-703

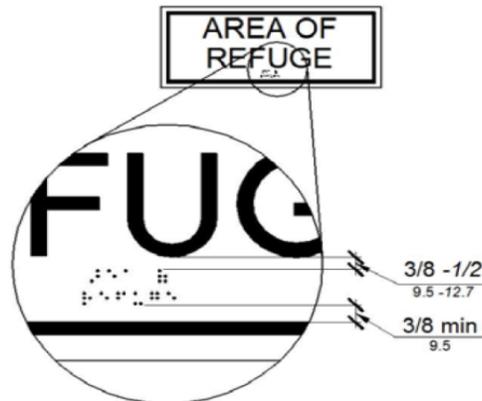
33. Raised characters on signage shall comply with the following (CBC 11B-703.2):

- a. Characters minimum 5/8-inch and maximum 2-inches high based on height of uppercase letter “I” per CBC Figure 11B-703.2.5



**FIGURE 11B-703.2.5  
HEIGHT OF RAISED CHARACTERS**

- b. Characters raised minimum 1/32 inch
  - c. Text in horizontal format
  - d. Characters sans serif and uppercase
  - e. Width of uppercase letter "O" minimum 60 percent and maximum 110 percent height of uppercase letter "I"
  - f. Stroke thickness of uppercase letter "I" maximum 15% height of character
  - g. Spacing between individual raised characters per the following:
    - o Where characters have rectangular cross sections, minimum 1/8 inch and maximum 4 times raised character stroke width
    - o Where characters have non-rectangular cross sections, minimum 1/16 inch and maximum 4 times raised character stroke width at base of cross sections and minimum 1/8 inch and maximum 4 times raised character stroke width at top of cross sections
  - h. Spacing between baselines of separate lines of raised characters of minimum 135% and maximum 170% of raised character height
  - i. Characters separated minimum 3/8 inch from raised borders and decorative elements
34. Braille on signage shall comply with the following (CBC 11B-703.3):
- a. Contracted (Grade 2)
  - b. Braille flush left or centered and placed minimum 3/8 inch and maximum 1/2 inch below raised characters or symbols per CBC Figure 11B-703.3.2



**FIGURE 11B-703.3.2  
POSITION OF BRAILLE**

- c. Braille in horizontal format
- d. When raised characters are multilined text, all Braille placed together below all raised text lines
- e. Dots domed or rounded with dimensions per CBC Table 11B-703.3.1 and CBC Figure 11B-703.3.1

TABLE 11B-703.3.1  
BRAILLE DIMENSIONS

MEASUREMENT RANGE	MINIMUM IN INCHES MAXIMUM IN INCHES
Dot base diameter	0.059 (1.5 mm) to 0.063 (1.6 mm)
Distance between two dots in the same cell <sup>1</sup>	0.100 (2.5 mm)
Distance between corresponding dots in adjacent cells <sup>1</sup>	0.300 (7.6 mm)
Dot height	0.025 (0.6 mm) to 0.037 (0.9 mm)
Distance between corresponding dots from one cell directly below <sup>1</sup>	0.395 (10 mm) to 0.400 (10.2 mm)

1. Measured center to center.

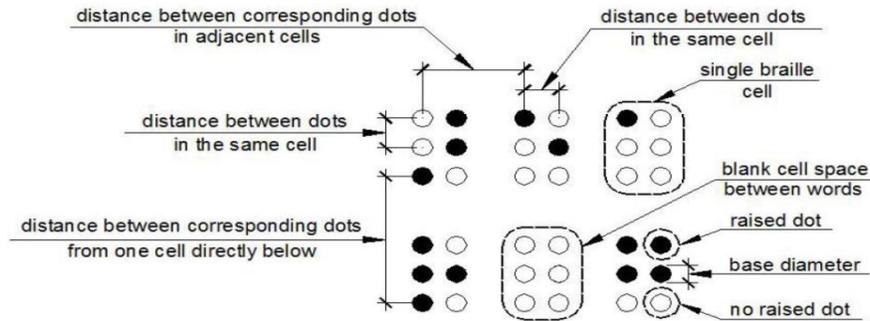


FIGURE 11B-703.3.1  
BRAILLE MEASUREMENT

## PLATFORM LIFTS

35. Platform lifts may be provided as part of an accessible route serving the following (CBC 11B-206.7):
  - a. Performance areas and speakers' platforms
  - b. Wheelchair spaces in assembly areas
  - c. Incidental spaces not used by the public and occupied by maximum five persons
  - d. Judicial and courtroom spaces
  - e. Where existing site constraints make use of a ramp or elevator infeasible
  - f. Levels within transient lodging guest rooms or residential dwelling units
  - g. Play area components or soft contained play structures
  - h. Team or player seating in sports facilities
  - i. Recreational boating facilities and fishing piers/platforms
36. Platform lifts may be used as an accessible means of egress per item W-8B.36 only when provided with standby power or self-rechargeable battery power adequate to operate all lift functions for minimum five upward and downward trips. (CBC 1007.5)
37. If platform lift provided, it shall be designed and constructed to facilitate unassisted entry, operation, and exit from lift. (CBC 11B-410.1)
38. Note on plans: "All platform lifts shall comply with ASME A18.1, Safety Standard for Platform Lifts and Stairway Chair Lifts." (CBC 11B-410.1)
39. Platform lifts on an accessible means of egress shall not be installed in a fully enclosed hoistway. (CBC 1007.5.1)
40. Specify maximum 1-1/4-inch clearance between platform sill and landing edge. (CBC 11B-410.4)
41. Dimension platform lift controls at minimum 15 inches and maximum 48 inches above platform surface. (CBC 11B-309, CBC 11B-410.5)
42. Dimension minimum 60-inch-by-60-inch clear and level landings at all entry/exit doors to platform lifts. (CBC 11B-410.7)
43. Specify and dimension platform lift doors or gates complying with the following (CBC 11B-410.6):
  - a. Power-operated
 

**Exception:** Platform lifts serving maximum two landings and having doors or gates on opposite side may have self-closing manual doors or gates
  - b. Doors or gates remain open for minimum 20 seconds

- c. End doors or gates with minimum 32-inch clear width
- d. Side doors or gates with minimum 42-inch clear width

44. Provide signage complying with the following at each platform lift (CBC 11B-410.8):
- a. Located within platform enclosure and at each landing
  - b. Reading: "No Freight"
  - c. Lettering complying with item W-8B.32
  - d. Including International Symbol of Accessibility

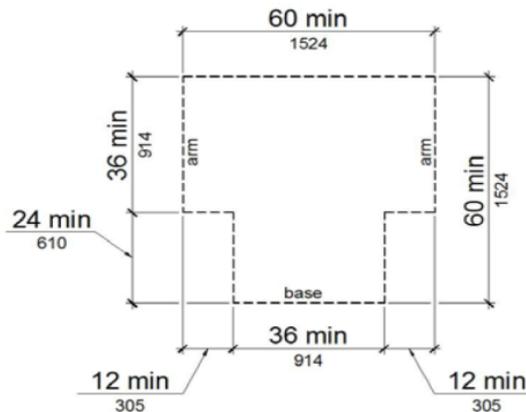
**W-9B. TOILET FACILITIES (CBC 11B)**

**SCOPING**

1. Provide accessible toilet facilities per the following (CBC 11B-213.2):
  - Exception:** Where multiple single-accommodation toilet rooms are clustered at a single location, 50 percent – but not fewer than one – of each toilet room type shall be accessible
  - a. Each separate-gender facility provided shall be accessible
  - b. Each all-gender facility provided shall be accessible
2. All toilet facilities required to be accessible per item W-9B.1 shall be located on an accessible route. (CBC 11B-206.2.4)
3. Provide complete dimensions and coordinated detailing for each accessible toilet facility. (CBC 11B-603)

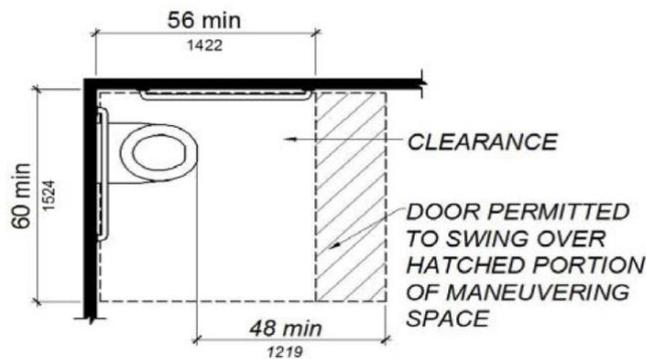
**SINGLE-ACCOMMODATION TOILET FACILITIES**

4. Dimension clear wheelchair turning space within toilet facility complying with the following (CBC 11B-304.3, CBC 11B-305.4, CBC 11B-306.2, CBC 11B-603.2):
  - a. Minimum 60-inch-diameter or equivalent T-shaped space per CBC Figure 11B-304.3.2



**FIGURE 11B-304.3.2  
T-SHAPED TURNING SPACE**

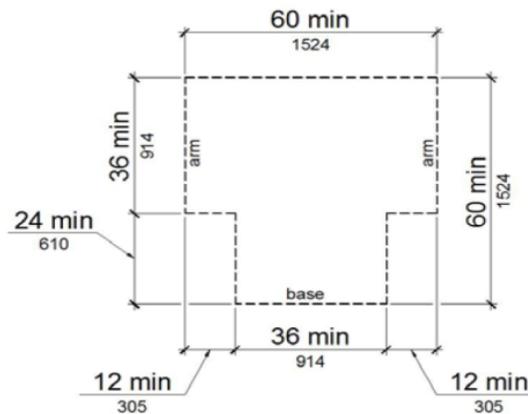
- b. May include maximum 19-inch deep knee and toe clearance per items W-9B.31 and W-9B.32 beneath lavatory
  - c. Maximum 12-inch door encroachment
    - Exception:** Door encroachment allowed into turning space if minimum 30-inch-wide by 48-inch-deep clear floor space provided in room beyond arc of door swing
5. Dimension clearances at toilet per CBC Figure 11B-604.3.1:
    - a. Minimum 60-inch-wide by 56-inch-deep clear floor space
    - b. Minimum 60-inch-wide by 48-inch-deep maneuvering space in front of toilet
    - c. Door encroachment allowed only into maneuvering space
      - Exception:** Door encroachment allowed into clear floor space if minimum 30-inch-wide by 48-inch-deep clear floor space provided in room beyond arc of door swing



**FIGURE 11B-604.3.1  
SIZE OF CLEARANCE AT WATER CLOSETS**

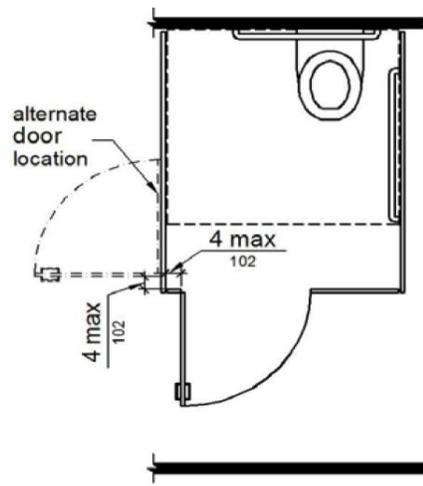
**MULTI-ACCOMMODATION TOILET FACILITIES**

- 6. Dimension clear wheelchair turning space within toilet facility -- and outside toilet compartment(s) -- complying with the following (CBC 11B-603.2):
  - a. Minimum 60-inch-diameter or equivalent T-shaped space per CBC Figure 11B-304.3.2



**FIGURE 11B-304.3.2  
T-SHAPED TURNING SPACE**

- b. Minimum 27-inch clearance above floor
  - c. No door encroachment more than 12 inches
    - Exception:** Door to accessible toilet compartment
- 7. In each multi-accommodation toilet facility, at least 5% of toilet compartments – but no fewer than one – shall comply with items W-9B.10 through W-9B.13. (CBC 11B-213.3.1)
- 8. Dimension minimum 44-inch-wide accessible route to each accessible toilet compartment.. (CBC 11B-403.5.1)
  - Exception:** Doors may swing into this clear width
- 9. Dimension maneuvering and strike-edge clearances at door to accessible toilet compartment per CBC 11B-404.2.4.1 for applicable direction of approach. (CBC 11B-604.8.1.2)
  - Exception:** Push-side clearance for in-swinging door may not be less than 48 inches measured perpendicular to door in closed position
- 10. Door to accessible toilet compartment shall comply with the following (CBC 11B-604.8.1.2):
  - a. Located in front partition or side partition farthest from toilet
  - b. Where located in front partition, door opening maximum 4 inches from side partition farthest from toilet per CBC Figure 11B-604.8.1.2
  - c. Where located in side partition, door opening maximum 4 inches from front partition per CBC Figure 11B-604.8.1.2

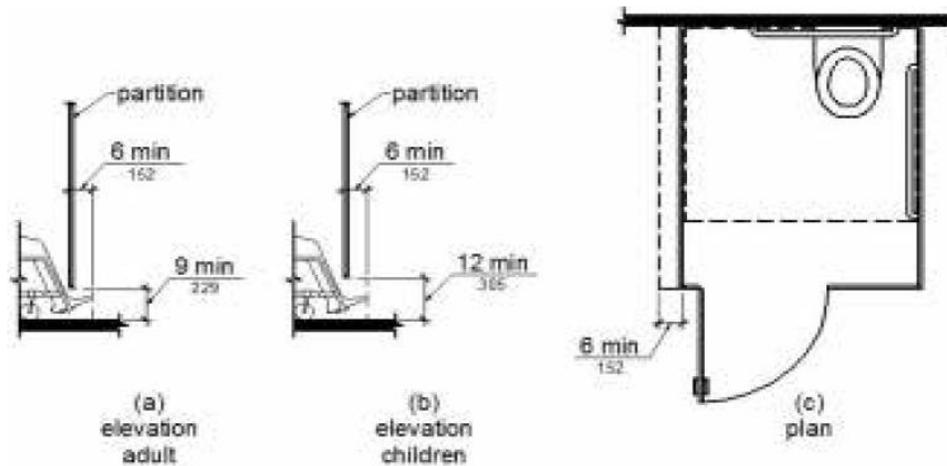


**FIGURE 11B-604.8.1.2  
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT DOORS**

d. At least one side partition shall provide toe clearance per CBC Figure 11B-604.8.1.4:

**Exception:** Toe clearance not required at accessible toilet compartments with minimum 66-inch width.

- o Minimum 9-inches high
- o Minimum 6-inches deep beyond compartment-side face of partition, exclusive of partition support members



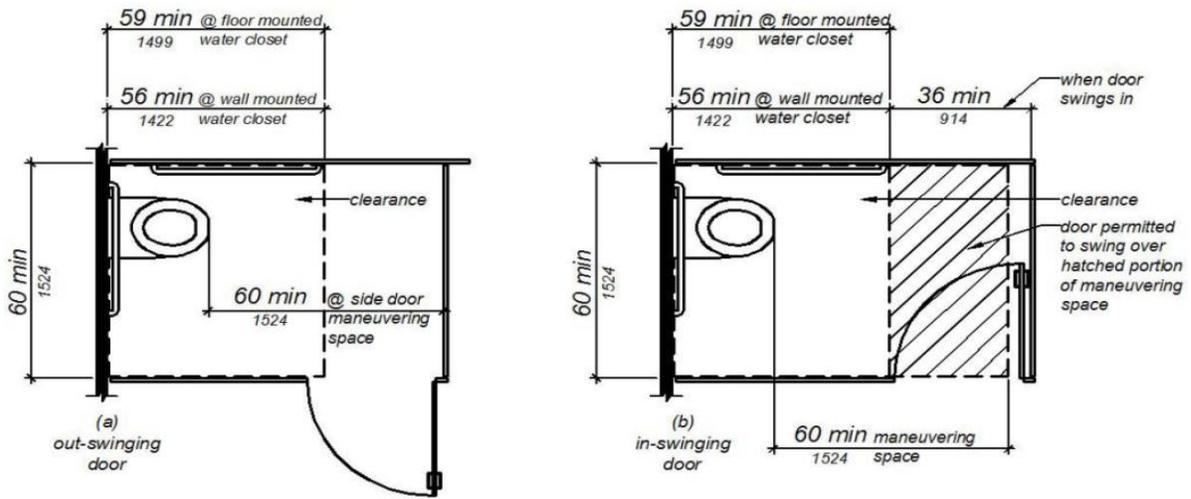
**FIGURE 11B-604.8.1.4  
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT TOE CLEARANCE**

11. Specify on door schedule the following for door to accessible toilet compartment (CBC 11B-404.2.7, CBC 11B-604.8.1.2):

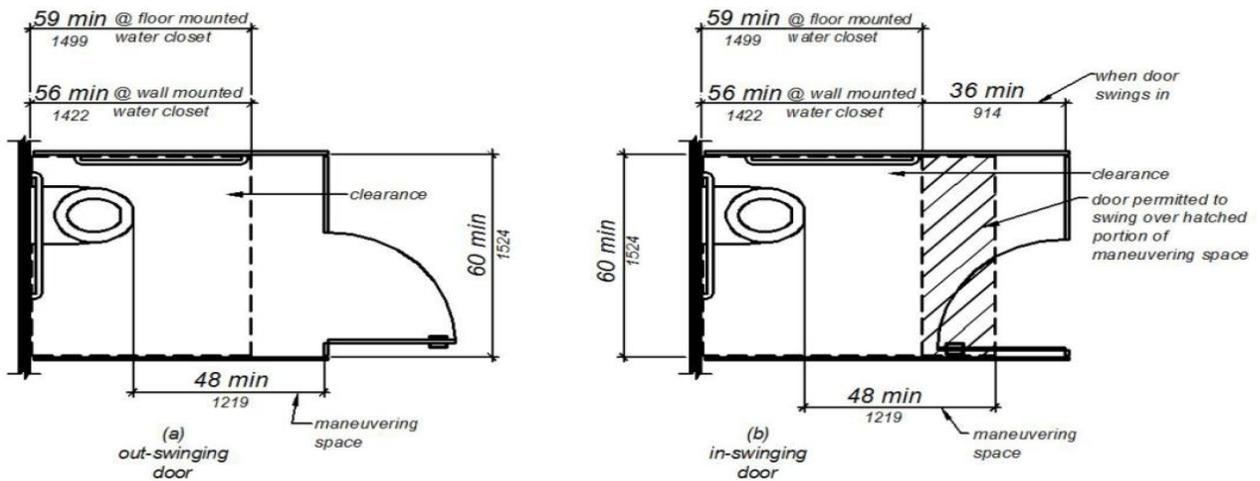
- a. Minimum 32-inch clear opening width for door located at end of accessible toilet compartment
- b. Minimum 34-inch clear opening width for door located at side of accessible toilet compartment
- c. Equipped with self-closing device
- d. Equipped with door pull on both sides of door with hardware minimum 34 inches and maximum 44 inches above finished floor and not requiring grasping or twisting

12. Dimension clear floor space at toilet per CBC Figure 11B-604.8.1.1.2 for compartments with side-opening doors and CBC Figure 11B-604.8.1.1.3 for compartments with end-opening doors (CBC 11B-604.8.1.1):

- a. Minimum 60-inches wide by 56-inches deep – measured from rear wall – for wall-mounted toilet
- b. Minimum 60-inches wide by 59-inches deep – measured from rear wall – for floor-mounted toilet
- c. No door encroachment

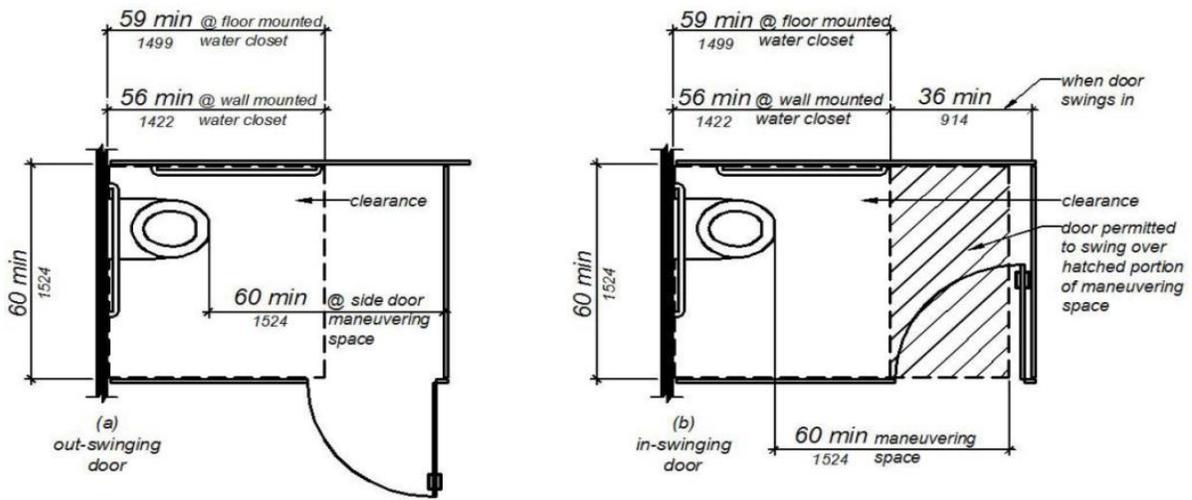


**FIGURE 11B-604.8.1.1.2  
MANEUVERING SPACE WITH SIDE-OPENING DOOR**

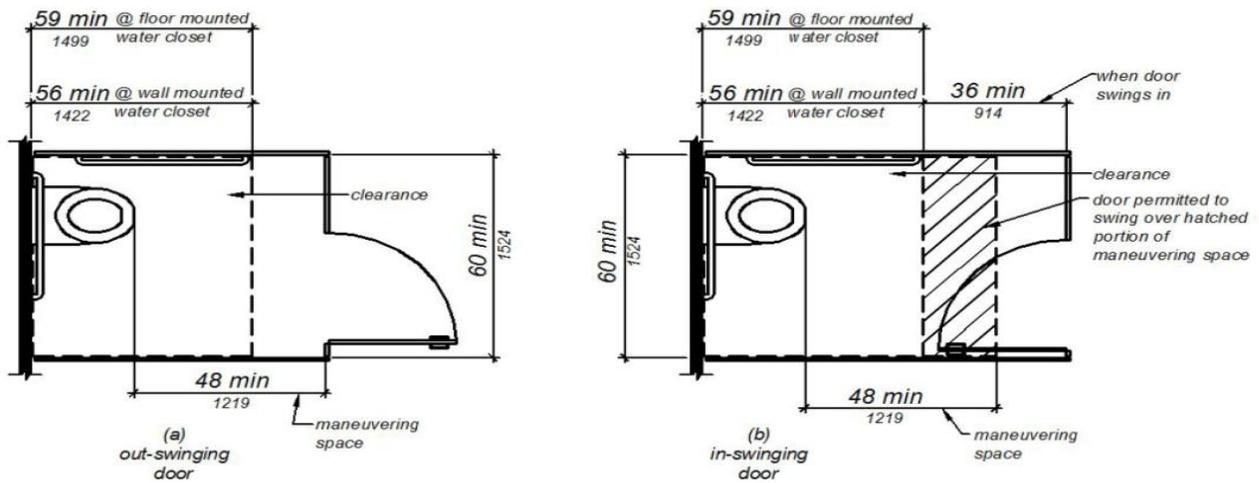


**FIGURE 11B-604.8.1.1.3  
MANEUVERING SPACE WITH END-OPENING DOOR**

13. Dimension maneuvering space in front of toilet per the following (CBC 11B-604.8.1.1):
- Minimum 60-inches wide by 60-inches deep for accessible toilet compartment with side-opening door per CBC Figure 11B-604.8.1.1.2
  - Minimum 60-inches wide by 48-inches deep for accessible toilet compartment with end-opening door per CBC Figure 11B-604.8.1.1.3
  - Door encroachment allowed only into minimum 36-inch-deep additional maneuvering space provided in front of required clear floor space

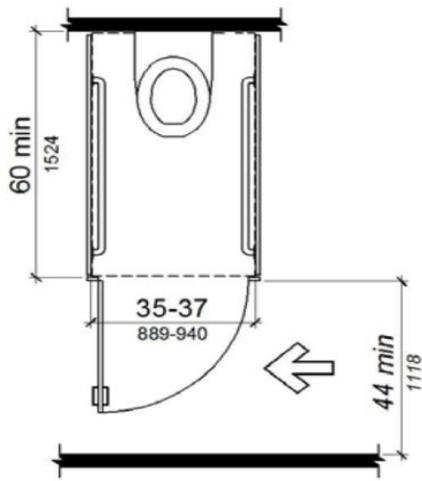


**FIGURE 11B-604.8.1.1.2  
MANEUVERING SPACE WITH SIDE-OPENING DOOR**



**FIGURE 11B-604.8.1.1.3  
MANEUVERING SPACE WITH END-OPENING DOOR**

14. In toilet facilities with six or more toilet compartments or six or more toilets and urinals, provide at least one toilet compartment – in addition to accessible toilet compartment required per item W-9B.7 – complying with the following ambulatory accessibility features per CBC 11B-604.8.2 (CBC 11B-213.3.1, CBC 11B-604.8.2):
- Minimum 35-inch and maximum 37-inch width
  - Minimum 60-inch depth
  - Outward swinging, self-closing door with compliant door hardware and pull and adequate strike edge clearance
  - Grab bars on each side per item W-9B.18

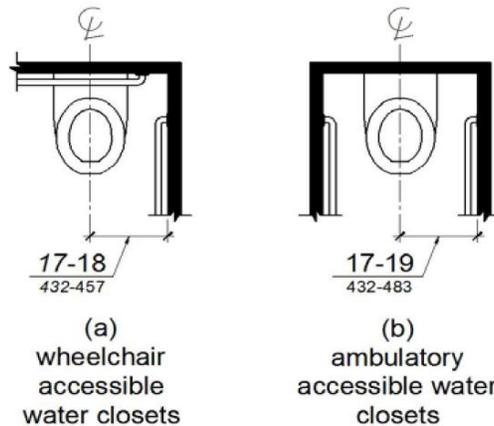


**11B-604.8.2  
AMBULATORY ACCESSIBLE TOILET COMPARTMENT**

**TOILETS**

15. Dimension minimum 17 inches and maximum 18 inches between centerline of toilet fixture and adjacent side wall or partition per CBC Figure 11B-604.2.

**Exception:** Centerline of toilet located in ambulatory accessible compartment per item W-9B.14 shall be minimum 17 inches and maximum 19 inches from adjacent side wall or partition



**FIGURE 11B-604.2  
WATER CLOSET LOCATION**

16. Detail minimum 17-inch and maximum 19-inch height of accessible toilets measured from finished floor to top of maximum 2-inch-high toilet seat. (CBC 11B-604.4)

**Exception:** Maximum 3-inch-high seat allowed in alterations where existing toilet less than 15-inches high.

17. Specify toilet seats shall not spring to return to a lifted position. (CBC 11B-604.4)

18. Specify toilet flush controls complying with the following:

- a. Mounted maximum 44 inches above floor
- b. Mounted on open side of toilet

**Exception:** Ambulatory accessible toilets per item W-9B.14

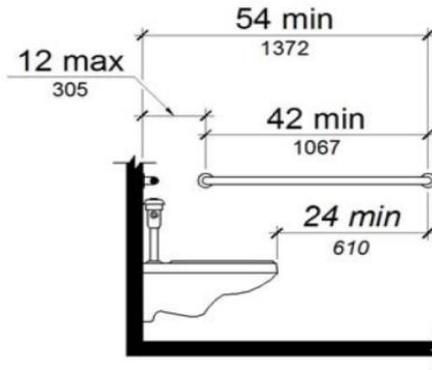
- d. Operable with maximum 5 pounds of force
- e. Operable with one hand and without tight grasping, pinching, or twisting of wrist

**GRAB BARS**

19. Provide grab bar on side wall closest to toilet and dimension to comply with the following per CBC Figure 11B-604.5.1 (CBC 11B-604.5.1, CBC 11B-604.8.1.5, CBC 11B-609.4):

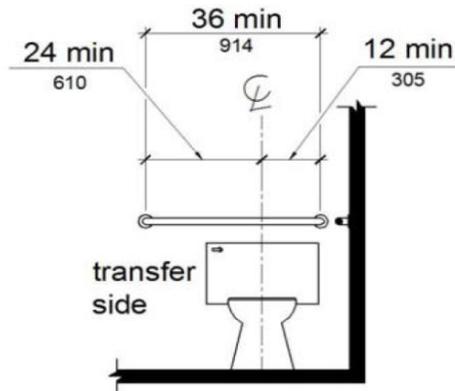
- a. Minimum 42-inches long
- b. Positioned maximum 12 inches from rear wall
- c. Extending minimum 54 inches from rear wall

- d. Extending minimum 24 inches in front of toilet
- e. Mounted horizontally at minimum 33 inches and maximum 36 inches from finished floor to top of gripping surface



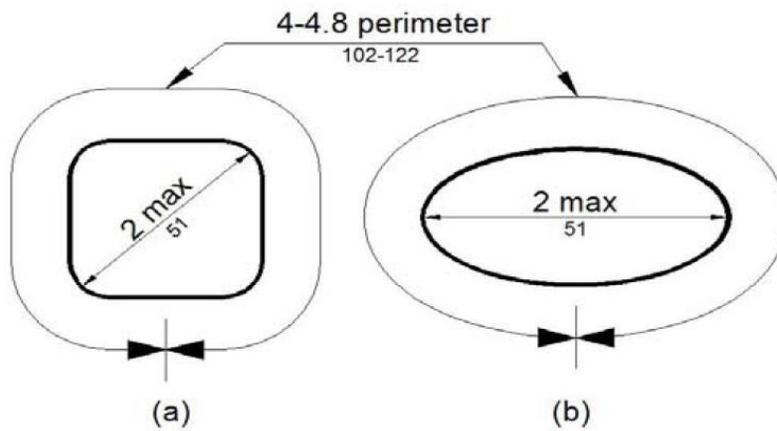
**FIGURE 11B-604.5.1**  
**SIDE WALL GRAB BAR AT WATER CLOSETS**

20. Provide grab bar on rear wall behind toilet and dimension to comply with the following per CBC Figure 11B-604.5.2 (CBC 11B-604.5.2, CBC 11B-609.4):
- a. Minimum 36-inches long
    - Exception:** Minimum 24-inch length, centered on toilet, acceptable where wall space does not allow 36-inch length due to location of a recessed fixture adjacent to toilet
  - b. Extending from centerline of toilet minimum 12 inches on one side
  - c. Extending from centerline of toilet minimum 24 inches on other side
  - d. Mounted horizontally at minimum 33 inches and maximum 36 inches from finished floor to top of gripping surface



**FIGURE 11B-604.5.2**  
**REAR WALL GRAB BAR AT WATER CLOSETS**

21. Detail toilet grab bar gripping surfaces per the following (CBC 11B-609.2):
- a. If cross section is circular, minimum 1-1/4-inch and maximum 2-inch outside diameter
  - b. If cross section is non-circular, minimum 4-inch and maximum 4.8-inch perimeter and maximum 2-inch cross-section dimension per CBC Figure 11B-609.2.2

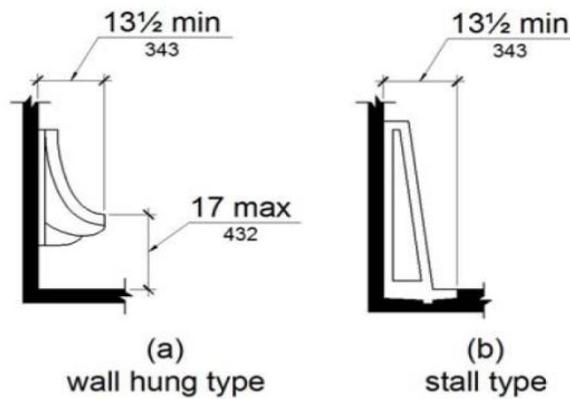


**FIGURE 11B-609.2.2  
GRAB BAR NON-CIRCULAR CROSS SECTION**

22. Detail grab bar clearance from adjacent elements per the following (CBC 11B-609.3):
- For grab bars mounted adjacent to a wall, 1-1/2-inch (absolute) space between the wall and grab bar
  - Minimum 1-1/2-inch space between grab bar and projecting objects below and at ends
  - Minimum 12-inch space between grab bar and projecting objects above
23. Specify surface material of any walls or other objects adjacent to grab bars to comply with the following (CBC 11B-609.5):
- Free of sharp or abrasive elements
  - Rounded edges
24. Specify structural adequacy of grab bars, mounting hardware, and fasteners to accommodate 250-pound point load applied at any point on the grab bar, fastener, mounting device, or supporting structure. (CBC 11B-609.8)

#### URINALS

25. Identify at least 10% of urinals provided -- but no fewer than one -- as stall-type or wall-hung with the following clear floor space dimensioned in front: (CBC 11B-213.3.3, CBC 11B-305, CBC 11B-605.3):
- Minimum 30-inches wide by 48-inches long  
**Exception:** Minimum 36-inches wide by 48-inches long clear floor space required at urinals located in alcoves greater than 24-inches deep
  - Allowing forward approach from accessible route
  - No door encroachment  
**Exception:** In single-accommodation toilet facilities, door encroachment allowed into clear space if minimum 30-inch-wide by 48-inch-deep clear floor space provided in room beyond arc of door swing
26. Where wall-hung urinals are provided, provide at least one including an rim complying with the following per CBC Figure 11B-605.2 (CBC 11B-605.2):
- Maximum 17 inches above finished floor
  - Minimum 13-1/2 inches deep, measured from outer face of rim to back of fixture

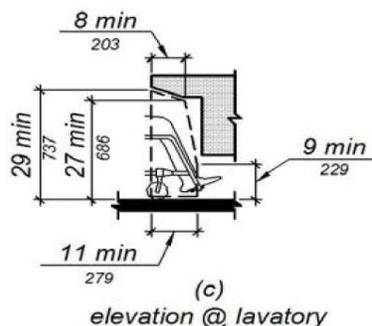


**FIGURE 11B-605.2  
HEIGHT AND DEPTH OF URINALS**

27. Specify urinal flush controls complying with the following (CBC 11B-309.4, CBC 11B-605.4):
- Mounted maximum 44 inches above floor
  - Operable with maximum 5 pounds of force
  - Operable with one hand and without tight grasping, pinching, or twisting of wrist

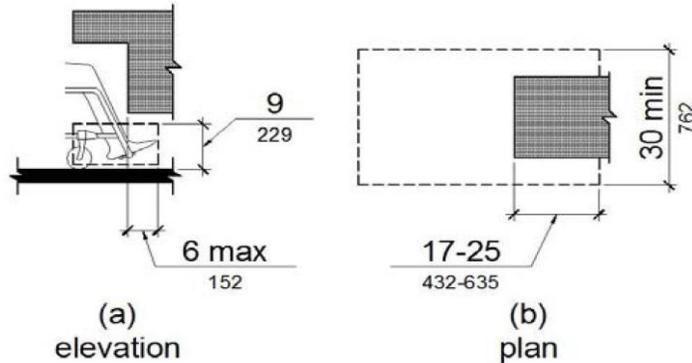
**LAVATORIES**

28. Identify at least 5% of lavatories provided – but not fewer than one – as accessible and not located within a toilet compartment. (CBC 11B-213.3.4)
29. Dimension the following for accessible lavatories (CBC 11B-606.3 and CBC 11B-606.6):
- Minimum 18 inches between centerline of lavatory and adjacent side walls or partitions
  - Lavatory mounted with higher of rim or counter surface maximum 34 inches above floor
30. Dimension the following clear floor space in front of each accessible lavatory (CBC 11B-305, CBC 11B-306.2.2, CBC 11B-606.2):
- Minimum 30-inch-wide by 48-inch-long clear floor space  
**Exception:** Clear floor space in front of accessible lavatory may extend maximum 19 inches into knee and toe clearance beneath lavatory
  - Allowing forward approach from accessible route
  - No door encroachment  
**Exception:** In single-accommodation toilet facilities, door encroachment allowed into clear space if minimum 30-inch-wide by 48-inch-deep clear floor space provided in room beyond arc of door swing
31. Provide knee clearance beneath accessible lavatories complying with the following per CBC Figure 11B-306.3(c) (CBC 11B-306.3, CBC 11B-606.5):
- Minimum 29-inch vertical clearance at front edge of lavatory
  - Reducing to minimum 27-inch vertical clearance at 8-inch depth
  - Reducing to minimum 9-inch vertical clearance at minimum 11-inch depth at rate of 1 inch in depth for each 6 inches in height
  - Minimum 30-inch width
  - Hot water and drain pipes insulated or otherwise configured to protect against contact
  - No sharp or abrasive surfaces



**FIGURE 11B-306.3  
KNEE CLEARANCE**

32. Provide toe clearance beneath accessible lavatories complying with the following per CBC Figure 11B-306.2 (CBC 11B-306.2, CBC 11B-606.5):
- Minimum 9-inch height
  - Minimum 17-inch depth
  - Minimum 30-inch width
  - Space extending more than 6 inches beyond available knee clearance or more than 25 inches beneath lavatory shall not be considered toe clearance
  - Hot water and drain pipes insulated or otherwise configured to protect against contact
  - No sharp or abrasive surfaces

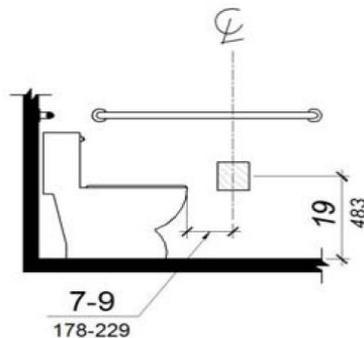


**FIGURE 11B-306.2  
TOE CLEARANCE**

33. Specify lavatory faucet controls complying with the following (CBC 11B-309.4, CBC 11B-603.5, CBC 11B-606.4):
- Mounted within CBC 11B-308 reach ranges
  - Operable with maximum 5 pounds of force
  - Operable with one hand and without tight grasping, pinching, or twisting of wrist
  - Hand-operated metering faucets open for minimum 10 seconds

#### ACCESSORIES

34. Detail the following for toilet tissue dispensers at accessible toilets per CBC Figure 11B-604.7 (CBC 11B-309.4, CBC 11B-604.7):
- Mounted on adjacent side wall below side grab bar
  - Mounted minimum 19 inches above floor
  - Positioned with dispenser centerline minimum 7 inches and maximum 9 inches from front edge of toilet seat
  - Operable with maximum 5 pounds of force
  - Operable with one hand and without tight grasping, pinching, or twisting of wrist
  - Dispensers controlling delivery or not permitting continuous paper flow shall not be used



**FIGURE 11B-604.7  
DISPENSER OUTLET LOCATION**

35. If any towel dispensers, sanitary napkin disposal units, waste receptacles, or other devices are provided, identify at least one accessible version of each device complying with the following (CBC 11B-309.4, CBC 11B-603.5, CBC 11B-604.7.2):

- a. Located on accessible route
  - b. All operable parts maximum 40 inches above floor
  - c. Operable with maximum 5 pounds of force
  - d. Operable with one hand and without tight grasping, pinching, or twisting of wrist
  - e. Sanitary napkin disposal units shall be comply with the following:
    - o Wall-mounted
    - o Located on the sidewall between the rear wall of the toilet and the toilet paper dispenser, adjacent to the toilet paper dispenser
    - o Located below the side grab bar with the disposal unit opening minimum 19 inches above finish floor
36. Where mirrors are provided, detail at least one per the following (CBC 11B-213.3.5, CBC 11B-603.3):
- a. If provided above accessible lavatories or countertops, installed with bottom edges of reflecting surfaces maximum 40 inches above finished floor
  - b. If provided at other locations, at least one mirror installed with bottom edge of reflecting surface maximum 35 inches above the floor
37. Detail any baby changing tables per the following (CBC 11B-226.4, CBC 11B-902):
- a. Located on accessible route
  - b. Shall not be located within an accessible toilet compartment in a multi-accommodation toilet facility
  - c. Baby changing table in deployed position shall not obstruct the required width of an accessible route
    - Exception:** Protrusion within CBC 11B-307.2 limits
  - d. Dimension table top at minimum 28 inches and maximum 34 inches above finished floor
  - e. Dimension minimum 30-inch-by-48-inch clear floor space positioned for forward approach
  - f. Detail and dimension knee/toe clearance complying with the following:
    - o Minimum 27-inches high
    - o Minimum 30-inches wide
    - o Minimum 19-inches deep
  - g. All operable parts within CBC 308 reach ranges
  - h. Operable with maximum 5 pounds of force
  - i. Operable with one hand and without tight grasping, pinching, or twisting of wrist
38. Where coat hooks or shelves are provided, at least one of each type shall be located serving accessible toilets or toilet compartments per the following (CBC 11B-213.3, CBC 11B-308, CBC 11B-603.4, CBC 11B-604.8.3):
- a. Coat hooks maximum 48 inches above finished floor
  - b. Shelves minimum 40 inches and maximum 48 inches above finished floor
39. If any medicine cabinets are provided, detail at least one medicine cabinet on accessible route with usable shelf maximum 44 inches above finished floor. (CBC 11B-603.4)

## SIGNAGE

40. Detail signage complying with the following at entrances to men's toilet facilities and coordinate with signage schedule (CBC 11B-703.7.2.6.1):
- Exception: Any single-accommodation restroom shall include all-gender signage per item W-9B.42
- a. Equilateral triangle symbol with vertex pointing upward
  - b. Edges 12-inches long
  - c. 1/4-inch thick
  - d. Specify colors of triangle symbol and background such that symbol contrasts with background, either light on dark background or dark on light background
41. Detail signage complying with the following at entrances to women's toilet facilities and coordinate with signage schedule (CBC 11B-703.7.2.6.2):
- Exception: Any single-accommodation restroom shall include all-gender signage per item W-9B.42
- a. Circle symbol
  - b. 12-inch diameter
  - c. 1/4-inch thick
  - d. Specify colors of circle symbol and background such that symbol contrasts with background, either light on dark background or dark on light background
42. Detail signage complying with the following on entrances to all-gender toilet facilities and coordinate with signage schedule (CBC 11B-703.7.2.6.3):
- a. Triangle symbol superimposed on and within 12-inch-diameter circle symbol
  - b. 1/4-inch thick
  - c. Specify colors of triangle and circle symbols such that triangle contrasts with circle, either light on dark background or dark on light background

- d. Specify color of background such that circle symbol contrasts with background, either light on dark background or dark on light background
43. Specify the following for any signs specified per items W-9B.40 through W-9B.42 (CBC 11B-703.7.2.6):
- a. Mounted with centerline minimum 58 inches and maximum 60 inches above finished floor
  - b. Where a door is provided, mounted within 1 inch of vertical centerline of door
  - c. Rounded or eased edges at minimum 1/16-inch radius or chamfered edges with minimum 1/8-inch radius
  - d. Vertices with minimum 1/8-inch radius and maximum 1/4-inch radius
44. Adult changing room signage, additional detailing requirements: (CBC 11B-813.2.12, CBC 11B-249.1.2)
- a. The sign at entrance to adult changing facility shall identify the room as "ADULT CHANGING ROOM".
  - b. Provide informational sign within the changing facility in close proximity to the table indicating the maximum weight capacity of the table, as determined by the table manufacturer.
  - c. Where the commercial place of public amusement has a central directory, the central directory shall indicate the locations of adult changing facilities. Where directories other than the central directory indicate the locations of toilet facilities, they shall also indicate the locations of adult changing facilities.

**ALTERNATIVE DIMENSIONS FOR CHILDREN’S FACILITIES**

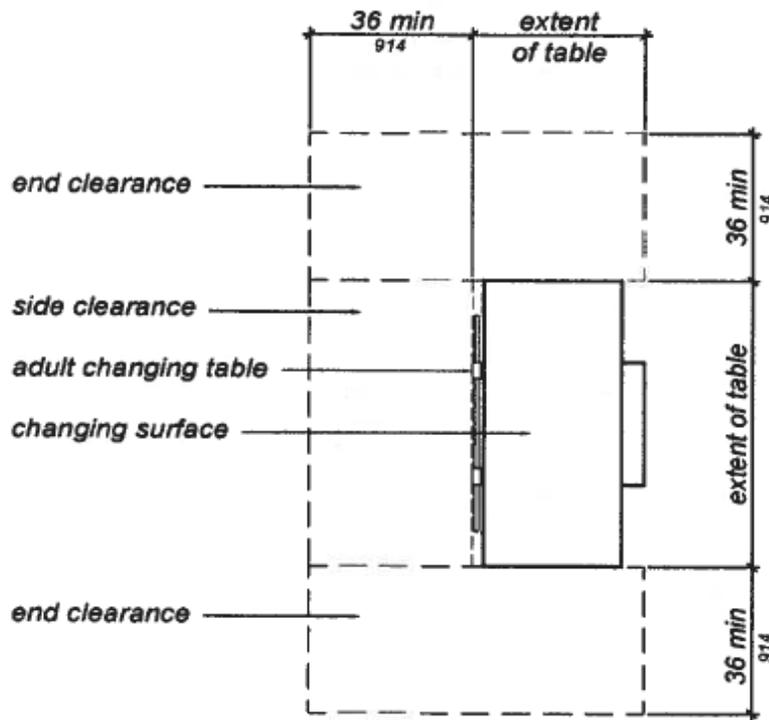
45. In toilet facilities used solely by small children, plan dimensions and details may incorporate adjusted heights and clearances per CBC Table 11B-604.9. (CBC 11B-604.9)

**TABLE 11B-604.9  
SUGGESTED DIMENSIONS FOR CHILDREN’S USE**

<i>SUGGESTED DIMENSIONS FOR WATER CLOSETS SERVING CHILDREN AGES 3 THROUGH 12</i>			
	<b>Ages 3 and 4</b>	<b>Ages 5 through 8</b>	<b>Ages 9 through 12</b>
<b>Water Closet Centerline</b>	12 inches (305 mm)	12 to 15 inches (305 to 381 mm)	15 to 18 inches (381 to 457 mm)
<b>Toilet Seat Height</b>	11 to 12 inches (279 to 305 mm)	12 to 15 inches (305 to 381 mm)	15 to 17 inches (381 to 432 mm)
<b>Grab Bar Height</b>	18 to 20 inches (457 to 508 mm)	20 to 25 inches (508 to 635 mm)	25 to 27 inches (635 to 686 mm)
<b>Dispenser Height</b>	14 inches (356 mm)	14 to 17 inches (356 to 432 mm)	17 to 19 inches (432 to 483 mm)

**ADULT CHANGING FACILITIES**

46. Detail **adult changing facilities** where required per the following: (CBC 11B-249, CBC 11B-813)
- a. No fewer than one adult changing facility required **in newly constructed commercial places of public amusement**, such as auditorium, convention center, cultural complex, exhibit hall, permanent amusement park, sports arena, theater or movie house with facility occupancy of 2500 or more, art gallery, symphony, concert hall, museum. (CBC Chapter 2 definitions, CBC 11B-249)
    - Exception:** Public or private higher education facility or district agricultural associations.
  - b. Shall be fixed to the floor or a wall within an single-user or family toilet room, or similar private room.
  - c. Size of adult changing table: Minimum length of 70-inches and minimum width of 30-inches.
  - d. Detail changing table **clearances** with no changes in level allowed::



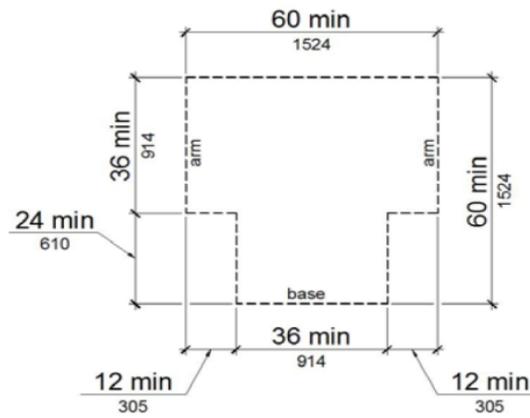
**FIGURE 11B-813.2.1.2  
CLEARANCE AROUND ADULT CHANGING TABLE**

- f. Height and operation: Height adjustability shall be powered, shall be adjustable between 17-inches and 38-inches above the floor or ground as measured to the top of the changing surface, and shall comply with operation force and reach range requirements. (CBC 11B-813.2.1.3, CBC 11B-309)
- g. Capacity: Adult changing tables shall provide a minimum weight capacity of 300-pounds.
- h. Accessible route obstructions: When changing table is deployed, leading edges shall not protrude more than 4-inches horizontally into a required accessible route. (CBC 813.2.1.5, CBC 307.2)
- i. Water closet: Provide no fewer than one water closet.
- j. Lavatory: Provide one lavatory.
- k. Waste receptacle: Provide no fewer than one waste receptacle.
- l. Coat hook: Provide no fewer than one coat hook in close proximity to the changing table and within accessible reach ranges.
- m. Shelf: Provide no fewer than one shelf in close proximity to the changing table between 40-inches and 48-inches above the finish floor.
- n. Accessories: Where provided, no fewer than one of each type of accessory shall be located on an accessible route, such as towel, sanitary napkin dispenser, or other types of accessories.
- o. Turning space: Accessible turning space shall be provided within adult changing facility.
- p. Overlap: Overlap shall be permitted of required clear floor spaces, clearance at fixtures, and turning space.
- q. Door swing: A door in any position shall be allowed to encroach into the required turning space by 12-inches maximum. Where a separate clear floor space complying with CBC 11B-305.3 is provided beyond the arc of the door swing, door shall be permitted to swing into the required clearance for any fixtures, and required clearances for adult changing tables.
- r. Privacy Latch: Each door shall have a privacy latch.

**W-10B. SHOWER, BATHING, AND LOCKER ROOM FACILITIES (CBC 11B)**

**TURNING SPACE**

- 1. Dimension clear wheelchair turning space within accessible shower, bathing, and/or locker room facility complying with the following (CBC 11B-603.2, CBC 11B-304, CBC 11B-305, CBC 11B-306):
  - a. Minimum 60-inch diameter or equivalent T-shaped space per CBC Figure 11B-304.3.2

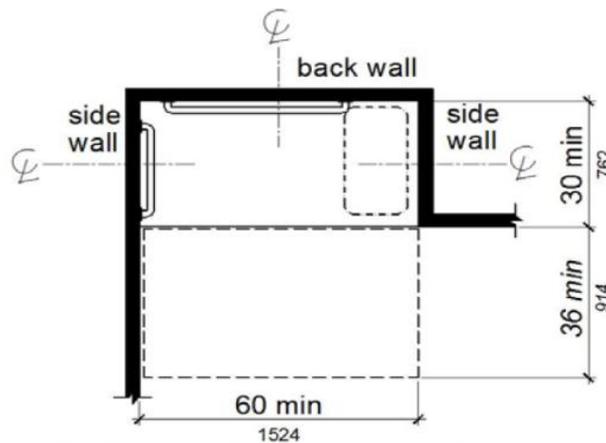


**FIGURE 11B-304.3.2  
T-SHAPED TURNING SPACE**

- b. Minimum 27-inch clearance above floor
  - c. No door encroachment more than 12 inches.
- Exception:** Door to accessible toilet compartment.

**SHOWERS**

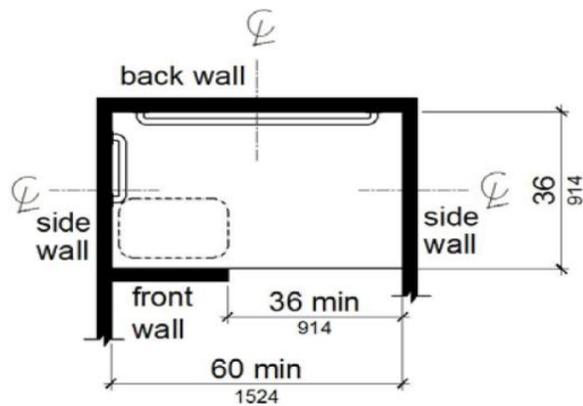
- 2. Where showers are provided, identify at least one as accessible and on an accessible route. (CBC 11B-206.2.4, CBC 11B-213.3.6)
- 3. Where two or more accessible showers are provided within same functional area, at least one shower shall be opposite hand from the others (i.e., left-hand controls versus right-hand controls). (CBC 11B-213.3.6)
- 4. **Size and clearances:** Provide complete dimensions and coordinated detailing for accessible showers complying with one of the following configurations:
  - a. Standard roll-in shower per CBC Figure 11B-608.2.2:
    - o Minimum 30-inch-deep by 60-inch-long clear inside dimensions measured at center points of opposing sides
    - o Full opening width on long side
    - o Minimum 36-inch-deep by 60-inch-long clearance adjacent to open face of shower compartment



Note: inside finished dimensions measured at the center points of opposing sides

**FIGURE 11B-608.2.2  
STANDARD ROLL-IN TYPE  
SHOWER COMPARTMENT SIZE AND CLEARANCE**

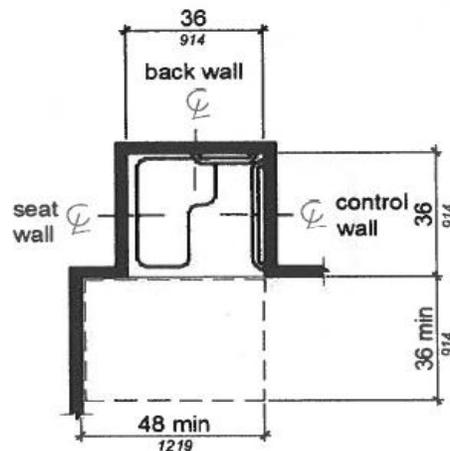
- b. Alternate roll-in shower per CBC Figure 11B-608.2.3:
  - o 36-inch-deep (absolute) by minimum 60-inch-long clear inside dimensions measured at center points of opposing sides
  - o Minimum 36-inch-wide entrance opening at one end of long side of shower compartment



Note: inside finished dimensions measured at the center points of opposing sides

**FIGURE 11B-608.2.3  
ALTERNATE ROLL-IN TYPE  
SHOWER COMPARTMENT SIZE AND CLEARANCE**

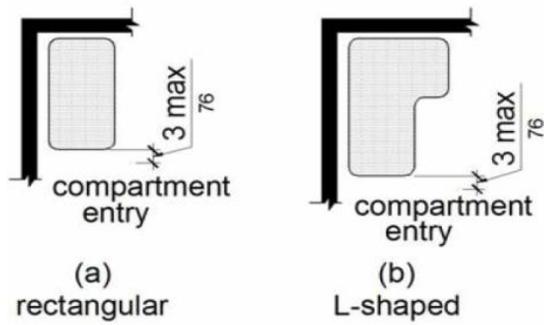
- c. Transfer-type shower compartment per CBC Figure 11B-608.2.1:
- o Minimum 36-inches by 36-inches clear inside dimension measured at the center points of opposing sides, and minimum 36-inchwide entry on the face of the shower compartment.
  - o Minimum clear space of 36-inches wide by 48-inches long measured from the control wall.
  - o Shall be permitted in transient lodging guest rooms, multibedroom housing units in undergraduate student housing, and residential dwelling units; shall not be permitted at other locations to meet the requirements of CBC 11B-213.3.6.



