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SECTION 00 0101 – DEFINITIONS

SPECIFICATIONS

The definitions, instructions, descriptions, directions, provisions, and requirements contained herein and all written supplements thereof made or to be made, pertaining to the contract and the materials and workmanship to be furnished under the contract are hereby incorporated into the beginning of the specifications and in the contract between owner and contractor. All specifications are per owner and shall not be deviated from or substituted for without written authorization from owner. Any and all substitutions must be submitted to owner in writing with specifications and samples (if required). With original bid and on date that bid is due. Without written approval from owner any bid that is late, incomplete or does not include required samples will be disqualified.

CONTRACT

All things that contained in and or referred to in the specifications, drawings, proposals, designated exhibits, and bond (if required), and also any and all supplemental agreements which could reasonably be required to complete the construction contemplated shall be considered integral parts of the contract for construction.

PERIOD OF CONSTRUCTION

The time up to the time the contractor can turn over the building to the owner for operation and the use it is intended for, from the time the work has started or contract was signed, whichever is agreed to by owner and owner's contractor.

CONSTRUCTION DOCUMENTS / CONTRACT DOCUMENTS

All items mentioned under "contract" definition above, but not limited to specifications, construction drawings, any / or all addenda, supplements, bulletin drawings, and other documents as issued by the owner for the complete performance of the work.

SECTION 00 0102 – PROJECT INFORMATION

- This project consists of the following:
  - The demolition of selective existing site and building elements, components, systems, and finishes.
    - 1.1.1. Bidding general contractors must review existing site conditions prior to submission of final bids.
  - The construction of new building elements and site improvements.
- Work includes demolition, providing site preparation, earthwork, and attendant site improvements.
  - Plumbing, heating, ventilating, and air conditioning, and electrical services, systems and equipment will be provided in accordance with the facilities requirements and applicable engineering construction documents.
- Work by owner:
  - Refer to owners provided "Brand Standards Manual" for all applicable owner provided/installed items.
  - Refer to owners provided "FF&E Manual" for all applicable owner provided / installed items.
- Materials supplied by owner / tenant to be installed by contractor:
- Refer to the owner's provided "FF&E Manual" for all applicable owner provided/contractor installed items, including but not limited to the following:
  - Exterior and interior building mounted signage
  - Suspended banners
  - Frame for menu board
  - Vehicle service podiums
  - Rolling waste oil drain pans
  - Magnetic ceiling mounted socket technician tool board
  - Vehicle lifts
  - Tire rotation tool board
  - Miscellaneous supply hoses and drainage piping
  - Stackable oil supply tanks
  - Miscellaneous site and lobby furnishings (bench, coffee bar, chairs, etc.)
  - Interior powered "open" signage
  - Lobby flat screen tv monitor
- Other items as indicated in contract drawing

5.1.16. Other items as indicated in contract drawings

SECTION 00 7200 – GENERAL CONDITIONS

NOTE: In the event of conflicting information, requirements in this section shall be superseded by the owner / contractor agreement. Information enumerated below shall be considered supplementary requirements to the general conditions of the contract for construction.

1. SUMMARY

- The contractor shall limit his use to the premises within contract limits for work and for storage. All construction traffic, parking, and storage shall be restricted to locations approved by the owner.
- The general contractor shall assume full responsibility for the protection and safekeeping of products under this contract stored on the site. The owner will not provide security during the construction period of the project.
- The general contractor shall move any stored products under his control which interfere with operations of the owner or any separate contractor.
- The contractor and / or subcontractor shall furnish all labor, materials, supplies, tools, machinery, transportation, and equipment necessary to construct complete, in the manner hereinafter specified, the complete work as shown by the drawings and as specified and as required by local governing codes not necessarily shown on drawings or in specifications.
- All the work shall be accomplished and furnished in accordance and in conformity with the contract documents. The contractor shall complete the entire work to the satisfaction of the owner at the sum agreed to in the contract for construction.
- The contractor and / or subcontractor is required to examine carefully the proposal, drawings specifications and contract forms, as well as the site of the proposed project. It will be assumed that the contractor has specified; and as to the character, quality and quantities of the work to be performed and materials to be furnished, including increases and decreases; and as required in the specifications. It is mutually agreed that the contractor has made such necessary, and that he is satisfied as to all of the conditions and contingencies that may arise in the performance of the work.
- In any discrepancy between scale and full-size drawings and figured dimensions, the latter in each case shall be followed. Work shown on the drawings and not mentioned in the specifications or in the specifications and not shown on the drawings shall be done as if included in both. Should any actual or apparent inconsistencies or errors be found the contractor shall notify the architect as soon as they are discovered and not proceed with any work pertaining to the inconsistencies or error while such uncertainties exist. The intent of the contract documents is to provide detailed instructions for the construction of the herein described work, which shall be necessary for such construction, and for a complete project as approved by the owner.
- Any error, omission, discrepancy or inconsistency in the contract documents must be called to the attention of the architect prior to commencing work on any item not completely clear. Failure of the contractor to understand intent or the contract documents shall be no excuse for failure to perform the work as approved by the owner / architect. The architect shall be solely responsible for interpretation of all contract documents.

2. COORDINATION

- The contractor shall coordinate the work and scheduling of applicable:
  - Subcontractors. The contractor shall cooperate, and schedule all work as not to conflict or delay the project. The contractor shall as per contract documents and his contract coordinate the project as specified below. Provide a full-time job superintendent.
  - Coordinate and prepare the overall project schedule.
  - Schedule administer all project meetings throughout the progress of the work.
  - Verify with all other contractors that all chases, ducts, openings, lines, fixtures, and equipment has been delay the project.
  - Advise the other contractors of work schedules for all sub-contractors to avoid conflict which might delay the project.
  - Coordinate any required change of temporary facilities, utilities and controls. The scope of the work and schedule of permanent facilities, utilities, and controls will determine if and when this change over is required.
- Each sub-contractor shall fully cooperate with each other and the general contractor during all phases of construction. Each sub-contractor shall be responsible for:
  - Field dimensions existing as well as verification of new dimensions.
  - Field verification of dimensions that require shop drawings.
- Furnish other contractors with one copy of all shop drawings and other required submittals:
  - Coordinate the layout of his work with other contractors.
  - Monitor the progress and sequencing of his work with that of the other contractors.

SECTION 01 1000 – SUMMARY

PART 1 GENERAL

1. PROJECT

- Project name: Strickland Brothers Oil
- Owner's name: NS Real Estate
- Architect's name: Franz Architects
- The project consists of the construction of a new single-story building of approximately 1,725 square feet in between the owner and contractor.

2. CONTRACT DESCRIPTION

- Contract type: A single prime contract based on a stipulated price as described in the contract agreement between the owner and contractor.

3. DESCRIPTION OF WORK

- Scope of construction work is shown on drawings.
  - Plumbing: add new construction.
  - HVAC: add new construction.
  - Electrical power and lighting: add new construction.
  - Fire alarm: not required.
  - Fire protection: sprinkler system is not required.

4. WORK BY OWNER

- Owner will award a contract for supply and installation of telecom, data, and A/V systems.
  - Items noted "NOT IN CONTRACT" will be supplied and installed by owner before substantial completion. Some items include:
    - Movable cabinets
- Furnishings
  - Small equipment
  - Rugs
  - Artwork

5. OWNER OCCUPANCY

- Owner intends to occupy the project upon substantial completion.
- Cooperate with owner to minimize conflict and to facilitate owner's operations.
- Schedule the work to accommodate owner occupancy.
- CONTRACTOR USE OF SITE AND PREMISES
  - Construction Operations: Limited to areas noted on drawings.
  - Arrange use of site and premises to allow:
    - Work by owner
      - 6.2.2 Work by others
    - Provide access to and from site as required by law and by owner:
      - Do not obstruct roadways, sidewalks, or other public ways without permit.
  - Utility outages and shutdown:
    - Prevent accidental disruption of utility services to other adjacent facilities.
- WORK SEQUENCE
  - Coordinate construction schedule and operations with owner

SECTION 01 2300 – ALTERNATES

PART 1 GENERAL

1. Section includes

- Description of alternates
- Acceptance of alternates
  - Alternates quoted on bid forms will be reviewed and accepted or rejected at owner's option. Accepted alternates will be identified in the owner – contractor agreement.
- Coordinate related work and modify surrounding work to integrate the work of each alternate.
- Schedule of alternates
  - Alternate NO.1 – odd / provide smooth surface FRP paneling continuous at interior perimeter of service bays to 8'-0" A.F.F.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

SECTION 01 3000 – ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

1. Submittals for review

- Submit to architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

- Samples will be reviewed only for aesthetic, color, or finish selection and general compliance with the contract document intent.
- After review, provide copies and distribute in accordance with submittal procedures article below and for record documents purposes described in SECTION 01 7800 – CLOSEOUT PROCEDURES.

2. Submittals for information

- Submit for architect's knowledge as contract administrator or for owner. No action will be taken.
  - Submittals for project closeout
- Submit for owners benefit during and after project completion.
  - Number of copies of submittals
- Documents for review (ELECTRONIC FILES): Submit one electronic copy in PDF format; an electronically marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- Documents for review (HARD COPY FILES):
  - Small size sheets, not larger than 8-1/2 x 11 inches (215 x 280 MM): Submit the number of copies that contractor requires, plus two copies that will be retained by architect.
  - Retained samples will not be returned to contractor unless specifically so stated.

5. SUBMITTAL PROCEDURES

- Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- Identify project, contractor, subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- Apply contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and contract documents.
- Provide space for contractor and architect review stamps.
- When revised for resubmission, identify all changes made since previous submission.
- Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- Submittals will not be reviewed by architect until reviewed and stamped by the general contractor.

SECTION 01 3216 – CONSTRUCTION PROGRESS SCHEDULES

- The contractor shall maintain and update the project schedule on a bi-weekly basis throughout the construction period.
- Construction schedule review shall be a designated meeting agenda item at each Owner / Architect / Contractor meeting.
- The general contractor shall prepare and submit estimated construction schedules for the work. Prepare schedules in the form of a horizontal bar chart. Show complete sequence of construction by activity:
  - Site preparation
  - Site utilities
  - Demolition
  - Foundation work
  - Structural framing
  - Subcontractor work
  - Equipment installations
  - Finishing
  - Other critical path and miscellaneous scope as required

SECTION 01 4000 – QUALITY REQUIREMENTS

PART 1 GENERAL

1. SUBMITTALS

- Design data: Submit for architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for owner's information.
- Test reports: After each test/inspection, promptly submit two copies of reports to architect and to contractor.
- Test report submittals are for architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

- Certificates: When specified in individual specification sections, submit certification by the manufacturer and contractor or installation/application subcontractor to architect, in quantities specified for product data.
  - Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- Manufacturer's field reports: Submit reports for architect's benefit as contract administrator or for owner.

- Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
  - REFERENCES AND STANDARDS
    - For products and workmanship specified by reference to a document or documents not included in the project manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
    - Conform to reference standard of date of issue current on date of contract documents, except where a specific date is established by applicable code.
    - Should specified reference standards conflict with contract documents, request clarification from architect before proceeding.
    - Neither the contractual relationships, duties, or responsibilities of the parties in contract nor those of architect shall be altered from the contract documents by mention or inference otherwise in any reference document.
  - PRODUCTS – NOT USED

PART 3 EXECUTION

1. CONTROL OF INSTALLATION

- Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- Comply with manufacturers' instructions conflict with contract documents, request clarification from architect before proceeding.
- Should manufacturers' instructions conflict with contract documents, request clarification from architect before proceeding.
- Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- Have work performed by persons qualified to produce required and specified quality.
- Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

2. DEFECT ASSESSMENT

- Replace work or portions of the work not conforming to specified requirements.
- If, in the opinion of architect, it is not practical to remove and replace the work, architect will direct on appropriate remedy or adjust payment.

SECTION 01 5000 – TEMPORARY FACILITIES AND CONTROLS

- The general contractor shall provide and install all temporary facilities, utilities, and controls as required by the project conditions, including but not limited to:
  - Layout of the work
  - Utilities
  - Protection and barriers
  - Construction aids
  - Field offices and sheds
  - Cleaning

2. STORAGE FACILITIES

- Each contractor shall provide suitable weathertight storage sheds or trailers as required by project conditions. Outdoor storage of materials shall be permitted when such storage is approved by the material manufacturer and will not affect the performance and / or appearance of the material. Refer to SECTION 01 6000 for additional requirements.
- Storage within weathertight and conditioned portions of the completed building is permitted, and shall comply with all OSHA, fire safety, and emergency egress requirements. The weight of stored materials shall not exceed the designed load capacity of the floor system.
- The general contractor shall coordinate all storage activities and shall direct the relocation of all materials that interfere with the progress of the work, create a hazard, or interfere with the owner's use of the site.
  - Each contractor shall coordinate delivery and installation of materials to minimize storage areas and storage period at the site.
- LAYOUT OF WORK
  - The general contractor shall employ a registered surveyor to lay out the building on the site and to locate and fix all site items such as grades, site improvements, and utilities, and shall furnish a certified plan of the work.
  - The General Contractor shall:
    - Contact all pertinent utility companies and arrange for all existing utilities to be located and identified. The depth of all underground services shall be determined and recorded. No demolition, grading, excavation, or new utility installation shall start until all existing utilities are properly identified and located.
    - Be responsible for accuracy of all lines, elevations, and measurements of the building and grading work.
    - Take necessary action to prevent destruction of reference points, pins, and stakes. Relocate disturbed reference points at contractor's expense.

- Exercise proper precaution to verify dimensions and elevations shown on drawings before layout of work.
  - As work progresses, lay out benchmarks and establish exact position of the work as a guide for all trades. Make field measurements to insure that work fits into the work of other trades.

SECTION 01 5100 – TEMPORARY UTILITIES

1. UTILITIES

- The general contractor shall be responsible for coordinating the installation and maintenance of all temporary utilities. All applications, permits, and inspections shall be obtained and paid for prior to installation. Utilities shall be installed and maintained in safe and proper operating condition and shall comply with the local building codes, OSHA, and applicable local utility code requirements. Distribution of utilities shall provide proper working conditions for execution of all portions of the work. The cost of all utilities, fuels, materials, and the cost of all utility installations and maintenance shall be paid for by the general contractor.

2. HEATING AND VENTILATING

- When project conditions require it, the general contractor shall provide thermostatically controlled temporary heating and ventilation prior to permanent enclosure of the structure and use of permanent systems.
  - Provide temporary heating and ventilating as follows:
    - During normal working hours, maintain 50 degrees F.
    - During placing, setting, and curing of concrete, minimum 50 degrees F.

- For ten days prior to placing interior finish material and throughout interior finishing and painting, and until final acceptance of work and occupancy by owner, minimum 70 degrees F.
- The temporary units shall be arranged to bring in sufficient outdoor air and to ventilate the structure and to prevent building up of harmful dusts and fumes and to remove excess moisture. During warm weather, provide an adequate supply of fresh air, when necessary, to properly ventilate moisture, dust, fumes from paint, cements, or adhesives in tightly enclosed areas where natural ventilation will not be sufficient.

- When permanent systems are used for temporary construction use, the mechanical contractor shall assume full responsibility for maintain such equipment, during and after use. Included in maintenance are the following items among others as required:
  - Proper operation and maintenance of the mechanical equipment until acceptance of the project tenant / owner.

- Maintenance of temporary filters in all equipment to prevent accumulation of dust and dirt in coils, housing, and ductwork.
- Prior to final inspection: Replacement of temporary filters, thorough cleaning of coils and other equipment, and all materials and equipment not functioning correctly.

- Use of permanent heating or cooling and ventilating equipment for temporary construction use shall not affect warranty. Warranty shall take effect at the time of project acceptance by tenant / owner.

3. LIGHTING AND POWER

- The electrical contractor shall provide necessary temporary electrical service and temporary wiring and outlets, as required to meet project needs for temporary lighting and power at the start of the project, as work progresses, and until acceptance by tenant.
- Extend temporary service from existing public utility service. Provide meter and extend service with disconnect to central location on site. System shall consist of minimum 200 AMP and 110/220 volt single phase service.
- Remove temporary service, light, and power system when permanent service and systems are available for use. No temporary system shall form a part of the permanent system.

4. CONSTRUCTION AIDS

- Scaffolds and Hoists – Each contractor shall provide, erect, and maintain construction scaffolding and hoisting facilities as required for their work. Remove these items when the work is completed.
- Shoring and Bracing – The general contractor shall provide and install shoring and bracing at new and existing locations as required for public and project safety and proper execution of the work. Remove these items when the work is completed. Coordinate specific project requirements with structural engineering drawings.
  - Cutting and Patching – Each contractor shall provide all chases and opening required to complete installation of their work.
  - Cutting, when necessary, shall be done with such tools and methods to prevent unnecessary damage to surrounding areas or equipment. No cutting shall be done while will, in any way, reduce the strength or engineer. Do not proceed with such operation unless written approval is provided.
  - Removal of new or existing concrete or masonry shall be done by saw-cutting to straight lines and break out area, within cut lines, using a method acceptable to owner / architect.

SECTION 01 6000 – PRODUCT REQUIREMENTS

PART 1 GENERAL – NOT USED

PART 2 PRODUCTS

1. NEW PRODUCTS

- Provide new products unless specifically required or permitted by the contract documents.
- PRODUCT OPTIONS
  - Products described by reference standards or by description only: Use any product meeting those standards or description.
  - Products specified by naming one or more manufacturers: Use a product of one of the manufacturers named and meeting specifications, substitutions will be considered. Allow for a minimum two-week review period for all substitution requests.
  - Products specified by naming one or more manufacturers with a provision for substitutions: Submit a request for substitution for any manufacturer not named for architect/owner approval.

PART 3 EXECUTION

- ARRANGE DELIVERIES OF PRODUCTS IN ACCORDANCE WITH CONSTRUCTION SCHEDULE, COORDINATE TO AVOID CONFLICT WITH WORK AND CONDITIONS AT THE SITE.
  - Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
  - Immediately on delivery, inspect shipments to assure compliance with requirements of contract documents and approved submittals, and that products are properly protected and undamaged.

- Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.
- STORE PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS WITH SEALS AND LABELS INTACT AND LEGIBLE.
  - Store products subject to damage by the elements in weathertight enclosures.
  - Maintain temperature and humidity within the ranges required by manufacturer's instructions.

3. INTERIOR STORAGE:

- Do not store items directly on new concrete slabs. All items stored within the building envelope shall be stored above the slab, on blocking or skids to prevent soiling or staining or damage to the products from standing water or other construction debris.

4. EXTERIOR STORAGE:

- Store fabricated products above the ground, on blocking or skids, to prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
- Store loose granular material in a well-drained area on solid surfaces to prevent mixing with foreign matter.

- HANDLE, INSTALL, CONNECT, CLEAN, CONDITION, AND ADJUST PRODUCTS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

- Should job conditions or specified requirements conflict with manufacturer's instruction, consult with architect for further instructions.
- Do not proceed with work without clear instructions.

- WHEN CONTRACT DOCUMENTS REQUIRED THAT INSTALLATION OF WORK COMPLY WITH MANUFACTURER'S PRINTED INSTRUCTIONS, OBTAIN AND MAINTAIN ONE SET OF INSTRUCTIONS AT THE JOB SITE.

- Provide substantial coverings as necessary to protect installed products from damage, traffic, and subsequent construction operations. Remove when no longer needed.

SECTION 01 7000 – EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

- WHEN THE CONTRACTOR CONSIDERS THE WORK IS SUBSTANTIALLY COMPLETED, HE SHALL SUBMIT TO OWNER / ARCHITECT:
  - A written notice that work or designated portion thereof, is substantially complete.
  - A list of items to be completed or corrected.