Note: inside finished dimensions measured at the center points of opposing sides

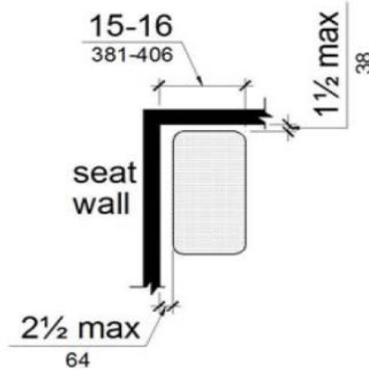
**FIGURE 11B-608.2.1  
TRANSFER TYPE SHOWER  
COMPARTMENT SIZE AND CLEARANCE**

5. Specify and detail shower compartment seat per the following:
- a. Folding type
  - b. Mounted minimum 17 inches and maximum 19 inches above bathroom finished floor
  - c. For standard roll-in shower, seat installed on side wall adjacent to controls and extending from back wall to point within 3 inches of shower compartment entry per CBC Figure 11B-610.3
  - d. For alternate roll-in shower, seat installed on front wall opposite back wall and extending from adjacent side wall to point within 3 inches of shower compartment entry per CBC Figure 11B-610.3



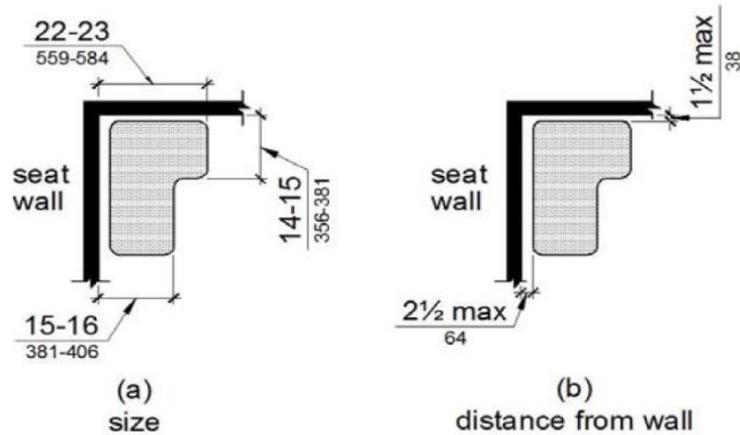
**FIGURE 11B-610.3  
EXTENT OF SEAT**

- e. Seat dimensions and clearance from wall per one of the following:
  - o Rectangular seats per CBC Figure 11B-610.3.1



**FIGURE 11B-610.3.1  
RECTANGULAR SHOWER SEAT**

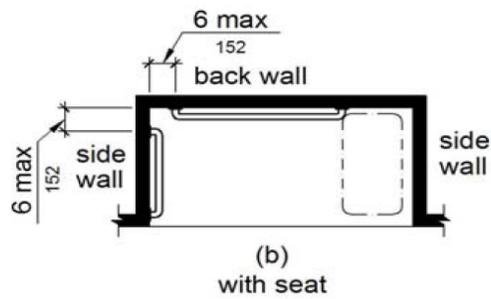
- o L-shaped seats per CBC Figure 11B-610.3.2



**FIGURE 11B-610.3.2  
L-SHAPED SHOWER SEAT**

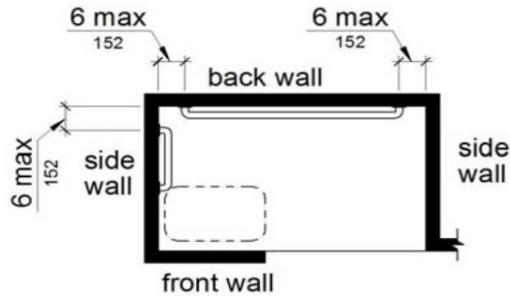
- f. Shower seats in folded position extending maximum 6 inches from mounting wall

6. **Grab bars:** Detail shower grab bars complying with the following (CBC 11B-608.3):
  - a. Mounted minimum 33 inches and maximum 36 inches above shower floor
  - b. For standard roll-in shower, located per CBC Figure 11B-608.3.2(b)



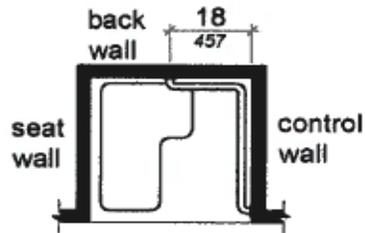
**FIGURE 11B-608.3.2  
GRAB BARS FOR STANDARD ROLL-IN TYPE SHOWER**

c. For alternate roll-in shower, located per CBC Figure 11B-608.3.3



**FIGURE 11B-608.3.3  
GRAB BARS FOR ALTERNATE ROLL-IN TYPE SHOWERS**

d. For transfer-type shower compartments, located per CBC Figure 11B-608.3.1

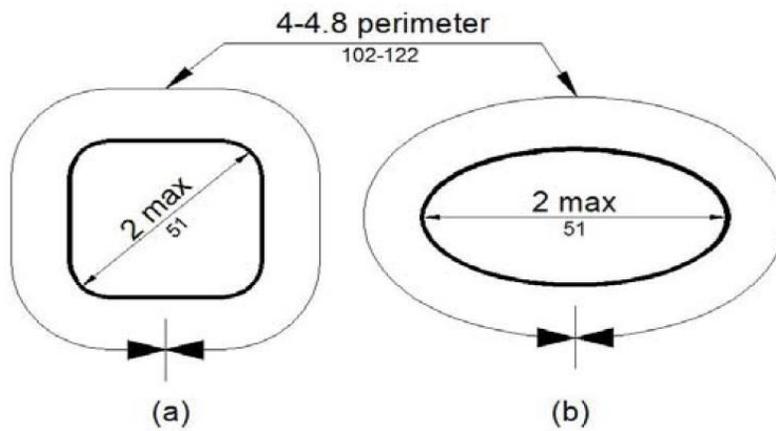


**FIGURE 11B-608.3.1  
GRAB BARS FOR TRANSFER TYPE SHOWERS**

e. Not extending over shower seat

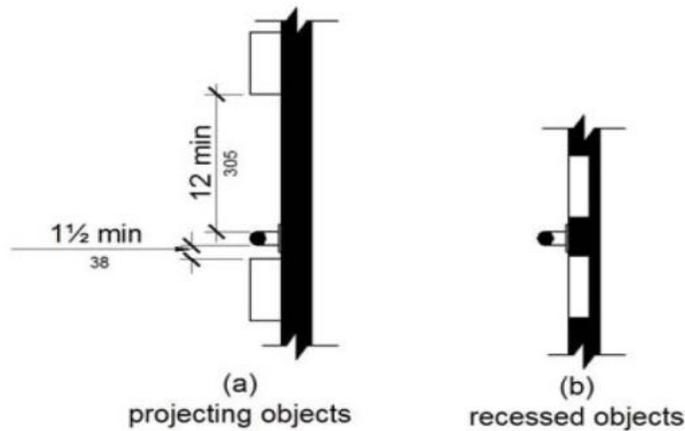
7. Detail shower grab bar gripping surfaces per the following (CBC 11B-609.2):

- a. If cross section is circular, minimum 1-1/4-inch and maximum 2-inch outside diameter
- b. If cross section is non-circular, minimum 4-inch and maximum 4.8-inch perimeter and maximum 2-inch cross-section dimension per CBC Figure 11B-609.2.2



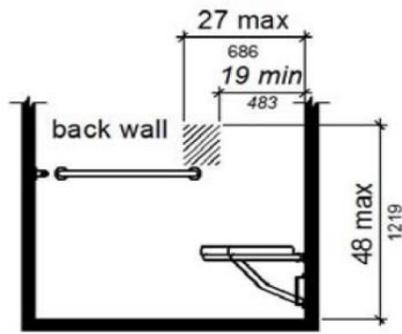
**FIGURE 11B-609.2.2  
GRAB BAR NON-CIRCULAR CROSS SECTION**

8. Detail grab bar clearance from adjacent elements per CBC Figure 11B-609.3 (CBC 11B-609.3):
  - a. For grab bars mounted adjacent to a wall, 1-1/2-inch (absolute) space between the wall and grab bar
  - b. Minimum 1-1/2-inch space between grab bar and projecting objects below and at ends
  - c. Minimum 12-inch space between grab bar and projecting objects above



**FIGURE 11B-609.3  
SPACING OF GRAB BARS**

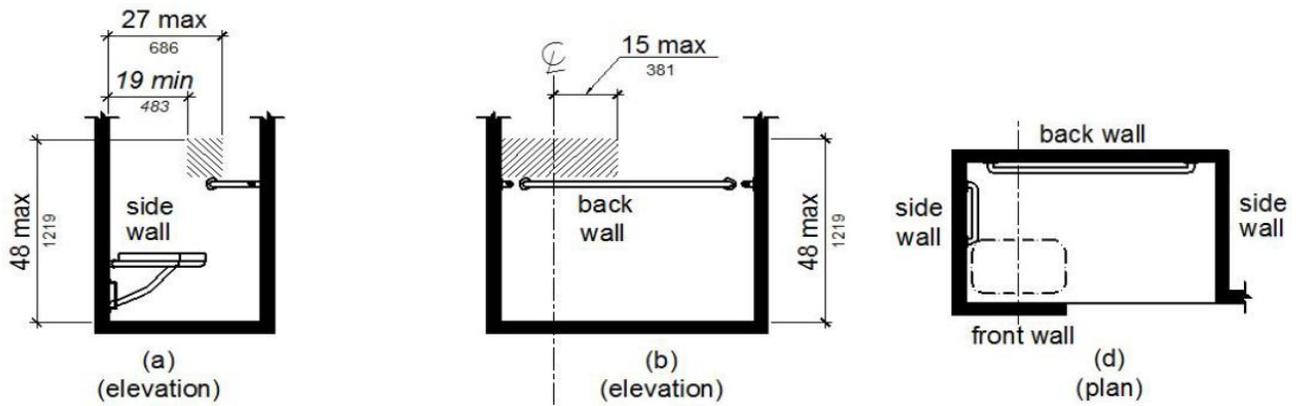
9. Specify structural adequacy of grab bars, mounting hardware, and fasteners to accommodate 250-pound point load applied at any point on the grab bar, fastener, mounting device, or supporting structure. (CBC 11B-609.8)
10. **Control locations:** Specify operable parts of shower controls and faucets complying with the following (CBC 11B-309.4 and CBC 11B-608.5):
  - a. For standard roll-in shower, installed on back wall of shower compartment adjacent to seat wall per CBC Figure 11B-608.5.2



(b)  
with seat

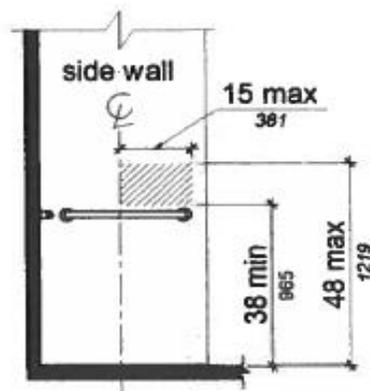
**FIGURE 11B-608.5.2  
STANDARD ROLL-IN TYPE  
SHOWER COMPARTMENT CONTROL LOCATION**

b. For alternate roll-in shower, installed on side wall of shower compartment adjacent to seat wall per CBC Figure 11B-608.5.3



**FIGURE 11B-608.5.3  
ALTERNATE ROLL-IN TYPE  
SHOWER COMPARTMENT CONTROL LOCATION**

c. For transfer-type shower compartment, installed on side wall opposite the seat per CBC Figure 11B-608.5.1



**FIGURE 11B-608.5.1  
TRANSFER TYPE SHOWER  
COMPARTMENT CONTROL LOCATION**

d. Located minimum 19 inches and maximum 27 inches from seat wall.

**Exception:** For transfer-type shower compartments, located on the control wall a maximum of 15-inches from the centerline of the seat toward the shower opening.

e. Located above grab bar but no higher than 48 inches above shower floor.

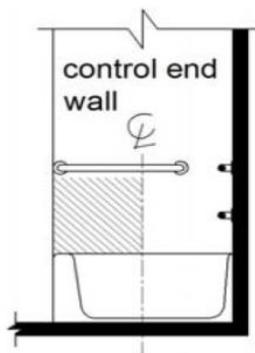
f. Centerline at minimum 39 inches and maximum 41 inches above shower floor.

**Exception:** For transfer-type shower compartments, located on the side wall opposite the seat minimum 38-inches and maximum 48-inches above the shower floor.

- g. Single-lever design.
  - h. Operable with maximum 5 pounds of force.
  - i. Operable with one hand and without tight grasping, pinching, or twisting of wrist.
11. Specify sprayer unit shall be provided per the following (CBC 11B-608.6):
- a. Minimum 59-inch long hose
  - b. Capable for use as fixed shower head and hand-held shower
  - c. On/off control with non-positive shut-off
  - d. Adjustable-height shower heads on vertical bar shall not obstruct use of bathtub grab bars
  - e. Deliver maximum 120-degree Fahrenheit water
12. Where soap dishes are provided, dimension location on control wall maximum 40 inches above shower floor and within reach limits from the shower seat. (CBC 11B-608.10)
13. Specify maximum 2.1% slope in all directions of accessible shower floors. (CBC 11B-608.9)
14. Roll-in shower **threshold**: Detail maximum 1/2-inch-high thresholds with maximum 50% slope. (CBC 11B-303, CBC 11B-608.7)
15. Transfer-type shower **threshold**: Detail maximum 1/2-inch-high **beveled, rounded, or vertical** thresholds with maximum 50% slope. (CBC 11B-303, CBC 11B-608.7)
- Exception:** Maximum 2-inch high threshold shall be permitted in transfer-type shower compartments in existing facilities where installing a 1/2-inch-high threshold would disturb the structural reinforcement of the floor slab.
16. Where drains are provided at accessible showers, specify maximum 1/4-inch grate openings flush with shower floor surface. (CBC 11B-608.9)
17. Specify any enclosures provided for shower compartments shall comply with the following (CBC 11B-608.8):
- a. No obstruction of shower controls
  - b. No obstruction of transfer from wheelchair to shower seat

## BATHTUBS

18. Where bathtubs are provided, identify at least one as accessible and on an accessible route. (CBC 11B-206.2.4, CBC 11B-213.3.6)
19. Provide complete dimensions and coordinated detailing for each accessible bathtub. (CBC 11B-607)
20. Specify whether accessible bathtub will include a permanent seat at head of bathtub or a removable in-tub seat. (CBC 11B-607.3)
21. Detail location of bathtub controls per the following:
- a. Located on an end wall of bathtub
  - b. Between bathtub rim and grab bar and between open side of bathtub and centerline of width of bathtub per CBC

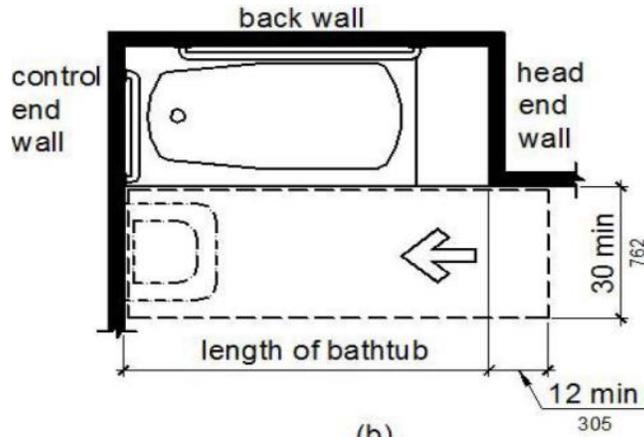


**FIGURE 11B-607.5  
BATHTUB CONTROL LOCATION**

22. Dimension clearance at accessible bathtub with permanent seat at head of bathtub per the following (CBC 11B-607.2):

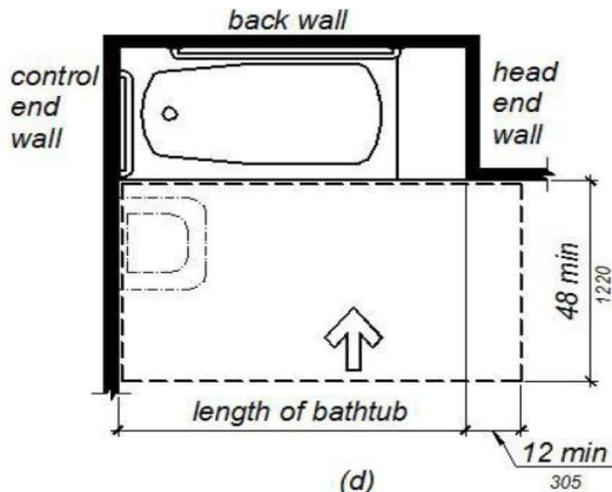
**Exception:** Accessible lavatory located at control end of tub may encroach into bathtub clear space

- a. Extending full length of bathtub plus minimum 12 inches beyond wall at head end of bathtub
- b. Minimum 30 inches wide per CBC Figure 11B-607.2(b) where allowing parallel approach



(b)  
 permanent seat  
 parallel approach  
**FIGURE 11B-607.2**  
**CLEARANCE FOR BATHTUBS**

- c. Minimum 48 inches wide per CBC Figure 11B-607.2(d) where requiring forward approach

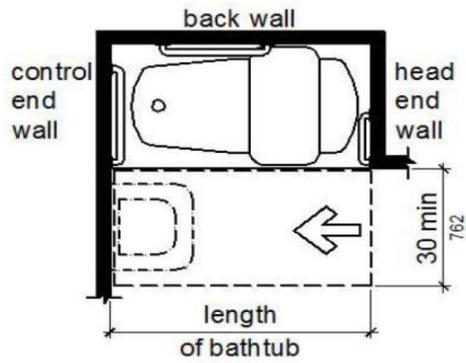


(d)  
 permanent seat  
 forward approach  
**FIGURE 11B-607.2**  
**CLEARANCE FOR BATHTUBS**

23. Dimension clearance at accessible bathtub with removable in-tub seat per the following (CBC 11B-607.2):

**Exception:** Accessible lavatory located at control end of tub may encroach into bathtub clear space

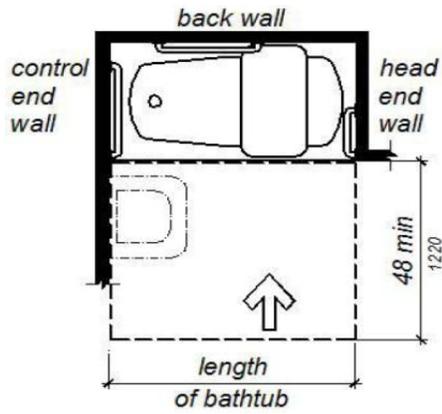
- a. Extending full length of bathtub
- b. Minimum 30 inches wide per CBC Figure 11B-607.2(a) where allowing parallel approach



(a)  
removable in-tub seat  
parallel approach

**FIGURE 11B-607.2  
CLEARANCE FOR BATHTUBS**

c. Minimum 48 inches wide per CBC Figure 11B-607.2(c) where requiring forward approach

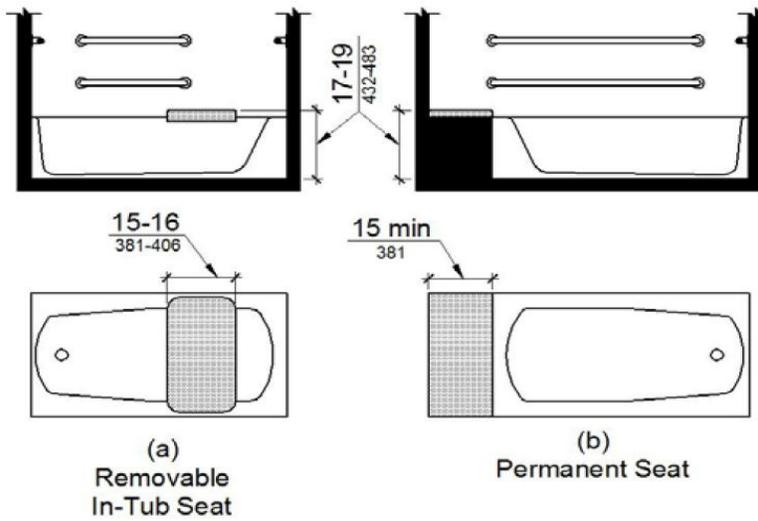


(c)  
removable in-tub seat  
forward approach

**FIGURE 11B-607.2  
CLEARANCE FOR BATHTUBS**

24. Specify and detail bathtub seat per the following (CBC 11B-610.2):

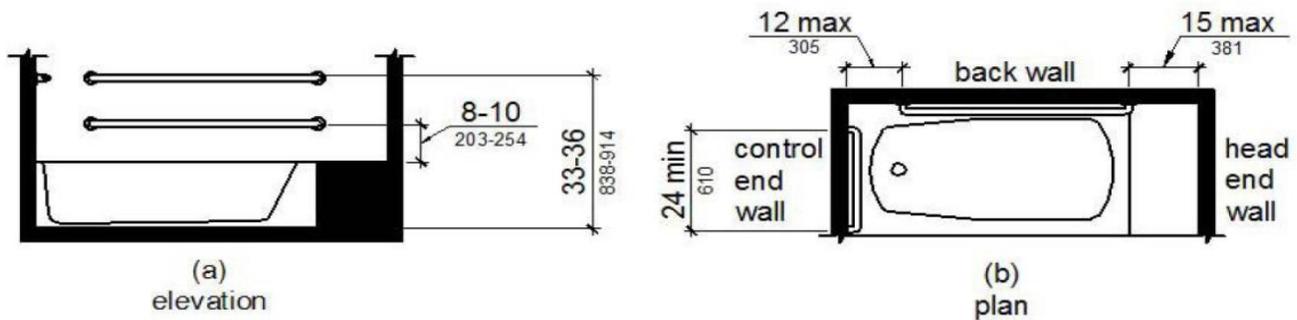
- a. Top of seat minimum 17 inches and maximum 19 inches above bathroom finished floor
- b. For bathtub with permanent seat, minimum 15-inch depth per CBC Figure 11B-610.2(b) and extending from back wall to or beyond outer edge of bathtub
- c. For bathtub with removable in-tub seat, minimum 15-inch and maximum 16-inch depth per CBC Figure 11B-610.2(a) and capable of secure placement



**FIGURE 11B-610.2  
BATHTUB SEATS**

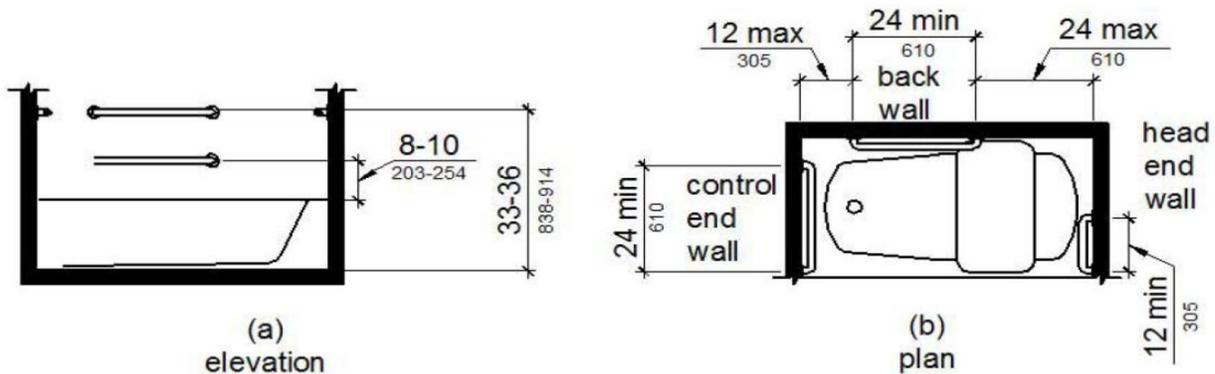
25. Detail bathtub grab bars complying with the following (CBC 11B-607.4):

- a. For bathtub with permanent seat, grab bar locations, lengths, and mounting heights per CBC Figure 11B-607.4.1



**FIGURE 11B-607.4.1  
GRAB BARS FOR BATHTUBS WITH PERMANENT SEATS**

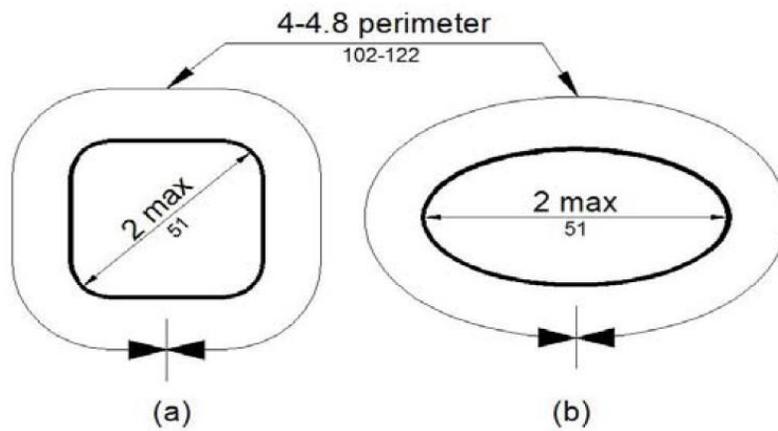
- b. For bathtub with removable in-tub seat, grab bar locations, lengths, and mounting heights per CBC Figure 11B-607.4.2



**FIGURE 11B-607.4.2  
GRAB BARS FOR BATHTUBS WITH REMOVABLE IN-TUB SEATS**

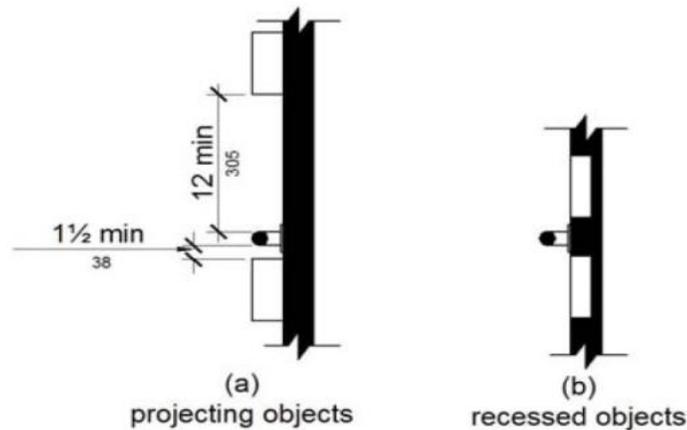
26. Detail bathtub grab bar gripping surfaces per the following (CBC 11B-609.2):

- a. If cross section is circular, minimum 1-1/4-inch and maximum 2-inch outside diameter
- b. If cross section is non-circular, minimum 4-inch and maximum 4.8-inch perimeter and maximum 2-inch cross-section dimension per CBC Figure 11B-609.2.2



**FIGURE 11B-609.2  
GRAB BAR NON-CIRCULAR CROSS SECTION**

27. Detail grab bar clearance from adjacent elements per the following (CBC 11B-609.3):
- For grab bars mounted adjacent to a wall, 1-1/2-inch (absolute) space between the wall and grab bar
  - Minimum 1-1/2-inch space between grab bar and projecting objects below and at ends
  - Minimum 12-inch space between grab bar and projecting objects above



**FIGURE 11B-609.3  
SPACING OF GRAB BARS**

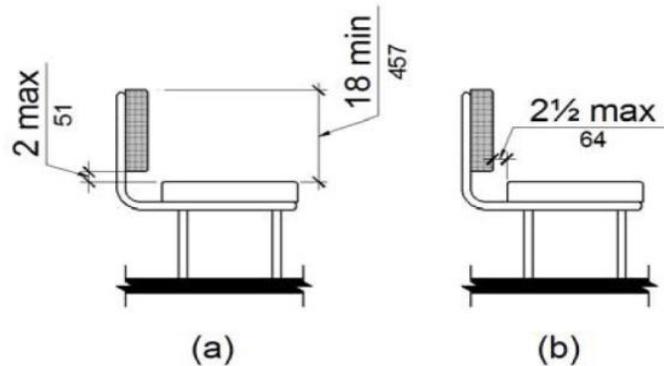
28. Specify structural adequacy of grab bars, mounting hardware, and fasteners to accommodate 250-pound point load applied at any point on the grab bar, fastener, mounting device, or supporting structure. (CBC 11B-609.8)
29. Specify bathtub controls complying with the following (CBC 11B-309.4, CBC 11B-607.5):
- Operable with maximum 5 pounds of force
  - Operable with one hand and without tight grasping, pinching, or twisting of the wrist
30. Specify sprayer unit shall be provided per the following (CBC 11B-607.6):
- Minimum 59-inch long hose
  - Capable for use as fixed shower head and hand-held shower
  - On/off control with non-positive shut-off
  - Adjustable-height shower heads on vertical bar shall not obstruct use of bathtub grab bars
  - Deliver water maximum 120-degree Fahrenheit
31. Specify any enclosures provided for bathtubs shall comply with the following (CBC 11B-607.7):
- No tracks mounted on rim of open face of bathtub
  - No obstruction of shower controls
  - No obstruction of transfer from wheelchair to bathtub seat or into bathtub

#### **LOCKER ROOMS AND DRESSING AREAS**

32. Identify at least 5% of lockers provided – but not fewer than one of each type – as accessible and on an accessible route. (CBC 11B-225.2.1)

33. Dimension minimum 30-inch-wide by 48-inch-long clear space at each accessible locker. (CBC 11B-305, CBC 11B-811.2)
34. Specify all portions of accessible lockers shall be within minimum 15-inch and maximum 48-inch reach range. (CBC 11B-308, CBC 11B-811.3)
35. Specify locker-opening hardware complying with the following (CBC 11B-309, CBC 11B-811.4):
  - a. Operable with maximum 5 pounds of force
  - b. Operable with one hand and without tight grasping, pinching, or twisting of wrist
36. Detail at least one bench per the following (CBC 11B-803.4, CBC 11B-903):
  - a. Minimum 48 inches long
  - b. Minimum 20 inches and maximum 24 inches deep
  - c. Minimum 48-inch-long back support per CBC Figure 11B-903.4

**Exception:** Bench affixed to wall along its long dimension



**FIGURE 11B-903.4  
BENCH BACK SUPPORT**

- d. Mounted minimum 17 inches and maximum 19 inches above finished floor
  - e. Minimum 30-inch-wide by 48-inch-long clear space **provided at end of bench seat and parallel to short axis of bench**
  - f. Structural adequacy to support 250-pound point load
  - g. Slip-resistant surface preventing water accumulation
37. Where mirrors are provided, detail at least one per the following (CBC 11B-223.6, CBC 11B-803.6):
    - a. Minimum 18-inches wide by 54-inches high
    - b. Bottom of mirror maximum 20 inches above floor
    - c. Mounted in position affording view to person sitting on bench as well as person standing
  38. Where coat hooks or shelves are provided, at least one of each type shall be located serving accessible lockers per the following (CBC 11B-222.3, CBC 11B-308, CBC 11B-803.6):
    - a. Coat hooks maximum 48 inches above finished floor and not located above bench or other seating
    - b. Shelves minimum 40 inches and maximum 48 inches above finished floor

## **SIGNAGE**

39. Detail signage complying with the following on doors to men's shower, bathing, and locker room facilities and coordinate with signage schedule (CBC 11B-703.7.2.6.1):
  - a. Equilateral triangle symbol with vertex pointing upward
  - b. Edges 12-inches long
  - c. 1/4-inch thick
  - d. Specify colors of triangle symbol and door such that symbol contrasts with door, either light on dark background or dark on light background
40. Detail signage complying with the following on doors to women's shower, bathing, and locker room facilities and coordinate with signage schedule (CBC 11B-703.7.2.6.2):
  - a. Circle symbol
  - b. 12-inch diameter
  - c. 1/4-inch thick
  - d. Specify colors of circle symbol and door such that symbol contrasts with door, either light on dark background or

dark on light background

41. Detail signage complying with the following on doors to all-gender shower, bathing, and locker room facilities and coordinate with signage schedule (CBC 11B-703.7.2.6.3):
  - a. Triangle symbol superimposed on and within 12-inch-diameter circle symbol
  - b. 1/4-inch thick
  - c. Specify colors of triangle and circle symbols such that triangle contrasts with circle, either light on dark background or dark on light background
  - d. Specify color of door such that circle symbol contrasts with door, either light on dark background or dark on light background
42. Specify the following for any signs specified per items W-10B.38 through W-10B.40 (CBC 11B-703.7.2.6):
  - a. Mounted with centerline minimum 58 inches and maximum 60 inches above finished floor
  - b. Mounted within 1 inch of vertical centerline of door
  - c. Rounded or eased edges at minimum 1/16-inch radius or chamfered edges with minimum 1/8-inch radius
  - d. Vertices with minimum 1/8-inch radius and maximum 1/4-inch radius

## **W-11B. DRINKING FOUNTAINS AND BOTTLE FILLING STATIONS (CBC 11B)**

### **SCOPING**

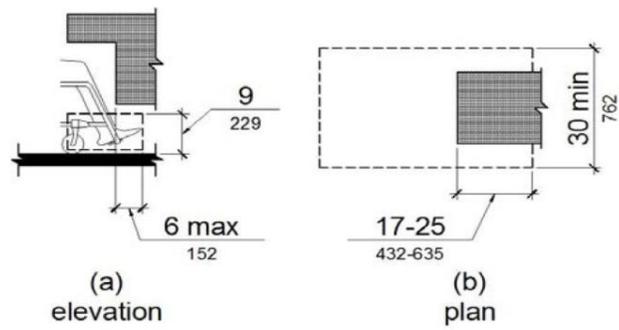
1. In facilities served by drinking fountains, identify at least one “low” drinking fountain complying with items W-11B.6 through W-11B.10 and at least one “high” drinking fountain complying with item W-11B.11.  
**Exception:** Where a single drinking fountain complies with items W-11B.6 through W-11B.10 and item W-11B.11, it may be substituted for two separate drinking fountains
2. Where more than the minimum number of drinking fountains required per item 1 is provided, minimum 50% of the total number of drinking fountains provided shall comply with items W-11B.6 through W-11B.10 and minimum 50% of the total number of drinking fountains provided shall comply with item W-11B.11  
**Exception:** Where 50% of the total number of drinking fountains provided yields a fraction, 50% shall be permitted to be rounded up or down provided the total number of drinking fountains complying with items W-11B.6 through W-11B.10 or item W-11B.11 equals 100% of the total number of drinking fountains provided.
3. Provide complete detailing for each drinking fountain provided to meet provisions of items W-11B.1 and W-11B.2. (CBC 11B-602)
4. Where bottle-filling stations are provided they shall comply with Section 11B-602.10.  
**Exception:** Refer to 11B-211.4 for detention or correctional facilities.

### **PEDESTRIAN PROTECTION**

5. All drinking fountains – accessible or otherwise – shall be located per **one of the following** (CBC 11B-602.9):
  - a. Within an alcove minimum 32-inches wide and minimum 18 inches deep
  - b. Between wing walls projecting horizontally at least as far as the drinking fountain and vertically to within 6 inches of the finished floor or ground surface
  - c. Otherwise positioned so as not to encroach into pedestrian ways
6. Dimension any wall- or post-mounted drinking fountains with minimum 18-inch and maximum 19-inch depth. (CBC 11B-602.8)

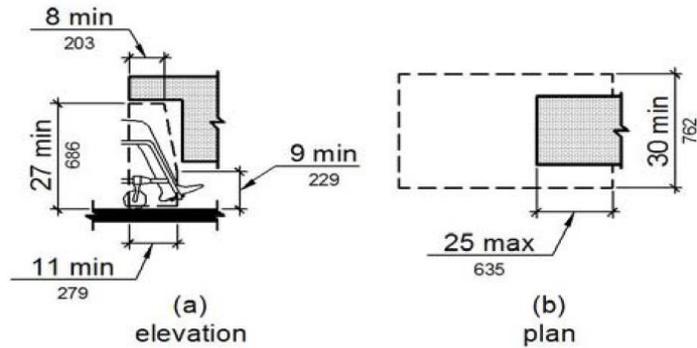
### **“LOW” DRINKING FOUNTAIN DIMENSIONS AND FEATURES**

7. Each “low” drinking fountain shall be on an accessible route allowing forward approach with minimum 30-inch by 48-inch clear floor space centered in front of drinking fountain. (CBC 11B-206.2.4, CBC 11B-305.3, CBC 11B-602.2)
8. Provide toe and knee clearance beneath each “low” drinking fountain per the following (CBC 11B-306.2, CBC 11B-306.3, CBC 11B-602.2):
  - a. Toe clearance per CBC Figure 11B-306.2:
    - o Minimum 9-inch height
    - o Minimum 17-inch depth
    - o Minimum 30-inch width



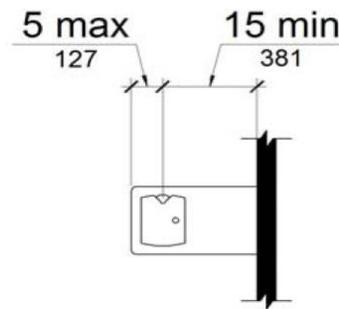
**FIGURE 11B-306.2  
TOE CLEARANCE**

- b. Knee clearance per CBC Figure 11B-306.3:
- Minimum 27-inch vertical clearance from front of drinking fountain to 8-inch depth
  - Reducing to minimum 9-inch vertical clearance at minimum 11-inch depth at rate of 1 inch in depth for each 6 inches in height
  - Minimum 30-inch width



**FIGURE 11B-306.3  
KNEE CLEARANCE**

9. Specify electronically controlled bubbler or manually operated bubbler activation complying with the following at each “low” drinking fountain (CBC 11B-309.4, CBC 11B-602.3):
- a. Front- or side-mounted
  - b. Maximum 6 inches from front edge of fountain
  - c. Operable with maximum 5 pounds of force
  - d. Operable with one hand and without tight grasping, pinching, or twisting of wrist
10. Detail bubbler spout outlet complying with the following at each “low” drinking fountain per CBC Figure 11B-602.5 (CBC 11B-602.4, CBC 11B-602.5):
- a. Maximum 36 inches above floor
  - b. Minimum 15 inches from vertical support
  - c. Maximum 5 inches from front edge of unit, including bumpers



**FIGURE 11B-602.5  
DRINKING FOUNTAIN SPOUT LOCATION**

11. Detail bubbler water flow complying with the following at each accessible drinking fountain (CBC 11B-602.6):

- a. Minimum 4 inches high
- b. Maximum 5 inches from front edge of unit
- c. Where spout located less than 3 inches from front edge of unit, maximum 30-degree angle measured horizontally between water stream and front face of unit
- d. Where spouts located between 3 inches and 5 inches from front edge of unit, maximum 15-degree angle measured horizontally between water stream and front face of unit

**“HIGH” DRINKING FOUNTAIN DIMENSIONS AND FEATURES**

- 12. Dimension spout outlets at minimum 38 inches and maximum 43 inches above finished floor or ground at each “high” drinking fountain. (CBC 11B-602.7)

**BOTTLE-FILLING STATIONS**

- 13. Comply with 11B-307 and 11B-309 regarding protruding objects and operable parts.
  - Exception:** Where a bottle-filling station is provided at a "High" drinking fountain, that bottle-filling station is not required to comply if a compliant bottle-filling station is located at the "Low" drinking fountain.

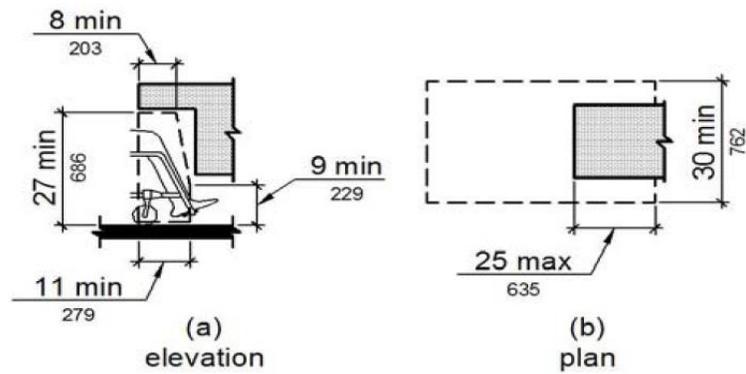
**W-12B. MISCELLANEOUS ELEMENTS (CBC 11B)**

**OPERABLE WINDOWS**

- 1. Where glazed openings provided in accessible rooms or spaces for operation by occupants, identify at least one complying with the following (CBC 11B-229, CBC 11B-309):
  - Exception:** Glazed openings in guest rooms required to provide communication features
  - Exception:** Glazed openings in guest rooms required to comply with CBC 11B-206.5.3 but otherwise not required to provide mobility features
  - a. Minimum 30-inch-by-48-inch clear floor space provided adjacent to window
  - b. Operable parts of window within CBC 11B-308 reach ranges
  - c. Window operable with maximum 5 pounds of force
  - d. Window operable with one hand and without tight grasping, pinching, or twisting of wrist

**SINKS**

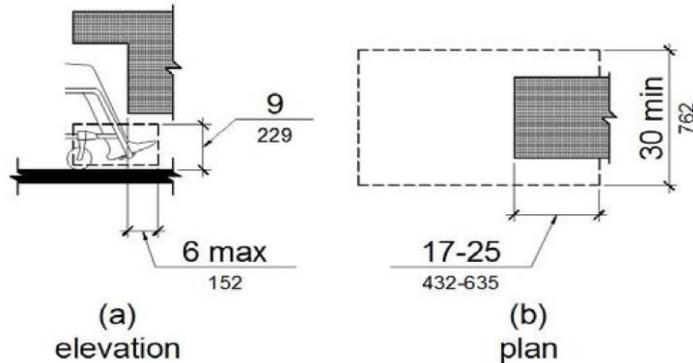
- 2. Identify at least 5% of sinks provided in each accessible room or space – but not fewer than one – complying with items W-12B.3 through W-12B.8 (CBC 11B-212.3).
  - Exception:** Mop, service, or scullery sinks
  - Exception:** Scrub sinks per CPC 221
- 3. Dimension accessible sinks with higher of rim or counter surface maximum 34 inches above finished. (CBC 11B-606.3)
- 4. Dimension the following clear floor space in front of each accessible sink (CBC 11B-305, CBC 11B-606.2):
  - a. Minimum 30-inch-wide by 48-inch-long clear floor space
  - b. Allowing forward approach from accessible route
    - Exception:** Parallel approach allowed to wet bars and kitchen sinks in spaces where cooktop or conventional range not provided
  - d. No door encroachment
- 5. Where forward approach required to accessible sink, provide knee clearance complying with the following per CBC Figure 11B-306.3: (CBC 11B-306.3, CBC 11B-606.5, CBC 11B-606.7):
  - a. Minimum 27-inch vertical clearance to 8-inch depth
  - b. Reducing to minimum 9-inch vertical clearance at minimum 11-inch depth at rate of 1 inch in depth for each 6 inches in height
  - c. Minimum 30-inch width
  - d. Hot water and drain pipes insulated or otherwise configured to protect against contact
  - e. No sharp or abrasive surfaces



**FIGURE 11B-306.3  
KNEE CLEARANCE**

6. Provide toe clearance beneath accessible sinks complying with the following per CBC Figure 11B-306.2 (CBC 11B-306.2, CBC 11B-606.5):

- a. Minimum 9-inch height
- b. Minimum 17-inch depth
- c. Minimum 30-inch width
- d. Space extending more than 6 inches beyond available knee clearance or more than 25 inches beneath sink shall not be considered toe clearance
- e. Hot water and drain pipes insulated or otherwise configured to protect against contact
- f. No sharp or abrasive surfaces



**FIGURE 11B-306.2  
TOE CLEARANCE**

7. Specify sink controls complying with the following (CBC 11B-308, CBC 11B-309, CBC 11B-606.4):

- a. Operable parts of sink faucet within CBC 11B-308 reach ranges
- b. Operable with maximum 5 pounds of force
- c. Operable with one hand and without tight grasping, pinching, or twisting of wrist
- d. Hand-operated metering faucets open for minimum 10 seconds

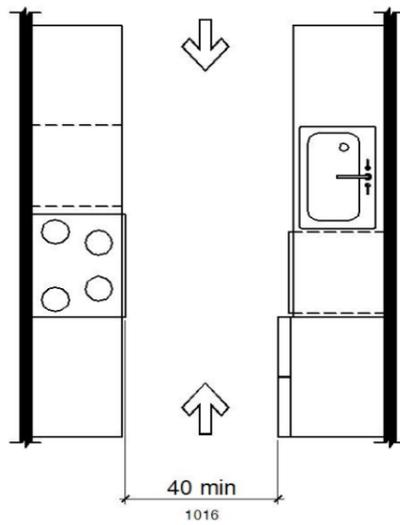
## **KITCHENS AND KITCHENETTES**

8. Dimension clearances at any kitchens per the following (CBC 11B-804.2):

**Exception:** Spaces that do not provide a cooktop or conventional range

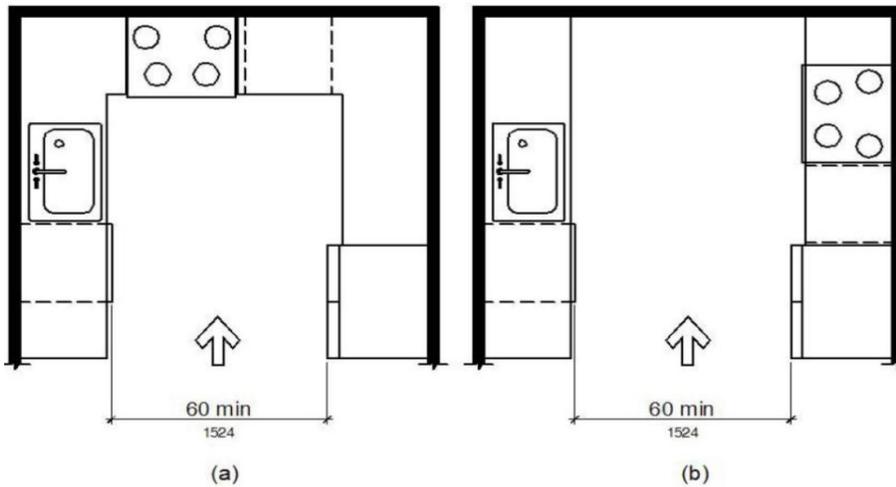
**Exception:** Commercial kitchens shall comply with clearance requirements of section W-5B

- a. Pass-through kitchens – i.e., minimum two entries – per CBC Figure 11B-804.2.1



**FIGURE 11B-804.2.1  
PASS THROUGH KITCHENS**

b. U-shaped kitchens per CBC Figure 11B-804.2.2



**FIGURE 11B-804.2.2  
U-SHAPED KITCHENS**

9. Specify any kitchen appliances provided shall comply with the following (CBC 11B-309, CBC 11B-804.6):

- a. Minimum 30-inch-by-48-inch clear floor space provided at each appliance
- b. Operable parts of appliances within CBC 11B-308 reach ranges  
**Exception:** Bottom-hinged appliance doors in the open position
- c. Appliances operable with maximum 5 pounds of force  
**Exception:** Appliance doors and door-latching devices
- d. Appliances operable with one hand and without tight grasping, pinching, or twisting of wrist  
**Exception:** Appliance doors and door-latching devices

10. Specify the following for individual kitchen appliances provided (CBC 11B-804.6):

- a. Dishwashers:
  - o Required clear floor space positioned adjacent to dishwasher door
  - o Dishwasher door in open position does not obstruct required clear floor space for dishwasher or sink
- b. Ranges or cooktops:
  - o Where forward approach provided, clear floor space shall include knee clearance per item W-12B.6 and toe clearance per item W-12B.7
  - o Where knee and toe clearance provided, underside of range or cooktop shall be insulated or otherwise configured to prevent burns, abrasions, or electrical shock
  - o Location of controls shall not require reaching across burners
- c. Ovens:
  - o Side-hinged ovens shall have minimum 30-inch-wide work surface adjacent to latch side of oven door

- Bottom-hinged ovens shall have minimum 30-inch-wide work surface adjacent to one side of oven door
- Controls located on front panels of oven
- d. Refrigerators and freezers:
  - Combination refrigerators and freezers shall have at least 50% of freezer space maximum 54 inches above finished floor
  - Clear floor space position for parallel approach to space dedicated to refrigerator/freezer with centerline of clear floor place offset maximum 24 inches from centerline of dedicated space

## LOCKERS

11. Identify at least 5% of any lockers provided complying with the following (CBC 11B-225.2.1, CBC 11B-811):
  - a. Minimum 30-inch-by-48-inch clear floor space provided adjacent to locker
  - b. Operable parts of locker within CBC 11B-308 reach ranges
  - c. Locker operable with maximum 5 pounds of force
  - d. Locker operable with one hand and without tight grasping, pinching, or twisting of wrist

## AUTOMATED TELLER MACHINES

12. Automated teller machines (ATMs) provided shall comply with the following (CBC 11B-220):
  - a. Accessible ATMs shall provide opportunity for same degree of privacy of input and output available to all individuals
  - b. Where one ATM provided, ATM shall meet provisions of items W-12B.13 through W-12B.20
  - c. Where two ATMs provided: One ATM shall meet provisions of items W-12B.13 through W-12B.20 and one ATM shall meet provisions of items W-12B.14, W-12B.15, W-12B.16, W-12B.17, W-12B.19, and W-12B.20
  - d. Where three or more ATMs provided: At least 50% shall meet provisions of items W-12B.13 through W-12B.20, while the remainder shall meet provisions of items W-12B.14, W-12B.15, W-12B.16, W-12B.17, W-12B.19, and W-12B.20

13. Dimension minimum 30-inch-by-48-inch clear floor space at each accessible ATM as required per item W-12B.12 (CBC 11B-707.2).

**Exception:** Drive-up only ATMs

14. Dimension operable parts within CBC 11B-308 reach ranges at each accessible ATM as required per item W-12B.12.

**Exception:** Drive-up only ATMs

15. Specify each accessible ATM as required per item W-12B.12 shall provide the opportunity for same degree of privacy of input and output available to all individuals. (CBC 11B-707.4)

16. Specify speech-enabled functions per the following at each accessible ATM as required per item W-12B.12. (CBC 11B-707.5)

- a. Operating instructions and orientation, visible transaction prompts, user input verification, error messages, and all displayed information for full use accessible to and independently usable by individuals with vision impairments

**Exception:** Audible tones acceptable instead of speech for visible output not displayed for security purposes, including, but not limited to, asterisks representing personal identification numbers

**Exception:** Advertisements and other similar information need not be audible unless they convey information that may be used in conducted transaction

- b. Speech delivered in recorded, digitized human, or synthesized manner through a mechanism readily available to all users, including, but not limited to, an industry standard connector or telephone handset

**Exception:** Where speech synthesis cannot be supported, dynamic alphabetic output need not be audible

- c. Speech capable of being repeated or interrupted with volume control provided for speech function

**Exception:** Speech output for any single function may be automatically interrupted when a transaction is selected

- d. Where receipts provided, speech output devices shall provide audible balance inquiry information, error messages, and all other information on printed receipt necessary to complete or verify transaction

**Exception:** Machine location, date and time of transaction, customer account number, and machine identifier need not be audible

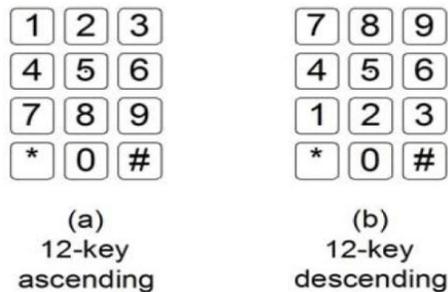
**Exception:** Information on printed receipts duplicating information available on screen need not be presented in form of audible receipt

**Exception:** Printed copies of bank statements and checks need not be audible

17. Specify input devices shall comply with the following at each accessible ATM as required per item W-12B.12 (CBC 11B-

707.6):

- a. At least one tactilely discernible input control shall be provided for each function
- b. Where provided, key surfaces not on active areas of display screens shall be raised above surrounding surfaces
- c. Where membrane keys are only method of input, each shall be tactilely discernible from surrounding surfaces and adjacent keys
- d. Numeric keys shall be arranged in a 12-key ascending or descending telephone keypad layout per CBC Figure 11B-707.6.2 with the number five key tactilely discernible from the other keys



**FIGURE 11B-707.6.2  
NUMERIC KEY LAYOUT**

- e. Function keys shall contrast visually from background surfaces, and characters and symbols on key surfaces shall contrast visually from key surfaces – visual contrast shall be either light-on-dark or dark-on-light

**Exception: Tactile symbols**

- f. Function key surfaces shall provide tactile symbols as follows:
  - o Enter or Proceed key: Raised circle
  - o Clear or Correct key: Raised left arrow
  - o Cancel key: Raised letter “X”
  - o Add Value key: Raised plus sign
  - o Decrease Value key: Raised minus sign

- 18. Specify display screen visibility shall comply with the following at each accessible ATM as required per item W-12B.12 (CBC 11B-707.7.1):

**Exception: Drive-up only ATMs**

- a. Display screen visible from point located 40 inches above center of clear floor space in front of ATM
- b. Where display screens mounted vertically or angled no more than 30 degrees from vertical, centerlines of screen and other display devices maximum 52 inches above floor or ground
- c. Where display screens mounted at an angle between 30 degrees and 60 degrees from vertical, centerlines of screen and other display devices maximum 44 inches above floor or ground
- d. Where display screens mounted at an angle between 60 degrees and 90 degrees from vertical, centerlines of screen and other display devices maximum 34 inches above floor or ground

- 19. Specify display screen characters shall comply with the following at each accessible ATM as required per item W-12B.12:

- a. Sans serif font
- b. Minimum 3/16-inch high based on uppercase letter “I”
- c. Contrast with background, either light-on-dark or dark-on-light

- 20. Specify Braille instructions for initiating speech mode shall be provided at each accessible ATM as required per item W-12B.12. (CBC 11B-707.8)

**DEPOSITORIES, VENDING MACHINES, CHANGE MACHINES, MAIL BOXES, AND FUEL DISPENSERS**

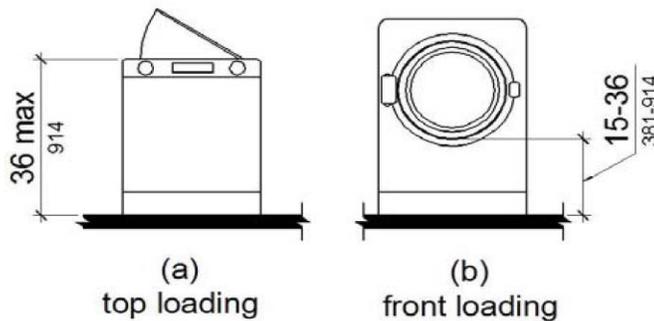
- 21. Identify at least 5% of any depositories, vending machines, change machines, mail boxes, and fuel dispensers complying with the following (CBC 11B-228, CBC 11B-308, CBC 11B-309):

**Exception: Drive-up only depositories**

- a. Minimum 30-inch-by-48-inch clear floor space provided adjacent to device
- b. Operable parts of device within CBC 11B-308 reach ranges
  - Exception:** Operable parts of fuel dispenser may have high-side reach of maximum 54 inches
- c. Operable with maximum 5 pounds of force
  - Exception:** Gas pump nozzles
- d. Operable with one hand and without tight grasping, pinching, or twisting of wrist

**WASHING MACHINES AND CLOTHES DRYERS**

- 22. Where washing machines or clothes dryers are provided, identify accessible appliances per the following (CBC 11B-214):
  - a. Where three or fewer washing machines provided, at least one shall comply with items W-12B.23 through W-12B.25
  - b. Where more than three washing machines provide, at least two shall comply with items W-12B.23 through W-12B.25
  - c. Where three or fewer clothes dryers provided, at least one shall comply with items W-12B.23 through W-12B.25
  - d. Where more than three clothes dryers provide, at least two shall comply with items W-12B.23 through W-12B.25
- 23. Dimension minimum 30-inch-by-48-inch clear floor space – positioned for parallel approach and centered on appliance – at each accessible washing machine and clothes dryer. (CBC 11B-611.2)
- 24. Specify the following for each accessible washing machine and clothes dryer (CBC 11B-611.3):
  - a. Operable parts of window within CBC 11B-308 reach ranges
  - b. Window operable with maximum 5 pounds of force
  - c. Window operable with one hand and without tight grasping, pinching, or twisting of wrist
- 25. Dimension the following at each accessible washing machine and clothes dryer per CBC Figure 11B-611.4 (CBC 11B-308.3.2, CBC 11B-611.4):
  - a. Top-loading machines: Door to laundry compartment maximum 36 inches above finished floor
  - b. Front-loading machines: Opening to laundry compartment minimum 15 inches and maximum 36 inches above finished floor



**FIGURE 11B-611.4  
HEIGHT OF LAUNDRY COMPARTMENT OPENING**

**PUBLIC TELEPHONES**

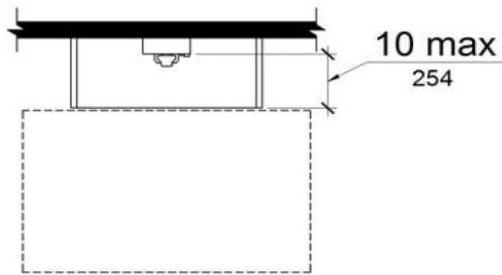
- 26. In facilities proposing public telephones, identify wheelchair accessible telephones per CBC Table 11B-217.2. (CBC 11B-217.2)

**Exception:** Drive-up only public telephones

**TABLE 11B-217.2  
WHEELCHAIR ACCESSIBLE TELEPHONES**

NUMBER OF TELEPHONES PROVIDED ON A FLOOR, LEVEL, OR EXTERIOR SITE	MINIMUM NUMBER OF REQUIRED WHEELCHAIR ACCESSIBLE TELEPHONES
1 or more single units	At least 50 percent of telephone units, but not less than 1 per floor, level, and exterior site
1 bank	At least 50 percent of telephone units per bank, but not less than 1 per floor, level, and exterior site
2 or more banks	At least 50 percent of telephone units per bank, but not less than 1 per bank At least 1 telephone per floor shall meet the requirements for a forward reach telephone.