- OWNER / ARCHITECT WILL MAKE AN INSPECTION TO VERIFY STATUS OF COMPLETION WITH REASONABLE PROMPTNESS AFTER RECEIPT OF SUCH CERTIFICATION. WHEN OWNER / ARCHITECT FINDS THAT THE WORK IS ACCEPTABLE UNDER THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL MAKE THE CLOSE-OUT SUBMITTAL.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

- OPERATION AND MAINTENANCE MANUALS
  - Prepare instructions and data by personnel experienced in maintenance and operation of described products.
  - Prepare data in the form of an electronic instructional manual. Submit electronic copies and any printed copies requested by the owner. The printed copies shall comply with the following requirements:

- Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- WARRANTIES AND BONDS
  - Obtain warranties and bonds, executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with owner's permission, leave date of beginning of time of warranty until the date of substantial completion is determined.

3. CLOSE-OUT SUBMITTALS

- Evidence of compliance with requirements of governing authorities

- Certificate of occupancy
- Certificates of inspection (mechanical / electrical)
- Evidence of payment and release of liens, to requirements of contract documents.
- Certificates of insurance for products and completed operations.

4. FINAL STATEMENT OF ACCOUNTING

- Statement shall reflect all adjustments to the contract sum. statement shall show at a minimum the follow:
  - The original contract sum
  - Additions and deductions resulting from
  - Previous change orders
  - Allowances
  - Unit Prices
  - Deductions for uncorrected work
  - Other adjustments
  - Total contract sum, as adjusted
  - Previous payments
  - Sum remaining due
- If required, the contractor will prepare a final change order for approval by the owner/architect, reflecting approved adjustments to the contract sum which were not previously made by change orders.
  - Submit the final application for payment that reflects the final statement of accounting and / or the final change order adjustments.

SECTION 01 7100 – CLEANING

- Execute site and building cleaning, during progress of the work, and at completion of the work as required by the contract documents. Cleaning activities are restricted to areas disturbed or soiled as a result of construction activities.
- Maintain premises free from accumulations of waste, debris, and rubbish caused by work operations.
  - At completion of work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all sight-exposed surfaces. Leave project clean and ready for occupancy.
- HAZARDS CONTROL
  - Store volatile wastes in covered metal containers and remove from premises daily.
  - Prevent accumulation of wastes which create hazardous conditions.
  - Provide adequate ventilation during use of volatile or noxious substances.
  - Conduct cleaning and disposal operations to comply with state and / or local ordinances and anti-pollution laws.
  - Do not burn or bury any rubbish and waste materials on project site.
  - Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary sewers.
  - Do not dispose of wastes into streams or waterways.

5. MATERIALS

- Use only cleaning methods and materials recommended by manufacturer of surface to be cleaned.

6. CLEANING DURING CONSTRUCTION

- Provide on-site containers for the collection of waste materials, debris, and rubbish.
- Execute cleaning to insure that building and grounds are maintained free
- From accumulations of waste materials and rubbish on a daily basis.
- Wet down dry materials and rubbish to lay dust and prevent blowing dust. At periodic intervals, clean site and legally dispose of waste materials, debris, and rubbish off the site.
- Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly pointed or finished surfaces.
- Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.

7. FINAL CLEANING

- Employ skilled workmen for final cleaning
- Remove greases, majestic, adhesives, dust, dirt, stains, fingermarks, labels, and other foreign materials from sight-exposed interior and exterior surfaces.
- Wash and shine interior and exterior glazing and mirrors.
- Polish glossy surfaces to a clear shine.
- Mop and polish resilient flooring. Vacuum carpeted areas.
- Broom clean exterior paved surfaces. Rake clean other surfaces of the ground.
- Prior to final completion or occupancy by owner, conduct an inspection of sight-exposed interior and exterior surfaces, and all work areas, to verify that the entire work area is clean.



SECTION 02 4100 – DEMOLITION

PART 1 GENERAL

1. SUBMITTALS

- 1.1. Demolition plan: Submit demolition plan as specified by OSHA and local authorities as required for existing site conditions and structures.
- 1.2. Project record documents: Accurately record actual locations of capped and active utilities and subsurface construction.
- 1.3. Quality assurance
- 1.4. Demolition firm qualifications: Company specializing in the type of work required.

PART 2 PRODUCTS

1. MATERIALS

- 1.1. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
  - 1.1.1. Obtain required permits.
  - 1.1.2. Comply with applicable requirements of NFPA 241.
  - 1.1.3. Use of explosives is not permitted.
  - 1.1.4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
  - 1.1.5. Provide, erect, and maintain temporary barriers and security devices.
- 1.2. Do not begin removal until ball elements to be salvaged or relocated have been removed.
- 1.3. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding sedimentation of public waterways or storm sewers, or other pollution.
- 1.4. If hazardous materials are discovered during removal operations, stop work and notify architect and owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.
- 1.5. Hazardous materials; Comply with 29 CFR 1926 and state and local regulations.
- 1.6. Perform demolition in a manner that maximizes salvage and recycling of materials.

2. EXISTING UTILITIES

- 2.1. Coordinate work with utility companies; notify before starting work and comply with their requirements, obtain required permits
- 2.2. Protect existing utilities to remain from damage.

3. SELECTIVE DEMOLITION FOR ALTERATIONS

- 3.1. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only. Verify all conditions and dimensions in field. Report any discrepancies affecting the scope of work to the architect immediately.
- 3.2. Maintain waterproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- 3.3. Remove existing work as indicated and as required to accomplish new work.
- 3.4. Services (including but not limited to HVAC, plumbing, fire protection, electrical, and telecommunications): remove existing systems and equipment as indicated.
- 3.5. Protect existing work to remain.

4. DEBRIS AND WASTE REMOVAL

- 4.1. Remove debris, junk, and trash from site

SECTION 03 3000 – CAST-IN-PLACE CONCRETE

PART 1 GENERAL

Requirements of structural documents shall supercede requirements listed below wherever a conflict occurs.

PART 2 PRODUCTS

1. FORMWORK

- 1.1. Formwork design and construction: comply with guidelines of ACI 347 to provide formwork that will produce concrete complying with tolerances of ACI 117.
- 1.2. Form materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
2. REINFORCEMENT
- 2.1. Steel welded wire reinforcement: ASTM A 185/A 185M, plain type.
3. CONCRETE MATERIALS
- 3.1. Cement: ASTM C 150, Type I – normal Portland type.
- 3.2. Fine and coarse aggregates: ASTM C 33.
- 3.3. Lightweight aggregate: ASTM C 330.
- 3.4. Water: Clean and not detrimental to concrete
- 3.5. Fiber reinforcement: Synthetic fiber shown to have long-term resistance to deterioration when exposed to moisture and alkalis; ½ inch (12mm) length.

4. ACCESSORY MATERIALS

- 4.1. Under slab vapor retarder: Class "A" vapor retarder, 10 mil min. thickness, "STEGO" or equal. Taped seams with manufacturer approved product. Suitable for installation in contact with soil or granular fill under concrete slabs.
- 4.2. Non-shrink cementitious grout: ASTM C 1107/C 1107M; premixed compound consisting of non-metallic drawings for additional information.

5. CONCRETE MIX DESIGN

- 5.1. Proportioning normal weight concrete: comply with ACI 211.1 recommendations.
  - 5.1.1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.
- 5.2. Proportioning structural lightweight concrete: comply with ACI 211.2 recommendations.
  - 5.2.1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.
- 5.3. Concrete strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
- 5.4. Normal weight concrete:
  - 5.4.1. Compressive strength, when tested in accordance with ASTM C 39/C 39M at 28 days; refer to structural drawings.

5.5. Structural lightweight concrete

- 5.6. Compressive strength, when tested in accordance with ASTM C 39/C 39M at 28 days; refer to structural drawings

PART 3 EXECUTION

1. PLACING CONCRETE

- 1.1. Place concrete in accordance with ACI 304R.
- 1.2. Place concrete for floor slabs in accordance with ACI 302.1R.

SECTION 03 3500 – CONCRETE FINISHING

PART 1 GENERAL

1. SUMMARY

- 1.1. Section includes:
- 1.2. Single application cure-seal-hardener for new concrete floors.

- 1.3. Related section:
  - 1.3.1. Precautions for avoiding staining concrete before and after application

- 1.4. SUBMITTALS
  - 1.4.1. Product data: Submit product data, including manufacturer's spec-data sheet, installation instructions and technical bulletins for specified products.
  - 1.4.2. Certificates: Manufacturer's certification that the installer is acceptable.
  - 1.4.3. Maintenance data: Maintenance instructions, including precautions
  - 1.4.4. Avoiding staining after application.

- 1.5. QUALITY ASSURANCE
  - 1.5.1. Installer qualifications: Acceptable to the manufacturer.

PART 2 PRODUCTS

1. MATERIAL

- 1.1. Cure-seal-hardener: Ashford formula, a water-based chemically reactive penetrating sealer and hardener that seals by densifying concrete so that water molecules cannot pass through but air and water vapor can, and allows concrete to achieve full compressive strength, minimizing surface crazing and eliminating dusting.
  - 1.1.1. Abrasion resistance to revolving disks: At least a 32.5% improvement over untreated samples when tested in accordance with ASTM C279.
  - 1.1.2. Surface adhesions: At least a 22% increase in adhesion for epoxy when tested in accordance with ASTM D3359.
  - 1.1.3. Hardening: As follows when tested in accordance with ASTM C39:
    - 1.1.3.1. After 7 days: An increase of at least 40% over untreated samples.
    - 1.1.3.2. After 28 days: An increase of at least 38% over untreated samples.
  - 1.1.4. Coefficient of friction: 0.86 dry, 0.69 wet when tested in accordance with ASTM C1028.
  - 1.1.5. Rebound number: An increase of at least 13.3% over untreated samples when tested in accordance with ASTM C805.
  - 1.1.6. Light exposure degradation: No evidence of adverse effects on treated samples when tested in accordance with ASTM G23.