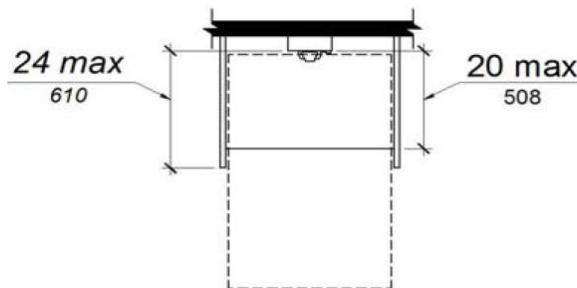
- 27. Dimension minimum 30-inch-by-48-inch clear floor space at each wheelchair accessible telephone per the following (CBC 11B-704.2):
  - a. Clear floor space not obstructed by bases, enclosures, or seats
  - b. Where parallel approach provided, maximum 10 inches from edge of telephone enclosure to face of telephone unit per CBC Figure 11B-704.2.1.1



**FIGURE 11B-704.2.1.1  
PARALLEL APPROACH TO TELEPHONE**

- c. Where forward approach provided at telephone within an enclosure, counter may extend maximum 20 inches beyond face of telephone and into required clear floor space and enclosure may extend maximum 24 inches beyond face of telephone per CBC Figure 11B-704.2.1.2

**Exception:** If minimum 36-inch-wide clear space provided, enclosure may extend more than 24 inches beyond face of telephone



**FIGURE 11B-704.2.1.2  
FORWARD APPROACH TO TELEPHONE**

28. Specify the following for each public telephone (CBC 11B-704.2):
- Operable parts of telephone and any phone directories within CBC 11B-308 reach ranges
  - Telephone operable with one hand and without tight grasping, pinching, or twisting of wrist
  - Push-button controls provided where service available
  - Cord from telephone to handset minimum 29-inches long
29. Specify all public telephones shall have volume controls per the following (CBC 11B-217.3, CBC 11B-703.7.2.3, CBC 11B-704.3):
- Provides gain adjustable up to minimum 20dB
  - Incremental volume control with at least one intermediate step of minimum 12dB gain
  - Includes automatic reset
  - Equipped with receiver generating magnetic field in area of receiver cap
  - Hearing-aid compatible
  - Identified by symbol per CBC Figure 11B-703.7.2.3



**FIGURE 11B-703.7.2.3  
VOLUME CONTROL TELEPHONE**

30. Identify at least one permanently affixed teletypewriter (TTY – also known as “text telephone”) with symbol per CBC Figure 11B-703.7.2.2 at the following (CBC 11B-216.9, CBC 11B-217.4, CBC 11B-703.7.2.2, CBC 11B-704.4):

- a. A bank of telephones with four or more public pay telephones
- b. On any floor of a public building with at least one public pay telephone on that floor
- c. On any floor of a private building with at least four public pay telephones on that floor
- d. In the public-use area of any public building with at least one public pay telephone in a public-use area
- e. In any private building with four or more public pay telephones in that building

**Exception:** At least one TTY shall be provided in a stadium, arena, convention center, hotel with a convention center, or covered mall with at least one interior public pay telephone

- f. At exterior sites with at least four public pay telephones on that site
- g. At rest stops, emergency roadside stops, or service plazas with at least one public pay telephone
- h. In hospital emergency, recovery, and waiting rooms with at least one public pay telephone
- i. In secured areas of detention and correctional facilities with at least one pay telephone



**FIGURE 11B-703.7.2.2  
INTERNATIONAL SYMBOL OF TTY**

31. Specify TTYs provided at public pay telephones shall comply with the following (CBC 11B-704.4):

- a. Where an acoustic couple is used, telephone cord shall be sufficiently long to allow connection of TTY and telephone receiver
- b. When in use, touch surface of TTY keypad minimum 34 inches above finished floor

**Exception:** Telephones with seats provided

32. Where a bank of telephones in the interior of a building includes three or more public pay telephones, identify at least one complying with the following to accommodate portable TTY (CBC 11B-217.5, CBC 704.5):

**Exception:** Secured areas of detention and correctional facilities where shelves and outlets prohibited for security or safety purposes

**Exception:** Bank of telephones with a TTY

- a. Provided with shelf and electrical outlet within or adjacent to telephone enclosure
- b. Telephone handset capable of being placed flush on surface of shelf
- c. Shelf capable of accommodating TTY with minimum 6 inches vertical clearance above area where TTY is to be placed

## **ELECTRIC VEHICLE CHARGING STATIONS**

33. For facilities providing electric vehicle charging stations, identify on site accessibility plan accessible/ambulatory electric vehicle charging stations as required per CBC Table 11B-228.3.2.1 (CBC 11B-228.3.2):

**Exception:** All drive-up electric vehicle charging stations – i.e., similar to gas station island – shall comply with items W-12B.34 through W-12B.44

**Exception:** Electric vehicle charging stations assigned to an employee

**Exception:** Electric vehicle charging stations serving public or private fleet vehicles

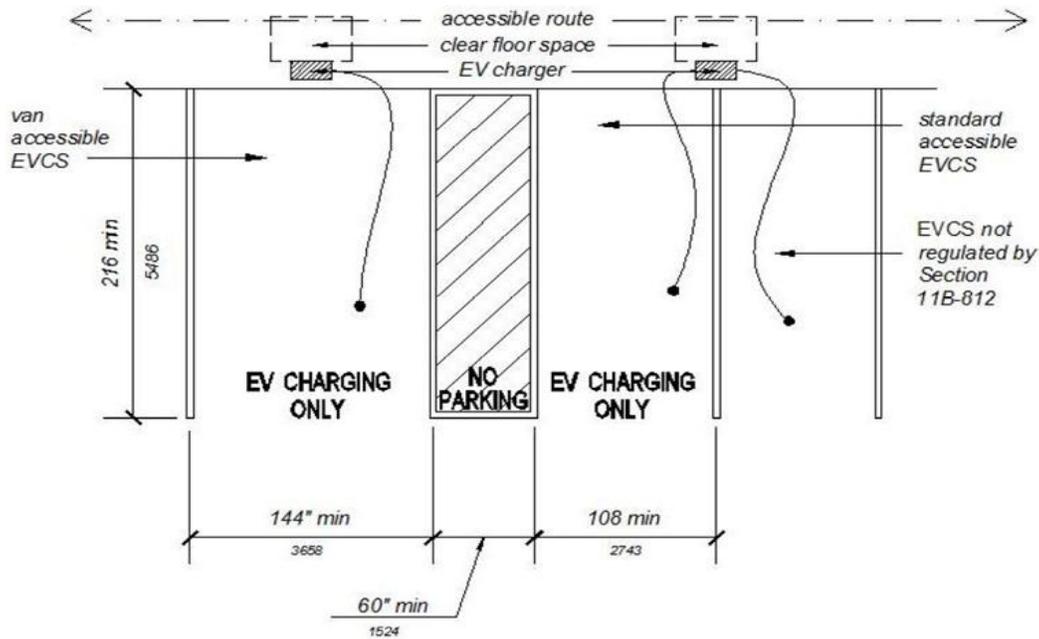
**TABLE 11B-228.3.2.1  
ELECTRIC VEHICLE CHARGING STATIONS FOR PUBLIC USE AND COMMON USE**

TOTAL NUMBER OF EVCS AT A FACILITY <sup>1</sup>	MINIMUM NUMBER (by type) OF EVCS REQUIRED TO COMPLY WITH SECTION 11B-812 <sup>1</sup>		
	Van Accessible	Standard Accessible	Ambulatory
1 to 4	1	0	0
5 to 25	1	1	0
26 to 50	1	1	1
51 to 75	1	2	2
76 to 100	1	3	3
101 and over	1, plus 1 for each 300, or fraction thereof, over 100	3, plus 1 for each 60, or fraction thereof, over 100	3, plus 1 for each 50, or fraction thereof, over 100

1. Where an EV charger can simultaneously charge more than one vehicle, the number of EVCS provided shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.

34. Provide complete dimensions and detailing for each accessible and ambulatory electric vehicle charging station. CBC 11B-812
35. Using ■■■■■■ or equivalent symbol, identify on site accessibility plan the accessible route(s) between accessible/ambulatory electric vehicle charging station access aisles and an accessible entrance of the building or facility served. (CBC 11B-812.5.1)
  - Exception:** Accessible/ambulatory electric vehicle charging station spaces and access aisles may be located in different electric vehicle charging facilities if substantially equivalent or greater accessibility is provided in terms of distance from accessible entrance(s), charging fee, and user convenience
  - Exception:** Accessible/ambulatory electric vehicle charging station spaces and access aisles not serving a particular building or facility shall be located on an accessible route to an accessible pedestrian entrance of the electric vehicle charging facility
36. Identify on site accessibility plan any obstructions overhanging accessible/ambulatory electric vehicle charging station spaces, access aisles, or access routes serving them and dimension minimum 98-inch vertical clearance. (CBC 11B-812.4)
37. The location of electric vehicle charging station spaces and access aisles shall not require persons using them to travel behind vehicle spaces or parking spaces other than their own. (CBC 11B-812.5.4)
  - Exception:** Ambulatory electric vehicle charging spaces
  - Exception:** Electric vehicle charging spaces installed in existing facilities shall comply to the maximum extent feasible
38. Provide bumpers or curbs at all electric vehicle charging station spaces – accessible, ambulatory, or otherwise – where necessary to prevent vehicle encroachment into required width of adjacent accessible routes. (CBC 11B-812.5.3)
39. Using ■■■■■■ or equivalent symbol, identify on site accessibility plan the accessible route – with no obstruction by cables or other elements – between electric vehicle charging station space and electric vehicle charger serving it. (CBC 11B-812.5.2, CBC 11B-812.5.5)
40. Specify on plans the following for surfaces of accessible/ambulatory electric vehicle charging station spaces and access aisles (CBC 11B-302, CBC 11B-812.3):
  - a. Maximum 2.1% slope in all directions
  - b. No changes in level
  - c. Concrete or paved surface qualifying as firm, stable, and slip-resistant
  - d. No detectable warnings within vehicle spaces or access aisles
41. Dimension the following at each electric vehicle charging space required per item W-12B.33 (CBC 11B-812.6, CBC 11B-812.7):
  - Exception:** Where the long dimension of vehicle spaces is parallel to traffic flow in the adjacent vehicular way, vehicle spaces shall be minimum 240-inches long
  - a. Van accessible:
    - o Minimum 144-inch-wide by minimum 216-inch-long vehicle space
    - o Minimum 60-inch-wide access aisle located on passenger side of vehicle space and extending full required length of vehicle space
  - b. Standard accessible:
    - o Minimum 108-inch-wide by minimum 216-inch-long vehicle space
    - o Minimum 60-inch-wide access aisle located on either side of vehicle space and extending full required length of vehicle space
  - c. Ambulatory:

- o Minimum 120-inch-wide by minimum 216-inch-long vehicle space
- d. Drive-up:
  - o Minimum 204-inch-wide by minimum 240-inch-long vehicle space



**FIGURE 11B-812.9.  
SURFACE MARKING**

42. Detail surface identification complying with following at each electric vehicle charging space and access aisle required per item W-12B.33 (CBC 11B-812.7.2, CBC 11B-812.7.3, CBC 11B-812.9):

- a. Vehicle space:
  - o “EV CHARGING ONLY” in minimum 12-inch-high letters and located per the following:
    - Centerline of text maximum 6 inches from centerline of vehicle space
    - Lower corner/side of text aligned with end of vehicle space length
- b. Access aisle:
  - o Painted borderline – contrasting with surface **but not blue** – around perimeter of access aisle
  - o Hatched lines – contrasting with surface **but not blue** – maximum 36 inches on center within access aisle
  - o “NO PARKING” painted on surface within access aisle in minimum 12-inch letters and located for visibility from adjacent vehicular way

43. Where total of 5 or more electric vehicle charging spaces are provided, identify on site accessibility plan the following signage (CBC 11B-812.8):

- a. Where total of 5 to 25 electric vehicle charging spaces are provided, one van accessible electric vehicle charging space shall be identified by signage including International Symbol of Accessibility
- b. Where total of 26 or more electric vehicle charging spaces are provided, all required van accessible and standard accessible electric vehicle charging spaces shall be identified by signage including International Symbol of Accessibility
- c. Identification signage shall be minimum 70 square inches and reflectorized
- d. Identification signage shall be visible from electric vehicle charging space it serves and permanently posted either immediately adjacent to vehicle space or within projected vehicle space width at head end of vehicle space
- e. Identification signage for van accessible vehicle spaces shall include the designation “Van Accessible”
- f. Minimum 80-inch vertical clearance above ground surface
  - Exception:** Minimum 60-inch vertical clearance if posted on wall at interior end of vehicle space or not located within or adjacent to an accessible route

44. Specify on plans electric vehicle charger shall comply with the following: (CBC 11B-309, CBC 11B-812.10):

- a. Located adjacent to and within projected width of vehicle space served
  - Exception:** Electric vehicle chargers serving more than one electric vehicle charging space shall be located adjacent to and within combined projected width of vehicle spaces served
  - Exception:** For alterations at existing facilities where an accessible route or general circulation path is not

provided adjacent to the head end of the vehicle space or access aisle, the electric vehicle charger may be located within the projected width of the access aisle maximum 36 inches from the head of the space

**Exception:** Where long dimension of vehicle space is parallel to vehicular way, electric vehicle charger shall be located adjacent to and maximum 48 inches from head end or foot end of vehicle space or access aisle served

- b. Minimum 30-inch-by-48-inch clear floor space provided adjacent to electric vehicle charger
- c. Operable parts and charging cord within CBC 11B-308 reach ranges
- d. Operable parts require maximum 5 pounds of force, except not required for electric vehicle connectors per CBC 11B-309.4 exception.
- e. Operable parts require only one hand and no tight grasping, pinching, or twisting of wrist
- f. Any point-of-sale devices shall meet item W-14B5.7

**W-13B. ALARMS (CBC 11B)**

**VISIBLE ALARMS**

1. Where fire alarm coverage required by CBC 907, identify location of visible alarms (strobe lights) in the following public- and common-use areas (CBC 907.5.2.3.1, CBC 11B-215):

**Exception:** In other than I-2 and I-2.1 occupancies, visible alarms not required in alterations unless fire alarm system is added, upgraded, or replaced.

**Exception:** Visible alarms not required in enclosed exit stairways, exterior exit stairs, or exterior exit ramps.

**Exception:** Visible alarms not required in elevator cars.

- a. Sanitary facilities including restrooms, bathrooms, and shower rooms
- b. Corridors
- c. Lobbies
- d. Meeting and conference rooms
- e. Filing, photocopy, and employee break rooms
- f. Dining rooms and cafeterias
- g. Multipurpose rooms
- h. Classrooms
- i. Gymnasiums
- j. Locker rooms
- k. Band and music practice rooms
- l. Occupational shops
- m. Other occupied rooms where ambient noise impairs hearing of fire alarm
- n. Other public- or common-use areas

2. Where employee work areas require audible alarm coverage, specify notification appliance circuits serving employee work areas shall be designed with minimum 20-percent spare capacity to support adding visible notification devices in future to accommodate any hearing-impaired employees. (CBC 907.5.2.3.2, CBC 11B-215.3)

3. Visible alarms shall be provided in R-1 sleeping units per CBC Table 907.5.2.3.3. (CBC 907.5.2.3.3)

**[F] TABLE 907.5.2.3.3  
VISIBLE ALARMS**

NUMBER OF SLEEP UNITS	SLEEPING ACCOMMODATIONS WITH VISIBLE ALARMS
6 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1,000	5% of total
1,001 and over	50 plus 3 for each 100 over 1,000

*[SFM] Also see Chapter 11B, Section 11B-224.4 and Table 11B-224.4.*

4. Where fire alarm coverage required in R-2 occupancies by CBC 907, all dwelling units and sleeping units shall be provided with capability to support visible alarms, including potential for future interconnection of building fire alarm system with unit smoke alarms, replacement of audible appliances with combination audible/visible appliances, or future extension of existing wiring from unit smoke alarm locations to required locations for visible appliances. (CBC 907.5.2.3.4)

## AUDIBLE ALARMS

5. Where fire alarm coverage required by CBC 907, specify audible alarms complying with the following (CBC 907.5.2.1, CBC 907.5.2.5):
  - Exception:** In patient areas of I-2 occupancies, visible alarms may be provided in lieu of audible alarms.
  - Exception:** Where average ambient noise great than 95 dBA, visible alarms shall be provided in lieu of audible alarms.
  - a. Sound distinctive alert not used for any purpose other than fire alarm
    - Exception:** In patient areas of I-2 occupancies, audible alarms shall be only chimes or similar-sounding devices for alerting staff
    - Exception:** Any audible alarms located in an occupant evacuation elevator lobby shall be connected to a separate notification zone for manual paging only
  - b. In every occupiable space within building, provide sound pressure level of 15 decibels above average ambient sound level or 5 decibels above maximum sound level having minimum 60-second duration, whichever is greater
  - c. Maximum sound pressure level of 110 decibels at minimum hearing distance from audible appliance
  - d. Audible signal shall be standard firm alarm evacuation signal, ANSI S3.41 Audible Emergency Evacuation Signal, "three pulse temporal pattern," as described in NFPA 72

## FIRE ALARM BOXES

6. Where manual fire alarms required by CBC 907, specify alarm boxes and protective covers complying with the following (CBC 907.4.2, CBC 11B-205.1, CBC 11B-309):
  - a. Highest point of activating handle or lever located minimum 42 inches and maximum 48 inches above floor
    - Exception:** Existing manual fire alarm boxes
  - b. Operable with maximum 5 pounds of force
  - c. Operable with one hand and without tight grasping, pinching, or twisting of wrist

## W-14B1. ASSEMBLY USES (CBC 11B)

### RESTAURANT, DINING, AND BAR FACILITIES

1. Identify on floor plan accessible route(s) to all functional areas, including raised, sunken, and outdoor areas. (CBC 11B-206.2.5)
  - Exception:** Mezzanines in altered facilities not required to provide an accessible route between stories where mezzanine contains less than 25% of total combine area for seating and dining and where same décor and services provided in accessible area
2. Identify on floor plan wheelchair spaces complying with the following in dining, banquet, and bar facilities (CBC 11B-226):
  - a. At least 5% of seating spaces and standing spaces at dining surfaces shall comply with items W-14B1.3 through W-14B1.7
  - b. Spaces required to comply with items W-14B1.3 through W-14B1.7 shall be dispersed throughout space or facility containing dining surfaces for each type of seating in a functional area
  - c. Where food or drink is served for consumption at a counter exceeding 34 inches in height, a minimum 60-inch-long portion of the main counter shall comply with item W-14B1.7
3. Dimension accessible routes and aisles serving seating per the following (CBC 11B-403.5.1):
  - a. Minimum 36-inch-wide accessible route to each wheelchair space
  - b. Minimum 36-inch-wide aisles serving tables or seats on only one side
  - c. Minimum 44-inch-wide aisles serving tables or seats on both sides
4. Dimension minimum 30-inch-by-48-inch clear floor space positioned for forward approach to each wheelchair space. (CBC 11B-902.2)
5. Detail and dimension knee/toe clearance complying with the following at each wheelchair space (CBC 11B-306.3.3):
  - a. Minimum 27-inches high

- b. Minimum 30-inches wide
  - c. Minimum 19-inches deep
6. Specify table tops minimum 28 inches and maximum 34 inches above finished floor at each wheelchair space. (CBC 11B-902.3)
  7. Specify minimum 50% of self-service shelves – but not fewer than one of each type – shall comply with CBC 11B-308 reach ranges. (CBC 11B-227.4, CBC 11B-904.5)
  8. Specify tops of tray slides shall be minimum 28 inches and maximum 34 inches above finished floor. (CBC 11B-227.4, CBC 11B-904.5)
  9. If restaurant includes service counter for transactions, dimension at least one of each type complying with the following (CBC 11B-227.3, CBC 11B-306, CBC 11B-904.4):
    - a. If parallel approach allowed:
      - o Minimum 36-inch-long portion of counter provided at maximum 34 inches above finished floor  
**Exception:** Where the provided counter surface is less than 36 inches long, the entire counter surface shall be maximum 34 inches above finished floor
      - o Minimum 30-inch-by-48-inch clear floor space positioned for parallel approach adjacent to accessible counter length
    - b. If forward approach required:
      - o Minimum 36-inch-long portion of counter provided at maximum 34 inches above finished floor
      - o Minimum 30-inch-by-48-inch clear floor space positioned for forward approach to accessible counter length
      - o Knee and toe space provided beneath counter per CBC 11B-306

**AUDITORIUMS, ASSEMBLY HALLS, AND THEATERS**

10. Identify on seating plan level wheelchair spaces in audience seating areas per CBC Table 11B-221.2.1.1 (CBC 11B-221.2, CBC 11B-802.1):  
**Exception:** When required wheelchair spaces are not occupied by persons eligible for those spaces, removable seats may be placed in those spaces

**TABLE 11B-221.2.1.1  
NUMBER OF WHEELCHAIR SPACES IN ASSEMBLY AREAS**

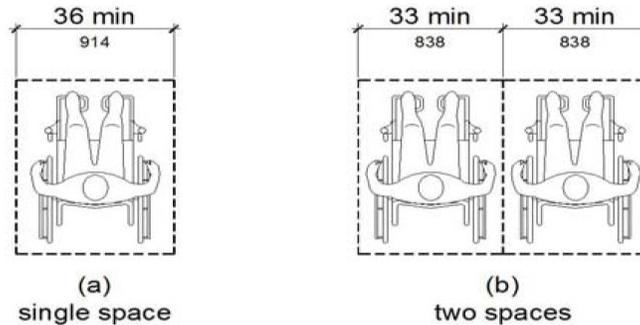
NUMBER OF SEATS	MINIMUM NUMBER OF REQUIRED WHEELCHAIR SPACES
4 to 25	1
26 to 50	2
51 to 150	4
151 to 300	5
301 to 500	6
501 to 5000	6, plus 1 for each 100, or fraction thereof, between 501 through 5000
5001 and over	46, plus 1 for each 200, or fraction thereof, over 5000

11. Accessible seating shall be an integral part of the seating plan and provide spectators with choices of seating locations and viewing angles equivalent to those available to all other spectators. (CBC 11B-221.2.3)
12. Wheelchair spaces shall be dispersed horizontally and vertically at varying distances from performance area. (CBC 11B-221.2.3.1)  
**Exception:** Horizontal dispersion not required in assembly areas with 300 or fewer seats if companion seats required by item W-14B1.17 and wheelchair spaces are located within the second or third quartile of the total row length or the first and fourth quartile of the row if the companion seats and wheelchair spaces cannot be accommodated in the second and third quartiles of the row  
**Exception:** In row seating, two wheelchair spaces shall be permitted to be located side-by-side  
**Exception:** Vertical dispersion not required in assembly areas with 300 or fewer seats if wheelchair spaces provide viewing angle equivalent to average viewing angle provided in facility  
**Exception:** In bleachers, wheelchair spaces shall not be required in rows other than rows at points of entry to bleacher seating
13. Wheelchair spaces shall be located on an accessible route connected with the following (CBC 11B-206.2.4, CBC 11B-206.2.6):
  - a. Required means of egress
  - b. Main lobby or primary entrance
  - c. Related toilet facilities

d. Performance areas and ancillary areas used by performers

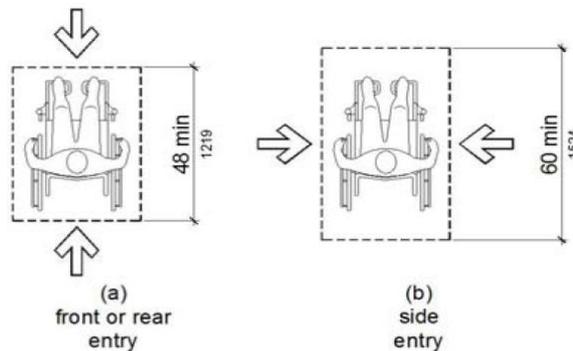
14. Dimension on seating plan wheelchair space locations with level clear floor space complying with the following (CBC 11B-802.1):

- a. Width per CBC Figure 11B-802.1.2:
  - o For single wheelchair space, minimum 36-inch width
  - o For two adjacent wheelchair spaces, minimum 33-inch width for each space



**FIGURE 11B-802.1.2  
WIDTH OF WHEELCHAIR SPACES**

- b. Depth per CBC Figure 11B-802.1.3:
  - o Where wheelchair space may be entered from front or rear, minimum 48-inch depth
  - o Where wheelchair space may be entered only from side, minimum 60-inch depth



**FIGURE 11B-802.1.3  
DEPTH OF WHEELCHAIR SPACES**

- c. Wheelchair space shall adjoin – but not overlap – accessible routes
- d. Lines of sight over seated spectators per CBC 11B-802.2.1
- e. Lines of sight over standing spectators per CBC 11B-802.2.2

15. Identify with an “R” on seating plan any removable seats installed at wheelchair spaces when such spaces are not utilized by wheelchair users. (CBC 11B-221.2.5)

16. Identify with a “C” on seating plan at least one companion seat per the following immediately adjacent to each wheelchair space (CBC 11B-221.3, CBC 11B-802.3):

- a. In row seating, companion seat shall be located to provide shoulder alignment with point measured 36 inches from front of adjacent wheelchair space
- b. Floor surface of companion seat shall be at same elevation as floor surface of adjacent wheelchair space
- c. Companion seat shall be equivalent in size, quality, comfort, and amenities to seating in immediate area
- d. Companion may be movable

17. In addition to wheelchair spaces, identify with an “A” on seating plan at least 5% of total number of aisle seats – but not fewer than one seat – as designated aisle seats per the following (CBC 11B-221.4, CBC 11B-802.4):

- a. Located closest to accessible routes
- b. No armrests, removable armrests, or folding armrests on the aisle side of the seat
- c. Identified by signage or marker with International Symbol of Accessibility

18. In addition to wheelchair spaces, identify with an “S” on seating plan at least 1% of total number of seats – but not fewer

than two seats – as semi-ambulant seats providing minimum 24-inch clear leg space between front of seat and back of seat immediately in front. (CBC 11B-221.6, CBC 11B-802.5)

19. Specify number of assistive-listening systems for all assembly audience areas, conference rooms, and meeting rooms, with a minimum number of receivers equal to 4% of seats but not fewer than 2 receivers. (CBC 11B-219.2, CBC 11B-219.3)

**Exception:** Systems used exclusively for paging, background music, or combination of these two uses

**Exception:** Where building contains multiple assembly areas under one management, the total number of required receivers may be calculated according to total number of seats in building provided all receivers are usable with all systems

20. Specify minimum 25% of receivers provided per item W-14B1.19 – but not fewer than 2 receivers – shall be hearing-aid compatible. (CBC 11B-219.3)

**Exception:** Assembly areas with all seats served by an induction loop assistive-listening system

21. If assistive-listening systems limited to specific areas or seats, identify on seating plan such areas or seats within a 50-foot viewing distance of performance areas and offering complete views. (CBC 11B-219.4)

22. Specify permanently installed assistive-listening systems in fixed-seating areas accommodating 50 occupants or having audio-amplification systems. (CBC 11B-219.5)

**Exception:** Portable assistive-listening systems used for conference rooms or meetings rooms may serve more than one room if an adequate number of electrical outlets to support the system are provided

23. Specify assistive-listening systems shall comply with the following (CBC 11B-706):

- a. Receivers required for use with assistive-listening system shall include 1/8-inch standard mono jack
- b. Receivers required to be hearing-aid compatible shall interface with telecoils in hearing aids through the provision of neckloops
- c. Capable of providing sound pressure level of minimum 110 dB and maximum 118 dB with dynamic range on volume control of 50 dB
- d. Signal-to-noise ratio for internally generated noise minimum 18 dB
- e. Peak clipping maximum 18 dB above clipping relative to peaks of speech

24. Provide signage in a prominent location within assembly area indicating availability of assistive-listening devices and coordinate with signage schedule to comply with the following (CBC 11B-216.10, CBC 11B-703.7.2.4):

**Exception:** Where ticket offices or windows provided, signs not required at each assembly area if sign displayed at each ticket office or window informing patrons of availability of assistive-listening systems

- a. Includes the International Symbol of Access for Hearing Loss per CBC Figure 11B-703.7.2.4



**FIGURE 11B-703.7.2.4**  
**INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS**

- b. Includes language reading: "Assistive-Listening System Available"
- c. Includes visual characters per CBC 11B-703.5

## **RELIGIOUS FACILITIES**

25. Provide wheelchair spaces per items W-14B1.11 through W-14B1.19 in sanctuary areas. (CBC 11B-244.1)
26. Provide wheelchair access to stages, raised platforms, choir areas, musician areas, and performing areas. (CBC 11B-244.1)

## **STADIUMS, GYMNASIUMS, AND SPORTS-SPECTATOR FACILITIES**

27. Provide and identify accessible spectator seating per items W-14B1.11 through W-14B1.19. (CBC 11B-221.2)
28. Provide accessible routes to the following participation areas and associated facilities (CBC 11B-206.2.4, CBC 11B-221.2.1.4):
- a. Tennis, racquetball, and badminton courts
  - b. Basketball, volleyball, and handball courts
  - c. Gymnasium floor areas and general exercise rooms
  - d. Playing fields and running tracks
  - e. Bowling lanes
  - f. Athletic team and club rooms
  - g. Team or player seating areas
  - h. Locker rooms and sanitary facilities
29. Provide accessible route to any press boxes. (CBC 1B-206.2.7)
- Exception:** Press boxes with points of entry at only one level and with aggregate area of maximum 500 square feet
- Exception:** Press boxes elevated minimum 12 feet above grade and with aggregate area of maximum 500 square feet

## **W-14B2. BUSINESS AND OFFICE USES (CBC 11B)**

### **BUSINESS AND PROFESSIONAL OFFICES**

**Note: Professional offices of health care providers also shall comply with section W-14B4**

1. The following areas shall be accessible (CBC 11B-206.2.4):
  - a. Reception and waiting rooms
  - b. Office areas
  - c. Any other areas intended for use by clients or visitors
  - d. Associated routes and toilet rooms
2. Spaces and elements within employee work areas shall be accessible per the following (CBC 11B-203.9, CBC 11B-206.2.8, CBC 11B-403.5):
 

**Exception:** Common-use circulation paths within employee work areas that are an integral component of work area equipment

**Exception:** Common-use circulation paths within exterior employee work areas fully exposed to the

  - a. Allow individuals with disabilities to approach, enter, and exit the employee work area
  - b. Include common-use circulation paths within the employee work area
3. If office includes service counter for transactions, dimension at least one of each type complying with the following (CBC 11B-227.3, CBC 11B-306, CBC 11B-904.4):
  - a. If parallel approach allowed:
    - o Minimum 36-inch-long portion of counter provided at maximum 34 inches above finished floor
    - Exception:** Where the provided counter surface is less than 36 inches long, the entire counter surface shall be maximum 34 inches above finished floor
    - o Minimum 30-inch-by-48-inch clear floor space positioned for parallel approach adjacent to accessible counter length
  - b. If forward approach required:
    - o Minimum 36-inch-long portion of counter provided at maximum 34 inches above finished floor
    - o Minimum 30-inch-by-48-inch clear floor space positioned for forward approach to accessible counter length
  - o Knee and toe space provided beneath counter per CBC 11B-306

### **POLICE STATIONS, FIRE STATIONS, AND COURTROOMS**

4. The following areas shall be accessible (CBC 11B-206.2.4, CBC 11B-231, CBC 11B-232.3, CBC 11B-808):
  - a. Reception and waiting rooms
  - b. Office areas
  - c. Public tour areas
  - d. Classrooms
  - e. Dispatch rooms
  - f. At least one detention cell with supporting sanitary facilities
  - g. Detention area visitor rooms
  - h. Courtroom areas:
    - o Judges' chambers and bench
    - o Counsel tables

- Jury boxes
- Witness stands
- Public seating
- i. Associated routes and toilet rooms

## W-14B3. EDUCATIONAL USES (CBC 11B)

### LIBRARIES AND STUDY AREAS

1. The following areas shall be accessible (CBC 11B-206.2.4):
  - a. Library card files
  - b. Book stacks
  - c. Periodicals
  - d. Reading and study areas
  - e. Reference areas
  - f. Information desks
  - g. Circulation counters
2. Dimension aisles complying with the following at open book stacks (CBC 11B-403.5.1):
  - a. Main aisles minimum 44-inches wide
  - b. Side, range, and end aisles minimum 36-inches wide
3. Specify book stacks maximum 54 inches above finished floor. (CBC 11B-225.2.3)
 

**Exception:** Where attendant available to assist persons with disabilities

**Exception:** Book stacks restricted to employee use
4. Identify on floor plan at least 5% of total seating spaces complying with wheelchair space requirements of items W-14B3.5 through W-14B3.9. (CBC 11B-226)
5. Dimension accessible routes and aisles serving seating per the following (CBC 11B-403.5.1):
  - a. Minimum 36-inch-wide accessible route to each wheelchair space
  - b. Minimum 36-inch-wide aisles serving tables or seats on only one side
  - c. Minimum 44-inch-wide aisles serving tables or seats on both sides
6. Dimension minimum 30-inch-by-48-inch clear floor space positioned for forward approach to each wheelchair space. (CBC 11B-902.2)
7. Detail and dimension knee clearance complying with the following at each wheelchair space (CBC 11B-306.3):
  - a. Minimum 27-inches high
  - b. Minimum 30-inches wide
  - c. Minimum 11-inches deep
8. Detail and dimension toe clearance complying with the following at each wheelchair space (CBC 11B-306.2):
  - a. Minimum 9-inches high
  - b. Minimum 30-inches wide
  - c. Minimum 19-inches deep
9. Specify table tops minimum 28 inches and maximum 34 inches above finished floor at each wheelchair space. (CBC 11B-902.3)

## W-14B4. HEALTH CARE USES (CBC 11B)

### GENERAL REQUIREMENTS

1. At licensed medical and long-term care facilities where period of stay may exceed 24 hours, provide passenger loading zone per section W-2B with loading zone and associated accessible route protected by canopy or roof overhang. (CBC 11B-223.2, CBC 11B-805.1)
2. All public- and common-use areas shall be accessible. (CBC 11B-223.2, CBC 11B-805.1)

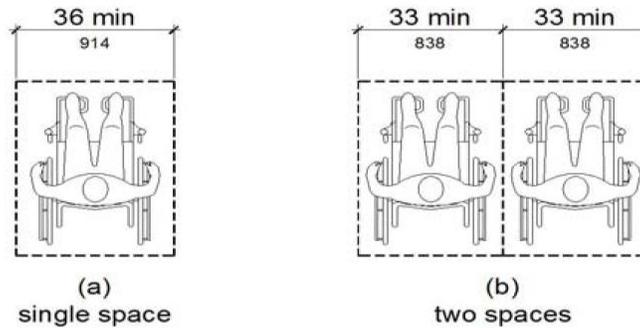
### WAITING ROOMS

3. Identify at least 5% of seating provided in waiting rooms as wheelchair spaces per the following (CBC 11B-802.1, CBC 11B-805.3):
 

**Exception:** In facilities specializing in treating conditions affecting mobility, at least 10% of seating shall be wheelchair spaces

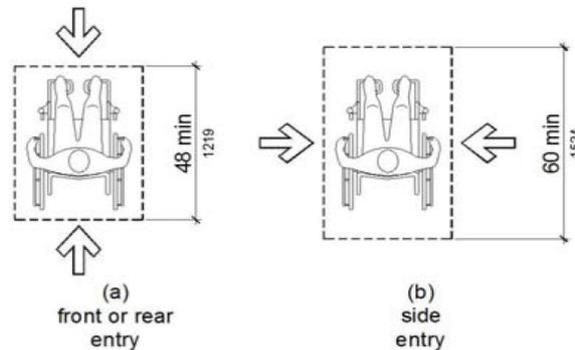
  - a. Width per CBC Figure 11B-802.1.2:
    - For single wheelchair space, minimum 36-inch width

- For two adjacent wheelchair spaces, minimum 33-inch width for each space



**FIGURE 11B-802.1.2  
WIDTH OF WHEELCHAIR SPACES**

- b. Depth per CBC Figure 11B-802.1.3:
- Where wheelchair space may be entered from front or rear, minimum 48-inch depth
  - Where wheelchair space may be entered only from side, minimum 60-inch depth



**FIGURE 11B-802.1.3  
DEPTH OF WHEELCHAIR SPACES**

- c. Wheelchair space shall adjoin – but not overlap – accessible routes

## EXAM ROOMS

4. Dimension examination, diagnostic, and treatment rooms complying with the following (CBC 11B-805.4):
- Minimum 36-inch-wide clear space provided along full length of each side of beds, exam tables, procedure tables, gurneys, and lounge chairs  
**Exception:** General exam rooms in non-emergency setting may provide clear space on only one side of beds, gurneys, and exam tables
  - Minimum 60-inch-diameter turnaround space or equivalent T-shaped space within the room
  - Minimum 30-inch-by-48-inch clear floor space at any equipment
5. Any patient changing areas shall comply with changing room requirements of section W-10B. (CBC 11B-805.5)
- 6 All hand-washing fixtures, lavatories, and sinks for patient use shall comply with lavatory requirements of section W-9B. (CBC 11B-805.6)  
**Exception:** Scrub sinks per CPC 221

## PATIENT ROOMS

- 7 At licensed medical and long-term care facilities where period of stay may exceed 24 hours, provide accessible patient bedrooms and toilet rooms per the following (CBC 11B-223):
- Exception:** Toilet rooms part of critical or intensive care patient sleeping rooms
- Exception:** Alterations where patient bedrooms are altered or added shall comply with CBC 11B-
- In hospitals and rehabilitation facilities not specializing in treating conditions affecting mobility, at least 10% of patient bedrooms and toilet rooms – but not fewer than one – shall meet accessibility provisions of item W-14B4.8
  - In hospitals and rehabilitation facilities specializing in treating conditions affecting mobility, all patient bedrooms and toilet rooms shall meet accessibility provisions of item W-14B4.8
  - In licensed long-term care facilities, including skilled nursing facilities, at least 50% of patient bedrooms and toilet

rooms – but not fewer than one – shall meet disabled access provisions of item W-14B4.8

- 8 Specify and dimension the following at each accessible patient bedroom (CBC 11B-805.2):
  - a. Minimum 60-inch-diameter turnaround space or equivalent T-shaped space within the room
  - b. Minimum 36-inch-wide clear floor space along each side of each bed
  - c. Hand-washing fixture per lavatory requirements of section W-9B
  - d. Toilet rooms provided as part of patient bedrooms per section W-9B
  - e. Bathing facilities provided as part of patient bedrooms per section V-10B

**W-14B5. MERCANTILE AND RETAIL USES (CBC 11B)**

**MERCHANDISE AND SERVICE AREAS**

1. Dimension aisles to comply with the following (CBC 11B-403.5.1):
  - a. Minimum 36-inches wide with merchandise shelves, tables, or gondolas on only one side
  - b. Minimum 44-inches wide with merchandise shelves, tables, or gondolas on both sides
2. Specify reach ranges at merchandise shelves, tables, and gondolas shall comply with CBC 11B-308.
3. Dimension minimum 36-inch-wide clear access to all employee work areas, with the work areas sized to allow employee in wheelchair to approach, enter, and exit. (CBC 11B-203.9, CBC 11B-206.2.8, CBC 11B-403.5)

**SALES AND SERVICE COUNTERS**

4. If building includes sales or service counter(s) for transactions, dimension at least one of each type complying with the following (CBC 11B-227.3, CBC 11B-306, CBC 11B-904.4):
  - a. If parallel approach allowed:
    - o Minimum 36-inch-long portion of counter provided at maximum 34 inches above finished floor  
**Exception:** Where the provided counter surface is less than 36 inches long, the entire counter surface shall be maximum 34 inches above finished floor
    - o Minimum 30-inch-by-48-inch clear floor space positioned for parallel approach adjacent to accessible counter length
  - b. If forward approach required:
    - o Minimum 36-inch-long portion of counter provided at maximum 34 inches above finished floor
    - o Minimum 30-inch-by-48-inch clear floor space positioned for forward approach to accessible counter length
    - o Knee and toe space provided beneath counter per CBC 11B-306

**CHECK-OUT AISLES**

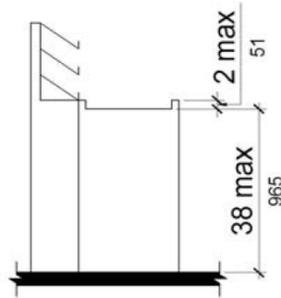
5. Where check-out aisles provided, identify on floor plan accessible check-out aisle(s) per the following (CBC 11B-216.11, CBC 11B-227.2, CBC 11B-904.3.4):
  - a. Minimum number of accessible check-out aisles for each function per CBC Table 11B-227.2, minimum one accessible check-out aisle always available when check-out aisles open for customer use  
**Exception:** One accessible check-out aisle acceptable in existing buildings where selling space less than 5000 square feet  
**Exception:** Where check-out aisles altered, at least one of each check-out aisle serving each function shall be accessible until number of check-out aisles complies with CBC Table 11B-227.2

**TABLE 11B-227.2  
CHECK-OUT AISLES**

NUMBER OF CHECK-OUT AISLES OF EACH FUNCTION	MINIMUM NUMBER OF CHECK-OUT AISLES OF EACH FUNCTION REQUIRED TO COMPLY WITH 11B-904.3
1 to 4	1
5 to 8	2
9 to 15	3
16 and over	3, plus 20 percent of additional aisles

- b. If check-out aisles dispersed throughout building or facility, accessible check-out aisles similarly dispersed
  - c. When not all check-out aisles are accessible, provide minimum 4-inch-by-4-inch signage with International Symbol of Accessibility at each accessible check-out aisle
6. Dimension and detail the following at each accessible check stand required per item W-14B5.5 (CBC 11B-902.3, CBC 11B-904.3):
  - a. Minimum 36-inch-wide checkout aisle

- b. Maximum 38-inch-high adjoining counter with counter-edge protection maximum 2 inches above top of counter surface on aisle side of check-out aisle per CBC Table 11B-904.3.2



**FIGURE 11B-904.3.2  
CHECK-OUT AISLE COUNTERS**

- c. Any check-writing surfaces at minimum 28 inches and maximum 34 inches above finished floor

## POINT-OF-SALE DEVICES

7. Point-of-sale devices provided shall comply with the following (CBC 11B-220.2, CBC 11B-308, CBC 11B-309.4, CBC 11B-707):

**Exception:** Where more than one point-of-sale device installed for use with a specific type of motor fuel, only two of each type shall be required to comply

- a. Minimum 30-inch-by-48-inch clear floor space provided adjacent to device
- b. All devices shall have operable parts within CBC 11B-308 reach ranges
- c. All devices shall be operable with one hand and without tight grasping, pinching, or twisting of wrist
- d. All devices shall have display characters in sans serif font – minimum 3/16-inch high based on uppercase letter “I” – with characters contrasting with their background, either light-on-dark or dark-on-light
- e. Devices including a video touch screen shall comply with **one of the following:**
  1. Tactilely discernible numerical keypad similar to telephone keypad containing a raised dot – dot base diameter minimum 1.5 mm and maximum 1.6 mm, dot height minimum 0.6 mm and maximum 0.9 mm – on the number “5” enabling visually impaired person to enter personal identification number or any other personal information necessary to process the transaction in manner providing opportunity for same degree of privacy input and output available to all individuals.
  2. Other technology, such as radio frequency identification device, finger-print biometrics, or some other mechanism, enabling visually impaired person to enter personal identification number or any other personal information necessary to process the transaction in manner providing opportunity for same degree of privacy input and output available to all individuals.

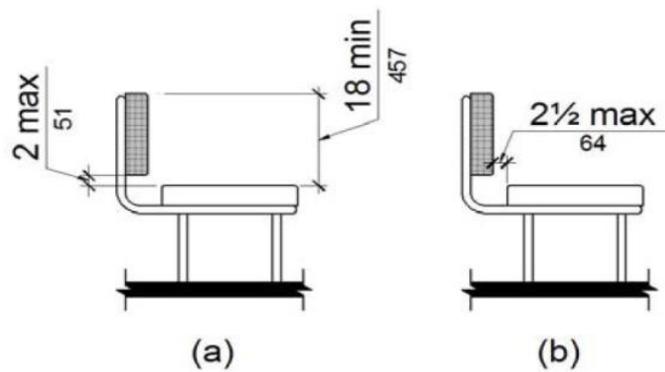
## AUTOMATED TELLER MACHINES

8. Automated teller machines (ATMs) provided shall comply with corresponding requirements in section W-12B. (CBC 11B-220, CBC 11B-707)

## FITTING ROOMS

9. Identify at least 5% of fitting rooms provided – but not fewer than one for each room type (e.g., female, male, all-gender) – as accessible and complying with items W-14B5.10 through W-14B5.13. (CBC 11B-222, CBC 11B-803)
10. Dimension minimum 60-inch diameter or equivalent T-shaped space per CBC 11B-304.3.2 within each accessible fitting room. (CBC 11B-304, CBC 11B-803.2)
11. Detail at least one bench per the following (CBC 11B-803.4, CBC 11B-903):
  - a. Minimum 48 inches long
  - b. Minimum 20 inches and maximum 24 inches deep
  - c. Minimum 48-inch-long back support per CBC Figure 11B-903.4

**Exception:** Bench affixed to wall along its long dimension



**FIGURE 11B-903.4  
BENCH BACK SUPPORT**

- d. Mounted minimum 17 inches and maximum 19 inches above finished floor
  - e. Minimum 30-inch-wide by 48-inch-long clear space provided at end of bench seat and parallel to short axis of bench
  - f. Structural adequacy to support 250-pound point load
12. Where mirrors are provided, detail at least one per the following (CBC 11B-223.6, CBC 11B-803.6):
- a. Minimum 18-inches wide by 54-inches high
  - b. Bottom of mirror maximum 20 inches above floor
  - c. Mounted in position affording view to person sitting on bench as well as person standing
13. Where coat hooks or shelves are provided, at least one of each type shall be located serving accessible lockers per the following (CBC 11B-222.3, CBC 11B-308, CBC 11B-803.6):
- a. Coat hooks maximum 48 inches above finished floor and not located above bench or other seating
  - b. Shelves minimum 40 inches and maximum 48 inches above finished floor

**W-14B6. HOTEL, MOTEL, AND OTHER TRANSIENT LODGING USES (CBC 11B)**

**GENERAL REQUIREMENTS**

- 1. Public- and common-use areas or elements serving hotels, motels, or other transient lodging shall be accessible. (CBC 11B-206.2.4)
- 2. In transient lodging facilities, identify guest rooms or suites as required per CBC Table 11B-224.2 with disabled access meeting items W-14B6.5 through W-14B6.9 (CBC 11B-224.1.1, CBC 11B-224.2):
  - Exception:** Where guest rooms or suites altered or added, CBC Table 11B-224.2 shall apply only to total guest rooms altered or added until overall number of guest rooms complies with minimum number required for new construction
  - Exception:** Facilities subject to same permit application on common site each having 50 or fewer guest rooms or suites may be combined when applying CBC Table 11B-224.2
  - Exception:** Facilities with more than 50 guest rooms or suites shall be treated separately when applying CBC Table 11B-224.2

**TABLE 11B-224.2  
GUEST ROOMS WITH MOBILITY FEATURES**

TOTAL NUMBER OF GUEST ROOMS PROVIDED	MINIMUM NUMBER OF REQUIRED ROOMS WITHOUT ROLL-IN SHOWERS	MINIMUM NUMBER OF REQUIRED ROOMS WITH ROLL-IN SHOWERS	TOTAL NUMBER OF REQUIRED ROOMS
1 to 25	0	1	1
26 to 50	1	1	2
51 to 75	3	1	4
76 to 100	4	1	5
101 to 150	5	2	7
151 to 200	6	2	8
201 to 300	7	3	10
301 to 400	8	4	12
401 to 500	9	4	13
501 to 1000	2 percent of total	1 percent of total	3 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000	10, plus 1 for each 100, or fraction thereof, over 1000	30, plus 2 for each 100, or fraction thereof, over 1000

- 3. In transient lodging facilities, identify guest rooms or suites per CBC Table 11B-224.4 with communication features per item

W-14B6.14.

**Exception:** Not more than 10% of guest rooms or suites provided to satisfy item W-14B6.2 shall be used to satisfy item W-14B6.3

**TABLE 11B-224.4  
GUEST ROOMS WITH COMMUNICATION FEATURES**

TOTAL NUMBER OF GUEST ROOMS PROVIDED	MINIMUM NUMBER OF REQUIRED GUEST ROOMS WITH COMMUNICATION FEATURES
1	1
2 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1000	5 percent of total
1001 and over	50, plus 3 for each 100 over 1000

4. Guest rooms or suites provided to meet items W-14B6.2 and/or W-14B6.3 shall be dispersed among available classes of sleeping accommodations to provide range of room sizes, costs, and amenities comparable to choices provided to other guests. (CBC 11B-224.1.3, CBC 11B-224.5)

**Exception:** Where minimum number of guest rooms or suites required to comply with items W-14B6.2 and W-14B6.3 is not sufficient to allow complete dispersion, guest rooms or suites shall be dispersed in the following priority:

- Guest room or suite type
- Number of beds
- Amenities

#### **GUEST ROOMS AND SUITES**

5. In guest rooms or suites provided to satisfy item W-14B6.2, the following shall be accessible and on an accessible route:

- a. Living areas
- b. Dining areas
- c. At least one sleeping area per item W-14B6.8
- d. At least one bathroom per item W-14B6.9
- e. Patios, terraces, balconies, and other exterior spaces serving guest room or suite
- f. Closets and other storage space

6. Doors into and within guest rooms and suites shall comply with the following (CBC 11B-206.5.3, CBC 11B-224.1.2):

- a. For doors into and within accessible guest rooms and suites, all requirements of section W-6B shall apply
- b. For doors into and within all other guest rooms and suites, only the door width and height requirements of section W-6B shall apply

**Exception:** Bathroom door requirements per item W-14B6.10

**Exception:** Shower and sauna doors

7. Dimension level wheelchair turning space complying with one of the following within rooms and spaces of guest room or suite (CBC 11B-304, CBC 11B-806.2.6):

- a. Minimum 60-inch-diameter and may include complying knee and toe clearance
- b. T-shaped space per CBC 11B-304.3.2

8. Detail sleeping areas provided to satisfy item W-14B.5 to comply with the following (CBC 11B-806.2.3):

- a. Dimension minimum 36-inch-by-48-inch clear floor space – positioned for parallel approach to side of bed – on both sides of bed

**Exception:** Where single minimum 30-inch-by-48-inch clear floor space – positioned for parallel approach – provided between two beds, clear floor space not required on both sides of bed

- b. Specify clear space beneath bed per the following for use of personal lift device:
  - Extending beneath bed parallel to long side and maximum 12 inches from head and foot end of bed
  - Minimum 30-inch horizontal and 7-inch vertical clearance
  - Adjacent to accessible route

9. Detail bathrooms provided to satisfy item W-14B6.5 to comply with the following (CBC 11B-806.2.4):
  - a. Doors per section W-6B with no encroachment into required clear floor space for any fixture
  - b. At least one toilet per section W-9B
  - c. At least one lavatory per section W-9B
  - d. At least one shower per section W-10B

**Exception:** At least one bathtub per section W-10B acceptable at guest rooms or suites not requiring roll-in showers to satisfy item W-14B6.2

- e. Vanity counter space and other amenities similar to that provided in non-accessible guest rooms or suites

10. Within hotel and motel guest rooms and suites beyond those addressed by item W-14B6.9, bathroom configuration shall comply with the following (CBC 11B-213.2, CBC 11B-224.1.2, CBC 11B-224.1.6, CBC 11B-603.6):

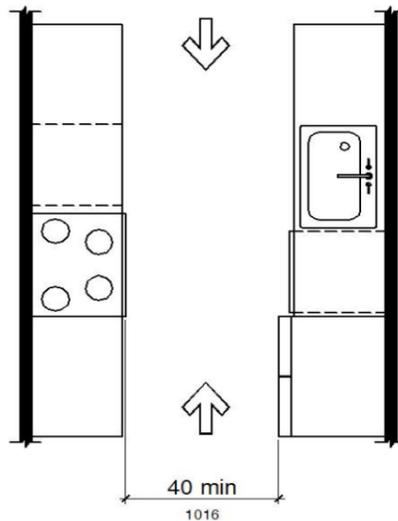
- a. All fixtures situated to allow person using 30-inch by 48-inch wheelchair to touch wheelchair to any provided lavatory, urinal, toilet, bathtub, sauna, shower stall, or similar installation
- b. All bathroom entrance doors per the following:
  - o Minimum 32-inch clear opening width
  - o Either sliding doors or doors swinging in direction of egress from bathroom

11. Dimension clearances at any kitchens per the following (CBC 11B-804.2):

**Exception:** Spaces that do not provide a cooktop or conventional range

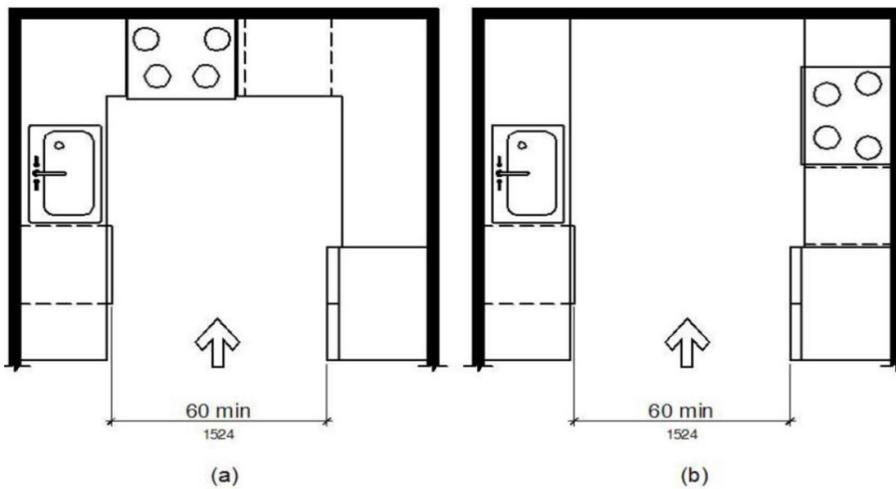
**Exception:** Commercial kitchens shall comply with clearance requirements of section W-5B

- a. Pass-through kitchens – i.e., minimum two entries – per CBC Figure 11B-804.2.1



**FIGURE 11B-804.2.1  
PASS THROUGH KITCHENS**

- b. U-shaped kitchens per CBC Figure 11B-804.2.2



**FIGURE 11B-804.2.2  
U-SHAPED KITCHENS**

12. Specify any kitchen appliances provided shall comply with the following (CBC 11B-309, CBC 11B-804.6):
- Minimum 30-inch-by-48-inch clear floor space provided at each appliance
  - Operable parts of appliances within CBC 11B-308 reach ranges
    - Exception:** Bottom-hinged appliance doors in the open position
  - Appliances operable with maximum 5 pounds of force
    - Exception:** Appliance doors and door-latching devices
  - Appliances operable with one hand and without tight grasping, pinching, or twisting of wrist
    - Exception:** Appliance doors and door-latching devices
13. Specify the following for individual kitchen appliances provided (CBC 11B-804.6):
- Dishwashers:
    - Required clear floor space positioned adjacent to dishwasher door
    - Dishwasher door in open position does not obstruct required clear floor space for dishwasher or sink.
  - Ranges or cooktops:
    - Where forward approach provided, clear floor space shall include knee clearance per item W-12B.6 and toe clearance per item W-12B.7
    - Where knee and toe clearance provided, underside of range of cooktop shall be insulated or otherwise configured to prevent burns, abrasions, or electrical shock
    - Location of controls shall not require reaching across burners
  - Ovens:
    - Side-hinged ovens shall have minimum 30-inch-wide work surface adjacent to latch side of oven door.
    - Bottom-hinged ovens shall have minimum 30-inch-wide work surface adjacent to one side of oven door.
    - Controls located on front panels of oven.
  - Refrigerators and freezers:
    - Combination refrigerators and freezers shall have at least 50% of freezer space maximum 54 inches above finished floor.
    - Clear floor space position for parallel approach to space dedicated to refrigerator/freezer with centerline of clear floor space offset maximum 24 inches from centerline of dedicated space.
14. Specify the following in hotel and motel guest rooms and suites with communication features provided to satisfy item W-14B6.3 (CBC 11B-309, CBC 11B-702, CBC 11B-704.3, CBC 11B-806.3):
- Visible and audible alarms per section W-13B
  - Visible notification devices alerting occupants of incoming phone calls and door knocks or bells
  - Permanently installed telephones per the following:
    - Volume controls per section V-12B
    - Accessible electrical outlet within 48 inches of telephone connection to facilitate use of TTY

#### **ASSOCIATED AMENITIES AND FACILITIES**

15. Any restaurant facilities shall comply with corresponding requirements of section W-14B1. (CBC 11B-206.2.4)
16. Any laundry facilities shall comply with corresponding requirements of section W-12B. (CBC 11B-206.2.4)

17. Any associated recreation facilities – e.g., swimming pools, spas, sport areas, play areas – shall comply with corresponding requirements of section W-14B8. (CBC 11B-206.2.4)

**W-14B7. STORAGE, WAREHOUSE, AND FACTORY USES (CBC 11B)**

**SELF-SERVICE STORAGE FACILITIES**

1. Identify accessible individual storage units of each type in self-service storage facilities per CBC Table 11B-225.3 with units dispersed throughout various classes of spaces provided. (CBC 11B-225.3)

**Exception:** Where more classes of spaces provided than number required to be accessible

**Exception:** Dispersion not required among building in multi-building facility

**TABLE 11B-225.3  
SELF-SERVICE STORAGE FACILITIES**

TOTAL SPACES IN FACILITY	MINIMUM NUMBER OF SPACES REQUIRED TO BE ACCESSIBLE
1 to 200	5 percent, but no fewer than 1
201 and over	10, plus 2 percent of total number of units over 200

2. Dimension clear and level floor space minimum 30 inches by 48 inches allowing forward or parallel approach to each accessible storage unit. (CBC 11B-811.2)
3. Specify operable elements of accessible storage units – e.g., roll-up doors – shall comply with the following (CBC 11B-811.3, CBC 11B-811.4):
- a. Within CBC 11B-308 reach ranges
  - b. Operable with maximum 5 pounds of force
- Exception:** Powered doors
- c. Operable with one hand and without tight grasping, pinching, or twisting of wrist
4. Any office areas shall comply with section W-14B2. (CBC 11B-206.2.4)
5. Any sanitary facilities serving self-service storage facilities and associated office areas shall comply with sections V-9B and V-10B. (CBC 11B-206.2.4)

**WAREHOUSES**

6. Provide accessible route to and throughout warehouse areas on floor nearest grade and other floors accessible via level entry, pedestrian ramp, or elevator. (CBC 11B-206.2.4)
7. Any office areas shall comply with section W-14B2. (CBC 11B-206.2.4)
8. Any sanitary facilities serving warehouse and associated office areas shall comply with sections W-9B and W-10B. (CBC 11B-206.2.4)

**FACTORIES**

9. Provide accessible route to and throughout major or principal factory floor areas. (CBC 11B-206.2.4)
10. Any office areas shall comply with section W-14B2. (CBC 11B-206.2.4)
11. Any sanitary facilities serving factory floor and associated office areas shall comply with section W-9B and W-10B. (CBC 11B-206.2.4)

**W-14B8. RECREATIONAL AND OUTDOOR USES (CBC 11B)**

**GENERAL REQUIREMENTS**

1. Any parking lots serving outdoor or recreational areas shall comply with section W-2B and include curb cuts leading to adjacent walks, paths, or trails. (CBC 11B-246.6)
2. Any public-use sanitary facilities serving outdoor or recreational areas shall comply with sections W-9B and W-10B. (CBC 11B-206.2.4)

**SWIMMING POOLS, WADING POOLS, AND SPAS**

3. Identify at least one accessible means of entry to each swimming pool per **one of the following** (CBC 11B-242.2, CBC 11B-1009):
- a. Pool lift per item W-14B8.7

b. Sloped entry per CBC 11B-1009.3

4. Where swimming pool has 300 linear feet or more of pool wall, identify at least one means of entry – **in addition to pool lift or sloped entry provided to satisfy item W-14B8.3** – per **one of the following**:

- a. Pool lift per item W-14B8.7
- b. Sloped entry per CBC 11B-1009.3
- c. Transfer wall per CBC 11B-1009.4
- d. Transfer system per CBC 11B-1009.5
- e. Pool stairs per CBC 11B-1009.6

5. Identify at least one sloped entry per CBC 11B-1009.3 to each wading pool. (CBC 11B-242.3)

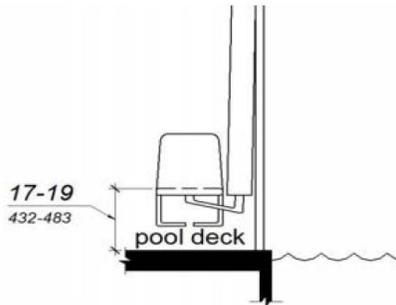
6. Identify at least one accessible means of entry to each spa per **one of the following** (CBC 11B-242.4, CBC 11B-1009):

**Exception:** Where spas provided in a cluster, no more than 5% of spas in each cluster shall be required to comply

- a. Pool lift per item W-14B8.7
- b. Transfer wall per CBC 11B-1009.4
- c. Transfer system per CBC 11B-1009.5

7. Detail and dimension any pool lift provided to satisfy items W-14B8.3, W-14B8.4, or W-14B8.6 to comply with the following (CBC 11B-1009.2):

- a. Equipped with rigid seat complying with the following:
  - o Minimum 16-inches wide
  - o Designed to allow stop at minimum 17 inches and maximum 19 inches above pool deck surface when in the raised (load) position per CBC Figure 11B-1009.2.4

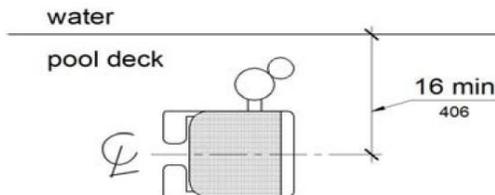


**FIGURE 11B-1009.2.4  
POOL LIFT SEAT HEIGHT**

- o Includes footrests that move with seat

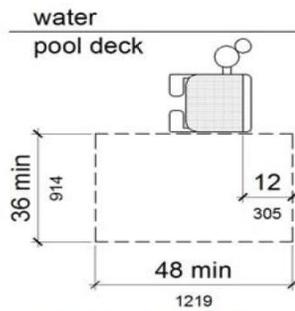
**Exception:** Pool lifts serving spas

- o Includes two armrests, with armrest positioned opposite water removable or foldable clear of seat when in raised (load) position
- o Includes back support minimum 12-inches tall
- o Includes occupant restraint operable with maximum 5 pounds of force using one hand and without tight grasping, pinching, or twisting of wrist
- o In raised (load) position, centerline of seat located over level pool deck and minimum 16 inches from edge of pool per CBC Figure 11B-1009.2.2



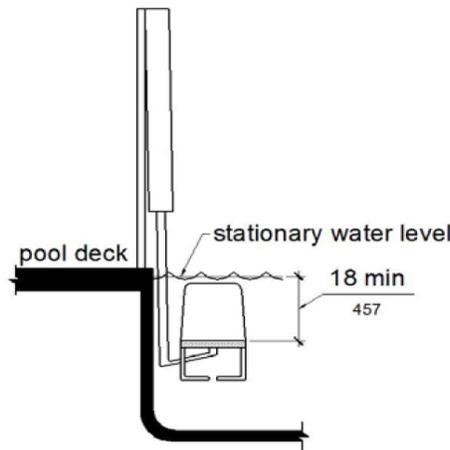
**FIGURE 11B-1009.2.2  
POOL LIFT SEAT LOCATION**

- o On side of seat opposite water, clear level deck space – minimum 36-inches wide and extending forward minimum 48 inches from line located 12 inches behind rear edge of seat – provided parallel with seat per CBC Figure 11B-1009.2.3



**FIGURE 11B-1009.2.3  
CLEAR DECK SPACE AT POOL LIFTS**

- b. Positioned where water depth is minimum 36 inches and maximum 48 inches
  - Exception:** Where entire pool depth is less than 36 inches and greater than 48 inches
  - Exception:** Where multiple pool lift locations provided, no more than one pool lift shall be required to be located where water level maximum 48-inches deep
  - Exception:** Where water depth of entire swimming pool or spa is less than 36 inches, pool lifts may be located where water depth less than 36 inches
- c. Capable of lowering operator minimum 18 inches below stationary water level per CBC Figure 11B-1009.2.8



**FIGURE 11B-1009.2.8  
POOL LIFT SUBMERGED DEPTH**

- d. Capable of unassisted operation from deck and water levels using one hand and without tight grasping, pinching, or twisting of wrist
- e. Controls and operating mechanism unobstructed when lift is in use
- f. Stable with no unintended movement when person getting into or out of seat
- g. Designed for weight capacity of minimum 300 pounds and capable of sustaining static load of at least one-and-a-

## SPORT ACTIVITY AREAS

- 8. An accessible route shall be provided to the boundary of each area of sport activity. (CBC 11B-206.2.18)
- 9. At least one accessible route shall directly connect both sides of any sport court. (CBC 11B-206.2.12)

## EXERCISE FACILITIES

- 10. Dimension minimum 30-inch-by-48-inch clear floor space – connected by accessible route – adjacent to at least one of each type of exercise machine or equipment provided and positioned for transfer or for use by an individual seated in a wheelchair. (CBC 11B-206.2.13, CBC 11B-236.1, CBC 11B-1004.1)

## PLAY AREAS

- 11. Play areas for children ages 2 years and over shall comply with the following (CBC 11B-240, CBC 11B-1008):
  - Exception:** Play areas located in family child care facilities where proprietor resides.
  - Exception:** Existing play areas where play components relocated for purposes of creating safe use zones and ground surface not altered or extended for more than one use zone.
  - Exception:** Ground surface where play components altered but ground surface not altered.

- a. Where ground-level play components provided, at least one of each type shall be on an accessible route per CBC 11B-1008.2

**Exception:** Transfer systems per CBC 11B-1008.3 where allowed by CBC 11B-1008.2

- b. Where elevated play components provided, ground-level play components shall be provided per CBC Table 11B-240.2.1.2

**Exception:** If at least 50% of elevated play components are connected by ramp and at least 3 of the elevated play components are different types

- c. Where two or more accessible ground-level play components provided, they shall be dispersed throughout play area and integrated with other play components

**TABLE 11B-240.2.1.2  
NUMBER AND TYPES OF GROUND LEVEL PLAY COMPONENTS REQUIRED TO BE ON ACCESSIBLE ROUTES**

NUMBER OF ELEVATED PLAY COMPONENTS PROVIDED	MINIMUM NUMBER OF GROUND LEVEL PLAY COMPONENTS REQUIRED TO BE ON AN ACCESSIBLE ROUTE	MINIMUM NUMBER OF DIFFERENT TYPES OF GROUND LEVEL PLAY COMPONENTS REQUIRED TO BE ON AN ACCESSIBLE ROUTE
1	Not applicable	Not applicable
2 to 4	1	1
5 to 7	2	2
8 to 10	3	3
11 to 13	4	3
14 to 16	5	3
17 to 19	6	3
20 to 22	7	4
23 to 25	8	4
26 and over	8, plus 1 for each additional 3, or fraction thereof, over 25	5

- 12. Identify accessible route(s) serving play areas per the following (CBC 11B-206.2.13):

- a. At least one accessible route within play area connecting ground-level play components and elevated play components, including entry and exit points of the play components
- b. Where three or fewer entry points provided for soft contained play structures, at least one entry point on an accessible route
- c. Where four or more entry points provided for soft contained play structures, at least two entry points on an accessible route

**OUTDOOR AREAS**

- 13. Provide complete details, dimensions, and notes demonstrating accessibility of **any of the following** elements (CBC 11B-246.2):

**Exception:** Areas where enforcing agency finds natural environment would be materially damaged by compliance with these regulations

**Exception:** Automobile access or accessible routes not required where enforcing agency determines compliance would create an unreasonable hardship

- a. Camping facilities: At least two campsites – plus one additional campsite for each 100 campsites or fraction thereof provided – shall be accessed by and connected to accessible sanitary facilities by travel routes with maximum 8.3% slope
- b. Picnic areas: At least one picnic table – plus one additional table for each 20 tables or fraction thereof provided – shall be accessible and meet height and clearance provisions of CBC 11B-902
- c. Trails, paths, and nature walk areas: Constructed with gradients allowing at least partial use by wheelchair occupants
- d. Nature trails: Accessible to individuals with vision impairments by provision of rope guidelines, raised Arabic numerals and symbols, or other similar guide and assistance devices
- e. Beaches
- f. Day-use areas and vista points
- g. Boating facilities per CBC 11B-206.2.10, CBC 11B-235, and CBC 11B-1003
- h. Fishing piers and platforms per CBC 11B-206.2.14, CBC 11B-237, and CBC 11B-1005
- i. Golf facilities per CBC 11B-206.2.15, CBC 11B-238, and CBC 11B-1006
- j. Miniature golf facilities per CBC 11B-206.2.16, CBC 11B-239, and CBC 11B-1007

**W-15B. EXISTING AND HISTORICAL BUILDINGS (CBC 11B)**

**EXISTING BUILDINGS**

- 1. All new construction in existing buildings and facilities shall comply with current disabled access provisions. (CBC 11B-201.1)

2. No alteration, structural repair, or addition shall be made to an existing building or facility that decreases accessibility or usability of the building or facility below requirements for new construction at the time of alteration, structural repair, or addition. (CBC 11B-202.3.1)
3. When alterations, structural repairs, or additions are made to existing buildings or facilities, the following elements shall be accessible (CBC 11B-202.4):
  - Exception:** Items among the following list and constructed or altered in compliance with disabled access provisions in the immediately preceding edition of the *California Building Code*
  - Exception:** Cases of disproportionate cost per items W-15B.11 or W-15B.13
  - Exception:** Projects consisting exclusively of work listed in items W-15B.14, W-15B.15, and/or W-15B.16
  - a. Route of travel from public way to building/facility entrance serving area of alteration, structural repair, or addition
  - b. Building/facility entrance serving area of alteration, structural repair, or addition
  - c. Primary path of travel within building/facility to area of alteration, structural repair, or addition
  - d. Sanitary facilities serving area of alteration, structural repair, or addition
  - e. Signs on routes and paths to and within area of alteration, structural repair, or addition
  - f. If required or provided, drinking fountains serving area of alteration, structural repair, or addition
  - g. If required or provided, public telephones serving area of alteration, structural repair, or addition
4. Using ■■■■■■ or equivalent symbol, identify on site accessibility plan accessible route of travel from public way to building/facility entrance serving area of alteration, structural repair, or addition. (CBC 11B-202.4)
5. Identify the following accessible elements serving area of alteration, structural repair, or addition via accessible route(s) (CBC 11B-202.4):
  - a. Sanitary facilities
  - b. Signage
  - c. Drinking fountains (if required or provided)
  - d. Public telephones (if required or provided)
6. Identify on site accessibility plan location of accessible parking spaces serving area of alteration, structural repair, or addition. (CBC 11B-202.4)
7. For each element specified in items W-15B.4 through W-15B.6, indicate if element is existing or new. (CBC 11B-202.4)
8. Add the following note to site accessibility plan (CBC 11B-202.4): *"If the building inspector determines noncompliance with any current accessibility provision of the law, he/she shall require submittal of complete and detailed plans to the County of San Diego, Building Division, for further review. Plans must clearly show all existing non-compliant conditions serving the alteration, structural repair, or addition and proposed mitigation of deficiencies to meet current accessibility provisions."*
9. If existing route(s) from public way to area of alteration, structural repair, or addition are fully compliant with current accessibility provisions, add the following note to site accessibility plan (CBC 11B-202.4):  
*"I am the designer/owner in responsible charge of this project. I have inspected the site/premises and determined that existing conditions are in full compliance with current accessibility provisions to the extent required by the law."*  
**Signature:** \_\_\_\_\_  
**Date:** \_\_\_\_\_"
10. If existing sanitary facilities serving area of alteration, structural repair, or addition are fully compliant with current accessibility provisions, add the following note to site accessibility plan (CBC 11B-202.4):  
*"I am the designer/owner in responsible charge of this project. I have inspected the site/premises and determined that existing restroom(s) serving the area of alteration are in full compliance with current accessibility provisions to the extent required by the law."*  
**Signature:** \_\_\_\_\_  
**Date:** \_\_\_\_\_"
11. When the adjusted construction cost of alterations, structural repairs, or additions does not exceed the valuation threshold (as determined at [www.dgs.ca.gov/dsa](http://www.dgs.ca.gov/dsa)), existing elements serving the area of alteration, structural repair, or addition may be upgraded per the following as an alternative to item W-15B.3 (CBC 11B-202.4, CBC 11B-213.2):
  - a. An additional amount equaling at least 20% of adjusted construction cost shall be spent on disabled access upgrades
  - b. Accessibility upgrade costs shall be dedicated to elements in the following order of priority:

- Accessible parking stall and access aisle
- Accessible route to entrance
- Accessible entrance
- Accessible route to area of alteration
- At least one accessible restroom for each sex or one accessible all-gender restroom

**Exception:** Where it is technically infeasible – i.e., requires removal/alteration of load-bearing member essential to structural frame – in areas of alteration to make existing toilet facilities compliant and provide separate toilet facilities for each sex, at least one all-gender toilet/facility per floor altered may be installed if located in same area as existing toilet facilities.

- If required or provided, accessible public telephones
- If required or provided, accessible drinking fountains
- Additional accessible elements (e.g., additional parking spaces, storage, alarms)

12. The adjusted construction cost specified in item W-15B.11 shall be calculated per the following (CBC 11B-202.4):

- a. Includes all costs directly related to the construction of the project, including labor, material, equipment, services, utilities, contractor financing, contractor overhead and profit, and construction management costs. The costs shall not be reduced by the value of components, assemblies, building equipment, or construction not directly associated with accessibility or usability.
- b. Does not include cost of accessibility improvements
- c. Does not include building or discretionary permit fees
- d. Does not include project management fees and expenses, architectural and engineering fees, testing and inspection fees, and utility connection or service district fees

13. In alteration projects involving buildings or facilities previously approved and built without elevators, the 20% upgrade cost limit of item W-15B.11 may be used for areas above and below the ground floor in the following projects regardless of valuation (i.e., above the current valuation as determined at [www.dgs.ca.gov/dsa](http://www.dgs.ca.gov/dsa)):

- a. Office buildings and passenger vehicle service stations of three stories or more and 3000 square feet or more per floor
- b. Offices of physicians and surgeons
- c. Shopping centers
- d. Other building and facilities three stories or more and 3000 square feet or more per floor if reasonable portion of services sought and used by public is available on an accessible level

14. Additions or alterations to meet disabled access requirements and consisting exclusively of one or more of the following items shall not trigger additional disabled access upgrades per item W-15B.3 (CBC 11B-202.4):

- a. Altering one building entrance
- b. Altering one existing toilet facility
- c. Altering existing elevators
- d. Altering existing steps
- e. Altering existing handrails

15. Alterations solely for the purpose of disabled access barrier removal and consisting exclusively of one or more of the following items shall not trigger additional disabled access upgrades item W-15B.3:

- a. Installing ramps
- b. Making curb cuts in sidewalks and/or entrance
- c. Repositioning shelves
- d. Rearranging tables, chairs, vending machines, display racks, and other furniture
- e. Repositioning telephones
- f. Adding raised markings on elevator control buttons
- g. Installing flashing alarm lights
- h. Widening doors
- i. Installing offset hinges to widen doorways
- j. Eliminating a turnstile or providing an alternative accessible route
- k. Installing accessible door hardware
- l. Installing grab bars in toilet stalls
- m. Rearranging toilet partitions to increase maneuvering space
- n. Insulating lavatory pipes under sinks to prevent burns
- o. Installing a raised toilet seat
- p. Installing a full-length bathroom mirror
- q. Repositioning a paper towel dispenser in a bathroom
- r. Creating designated accessible parking spaces
- s. Removing high-pile, low-density carpeting

16. Projects consisting exclusively of the following work shall not trigger disabled access upgrades in existing buildings and facilities provided the work does not affect accessibility or usability of building or facility (CBC 11B-202.4):

- a. Heating
- b. Ventilation
- c. Air conditioning
- d. Reroofing (non-structural)
- e. Electrical work not involving placement of switches or outlets
- f. Cosmetic work not affecting items regulated by the CBC (e.g., painting, office equipment)

17. Projects consisting exclusively of the installation of electric vehicle charging stations shall not trigger disabled access upgrades in existing building and facilities **unless** the primary function of the facility is vehicle fueling, recharging, parking, or storage. (CBC 11B-202.4)

18. Submit the following for any project providing limited accessibility upgrades per item W-15B.11 or W-15B.13 (CBC 11B-202.4):

- a. Completed "Application for Unreasonable Hardship Exception to Disabled Access Requirements" (form PDS 644)
- b. Documentation supporting estimates of adjusted construction cost and itemized costs of accessibility upgrades

19. If "Application for Unreasonable Hardship Exception to Disabled Access Requirements" (form PDS 644) submitted, add the following note to site accessibility plan (CBC 11B-202.4):

*"I am the designer/owner in responsible charge of this project. As part of this permit, the following deficient disabled access elements will be upgraded per the approved Application for Unreasonable Hardship Exception to Disabled Access Requirements (form PDS 644):*

**(List each applicable disabled access element upgraded in same order as priority list of item W-15B.11)**

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

20. Provide complete details, dimensions, and notes for all disabled access elements designated for upgrades listed on plans per item W-15B.18. (CBC 11B-202.4)

21. If completed "Application for Unreasonable Hardship Exception to Disabled Access Requirements" (form PDS 644) indicates total construction cost applies only to work proposed under this permit, add the following note to site accessibility plan (CBC 11B-202.4):

*"I am the tenant/owner in responsible charge of this project. I certify that no alterations, structural repairs, or additions have been performed at this building/facility within the last three years.*

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## **HISTORICAL BUILDINGS**

22. Provide documentation qualifying building as historical. (CHBC 8-601.1)

23. The accessibility provisions of CBC Chapter 11B shall apply to qualified historical buildings unless strict compliance with that chapter will threaten or destroy the historical significance or character-defining features of the building, facility, or property. (CHBC 8-602.1)

24. If historical significance or character-defining features of building, facility, or property would be threatened by applying the accessibility provisions of CBC Chapter 11B, alternative accessibility provisions of the California Historical Building Code (CHBC) per items W-15B.24 through W-15B.28 may be applied provided the following conditions are met (CHBC 8-601.3, CHBC 8-602.2):

- a. Provisions applied only on item-by-item or case-by-case basis
- b. Provisions applied only to existing historical buildings and not new construction or reconstruction of historical buildings
- c. Documentation provided stating reasons for application of alternative provisions

25. In lieu of compliance with CBC Chapter 11B for access to building/facility entrances, provide entrance complying with one of the following (**listed in order of priority**) (CHBC 8-603.2):

- a. Access to any entrance used by general public and no further than 200 feet from primary entrance
- b. Access to any entrance not used by general public but open and unlocked with directional signs at primary entrance and as close as possible and within 200 feet of primary entrance
- c. Accessible entrance with notification system (remote monitoring acceptable at locations with security issues)

26. In lieu of compliance with CBC Chapter 11B for doors, provide door(s) complying with the following (**listed in order of priority**) (CHBC 8-603.3):
  - a. Single-leaf door with minimum 30-inch clear width
  - b. Single-leaf door with minimum 29-1/2-inch clear width
  - c. Double door with one leaf with minimum 29-1/2-inch clear width
  - d. Double door operable with power-assist device to provide 29-1/2-inch clear width when both door leaves in open position
27. In lieu of compliance with CBC Chapter 11B for level landings, strike-edge clearances, and opening forces at doors, provide power-assisted door(s). (CHBC 8-603.4)
28. In lieu of compliance with CBC Chapter 11B for separate-gender toilet facilities, provide accessible all-gender toilet facility per section W-9B. (CHBC 8-603.5)
29. In lieu of compliance with CBC Chapter 11B for exterior and interior pedestrian ramps and platform/wheelchair lifts, provide ramp or lift complying with one of the following (**listed in order of priority**) (CHBC 8-603.6):
  - a. Ramp or lift per the following:
    - o Maximum 10% slope
    - o Maximum 60-inch ramp run measured horizontally
    - o Signs posted at upper and lower landings of ramp or lift indicating steepness of slope
  - b. Ramp per the following:
    - o Maximum 16.7% slope
    - o Maximum 13-inch ramp run measured horizontally
    - o Signs posted at upper and lower landings of ramp or lift indicating steepness of slope
30. If the alternatives of items W-15B.24 through W-15B.28 would threaten the historical significance or character-defining features of the building, facility, or property, alternative designs providing equivalent facilitation may be proposed to the County of San Diego, Building Division, for consideration. (CHBC 8-604)

#### **X-1A. CODE APPLICABILITY, SITE ACCESSIBILITY, AND EXTERIOR ROUTES OF TRAVEL (CBC 11A)**

##### **CODE APPLICABILITY**

1. Each building on a building site shall be considered separately when applying items X-1A.2, X-1A.3, and X-1A.4. (CBC 1102A.1)
2. CBC Chapter 11A housing accessibility provisions apply to newly constructed "covered multifamily dwellings," which include any of the following (CBC 1101A.1, CBC 1102A.1):
  - a. Apartment buildings with 3 or more dwelling units (including timeshare apartments not considered places of public accommodation or transient lodging)
  - b. Condominiums with 4 or more dwelling units (including timeshare condominiums not considered places of public accommodation or transient lodging)
  - c. Lodging houses used as a residence with four or five guest rooms
  - d. Congregate residences
  - e. Dwellings with 3 or more efficiency dwelling units
  - f. Homeless shelters not otherwise subject to provisions of CBC Chapter 11B
  - g. Dormitories with 3 or more guest rooms
  - h. Timeshare dwellings with 3 or more units (not considered places of public accommodation or transient lodging)
  - i. Other Group R occupancies in covered multifamily dwellings regulated by Office of the State Fire Marshal per CBC 1.11
3. CBC Chapter 11A housing accessibility provisions also apply to any of the following (CBC 1101A.1):
  - a. New common-use areas serving newly constructed covered multifamily dwellings listed in item X-1A.2
  - b. New common-use areas serving existing covered multifamily dwellings listed in item X-1A.2
  - c. Additions to existing buildings, where the addition alone constitutes any of the covered multifamily dwellings listed in item X-1A.2
4. CBC Chapter 11A housing accessibility provisions also apply when all of the following conditions are met (CBC 1101A.1):
  - a. Any portion of a building's exterior is preserved
  - b. Interior of building is removed, including all structural portions of floors and ceilings
  - c. Proposed building constitutes one of the covered multifamily dwellings listed in item X-1A.2
5. CBC Chapter 11A housing accessibility provisions do not apply to the alteration, repair, rehabilitation, or maintenance of

multifamily dwellings constructed for first occupancy prior to March 13, 1991. (CBC 1102A.2)

6. Any new or existing public-use areas, public accommodations, and commercial buildings are subject to provisions of CBC Chapter 11B and sections W-1B through W-15B as applicable. (CBC 1101A.1)
7. Specify on plans if project uses public funding. CBC Chapter 11B-809 applies to housing accessibility for buildings using public funding. Also, refer to the definition of "public housing" in CBC, Chapter 2.

## SCOPING

8. All ground-floor dwelling units in a covered multifamily dwelling without an elevator shall comply with the following (CBC 1104A.1):

**Exception:** Buildings exempted by site impracticality tests per item X-1A.43

**Exception:** Multistory dwelling units shall comply with item X-1A.9

- a. Accessibility/adaptability provisions of section X-15A
- b. Served by accessible route

9. Where multistory dwelling units are proposed on the ground floor of an apartment/condominium covered multifamily dwelling without an elevator, a minimum 10% – but not fewer than one – of the **cumulative number of multistory dwelling units located on the ground floor in such covered multifamily dwellings on the site** shall comply with the following (CBC 1102A.1, CBC 1102A.3.1):

**Exception:** Carriage units (i.e., dwelling units with living space on one or more floors immediately above a private garage or garages – but not a common garage – with the garage level containing no habitable space and the footprint of the garage or garages used as the footprint for the remaining floor or floors of the units above).

- a. Primary entry to dwelling unit on accessible route  
Exception: Buildings exempted by site impracticality tests per item X-1A.42
- b. At least one powder room or bathroom per the following:
  - o Located on primary entry level
  - o Served by accessible route
  - o Complying with section X-15A
- c. All rooms and spaces located on primary entry level – including kitchens, powder rooms, bathrooms, living rooms, bedrooms, hallways – per the following:
  - o Served by accessible route
  - o Complying with section X-15A
- d. Any common-use spaces serving dwelling unit are accessible

10. Where multistory dwelling units are proposed in a covered multifamily dwelling with one or more elevators, the story of any multistory dwelling unit served by a building elevator shall be considered a primary entry level and comply with the following (CBC 1102A.3.2):

- a. At least one powder room or bathroom located on primary entry level
- b. At least one kitchen shall be located on primary entry level
- c. All rooms and spaces located on primary entry level shall be served by an accessible route and comply with section W-15A

11. Where the first floor containing dwelling units in a covered multifamily dwelling is above grade, that floor shall be considered a ground floor and comply with the following (CBC 1104A.2):

**Exception:** Carriage units (i.e., dwelling units with living space on one or more floors immediately above a private garage or garages – but not a common garage – with the garage level containing no habitable space and the footprint of the garage or garages used as the footprint for the remaining floor or floors of the units above).

- a. All dwelling units on that floor served by an accessible route
- b. All dwelling units on that floor considered covered multifamily dwelling units and subject to provisions of item X-1A.8, X-1A.9, or X-1A.10 as applicable

12. Where an elevator in a covered multifamily dwelling serves as means of access to dwelling units on floors other than the ground floor, the covered multifamily dwelling shall comply with the following (CBC 1106A.1(2)):

**Exception:** In buildings with an elevator provided solely to access dwelling units on a ground floor – e.g., to meet provisions of item X-1A.11 – only dwelling units on the ground floor need be served by accessible route and comply with provisions of item X-1A.8, X-1A.9, or X-1A.10 as applicable

- a. Elevators shall provide access to all dwelling units in building
- b. All dwelling units in building subject to provisions of item X-1A.8 or X-1A.10 as applicable

13. Where an elevated walkway with maximum 10% slope proposed between covered multifamily dwelling entrance and

vehicular or pedestrian arrival point, floor served by walkway shall be considered a ground floor and comply with the following (CBC 1106A.1(3)):

- a. All dwelling units on that floor subject to provisions of item X-1A.8, X-1A.9, or X-1A.10 as applicable
- b. Elevated walkway shall comply with accessible route provisions of item X-1A.21 or pedestrian ramp provisions of section X-4A

14. Regardless of site impracticality, where an elevator connects parking area with dwelling units on ground floor, the ground floor shall be served by an accessible entrance on an accessible route and comply with the following (CBC 1106A.1(1)):

- a. All dwelling units on ground floor shall comply with accessibility/adaptability provisions of section X-15A
- b. At least one of each type of common-use area on ground floor shall be accessible

## SITE ACCESSIBILITY

15. Identify on site accessibility plan location of the following elements as provided and distinguishing between accessible and inaccessible elements and new and existing elements (CBC 1110A.1):

- a. Covered multifamily dwellings
- b. Dwelling units meeting scoping provisions of items X-1A.8 through X-1A.14 as applicable
- c. Common-use facilities
- d. Public-use facilities
- e. Parking spaces
- f. Passenger loading zones
- g. Public transportation stops
- h. Walks and sidewalks
- i. Curb ramps
- j. Exterior pedestrian ramps
- k. Exterior stairways
- l. Exterior drinking fountains
- m. Exterior public telephones
- n. Elevators or platform lifts serving exterior routes

16. Using ■■■■■■ or equivalent symbol, identify on site accessibility plan the following accessible routes of travel serving covered multifamily dwellings and associated public- and common-use facilities (CBC 1110A.1, CBC 1117A.2, CBC 1117A.4):

- a. Between all exterior ground-floor exits and the public way
- b. Between accessible parking facilities and entrances of buildings/dwellings served
- c. Between public streets or sidewalks and entrances
- d. Between public transportation stops and entrances
- e. Between covered multifamily dwellings and public- and/or common-use facilities/spaces on the same site

**Exception:** If slope of finished grade between covered multifamily dwelling units and a public- or common-use facility exceeds 8.3% slope or where other physical barriers outside of owner's control prevent installation of an accessible route, access by vehicular route may be provided given **both of the following**:

- Accessible parking provided on accessible route for minimum 2% of covered multifamily dwelling units.
- Site provisions such as accessible parking and curb ramps provided at public- or common-use facility.

17. Accessible routes shall be the most practical route and shall coincide – the maximum extent feasible – with routes for the general public and building residents. (CBC 1110A.1)

18. If more than one route of travel is provided, all routes shall be accessible. (CBC 1110A.1(1))

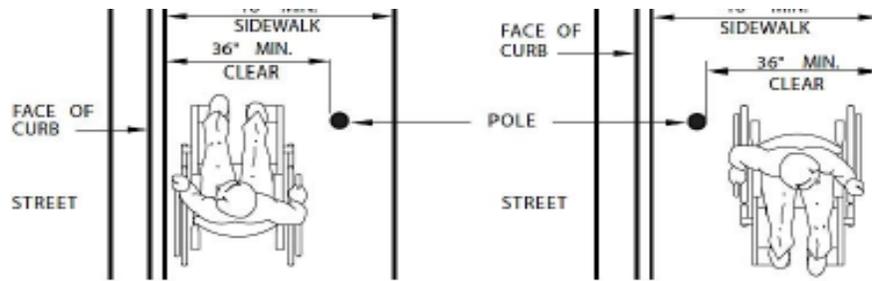
## EXTERIOR ROUTES OF TRAVEL

19. Dimension minimum 48-inch-wide walks and sidewalks. (CBC 1113A.1.1)

**Exception:** Minimum 36-inch width acceptable for walk serving individual dwelling unit provided adequate maneuvering clearances provided at doors per section X-6A

**Exception:** Minimum 36-inch clear width acceptable at sidewalk right-of-way obstructions per CBC Figure 11A-5A(a)

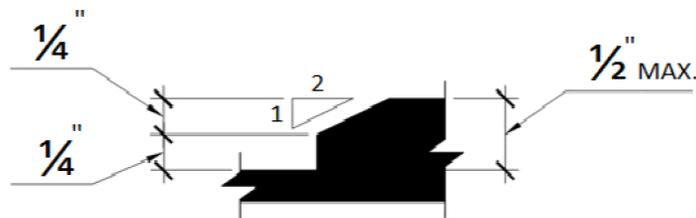




(a) SIDEWALK OBSTRUCTIONS  
**FIGURE 11A-5A**  
**RAMP AND SIDEWALKS**

20. Specify on site accessibility plan running slope of each walk and sidewalk. (CBC 1113A.3)
21. Specify on site accessibility plan spot elevations at each walk to verify running slopes indicated per item X-1A.20 do not exceed 5% slope unless pedestrian ramp provided per section W-4A. (CBC 1113A.3)
22. Specify on site accessibility plan maximum 2.1% slope of each walk and sidewalk. (CBC 1113A.1.3)
 

**Exception:** If building official determines local conditions would create an unreasonable hardship, cross slope may be increased to maximum 4.2% slope for maximum 20-foot distance
23. Specify stable, firm, and slip-resistant surface for each accessible walk and sidewalk. (CBC 1113A.1.2)
  - a. Surface with slope less than 6% shall have slip resistance equivalent to medium salted finish
  - b. Surface with slope 6% or greater shall be slip-resistant
24. Dimension **one of the following** at accessible routes exceeding 200 feet in length (CBC 1110A.4, CBC 1138A.1.2):
  - a. Minimum 60-inch clear width
  - b. Minimum 60-inch-wide by 60-inch-long passing space(s) at maximum 200-foot intervals
  - c. Minimum 48-inch-wide T-shaped intersection(s) – where base and arms extend minimum 48 inches beyond intersection – at maximum 200-foot intervals
25. For walks with continuous gradients, dimension minimum 5-foot-long level areas at maximum 400-foot intervals. (CBC 1133B.7.6)
26. Identify on site accessibility plan and dimension any abrupt changes in level greater than 1/4 inch on walks or sidewalks. (CBC 1111A.1)
27. For abrupt changes in level between 1/4 inch and 1/2 inch on walks or sidewalks, detail maximum 50% beveled slope per CBC Figure 11A-1F(b). (CBC 1111A.2)



(b) BEVELED CHANGE IN LEVEL  
**FIGURE 11A-1F**  
**CHANGE IN LEVEL**

28. For abrupt changes in level greater than 1/2 inch on walks or sidewalks, provide sloping surface with maximum 5% running slope or pedestrian ramp per section X-4A. (CBC 1111A.2)
29. Stairs located along or adjacent to an accessible route shall comply with requirements of section X-7A. (CBC 1111A.1)
30. Identify on site accessibility plan any grates located on walks or sidewalks and detail maximum 1/2-inch grid openings in direction of traffic flow, with elongated openings in gratings placed so that long dimension is perpendicular to dominant direction of traffic. (CBC 1113A.6)
31. For walks or sidewalks encountering doors or gates, dimension level areas complying with the following (CBC 1113A.4):

- a. Minimum 60-inches wide by 60-inches deep at doors or gates swinging toward walk or sidewalk with minimum 24-inch clearance extending beyond latch side of door or gate
- b. Minimum 48-inches wide by 44-inches deep at doors or gates swinging away from walk or sidewalk

**HAZARDS**

32. Identify on site accessibility plan and dimension any vertical drops adjacent to walks or sidewalks. (CBC 1116A.1)

33. At any walk or sidewalk with adjacent vertical drop exceeding 4 inches, detail minimum 6-inch-high warning curb. (CBC 1010.10.1, CBC 1116A.1)

**Exception:** Vertical drops due to curbs between sidewalks and vehicular ways

**Exception:** Where handrail or guardrail provided with edge protection per one of the following

- a. Minimum 4-inch-high curb
- b. Barrier preventing passage of 4-inch-diameter sphere, where any portion of sphere is within 4 inches of ground surface

34. At any walk or sidewalk with adjacent vertical drop exceeding 30 inches, detail minimum 42-inch-high guardrail with openings not allowing passage of 4-inch-diameter sphere. (CBC 1013.1, CBC 1013.2)

**Exception:** Openings not allowing passage of 4-3/8-inch-diameter sphere allowed in portions of guard 36 inches to 42 inches high

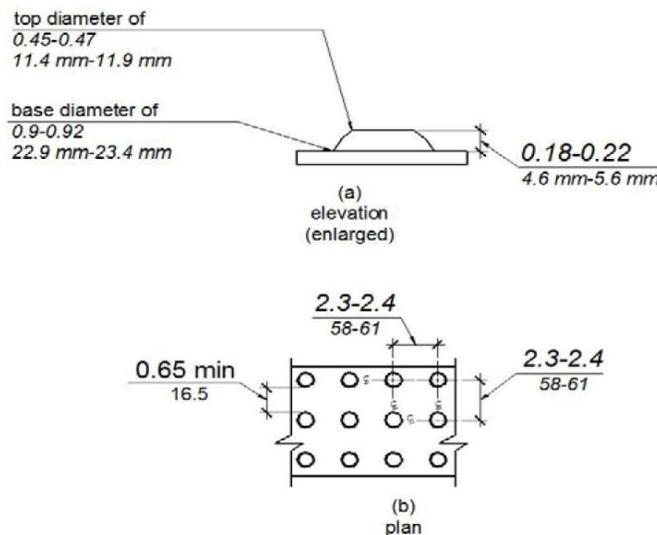
35. At any walk entering or adjoining vehicular ways without curb, railing, or barrier separation, detail continuous detectable warning strip per the following with 36-inch (absolute) depth for entire length/width of transition. (CBC 1116A.5, CBC 11B-705.1.2.5)

a. Including raised, truncated domes per CBC Figure 11B-705.1:

- o Minimum 0.9-inch and maximum 0.92-inch base diameter
- o Minimum 0.45-inch and maximum 0.47-inch top diameter
- o Minimum 0.18-inch and maximum 0.22-inch height
- o Minimum 2.3-inch and maximum 2.4-inch center-to-center spacing and minimum 0.65-inch base-to-base spacing

**Exception:** Minimum 1.6-inch and maximum 2.4-inch center-to-center spacing acceptable for domes in radial pattern

b. Yellow color – integral to surface – conforming to FS33538 of Federal Standard 595C



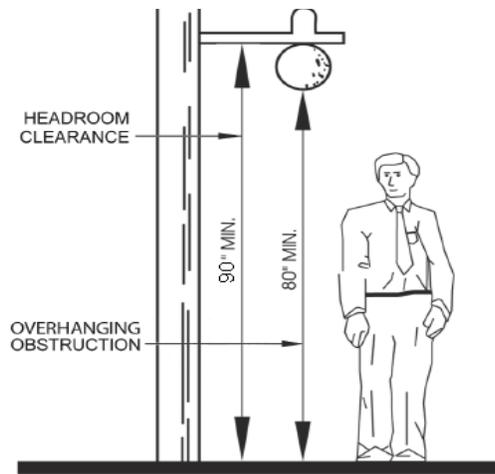
**FIGURE 11B-705.1  
SIZE AND SPACING OF TRUNCATED DOMES**

36. Identify on site accessibility plan any obstructions overhanging pedestrian ways and dimension vertical clearance complying with the following (CBC 1116A.2):

a. Minimum 84 inches per CBC Figure 11A-1B where part of required egress path

**Exception:** Minimum 80 inches acceptable at doorways and arches maximum 24 inches deep

b. Minimum 80 inches for other pedestrian ways



**FIGURE 11A-1B  
HEADROOM CLEARANCE AND OVERHANGING OBSTRUCTION**

37. Where pedestrian ways adjoin areas with less than 80-inch vertical clearance – e.g., open areas beneath stairs – detail cane-detectable barrier at maximum 27 inches above walking surface. (CBC 1116A.2)
38. Specify rounded corners with minimum 1/8-inch radius of curvature for any sign projecting from a post and with bottom edge less than 80 inches above walking surface. (CBC 1116A.4)

### **SIGNAGE**

39. Identify on site accessibility plan location of each exterior directional and informational sign and coordinate with signage schedule and/or details indicating the following (CBC 1143A.1):
  - a. Sign dimensions
  - b. Character and symbol dimensions
  - c. Character, symbol, and background colors
  - d. Sign placement (e.g., post-mounted, wall-mounted)
  - e. Horizontal/vertical clearance dimensions from pedestrian ways
40. Specify on signage schedule and/or details visual characters on any exterior directional and informational signs complying with the following (CBC 1143A.3, CBC 1143A.5):
  - a. Signs providing information about accessible elements and features of a building or site shall include appropriate symbol of accessibility
  - b. Located minimum 40 inches above finished ground
  - c. Characters and background with non-glare finish
  - d. Characters contrasting with background, either light characters on dark background or dark characters on light background
  - e. Text shall be in a horizontal format
  - f. Line spacing between baselines of separate character lines at minimum 135 percent and maximum 170 percent of character height
  - g. Characters shall be uppercase or lowercase or a combination of both
  - h. Characters shall be conventional in form – i.e., not italic, oblique, script, highly decorate, or of other unusual form
  - i. Character font with uppercase letter “O” width minimum 60 percent and maximum 110 percent uppercase letter “I” height
  - j. Characters with stroke thickness of uppercase letter “I” minimum 10 percent and maximum 20 percent character height
  - k. Characters spaced with closest points of adjacent character minimum 10 percent and maximum 35 percent of character height
  - l. Character height sized according to CBC Table 1143A.5 and based on uppercase letter “I”:

**TABLE 1143A.5**

**TABLE 11-100  
VISUAL CHARACTER HEIGHT**

<b>HEIGHT TO FINISH FLOOR FROM BASELINE OF CHARACTER</b>	<b>HORIZONTAL VIEWING DISTANCE</b>	<b>MINIMUM CHARACTER HEIGHT</b>
40 inches (1016 mm) to less than or equal to 70 inches (1778 mm)	Less than 72 inches (1829 mm)	$\frac{5}{8}$ inch (15.9 mm)
	72 inches (1829 mm) and greater	$\frac{5}{8}$ inch (15.9 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1829 mm)
Greater than 70 inches (1778 mm) to less than or equal to 120 inches (3048 mm)	Less than 180 inches (4572 mm)	2 inches (51 mm)
	180 inches (4572 mm) and greater	2 inches (51 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4572 mm)
Greater than 120 inches (3048 mm)	Less than 21 feet (6401 mm)	3 inches (76 mm)
	21 feet (6401 mm) and greater	3 inches (76 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6401 mm)

41. Specify on signage schedule and/or details pictograms on any exterior directional and informational signs complying with the following (CBC 1143A.6.10):
  - a. Field height of minimum 6 inches
  - b. Characters and Braille not within pictogram field
  - c. Pictograms and field with non-glare finish
  - d. Pictograms contrasting with field, either light pictogram on dark field or dark pictogram on light field
  - e. Include text descriptors complying with raised character, Braille, and mounting height provisions of CBC 1143A.6 and CBC 1143A.7
  
42. At each major junction where an accessible route diverges from main circulation path, provide sign displaying International Symbol of Accessibility and indicating direction to accessible routes, entrances, and/or facilities. (CBC 1110A.2)

**SITE IMPRACTICALITY**

43. Where proposed on sites with difficult terrain conditions or unusual characteristics, covered multifamily dwellings in buildings without an elevator may employ site impracticality tests per item X-1A.43 or X-1A.45 to determine accessibility/adaptability requirements. (CBC 1150A.1)
 

**Exception:** Where a building elevator is provided only as a means of creating an accessible route to covered multifamily dwelling units on a ground floor, the building is not considered an elevator building and accessibility/adaptability requirements would apply only to ground-floor dwelling units
  
44. For a site with a single building having one common (lobby) entrance, provide dimensions and spot elevations on site accessibility plan demonstrating the site passes one of the following tests (CBC 1150A.1):
  - a. Individual building test (all conditions must be satisfied):
    - o Slopes of undisturbed site measured between planned entrance and all vehicular or pedestrian arrival points within 50 feet of planned entrance exceed 15%
    - o Slopes of planned finished grade measured between planned entrance and all vehicular or pedestrian arrival points within 50 feet of planned entrance exceed 15%

**Exception:** If there are no vehicular or pedestrian arrival points within 50 feet of the planned entrance, the slopes of undisturbed and finished grade shall be measured from the closest vehicular or pedestrian arrival point and the planned entrance.
  - b. Unusual characteristics test (all conditions must be satisfied):
    - o Applies only to sites in state or federally designated floodplain or coastal high-hazard areas or sites subject to other similar requirements of law or code requiring design of lowest floor or lowest structural member of lowest floor at level at or above base flood elevation.
    - o Original site characteristics result in difference in finished grade elevation exceeding 30 inches and slope exceeding 10% measured between planned entrance and all vehicular or pedestrian arrival points within 50 feet of the planned entrance.

**Exception:** If there are no vehicular or pedestrian arrival points within 50 feet of the planned entrance, the slope of finished grade shall be measured from the closest vehicular or pedestrian arrival point and the planned entrance.
  
45. If a site passes one of the impracticality tests of item X-1A.43, the following accessibility/ adaptability provisions may be applied (CBC 1150A.1):
  - a. Accessible route not required to common (lobby) entrance
  - b. Minimum 20% of ground-floor dwelling units shall comply with accessibility/adaptability provisions of section W-15A
  - c. All remaining ground-floor dwelling units shall comply with item X-1A.47

46. For site with multiple buildings or site with single building having multiple entrances, provide site terrain analysis per the following (CBC 1150A.1):
  - a. Calculates percentage of buildable area of undisturbed site with natural grade less than 10% slope
  - b. Employs topographic survey with 2-foot contour intervals and slope measured between successive intervals
  - c. Certified by a licensed engineer, architect, landscape architect, or surveyor
47. If site terrain analysis is provided per item X-1A.45, the following accessibility/adaptability provisions may be applied (CBC 1150A.1):
  - a. The following number ground-floor units – minimum 20% of total ground-floor units on site – shall be on an accessible route and comply with accessibility/adaptability provisions of section X-15A:
    - o Percentage of units equaling percentage of total buildable area of undisturbed site with natural grade less than 10% slope per site terrain analysis
    - o All additional ground floor units in a building – or served by a particular entrance – falling within a 8.33% slope between their planned entrances and an arrival point
  - b. All remaining ground-floor dwelling units shall comply with item X-1A.47
48. Beyond the accessibility/adaptability provisions of items X-1A.44 and X-1A.46, all other ground-floor dwelling units on sites meeting impracticality criteria shall comply with the following provisions of section W-15A (CBC 1150A.2):
  - a. Grab bar reinforcement
  - b. Minimum 32-inch clear width at interior doors
  - c. Lever hardware
  - d. Door signal devices
  - e. Complying clear space at doors
  - f. Minimum 15-inch toilet seat height
  - g. Electrical receptacle outlet height
  - h. Lighting and environmental control height
  - i. Faucet controls
  - j. Minimum space requirements at toilets, bathtubs, and lavatories
  - k. Removable cabinets under kitchen sink counter

## X-2A. PARKING FACILITIES (CBC 11A)

### SCOPING

1. The accessibility provisions of this section apply to the following parking facilities serving covered multifamily dwellings and associated common-use facilities (CBC 1109A.1, CBC 1109A.2):
  - a. Garages
  - b. Private garages
 

**Exception:** A private garage attached to and directly serving a single covered multifamily dwelling unit meeting the dimensional requirements of items X-2A.14, X-2A.16, and X-2A.17 and served by an accessible route meeting **one of the following:**

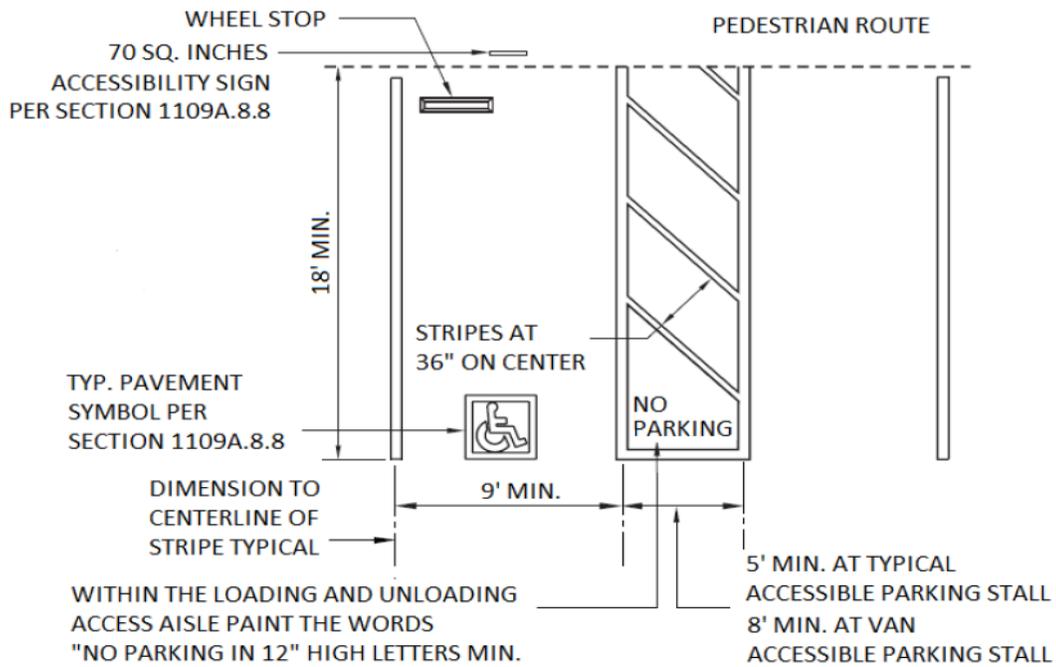
    - o A door leading directly from the covered dwelling unit and immediately entering the and complying with provisions of section X-15A
    - o Accessible route from dwelling unit to exterior door entering garage with both dwelling unit and garage doors complying with provisions of section W-15A
    - o Accessible route from dwelling unit's primary entry door to vehicular entrance to garage with dwelling unit door complying with provisions of section X-15A
  - c. Carports
  - d. Off-street parking (e.g., parking lots or spaces)
2. Identify on site accessibility plan accessible parking spaces numbering minimum 2% of covered multifamily dwelling units with at least one accessible space provided in each type of parking facility. (CBC 1109A.3)
3. Where assigned parking provided for residents or groups of residents, identify on site accessibility plan minimum 2% of assigned spaces serving covered multifamily dwellings as accessible with at least one accessible space provided in each parking facility type. (CBC 1109A.4)
4. Where assigned parking provided, designated accessible parking serving a covered multifamily dwelling unit shall be provided upon request of residents and with full range of choices – e.g., off-street parking, carport, garage – available for other residents. (CBC 1109A.6)
5. Where unassigned and visitor parking provided, identify on site accessibility plan minimum 5% of parking spaces as

accessible and providing access to grade-level entrances of covered multifamily dwellings and associated facilities. (CBC 1109A.5)

6. Identify on site accessibility plan one of every eight accessible parking spaces – but not less than one – as van accessible. (CBC 1109A.8.6)
7. Identify on site accessibility plan accessible routes between parking spaces and building entrances using ■■■■■■ or equivalent symbol. (CBC 1109A.7)
8. Accessible parking spaces shall be located on shortest accessible route to accessible building or covered multifamily dwelling unit entrance. (CBC 1109A.7(1))  
**Exception:** All van accessible spaces may be grouped on one level of a multilevel parking facility
9. In parking facilities not serving a particular building, accessible parking spaces shall be located on shortest accessible route to an accessible pedestrian entrance to parking facility. (CBC 1109A.7(4))
10. In buildings with multiple entrances with adjacent parking, accessible parking spaces shall be dispersed to serve each entrance. (CBC 1109A.7(2))
11. Accessible parking space locations shall not compel persons with disabilities to wheel or walk behind parked cars other than their own. (CBC 1109A.7(5))
12. Accessible routes shall not cross lanes for vehicular traffic when practical. (CBC 1109A.7(3))  
**Exception:** When crossing vehicular traffic lanes is necessary, accessible route shall be designated and marked as crosswalk

#### **DIMENSIONS AND CONFIGURATION**

13. Provide complete dimensions and coordinated detailing for each accessible parking space. (CBC 1109A.8)
  14. Where individual accessible parking spaces are provided, dimension the following per CBC Figure 11A-2B (CBC 1109A.8.5, CBC 1109A.8.6):
    - a. Standard accessible parking spaces:
      - Minimum 9-foot-wide by 18-foot-long parking stall with minimum 5-foot-wide by 18-foot-long parking stall located adjacent to either side of parking stall
    - b. Van accessible parking spaces per **one of the following**:
      - Minimum 12-foot-wide by 18-foot-long parking stall with minimum 5-foot-wide by 18-foot-long access aisle located on passenger side of parking stall with the vehicle parked in the forward position
      - Minimum 9-foot-wide by 18-foot-long parking stall with minimum 8-foot-wide by 18-foot-long access aisle located on passenger side of parking stall with the vehicle parked in the forward position
-

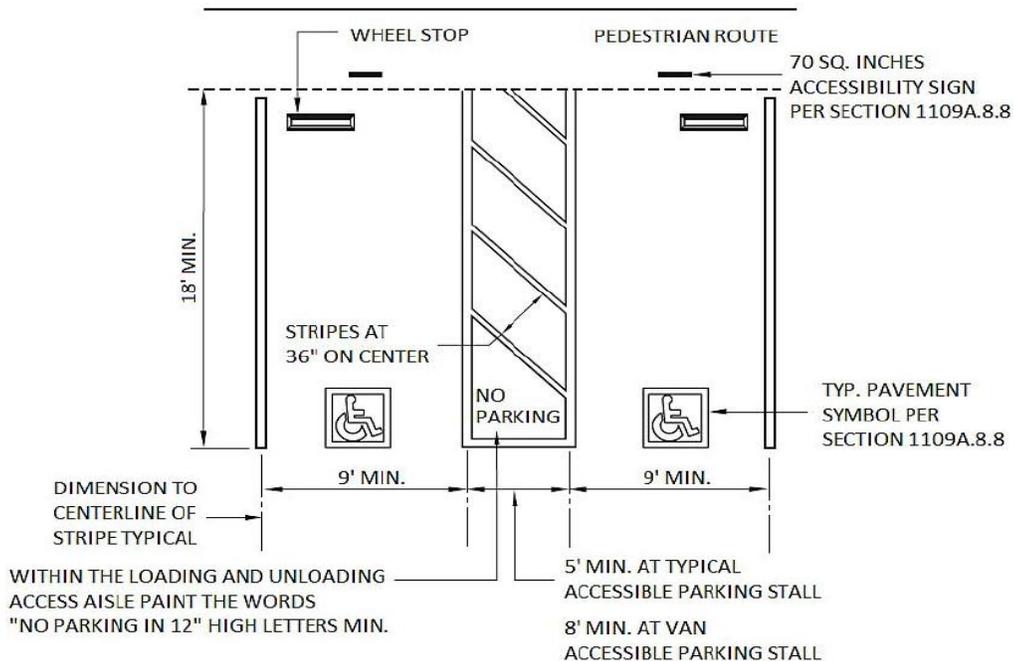


**FIGURE 11A-2B  
SINGLE AND VAN ACCESSIBLE PARKING STALLS**

15. Where dual accessible parking spaces are provided, dimension the following per CBC Figure 11A-2A or CBC Figure 11A-2C (CBC 1109A.8.5, CBC 1109A.8.6):

- a. Two minimum 9-foot-wide by 18-foot-long parking stalls
- b. Minimum 5-foot-wide by 18-foot-long access aisle between parking stalls

**Exception:** Minimum 8-foot-wide by 18-foot-long access aisle required on passenger side of van accessible spaces



**FIGURE 11A-2A  
DOUBLE PARKING STALLS**

70 SQ. INCHES

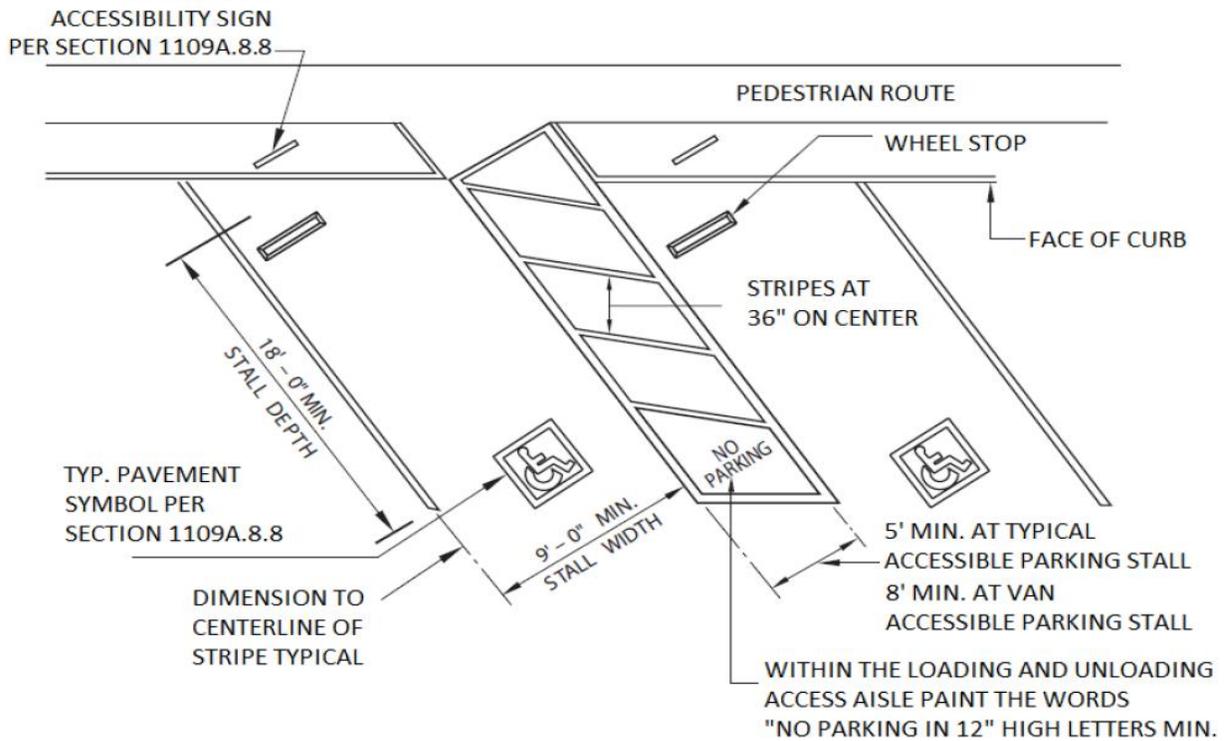


FIGURE 11A-2C  
DIAGONAL PARKING STALLS

16. Identify on site accessibility plan minimum 98-inch vertical clearance at the following locations within each parking facility (CBC 1109A.8.1):

**Exception:** Lower vertical clearance acceptable for vehicular passageways serving inaccessible parking spaces if reflective warning signs provided where entering areas with less than 98-inch vertical clearance

- a. Entrances
- b. Exits
- c. Accessible parking spaces and access aisles
- d. Vehicular passageways serving accessible spaces

17. Specify maximum 2.1% slope in all directions at surfaces of accessible parking stalls and access aisles. (CBC 1109A.8.3)

18. Provide bumpers or curbs at all applicable parking stalls – accessible and otherwise – to prevent vehicle encroachment into required width of adjacent pedestrian ways. (CBC 1109A.8.2(1))

19. Where curbs separate access aisles and adjacent pedestrian ways, provide curb ramps per section X-3A with no encroachment into accessible parking stalls or access aisles. (CBC 1109A.8.2(2))

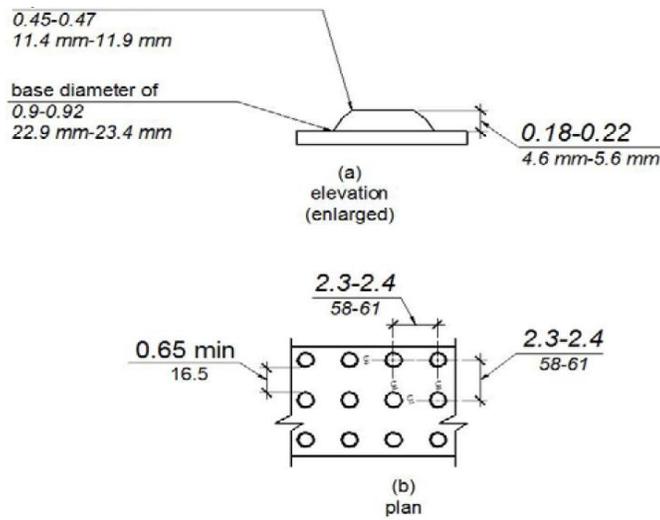
20. At pedestrian ways entering or adjoining parking stalls or access aisles without curb, railing, or barrier separation, detail continuous detectable warning strip complying with the following (CBC 1116A.5, CBC 11B-705.1.1, CBC 11B-705.1.2.5):