PART 3 EXECUTION

1. MANUFACTURER'S INSTRUCTIONS

- 1.1. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog, installation instructions and product carton instructions for installation.
2. EXAMINATION
- 2.1. Do not begin installation until substrates have been properly prepared and are suitable for application of product.
- 2.2. If substrate preparation is the responsibility of another installer, notify architect of

unsatisfactory preparation before proceeding.

3. PREPARATION

- 3.1. Clean surfaces thoroughly prior to installation.
- 3.2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
  - 3.3. Do not use frozen material. Thaw and stabilize prior to use.
  - 3.4. If construction equipment must be used for application, diaper all components that might drip oil, hydraulic fluid or other liquids.
4. INSTALLATION
- 4.1. All work must be performed by an applicator certified by the manufacturer. Certification credentials are required.
- 4.2. New concrete: Apply cure-seal-hardener to new concrete as soon as the concrete is firm enough to work on after troweling; with colored concrete, wait a minimum of 30 days before application.
  - 4.2.1. Spray on at rate of 200 FT2/GAL (5M2/L).
  - 4.2.2. Keep surface wet with cure-seal-hardener for a minimum soak-in period of 30 minutes without allowing to dry out or become slippery. In hot weather, slipperiness may appear before the 30 minutes without allowing elapsed. If that occurs, apply additional cure-seal-hardener as needed to keep the entire surface in a non-slippery state for the first 15 minutes. For the remaining 15 minutes, mist the surface as needed with water to keep the material in a non-slippery state. In hot weather conditions, follow manufacturer's special application procedures.
  - 4.2.3. When the treated surface becomes slippery after this period, lightly mist with water until slipperiness disappears.
  - 4.2.4. Wait for surface to become slippery again, and then flush entire surface with water to remove all cure-seal-hardener residue.
  - 4.2.5. Squeegee surface to become slippery again, and then flush entire surface with water to remove all cure-seal-hardener residue.
  - 4.2.6. Wet vacuum or scrubbing machines can be used in accordance with manufacturer's instructions to remove residue.

5. PROTECTION

- 5.1. Protect installed floors for at least 3 months until chemical reaction
- 5.2. Process is complete.
  - 5.2.1. Do not allow traffic on floors for 3 hours after application.
  - 5.2.2. Do not allow parking of vehicles on slab, place drop cloths under vehicles during entire time parked.
  - 5.2.3. If vehicles must be temporarily parked on slab, place drop cloths under vehicles during entire time parked.
  - 5.2.4. Do not allow pipe cutting using pipe cutting machinery on concrete slab.
  - 5.2.5. Do not allow temporary placement and storage of steel members on concrete slabs.
  - 5.2.6. Clean up spills immediately and spot-treat stains with degreaser or oil emulsifier.
  - 5.2.7. Clean floor regularly in accordance with manufacturer's recommendations.

- 5.3. Fabrication
  - 5.3.1. Fit and shop assemble items in largest practical sections, for delivery to site.
  - 5.3.2. Fabricate items with joints tightly fitted and secured.
4. FINISHES – STEEL
- 4.1. Prime paint all steel items.
5. FINISHES– ALUMINUM
- 5.1. Exterior aluminum surfaces: As indicated on contract drawings.
- 5.2. Interior aluminum surfaces: Class I natural anodized.
- 5.3. Formed aluminum: Items noted in contract drawings as formed aluminum shall be of sufficient gauge to hold indicated forms and dimensions without oil canning or deformations. All required fasteners shall be concealed from view.
- 2.6. Bolts, nuts, and washers: Stainless steel.
- 2.5. Welding materials: AWS D1.2/D1.2M, type required for materials being welded.
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- 2.1. Extruded aluminum: ASTM B 221 (ASTM B 221M), 6063 Alloy, T6 Temper.
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- 2.6. Welding materials: AWS D1.2/D1.2M, type required for materials being welded.

2. MATERIALS – ALUMINUM
- 2.1. Extruded aluminum: ASTM B 221 (ASTM B 221M), 6063 Alloy, T6 Temper.
- 2.2. Sheet aluminum: ASTM B 209 (ASTM B 209M), 5052 Alloy, H32 or H22 Temper.
- 2.3. Aluminum-Alloy drawn seamless tubes: ASTM B 210 (ASTM B 210M), 6063 Alloy, T6 Temper.
- 2.4. Formed aluminum: Items noted in contract drawings as formed aluminum shall be of sufficient gauge to hold indicated forms and dimensions without oil canning or deformations. All required fasteners shall be concealed from view.
- 2.5. Bolts, nuts, and washers: Stainless steel.
- 2.6. Welding materials: AWS D1.2/D1.2M, type required for materials being welded.

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- 2.5. Bolts, nuts, and washers: Stainless steel.
- 2.6. Welding materials: AWS D1.2/D1.2M, type required for materials being welded.

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- 2.1. Extruded aluminum: ASTM B 221 (ASTM B 221M), 6063 Alloy, T6 Temper.
- 2.2. Sheet aluminum: ASTM B 209 (ASTM B



SECTION 07 6200 – SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

\*Contractor shall provide single source responsibility for all building waterproofing components. One contract shall be responsible for coordination/installation of all components affecting building water / or barrier.

PART 2 PRODUCTS

1. SHEET MATERIALS

- 1.1. Provide material as appropriate for system and location related to adjacent materials and finishes:
  - 1.1.1. Galvanized steel: ASTM A 653/A 653M, with G90/Z275 zinc coating; minimum 0.02 inch (0.6 MM) thick base metal.
  - 1.1.2. Pre-finished galvanized steel: ASTM A 653/A 653M, with F90/Z275 zinc coating; minimum 0.02 inch (0.6 MM) thick base metal, shop pre-coated with PVDF coating.
  - 1.1.3. Aluminum: ASTM B 209 (ASTM B 209M); 0.032 INCH (0.8 MM) thick; anodized finish of color as selected.
  - 1.1.4. Pre-finished aluminum: ASTM B 209 (ASTM B 209M); 0.032 inch (0.8 MM) thick; plain finish shop pre-coated with modified silicone coating.
  - 1.1.5. Lead: ASTM B 749, 2.5lb/sq ft (0.99MM) thick.
  - 1.1.6. Stainless steel: ASTM A 666 type 304, soft temper, 0.015 inch (0.4MM) thick; smooth NO.4 finish.
  - 1.1.7. Terne coated steel: 0.015 inch (0.4MM) thick copper bearing carbon steel core material with 0.092lb/sq ft (0.45 kg/sq m) terne alloy coating on both sides of core metal.
  - 1.1.8. Cooper: ASTM B370, cold rolled 16oz/sq ft (0.5 MM) thick; natural finish.
  - 1.1.9. Lead coated copper: ASTM B 101, 24 (7320) ounce-weight of bare copper, hoo (cold-rolled) temper.
  - 1.1.10. Terne coated stainless steel: 0.015 inch (0.4 MM) ASTM A 666 type 304 core material with 0.092lb/sq ft (0.45kg/sq m) terne alloy coating on both sides of core metal.

2. ACCESSORIES

- 2.1. Fasteners: Galvanized steel, with soft neoprene washers.
- 2.2. Underlayment: ASTM D 226, organic roofing felt, type 1 (NO. 15).
- 2.3. Slip sheet: Rosin sized building paper.
3. FABRICATION
  - 3.1. Form sections true to shape, accurate in size, square, and free from distortion or defects.
  - 3.2. Form pieces in longest possible lengths.
  - 3.3. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
4. CUTTER AND DOWNSPOUT FABRICATION
  - 4.1. Gutters: SMACNA architectural sheet metal manual, rectangular profile.
  - 4.2. Downspouts: Rectangular profile.
  - 4.3. Gutters and downspouts: Size for rainfall intensity determined by a storm occurrence of 1 in 5 years in accordance with SMACNA architectural sheet metal manual. Size as indicated on contract drawings.

SECTION 07 9005 – JOINT SEALERS

PART 1 GENERAL

PART 2 PRODUCTS

1. SEALANTS

- 1.1. Sealants and primers – General: Provide only products having lower volatile organic compound (VOC) content than required by south coast air quality management district rule NO.1168.
- 1.2. General purpose exterior sealant: Polyurethane; ASTM C 920, grade NS, class 25, uses M, G, and A; single component.
- 1.3. Exterior expansion joint sealant: ASTM D 2628, hollow neoprene (polychloroprene) compression gasket.
- 1.4. Exterior metal lap joint sealant: Butyl or polysobutylene, noncuring, nonskinning, noncuring.
- 1.5. General purpose interior sealant: Acrylic emulsion latex; ASTM C 834, type DP, grade NF single component, paintable.
- 1.6. Bathtub/Tile sealant: White silicone; ASTM C 920, uses I, M, and A; single component, mildew resistant.
- 1.7. Acoustical sealant for concealed locations; Permanently tacky non-hardening butyl sealant.
- 1.8. Interior floor joint sealant: Polyurethane, self-leveling; ASTM C 920, grade F, class 25, uses T, M, and A; single component.
- 1.9. Concrete paving joint sealant: Polyurethane, self-leveling; ASTM C 920, class 25, uses T, I, M, and A; single component.
- 1.10. Silicone sealant: ASTM C 920, grade NS, class 25, uses NT, A, G, M, O; single component, solvent curing, non-sagging, non-staining, fungus resistant, non-bleeding.

2. ACCESSORIES

- 2.1. Joint backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
- 2.2. Bond breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.
- PART 3 EXECUTION
  1. INSTALLATION
    - 1.1. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
    - 1.2. Perform installation in accordance with ASTM C 1193.
    - 1.3. Perform acoustical sealant application work in accordance with ASTM C 919.
    - 1.4. Tool joints concave.
    - 1.5. Precompressed foam sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to ¼ inch (3 to 6 MM) below adjoining surface.
    - 1.6. Compression gaskets: Avoid joints except at ends, corners, and intersections; seal all joints with adhesive; install with face 1/8 to ¼ inch (3 to 6 MM) below adjoining surface.