- a. 36-inches (absolute) deep for entire length/width of transition
- b. Including raised, truncated domes per CBC Figure 11B-705.1:
  - o Minimum 0.9-inch and maximum 0.92-inch base diameter
  - o Minimum 0.45-inch and maximum 0.47-inch top diameter
  - o Minimum 0.18-inch and maximum 0.22-inch height
  - o Minimum 2.3-inch and maximum 2.4-inch center-to-center spacing and minimum 0.65-inch base-to-base spacing

**Exception:** Minimum 1.6-inch and maximum 2.4-inch center-to-center spacing acceptable for domes in radial pattern

- c. Yellow color – integral to surface – conforming to FS33538 of Federal Standard 595C

top diameter of \_\_\_\_\_



**FIGURE 11B-705.1  
SIZE AND SPACING OF TRUNCATED DOMES**

## IDENTIFICATION AND SIGNAGE

21. The identification and signage requirements of items X-2A.22 through X-2A.27 do not apply to accessible assigned parking spaces provided per item X-2A.3. (CBC 1109A.4)
22. Detail surface identification complying with **one of the following** configurations at each accessible parking stall (CBC 1109A.8.8):
  - a. Outlined minimum 36-inch by 36-inch International Symbol of Accessibility in white on blue background and located per **all of the following**:
    - o Centerline of symbol located maximum 6 inches from centerline of parking stall
    - o Sides of symbol parallel to length of parking stall
    - o Lower side of symbol aligned with end of parking stall
  - b. Stall outlined or painted blue with minimum 36-inch by 36-inch International Symbol of Accessibility outlined in white and located per **all of the following**:
    - o Centerline of symbol located maximum 6 inches from centerline of parking stall
    - o Sides of symbol parallel to length of parking stall
    - o Lower side of symbol aligned with end of parking stall
23. Detail surface identification complying with the following at each accessible parking access aisle (CBC 1109A.8.5(4)):
  - a. Blue access aisle border
  - b. Blue or white hatched lines maximum 36 inches on center within access aisle
  - c. "NO PARKING" painted on ground within access aisle in white letters minimum 12-inches high and located for visibility from adjacent vehicular way
24. Identify on site accessibility plan location of each parking-related sign required per items X-2A.24 through X-2A.26 and coordinate with signage schedule and/or details indicating the following (CBC 1109A.8.8):
  - a. Sign dimensions
  - b. Character and symbol dimensions, colors, and background colors
  - c. Sign placement (e.g., post-mounted, wall-mounted)
  - d. Horizontal/vertical clearance dimensions from pedestrian ways
25. Provide sign complying with the following adjacent to and visible from each accessible parking space (CBC 1109A.8.8):
  - a. International Symbol of Accessibility symbol in white on blue background
  - b. Minimum 70 square inches
  - c. Posted minimum 80 inches – measured to the bottom of the sign – above finished ground surface
    - Exception:** Posted minimum 60 inches – measured to the bottom of the sign – above finished ground surface when not located within or adjacent to pedestrian way
  - d. Reflectorized surface
26. Provide signage reading "Van Accessible" at each van-accessible parking space with minimum 80-inch vertical clearance above any adjacent pedestrian ways. (CBC 1109A.8.8)

27. Provide tow-away warning signs complying with the following (CBC 1109A.8.8):
  - a. Posted conspicuously at each parking facility entrance or adjacent to and visible from each accessible parking space
  - b. Minimum 17 inches by 22 inches
  - c. Minimum 1-inch-high lettering
  - d. Reading: "Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or special license plates issued for persons with disabilities will be towed away at the owner's expense. Towed vehicles may be reclaimed at \_\_\_\_\_ or by telephoning \_\_\_\_\_."
  - e. Tow-away contact information specified on sign detail

**X-3A. CURB RAMPS (CBC 11A)**

**GENERAL REQUIREMENTS**

1. Identify on site accessibility plan location of all curb ramps. (CBC 1112A)
2. Built-up curb ramps shall not project into vehicular traffic lanes, parking stalls, or parking access aisles. (CBC 1109A.8.2(2), CBC 1112A.2)
3. Curb ramps shall be located or protected to prevent obstruction by parked vehicles. (CBC 1112A.2)

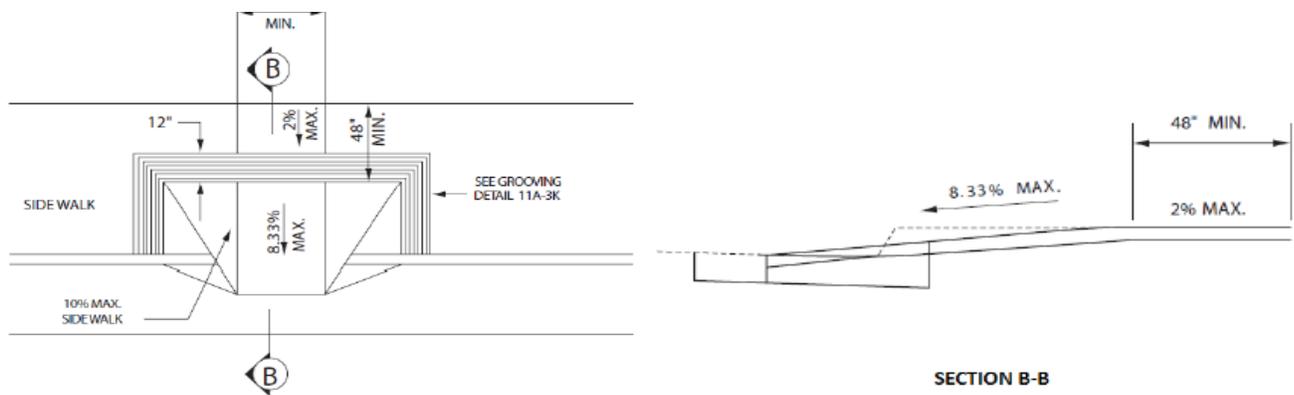
**DIMENSIONS AND SLOPES**

4. Provide complete dimensions and coordinated detailing for each curb ramp. (CBC 1112A)
5. Dimension minimum 48-inch width – lying in a single-sloped plane – of each curb ramp run. (CBC 1112A.3, CBC 1112A.5)
6. Specify running slope of each curb ramp run. (CBC 1112A.5)
7. Specify and dimension the following to verify slope(s) indicated per item X-3A.6 do not exceed 8.3% slope for each curb ramp run (CBC 1112A.5):
  - a. Elevations at top and bottom curb ramp landings
  - b. Length of curb ramp run
8. If curb ramp located where pedestrians must walk across ramp, detail flared sides on curb ramp with maximum 10% slope. (CBC 1112A.5)
9. Specify surfaces of curb ramps and flared sides shall be stable, firm, slip-resistant finish contrasting with finish of adjacent walk. (CBC 1112A.7)
10. At top of each curb ramp, dimension minimum 48-inch-deep level landing for full curb ramp width. (CBC 1112A.6)

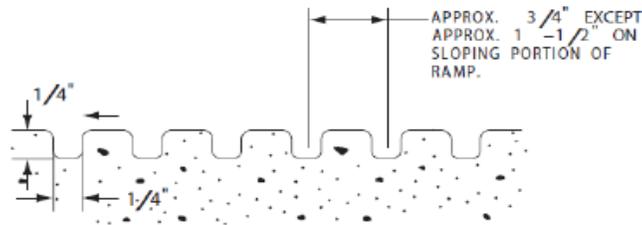
**Exception:** Landings less than 48-inches deep allowed where flared sides of curb ramp limited to maximum 8.3% slope

11. Detail grooved border complying with the following per CBC Figure 11A-3C and CBC Figure 11A-3K at each curb ramp (CBC 1112A.8):
  - a. Located at level surface of walk along top and sides of curb ramp
  - b. 12-inches (absolute) wide
  - c. Grooves 1/4-inch deep
  - d. Grooves spaced 3/4-inch on center





**FIGURE 11A-3C  
CURB DETAIL**



**GROOVING DETAIL**

**FIGURE 11A-3K  
CURB DETAIL**

12. Detail detectable warning complying with the following at each curb ramp (CBC 1112A.9, 11B-247.1.2.2, CBC 11B-406.5, CBC 11B-705.1):

- a. Extending full width of curb ramp run (excluding flared sides)
- b. Extending minimum 36 inches in direction of travel

**Exception:** On parallel curb ramps, detectable warnings minimum 36-inches deep shall be placed on the turning space at the flush transition between the sidewalk and vehicular area

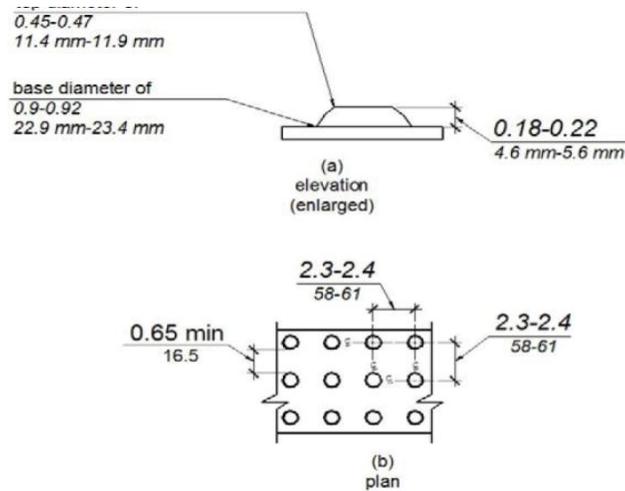
- c. Located so the edge nearest curb is minimum 6 inches and maximum 8 inches from line at curb face
- d. Including raised, truncated domes per CBC Figure 11B-705.1:

- o Minimum 0.9-inch and maximum 0.92-inch base diameter
- o Minimum 0.45-inch and maximum 0.47-inch top diameter
- o Minimum 0.18-inch and maximum 0.22-inch height
- o Minimum 2.3-inch and maximum 2.4-inch center-to-center spacing and minimum 0.65-inch base-to-base spacing

**Exception:** Minimum 1.6-inch and maximum 2.4-inch center-to-center spacing acceptable for domes in radial pattern

- e. Color – integral to surface – contrasting with adjacent walking surfaces, either light-on-dark or dark-on-light

top diameter of



**FIGURE 11B-705.1  
SIZE AND SPACING OF TRUNCATED DOMES**

13. Specify the following for transitions from curb ramps to adjoining walks, gutters, and streets (CBC 1112A.5):
  - a. Flush and free of abrupt change
  - b. Maximum 5% slope of adjoining walks, gutters, and streets within 48 inches of top and bottom of curb ramp
  
14. Detail and dimension any diagonal/corner curb ramps to comply additionally with the following (CBC 1112A.4):
  - a. Minimum 48-inch clear space at bottom of ramp and within any marked crossings
  - b. If ramps have returned curb or other well-defined edges, such edges shall be parallel to direction of pedestrian flow
  - c. If ramps have flared sides, minimum 24-inch-long segment of straight curb required on each side of ramp and within any marked crossings

#### **X-4A. RAMPS (CBC 11A)**

##### **GENERAL REQUIREMENTS**

1. An accessible route with running slope exceeding 5% requires an accessible ramp. (CBC 1111A.2)  
**Exception:** Curb ramps per section X-3A
2. Provide complete dimensions and coordinated detailing for each ramp. (CBC 1114A, CBC 1122A)

##### **RAMP RUNS**

3. Dimension minimum 48-inch clear width at each ramp run with no protrusion by handrails, curbs, or guide rails. (CBC 1114A.1, 1122A.1)  
**Exception:** Minimum 36-inch clear width allowed at ramp runs serving covered multifamily dwellings with occupant load of 10 or fewer  
**Exception:** Handrails – but not curbs or wheel guides – may project into the required clear width maximum 3-1/2 inches on each side
4. Specify running slope for each ramp run. (CBC 1114A.2, CBC 1122A.2)
5. Specify and dimension the following to verify slope(s) indicated per item X-4A.4 do not exceed 8.3% running slope for each ramp run (CBC 1114A.2, CBC 1122A.2):  
**Exception:** Alternate running slopes allowed at ramps serving dwelling unit decks, patios, or balconies per section X-15A
  - a. Elevations at top and bottom ramp landings
  - b. Length of ramp run
6. Specify maximum 2.1% cross slope for each ramp run and landing. (CBC 1114A.2.1, CBC 1122A.2.1)

##### **SURFACE MATERIAL**

7. Specify continuous common surface material complying with the following for each ramp run and landing (CBC 1113A.1.2):
  - a. Surface with slope less than 6% gradient shall have slip resistance equivalent to medium salted finish
  - b. Surface with slope 6% gradient or greater shall be slip-resistant

8. Specify means of preventing accumulation of water on exterior ramp runs, approaches, and landings. (CBC 1114A.3)

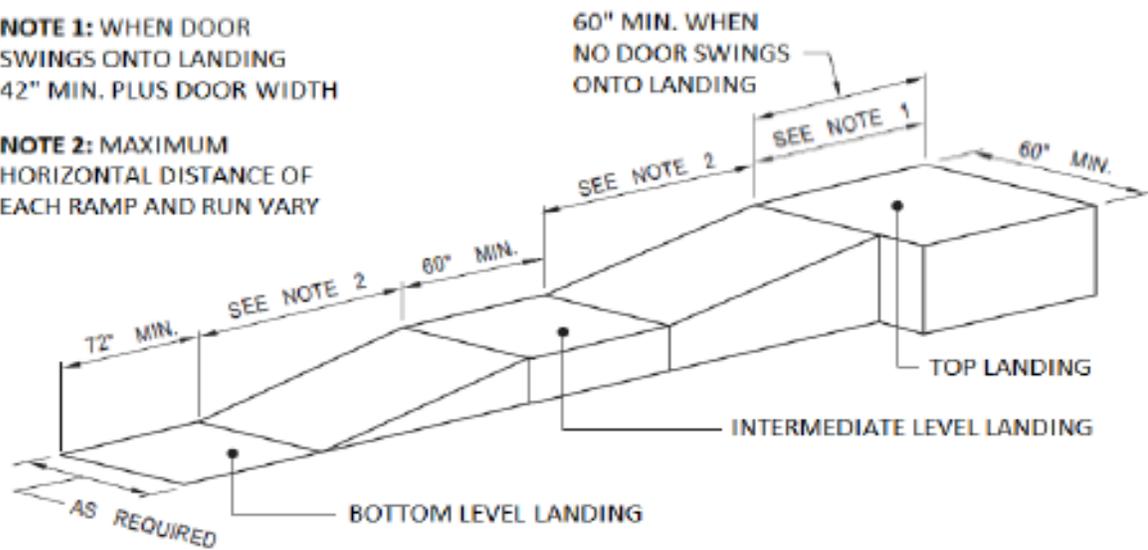
### LANDING DIMENSIONS AND CONFIGURATION

9. Dimension the following level ramp landings per CBC Figure 11A-6C(a), CBC Figure 11A-6C(b), or CBC Figure 11A-6D(a) (CBC 1114A.4.2, CBC 1122A.3.2):

- a. Top landing:
  - o Minimum 60-inch length
  - o Minimum 60-inch width
- b. Bottom landing:
  - Minimum 72-inch length
  - Minimum width equivalent to ramp run width
- c. Intermediate landing(s) required at changes in direction **or** where elevations specified per item X-4A.5 indicate vertical rise exceeds 30 inches:
  - o Minimum 72-inch length in the direction of downward travel from the upper ramp run at any change of direction in excess of 30 degrees
  - o Minimum 60-inch length for other intermediate landings
  - o Minimum 60-inch width at any change of direction
  - o Minimum width equivalent to ramp run width for other intermediate landings
  - o Intermediate landings placed at intervals such that no ramp run exceeds 30-inch vertical rise

**NOTE 1:** WHEN DOOR SWINGS ONTO LANDING  
42" MIN. PLUS DOOR WIDTH

**NOTE 2:** MAXIMUM HORIZONTAL DISTANCE OF EACH RAMP AND RUN VARY



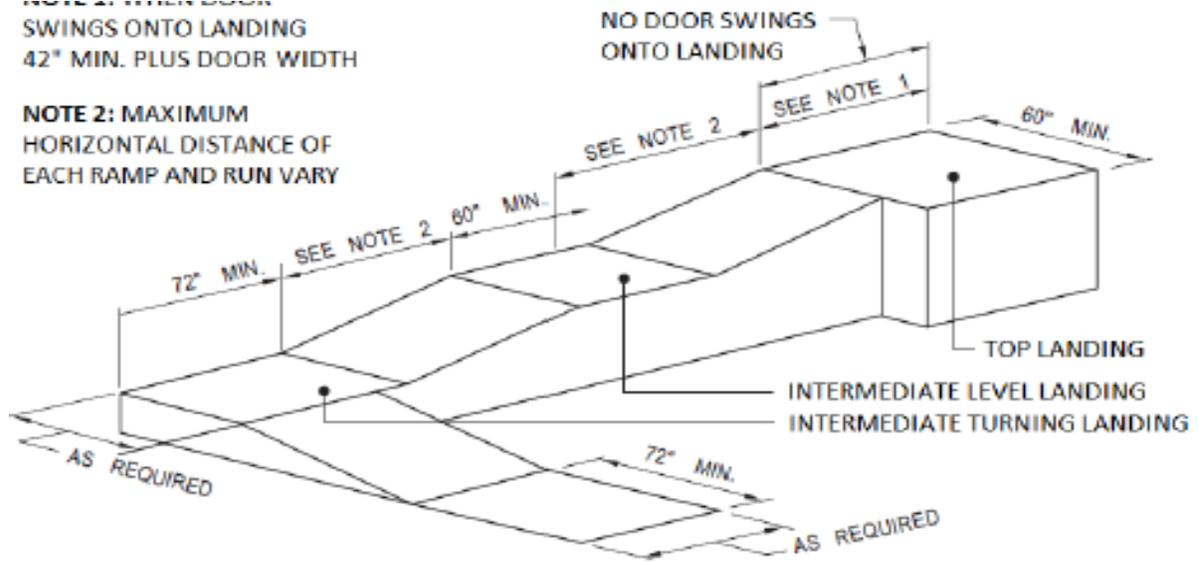
(a) STRAIGHT RAMP RUN  
FIGURE 11A-6D  
RAMP LANDING

**NOTE 1:** WHEN DOOR

60" MIN. WHEN

NOTE 1: WHEN DOOR SWINGS ONTO LANDING 42" MIN. PLUS DOOR WIDTH

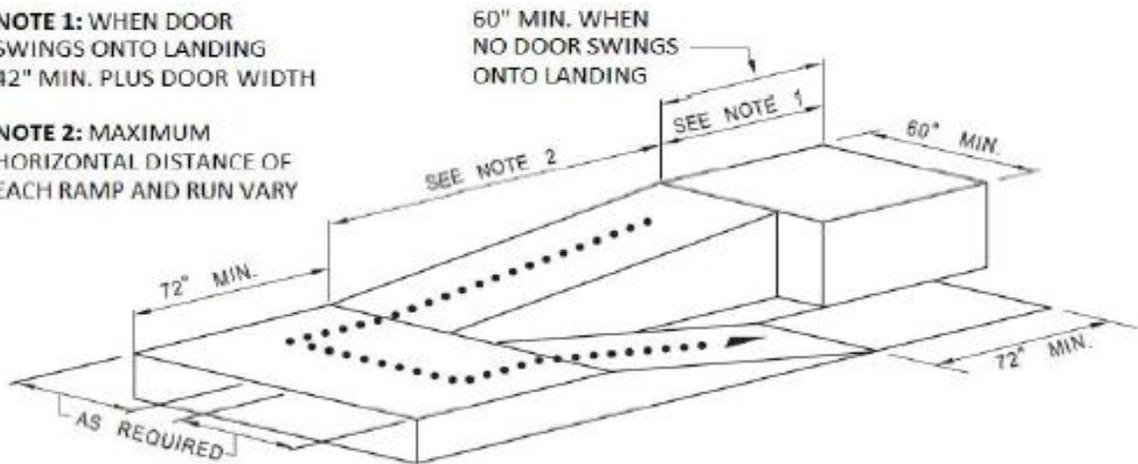
NOTE 2: MAXIMUM HORIZONTAL DISTANCE OF EACH RAMP AND RUN VARY



(b) RAMP WITH TURNING LANDING  
 FIGURE 11A-6D  
 RAMP LANDING

NOTE 1: WHEN DOOR SWINGS ONTO LANDING 42" MIN. PLUS DOOR WIDTH

NOTE 2: MAXIMUM HORIZONTAL DISTANCE OF EACH RAMP AND RUN VARY

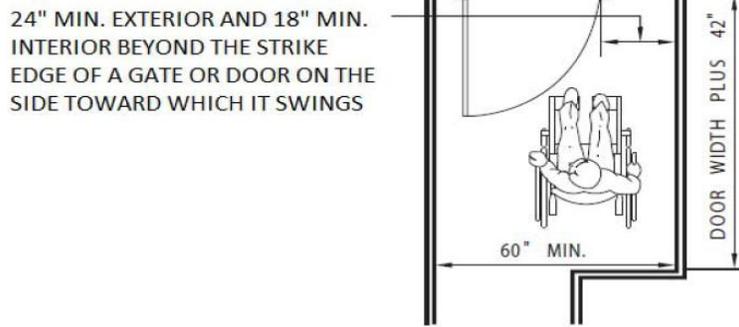


(a) RAMP WITH INTERMEDIATE SWITCH BACK LANDING  
 FIGURE 11A-6D  
 RAMP LANDING

10. Dimension landings with associated door/gate swings per CBC Figure 11A-6D(b) (CBC 1114A.4.4, CBC 1114A.4.5, CBC 1122A.3.4, CBC 1122A.3.5):

- a. Doors/gates in any position shall not reduce the minimum landing dimension to less than 42 inches
- b. Doors/gates in fully open position shall not reduce the required landing width by more than 3 inches when fully open
- c. Landing extending 24 inches past strike edge of doors or gates at exterior ramps
- d. Landing extending 18 inches past strike edge of doors or gates at interior ramps





(b) RAMP LANDING AT DOORWAY  
**FIGURE 11A-6D**  
**RAMP LANDING AND DOORWAY**

**EDGE PROTECTION**

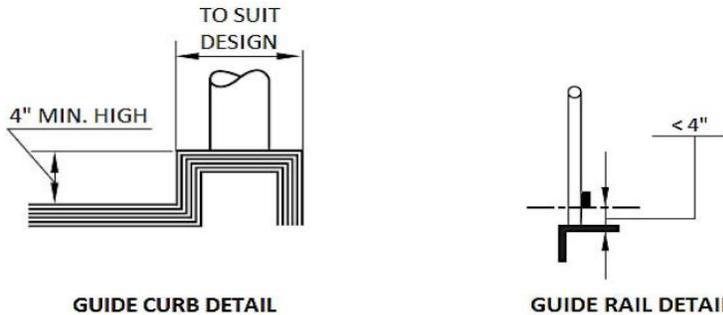
11. At each side of ramp runs and landings not bounded by a wall, detail **one of the following** (CBC 1010.10, CBC 1114A.7):

- a. Minimum 4-inch-high continuous guide curb per CBC Figure 11A-5A  
**Exception:** Minimum 2-inch-high continuous guide curb acceptable if ramp does not serve as means of egress
- b. Minimum 2-inch-high continuous barrier preventing the passage of 4-inch-diameter sphere per CBC Figure 11A-5A

**Exception:** Edge protection not required on sides of ramp landings serving adjoining ramp run or stairway

**Exception:** Edge protection not required on sides of ramps not required to have handrails and having flared sides with maximum 10% slope

**Exception:** Edge protection not required on sides of ramp landings with adjacent vertical drop-off not exceeding 1/2 inch within 10 inches horizontally



**FIGURE 11A-5A**  
**RAMPS**

12. At ramp runs or landings located more than 30 inches above adjacent floor or grade within 36 inches horizontally of open side, detail continuous guard minimum 42-inches above ramp surface with openings not allowing passage of 4-inch-diameter sphere. (CBC 1013.2, CBC 1013.3, CBC 1013.4)

**Exception:** Openings not allowing passage of 4 3/8-inch-diameter sphere allowed in portions of guard 36 inches to 42 inches high

**HANDRAILS AND EXTENSIONS**

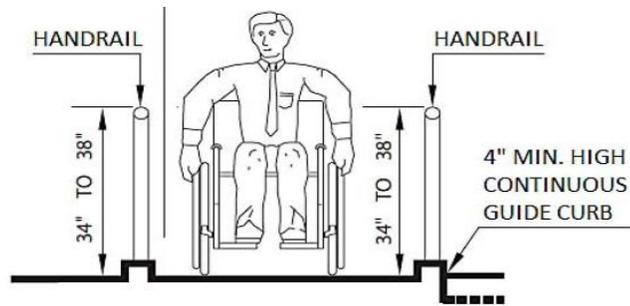
13. Provide continuous handrail on each side of each ramp run. (CBC 1114A.6.1, CBC 1122A.5.1)

**Exception:** Handrail acceptable on only one side of ramp run serving an individual dwelling unit provided ramp open on any side includes handrail on that side

**Exception:** Handrails not required at ramp runs with less than 6-inch rise or 72-inch length serving exterior door landings

14. Provide continuous inner handrails between ramp runs at dogleg or switchback ramps. (CBC 1114A.6.2.2)

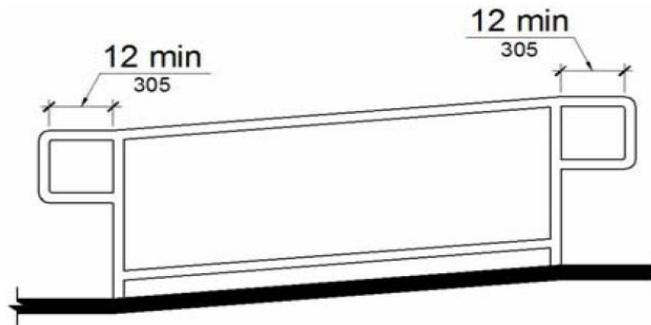
15. Dimension top of handrail gripping surface at minimum 34 inches and maximum 38 inches above ramp surface per CBC Figure 11A-5A. (CBC 1114A.6.2.1, CBC 1122A.5.2.1)



**FIGURE 11A-5A  
RAMPS**

16. Detail extensions for each handrail complying with the following per CBC Figure 11A-5A (CBC 1012.6, CBC 1114A.6.2.3, CBC 1122A.5.2.3):

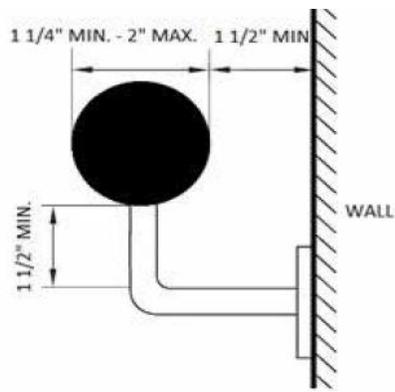
- a. Extending minimum 12 inches horizontally beyond the top and bottom of each ramp run
- b. Extending in direction of each ramp run
- c. Ends returning smoothly to floor, wall, or post



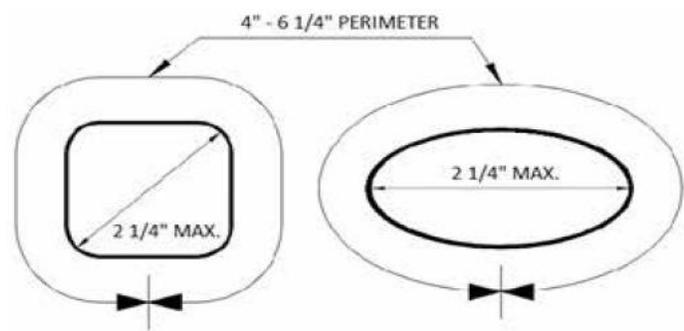
**FIGURE 11A-5A  
RAMPS**

17. Detail handrail gripping surfaces complying with the following (CBC 1114A.6.2.5, CBC 1122A.5.2.5):

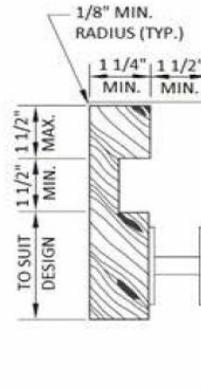
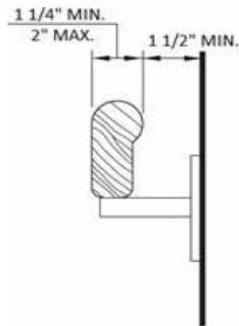
- a. If cross section is circular, minimum 1-1/4-inch and maximum 2-inch outside diameter per CBC Figure 11A-6B(a)
- b. If cross section is non-circular, minimum 4-inch and maximum 6-1/4-inch perimeter and maximum 2-1/4-inch cross-section dimension per CBC Figure 11A-6B(b) or CBC Figure 11A-6B(d)
- c. Continuous along length of handrail
- d. Unobstructed on tops or sides
- e. Not obstructed on bottoms more than 20% of handrail length
- f. Any horizontal projections minimum 1-1/2 inches below handrail gripping surface
- g. Rounded edges
- h. No sharp or abrasive elements or adjacent surfaces
- i. No handrail rotation within fittings



(a) HANDRAILS WITH CIRCULAR CROSS SECTION



(b) HANDRAILS WITH NON-CIRCULAR CROSS SECTION

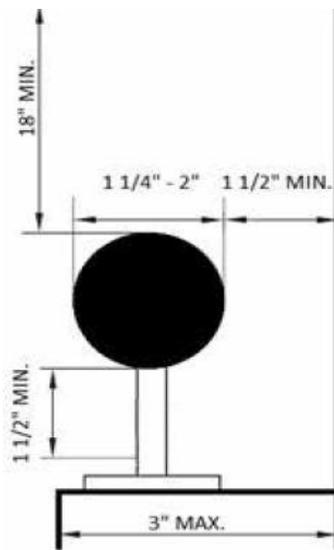


(d) HANDRAILS WITH EQUIVALENT GRIPPING SURFACES

**FIGURE 11A-6B  
HANDRAILS**

18. For handrails projecting from walls, detail minimum 1-1/2-inch space between wall and handrail per CBC Figure 11A-6B(b) or CBC Figure 11A-6B(d). (CBC 1114A.6.2.4, CBC 1122A.5.2.4)
19. For handrails located in recesses, detail recess complying with the following per CBC Figure 11A-6B(c) (CBC 1114A.6.2.4, CBC 1122A.5.2.4):
  - a. Maximum 3-inches deep
  - b. Extending minimum 18 inches above top of handrail





(c) HANDRAILS LOCATED IN A RECESS

**FIGURE 11A-6B  
HANDRAILS**

20. Specify surface material of any walls or other surface adjacent to handrails shall be free of sharp or abrasive elements. (CBC 1114A.6.2.4, CBC 1122A.5.2.4)

**X-5A. ENTRANCES, EXITS, AND INTERIOR ROUTES OF TRAVEL (CBC 11A)**

**ACCESSIBLE MEANS OF EGRESS**

1. All accessible spaces shall be served by at least as many accessible means of egress as required means of egress per CBC 1006.2 and CBC 1006.3. (CBC 1009.1)
2. Each accessible means of egress shall be continuous to a public way and consist of one or more of the following (CBC 1009.2):

**Exception:** Where exit discharge is inaccessible, an exterior area for assisted rescue per section W-7A shall be provided

**Exception:** An accessible means of egress including an exit stairway open to the exterior shall include either an area of refuge or exterior area for assisted rescue per section X-7A

- a. Accessible routes per this accessibility correction list
  - b. Stairways within vertical exit enclosures per CBC 1020 and section W-7A
  - c. Exterior exit stairways per section W-7A
  - d. Elevators per section W-8A
  - e. Platform lifts per section X-8A
  - f. Horizontal exits per CBC 1022
  - g. Pedestrian ramps per section W-4A
  - h. Areas of refuge per section X-7A or 8A
3. In buildings where a required accessible floor is four or more stories above or below a level of exit discharge, at least one accessible means of egress shall be via elevator per section X-8A. (CBC 1009.2.1)

**Exception:** In buildings equipped throughout with an automatic sprinkler system, elevator shall not be required on floors provided with a horizontal exit and located at or above the level of exit discharge

**Exception:** In buildings equipped throughout with automatic sprinkler system, elevator shall not be required on floors served by pedestrian ramp per section X-4A

**ENTRANCES AND EXITS**

4. All primary entrances and exterior ground-floor exits shall be accessible to persons with disabilities. (CBC 1117A.2)

**Exception:** Entrances to and exits from floors not required to be accessible

5. Where a ground-floor dwelling unit has a separate entrance, each such ground-floor dwelling unit shall be served by an accessible route (CBC 1117A.3):

**Exception:** Dwelling units exempted per site impracticality tests of section X-1A

6. Where a covered multifamily dwelling includes multiple entrances serving clusters of dwelling units sharing an entrance,

each such entrance shall be accessible. (CBC 1117A.4)

**Exception:** Only one entrance must be accessible to each ground floor of a covered multifamily dwelling unless an individual dwelling unit has a separate exterior entrance

7. Revolving doors shall not be used as accessible entrances. (CBC 1126A.1)

**INTERIOR ROUTES OF TRAVEL**

8. Within covered multifamily dwellings and accessory common-use facilities, provide an accessible route of travel connecting accessible entrances with all accessible spaces and covered multifamily dwelling units. (CBC 1119A.1, CBC 1130A.1)

**Exception:** Accessible routes within covered multifamily dwelling units shall comply with section X-15A

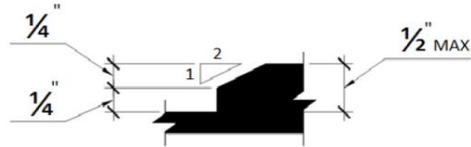
9. Where a particular story contains rooms or spaces at different floor elevations, specify floor elevations at each room/space. (CBC 1120A.3)

10. Floors of a particular story shall be a common level throughout or connected by **at least one of the following** (CBC 1121A):

**Exception:** Changes in level up to 1/4 inch

**Exception:** Changes in level between 1/4 inch and 1/2 inch with maximum 50% beveled slope per CBC Figure 11A-1F(b)

- a. Sloping surface with maximum 5% running slope
- b. Pedestrian ramps per section X-4A
- c. Passenger elevators per section X-8A
- d. Platform lifts per section X-8A



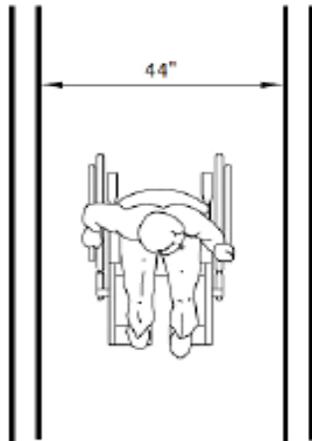
(b) BEVELED CHANGE IN LEVEL  
FIGURE 11A-1F  
CHANGE IN LEVEL

11. Dimension all corridors and hallways to comply with the following (CBC 1119A.3):

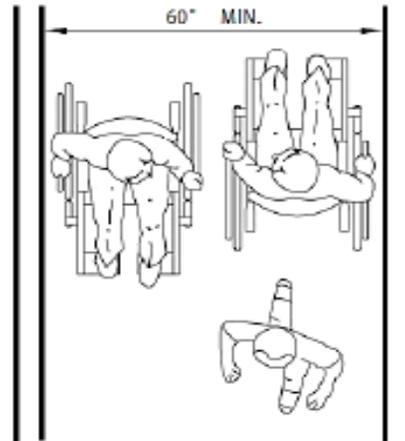
- a. Minimum 44-inches wide if serving occupant load of 10 or greater
- b. Minimum 36-inches wide if serving occupant load fewer than 10

12. Dimension **one of the following** per CBC Figure 11A-1L at corridors and hallways exceeding 200 feet in length (CBC 1119A.4, CBC 1138A.1.2):

- a. Minimum 60-inch clear width
- b. Minimum 60-inch-wide by 60-inch-long passing space(s) at maximum 200-foot intervals
- c. Minimum 44-inch-wide T-shaped intersection(s) – where base and arms extend minimum 48 inches beyond intersection – at maximum 200-foot intervals

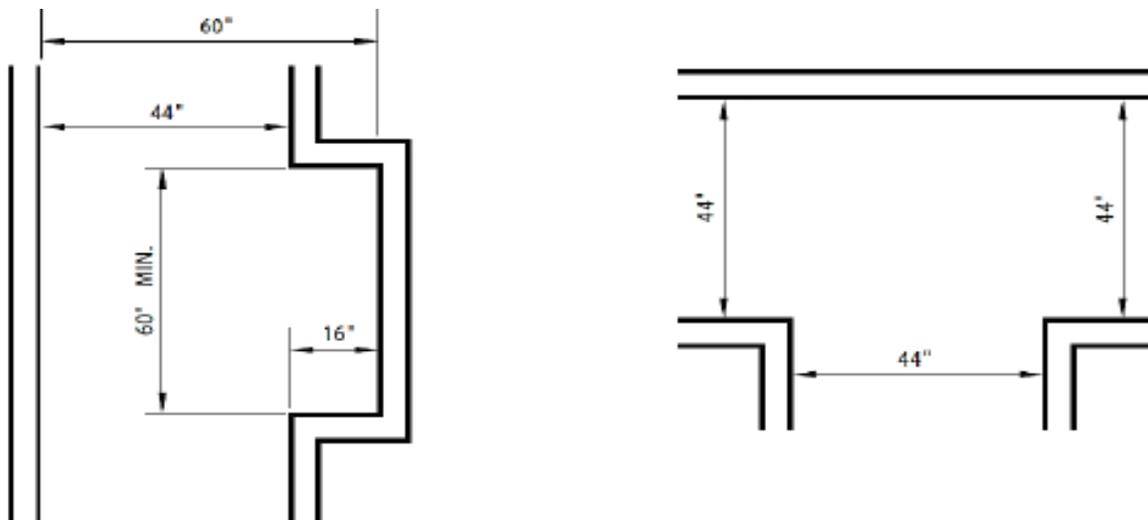


(a) MINIMUM WIDTH FOR CORRIDORS



(b) MINIMUM WIDTH FOR CORRIDORS OVER 200 FEET

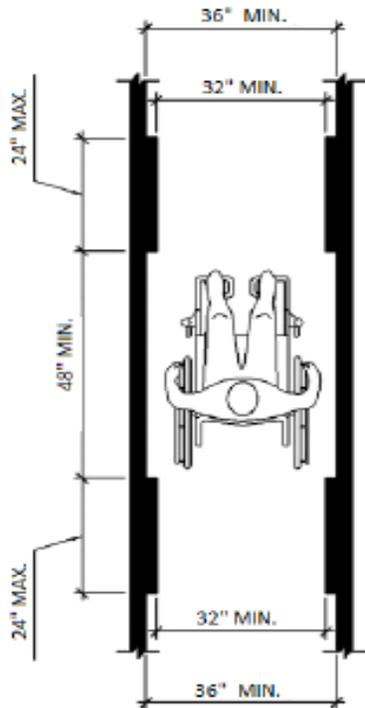
FIGURE 11A-1L  
INTERIOR ACCESSIBLE ROUTE (CORRIDOR) OVER 200 FEET; OCCUPANT LOAD 10 OR MORE



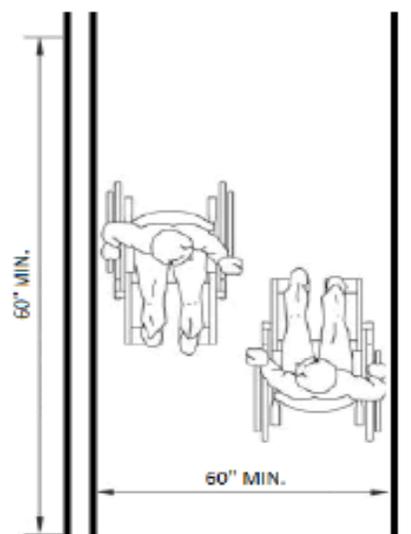
(c) PASSING METHODS FOR CORRIDORS WITH LENGTH OVER 200 FEET AND WIDTH LESS THAN 60"  
 FIGURE 11A-1L  
 INTERIOR ACCESSIBLE ROUTE (CORRIDOR) OVER 200 FEET; OCCUPANT LOAD 10 OR MORE

13. Dimension minimum 36-inch-wide clear access to all areas within all accessible common-use rooms and spaces. (CBC 1138A.1.1, CBC 1138A.1.2)

**Exception:** Minimum 32-inch clear width acceptable – up to 24-inch length – per CBC Figure 11A-1E



MINIMUM CLEAR WIDTH FOR SINGLE WHEELCHAIR



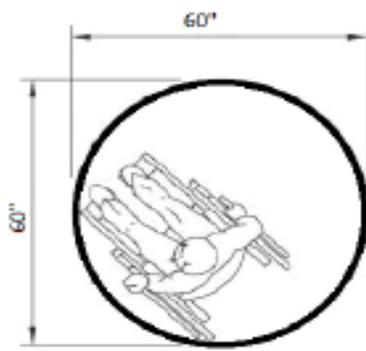
MINIMUM CLEAR WIDTH FOR TWO WHEELCHAIRS

FIGURE 11A-1E  
 WHEELCHAIR PASSAGE WIDTH

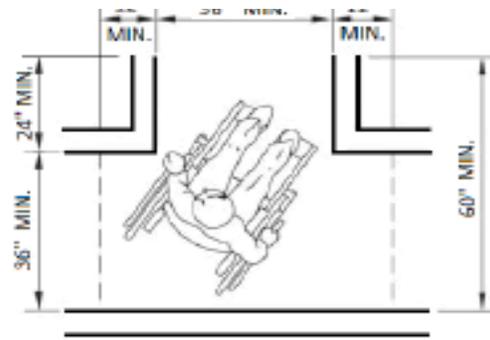
14. Dimension adequate wheelchair turnaround space complying with one of the following in all accessible common-use rooms and spaces (CBC 1138A.1.3):

- a. Minimum 60-inch-diameter per CBC Figure 11A-1D(a)
- b. Equivalent T-shaped space per CBC Figure 11A-1D(b)





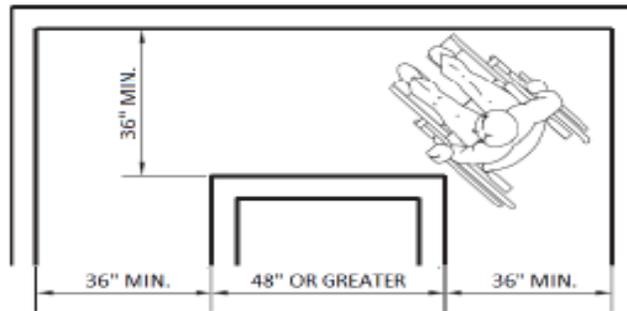
(a) 60 INCHES DIAMETER SPACE



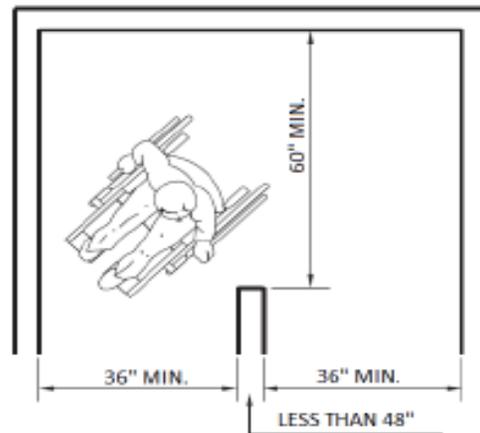
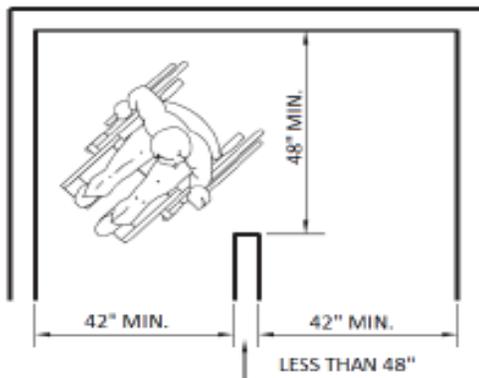
(b) T-SHAPED SPACE FOR 180 ° TURN

FIGURE 11A-1D  
WHEELCHAIR TURNING SPACE

15. Dimension adequate wheelchair clearance for circulation around an obstruction per CBC Figure 11A-1C(a) and (b). (CBC 1120A.1, CBC 1138A.1.5)



(a) 90 ° TURN AROUND OBSTRUCTION



(b) 180 ° TURN AROUND OBSTRUCTION

FIGURE 11A-1C  
WIDTH OF ACCESSIBLE ROUTE AT TURNS

16. Dimension vertical clearance complying with the following at all accessible or adaptable rooms and spaces (CBC 1125A.2):

- a. Minimum 84 inches where part of required egress path
  - Exception:** Minimum 80 inches acceptable at doorways and arches maximum 24 inches deep
- b. Minimum 80 inches for other pedestrian ways

17. Provide cane-detectable barrier at maximum 27 inches above floor at areas adjoining accessible routes or spaces with less than 80 inches vertical clearance. (CBC 1125A.2)

18. Specify rounded corners with minimum 1/8-inch radius of curvature for any sign projecting from a post and with bottom

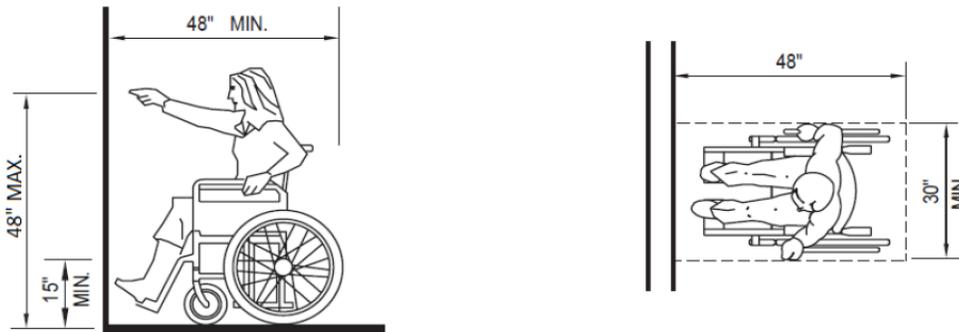
edge less than 80 inches above walking surface. (CBC 1125A.4)

## OPERABLE WINDOWS

19. Where glazed openings provided in accessible rooms or spaces for operation by occupants, identify at least one complying with the following (CBC 1126A.8, CBC 1138A.4):
- Minimum 30-inch-by-48-inch clear floor space provided adjacent to window
  - Operable parts of window within reach ranges per item X-5A.20
  - Window operable with maximum 5 pounds of force
  - Window operable with one hand and without tight grasping, pinching, or twisting of wrist

## MISCELLANEOUS REQUIREMENTS

20. Specify reach ranges shall comply with the following as applicable (CBC 1138A.3):
- Unobstructed forward reach per CBC Figure 11A-1(a):
    - High forward reach maximum 48 inches and low forward reach minimum 15 inches above finished floor

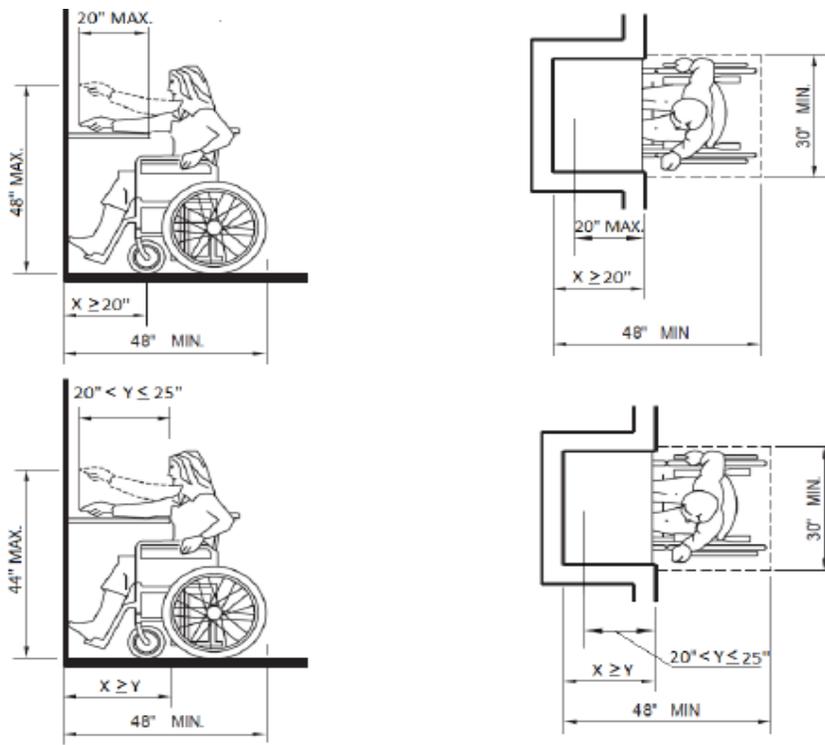


(a) UNOBSTRUCTED FORWARD REACH

FIGURE 11A-11  
FORWARD REACH

- Obstructed high reach per CBC Figure 11A-1(b):
  - Where reach depth maximum 20 inches, high forward reach maximum 48 inches above finished floor
  - Where reach depth exceed 20 inches, high forward reach maximum 44 inches and reach depth maximum 25 inches
  - Clear floor space extending beneath obstructing element for distance not less than required reach depth over obstruction

I .....



(b) FORWARD REACH OVER OBSTRUCTION

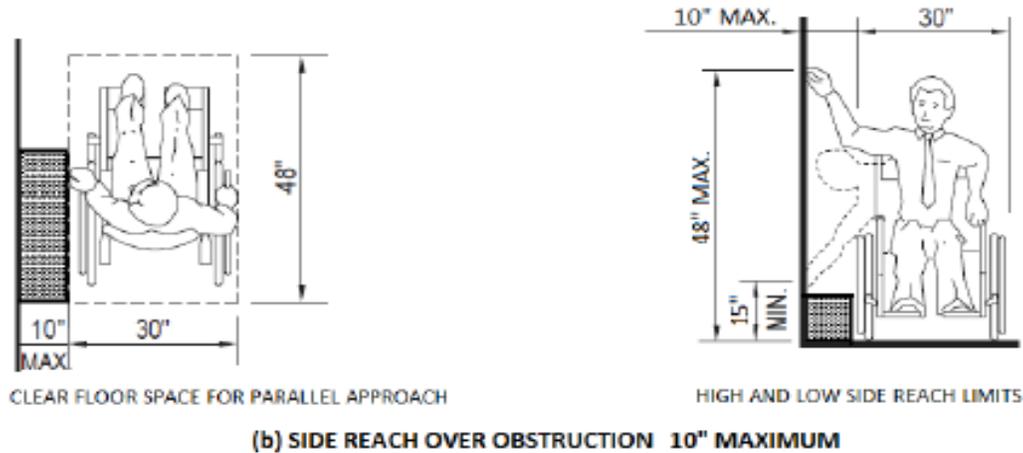
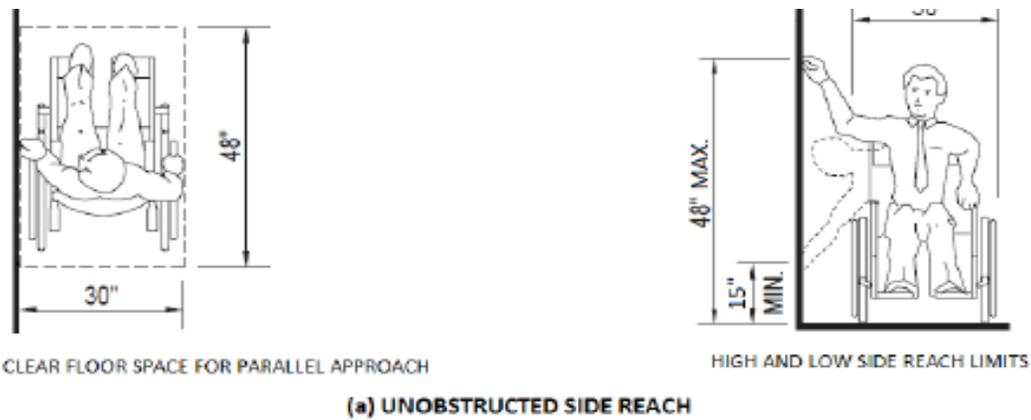
FIGURE 11A-11  
FORWARD REACH

c. Where parallel approach allowed, unobstructed side reach per CBC Figure 11A-1J(a):

- o High side reach maximum 48 inches and minimum 15 inches above finished floor

**Exception:** Obstruction maximum 10-inches deep allowed between clear floor space and element reached per CBC Figure 11A-1J(b)

30"

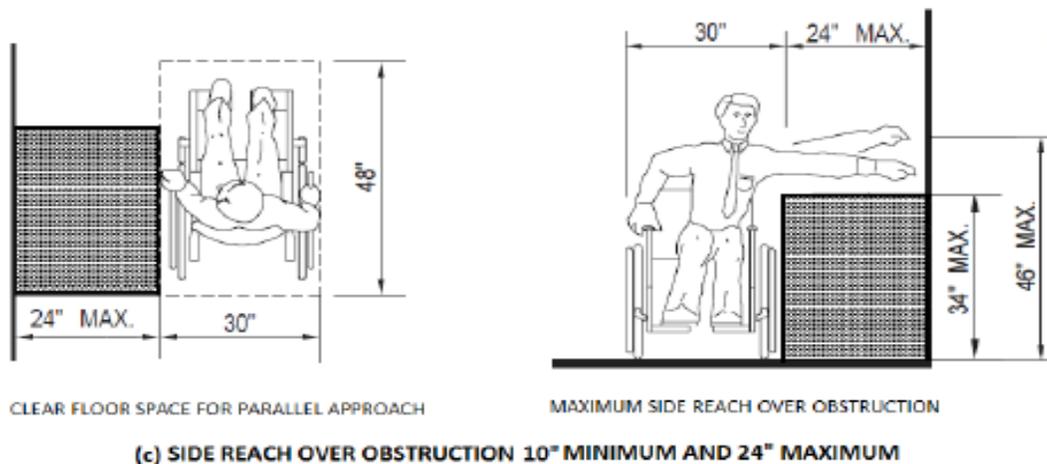


**FIGURE 11A-1J  
SIDE REACH**

d. Where parallel approach allowed, obstructed side reach per CBC Figure 11A-1J(c):

**Exception:** Kitchen countertops in dwelling units and the top of washing machines and clothes dryers may be maximum 36 inches above finished floor

- o Height of obstruction 34 inches maximum
- o Depth of obstruction 24 inches maximum
- o Where reach depth maximum 10 inches, high side reach maximum 48 inches
- o Where reach depth exceeds 10 inches, high side reach maximum 46 inches and reach depth maximum 24 inches



**FIGURE 11A-1J  
SIDE REACH**

21. Specify any electrical switches or outlets in common-use areas shall be located per the following (CBC 1136A.1, CBC 1136A.2, CBC 1138A.3):

**Exception:** Receptacle outlets installed as part of permanent baseboard heaters are exempt from height and reach limits

**Exception:** Required receptacle outlets allowed in floors when adjacent to sliding panels or walls

**Exception:** Baseboard electrical outlets used in relocatable partitions, window walls, or other electrical convenience floor outlets are exempt from minimum height limits

- a. Minimum 15 inches from bottom of receptacle/outlet box to finished floor
- b. Maximum 48 inches from top of receptacle/outlet box to finished floor
- c. Within CBC 1138A.3 reach ranges

22. Specify any floor surfaces shall be stable, firm, and slip-resistant. (CBC 1119A.2)

23. Specify any carpet shall comply with the following (CBC 1119A.2, CBC 1121A):

- a. Level loop, textured loop, level cut pile, or level cut/uncut pile texture
- b. Maximum 1/2-inch pile height
- c. Firm backing or no backing
- d. Exposed edges fastened to floor surface with trim along entire length of exposed edge
- e. Edge trim with maximum 1/4-inch vertical change in level or beveled change in level between 1/4 inch and 1/2 inch with maximum 50% beveled slope

## **SIGNAGE**

24. Identify on plans location of each sign required or provided per items X-5A.25 through X-5A.29 and coordinate with signage schedule and details indicating the following (CBC 1143A.1):

- a. Sign dimensions
- b. Character and symbol dimensions
- c. Character, symbol, and background colors
- d. Braille dimensions
- e. Dimension of vertical clearance above floor or ground
- f. Dimension of any horizontal projection from wall

25. Provide sign at each required accessible entrance displaying International Symbol of Accessibility.(CBC 1110A.2)

26. Provide sign including the following at each exit door to an inaccessible exit (CBC 1009.10, CBC 1143A.4):

**Exception:** Signage not required within dwelling units

- a. International Symbol of Accessibility
- b. Directions to nearest accessible exit per visual character requirements of item X-5A.30

27. Provide tactile signage complying with the following at exit doors (CBC 1013.4, CBC 1143A.1):

**Exception:** Signage not required within dwelling units

- a. Each grade-level exterior exit door required to have visual exit signage shall be identified by tactile sign with word "EXIT"
- b. Each exit door leading directly to grade-level exterior exit via stairway or ramp and required to have visual exit signage shall be identified by tactile sign with the following words as applicable:
  - o "EXIT STAIR DOWN"
  - o "EXIT RAMP DOWN"
  - o "EXIT STAIR UP"
  - o "EXIT RAMP UP"
- c. Each exit door leading directly to grade-level exterior exit via interior exit stairway or exit passageway and required to have visual exit signage shall be identified by tactile sign with words "EXIT ROUTE"
- d. Each exit access door required to have visual exit signage from an interior room or area to a corridor or hallway shall be identified by tactile sign with words "EXIT ROUTE"
- e. Each exit door through a horizontal exit and required to have visual exit signage shall be identified by tactile sign with words "TO EXIT"
- f. Placed on approach side as one exits room or space
- g. Placed adjacent to door on latch side

**Exception:** Where provided at double doors with two active leaves, signage shall be located to the right of the doors

**Exception:** Where no wall space available on latch side of single door or right side of double doors, signage shall be located on nearest adjacent wall

- h. Located so clear floor space minimum 18 inches by 18 inches – centered on tactile characters – provided beyond arc of any door swing between closed and 45-degree-open positions
- i. Mounted per the following:
  - o Minimum 48 inches from finish floor or ground surface to baseline of lowest line of Braille
  - o Maximum 60 inches from finish floor or ground surface to baseline of highest line of raised characters
- j. Visual characters per item X-5A.30
- k. Raised characters/symbols per item X-5A.32
- l. Corresponding Braille per item X-5A.33 provided beneath raised characters and symbols

28. Provide tactile signage complying with the following at exit doors with delayed-egress locks (CBC 1010.1.9.7(6), CBC 1143A.1):
- a. Reading: "KEEP PUSHING. THIS DOOR WILL OPEN IN 15 SECONDS. ALARM WILL SOUND."  
**Exception:** In facilities housing Alzheimer's or dementia clients, a delay of 30 seconds is allowed
  - b. Placed on approach side as one exits room or space
  - c. Placed adjacent to door on latch side  
**Exception:** Where provided at double doors with two active leaves, signage shall be located to the right of the doors  
**Exception:** Where no wall space available on latch side of single door or right side of double doors, signage shall be located on nearest adjacent wall
  - d. Located with clear floor space minimum 18 inches by 18 inches – centered on tactile characters – provided beyond arc of any door swing between closed and 45-degree-open positions
  - e. Mounted per the following:
    - o Minimum 48 inches from finish floor or ground surface to baseline of lowest line of Braille
    - o Maximum 60 inches from finish floor or ground surface to baseline of highest line of raised characters
  - f. Visual characters per item X-5A.30
  - g. Raised characters/symbols per item X-5A.32
  - h. Corresponding Braille per item X-5A.33 provided beneath raised characters and symbols
29. Any room identification signs shall comply with the following at each accessible room (CBC 1143A.2):
- a. Placed on approach side as one enters room or space
  - b. Placed adjacent to door on latch side  
**Exception:** Where provided at double doors with two active leaves, signage shall be located to the right of the doors  
**Exception:** Where no wall space available on latch side of single door or right side of double doors, signage shall be located on nearest adjacent wall
  - c. Located with clear floor space minimum 18 inches by 18 inches – centered on tactile characters – provided beyond arc of any door swing between closed and 45-degree-open positions
  - d. Mounted per the following:
    - o Minimum 48 inches from finish floor or ground surface to baseline of lowest line of Braille
    - o Maximum 60 inches from finish floor or ground surface to baseline of highest line of raised characters
  - e. Visual characters per item X-5A.30
  - f. Any pictograms per item X-5A.31
  - g. Raised characters/symbols per item X-5A.32
  - h. Corresponding Braille per item X-5A.33 provided beneath raised characters and symbols
30. Specify on signage schedule and/or details visual characters on any directional and informational signs complying with the following (CBC 1143A.5):
- a. Located minimum 40 inches above finished ground
  - b. Characters and background with non-glare finish
  - c. Characters contrasting with background, either light characters on dark background or dark characters on light background
  - d. Text shall be in a horizontal format
  - e. Line spacing between baselines of separate character lines at minimum 135 percent and maximum 170 percent of character height
  - f. Characters shall be uppercase or lowercase or a combination of both
  - g. Characters shall be conventional in form – i.e., not italic, oblique, script, highly decorate, or of other unusual form
  - h. Character font with uppercase letter "O" width minimum 60 percent and maximum 110 percent uppercase letter "I" height
  - i. Characters with stroke thickness of uppercase letter "I" minimum 10 percent and maximum 20 percent character height
  - j. Characters spaced with closest points of adjacent character minimum 10 percent and maximum 35 percent of character height
  - k. Character height sized according to CBC Table 1143A.5 and based on uppercase letter "I":

**TABLE 1143A.5**

**TABLE 1143A.6  
VISUAL CHARACTER HEIGHT**

<b>HEIGHT TO FINISH FLOOR FROM BASELINE OF CHARACTER</b>	<b>HORIZONTAL VIEWING DISTANCE</b>	<b>MINIMUM CHARACTER HEIGHT</b>
40 inches (1016 mm) to less than or equal to 70 inches (1778 mm)	Less than 72 inches (1829 mm)	$\frac{5}{8}$ inch (15.9 mm)
	72 inches (1829 mm) and greater	$\frac{5}{8}$ inch (15.9 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1829 mm)
Greater than 70 inches (1778 mm) to less than or equal to 120 inches (3048 mm)	Less than 180 inches (4572 mm)	2 inches (51 mm)
	180 inches (4572 mm) and greater	2 inches (51 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4572 mm)
Greater than 120 inches (3048 mm)	Less than 21 feet (6401 mm)	3 inches (76 mm)
	21 feet (6401 mm) and greater	3 inches (76 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6401 mm)

31. Specify on signage schedule and/or details pictograms on any directional and informational signs complying with the following (CBC 1143A.6):
  - a. Field height of minimum 6 inches
  - b. Characters and Braille not within pictogram field
  - c. Pictograms and field with non-glare finish
  - d. Pictograms contrasting with field, either light pictogram on dark field or dark pictogram on light field
  - e. Include text descriptors complying with raised character, Braille, and mounting height provisions of CBC 1143A.6 and CBC 1143A.7
  
32. Raised characters on signage shall comply with the following (CBC 1143A.6):
  - a. Characters minimum 5/8-inch and maximum 2-inches high based on height of uppercase letter "I"
  - b. Characters raised minimum 1/32 inch
  - c. Text in horizontal format
  - d. Characters sans serif and uppercase
  - e. Width of uppercase letter "O" minimum 60 percent and maximum 110 percent height of uppercase letter "I"
  
  - f. Stroke thickness of uppercase letter "I" maximum 15 percent height of character
  - g. Spacing between individual raised characters per the following:
    - o Where characters have rectangular cross sections, minimum 1/8 inch and maximum 4 times raised character stroke width
    - o Where characters have non-rectangular cross sections, minimum 1/16 inch and maximum 4 times raised character stroke width at base of cross sections and minimum 1/8 inch and maximum 4 times raised character stroke width at top of cross sections
  - h. Spacing between baselines of separate lines of raised characters of minimum 135% and maximum 170% of raised character height
  - i. Characters separated minimum 3/8 inch from raised borders and decorative elements
  
33. Braille on signage shall comply with the following (CBC 1143A.7):
  - a. Contracted (Grade 2)
  - b. Braille flush left or centered and placed minimum 3/8 inch and maximum 1/2 inch below raised characters or symbols
  - c. Braille in horizontal format
  - d. When raised characters are multilined text, all Braille placed together below all raised text lines
  - e. Dots domed or rounded with dimensions per CBC Table 1143A.7.1

**TABLE 1143A.7.1 BRAILLE DIMENSIONS**

<i>MEASUREMENT RANGE</i>	<i>MINIMUM IN INCHES MAXIMUM IN INCHES</i>
<i>Dot base diameter</i>	<i>0.059 (1.5 mm) to 0.063 (1.6 mm)</i>
<i>Distance between two dots in the same cell<sup>1</sup></i>	<i>0.100 (2.5 mm)</i>
<i>Distance between corresponding dots in adjacent cells<sup>1</sup></i>	<i>0.300 (7.6 mm)</i>
<i>Dot height</i>	<i>0.025 (0.6 mm) to 0.037 (0.9 mm)</i>
<i>Distance between corresponding dots from one cell directly below<sup>1</sup></i>	<i>0.395 (10 mm) to 0.400 (10.2 mm)</i>

1. Measured center to center.

## X-6A. DOORS AND GATES (CBC 11A)

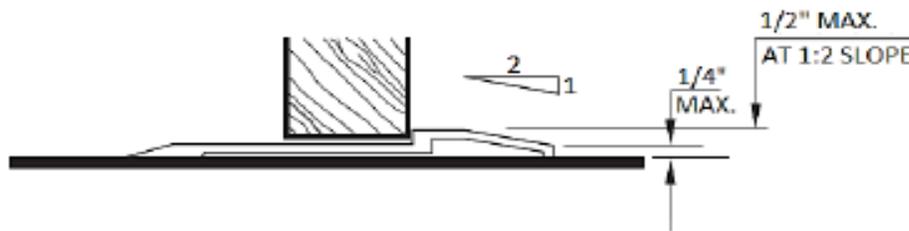
### GENERAL REQUIREMENTS

1. Provide door/gate schedule coordinated with floor plans and indicating the following for each door and gate (CBC 1126A):
  - a. Operation type (e.g., hinged, sliding, pocket, folding, automatic, power-assisted, delayed-egress)
  - b. Nominal and clear width
  - c. Height
  - d. Opening hardware
  - e. Latch (if provided)
  - f. Closer (if provided)
2. Entry doors to and interior doors within covered multifamily dwelling units shall comply with section W-15A. (CBC 1132A.1)

**Exception:** Maneuvering clearances per items X-6A.7 through X-6A.10 shall apply to sides of dwelling unit doors exposed to common-use spaces – e.g., entry or exit doors opening into corridor, hallway, lobby, or directly to exterior

### DIMENSIONS AND CLEARANCES

3. Provide dimensions on door/gate schedule indicating all doors and gates comply with the following (CBC 1126A.1):
  - a. Minimum 36-inches wide by 80-inches high
  - b. Capable of opening minimum 90 degrees
  - c. Minimum 32-inch clear width, measured with door at 90-degree angle from its closed position
  - d. Where pair of doors proposed, at least one door leaf shall provide minimum 32-inch clear width, measured with door at 90-degree angle from its closed position
4. Where pocket doors proposed, specify on door schedule bumpers to prevent doors from fully receding. (CBC 1126A.6)
5. Detail door thresholds complying with the following (CBC 1126A.2.1):
  - a. Maximum 1/2-inch change in level between landing and threshold
  - b. Maximum 50% beveled slope for changes in level between 1/4 inch and 1/2 inch per CBC Figure 11A-81

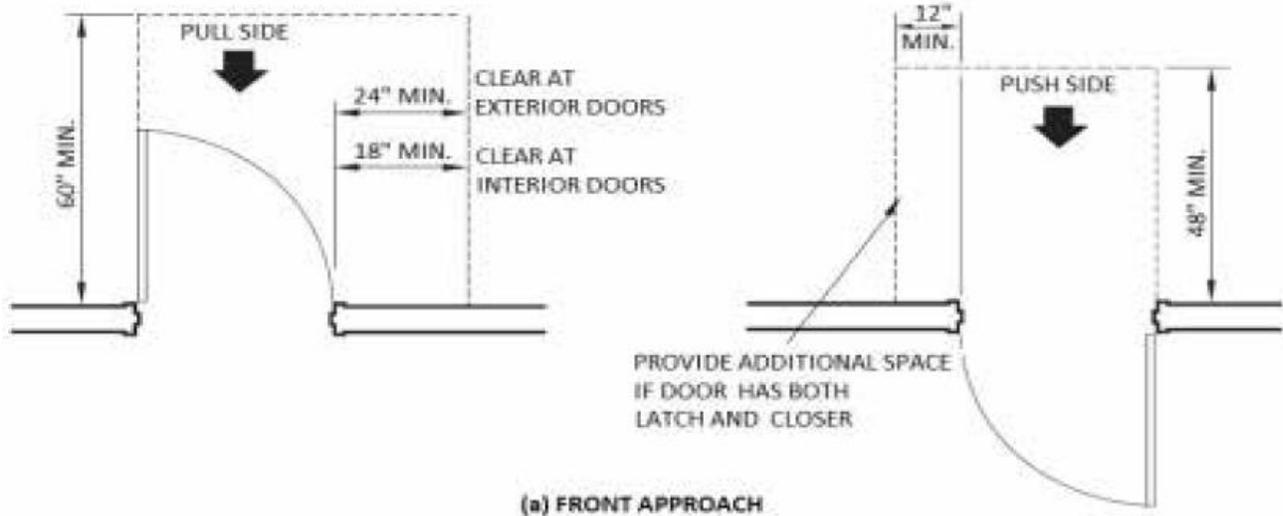


**FIGURE 11A-81  
THRESHOLDS**

6. Specify level landing – maximum 2.1% slope in all directions – on each side of each door and gate. (CBC 1126A.2)

7. Dimension clear and level landings per CBC Figure 11A-8A(a) for each hinged door or gate requiring front approach:

- a. Front approach to pull side of door:
  - o Width: Door width plus minimum 24 inches beyond latch side of exterior door and minimum 18 inches beyond latch side of interior door
  - o Depth: Minimum 60 inches perpendicular to doorway
- b. Front approach to push side of door with latch and closer:
  - o Width: Door width plus minimum 12 inches beyond latch side of door
  - o Depth: Minimum 48 inches perpendicular to doorway
- c. Front approach to push side of door without latch/closer combination:
  - o Width: Door width
  - o Depth: Minimum 48 inches perpendicular to doorway

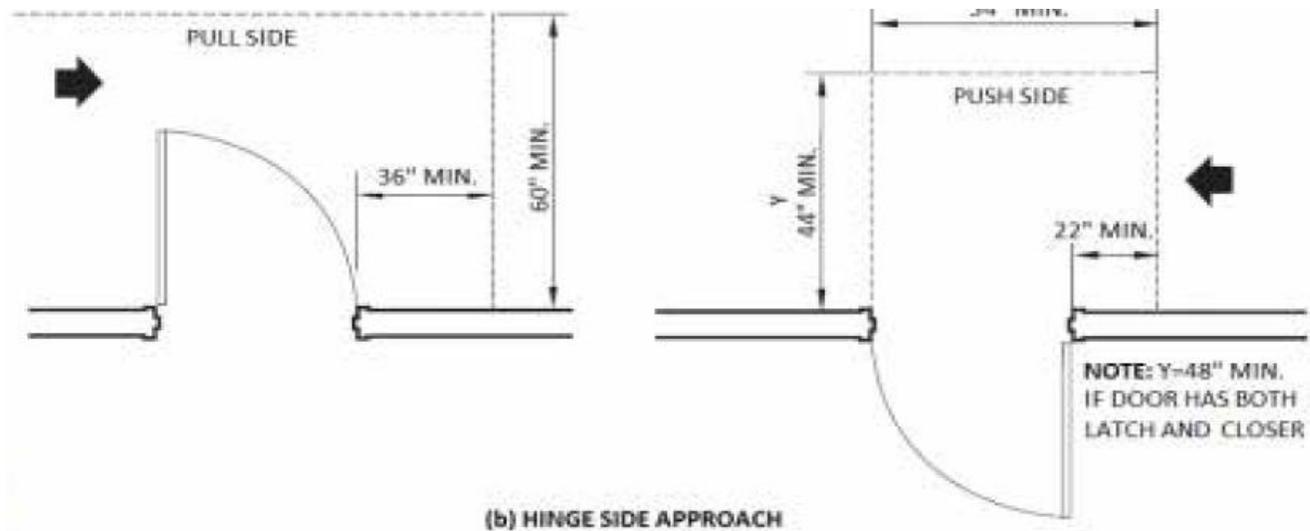


**FIGURE 11A-8A  
MANEUVERING CLEARANCE AT SWINGING DOORS**

8. Dimension clear and level landings per CBC Figure 11A-8A(b) for each hinged door or gate allowing hinge-side approach (CBC 1126A.3.2.2):

- a. Hinge-side approach to pull side of door:
  - o Width: Door width plus minimum 36 inches beyond latch side of door
  - o Depth: Minimum 60 inches perpendicular to doorway
- b. Hinge-side approach to push side of door with latch and closer:
  - o Width: Minimum 54 inches parallel to doorway
  - o Depth: Minimum 48 inches perpendicular to doorway
- c. Hinge-side approach to push side of door without latch/closer combination:
  - o Width: Minimum 54 inches parallel to doorway
  - o Depth: Minimum 44 inches perpendicular to doorway

54" MIN.

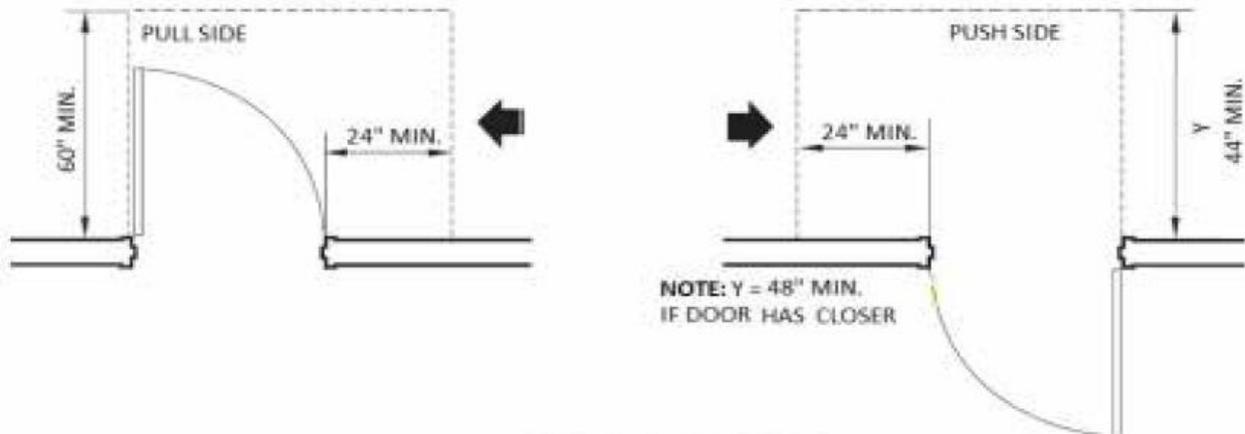


(b) HINGE SIDE APPROACH

FIGURE 11A-8A  
MANEUVERING CLEARANCE AT SWINGING DOORS

9. Dimension clear and level landings per CBC Figure 11A-8C for each hinged door or gate allowing latch-side approach (CBC 1126A.3.2.3):

- a. Latch-side approach to pull side of door:
  - o Width: Door width plus minimum 24 inches beyond latch side of door
  - o Depth: Minimum 60 inches perpendicular to doorway
  - Exception:** Minimum 54-inch depth for doors with closers serving individual dwelling units
  - Exception:** Minimum 44-inch depth for doors without closers serving individual dwelling units
- b. Latch-side approach to push side of door with closer:
  - o Width: Door width plus minimum 24 inches beyond latch side of door
  - o Depth: Minimum 48 inches perpendicular to doorway
- c. Latch-side approach to push side of door without closer:
  - o Width: Door width plus minimum 24 inches beyond latch side of door
  - o Depth: Minimum 44 inches perpendicular to doorway



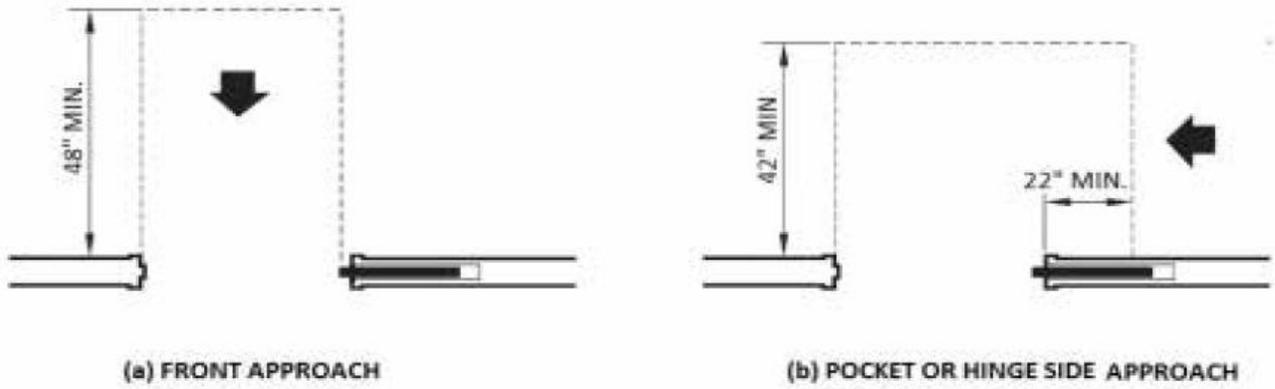
(c) LATCH SIDE APPROACH

FIGURE 11A-8A  
MANEUVERING CLEARANCE AT SWINGING DOORS

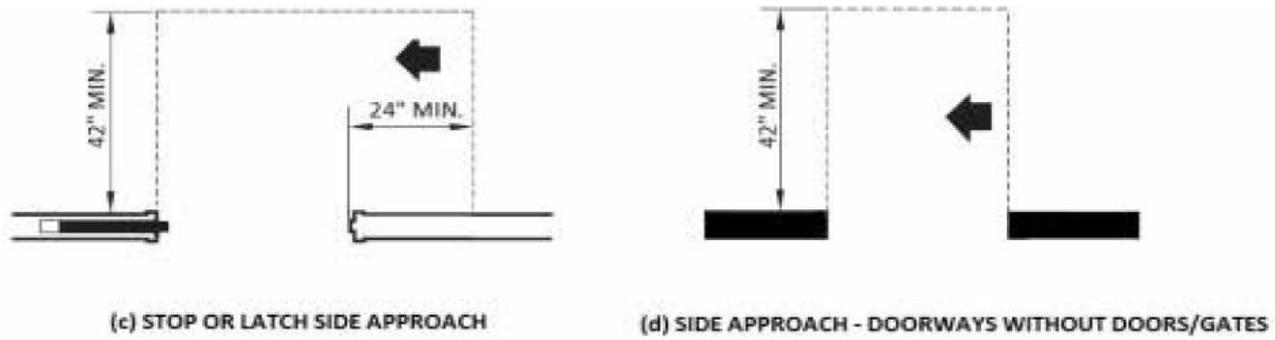
10. Dimension clear and level landings per the following for each sliding door, folding door, and doorway less than 36 inches wide without door/gate: (CBC 1126A.3.1):

- a. Front approach per CBC Figure 11A-8B(a):
  - o Width: Door width
  - o Depth: Minimum 48 inches perpendicular to doorway
- b. Side approach to doorway without door/gate per CBC Figure 11A-8B(d):
  - o Width: Door width
  - o Depth: Minimum 42 inches perpendicular to doorway
- c. Doors with pocket/hinge-side approach per CBC Figure 11A-8B(b):
  - o Width: Door width plus minimum 22 inches beyond pocket/hinge side of door
  - o Length: Minimum 42 inches perpendicular to doorway

- d. Stop/latch-side approach per CBC Figure 11A-8B(c):
  - o Width: Door width plus minimum 24 inches beyond stop/latch side of door
  - o Length: Minimum 42 inches perpendicular to doorway



**FIGURE 11A-8B  
MANEUVERING CLEARANCE AT DOORWAYS, SLIDING DOORS, AND FOLDING DOORS**



**FIGURE 11A-8B  
MANEUVERING CLEARANCE AT DOORWAYS, SLIDING DOORS, AND FOLDING DOORS**

11. Dimension clear and level landing complying with requirements of item X-6A.7 or X-6A.10 as applicable for forward approach to each recessed door and gate per CBC Figure 11A-8C. (CBC 1126A.3.4.5)



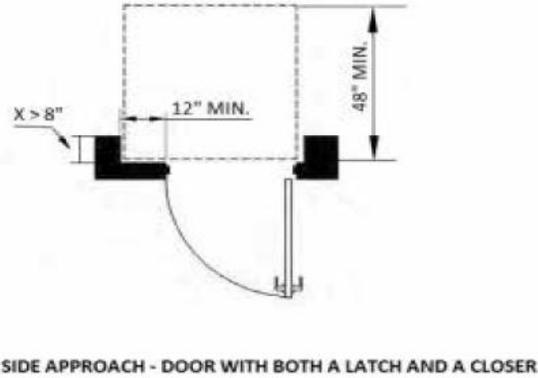
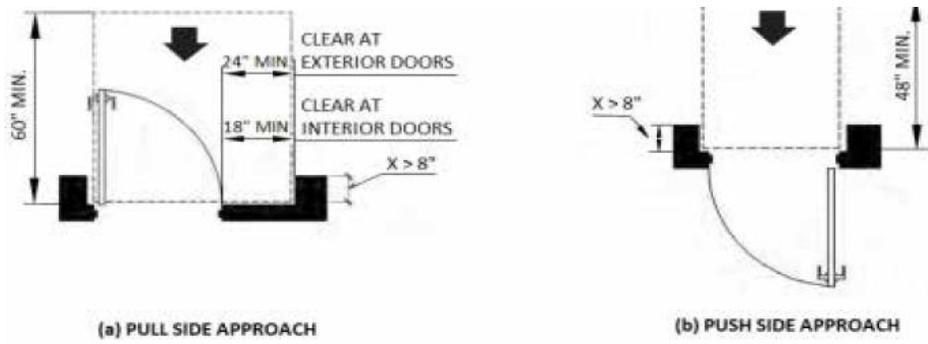
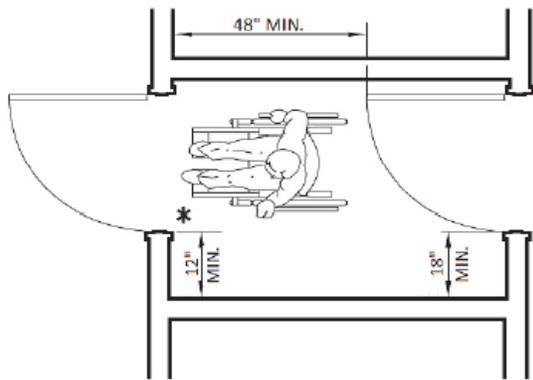


FIGURE 11A-8C  
MANEUVERING CLEARANCES AT RECESSED DOORS

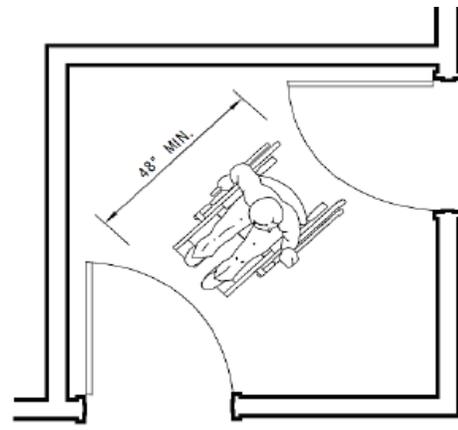
12. For consecutive doors in a vestibule, dimension minimum 48-inch clearance between 90-degree door-opening positions per CBC Figure 11A-8G and CBC Figure 11A-8H.

**Exception:** Doors opening into a stair or smokeproof enclosures need not have minimum 60-inch landing depth.

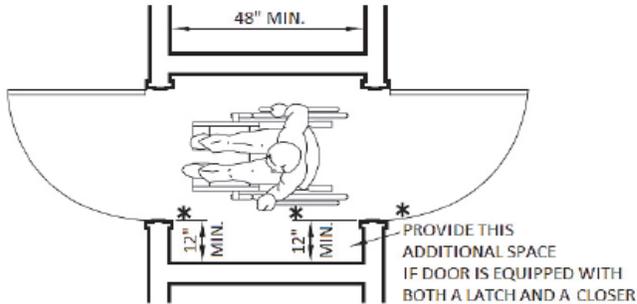
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(a) DOORS IN SERIES

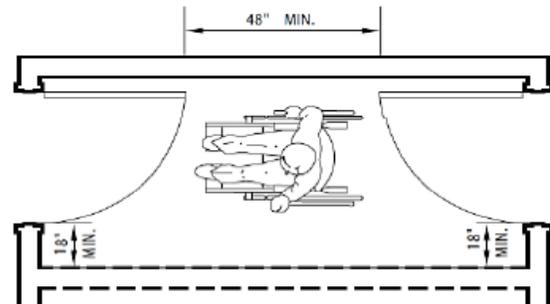


(a) DOORS AT ADJACENT WALLS



(b) BOTH DOORS OPEN OUT

**FIGURE 11A-8G  
VESTIBULE**



(b) DOORS AT OPPOSITE WALLS

**FIGURE 11A-8H  
VESTIBULE**

13. Specify any recessed doormats shall be adequately anchored to prevent interference with wheelchair traffic. (CBC 1119A.2.1)

## HARDWARE

14. Specify on door/gate schedule hand-activated opening hardware, handles, pulls, latches, locks, and other operating devices complying with the following for all doors and gates (CBC 1010.1.9.2, CBC 1126A.5, CBC 1126A.6):

- a. Minimum 34 inches and maximum 44 inches above floor

**Exception:** Access gates in barrier walls and fences protecting pools, spas, and hot tubs may have operable parts releasing latch of self-latching device at maximum 54 inches above ground surface if self-latching device not also self-locking device operated by means of a key, electronic opener, or integral combination lock

- b. Operable within force limits of item X-6A.18

- c. Operable by single effort and without tight grasping, tight pinching, or twisting of the wrist

15. Any exit door or gate with locking hardware shall operate per item X-6A.14 in direction of egress. (CBC 1126A.6)

16. Specify lever hardware shall be curved to return within 1/2 inch of door to prevent catching of clothing during egress. (CBC 1126A.6.1)

**Exception:** Group R and U occupancies with occupant load of ten or fewer

17. Specify the following at push side of all doors and gates (CBC 1126A.7):

**Exception:** Automatic or sliding doors or gates

**Exception:** Tempered glass doors without stiles and having a bottom rail or shoe with top leading edge tapered at minimum 60 degrees from horizontal

**Exception:** Doors or gates not extending within 10 inches of finished floor or ground

- Smooth surface within 10 inches of finished floor or ground and extending full width of door or gate
- Parts creating horizontal or vertical joints in surface shall be within 1/16 inch of the same plane as the other and free of sharp or abrasive edges
- Cavities created by added kick plates shall be capped

18. Specify door/gate opening force complying with the following (CBC 1126A.4):

**Exception:** Doors or gates with automatic or power-assist devices may be used to meet maximum force limits.

**Exception:** Required fire doors may have minimum opening force allowed by fire jurisdiction, maximum 15 pounds of force

- a. Maximum 8.5 pounds of force for exterior doors or gates
- b. Maximum 5 pounds of force for interior doors or gates

19. Specify doors with closers or spring hinges shall comply with the following (CBC 1126A.4.1, CBC 1126A.4.2):

- a. Closers: Sweep period of minimum 5 seconds from 90-degree open position to position of 12 degrees from the latch
- b. Spring hinges: Sweep period of minimum 1.5 seconds from 70-degree open position to closed position

## X-7A. STAIRWAYS (CBC 11A)

### GENERAL REQUIREMENTS

1. Provide dimensions and coordinated detailing for each stairway. (CBC 1115A, CBC 1123A)

### TREADS AND RISERS

2. Detail stair treads and risers complying with the following (CBC 1011.5.2, CBC 1011.5.4, CBC 1115A.2, CBC 1123A.2):

- a. Minimum 11-inch tread width

**Exception:** Minimum 10-inch width within dwelling units

- b. Minimum 4-inch and maximum 7-inch riser height

**Exception:** Maximum 7-3/4-inch height within dwelling units

- c. Uniform tread width and riser height on each stairway flight
- d. Open risers prohibited

**Exception:** Stairways within an individual dwelling unit

**Exception:** On exterior stairways, maximum 1/2-inch opening allowed between base of riser and tread.

**Exception:** On exterior stairways, risers constructed of grating allowed with maximum 1/2-inch openings.

3. Detail risers and treads complying with the following (CBC 1011.5.5, CBC 1009.4.5, CBC 1133B.4.5):

- a. Treads with smooth, rounded, or chamfered exposed edges
- b. Maximum 9/16-inch radius and beveling at tread edges
- c. Nosings projecting maximum 1-1/4 inches past face of riser below
- d. Risers sloped or underside of nosings at angle not more than 30 degrees from vertical
- e. Uniform nosings on each stairway flight

4. Detail contrasting stair striping complying with the following (CBC 1115A.5, CBC 1123A.5):

- a. Painted stripe acceptable, grooves not acceptable
- b. At upper approach and lowest tread of interior stairs
- c. At upper approach and all treads of exterior stairs
- d. Extending full width of approaches and treads
- e. Minimum 2-inches and maximum 4-inches wide
- f. Placed parallel to and within 1 inch of nosing edges of approaches and treads

5. Specify slip-resistant tread surface and striping material. (CBC 1115A.3, CBC 1115A.5, CBC 1123A.3, CBC 1123A.5)

### HAZARDS

6. At stairway flights or landings with an adjacent vertical drop exceeding 30 inches, detail continuous guard minimum 42-inches high with openings not allowing passage of 4-inch-diameter sphere. (CBC 1015.2, CBC 1015.3)

**Exception:** Minimum 34-inches high at open side of stairs within individual dwelling units

**Exception:** Openings not allowing passage of 4-3/8-inch-diameter sphere allowed in portions of guard 36 inches to 42 inches high

**Exception:** Triangular openings not allowing passage of 6-inch-diameter sphere allowed between riser, tread, and bottom rail

7. Where pedestrian ways adjoin areas beneath stairs with less than 80-inch vertical clearance, detail cane-detectable barrier maximum 27 inches above walking surface. (CBC 1116A.2)

### HANDRAILS AND EXTENSIONS

8. Provide handrail at each side of each stairway flight. (CBC 1115A.6.1, CBC 1123A.6.1)

**Exception:** Handrail acceptable on only one side of stairs serving an individual dwelling unit provided stairs open on any side include handrail on that side

9. Position any intermediate handrails equidistant from each side of stairway and with required egress width within 30 inches of handrail. (CBC 1014.9, CBC 1115A.6.1, CBC 1123A.6.1)

10. Detail handrails complying with the following (CBC 1115A.6.2):

- a. Top of gripping surface minimum 34 inches and maximum 38 inches above tread nosings
- b. Continuous full length of each stairway flight and without interruption by newel posts or other obstructions

**Exception:** Handrails within dwelling units may be interrupted by a newel post at a turn or landing

- c. Continuous inner handrails required between stair flights at dogleg or switchback stairs

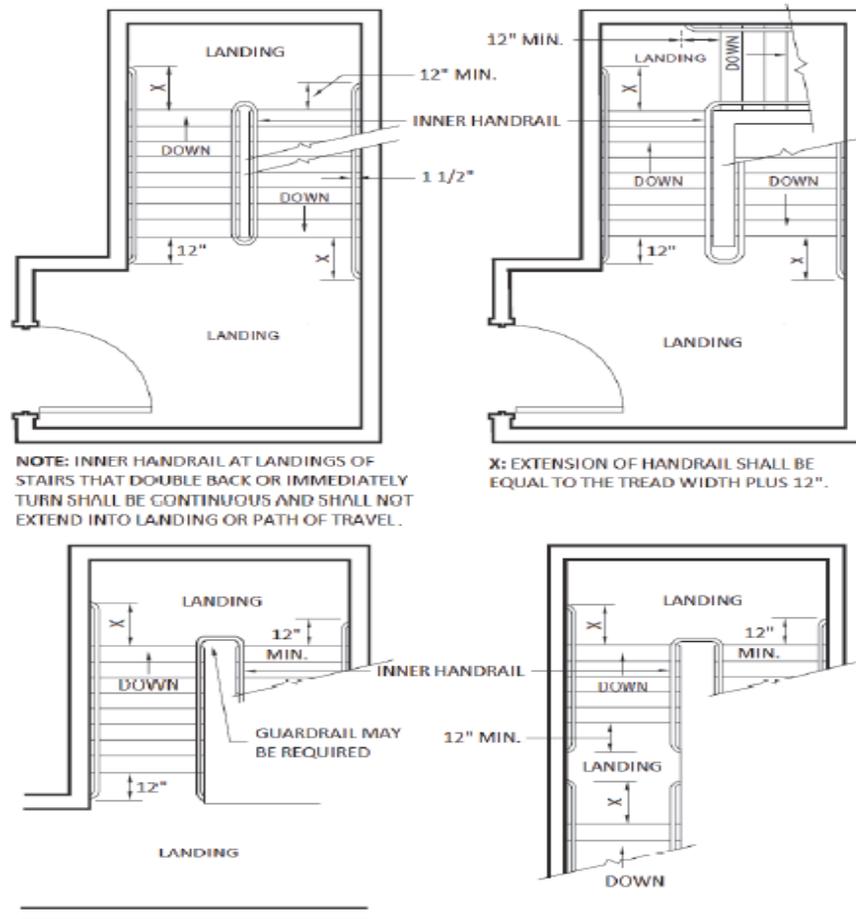
11. Detail extensions for each handrail complying with the following per CBC Figure 11A-6E (CBC 1014.6, CBC 1115A.6.2.3, CBC 1123A.6.2.3):

**Exception:** Stairways within an individual dwelling unit

- a. Horizontal extension at top of stairway minimum 12 inches beyond top nosing
- b. Stair-slope extension at bottom of stairway for width of one tread beyond bottom riser plus horizontal extension minimum 12 inches

**Exception:** Inner handrails at dogleg or switchback stairways shall be continuous and shall not extend into landings

- c. Extending in same direction as stair flight
- d. Returning smoothly to newel post or safety terminal

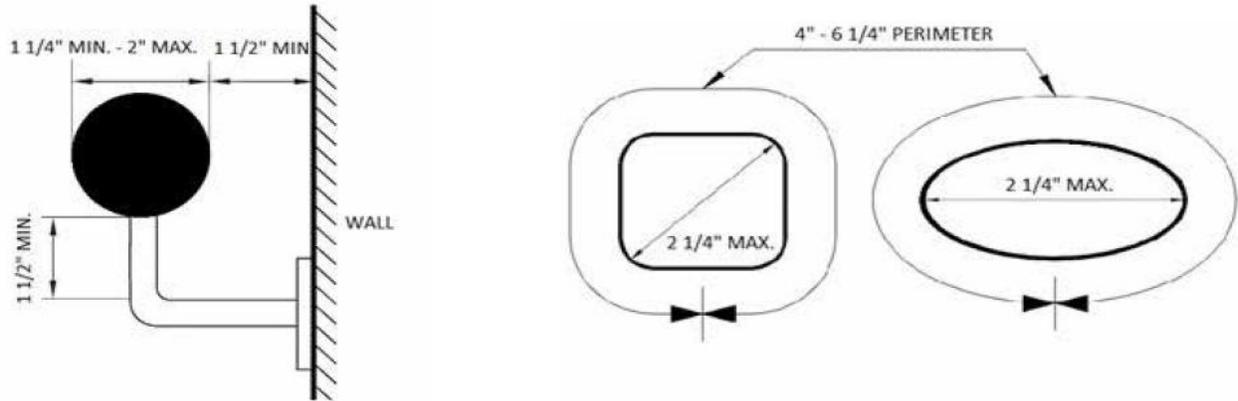


**FIGURE 11A-6E  
STAIR HANDRAILS**

12. Detail handrail gripping surfaces complying with the following (CBC 1115A.6.2):

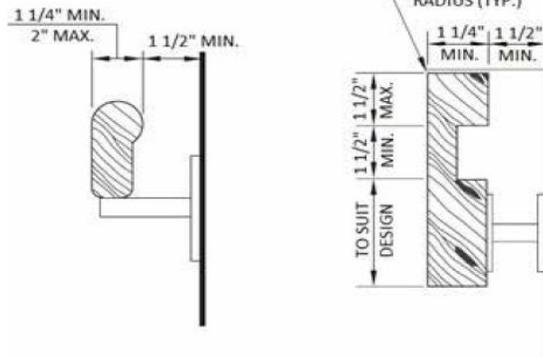
- a. If cross section is circular, minimum 1-1/4-inch and maximum 2-inch outside diameter per CBC Figure 11A-6B(a)
- b. If cross section is non-circular, minimum 4-inch and maximum 6-1/4-inch perimeter and maximum 2-1/4-inch cross-section dimension per CBC Figure 11A-6B(b) or CBC Figure 11A-6B(d)

- c. Continuous along length of handrail
- d. Unobstructed on tops or sides
- e. Not obstructed on bottoms more than 20% of handrail length
- f. Any horizontal projections minimum 1-1/2 inches below handrail gripping surface
- g. Rounded edges
- h. No sharp or abrasive elements or adjacent surfaces
- i. No handrail rotation within fittings



(a) HANDRAILS WITH CIRCULAR CROSS SECTION

(b) HANDRAILS WITH NON-CIRCULAR CROSS SECTION



(d) HANDRAILS WITH EQUIVALENT GRIPPING SURFACES

**FIGURE 11A-6B  
HANDRAILS**

13. Specify surface material of any walls or other surface adjacent to handrails shall be free of sharp or abrasive elements. (CBC 1114A.6.2.4, CBC 1122A.5.2.4)

**SIGNAGE**

14. Identify on plans location of each stair-related sign and coordinate with signage schedule and/or details indicating the following (CBC 1143A.1):

- a. Sign dimensions
- b. Character and symbol dimensions
- c. Character, symbol, and background colors
- d. Braille dimensions
- e. Dimension of vertical clearance above floor or ground
- f. Dimension of any horizontal projection from wall

15. Provide floor-designation signs complying with the following in each enclosed stairway (CBC 1023.9, CBC 1143A.2):

- a. Located at landing at each floor level
- b. Placed adjacent to door on latch side
- c. Located with clear floor space minimum 18 inches by 18 inches – centered on tactile characters – provided beyond arc of any door swing between closed and 45-degree-open positions
- d. Mounted per the following:

- o Minimum 48 inches from finish floor or ground surface to baseline of lowest line of Braille
- o Maximum 60 inches from finish floor or ground surface to baseline of highest line of raised characters
- e. At exit discharge level, includes raised five-pointed star located to left of identifying floor level with outside diameter of star at same height as raised characters
- f. Visual characters designating floor level per item X-7A.16
- g. Raised characters designating floor level per item X-7A.17
- h. Corresponding Braille per item X-7A.18 provided beneath raised characters

16. Visual characters on signage shall comply with the following (CBC 1143A.5):

- a. Located minimum 40 inches above finished ground
- b. Characters and background with non-glare finish
- c. Characters contrasting with background, either light characters on dark background or dark characters on light background
- d. Text shall be in a horizontal format
- e. Line spacing between baselines of separate character lines at minimum 135 percent and maximum 170 percent of character height
- f. Characters shall be uppercase or lowercase or a combination of both
- g. Characters shall be conventional in form – i.e., not italic, oblique, script, highly decorate, or of other unusual form
- h. Character font with uppercase letter “O” width minimum 60 percent and maximum 110 percent uppercase letter “I” height
- i. Characters with stroke thickness of uppercase letter “I” minimum 10 percent and maximum 20 percent character height
- j. Characters spaced with closest points of adjacent character minimum 10 percent and maximum 35 percent of character height
- k. Character height sized according to CBC Table 1143A.5 and based on uppercase letter “I”:

**TABLE 1143A.5  
VISUAL CHARACTER HEIGHT**

<b>HEIGHT TO FINISH FLOOR FROM BASELINE OF CHARACTER</b>	<b>HORIZONTAL VIEWING DISTANCE</b>	<b>MINIMUM CHARACTER HEIGHT</b>
40 inches (1016 mm) to less than or equal to 70 inches (1778 mm)	Less than 72 inches (1829 mm)	$\frac{5}{8}$ inch (15.9 mm)
	72 inches (1829 mm) and greater	$\frac{5}{8}$ inch (15.9 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1829 mm)
Greater than 70 inches (1778 mm) to less than or equal to 120 inches (3048 mm)	Less than 180 inches (4572 mm)	2 inches (51 mm)
	180 inches (4572 mm) and greater	2 inches (51 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4572 mm)
Greater than 120 inches (3048 mm)	Less than 21 feet (6401 mm)	3 inches (76 mm)
	21 feet (6401 mm) and greater	3 inches (76 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6401 mm)

17. Raised characters on signage shall comply with the following (CBC 1143A.6):

- a. Characters minimum 5/8-inch and maximum 2-inches high based on height of uppercase letter “I”
- b. Characters raised minimum 1/32 inch
- c. Text in horizontal format
- d. Characters sans serif and uppercase
- e. Width of uppercase letter “O” minimum 60 percent and maximum 110 percent height of uppercase letter “I”
- f. Stroke thickness of uppercase letter “I” maximum 15 percent height of character
- g. Spacing between individual raised characters per the following:
  - o Where characters have rectangular cross sections, minimum 1/8 inch and maximum 4 times raised character stroke width
  - o Where characters have non-rectangular cross sections, minimum 1/16 inch and maximum 4 times raised character stroke width at base of cross sections and minimum 1/8 inch and maximum 4 times raised character stroke width at top of cross sections
- h. Spacing between baselines of separate lines of raised characters of minimum 135% and maximum 170% of raised character height
- i. Characters separated minimum 3/8 inch from raised borders and decorative elements

18. Braille on signage shall comply with the following (CBC 1143A.7):

- a. Contracted (Grade 2)

- b. Braille flush left or centered and placed minimum 3/8 inch and maximum 1/2 inch below raised characters or symbols
- c. Braille in horizontal format
- d. When raised characters are multilined text, all Braille placed together below all raised text lines
- e. Dots domed or rounded with dimensions per CBC Table 1143A.7.1

**TABLE 1143A.7.1 BRAILLE DIMENSIONS**

<i>MEASUREMENT RANGE</i>	<i>MINIMUM IN INCHES MAXIMUM IN INCHES</i>
<i>Dot base diameter</i>	<i>0.059 (1.5 mm) to 0.063 (1.6 mm)</i>
<i>Distance between two dots in the same cell<sup>1</sup></i>	<i>0.100 (2.5 mm)</i>
<i>Distance between corresponding dots in adjacent cells<sup>1</sup></i>	<i>0.300 (7.6 mm)</i>
<i>Dot height</i>	<i>0.025 (0.6 mm) to 0.037 (0.9 mm)</i>
<i>Distance between corresponding dots from one cell directly below<sup>1</sup></i>	<i>0.395 (10 mm) to 0.400 (10.2 mm)</i>

1. Measured center to center.

**X-8A. ELEVATORS AND PLATFORM LIFTS (CBC 11A)**

**SCOPING**

- 1. Elevators provided in covered multifamily dwellings or accessory common-use facilities shall be accessible and on an accessible route. (CBC 1124A.1, CBC 1124A.2)

**Exception:** Private elevator serving an individual dwelling unit

- 2. Note on plans: "All elevators shall comply with ASME A17.1, Safety Code for Elevators and Escalators." (CBC 1124A.1)

**ELEVATOR CAR DIMENSIONS**

- 3. Elevator interior dimensions and door clear width shall comply with CBC Table 1124A.3.2.

**TABLE 1124A.3.2  
ELEVATOR CAR DIMENSIONS**

<i>DOOR LOCATION</i>	<i>MINIMUM DIMENSIONS</i>			
	<i>DOOR CLEAR WIDTH</i>	<i>INSIDE CAR, SIDE TO SIDE</i>	<i>INSIDE CAR, BACK WALL TO FRONT RETURN</i>	<i>INSIDE CAR, BACK WALL TO INSIDE FACE OF DOOR</i>
<i>Centered</i>	<i>42 inches (1067 mm)</i>	<i>80 inches (2032 mm)</i>	<i>51 inches (1295 mm)</i>	<i>54 inches (1372 mm)</i>
<i>Side (off-centered)</i>	<i>36 inches (914 mm)<sup>f</sup></i>	<i>68 inches (1727 mm)</i>	<i>51 inches (1295 mm)</i>	<i>54 inches (1372 mm)</i>
<i>Any</i>	<i>36 inches (914 mm)<sup>f</sup></i>	<i>54 inches (1372 mm)</i>	<i>80 inches (2032 mm)</i>	<i>80 inches (2032 mm)</i>
<i>Any</i>	<i>36 inches (914 mm)<sup>g</sup></i>	<i>60 inches (1524 mm)<sup>g</sup></i>	<i>60 inches (1524 mm)<sup>g</sup></i>	<i>60 inches (1524 mm)<sup>g</sup></i>

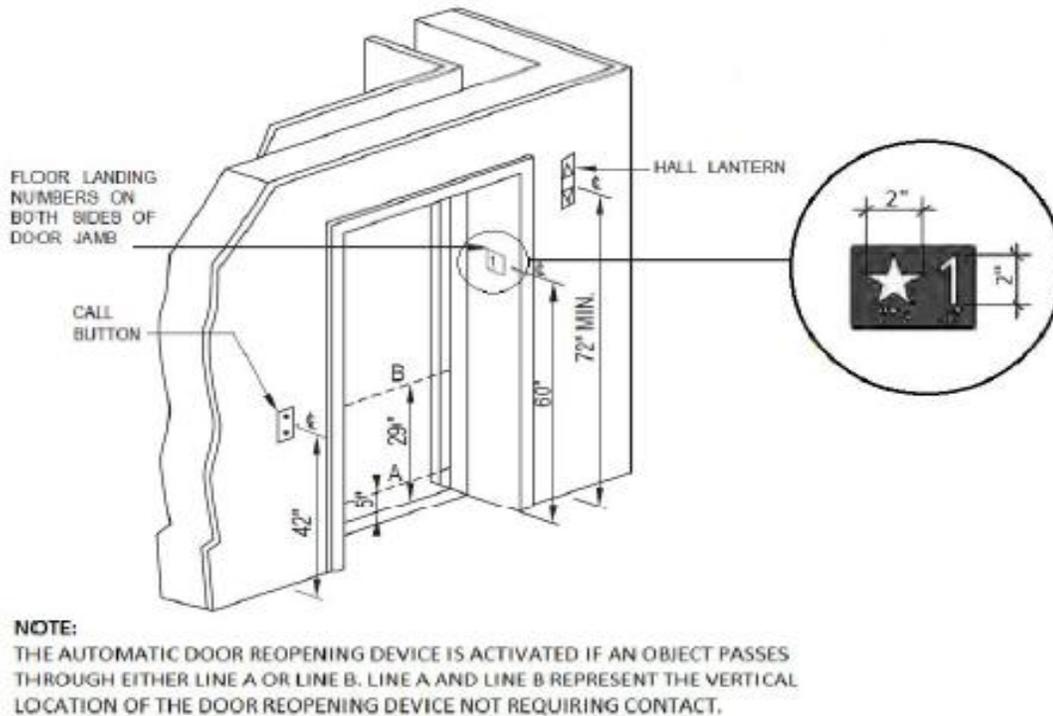
1. A tolerance of minus 5/8 inch (15.9 mm) is permitted.

2. Other car configurations that provide a turning space complying with Section 1138A.1.3 with the door closed shall be permitted.