SECTION 08 1113 – HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

PART 2 PRODUCTS

1. DOORS AND FRAMES

- 1.1. Requirements for all doors and frames:
- 1.2. Accessibility: Comply with ANSI/ICC A117.1.
- 1.3. Door texture: Smooth faces.
- 1.4. Hardware preparation: In accordance with BHMA A156.115, with reinforcement welded in place, in addition to other requirements specified in door and frame standard.
- 1.5. Galvanizing for units in wet areas: All components hot-dipped zinc-iron alloy-coated (Galvannealed), manufacturer's standard coating thickness.
- 1.6. Finish: Factory primed, for field finishing.

2. STEEL DOORS

- 2.1. Exterior doors type:
  - 2.1.1. Grade: ANSI A250.8 level 3, physical performance level A, model 2, seamless.
  - 2.1.2. Core: Polystyrene foam.
  - 2.1.3. Galvanizing: All components hot-dipped zinc-iron alloy-coated (Galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
  - 2.1.4. Texture: Smooth faces.
  - 2.1.5. Insulating value: U-value of 0.50, when tested in accordance with ASTM C 1363.
  - 2.1.6. Weatherstripping: Separate, see section 08 7100.
- 2.2. Interior doors, non-fire-rated:
  - 2.2.1. Grade: ANSI A250.8 level 1, physical performance level C, model 1, full flush.
  - 2.2.2. Core: Cardboard honeycomb typical; provide polystyrene insulated core at locations indicated.
  - 2.2.3. Thickness: 1–3/4 inches (44 MM).
  - 2.2.4. Texture: Smooth faces.
  - 2.2.5. Finish: Factory primed, for field finishing.
- 2.3. Panels: Same construction, performance, and finish as doors.

3. STEEL FRAMES

- 3.1. General:
  - 3.1.1. Comply with the requirements of grade specified for corresponding door.
  - 3.1.2. Frames for wood doors: Comply with frame requirements specified in ANSI A250.8 for level 1, 18 gage.
  - 3.1.3. Frames for sound-rated wood doors: Comply with frame requirements specified in ANSI A250.8 for level 1, 18 gage.
- 3.2. Exterior door frames: Face welded, seamless with joints filed.
- 3.2.1. Galvanizing: All components hot-dipped zinc-iron alloy-coated (Galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
- 3.2.2. Finish: Factory primed, for field finishing.
- 3.3. Interior door frames, non-fire-rated: Face welded, seamless with joints filed.
- 3.3.1. Terminated stops: Provide at all interior doors; closed end stop terminated 6 inches (150 MM) above floor at 45 degree angle.
- 3.3.2. Finish: Factory primed, for field finishing.

4. ACCESSORY MATERIALS

- 4.1. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.

5. FINISH MATERIALS

- 5.1. Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.

PART 3 EXECUTION

1. INSTALLATION

- 1.1. Install in accordance with the requirements of the specified door grade standard and NAAMM HMA 840.
- 1.2. Coordinate frame anchor placement with wall construction.

SECTION 08 3600 – SECTIONAL DOORS

PART 1 GENERAL

1. WARRANTY

- 1.1. Correct defective work within a five-year period after date of substantial completion.

PART 2 PRODUCTS

Basic of design product: Model 903 sectional aluminum extrusion full view door by clcopy commercial doors or equal.

1. DOOR CONSTRUCTION:

- 1.1. Panel sections: 2–1/8 inches (54 MM) thick extruded 6053–T5 aluminum, with integral reinforcing fin. Enclosed top and bottom rails 3–1/2 inches (89 MM) wide, meeting rails 2–13/16 inch (71.4 MM) wide, and end stiles 1–1/2 inches (89 MM) wide, with meeting rails meeting to form a tongue-and-groove joint and bottom rail configured to retain u-shaped flexible PVC astragal. Glazing and solid panels installed and sealed with BUTYL tape and locking retainer.
  - 1.1.1. Door size: As indicated on contract drawings
  - 1.1.2. Windows: Full-view aluminum sections, pre-painted to match door finish.
  - 1.1.3. Glazing: 1/8" (3 MM) tempered sheet glass glazing; tint to match building glazing.

2. ALUMINUM FINISH: Clear Anodized.

3. LOCKING: Inside spring-loaded slide bolt lock on end stile that engages slot in track.
- 3.1. Provide two inside slide locks.

4. WEATHERSTRIPPING: Provide complete perimeter seals. Provide flexible top seal, flexible jamb seal and u-shaped bottom seal.

5. TRACKS: Vertical tracks minimum 0.061 inch (1.55 MM) galvanized steel tapered and mounted for wedge type closing. Horizontal tracks minimum 0.075 inch (1.91 MM) galvanized steel, reinforced with minimum 0.089 inch (2.28 MM) galvanized steel angles as required/
  - Track width: As recommended by manufacturer for door specified.
- 5.2. Provide standard lift tracks with 15 inch (381 MM) radius track as indicated.
6. Spring counterbalance: Torsion spring counterbalance mechanism sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of die cast aluminum with high strength
- 6.1. High cycle spring: 100,000 cycles.
  7. Operation: Manual
  8. Door panels: Flush steel construction; 24 gauge minimum; insulated.
  9. Window frame: Manufacturers standard, finish to match.
  10. Glazing: Annealed float glass; insulated; tinted; 1 inch (25.4 MM) thick.

PART 3 EXECUTION

1. EXAMINATION

- 1.1. Examine wall and overhead areas, including opening framing and blocking, with installer present, for compliance with requirements for installation tolerances, clearances, and other conditions affecting performance of work in this section.
  - 1.1.1. Proceed with installation only after unsatisfactory conditions have been corrected.
  - 1.1.2. If substrate preparation is the responsibility of another installer, notify architect of unsatisfactory preparation before proceeding.
- 1.2. Preparation
  - 1.2.1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- 1.3. Installation
  - 1.3.1. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions.
- 1.4. Protection
  - 1.4.1. Protect installed products until completion of project.
  - 1.4.2. Touch-up, repair or replace damaged products before substantial completion.

SECTION 08 4313 – ALUMINUM FRAMED STOREFRONTS

PART 1 GENERAL

PART 2 PRODUCTS

1. STOREFRONT

- 1.1. Aluminum-framed storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashing, anchorage and attachment devices.
  - 1.1.1. Utilized, shop assembly.
  - 1.1.2. Glazing rabbet: For 1 inch (25 MM) insulating glazing at exterior applications, ¼" glazing at interior locations.
  - 1.1.3. Glazing position: Centered (interior storefront), offset front (exterior locations).
  - 1.1.4. Vertical mullion dimensions: As indicated on drawings.
  - 1.1.5. Overall u-value including glazing: 0.40 maximum.
  - 1.1.6. Finish: Clear anodized
  - 1.1.7. Basis of design: Exterior storefront: YKK AP America Inc; yes 45TU center set thermally broken system.
2. COMPONENTS
  - 2.1. Doors: Glazed aluminum, medium stile entrance doors.
    - 2.1.1. Thickness: 1–3/4 inches (43 MM).
    - 2.1.2. Top rail: 4 ½ inches (115 MM) wide.
    - 2.1.3. Vertical stiles: 4 inches (100 MM) wide.
    - 2.1.4. Bottom rail: 10 inches (200 MM) wide.
    - 2.1.5. Finish: Same as storefront.
    - 2.1.6. Basis of design: YKK AP America Inc; megatherm 35XT medium stile.
3. FABRICATION
  - 3.1. Fabricate components with minimum clearances and shim spacing around perimeter of assembly yet enabling installation and dynamic movement of perimeter seal.
  - 3.2. Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
  - 3.3. Reinforce framing members for imposed loads.
  - 3.4. Finishing: Apply factory finish to all surfaces that will be exposed in completed assemblies.

PART 3 EXECUTION

1. INSTALLATION

- 1.1. Install wall system in accordance with manufacturer's instructions.
- 1.2. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- 1.3. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- 1.4. Structural adhesive glazing: Install glazing adhesive and weatherseal sealant in accordance with adhesive manufacturer's instructions.

SECTION 08 7100 – DOOR HARDWARE

PART 1 GENERAL

1. SECTION INCLUDES

- 1.1. Work under this section includes furnishing and the installation of finish and security hardware specified herein and noted on drawings for a complete and operational system, items include, but are not limited to:

- 1.1.1. Hinges/continuous hinges
- 1.1.2. Locksets and cylinders
- 1.1.3. Closers/ADA operators
- 1.1.4. Kick, mop and protection plates
- 1.1.5. Stops, wall bumpers, overhead controls
- 1.1.6. Thresholds, gasketing and door bottoms
- 1.1.7. Miscellaneous trim and accessories

2. REFERENCES

- 2.1. The following references are used in this section.
  - 2.1.1. NFPA 80– standard for fire doors, 2007.
  - 2.1.2. Installation guide for doors and hardware, DHI, 1984.
  - 2.1.3. ANSI / BHMA A156.18, materials and finishes, 2006.

3. GENERAL REQUIREMENTS

- 3.1. Provide items, articles, materials, operations and methods listed, mentioned or scheduled herein or on drawings, in quantities as required to complete project. Provide hardware that functions properly. Prior to furnishing hardware, advise architect of items that will not operate properly, are improper for conditions, or will not remain permanently anchored.

4. SUBMITTALS

- 4.1. Hardware schedule: Submit as illustrated by the sequence of format for the hardware schedule as published by the door and hardware institute. Schedule which do not comply will be returned for correction before checking.
- 4.2. Installation instructions: Provide manufacturer's written installation and adjustment instructions for finish hardware. Send installation instructions to site with hardware.
- 4.3. Templates: Submit templates and "Reviewed hardware schedule" to door and frame supplier and others as applicable to enable proper and accurate sizing and locations of cutouts and reinforcing.
5. QUALITY ASSURANCE

- 5.1. Manufacturer: Obtain each type of hardware (i.e. Latch and locksets, hinges, closers) from single manufacturer, although several may be indicated as offering products complying with requirements.

6. DELIVERY, STORAGE AND HANDLING

- 6.1. Packaging of door hardware is the responsibility of the supplier. As material is received by the hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set numbers to match the set numbers of the approved hardware schedule. Two or more identical sets may be packed in the same container.
- 6.2. The general contractor shall provide a secure lock-up for the door hardware and security equipment delivered to the project, but not yet installed. Control handling and installation of the hardware items that are not immediately replaceable, so that completion of the wall will not be delayed by hardware losses, both before and after installation.

7. WARRANTY

- 7.1. All materials must be warranted against defects in workmanship and materials for a period of one (1) year from date of acceptance of this project, unless otherwise noted. Any evidence of misuse or abuse voids all warranties. These warranties shall be each manufacturers' standard written warranty.

7.2. Special warranties:

- 7.2.1. Door closers: Thirty (30) year period.
- 7.2.2. Saddle thresholds, bumper thresholds, door sweeps, self-adhesive gasketing, perimeter seals, astragal seals, self-adhesive astragal gasketing, mullion seals, interlocking seals, and drip strips: Five (5) year period.
- 7.3. Any manufacturer whose standard written warranty does not equal or exceed the requirements listed above must provide a letter stating that they will extend their warranty to comply with the requirements of this specification.

8. MAINTENANCE

- 8.1. Maintenance tools and instructions: General contractor shall furnish a complete set of specialized tools and maintenance instructions as needed for the owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 PRODUCTS

1. DOOR HARDWARE – GENERAL

- 1.1. Reference door schedule for locking and additional specific hardware requirements
- 1.2. Provide all hardware specified or required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.
- 1.3. Provide products that comply with the following:
  - 1.3.1. Applicable provisions of federal, state, and local codes.
- 1.4. Finishes: All door hardware the same finish unless otherwise indicated.
  - 1.4.1. Primary finish: Satin chrome plated over nickel on brass or bronze, 626 (APPROX US260)
  - 1.4.2. Secondary finish: Satin chrome plated over nickel on brass or bronze, 626 (APPROX US260).

2. BUTTS AND HINGES

2.1. Application:

- 2.1.1. Provide NRP (Non-removable pins) at out-swinging lockable doors.
- 2.2. Quantity:
  - 2.2.1. Two hinges per leaf for openings through 60 inches high.
  - 2.2.2. One additional hinge per leaf for each additional 30 inches in height or fraction thereof.

3. LOCKSETS – CYLINDRICAL – GRADE 2

- 3.1. Provide lock functions specified in hardware groups, with following provisions:
  - 3.1.1. Cylinders: Refer to "Keying" article, herein.
  - 3.1.2. Locks shall meet UL A label; to have a minimum listing for single doors 4"x8".
  - 3.1.3. Levers shall be Bi-Directional.
  - 3.1.4. Levers shall be solid. Manufacturers utilizing lever fillers are not acceptable.
  - 3.1.5. Furnish "Knurler" or "Tactile" outside levers as indicated in the door hardware sets. "Abrasive" outside levers shall not be acceptable.
  - 3.1.6. Lockset adjustment plate shall be threaded for door thickness adjustment for doors 1 5/8" to 2 1/8" thickness. The adjustment plate shall have visual chassis marking for doors 1 ½" thick.
  - 3.1.7. Locks shall have field reversible handing.
  - 3.1.8. Latchbolt to be steel with minimum ½" throw latch.
  - 3.1.9. Strikes shall have curved fil of sufficient length to clear trim.

4. KEYING

- 4.1. Master key or grand master key cylinders and key in groups, unless otherwise specified.
- 4.2. Provide 6 master keys for each master key set.
- 4.3. Submit proposed keying schedule to architect. If requested, meet with owner and architect to review schedule.

5. DOOR TRIM

- 5.1. Kick plates and armor plates: minimum of 0.050 inch thick, beveled 4 edges.
  - 5.1.1. At single doors provide width two inches less than door width on stop side and one inch less than door width on pull side.
  - 5.1.2. Height of 10 inches, unless otherwise indicated.
  - 5.1.3. Provide plates with countersunk screw holes.

6. DOOR CLOSERS – ALUMINUM

- 6.1. Medium bore exposed closers:
  - 6.1.1. Provide door closers conforming to ANSI/BHMA A156.4 grade 1 requirements by BHMA certified independent testing laboratory.
  - 6.1.2. Provide door closers with fully hydraulic, full rack and pinion action with cast aluminum cylinder.
  - 6.1.3. Cylinder body: 1–1/4 inch (32 MM) diameter, with 5/8 inch (16 MM) diameter heat-treated pinion journal and full complement bearings.
  - 6.1.4. Hydraulic fluid: Fireproof, passing requirements of UL100, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to –30 degrees F.
  - 6.1.5. Spring power: Continuously adjustable over full range of closer sizes and providing reduced opening for as required by accessibility codes and standards.
  - 6.1.6. Hydraulic regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed general speed, and back check.
  - 6.1.7. Pressure relief valve (PRV) technology: Not permitted.
  - 6.1.8. Provide stick on and special templates, drop plates, mounting brackets, or adapters for ARMS as required for details, overhead stops, and other door hardware items interfering with closer mounting.

7. OVERHEAD STOPS

- 7.1. Provide overhead stops for interior doors equipped with regular ARM surface type closer for doors that open against equipment, casework, sidelights, other objects that would make wall stops inappropriate.
- 7.2. Provide sex bolt attachments for mineral core door application.

8. WALL STOPS AND HOLDERS

- 8.1. Provide wall stop for each door leaf unless otherwise specified, or where conditions require the use of an overhead.
- 8.2. Floor or base stops shall be used only where definitely specified or absolutely unavoidable.

9. THRESHOLDS

- 9.1. Where thresholds are specified in hardware groups, provide 8655A thresholds on out swinging doors unless detailed otherwise.
- 9.2. Refer to drawings for special details. Provide accessories, shims and fasteners.
- 9.3. Where thresholds occur at openings with one or more mullions, they shall be cut for the mullions and extended continuously for the entire opening.

10. WEATHERSTIPPING

- 10.1. Provide gaskets for 20-minute doors and doors designated for smoke and draft control.
- 10.2. Where sweeps are specified in hardware groups, provide 39A unless detailed otherwise.
- 10.3. Where rain drips are specified in hardware groups, provide 142A x full frame width, unless detailed otherwise.
11. GASKETING
  - 11.1. Provide gaskets for 20-minute doors and doors designated for smoke and draft control.
  - 11.2. Where frame applied intumescent seals are required by the manufacturer, provide gaskets that comply with UBC 7–2 1997 and UL 100 positive pressure tests.

12. SILENCERS

- 12.1. Provide grey rubber silencers featuring pneumatic design that, once installed, forms an air pocket to absorb shock and reduce noise of door closing.
- 12.2. Provide three (3) silencers per hollow metal strike jamb, two (2) per hollow metal double door head. Omit at doors scheduled to receive perimeter weatherstripping or smoke gasket.
- 12.3. Silencers shall meet ANSI/BHMA A156.16, L03011

13. KEY CABINET

- 13.1. Provide cabinet with one hook for each lock or cylinder plus at least 50 percent extra hooks.
- 13.2. Provide each hook with one non-removable security key tag and one snap-on link duplicate key tag.
- 13.3. Provide tools, instruction sheets and accessories required to complete installation.
- 13.4. Owner will place keys in key cabinet and complete index cards furnished with key system.

14. FASTENERS

- 14.1. Including, but not limited to, wood or machine screws, bolts, bolts, nuts, anchors, etc. of proper type, material, and finish required for installation of hardware.
- 14.2. Use Phillips head for exposed screws. Do not use aluminum screws to attach hardware.
- 14.3. Provide self-tapping (TEC) screws for attachment of sweeps and stop-applied weatherstripping only.

15. TYPICAL FINISHES AND MATERIALS

- 15.1. Finishes as indicated on contract drawings.

PART 3 EXECUTION

1. EXAMINATION

- 1.1. Examine doors, frames, and related items for conditions that would prevent the proper application of finish hardware. Do not proceed until defects are corrected.

2. INSTALLATION

- 2.1. Mount hardware units at heights indicated in the following applicable publications, except as specifically indicated or required to comply with governing regulations and, except as otherwise indicated, by the architect.
- 2.2. Recommended locations for builders' hardware for standard steel doors and frames" by the door and hardware institute.
- 2.3. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the division 09 sections. Do not install face-mounted items until finishes have been completed on the substrates involved.
- 2.4. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- 2.5. Where scheduled, door pulls shall be through bolted with bolt heads concealed behind push plates.
- 2.6. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- 2.7. Set thresholds, for exterior and interior doors, in a full bed of BUTYL-rubber or polysobutylene sealed sealant complying with requirements specified in division 07 joint sealers.
- 2.8. Weatherstripping and seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

3. FIELD QUALITY CONTROL

- 3.1. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

4. ADJUSTING AND CLEANING

- 4.1. At final completion, hardware shall be left clean and free from disfigurement. Make final adjustment to door closers and other items of hardware. Where hardware is found defective repair or replace or otherwise correct as directed.
- 4.2. Adjust door closers to meet opening force requirements of uniform federal accessibility standards.
- 4.3. Final adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of space or area, return to work during week prior to acceptance or occupancy, and make final check and adjustment and finish of hardware and doors.
- 4.4. Instruct owner's personnel in proper adjustment and maintenance of door hardware and hardware finishes.
- 4.5. Clean adjacent surfaces soiled by hardware installation.

5. PROTECTION

- 5.1. Provide for proper protection of items of hardware until owner accepts project as complete.