**ELEVATOR DOORS**

- 4. Specify door reopening devices at automatic doors complying with the following (CBC 1124A.9):
  - a. Capable of sensing an object or person in path of closing door at nominal 5 inches and 29 inches above floor
  - b. Do not require contact for activation
  - c. Remain effective for not fewer than 20 seconds
- 5. Detail doorjamb marking complying with the following at each lobby elevator hoistway entrance per CBC Figure 11A-7C:
  - a. Indicating respective floor number
  - b. Located on both sides of door and visible from within elevator car
  - c. Located per the following:

- o Minimum 48 inches from finish floor or ground surface to baseline of lowest line of Braille
- o Maximum 60 inches from finish floor or ground surface to baseline of highest line of raised characters
- d. Centered 60 inches (absolute) above lobby floor
- e. Floor numbers designated by raised characters minimum 2-inches high on contrasting background and otherwise complying with item X-8A.25
- f. Grade level designated by raised five-pointed star with 2-inch (absolute) outside diameter placed to left of floor-designation number on contrasting background and otherwise complying with item X-8A.25
- g. Corresponding Braille per item X-8A.26 beneath raised characters



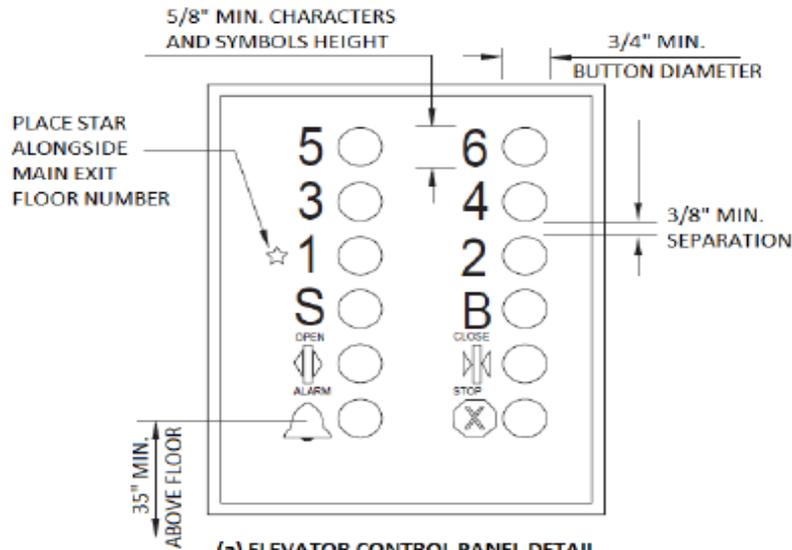
**FIGURE 11A-7C  
HOISTWAY AND ELEVATOR ENTRANCES**

6. Specify the following at elevator landings (CBC 1124A.5, CBC 1124A.10):
  - a. Self-leveling feature automatically positioning elevator car platform flush with lobby landings within +/- 1/2-inch tolerance
  - b. Maximum 1-1/4-inch clearance between elevator car platform sill and hoistway landing edge
  - c. Minimum 5-foot-candle illumination at car/landing threshold

#### **ELEVATOR CAR CONTROLS AND INDICATORS**

7. Dimension floor buttons complying with the following (CBC 1124A.3.3.1):
  - a. Maximum 48 inches above elevator car platform surface where only front approach allowed
  - b. Maximum 54 inches above elevator car platform surface where parallel approach allowed
8. Specify floor buttons shall include visual indicators showing when each call is registered and extinguishing when each call is answered. (CBC 1124A.3.3.1)
9. Dimension elevator emergency controls – including emergency stop and alarm – complying with the following (CBC 1124A.3.3.1):
  - a. Minimum 35 inches above elevator car platform surface
  - b. Grouped near bottom of floor-button panel
10. Detail car control and emergency buttons complying with following per CBC Figure 11A-7B(a) (CBC 1124A.3.3.2):
  - a. Minimum 3/4-inch-diameter control buttons raised 1/8 inch +/- 1/32 inch above surrounding surface
  - b. Illuminated control buttons with square shoulders and activated by detectable mechanical motion
  - c. Minimum 3/8-inch clear space or separation between rows of control buttons
  - d. Raised characters per the following:
    - o Located immediately to left of control buttons
    - o **White on black background**

- o Otherwise complying with item X-8A.25
- e. Raised symbols per the following:
  - o Provided for controls and emergency equipment including – but not limited to – “door open,” “door close,” “alarm bell,” “emergency stop,” and “telephone”
  - o Five-pointed star at call button for main entry floor
  - o Located immediately to left of control buttons
  - o **White on black background**
  - o Otherwise complying with item X-8A.25
- f. Corresponding Braille per item X-8A.26 beneath raised characters and symbols



**FIGURE 11A-7B  
ELEVATOR CONTROL PANEL**

11. When an emergency telephone system is installed, specify and dimension elevator emergency telephone handset complying with following (CBC 1124A.3.4):
  - a. Positioned maximum 48 inches above platform surface
  - b. Handset cord minimum 29 inches long
  - c. Designated by raised telephone symbol per item X-8A.25
  - d. Corresponding Braille per item X-8A.26 beneath raised symbol
  - e. Lever-type hardware for door to any telephone compartment
  - f. Emergency intercommunication shall not require voice communication

### **ELEVATOR LOBBY CONTROLS AND INDICATORS**

12. Detail lobby call buttons complying with the following (CBC 1124A.4):
  - a. Located within CBC 1138A.3 reach ranges, measured to the centerline of the highest operable part
  - b. Minimum 3/4-inch-diameter buttons raised 1/8 inch +/- 1/32 inch above surrounding surface
  - c. Button designating up direction on top
  - d. Internally illuminated with white light over entire button surface
  - e. Visual indication provided when each call registered and extinguished when answered
  - f. No objects adjacent to and below call buttons projecting more than 4 inches from wall
13. Specify visual and audible signals at each lobby hoistway entrance complying with the following (CBC 1124A.6):
  - a. Minimum 2-1/2-inch-high by 2-1/2-inch-wide lanterns signifying up and down directions
  - b. Lanterns preferably arrow-shaped
  - c. Lanterns visible from proximity of lobby call buttons, whether on wall or elevator car doorjamb
  - d. Centerline of lanterns minimum 72 inches above lobby floor
  - e. Audible signal sounding once for up direction and twice for down direction or verbal annunciators stating “up” or “down”
  - f. Audible signals shall have maximum 1500 Hz frequency
  - g. Verbal annunciators shall have minimum 300 Hz and maximum 3000 Hz frequency

### **ELEVATOR LANDING TWO-WAY COMMUNICATION**

14. Specify two-way communication system at elevator landings on each accessible floor one or more stories above or below story of exit discharge. (CBC 1009.8)

**Exception:** Elevator landing served by area of refuge with two-way communication

**Exception:** Floor provided with exit ramp

15. Specify two-way communication system complying with the following between required location and central control point approved by fire department (CBC 1009.8.1):
  - a. If central control point not constantly attended, system shall have timed automatic telephone dial-out capability to an approved monitoring location
  - b. Communication system shall include both audible and visible signals
16. Specify posting of the following information adjacent to two-way communication system (CBC 1009.8.2):
  - a. Directions for use of system
  - b. Instructions for summoning assistance via system
  - c. Written identification of location

## AREAS OF REFUGE

17. Identify on plans an area of refuge at each elevator provided **as an accessible means of egress** per CBC 1009. (CBC 1009.4, CBC 1009.6)
  - Exception:** Elevators in buildings and facilities equipped with automatic sprinkler system
  - Exception:** Elevators without protected shaft enclosures per CBC 713
  - Exception:** Elevators in smoke-protected seating areas
  - Exception:** Elevators in open parking garages
  - Exception:** Elevators accessed from horizontal exits
18. Locate and dimension each area of refuge to comply with the following (CBC 1009.6):
  - a. Location on accessible route from space served
  - b. Maximum travel distance from space served per CBC 1016
  - c. Accommodates one wheelchair space for every 200 occupants served, but not fewer than two wheelchair spaces
    - Exception:** On floors where occupant load is less than 200, building official may allow refuge area accommodating one wheelchair space
  - d. Each wheelchair space minimum 30-inches by 48-inches with no door encroachment
  - e. Access to any wheelchair space not obstructed by more than one adjoining wheelchair space
  - f. Wheelchair spaces do not reduce required egress width
19. Where elevator lobby used as area of refuge, detail smoke-proof enclosure assembly for shaft and lobby. (CBC 1009.6)
  - Exception:** Elevator within area of refuge formed by horizontal exit or smoke barrier
20. Detail smoke barrier per CBC 710 or horizontal exit per CBC 1025 between each area of refuge and remainder of story. (CBC 1009.6.4)
21. Specify two-way communication system provided per items X-8A.15 and X-8A.16 within each area of refuge and also including the following (CBC 1009.6.5, CBC 1009.8.1.1):
  - a. Accessible button provided within area of refuge activating lights in both area of rescue and control point indicating rescue requested
  - b. Button provided at control point activating lights in both area of rescue and control point indicating request received
22. Provide sign per the following at door accessing area of refuge (CBC 1009.9):
  - a. Visual characters stating "AREA OF REFUGE" per item X-8A.24
  - b. Including International Symbol of Accessibility
  - c. Illuminated where exit sign illumination required
  - d. Raised characters per item W-8A.25
  - e. Corresponding Braille per item W-8A.26
23. Specify instructions displayed per item X-8A.16 within area of refuge per the following for use under emergency conditions (CBC 1009.10, CBC 1009.11):
  - a. Visual characters per item X-8A.24
  - b. Including directions to locate other accessible means of egress
  - c. Including directions for persons able to use exit stairway to do so as soon as possible, unless assisting others
  - d. Include information on planned availability of assistance in supervised operation of elevators and how to summon such assistance
  - e. Include directions for use of two-way communications system

**SIGNAGE**

24. Visual characters on signage shall comply with the following (CBC 1143A.5):

- a. Located minimum 40 inches above finished ground
- b. Characters and background with non-glare finish
- c. Characters contrasting with background, either light characters on dark background or dark characters on light background
- d. Text shall be in a horizontal format
- e. Line spacing between baselines of separate character lines at minimum 135 percent and maximum 170 percent of character height
- f. Characters shall be uppercase or lowercase or a combination of both
- g. Characters shall be conventional in form – i.e., not italic, oblique, script, highly decorate, or of other unusual form
- h. Character font with uppercase letter “O” width minimum 60 percent and maximum 110 percent uppercase letter “I” height
- i. Characters with stroke thickness of uppercase letter “I” minimum 10 percent and maximum 20 percent character height
- j. Characters spaced with closest points of adjacent character minimum 10 percent and maximum 35 percent of character height
- k. Character height sized according to CBC Table 1143A.5 and based on uppercase letter “I”:

**TABLE 1143A.5  
VISUAL CHARACTER HEIGHT**

<b>HEIGHT TO FINISH FLOOR FROM BASELINE OF CHARACTER</b>	<b>HORIZONTAL VIEWING DISTANCE</b>	<b>MINIMUM CHARACTER HEIGHT</b>
40 inches (1016 mm) to less than or equal to 70 inches (1778 mm)	Less than 72 inches (1829 mm)	$\frac{5}{8}$ inch (15.9 mm)
	72 inches (1829 mm) and greater	$\frac{5}{8}$ inch (15.9 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1829 mm)
Greater than 70 inches (1778 mm) to less than or equal to 120 inches (3048 mm)	Less than 180 inches (4572 mm)	2 inches (51 mm)
	180 inches (4572 mm) and greater	2 inches (51 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4572 mm)
Greater than 120 inches (3048 mm)	Less than 21 feet (6401 mm)	3 inches (76 mm)
	21 feet (6401 mm) and greater	3 inches (76 mm), plus $\frac{1}{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6401 mm)

25. Raised characters on signage shall comply with the following (CBC 1143A.6):

- a. Characters minimum 5/8-inch and maximum 2-inches high based on height of uppercase letter “I”
- b. Characters raised minimum 1/32 inch
- c. Text in horizontal format
- d. Characters sans serif and uppercase
- e. Width of uppercase letter “O” minimum 60 percent and maximum 110 percent height of uppercase letter “I”
- f. Stroke thickness of uppercase letter “I” maximum 15 percent height of character
- g. Spacing between individual raised characters per the following:
  - o Where characters have rectangular cross sections, minimum 1/8 inch and maximum 4 times raised character stroke width
  - o Where characters have non-rectangular cross sections, minimum 1/16 inch and maximum 4 times raised character stroke width at base of cross sections and minimum 1/8 inch and maximum 4 times raised character stroke width at top of cross sections
- h. Spacing between baselines of separate lines of raised characters of minimum 135% and maximum 170% of raised character height
- i. Characters separated minimum 3/8 inch from raised borders and decorative elements

26. Braille on signage shall comply with the following (CBC 1143A.7):

- a. Contracted (Grade 2)
- b. Braille flush left or centered and placed minimum 3/8 inch and maximum 1/2 inch below raised characters or symbols
- c. Braille in horizontal format
- d. When raised characters are multilined text, all Braille placed together below all raised text lines
- e. Dots domed or rounded with dimensions per CBC Table 1143A.7.1

**TABLE 1143A.7.1 BRAILLE DIMENSIONS**

<i>MEASUREMENT RANGE</i>	<i>MINIMUM IN INCHES MAXIMUM IN INCHES</i>
<i>Dot base diameter</i>	<i>0.059 (1.5 mm) to 0.063 (1.6 mm)</i>
<i>Distance between two dots in the same cell<sup>1</sup></i>	<i>0.100 (2.5 mm)</i>
<i>Distance between corresponding dots in adjacent cells<sup>1</sup></i>	<i>0.300 (7.6 mm)</i>
<i>Dot height</i>	<i>0.025 (0.6 mm) to 0.037 (0.9 mm)</i>
<i>Distance between corresponding dots from one cell directly below<sup>1</sup></i>	<i>0.395 (10 mm) to 0.400 (10.2 mm)</i>

1. *Measured center to center.*

## PLATFORM LIFTS

27. Platform/wheelchair lifts may be provided between levels – in lieu of passenger elevators – when the travel distance between landings complies with the following (CBC1124A.11.1, ASME A18.1):
  - a. Maximum 5-foot vertical distance for unenclosed lifts
  - b. Maximum 14-foot vertical distance for enclosed or partially enclosed lifts
  - c. Maximum 45-degree travel angle for incline lifts
28. Platform lifts shall be located on an accessible route. (CBC 1124A.11.3)
29. Platform lifts may be used as an accessible means of egress only when provided with standby power or self-rechargeable battery power adequate to operate all lift functions for minimum five upward and downward trips. (CBC 1124A.11.4)
30. If platform lift provided, it shall be designed and constructed to facilitate unassisted entry, operation, and exit from lift. (CBC 1124A.11.1)
31. *Note on plans*: “All platform lifts shall comply with ASME A18.1, Safety Standard for Platform Lifts and Stairway Chair Lifts.” (CBC 1124A.11.1)
32. Platform lifts on an accessible means of egress shall not be installed in a fully enclosed hoistway. (CBC 1124A.11.5)
33. Dimension platform lift to accommodate minimum 30-inch-by-48-inch wheelchair space. (CBC 1124A.11.2)
34. Specify and dimension platform lift doors or gates complying with the following (CBC 1124A.11.6):
  - a. Power-operated
    - Exception:** Platform lifts serving having doors or gates on opposite side may have self-closing manual doors or gates
  - b. Doors or gates remain open for minimum 20 seconds
  - c. End doors or gates with minimum 32-inch clear width
  - d. Side doors or gates with minimum 42-inch clear width
35. Dimension landings complying with section X-6A at each platform lift door. (CBC 1124A.11.3)
36. Provide signage complying with the following at each platform lift (CBC 1124A.11.7):
  - a. Located within platform enclosure and at each landing
  - b. Reading: “No Freight”
  - c. Lettering complying with item X-8A.24
  - d. Including International Symbol of Accessibility

## X-9A. COMMON-USE TOILET FACILITIES (CBC 11A)

### SCOPING

1. Where common-use toilet facilities are provided for residents or guests, at least 1% of the total number of fixtures – but not less than one of each type – shall be accessible. (CBC 1127A.2)
2. Any public-use toilet facilities shall comply with section V-9B. (CBC 1127A)
3. Toilet facilities in covered multifamily dwelling units shall comply with section X-15A. (CBC 1134A)

4. Common-use toilet facilities shall be accessible via lobby, corridor, or building exterior, with access routes not passing through intervening rooms where access may be limited or would disrupt the function of the room. (CBC 1127A.1)

5. Provide complete dimensions and coordinated detailing for each accessible toilet facility. (CBC 1127A.1)

**SINGLE-ACCOMMODATION TOILET FACILITIES**

6. Dimension sufficient space within toilet facility for wheelchair measuring minimum 30-inches-wide by 48-inches-long to enter room and allow door to close. (CBC 1127A.2.2.1)

7. Dimension within toilet facility clear floor space and maneuvering space per the following (CBC 1127A.2.2.1, CBC 1127A.2.2.2, CBC 1127A.2.2.3):

a. Turning space per CBC Figure 11A-9A(b):

- o Minimum 60-inch-diameter or equivalent T-shaped space
- o May include maximum 19-inch deep knee and toe clearance per items X-9A.32 and X-9A.33 beneath lavatory

o Maximum 12-inch door encroachment

**Exception:** Additional door encroachment allowed into turning space if minimum 30-inch-wide by 48-inch-deep clear floor space provided in room beyond arc of door swing

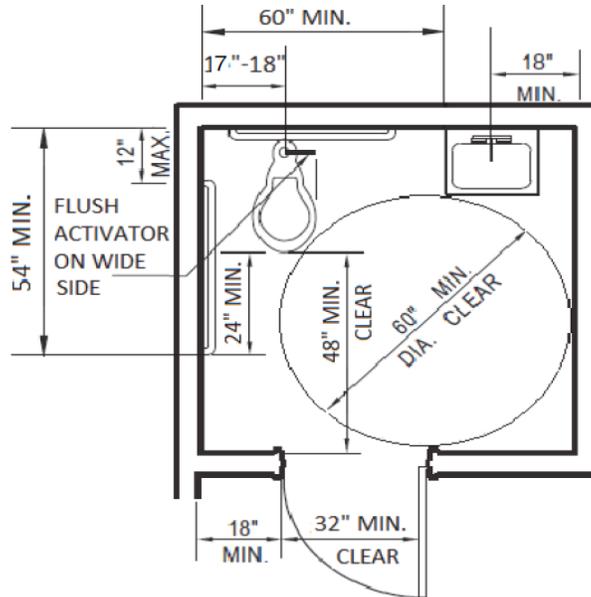
b. Clear floor space around toilet per CBC Figure 11A-9B(c):

- o Minimum 60-inch width measured perpendicular from side wall
- o Minimum 56-inch depth measured perpendicular from rear wall
- o No fixture encroachment other than toilet, grab bars, or dispensers
- o No door encroachment

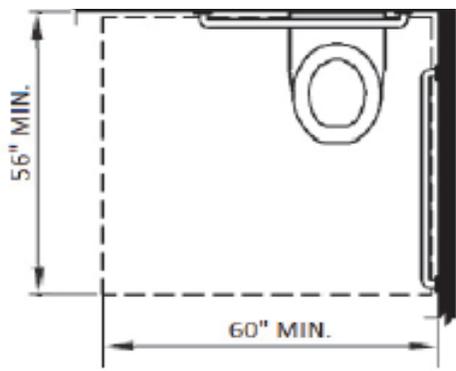
**Exception:** Door encroachment allowed into clear floor space if minimum 30-inch-wide by 48-inch-deep clear floor space provided in room beyond arc of door swing

c. Maneuvering space in front of toilet per CBC Figure 11A-9A(b):

- o Minimum 60-inch width measured perpendicular from side wall
- o Minimum 48-inch depth measured perpendicular from front of toilet



**(b) SINGLE-ACCOMMODATION TOILET FACILITY  
FIGURE 11A-9A  
TOILET FACILITIES**



(c) CLEAR FLOOR SPACE AT WATER CLOSETS

FIGURE 11A-9B  
WATER CLOSETS

## MULTI-ACCOMMODATION TOILET FACILITIES

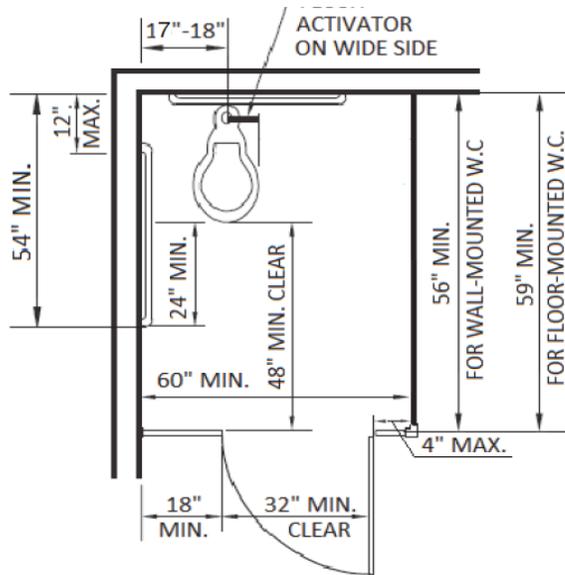
8. Dimension clear wheelchair turning space within toilet facility complying with the following (CBC 1127A.2.1.1):
  - a. Minimum 60-inch diameter or equivalent T-shaped space
  - b. Minimum 27-inch clearance above floor
  - c. No door encroachment more than 12 inches

**Exception:** Door to accessible toilet compartment
9. Provide at least one accessible toilet compartment per items X-9A.10 through X-9A.14 in each multi-accommodation toilet facility. (CBC 1127A.2.1)
10. Dimension minimum 44-inch-wide clear, unobstructed accessible route from toilet facility entry door to accessible toilet compartment door. (CBC 1127A.2.1.5.4)
11. Dimension maneuvering and strike-edge clearances at door to accessible toilet compartment per CBC 1126A.3.2 for applicable direction of approach. (CBC 1126A.3.2, CBC 1127A.2.1.5.2, CBC 1127A.2.1.5.4)
 

**Exception:** Push-side maneuvering clearance for in-swinging door may not be less than 48 inches measured perpendicular to door in closed position

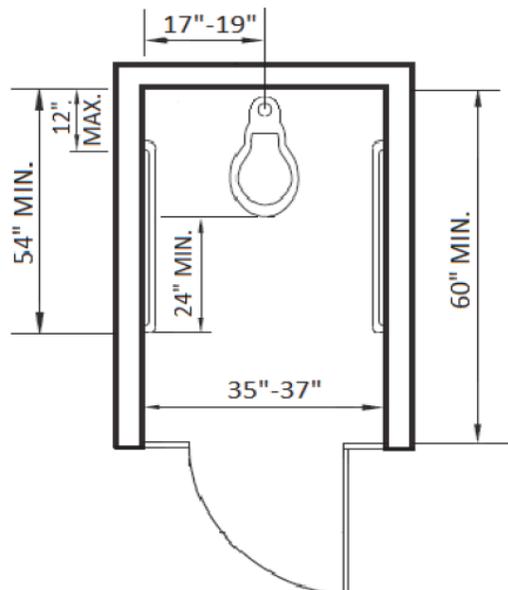
**Exception:** Push-side strike-edge clearance not required where compartment door provided with minimum 9-inch clearance underneath for wheelchair footrest
12. Specify on door schedule the following for door to accessible toilet compartment (CBC 1127A.2.1.5):
  - a. Minimum 32-inch clear opening width for door located at front of accessible toilet compartment with door opening maximum 4 inches from side wall or partition farthest from toilet
  - b. Minimum 34-inch clear opening width for door located at side of accessible toilet compartment farthest from toilet with door opening maximum 4 inches from front wall or partition
  - c. Equipped with self-closing device
  - d. Equipped with loop- or U-shaped handles on both sides of door immediately below latch
  - e. Equipped with flip-over, sliding, or other latch hardware not requiring user to grasp or twist
13. Dimension clear floor space at toilet per CBC Figure 11A-9A(c) (CBC 1127A.2.1.3):
  - a. Minimum 60-inches wide by 56-inches deep – measured from rear wall – for wall-mounted toilet
  - b. Minimum 60-inches wide by 59-inches deep – measured from rear wall – for floor-mounted toilet
  - c. No door encroachment

FLUSH



**(c) ACCESSIBLE WATER CLOSET COMPARTMENT  
WITHIN MULTIPLE-ACCOMMODATION TOILET FACILITY**  
**FIGURE 11A-9A  
TOILET FACILITIES**

14. Dimension maneuvering space in front of toilet per the following (CBC 1127A.2.1.3):
  - a. Minimum 60-inches wide by 60-inches deep for accessible toilet compartment with side-opening door
  - b. Minimum 60-inches wide by 48-inches deep for accessible toilet compartment with end-opening door
15. In toilet facilities with six or more toilet compartments or six or more toilets and urinals, provide at least one toilet compartment – in addition to accessible toilet compartment required per item X-9A.9 – complying with the following ambulatory accessibility features per CBC Figure 11A-9A(d):
  - a. Minimum 35-inch and maximum 37-inch width
  - b. Minimum 60-inch depth
  - c. Outward swinging, self-closing door with compliant door hardware and pull and adequate strike edge clearance
  - d. Grab bars on each side per item X-9A.20



**(d) AMBULATORY ACCESSIBLE COMPARTMENT**  
**FIGURE 11A-9A  
TOILET FACILITIES**

## TOILETS

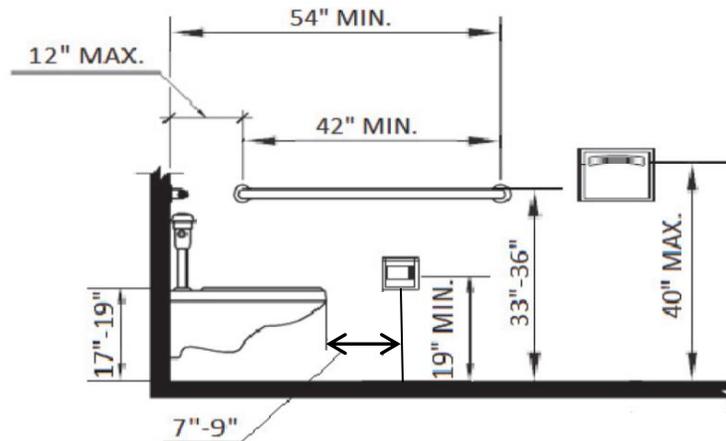
16. Dimension minimum 17 inches and maximum 18 inches between centerline of toilet fixture and adjacent side wall or partition. (CBC 1127A.2.1.3, CBC 1127A.2.2.3)

**Exception:** Centerline of toilet located in ambulatory accessible compartment per item X-9A.15 shall be minimum 17 inches and maximum 19 inches from adjacent side wall or partition

17. Detail minimum 17-inch and maximum 19-inch height of accessible toilets measured from finished floor to top of maximum 2-inch-high toilet seat. (CBC 1127A.2.3.1)
18. Specify toilet seats shall not spring to return to a lifted position. (CBC 1127A.2.3.3)
19. Specify toilet flush controls complying with the following (CBC 1127A.2.3.2):
  - a. Mounted maximum 44 inches above floor
  - b. Mounted on open side of toilet
  - c. Exception: Ambulatory accessible toilets per item X-9A.15
  - d. Operable with maximum 5 pounds of force
  - e. Operable with one hand and without tight grasping, pinching, or twisting

## GRAB BARS

20. Provide grab bar on side wall closest to toilet and dimension to comply with the following per CBC Figure 11A-9B(a) (CBC 1127A.2.1.4, CBC 1127A.2.2.4, CBC 1127A.4):
  - a. Minimum 42-inches long
  - b. Positioned maximum 12 inches from rear wall
  - c. Extending minimum 54 inches from rear wall
  - d. Extending minimum 24 inches in front of toilet
  - e. Mounted horizontally at minimum 33 inches and maximum 36 inches from finished floor to top of gripping surface

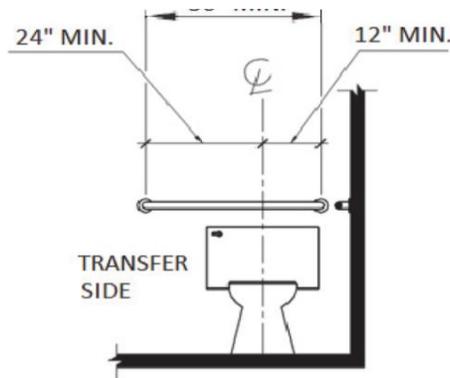


(a) SIDE VIEW  
FIGURE 11A-9B  
WATER CLOSETS

21. Provide grab bar on rear wall behind toilet and dimension to comply with the following per CBC 11A-9B(b) (CBC 1127A.2.1.4, CBC 1127A.2.2.4, CBC 1127A.4):
  - a. Minimum 36-inches long

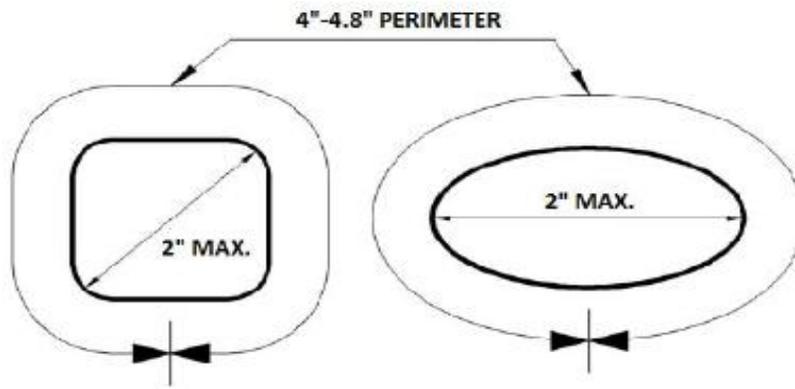
**Exception:** Minimum 24-inch length, centered on toilet, acceptable where wall space does not allow 36-inch length due to location of a recessed fixture adjacent to toilet
  - b. Extending from centerline of toilet minimum 12 inches on one side
  - c. Extending from centerline of toilet minimum 24 inches on other side
  - d. Mounted horizontally at minimum 33 inches and maximum 36 inches from finished floor to top of gripping surface

... 36" MIN. ...



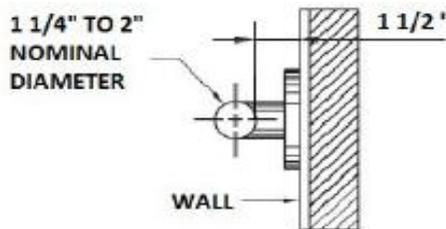
(b) FRONT VIEW  
 FIGURE 11A-9B  
 WATER CLOSETS

22. Detail the grab bar gripping surfaces per the following (CBC 1127A.4.3):
- If cross section is circular, minimum 1-1/4-inch and maximum 2-inch outside diameter
  - If cross section is non-circular, minimum 4-inch and maximum 4.8-inch perimeter and maximum 2-1/4-inch cross-section dimension per CBC Figure 11A-9C(b)



(b) NON-CIRCULAR CROSS SECTIONS  
 FIGURE 11A-9C  
 GRAB BARS

23. Detail grab bar clearance from adjacent elements per the following (CBC 1127A.4.6):
- For grab bars mounted adjacent to a wall, 1-1/2-inch (absolute) space between the wall and grab bar per CBC Figure 11A-9C(a)
  - Minimum 1-1/2-inch space between grab bar and projecting objects below and at ends
  - Minimum 12-inch space between grab bar and projecting objects above



(a) SECTION THROUGH TYPICAL CIRCULAR GRAB BAR  
 FIGURE 11A-9C  
 GRAB BARS

24. Specify surface material of any walls or other objects adjacent to grab bars to comply with the following (CBC 1127A.4.5):
- Free of sharp or abrasive elements
  - Rounded edges

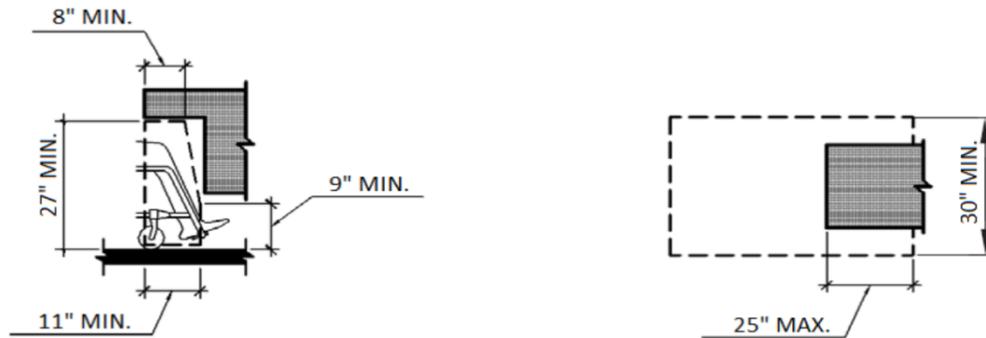
25. Specify structural adequacy of grab bars, mounting hardware, and fasteners to accommodate 250-pound point load applied at any point on the grab bar, fastener, mounting device, or supporting structure. (CBC 1127A.4.4)

**URINALS**

26. Where urinals are provided, at least one shall provide the following clear floor space located in front (CBC 1127A.2.4(3), CBC 1138A.1.4):
- a. Minimum 30-inches wide by 48-inches long
    - Exception:** Minimum 36-inches wide by 48-inches long clear floor space required at urinals located in alcoves greater than 24-inches deep
  - b. Allowing forward approach from accessible route
  - c. No door encroachment
27. Where urinals are provided, provide at least one floor-mounted or wall-hung urinal with rim complying with the following (CBC 1127A.2.4(1)):
- a. Minimum 13-1/2-inches deep measured from outer face of rim to back of fixture
  - b. Maximum 17 inches above finished floor
28. Specify urinal flush controls complying with the following (CBC 1127A.2.4(2)):
- a. Mounted maximum 44 inches above floor
  - b. Operable with maximum 5 pounds of force
  - c. Operable with one hand and without tight grasping, pinching, or twisting of wrist

**LAVATORIES**

29. Identify at least 1% of common-use lavatories provided – but not less than one – as accessible. (CBC 1127A.3)
30. Dimension the following for accessible lavatories (CBC 1127A.3(1)):
- a. Minimum 18 inches between centerline of lavatory and adjoining wall, partition, or fixture
  - b. Lavatory mounted with rim or counter edge maximum 34 inches above floor
31. Dimension clear floor space per the following in front of each accessible lavatory (CBC 1127A.3(2)):
- a. Minimum 30-inches wide by 48-inches long
    - Exception:** Clear floor space in front of accessible lavatory may extend maximum 19 inches into knee and toe clearance beneath lavatory
  - b. Allowing forward approach from accessible route
  - c. No door encroachment
32. Detail knee clearance beneath accessible lavatories complying with the following per CBC Figure 11A-9D(a) (CBC 1127A.3(3)):
- a. Minimum 30 inches wide
  - b. Minimum 8 inches deep
  - c. Minimum 29 inches at front face reducing to minimum 27 inches at point 8 inches back from front edge



**(a) KNEE SPACE - GENERAL REQUIREMENT**  
**FIGURE 11A-9D**  
**KNEE AND TOE SPACE**

33. Detail toe clearance beneath accessible lavatories complying with the following per CBC Figure 11A-9D(b) (CBC 1127A.3(3)):
- a. Minimum 30 inches wide
  - b. Minimum 9 inches high
  - c. Minimum 17 inches deep from front edge





**(b) TOE SPACE - GENERAL REQUIREMENT**

**FIGURE 11A-9D  
KNEE AND TOE SPACE**

34. Specify the following for knee and toe clearances beneath accessible lavatories (CBC 1127A.3(4), CBC 1127A.3(5)):
- a. Insulated hot water and drain pipes
  - b. No sharp or abrasive surfaces
  - c. Finished floor beneath lavatory shall extend to wall
35. Specify lavatory faucet controls complying with the following (CBC 1127A.3):
- a. Located within forward reach per section W-5A
  - b. Operable with maximum 5 pounds of force
  - c. Operable with one hand and without tight grasping, pinching, or twisting of wrist
  - d. Self-closing valves allowed if faucet remains open for minimum 10 seconds

**ACCESSORIES**

36. Detail the following for toilet tissue dispensers at accessible toilets per the following (CBC 1127A.8.2):
- a. Mounted on adjacent side wall below side grab bar
  - b. Mounted minimum 19 inches above floor
  - c. Positioned with dispenser centerline minimum 7 inches and maximum 9 inches from front edge of toilet seat
  - d. Operable with maximum 5 pounds of force
  - e. Operable with one hand and without tight grasping, pinching, or twisting of wrist
  - f. Dispensers controlling delivery or not permitting continuous paper flow shall not be used
37. If any towel dispensers, sanitary napkin dispensers, waste receptacles, or other devices are provided, identify at least one accessible version of each device complying with the following (CBC 1127A.8.1, CBC 1138A.4):
- a. Located on accessible route
  - b. All operable parts maximum 40 inches above floor
  - c. Operable with maximum 5 pounds of force
  - d. Operable with one hand and without tight grasping, pinching, or twisting of wrist
38. Where mirrors are provided, detail at least one per the following (CBC 1127A.8.3):
- a. If provided above accessible lavatories or countertops, installed with bottom edges of reflecting surfaces maximum 40 inches above finished floor
  - b. If provided at other locations, at least one mirror installed with bottom edge of reflecting surface maximum 35 inches above the floor

**SIGNAGE**

39. Detail signage including International Symbol of Accessibility and complying with the following on doors to men's toilet facilities and coordinate with signage schedule (CBC 1127A.7.1, CBC 1127A.7.2.1):
- a. Equilateral triangle symbol with vertex pointing upward
  - b. Edges 12-inches long
  - c. 1/4-inch thick
  - d. Specify colors of triangle symbol and door such that symbol contrasts with door, either light on dark background or dark on light background
40. Detail signage including International Symbol of Accessibility and complying with the following on doors to women's toilet facilities and coordinate with signage schedule (CBC 1127A.7.1, CBC 1127A.7.2.2):
- a. Circle symbol
  - b. 12-inch diameter

- c. 1/4-inch thick
  - d. Specify colors of circle symbol and door such that symbol contrasts with door, either light on dark background or dark on light background
41. Detail signage including International Symbol of Accessibility and complying with the following on doors to all-gender toilet facilities and coordinate with signage schedule (CBC 1127A.7.1, CBC 1127A.7.2.3):
- a. Triangle symbol superimposed on and within 12-inch-diameter circle symbol
  - b. 1/4-inch thick
  - c. Specify colors of triangle and circle symbols such that triangle contrasts with circle, either light on dark background or dark on light background
  - d. Specify color of door such that circle symbol contrasts with door, either light on dark background or dark on light background
42. Specify the following for any signs specified per items X-9A.39 through X-9A.41 (CBC 1127A.7.2):
- a. Mounted with centerline minimum 58 inches and maximum 60 inches above finished floor
  - b. Mounted within 1 inch of vertical centerline of door
  - c. Rounded, chamfered, or eased edges with minimum 1/8-inch radius

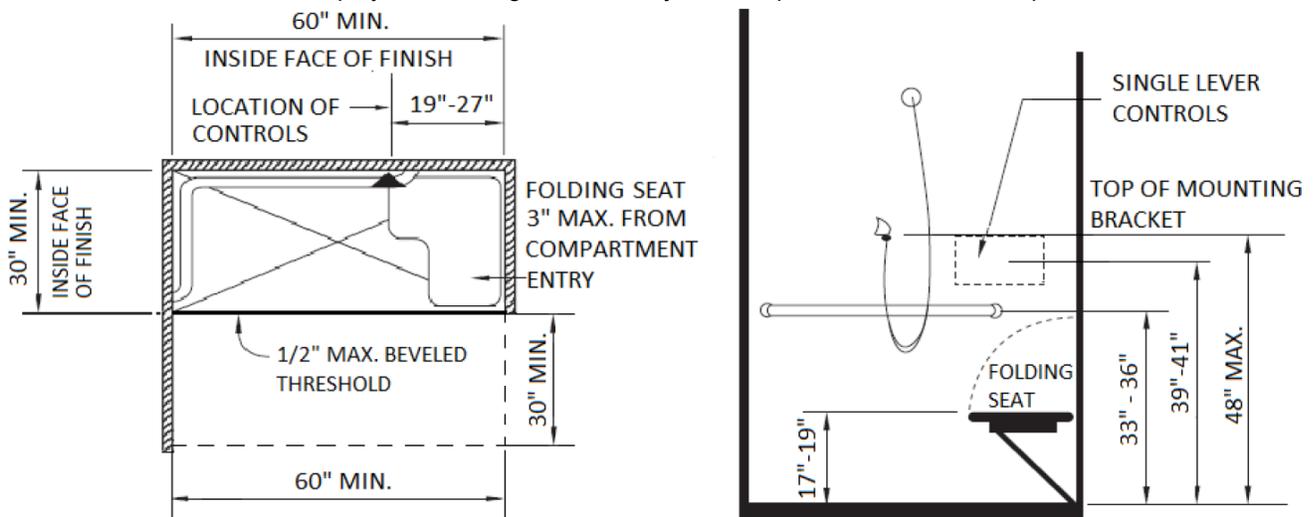
**X-10A. COMMON-USE SHOWER AND BATHING FACILITIES (CBC 11A)**

**SCOPING**

- 1. Where common-use bathing facilities are provided for residents or guests – including showers and bathtubs -- at least 1% of the total number of fixtures – but not less than one of each type – shall be accessible. (CBC 1127A.5.1)
- 2. Any public-use bathing facilities shall comply with section V-10B. (CBC 1127A)
- 3. Bathing facilities in covered multifamily dwelling units shall comply with section V-15A. (CBC 1134A)

**SHOWERS**

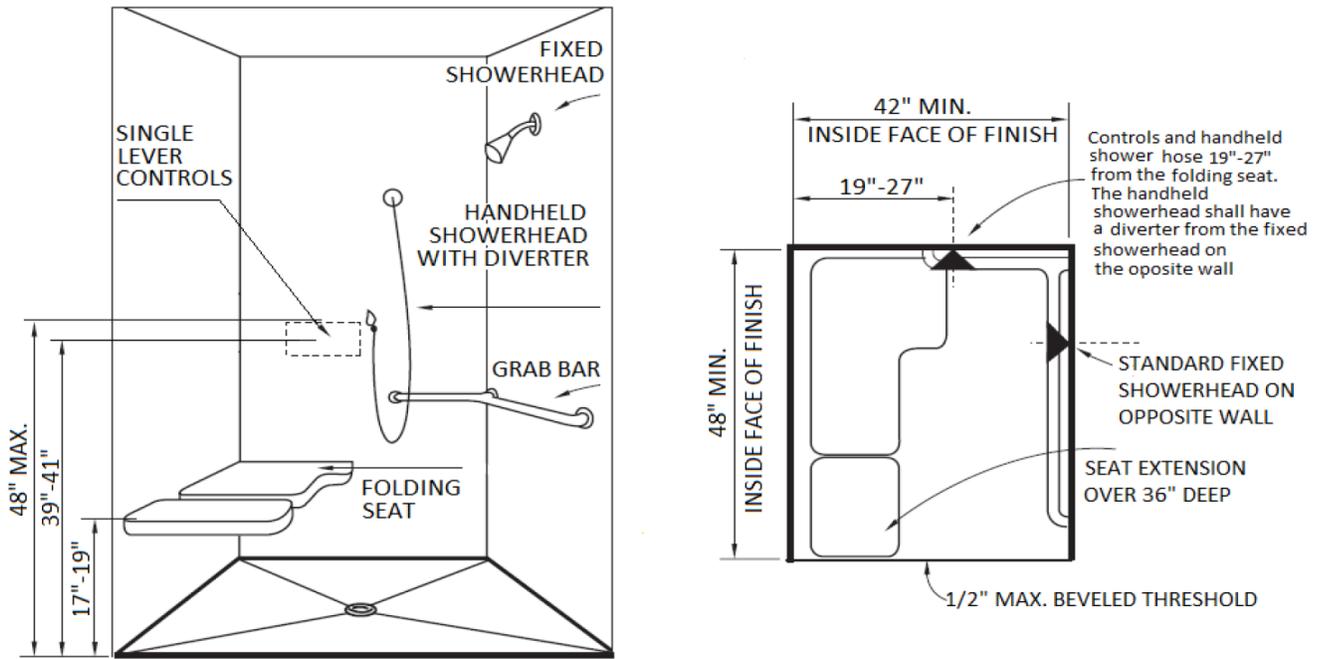
- 4. Where showers are provided, identify at least one as accessible and on an accessible route. (CBC 1127A.5.1)
- 5. Provide complete dimensions and coordinated detailing for each accessible shower. (CBC 1127A.5.3)
- 6. Provide complete dimensions and coordinated detailing for accessible showers complying with one of the following configurations (CBC 1127A.5.3.1):
  - a. Standard roll-in shower per CBC Figure 11A-9H(a):
    - o Minimum 30-inch-deep by 60-inch-long clear inside dimensions measured at center points of opposing sides
    - o Full opening width on long side
    - o Minimum 30-inch-deep by 60-inch-long clearance adjacent to open face of shower compartment



**(a) 60" x 30" ROLL-IN SHOWER  
FIGURE 11A-9H  
STANDARD ROLL-IN SHOWER**

- b. Standard roll-in shower per CBC Figure 11A-9H(b):
  - o Minimum 42-inch-wide by 48-inch-deep clear inside dimensions

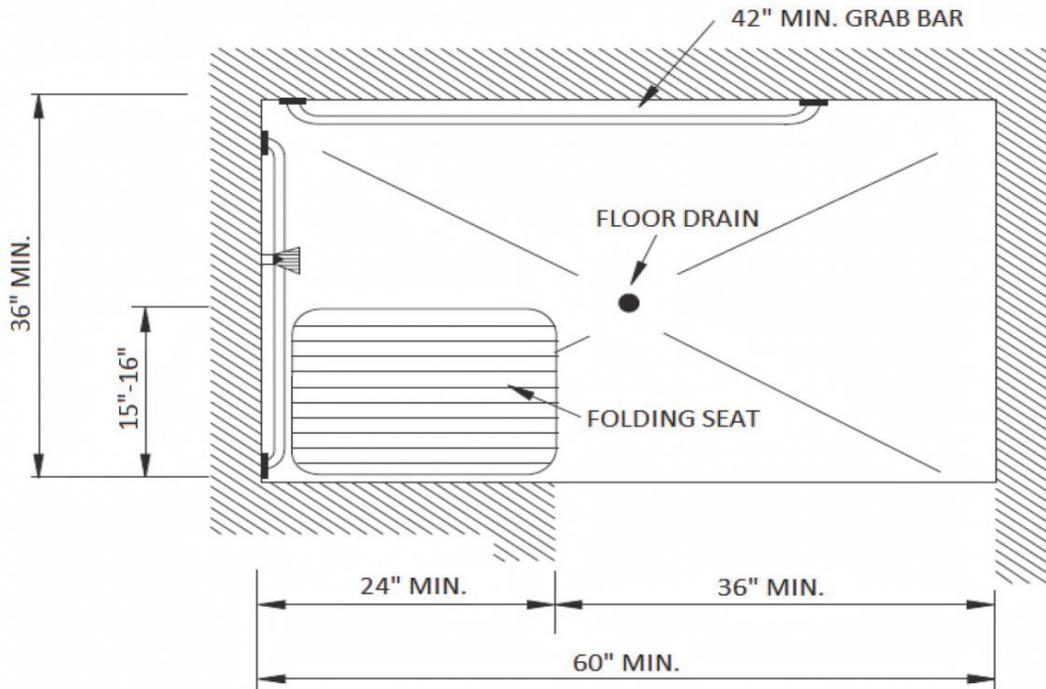
- o Minimum 42-inch-wide entrance opening



**(b) 42" x 48" ROLL-IN SHOWER**  
**FIGURE 11A-9H**  
**STANDARD ROLL-IN SHOWER**

- c. Alternate roll-in shower per CBC Figure 11A-9K:

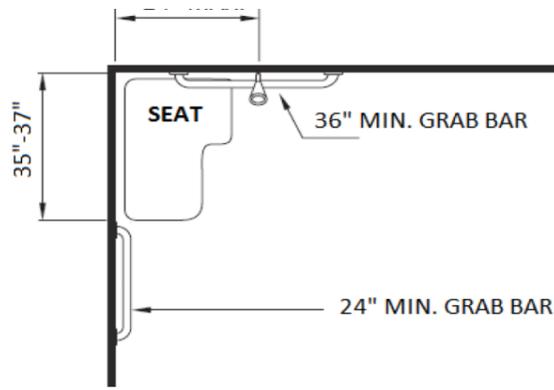
- o Minimum 36-inch-deep by minimum 60-inch-long clear inside dimensions measured at center points of opposing sides
- o Minimum 36-inch-wide entrance opening at one end of long side of shower compartment



**FIGURE 11A-9K**  
**ALTERNATE ROLL-IN SHOWER**

7. Where showers provided do not include separate compartments, provide accessible open shower per 11A-9J(a) configuration. (CBC 1127A.5.3.10)

| 24" MAX. |



(a) PLAN VIEW  
 FIGURE 11A-9J  
 OPEN SHOWER

8. Specify and detail shower compartment seat per the following (CBC 1127A.5.3.7):
- a. Folding type not extending more than 6 inches from mounting wall when folded
  - b. Located within 27 inches of shower controls
  - c. Mounted minimum 17 inches and maximum 19 inches above bathroom finished floor
  - d. For standard roll-in shower, seat installed on side wall adjacent to controls and extending from back wall to point within 3 inches of shower compartment entry
  - e. For alternate roll-in shower, seat installed on front wall opposite back wall and extending from adjacent side wall to point within 3 inches of shower compartment entry
  - f. Seat dimensions and clearance from wall per CBC Figure 11A-9I(b) for rectangular- or L-shaped configurations



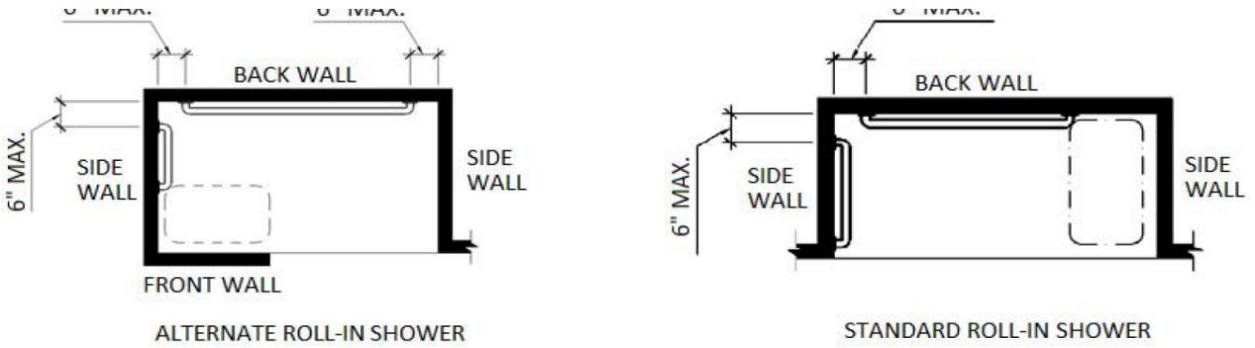
(b) SHOWER SEATS  
 FIGURE 11A-9I  
 SHOWER SEATS

9. Detail shower grab bars complying with the following (CBC 1127A.5.3.8):
- a. Mounted minimum 33 inches and maximum 36 inches above shower floor
  - b. Located per CBC 11A-9I(a) for rectangular- or L-shaped configurations
  - c. Not extending over shower seat

6" MAX.

6" MAX.

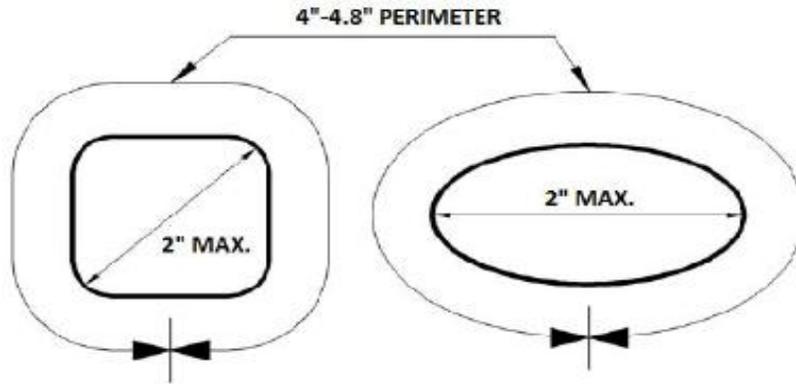
6" MAX.



(a) GRAB BARS

FIGURE 11A-91

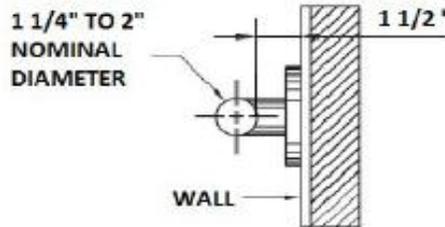
10. Detail grab bar gripping surfaces per the following (CBC 1127A.4.3):
- If cross section is circular, minimum 1-1/4-inch and maximum 2-inch outside diameter
  - If cross section is non-circular, minimum 4-inch and maximum 4.8-inch perimeter and maximum 2-1/4-inch cross-section dimension per CBC Figure 11A-9C(b)



(b) NON-CIRCULAR CROSS SECTIONS

FIGURE 11A-9C  
GRAB BARS

11. Detail grab bar clearance from adjacent elements per the following (CBC 1127A.4.6):
- For grab bars mounted adjacent to a wall, 1-1/2-inch (absolute) space between wall and grab bar per CBC Figure
  - Minimum 1-1/2-inch space between grab bar and projecting objects below and at ends
  - Minimum 12-inch space between grab bar and projecting objects above



(a) SECTION THROUGH TYPICAL CIRCULAR GRAB BAR

FIGURE 11A-9C  
GRAB BARS

12. Specify surface material of any walls or other objects adjacent to grab bars to comply with the following (CBC 1127A.4.5):
- Free of sharp or abrasive elements
  - Rounded edges

13. Specify structural adequacy of seats, grab bars, mounting hardware, and fasteners to accommodate 250-pound point load applied at any point on the grab bar, fastener, mounting device, or supporting structure. (CBC 1127A.4.4)
14. Specify operable parts of shower controls and faucets complying with the following (CBC 1127A.5.3.5):
  - a. For standard roll-in shower, installed on back wall of shower compartment adjacent to seat wall
  - b. For alternate roll-in shower, installed on side wall of shower compartment adjacent to seat wall
  - c. Located minimum 19 inches and maximum 27 inches from seat wall
  - d. Located above grab bar but no higher than 48 inches above shower floor
  - e. Centerline at minimum 39 inches and maximum 41 inches above shower floor
  - f. Single-lever design
  - g. Operable with maximum 5 pounds of force
  - h. Operable with one hand and without tight grasping, pinching, or twisting of wrist
15. Specify sprayer unit and associated operable parts shall be provided per the following (CBC 1127A.5.3.5):
  - a. For standard roll-in shower, operable parts – including handle – installed on back wall of shower compartment minimum 19 inches and maximum 27 inches from seat wall
  - b. For alternate roll-in shower, operable parts – including handle – installed per one of the following:
    - o On side wall of shower compartment minimum 17 inches and maximum 19 inches from seat wall
    - o On back wall opposite seat maximum 15 inches – left or right – from centerline of seat
  - c. Operable parts located above grab bar but no higher than 48 inches above shower floor, measured to top of mounting bracket
  - d. Minimum 59-inch long hose
  - e. Capable for use as fixed shower head and hand-held shower
  - f. On/off control with non-positive shut-off
  - g. Adjustable-height shower heads on vertical bar shall not obstruct use of bathtub grab bars
16. Where soap dishes are provided, dimension location on control wall maximum 40 inches above shower floor and within reach limits from the shower seat. (CBC 1127A.5.3.9)
17. Specify maximum 2.1% slope in all directions of accessible shower floors. (CBC 1127A.5.3.4)
18. Detail maximum 1/2-inch-high thresholds with maximum 50% beveled slope at roll-in showers. (CBC 1127A.5.3.2)
19. Where drains are provided at accessible showers, specify maximum 1/4-inch grate openings flush with shower floor surface. (CBC 1127A.5.3.4)
20. Specify any enclosures provided for shower compartments shall comply with the following (CBC 1127A.5.3.3):
  - a. No obstruction of shower controls
  - b. No obstruction of transfer from wheelchair to shower seat

**BATHTUBS**

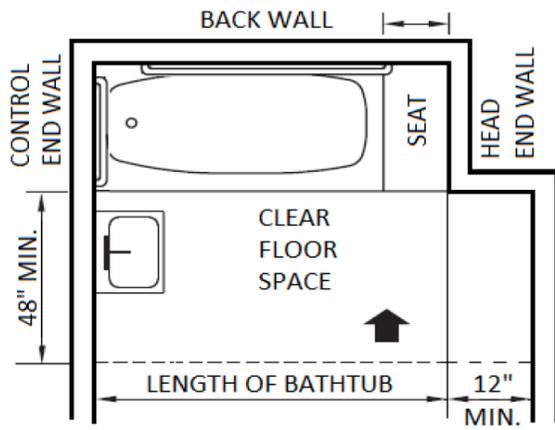
21. Where bathtubs are provided, identify at least one as accessible and on an accessible route. (CBC 1127A.5.1)
22. Provide complete dimensions and coordinated detailing for each accessible bathtub. (CBC 1127A.5.2)
23. Specify whether accessible bathtub will include a permanent seat at head of bathtub or a removable in-tub seat. (CBC 1127A.5.2.2)
24. Detail location of bathtub controls per the following (CBC 1127A.5.2.4):
  - a. Located on an end wall of bathtub
  - b. Between bathtub rim and grab bar and between open side of bathtub and centerline of width of bathtub
25. Dimension clearance at accessible bathtub with permanent seat at head of bathtub per the following (CBC 1127A.5.2.1):

**Exception:** Accessible lavatory located at control end of tub may encroach into bathtub clear space.

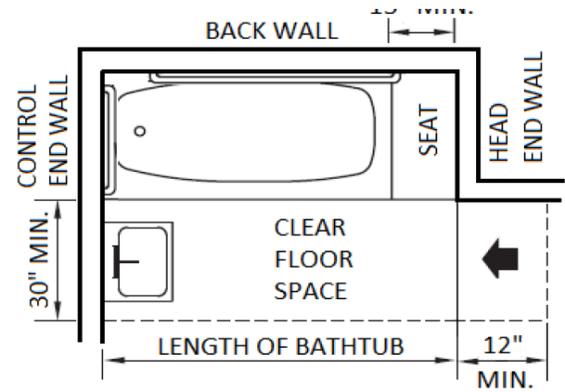
- a. Extending full length of bathtub plus minimum 12 inches beyond wall at head end of bathtub
- b. Minimum 30 inches wide per CBC Figure 11A-9E(d) where allowing side approach
- c. Minimum 48 inches wide per CBC Figure 11A-9E(c) where requiring front approach

----- 15" MIN.

15" MIN.



(c) PERMANENT SEAT IN TUB - FRONT APPROACH



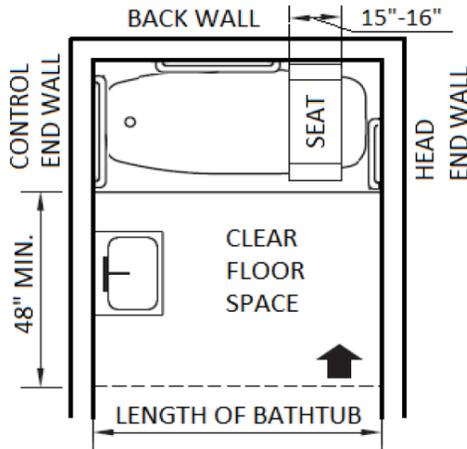
(d) PERMANENT SEAT IN TUB - SIDE APPROACH

FIGURE 11A-9E  
CLEAR FLOOR SPACE AT BATHTUBS

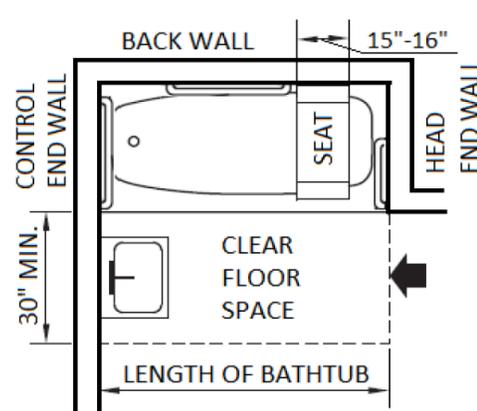
26. Dimension clearance at accessible bathtub with removable in-tub seat per the following (CBC 1127A.5.2.1):

**Exception:** Accessible lavatory located at control end of tub may encroach into bathtub clear space.

- a. Extending full length of bathtub
- b. Minimum 30 inches wide per CBC Figure 11A-9E(b) where allowing parallel approach
- c. Minimum 48 inches wide per CBC Figure 11A-9E(a) where requiring forward approach



(a) REMOVABLE SEAT IN TUB - FRONT APPROACH



(b) REMOVABLE SEAT IN TUB - SIDE APPROACH

FIGURE 11A-9E  
CLEAR FLOOR SPACE AT BATHTUBS

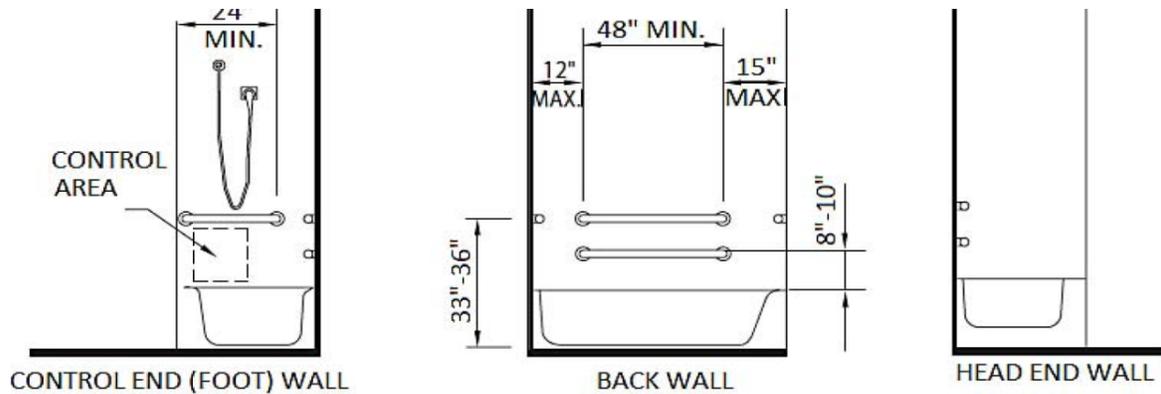
27. Specify and detail bathtub seat per the following (CBC 1127A.5.2.1):

- a. Top of seat minimum 17 inches and maximum 19 inches above bathroom finished floor
- b. For bathtub with permanent seat, minimum 15-inch depth and extending from back wall to or beyond outer edge of bathtub
- c. For bathtub with removable in-tub seat, minimum 15-inch and maximum 16-inch depth and capable of secure placement

28. Detail bathtub grab bars complying with the following (CBC 1127A.5.2.3):

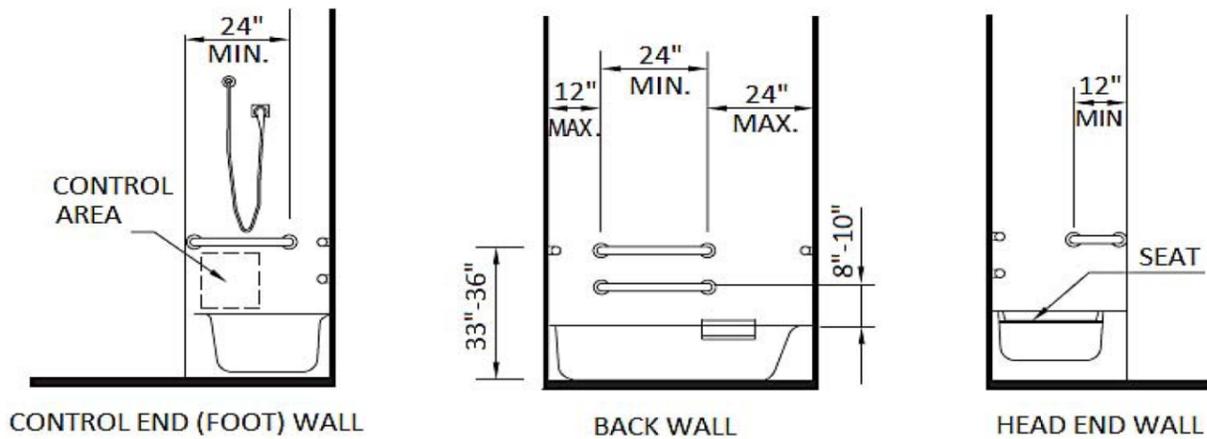
- a. For bathtub with permanent seat, grab bar locations, lengths, and mounting heights per CBC Figure 11A-9F(b)





**(b) WITH PERMANENT SEAT AT HEAD OF TUB**  
**FIGURE 11A-9F**  
**GRAB BARS AT BATHTUBS**

b. For bathtub with removable in-tub seat, grab bar locations, lengths, and mounting heights per CBC Figure 11A-9F(a)

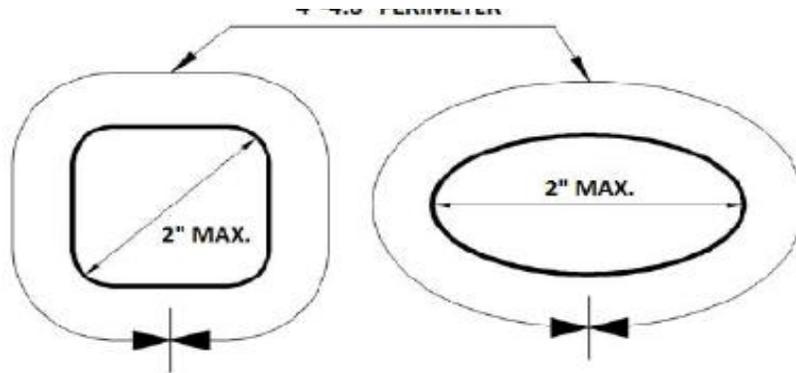


**(a) WITH REMOVABLE SEAT IN TUB**  
**FIGURE 11A-9F**  
**GRAB BARS AT BATHTUBS**

29. Detail grab bar gripping surfaces per the following (CBC 1127A.4.3):

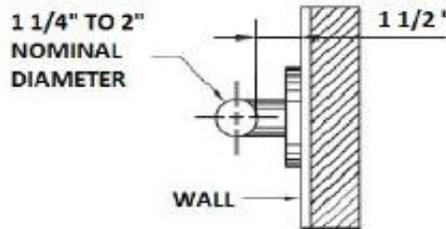
- a. If cross section is circular, minimum 1-1/4-inch and maximum 2-inch outside diameter
- b. If cross section is non-circular, minimum 4-inch and maximum 4.8-inch perimeter and maximum 2-1/4-inch cross-section dimension per CBC Figure 11A-9C(b)

**4"-4.8" PERIMETER**



(b) NON-CIRCULAR CROSS SECTIONS  
**FIGURE 11A-9C**  
**GRAB BARS**

30. Detail grab bar clearance from adjacent elements per the following (CBC 1127A.4.6):
- For grab bars mounted adjacent to a wall, 1-1/2-inch (absolute) space between wall and grab bar per CBC Figure 11A-9C(a)
  - Minimum 1-1/2-inch space between grab bar and projecting objects below and at ends
  - Minimum 12-inch space between grab bar and projecting objects above



(a) SECTION THROUGH TYPICAL CIRCULAR GRAB BAR  
**FIGURE 11A-9C**  
**GRAB BARS**

31. Specify surface material of any walls or other objects adjacent to grab bars to comply with the following (CBC 1127A.4.5):
- Free of sharp or abrasive elements
  - Rounded edges
32. Specify structural adequacy of seats, grab bars, mounting hardware, and fasteners to accommodate 250-pound point load applied at any point on the grab bar, fastener, mounting device, or supporting structure. (CBC 1127A.4.4)
33. Specify bathtub controls complying with the following (CBC 1127A.5.2.4):
- Operable with maximum 5 pounds of force
  - Operable with one hand and without tight grasping, pinching, or twisting of the wrist
34. Specify sprayer unit shall be provided per the following (CBC 1127A.5.2.5):
- Minimum 59-inch long hose
  - Capable for use as fixed shower head and hand-held shower
  - On/off control with non-positive shut-off
  - Adjustable-height shower heads on vertical bar shall not obstruct use of bathtub grab bars
35. Specify any enclosures provided for bathtubs shall comply with the following (CBC 1127A.5.2.6):
- No tracks mounted on rim of open face of bathtub
  - No obstruction of shower controls
  - No obstruction of transfer from wheelchair to bathtub seat or into bathtub

**SIGNAGE**

36. Detail signage including International Symbol of Accessibility and complying with the following on doors to men's shower

and/or bathing facilities and coordinate with signage schedule (CBC 1127A.7.1, CBC 1127A.7.2.1):

- a. Equilateral triangle symbol with vertex pointing upward
- b. Edges 12-inches long
- c. 1/4-inch thick
- d. Specify colors of triangle symbol and door such that symbol contrasts with door, either light on dark background or dark on light background

37. Detail signage including International Symbol of Accessibility and complying with the following on doors to women's shower and/or bathing facilities and coordinate with signage schedule (CBC 1127A.7.1, CBC 1127A.7.2.2):

- a. Circle symbol
- b. 12-inch diameter
- c. 1/4-inch thick
- d. Specify colors of circle symbol and door such that symbol contrasts with door, either light on dark background or dark on light background

38. Detail signage including International Symbol of Accessibility and complying with the following on doors to all-gender shower and/or bathing facilities and coordinate with signage schedule (CBC 1127A.7.1, CBC 1127A.7.2.3):

- a. Triangle symbol superimposed on and within 12-inch-diameter circle symbol
- b. 1/4-inch thick
- c. Specify colors of triangle and circle symbols such that triangle contrasts with circle, either light on dark background or dark on light background
- d. Specify color of door such that circle symbol contrasts with door, either light on dark background or dark on light background

39. Specify the following for any signs specified per items X-10A.36 through X-10A.38 (CBC 1127A.7.2):

- a. Mounted with centerline minimum 58 inches and maximum 60 inches above finished floor
- b. Mounted within 1 inch of vertical centerline of door
- c. Rounded, chamfered, or eased edges with minimum 1/8-inch radius

## **X-11A. DRINKING FOUNTAINS (CBC 11A)**

### **SCOPING**

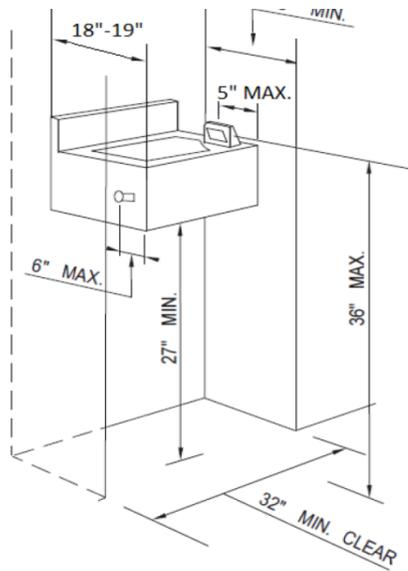
- 1. Drinking fountains and water coolers provided in common-use spaces shall be accessible. (CBC 1139A.1)
- 2. Each accessible drinking fountain and water cooler shall be on an accessible route allowing forward approach. (CBC 1139A.2, CBC 1139A.4)
- 3. Provide complete detailing for each accessible drinking fountain. (CBC 1139A)

### **PEDESTRIAN PROTECTION**

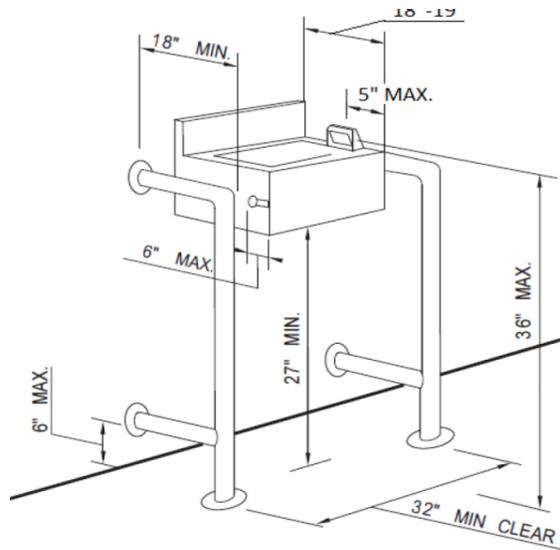
- 4. Dimension any wall- or post-mounted drinking fountains with minimum 18-inch and maximum 19-inch depth. (CBC 1139A.3)
- 5. All drinking fountains – accessible or otherwise – shall be located per one of the following or otherwise positioned to not encroach into pedestrian ways (CBC 1139A.8):
  - a. Within an alcove minimum 32-inches wide and minimum 18 inches deep per CBC Figure 11A-11A(a)
  - b. Between wing walls projecting horizontally at least as far as the drinking fountain and vertically to within 6 inches of the finished floor or ground surface per CBC Figure 11A-11A(b)

18" MIN.

18"-19"



**(a) ALCOVE INSTALLATION**



**(b) NONALCOVE WING WALL INSTALLATION**

**FIGURE 11A-11A  
DRINKING FOUNTAINS**

**DIMENSIONS AND FEATURES**

6. Specify maximum 4-inch projection of protruding objects into required alcoves or adjacent pedestrian ways. (CBC 1139A.8)
7. Detail toe and knee clearance beneath each accessible drinking fountain per the following (CBC 1138A.2):
  - a. Toe clearance:
    - o Minimum 9-inch height
    - o Minimum 17-inch depth
    - o Minimum 30-inch width
  - b. Knee clearance:
    - o Minimum 27-inch vertical clearance from front of drinking fountain to 8-inch depth
    - o Reducing to minimum 9-inch vertical clearance at minimum 11-inch depth at rate of 1 inch in depth for each 6 inches in height
    - o Minimum 30-inch width
8. Specify electronically controlled bubbler or manually operated bubbler activation complying with the following at each accessible drinking fountain:
  - a. Front- or side-mounted
  - b. Maximum 6 inches from front edge of fountain
  - c. Operable with maximum 5 pounds of force
  - d. Operable with one hand and without tight grasping, pinching, or twisting of wrist
9. Detail bubbler spout outlet complying with the following at each accessible drinking fountain (CBC 1139A.5):
  - a. Maximum 36 inches above floor
  - b. Minimum 15 inches from vertical support
  - c. Maximum 5 inches from front edge of unit, including bumpers
10. Detail bubbler water flow complying with the following at each accessible drinking fountain:
  - a. Minimum 4 inches high
  - b. Maximum 5 inches from front edge of unit
  - c. Where spouts located less than 3 inches from front edge of unit, maximum 30-degree angle measured horizontally between water stream and front face of unit
  - d. Where spouts located between 3 inches and 5 inches from front edge of unit, maximum 15-degree angle measured horizontally between water stream and front face of unit

**X-12A. PUBLIC TELEPHONES (CBC 11A)**

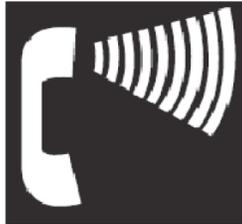
**SCOPING**

1. Public telephones provided in common-use spaces shall be accessible per the following (CBC 1140A.1):

- a. On floors where public telephones are provided, at least one accessible telephone required
- b. On floors where two or more banks of multiple telephones provided, at least one accessible telephone required in each bank

**VOLUME-CONTROL TELEPHONES**

- 2. Where public telephones are provided in common-use areas, identify at least one telephone equipped with volume control on each floor or in each bank, whichever is more. (CBC 1140A.6)
- 3. Specify volume-control telephones complying with the following (CBC 1140A.6):
  - a. Receiver generating magnetic field in area of receiver cap
  - b. Hearing-aid compatible
  - c. Capable of providing a gain adjustable up to minimum 20 decibels
  - d. For incremental volume control, at least one intermediate step of minimum 12 decibels gain
  - e. Includes automatic reset
  - f. Identified by signage per CBC Figure 11A-11D



**FIGURE 11A-11D  
VOLUME CONTROL TELEPHONES**

**TEXT TELEPHONES (TTY)**

- 4. If a total of four or more public telephones are provided at the interior and exterior of a site – with at least one at an interior location – specify at least one interior phone as a text telephone (TTY) complying with the following (CBC 1140A.7):
  - a. Permanently affixed within or adjacent to telephone enclosure
  - b. Equipped with a shelf and electrical outlet within or adjacent to telephone enclosure
  - c. Telephone handset capable of being placed flush on shelf surface
  - d. Shelf capable of accommodating TTY with minimum 6 inches vertical clearance above area where TTY is to be placed
  - e. Minimum 29-inch-long cord from telephone to handset
  - f. Where an acoustic coupler is used, telephone cord shall be sufficiently long to allow connection of the TTY and the telephone receiver
  - g. Touch surface of TTY keypads minimum 34 inches above finished floor
  - h. Push-button controls where service for such equipment is available
  - i. Any telephone books within CBC 1138A.3 reach ranges
  - j. Identified by signage per CBC Figure 11A-11C



**FIGURE 11A-11C  
INTERNATIONAL TTY SYMBOL**

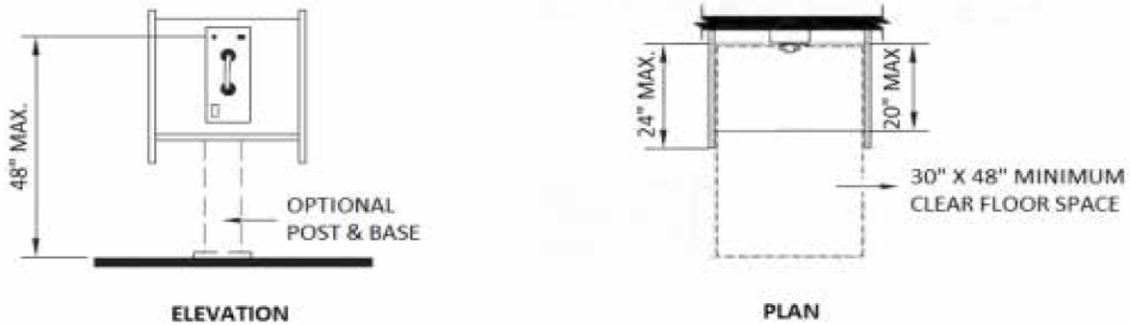
**DIMENSIONS AND CLEARANCES**

- 5. Dimension wheelchair clear floor/ground space complying with the following at each accessible telephone (CBC 1140A.2, CBC 1140A.3):
  - a. Minimum 30 inches by 48 inches
  - b. Allowing forward or parallel approach

c. One full unobstructed side adjoining another wheelchair clear floor/ground space

6. Dimension telephone mounting height and any enclosures per the following (CBC 1140A.4):

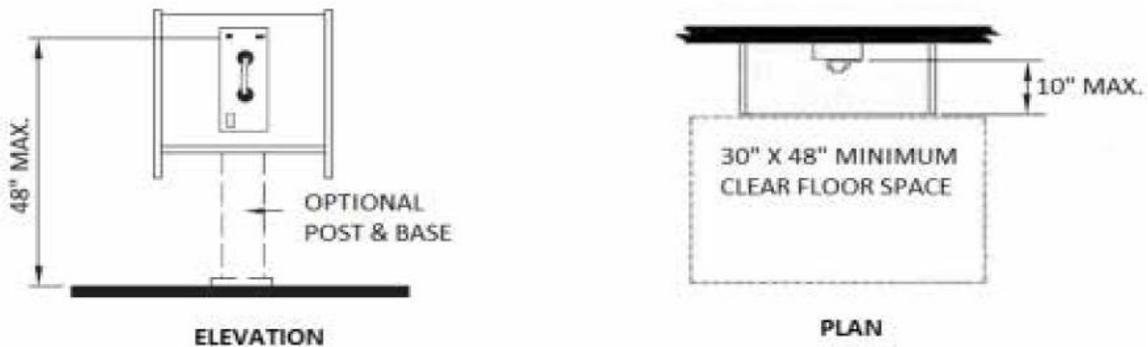
a. Where only forward approach allowed, per CBC Figure 11A-11B(b)



(b) FORWARD APPROACH

FIGURE 11A-11B  
TELEPHONES

b. Where parallel approach allowed, per CBC Figure 11A-11B(a)



(a) PARALLEL APPROACH

FIGURE 11A-11B  
TELEPHONES

7. Specify minimum 29-inch-long cord from phone to handset. (CBC 1140A.9)

8. Specify push-button telephone controls where service available. (CBC 1140A.8)

### X-13A. ALARMS (CBC 11A)

#### VISIBLE ALARMS

1. Where fire alarm coverage required by CBC 907, identify location of visible alarms (strobe lights) in the following public- and common-use areas (CBC 907.5.2.3.1):

**Exception:** In other than I-2 and I-2.1 occupancies, visible alarms not required in alterations unless fire alarm system is added, upgraded, or replaced

**Exception:** Visible alarms not required in enclosed exit stairways, exterior exit stairs, or exterior exit ramps

**Exception:** Visible alarms not required in elevator cars

- a. Sanitary facilities including restrooms, bathrooms, and shower rooms
- b. Corridors
- c. Lobbies
- d. Meeting and conference rooms
- e. Filing, photocopy, and employee break rooms
- f. Dining rooms and cafeterias
- g. Multipurpose rooms
- h. Classrooms

- i. Gymnasiums
- j. Locker rooms
- k. Band and music practice rooms
- l. Occupational shops
- m. Other occupied rooms where ambient noise impairs hearing of fire alarm
- n. Other public- or common-use areas

2. Where employee work areas require audible alarm coverage, specify notification appliance circuits serving employee work areas shall be designed with minimum 20-percent spare capacity to support adding visible notification devices in future to accommodate any hearing-impaired employees. (CBC 907.5.2.3.2)

3. Visible alarms shall be provided in R-2.1 sleeping units per CBC Table 907.5.2.3.3. (CBC 907.5.2.3.3)

[F] TABLE 907.5.2.3.3  
VISIBLE ALARMS

NUMBER OF SLEEP UNITS	SLEEPING ACCOMMODATIONS WITH VISIBLE ALARMS
6 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1,000	5% of total
1,001 and over	50 plus 3 for each 100 over 1,000

[SFM] Also see Chapter 11B, Section 11B-224.4 and Table 11B-224.4.

4. Where fire alarm coverage required in R-2 occupancies by CBC 907, all dwelling units and sleeping units shall be provided with capability to support visible alarms, including potential for future interconnection of building fire alarm system with unit smoke alarms, replacement of audible appliances with combination audible/visible appliances, or future extension of existing wiring from unit smoke alarm locations to required locations for visible appliances. (CBC 907.5.2.3.4)

#### AUDIBLE ALARMS

5. Where fire alarm coverage required by CBC 907, specify audible alarms complying with the following (CBC 907.5.2.1, CBC 907.5.2.5):

**Exception:** In patient areas of I-2 occupancies, visible alarms may be provided in lieu of audible alarms.

**Exception:** Where average ambient noise great than 95 dBA, visible alarms shall be provided in lieu of audible alarms

a. Sound distinctive alert not used for any purpose other than fire alarm

**Exception:** In patient areas of I-2 occupancies, audible alarms shall be only chimes or similar-sounding devices for alerting staff

**Exception:** Any audible alarms located in an occupant evacuation elevator lobby shall be connected to a separate notification zone for manual paging only

b. In every occupiable space within building, provide sound pressure level of 15 decibels above average ambient sound level or 5 decibels above maximum sound level having minimum 60-second duration, whichever is greater

c. Maximum sound pressure level of 110 decibels at minimum hearing distance from audible appliance

d. Audible signal shall be standard firm alarm evacuation signal, ANSI S3.41 Audible Emergency Evacuation Signal, "three pulse temporal pattern," as described in NFPA 72

#### FIRE ALARM BOXES

6. Where manual fire alarms required by CBC 907, specify alarm boxes and protective covers complying with the following (CBC 907.4.2, CBC 1138A.4):

a. Highest point of activating handle or lever located minimum 42 inches and maximum 48 inches above floor

**Exception:** Existing manual fire alarm boxes

b. Operable with maximum 5 pounds of force

c. Operable with one hand and without tight grasping, pinching, or twisting of wrist

## **X-14A. COMMON-USE AMENITIES (CBC 11A)**

### **LAUNDRY ROOMS**

1. Common-use laundry rooms shall be accessible per the following (CBC 1127A.10.1):
  - a. If one laundry room provided on ground floor of each covered multifamily dwelling, each laundry room shall be accessible
  - b. If laundry rooms provided in covered multifamily dwellings served by elevator, each laundry room shall be accessible
  - c. If one laundry room provided on ground floor of covered multifamily dwelling and another in basement, only ground floor laundry room must be accessible
2. Identify at least one accessible appliance of each type – including washers, dryers, soap dispensers, wash sinks, tables, storage areas – as provided within common-use laundry rooms. (CBC 1127A.10.1)
3. Dimension accessible route to each accessible appliance complying with the following (CBC 1127A.10.1):
  - a. Minimum 36-inch width
  - b. Minimum 60-inch-diameter turnaround or equivalent T-shaped space
4. Dimension clear spaces complying with the following (CBC 1127A.10.2):
  - a. Minimum 30-inches perpendicular and 48-inches parallel in front of each accessible washer and dryer
  - b. Minimum 30-inches by 48-inches at each accessible soap dispenser, wash sink, table, and storage area
5. Specify operable components – including coin slots – of accessible washing machines and dryers are within the following reach ranges (CBC 1127A.10.3):
  - a. Minimum 15 inches and maximum 48 inches high above floor
  - b. Within reach ranges over obstructions per section W-5A
  - c. Operable with maximum 5 pounds of force
  - d. Operable by single effort and without tight grasping, tight pinching, or twisting of the wrist
6. Specify accessible washers and dryers shall be front-loading with bottom of opening to laundry compartment minimum 15 inches and maximum 36 inches above finished floor. (CBC 1127A.10.4)

### **SEATING, TABLES, AND COUNTERS**

7. Identify minimum 5% of seating provided within common-use areas – but not fewer than one seat – as complying with the following (CBC 1127A.12):
  - a. Minimum 30-inch-wide by 48-inch-deep clear floor space with maximum 19-inch overlap of knee space beneath table or counter
  - b. Minimum 27-inch-high, 30-inch-wide, and 19-inch-deep knee space
  - c. Tables and counters minimum 28 inches and maximum 34 inches above floor
  - d. Where food or drink served for consumption at counter exceeding 34 inches in heights, minimum 60-inch-long section of such counter shall meet clear floor space, knee space, and counter height provisions above

### **STORAGE FACILITIES**

8. Identify at least one accessible fixed storage facility of each type – including cabinets, shelves, closets, clothes rods, drawers – as provided at common-use areas. (CBC 1127A.11.1)
9. Dimension and specify accessible storage facilities complying with the following (CBC 1127A.11.2, CBC 1127A.11.3, CBC 1127A.11.4):
  - a. Minimum 30-inch by 48-inch clear floor space allowing forward or parallel approach
  - b. Within reach ranges per CBC 1138A.3
  - c. Any hardware operable with maximum 5 pounds of force
  - d. Any hardware – touch latches and U-shaped pulls acceptable – operable by single effort and without tight grasping, tight pinching, or twisting of the wrist

### **SWIMMING POOLS**

10. Provide accessible route to common-use swimming pool deck areas and associated locker rooms and sanitary facilities. (CBC 1141A.1)
11. Specify lift device complying with the following to assist persons with disabilities in entering and exiting pool (CBC 1141A.2):

- a. Equipped with rigid seat complying with the following:
  - o Minimum 17 inches and maximum 19 inches above pool deck, including any cushioned surface provided
  - o Includes two armrests, with a folding or removable armrest on side of seat accessing pool
  - o Includes back support minimum 12-inches high
  - o Provides occupant restraint operable with maximum 5 pounds of force using one hand and without tight grasping, pinching, or twisting of wrist
- b. Capable of unassisted operation from both deck and water levels
- c. Stable with no unintended movement when operator getting into or out of seat
- d. Designed for live load capacity of not less than 300 pounds
- e. Positioned to place operator into water minimum 3-feet deep
- f. Capable of lowering operator minimum 18 inches below water surface

12. As an alternative to item X-14A.11, detail and dimension swimming pool access via sloped-entry ramps, transfer systems, or transfer walls. (CBC 1141A.2)

## PARTICIPATION AREAS

13. Any participation areas – including tennis courts, basketball courts, exercise facilities, outdoor recreation areas – provided for use by residents and guests shall be located on an accessible route. (CBC 1117A.1)

## X-15A. DWELLING UNITS (CBC 11A)

### SCOPING

1. The adaptability and accessibility requirements of this correction list apply to covered multifamily dwelling units per the scoping provisions of section X-1A. (CBC 1128A.1)

### ACCESSIBLE ROUTES

2. Dimension minimum 36-inch-wide accessible route within each covered multifamily dwelling unit per the following (CBC 1102A.3, CBC 1130A.1, CBC 1130A.2):

**Exception:** Accessible routes required only on primary entry level in multistory dwelling units per scoping provisions of section X-1A

**Exception:** Accessible route not required from interior of unit into garage if provisions of section X-2A are

**Exception:** Accessible route not required from interior of unit into basement

- a. Passes through primary entry door
- b. Connects with all additional exterior doors
- c. Connects with required clear floor spaces at kitchen appliances and bathroom fixtures
- d. Provide access to all rooms and spaces within dwelling unit

3. Accessible floors within dwelling units shall be on common level throughout or connected by at least one of the following (CBC 1131A.1, CBC 1131A.2):

**Exception:** Changes in level up to 1/4 inch

**Exception:** Changes in level between 1/4 inch and 1/2 inch with maximum 50% beveled slope

**Exception:** Landings at doors per item X-15A.7

- a. Pedestrian ramps per section X-4A
- b. Passenger elevators per section X-8A
- c. Platform lifts per section X-8A

### DOORS

4. Provide dimensions on door/gate schedule indicating all doors and gates comply with the following (CBC 1126A.1, CBC 1132A.3):

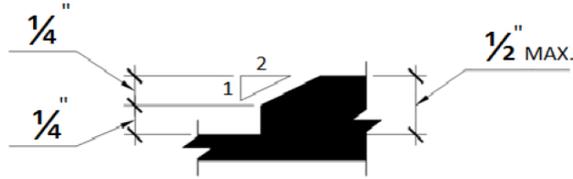
- a. Swinging doors capable of opening minimum 90 degrees
- b. Minimum 32-inch clear width measured with door at 90-degree angle from its closed position
  - Exception:** Minimum 36-inch nominal door required at primary entry and all required exits
  - Exception:** Nominal 32-inch clear opening provided by 6-foot-wide sliding patio door acceptable
- c. Minimum 80-inches high
- d. Where pair of doors proposed, at least one door leaf shall provide minimum 32-inch clear width, measured with door at 90-degree angle from its closed position

5. Where pocket doors proposed, specify on door schedule bumpers to prevent doors from fully receding. (CBC 1132A.8)

6. Specify level landing – maximum 2.1% slope in all directions – on each side of each door. (CBC 1132A.4)

7. Detail any elevation changes at doors complying with the following between interior and exterior floor levels (CBC 1132A.4):

- a. At exterior landings of impervious construction – e.g., concrete, brick, flatwork – serving primary entry door and required exit doors, maximum 1/2-inch elevation change complying with 50% beveled slope per CBC Figure 11A-1F(b)

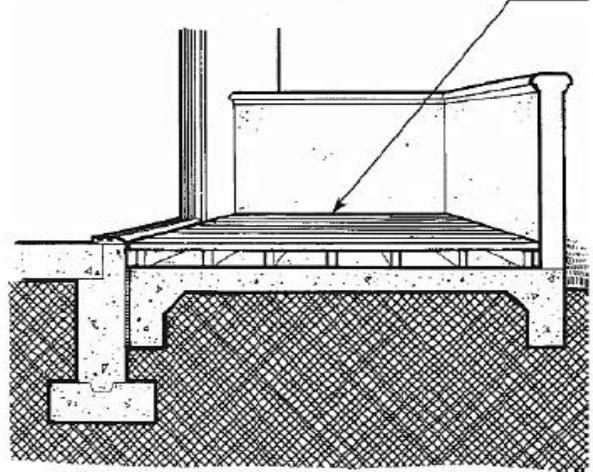


**(b) BEVELED CHANGE IN LEVEL**  
**FIGURE 11A-1F**  
**CHANGE IN LEVEL**

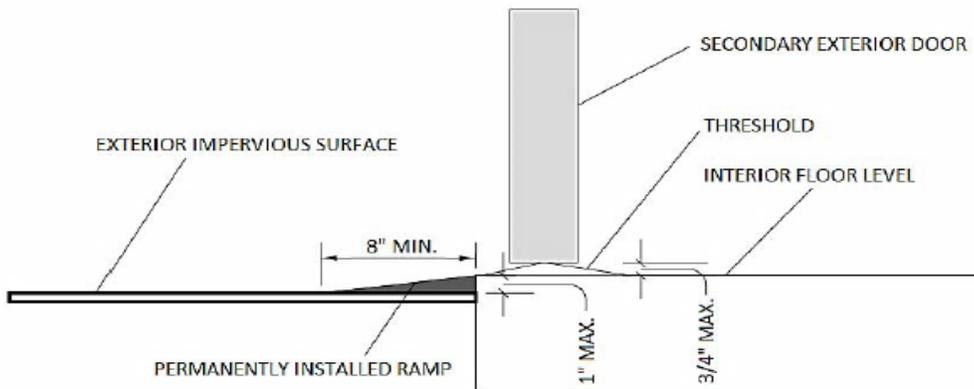
- b. At secondary exterior doors on to decks, patios, or balconies of impervious construction, maximum 1-inch elevation change accomplished with ramp with maximum 12.5% slope per CBC Figure 11A-8K

**Exception:** Maximum 4-inch elevation change with any elevation change greater than 1/2 inch accomplished by pedestrian ramp per section X-4A or built-up platform per CBC Figure 11A-8J

*Platform of approved materials to raise floor level of balcony.*  
*(Platform required for final inspection)*



**FIGURE 11A-8J**  
**PLATFORM AT SECONDARY EXTERIOR DOOR**



**FIGURE 11A-8K**  
**RAMP AT SECONDARY EXTERIOR DOOR**

- c. At exterior landings of pervious construction – e.g., wood decking with spaces, no elevation change allowed

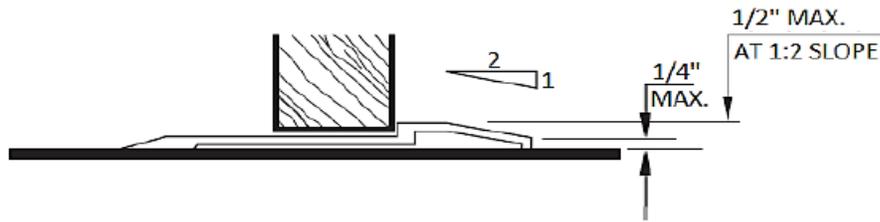
**Exception:** Maximum 1/2-inch elevation change per CBC Figure 11A-1F(b) allowed at secondary exit doors

8. Detail door thresholds complying with the following per CBC Figure 11A-8I (CBC 1132A.4.1):

a. Maximum 1/2-inch vertical between landing and threshold

**Exception:** Maximum 3/4-inch vertical acceptable at secondary exterior doors

b. Maximum 50% beveled slope for changes in level between 1/4 inch and 1/2 inch



**FIGURE 11A-8I  
THRESHOLDS**

9. Dimension maneuvering clearances complying with the following at each door (CBC 1132A.5.2):

**Exception:** Maneuvering clearances per section X-6A shall apply to sides of dwelling unit doors exposed to common-use spaces

a. Pull side of door:

o Width: Door width plus minimum 18 inches beyond latch

o Depth: Minimum 42 inches perpendicular to doorway

**Exception:** Minimum 39 inches perpendicular to doorway acceptable at doors with minimum 34-inch clear opening width

b. Push side of door:

o Width: Door width

o Depth: Minimum 42 inches perpendicular to doorway

**Exception:** Minimum 44 inches perpendicular to doorway required on dwelling side of primary entry door and required exit doors

**Exception:** Minimum 39 inches perpendicular to doorway acceptable at doors with minimum 34-inch clear opening width

10. Specify on door/gate schedule hand-activated opening hardware, handles, pulls, latches, locks, and other operating devices complying with the following for all doors and gates (CBC 1010.1.9.2, CBC 1132A.7, CBC 1132A.8):

a. Minimum 34 inches and maximum 44 inches above floor

b. Operable within force limits of item X-15A.14

c. Operable by single effort and without tight grasping, tight pinching, or twisting of the wrist

11. Any exit door or gate with locking hardware shall operate per item X-15A.10 in direction of egress. (CBC 1132A.8)

12. Specify lever hardware shall be curved to return within 1/2 inch of door to prevent catching of clothing during egress. (CBC 1132A.8.1)

**Exception:** Group R and U occupancies with occupant load of ten or fewer

13. Specify the following at push side of all doors and gates (CBC 1132A.9):

**Exception:** Automatic doors

**Exception:** Tempered glass doors without stiles and having a bottom rail or shoe with top leading edge tapered at minimum 60 degrees from horizontal

**Exception:** Doors or gates not extending within 10 inches of finished floor or ground

a. Smooth surface within 10 inches of finished floor or ground and extending full width of door or gate

b. Parts creating horizontal or vertical joints in surface shall be within 1/16 inch of the same plane as the other and free of sharp or abrasive edges

c. Cavities created by added kick plates shall be capped

14. Specify door/gate opening force complying with the following (CBC 1132A.6):

**Exception:** Doors or gates with automatic or power-assist devices may be used to meet maximum force

**Exception:** Required fire doors may have minimum opening force allowed by fire jurisdiction, not to exceed 15 pounds of force

a. Maximum 8.5 pounds of force for exterior doors or gates

b. Maximum 5 pounds of force for interior doors or gates

15. Specify buzzer, bell, or chime at maximum 48 inches above floor at primary entrance to each covered multifamily dwelling unit. (CBC 1132A.10)

## KITCHENS

16. Dimension clear floor space complying with the following at each kitchen appliance and fixture (CBC 1133A.2):
- Minimum 30 inches by 48 inches allowing parallel approach to range or cooktop allowing parallel approach
  - Minimum 30 inches by 48 inches allowing forward or parallel approach to sink, oven, dishwasher, refrigerator/freezer, trash compactor, and other appliances
  - Minimum 30 inches by 48 inches allowing forward or parallel approach to work surface required per item X-15A.20
  - Clear floor space aligned with centerline of each appliance or fixture
17. Dimension clear width – measured between cabinets, countertops, or appliances – complying with the following at each kitchen (CBC 1133A.2.1):
- Minimum 60-inch clear width at U-shaped kitchens with range or cooktop located at base of U
  - Minimum 48-inch clear width for all other kitchen configurations
18. Detail toe and knee clearance per the following centered on and beneath kitchen sink and work surface required per item X-15A.20 (CBC 1133A.3, CBC 1133A.7):
- Exception:** Removable base cabinets acceptable per item X-15A.19
- Toe clearance:
    - Minimum 9-inch height
    - Minimum 17-inch depth
    - Minimum 30-inch width
  - Knee clearance:
    - Minimum 27-inch vertical clearance from front to minimum 8-inch depth
    - Reducing to minimum 9-inch vertical clearance at minimum 11-inch depth at rate of 1 inch in depth for each 6 inches in height
    - Minimum 30-inch width
  - Water supply and drain pipes under sink insulated or otherwise covered
  - No sharp or abrasive surfaces under sink
19. Specify the following for any base cabinets directly beneath sink counter area (CBC 1133A.3):
- Removable to provide knee and toe space
  - Removable without specialized tool or knowledge
  - Finished floor beneath sink counter area extending to rear wall
20. Specify countertops complying with the following (CBC 1133A.4):
- Minimum 30-inch length for sink installation
  - Minimum 30-inch length for work surface
- Exception:** Two minimum 15-inch-wide breadboards may be provided in lieu of 30-inch-long work surface
- Sink and work surface may be single minimum 60-inch length or separate minimum 30-inch lengths
21. Specify repositionable countertops complying with the following at minimum 5% of covered multifamily dwelling units (CBC 1133A.4.1):
- Enable repositioning to minimum 28-inch height of sink and work surfaces per item X-15A.20
- Exception:** Stone, cultured stone, and tile countertops may be used without meeting repositioning requirements
- Base cabinets directly beneath sink counter area and work surface removable per item X-15A.18
- Exception:** Two minimum 15-inch-wide breadboards may be provided in lieu of 30-inch-long work surface and used without meeting repositioning requirements
- Sides of adjacent cabinets and rear wall constructed of durable, nonabsorbent materials
  - Finished floor beneath sink and work surfaces extending to wall
22. Specify lower shelving and/or drawer space in kitchen at maximum 48 inches above floor. (CBC 1133A.4.2)
23. Specify faucet controls complying with the following (CBC 1133A.6):
- Operable with maximum 5 pounds of force
  - Operable with one hand and without tight grasping, pinching, or twisting of wrist
  - Self-closing valves allowed if faucet remains open for minimum 10 seconds

## BATHROOM SCOPING

24. Bathrooms within dwelling units shall be configured to comply with **one of the following** options (CBC 1134A.2):

- a. Option 1: All bathrooms comply with the following:
  - o Maneuvering spaces per item X-15A.26
  - o Bathtubs per items X-15A.27 through X-15A.30
  - o Showers per items X-15A.31 through X-15A.37
  - o Toilets per items X-15A.38 through X-15A.42
  - o Lavatories, vanities, mirrors, and towel fixtures per items X-15A.43 through X-15A.50
  - o Accessible route into and through bathroom
  - o Accessible door into bathroom per items X-15A.4 through X-15A.13
  - o Minimum 18-inch strike-edge clearance on pull side of any door swinging into bathroom
  - o Accessible switches, outlets, and controls per items X-15A.52 and X-15A.53
  - o Reinforced walls per items X-15A.28, X-15A.34, and X-15A.40 allowing for future installation of grab bars at bathtubs, showers, and toilets
- b. Option 2: One bathroom complies with the following:
  - o Maneuvering spaces per item X-15A.26
  - o Bathtubs per items X-15A.27 through X-15A.30
  - o Showers per items X-15A.31 through X-15A.37
  - o Where both bathtub and shower provided in bathroom, at least one shall be accessible
    - Exception:** Where dwelling unit contains two or more bathrooms and accessible bathtub provided in one bathroom and shower provided in second bathroom, at least one shower shall meet provisions of items X-15A.31 through X-15A.37
  - o Toilets per items X-15A.38 through X-15A.42
  - o Lavatories, vanities, mirrors, and towel fixtures per items X-15A.43 through X-15A.50
  - o Where two or more lavatories provided, at least one shall be accessible
  - o Accessible route into and through bathroom
  - o Accessible door into bathroom per items X-15A.4 through X-15A.13
  - o Minimum 18-inch strike-edge clearance on pull side of any door swinging into bathroom
  - o Accessible switches, outlets, and controls per items X-15A.52 and X-15A.53
  - o Reinforced walls per items X-15A.28, X-15A.34, and X-15A.40 allowing for future installation of grab bars at bathtubs, showers, and toilets
  - o All additional bathrooms complying with provisions listed above for accessible routes, doors, strike-edge clearance, switches, outlets, controls, and wall reinforcement

25. Powder rooms within dwelling units shall comply with the following (CBC 1133A.3):

- a. Where powder room is only toilet facility located on accessible level, it shall comply with all provisions per option 2 in item X-15A.24
- b. Any other powder rooms shall comply with provisions for accessible routes, doors, strike-edge clearance, switches, outlets, controls, and wall reinforcement per option 2 in item X-15A.24

## BATHROOM MANEUVERING SPACE

26. Dimension maneuvering space per the following at each bathroom and powder room designed to comply with items X-15A.24 and X-15A.25 (CBC 1134A.4):

- a. Allowing wheelchair user to enter, close door, use fixtures, reopen door, and exit
- b. Where door swings into bathroom or powder room, minimum 30-inch by 48-inch maneuvering space required within room and outside door swing
- c. Allowing positioning of wheelchair outside door swing as it closes
- d. Allowing use of all fixtures
- e. May include knee and toe space available beneath fixtures

## BATHTUBS

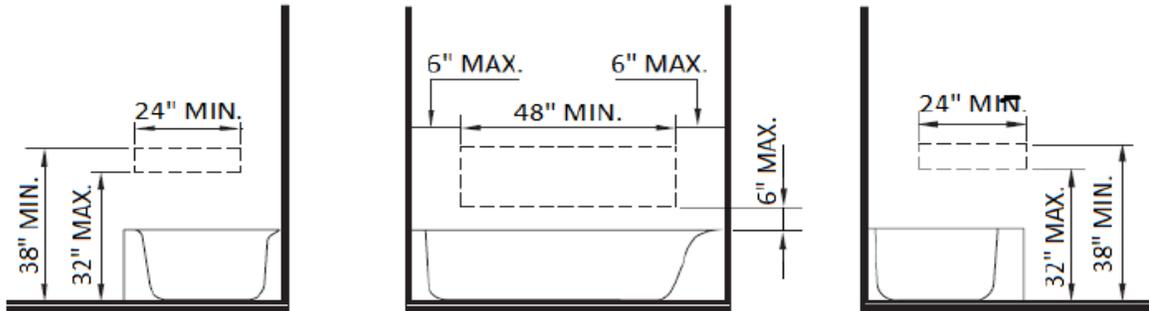
27. Dimension clear floor space per the following at each accessible bathtub (CBC 1134A.4, CBC 1134A.5(1)):

- a. Minimum 48-inches parallel and 30-inches perpendicular – measured from foot or drain end of bathtub -- at side of bathtub or bathtub/shower combination
- b. No door encroachment unless minimum 30-inch by 48-inch maneuvering space provided within bathroom outside door swing
- c. May use knee and toe space beneath lavatory
- d. No encroachment by toilets or cabinets beneath lavatories

28. Detail wall reinforcement – e.g., blocking – complying with the following per CBC Figure 11A-9G(b) at accessible bathtubs for future installation of grab bars (CBC 1134A.5(2)):

**Exception:** Bathtubs installed without surrounding walls shall include reinforcement for future installation of floor-mounted grab bars

- a. At end walls of bathtub:
  - o Located minimum 32 inches and maximum 38 inches above floor
  - o Extending minimum 24 inches from open edge of bathtub toward side wall
  - o Minimum 6-inch nominal height
- b. At side wall of bathtub:
  - o Located maximum 6 inches above bathtub rim
  - o Extending upward minimum 38 inches above floor
  - o Installed to allow installation of 48-inch-long grab bar with each end maximum 6 inches from each end wall
  - o Minimum 6-inch nominal height



**(b) GRAB BAR REINFORCEMENT FOR ADAPTABLE BATHTUBS**

**FIGURE 11A-9G  
REINFORCEMENT FOR GRAB BARS**

29. Specify bathtub faucet and mechanism controls complying with the following (CBC 1134A.5(1), CBC 1134A.5(3), CBC 1134A.5(4)):

**Exception:** Shower spray units are not required in bathtubs

- a. Located on wall at foot of bathtub
- b. Edge of clear floor space required per item X-15A.27 shall be flush with control wall surface
- c. Operable with maximum 5 pounds of force
- d. Operable with one hand and without tight grasping, pinching, or twisting of wrist
- e. Self-closing valves allowed if faucet remains open for minimum 10 seconds

30. Specify any enclosures provided for bathtubs shall comply with the following (CBC 1134A.5(5)):

- a. Any hinged doors swinging outward
- b. Shatter-resistant materials in doors and panels
- c. Glazing in doors and panels per one of the following:
  - o Minimum 1/8-inch-thick fully tempered glass
  - o Minimum 1/4-inch-thick laminated glass
  - o Shatter-resistant plastic

## SHOWERS

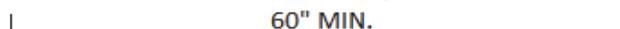
31. Dimension clear maneuvering space per the following at each accessible shower (CBC 1134A.4, CBC 1134A.5.4(3)):

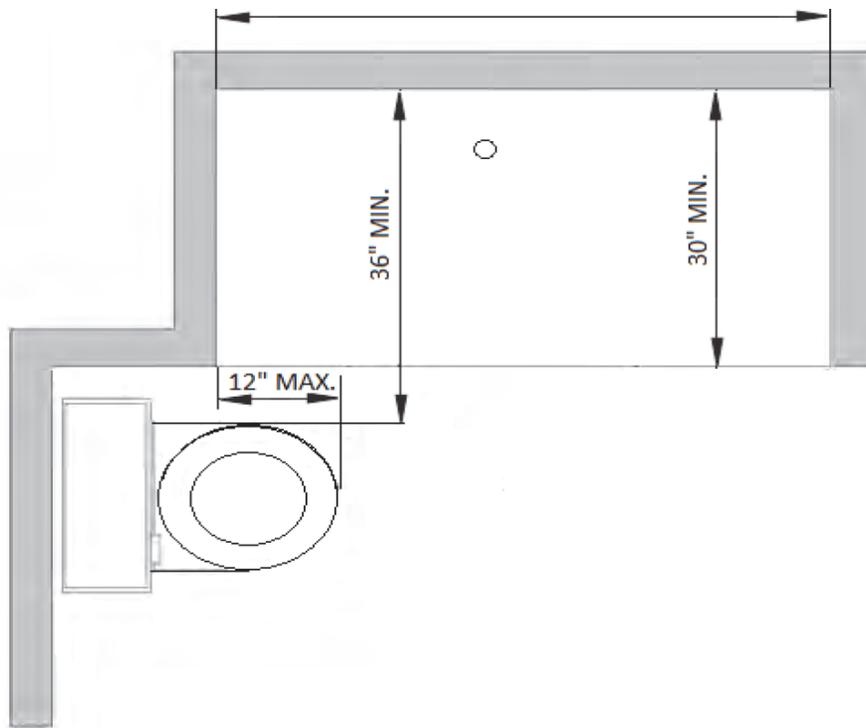
- a. Minimum 30-inches wide by 48-inches long outside shower
- b. Flush and parallel to control wall
- c. No door encroachment unless minimum 30-inch by 48-inch maneuvering space provided within bathroom outside door swing

32. Dimension accessible shower stalls to comply with one of the following configurations (CBC 1134A.6(1)):

- a. Minimum 42-inches wide by 48-inches deep with minimum 36-inch-wide entrance opening
- b. Minimum 60-inches wide by 36-inches deep with minimum 36-inch-wide entrance opening when wall installed on opening side
- c. Minimum 60-inches wide by 30-inches deep with minimum 60-inch-wide entrance opening

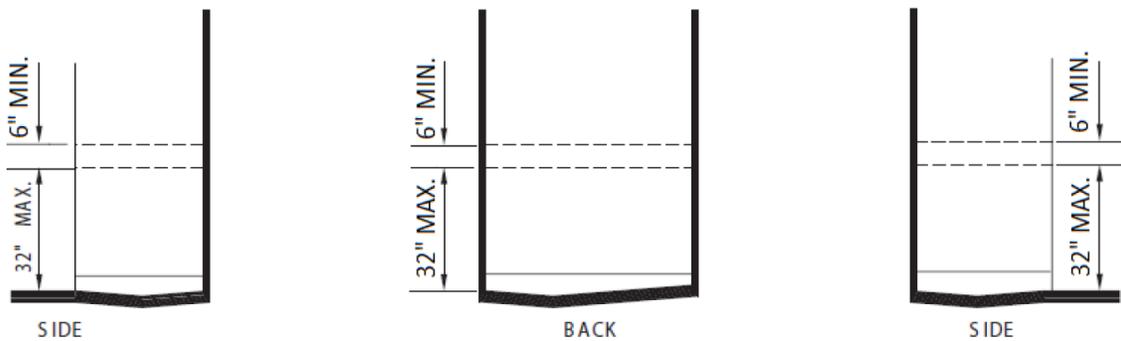
**Exception:** Toilet may project maximum 12 inches into entrance opening provided minimum 36-inch clear space maintained between toilet and shower wall per CBC Figure 11A-9L





**FIGURE 11A-9L  
SHOWER WITH WATER CLOSET**

33. Specify accessible shower stall floors complying with the following (CBC 1134A.6(2)):
- Maximum 4.2% slope in all directions
  - Composed of Carborundum, grit-faced tile, or material providing equivalent slip-resistance
34. Detail wall reinforcement – e.g., blocking – complying with the following per CBC Figure 11A-9G(c) at accessible showers for future installation of grab bars (CBC 1134A.6(4)):
- Exception:** Showers installed with glass walls shall include reinforcement for future installation of floor-mounted or ceiling-mounted grab bars
- Continuous in all shower walls
  - Located minimum 32 inches and maximum 38 inches above floor
  - Minimum 6-inch nominal height



**(c) GRAB BAR REINFORCEMENT FOR ADAPTABLE SHOWERS**

**FIGURE 11A-9G  
REINFORCEMENT FOR GRAB BARS**

35. Specify any shower thresholds shall comply with the following (CBC 1134A.6(5)):
- Maximum 2-inch height with maximum 50% beveled slope
- Exception:** Maximum 1/2-high thresholds may have maximum 100% beveled slope
36. Specify shower faucet and mechanism controls complying with the following (CBC 1134.6(6)):
- Exception:** Shower spray units are not required in bathtubs
- Operable with maximum 5 pounds of force

- b. Operable with one hand and without tight grasping, pinching, or twisting of wrist
- c. Self-closing valves allowed if faucet remains open for minimum 10 seconds

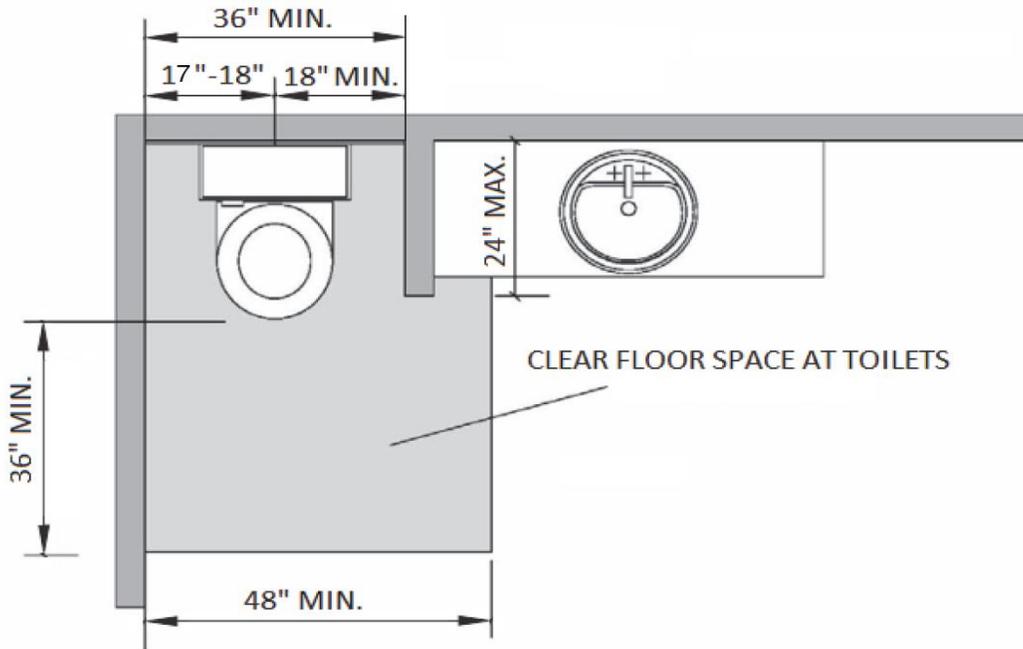
37. Specify any enclosures provided for showers shall comply with the following (CBC 1134A.6(7)):

- a. Any hinged doors swinging outward
- b. Shatter-resistant materials in doors and panels
- c. Glazing in doors and panels per one of the following:
  - o Minimum 1/8-inch-thick fully tempered glass
  - o Minimum 1/4-inch-thick laminated glass
  - o Shatter-resistant plastic

**TOILETS**

38. Dimension clear floor space per the following at each accessible toilet (CBC 1134A.4, CBC 1134A.7(1)):

- a. Minimum 48-inches wide
  - Exception:** Minimum 36-inch width acceptable for maximum 24-inch-deep lavatories, cabinets, wing walls, or privacy walls located immediately adjacent to toilet per CBC Figure 11A-9M
- b. Extending minimum 36 inches past front edge of toilet
- c. No door encroachment unless minimum 30-inch by 48-inch maneuvering space provided within bathroom outside door swing



**FIGURE 11A-9M  
WING WALL OR CABINET AT WATER CLOSET**

39. Dimension minimum 17 inches and maximum 18 inches between centerline of toilet fixtures and adjacent side walls or partitions. (CBC 1134A.7(1))

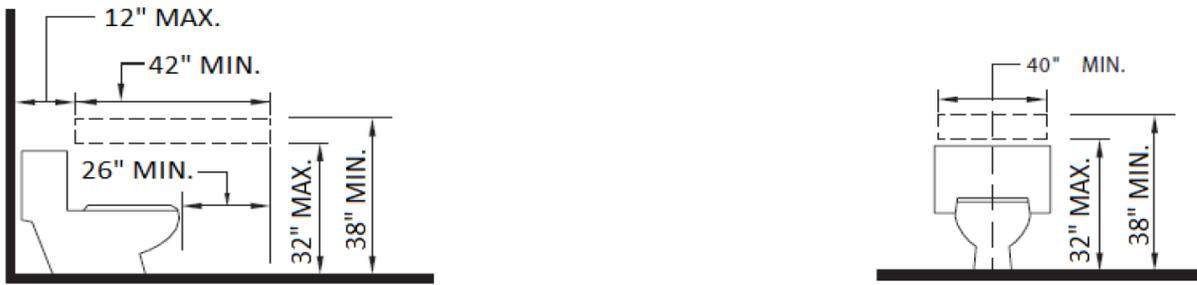
**Exception:** Toilets in locations without adjacent walls shall be positioned to allow future installation of grab bar on one side of fixture

40. Detail wall reinforcement – e.g., blocking – complying with the following per CBC Figure 11A-9G(a) at accessible toilets for future installation of grab bars (CBC 1134A.7(2)):

**Exception:** Toilets in locations without adjacent walls shall be positioned to allow future installation of floor-mounted, fold-away, or similar alternative grab bars

- a. Located on both sides or one side and rear
- b. Rear wall reinforcement per the following:
  - o Minimum 32 inches and maximum 38 inches above floor
  - o Minimum 40-inch length
  - o Minimum 6-inch nominal height
- c. Side wall reinforcement per the following:
  - o Minimum 32 inches and maximum 38 inches above floor

- o Maximum 12 inches from rear wall
- o Extending minimum 26 inches in front of toilet
- o Minimum 6-inch nominal height



**(a) GRAB BAR REINFORCEMENT FOR ADAPTABLE WATER CLOSETS**  
**FIGURE 11A-9G**  
**REINFORCEMENT FOR GRAB BARS**

41. Dimension minimum 15-inch height of accessible toilet seats above floor. (CBC 1134A.7(3))
42. Specify toilet controls complying with the following (CBC 1134A.7(4)):
  - a. Mounted maximum 44 inches above floor
  - b. Operable with maximum 5 pounds of force
  - c. Operable with one hand and without tight grasping, pinching, or twisting of wrist

## LAVATORIES

43. Dimension location of accessible lavatories to comply with the following (CBC 1134A.8(1)):
  - a. Where forward approach allowed, minimum 18 inches from centerline of fixture to adjacent wall or fixture
  - b. Where parallel approach required, minimum 24 inches from centerline of fixture to adjacent wall or fixture
  - c. Top of fixture rim maximum 34 inches above floor
44. Dimension clear maneuvering space per the following at each accessible lavatory (CBC 1134A.4, CBC 1134A.8(2)):
  - a. Minimum 30 inches by 48 inches centered on lavatory
  - b. No door encroachment unless minimum 30-inch by 48-inch maneuvering space provided within bathroom outside door swing
45. Detail knee clearance beneath accessible lavatories complying with the following (CBC 1134A.8(4), CBC 1138A.2):
  - a. Minimum 30 inches wide
  - b. Minimum 27-inch vertical clearance from front to minimum 8-inch depth
  - c. Reducing to minimum 9-inch vertical clearance at minimum 11-inch depth at rate of 1 inch in depth for each 6 inches in height
46. Detail toe clearance beneath accessible lavatories complying with the following (CBC 1134A.8(4), CBC 1138A.2):
  - a. Minimum 30 inches wide
  - b. Minimum 9 inches high
  - c. Minimum 17 inches deep from front edge
47. Specify one of the following configurations to ensure knee and toe clearances provided per items X-15A.45 and X-15A.46:
  - a. Space beneath lavatory shall be left clear and unobstructed
  - b. Any cabinet beneath lavatory shall be removable without specialized tool or knowledge
  - c. Doors to any cabinet beneath lavatory shall be removable or openable such that required knee and toe clearance provided without obstruction
48. Specify the following for knee and toe clearances beneath accessible lavatories (CBC 1134A.8(5), CBC 1134A.8(6)):
  - a. Insulated hot water and drain pipes
  - b. No sharp or abrasive surfaces
  - c. Finished floor beneath lavatory shall extend to wall
49. Specify faucet and mechanism controls complying with the following (CBC 1134.8(7)):

- a. Operable with maximum 5 pounds of force
- b. Operable with one hand and without tight grasping, pinching, or twisting of wrist
- c. Self-closing valves allowed if faucet remains open for minimum 10 seconds

50. Specify any mirrors or towel fixtures shall be mounted with bottom edge maximum 40 inches above floor. (CBC 1134.8(8))

## LAUNDRY APPLIANCES

51. If washers and dryers are provided in covered multifamily dwelling units, specify at least one each type shall be accessible and front-loading. (CBC 1135A.1)

**Exception:** Where front-loading washers not provided, management shall provide assistive devices – on request of occupant – for use with top-loading washers

## MISCELLANEOUS

52. Specify controls and operating mechanisms shall comply with the following (CBC 1136A.2):

**Exception:** Appliances – including stoves, dishwashers, range hoods, microwaves – having controls on the appliance

- a. Minimum 15 inches and maximum 48 inches high above floor and within reach ranges per section X-5A
- b. Operable with maximum 5 pounds of force
- c. Operable by single effort and without tight grasping, tight pinching, or twisting of the wrist

53. Specify any electrical switches or outlets in common-use areas shall be located per the following (CBC 1136A.1):

**Exception:** Receptacle outlets installed as part of permanent baseboard heaters are exempt from height and reach limits

**Exception:** Required receptacle outlets allowed in floors when adjacent to sliding panels or walls

**Exception:** Baseboard electrical outlets used in relocatable partitions, window walls, or other electrical convenience floor outlets are exempt from minimum height limits

- a. Minimum 15 inches from bottom of receptacle/outlet box to finished floor
- b. Maximum 48 inches from top of receptacle/outlet box to finished floor
- c. Within reach ranges per section X-5A