SECTION 08 8000 – GLAZING

PART 1 GENERAL

PART 2 PRODUCTS

1. DESIGN FOR EXTERIOR TINTED GLAZING:

- 1.1. Guardian sunguard industries or equal, SN68 low e coating on gray
  - 1.1.1. U VALUE: .29
  - 1.1.2. SHGC: .25
  - 1.1.3. VLT: 34%

2. BASIS OF DESIGN FOR INTERIOR GLAZING: VARIOUS

- 2.1. Refer to contract drawings and glass schedule for additional glazing types and designations required for interior and other uses.

3. GLASS MATERIALS

- 3.1. Float glass: All glazing is to be float glass unless otherwise indicated.
  - 3.1.1. Annealed type: ASTM C 1036, type I, transparent flat, class 1 clear, quality Q3 (glazing select).
  - 3.1.2. Heat-strengthened and fully tempered types: ASTM C 1048.
  - 3.1.3. Tinted types: Color and performance characteristics as indicated.
  - 3.1.4. Thicknesses: As indicated; for exterior glazing comply with specified requirements for wind load design regardless of specified thickness.
4. SEALED INSULATING GLASS UNITS
  - 4.1. Sealed insulating glass units: Types as indicated.
    - 4.1.1. Locations: Exterior, except as otherwise indicated.
    - 4.1.2. Durability: Certified by an independent testing agency to comply with ASTM E 2190.
    - 4.1.3. Edge spacers: Aluminum, bent and soldered corners.
    - 4.1.4. Edge seal: Glass



2009 ANSI A117.1 for Accessible Design

CHAPTER 3: BUILDING BLOCKS

301 General

301.1 Scope. The provisions of Chapter 3 shall apply where required by Chapter 4 through 11.

301.2 Overlap. Unless otherwise specified, clear floor spaces, clearances of fixtures, maneuvering clearances at doors, and turning spaces shall be permitted to overlap.

302 Floor or Ground Surfaces

302.1 General. Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with 302.

EXCEPTIONS:

1. Within animal containment areas, floor and ground surfaces shall not be required to be stable, firm, and slip resistant.
2. Areas of sport activity shall not be required to comply with 302.

302.2 Carpet. Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be 1/2 inch (13 mm) maximum. Exposed edges of carpet shall be fastened to floor surfaces and shall have trim on the entire length of the exposed edge. Carpet edge trim shall comply with 303.3.

302.3 Openings. Openings in floor or ground surfaces shall not allow passage of a sphere more than 1/2 inch (13 mm) diameter except as allowed in 407.4.3, 409.4.3, 410.4, 810.5.3 and 810.10. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

303 Changes in Level

303.1 General. Where changes in level are permitted in floor or ground surfaces, they shall comply with 303.

EXCEPTIONS:

1. Animal containment areas shall not be required to comply with 303.
2. Areas of sport activity shall not be required to comply with 303.

303.2 Vertical. Changes in level of 1/4 inch (6.4 mm) high maximum shall be permitted to be vertical.

303.3 Beveled. Changes in level between 1/4 inch (6.4 mm) high minimum and 1/2 inch (13 mm) high maximum shall be beveled with a slope not steeper than 1:2.

303.4 Ramps. Changes in level greater than 1/2 inch (13 mm) high shall be ramped, and shall comply with 405 or 406.

304 Turning Space

304.1 General. Turning space shall comply with 304.

304.2 Floor or Ground Surfaces. Floor or ground surfaces of a turning space shall comply with 302. Changes in level are not permitted.

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

304.3 Size. Turning space shall comply with 304.3.1 or 304.3.2.

304.3.1 Circular Space. The turning space shall be a space of 60 inches (1525 mm) diameter minimum. The space shall be permitted to include knee and toe clearance complying with 306.

304.3.2 T-Shaped Space. The turning space shall be a T-shaped space within a 60 inch (1525 mm) square minimum with arms and base 36 inches (915 mm) wide minimum. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction and the base shall be clear of obstructions 24 inches (610 mm) minimum. The space shall be permitted to include knee and toe clearance complying with 306 only at the end of either the base or one arm.

304.4 Door Swing. Doors shall be permitted to swing into turning spaces.

305 Clear Floor or Ground Space

305.1 General. Clear floor or ground space shall comply with 305.

305.2 Floor or Ground Surfaces. Floor or ground surfaces of a clear floor or ground space shall comply with 302. Changes in level are not permitted.

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

305.3 Size. The clear floor or ground space shall be 48 inches (1220 mm) minimum by 30 inches (760 mm) minimum.

305.4 Knee and Toe Clearance. Unless otherwise specified, clear floor or ground space shall be permitted to include knee and toe clearance complying with 306.

305.5 Position. Unless otherwise specified, clear floor or ground space shall be positioned for either forward or parallel approach to an element.

305.6 Approach. One full unobstructed side of the clear floor or ground space shall adjoin an accessible route or adjoin another clear floor or ground space.

305.7 Maneuvering Clearance. Where a clear floor or ground space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with 305.7.1 and 305.7.2.

305.7.1 Forward Approach. Alcoves shall be 60 inches (1525 mm) wide minimum where the depth exceeds 15 inches (380 mm).

305.7.2 Parallel Approach. Alcoves shall be 36 inches (915 mm) wide minimum where the depth exceeds 24 inches (610 mm).

306 Knee and Toe Clearance

306.1 General. Where space beneath an element is included as part of clear floor or ground space or turning space, the space shall comply with 306. Additional space shall not be prohibited beneath an element but shall not be considered as part of the clear floor or ground space or turning space.

306.2 Toe Clearance. Space under an element between the finish floor or ground and 9 inches (230 mm) above the finish floor or ground shall be considered toe clearance and shall comply with 306.2.

306.2.2 Maximum Depth. Toe clearance shall extend 25 inches (635 mm) maximum under an element.

306.2.3 Minimum Required Depth. Where toe clearance is required at an element as part of a clear floor space, the toe clearance shall extend 17 inches (430 mm) minimum under the element.

306.2.4 Additional Clearance. Space extending greater than 6 inches (150 mm) beyond the available knee clearance at 9 inches (230 mm) above the finish floor or ground shall not be considered toe clearance.

306.2.5 Width. Toe clearance shall be 30 inches (760 mm) wide minimum.

306.3 Knee Clearance

306.3.1 General. Space under an element between 9 inches (230 mm) and 27 inches (685 mm) above the finish floor or ground shall be considered knee clearance and shall comply with 306.3.

306.3.2 Maximum Depth. Knee clearance shall extend 25 inches (635 mm) maximum under an element at 9 inches (230 mm) above the finish floor or ground.

306.3.3 Minimum Required Depth. Where knee clearance is required under an element as part of a clear floor space, the knee clearance shall be 11 inches (280 mm) deep minimum at 9 inches (230 mm) above the finish floor or ground, and 8 inches (205 mm) deep minimum at 27 inches (685 mm) above the finish floor or ground.

306.3.4 Clearance Reduction. Between 9 inches (230 mm) and 27 inches (685 mm) above the finish floor or ground, the knee clearance shall be permitted to reduce at a rate of 1 inch (25 mm) in depth for each 6 inches (150 mm) in height.

306.3.5 Width. Knee clearance shall be 30 inches (760 mm) wide minimum.

307 Protruding Objects

307.1 General. Protruding objects shall comply with 307.

307.2 Protrusion Limits. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path.

EXCEPTION: Handrails shall be permitted to protrude 4 1/2 inches (115 mm) maximum.

307.3 Post-Mounted Objects. Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches (305 mm) maximum when located 27 inches (685 mm) minimum and 80 inches (2030 mm) maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the finish floor or ground.

EXCEPTION: The sloping portions of handrails serving stairs and ramps shall not be required to comply with 307.3.

307.4 Vertical Clearance. Vertical clearance shall be 80 inches (2030 mm) high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches (2030 mm) high. The leading edge of such guardrail or barrier shall be located 27 inches (685 mm) maximum above the finish floor or ground.

EXCEPTION: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish floor or ground.

307.5 Required Clear Width. Protruding objects shall not reduce the clear width required for accessible routes.

308 Reach Ranges

308.1 General. Reach ranges shall comply with 308.

308.2 Forward Reach.

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

308.2.2 Obstructed High Forward Reach. Where a high forward reach is over an obstruction, the clear floor space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches (1220 mm) maximum where the reach depth is 20 inches (510 mm) maximum. Where the reach depth exceeds 20 inches (510 mm), the high forward reach shall be 44 inches (1120 mm) maximum and the reach depth shall be 25 inches (635 mm) maximum.

308.3 Side Reach.

308.3.1 Unobstructed. Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches (1220 mm) maximum and the low side reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

EXCEPTIONS:

1. An obstruction shall be permitted between the clear floor or ground space and the element where the depth of the obstruction is 10 inches (255 mm) maximum.
2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

308.3.2 Obstructed High Side Reach. Where a clear floor or ground space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches (865 mm) maximum and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum for a reach depth of 10 inches (255 mm) maximum. Where the reach depth exceeds 10 inches (255 mm), the high side reach shall be 46 inches (1170 mm) maximum for a reach depth of 24 inches (610 mm) maximum.

308.3.2 EXCEPTIONS:

1. The top of washing machines and clothes dryers shall be permitted to be 36 inches (915 mm) maximum above the finish floor.
2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

309 Operable Parts

309.1 General. Operable parts shall comply with 309.

309.2 Clear Floor Space. A clear floor or ground space complying with 305 shall be provided.

309.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in 308.

309.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum.

EXCEPTION: Gas pump nozzles shall not be required to provide operable parts that have an activating force of 5 pounds (22.2 N) maximum.

CHAPTER 4: ACCESSIBLE ROUTES

401 General

401.1 Scope. The provisions of Chapter 4 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

402 Accessible Routes

402.1 General. Accessible routes shall comply with 402.

402.2 Components. Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts. All components of an accessible route shall comply with the applicable requirements of Chapter 4.

402.3 Revolving Doors, Revolving Gates and Turnstiles. Revolving doors, revolving gates and turnstiles shall not be part of an accessible route.

403 Walking Surfaces

403.1 General. Walking surfaces that are a part of an accessible route shall comply with 403.

403.2 Floor or Ground Surface. Floor or ground surfaces shall comply with 302.

403.3 Slope. The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.

403.4 Changes in Level. Changes in level shall comply with 303.

403.5 Clear Width. Except as provided in 403.5.2 and 403.5.3, the clear width of walking surfaces shall be 36 inches (915 mm) minimum.

EXCEPTION: The clear width shall be permitted to be reduced to 32 inches (815 mm) minimum for a length of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum.

403.5.2 Clear Width at Turn. Where the accessible route makes a 180 degree turn around an element which is less than 48 inches (1220 mm) wide, clear width shall be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum at the turn and 42 inches (1065 mm) minimum leaving the turn.

EXCEPTION: Where the clear width at the turn is 60 inches (1525 mm) minimum compliance with 403.5.1 shall not be required.

403.5.3 Passing Spaces. An accessible route with a clear width less than 60 inches (1525 mm) shall provide passing spaces at intervals of 200 feet (61 m).

EXCEPTION: Passing spaces shall be either: a space 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum; or, an intersection of two walking surfaces providing a T-shaped space complying with 304.3.2 where the base and arms of the T-shaped space extend 48 inches (1220 mm) minimum beyond the intersection.

403.6 Handrails. Where handrails are provided along walking surfaces with running slopes not steeper than 1:20 they shall comply with 505.4 through 505.9.

404 Doors, Doorways, and Gates

404.1 General. Doors, doorways, and gates that are part of an accessible route shall comply with 404.

EXCEPTION: Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with 404.2.6, 404.2.7, 404.2.8.

404.2 Manual Doors, Doorways, and Manual Gates. Manual doors and doorways and manual gates intended for foot passage shall comply with 404.2.

404.2.1 Double-Leaf Doors and Gates. At least one of the active leaves of doorways with two leaves shall comply with 404.2.3 and 404.2.4.

404.2.2 Clear Width. Door openings shall provide a clear width of 32 inches (815 mm) minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep shall provide a clear opening of 36 inches (915 mm) minimum. There shall be no projections into the required clear opening with lower than 34 inches (865 mm) above the finish floor or ground. Projections into the clear opening with between 34 inches (865 mm) and 80 inches (2030 mm) above the finish floor or ground shall not exceed 4 inches (100 mm).

EXCEPTIONS: 1. In alterations, a projection of 5/8 inch (16 mm) maximum into the required clear width shall be permitted for the door side stop.

2. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish floor or ground.

404.2.3 Maneuvering Clearances. Minimum maneuvering clearances at doors and gates shall comply with 404.2.3.1. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance.

404.2.3.1 Floor Surface. Floor surface within the maneuvering clearances shall have a slope not steeper than 1:48 and shall comply with Section 302.

404.2.3.2 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.1 Floor Surface. Floor surface within the maneuvering clearances shall have a slope not steeper than 1:48 and shall comply with Section 302.

404.2.3.2.2 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.3 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.4 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.5 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.6 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.7 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.8 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.9 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.10 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.11 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.12 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.13 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.14 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.15 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.16 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.17 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.18 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.19 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.20 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.21 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.22 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.23 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.24 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.25 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.26 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.27 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.28 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.29 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.30 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.31 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.32 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.33 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.34 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.35 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.36 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.37 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.38 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.39 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.40 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.41 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.42 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.43 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.44 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.45 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.46 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.47 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.48 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.49 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.50 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.51 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.52 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.53 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.54 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.55 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.56 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.57 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.58 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.59 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.60 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.61 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.62 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.63 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.64 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.65 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.66 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.67 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.68 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.69 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

404.2.3.2.70 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2. (as illustrated on Figures 404.2.3.2)

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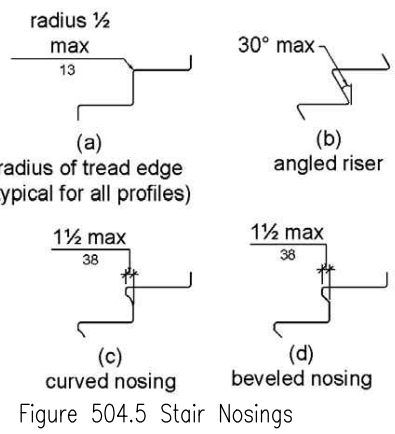
404.2.3.2.118 Swinging



2009 ANSI A117.1 for Accessible Design

CHAPTER 5: GENERAL SITE AND BUILDING ELEMENTS

504 Stairways.  
504.1 General. Stairs shall comply with 504.  
504.2 Treads and Risers. All steps on a flight of stairs shall have uniform riser heights and uniform tread depths. Risers shall be 4 inches (100 mm) high minimum and 7 inches (180 mm) high maximum. Treads shall be 11 inches (280 mm) deep minimum.  
504.3 Open Risers. Open risers are not permitted.  
504.4 Tread Surface. Stair treads shall comply with 302. Changes in level are not permitted.  
EXCEPTION: Treads shall be permitted to have a slope not steeper than 1:48.

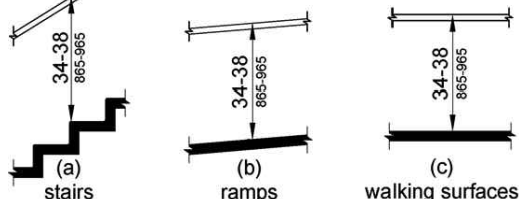


504.5.1 Visual Contrast. The leading 2 inches (51 mm) of the tread shall have visual contrast of dark on-light or light-on-dark from the remainder of the tread.  
504.6 Handrails. Stairs shall have handrails complying with 505.

504.7 Wet Conditions. Stair treads and landings subject to wet conditions shall be designed to prevent the accumulation of water.

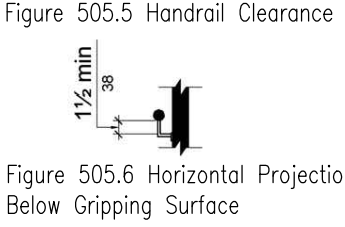
505 Handrails  
505.1 General. Handrails provided along walking surfaces complying with 403, required at ramps complying with 405, and required at stairs complying with 504 shall comply with 505.  
505.2 Where Required. Handrails shall be provided on both sides of stairs and ramps.  
EXCEPTION: In assembly areas, handrails shall not be required on both sides of aisle ramps where a handrail is provided at either side or within the aisle width.

505.3 Continuity. Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs and ramps shall be continuous between flights or runs.  
EXCEPTION: In assembly areas, handrails on ramps shall not be required to be continuous in aisles serving seating.

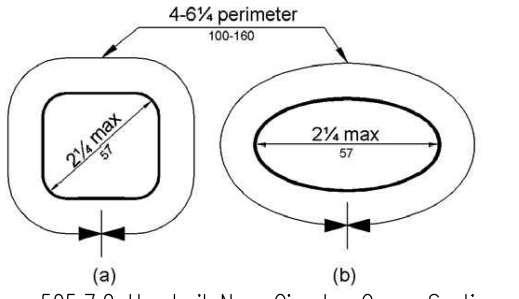


505.5 Clearance. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1 1/2 inches (38 mm) minimum.

505.6 Gripping Surface. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 1 1/2 inches (38 mm) minimum below the bottom of the handrail gripping surface.  
EXCEPTIONS:  
1. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.  
2. The distance between horizontal projections and the bottom of the gripping surface shall be permitted to be reduced by 1/8 inch (3.2 mm) for each 1/2 inch (13 mm) of additional handrail perimeter dimension that exceeds 4 inches (100 mm).

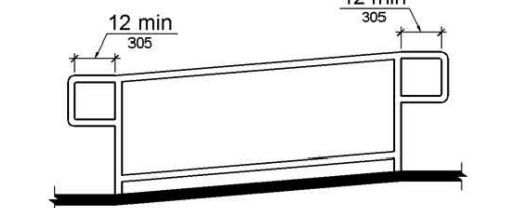


505.7 Cross Section. Handrail gripping surfaces shall have a cross section complying with 505.7.1 or 505.7.2.  
505.7.1 Circular Cross Section. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1 1/4 inches (32 mm) minimum and 2 inches (51 mm) maximum.  
505.7.2 Non-Circular Cross Sections. Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension of 4 inches (100 mm) minimum and 6 1/4 inches (160 mm) maximum, and a cross-section dimension of 2 1/4 inches (57 mm) maximum.

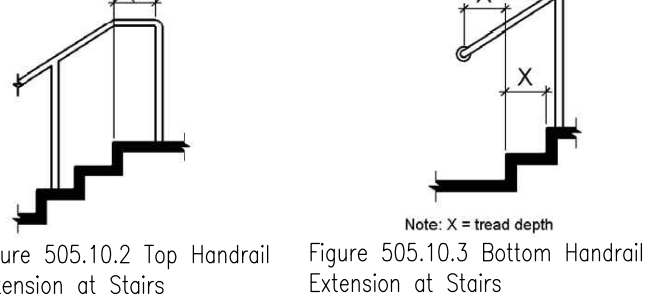


505.8 Surfaces. Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.  
505.9 Fittings. Handrails shall not rotate within their fittings.  
505.10 Handrail Extensions. Handrail gripping surfaces shall extend beyond and in the same direction of stair flights and ramp runs in accordance with 505.10.  
EXCEPTIONS:  
1. Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg stairs and ramps.  
2. In assembly areas, extensions shall not be required for ramp handrails in aisles serving seating where the handrails are discontinuous to provide access to seating and to permit crossovers within aisles.  
3. In alterations, full extensions of handrails shall not be required where such extensions would be hazardous due to plan configuration.

505.10.1 Top and Bottom Extension at Ramps. Ramp handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run.



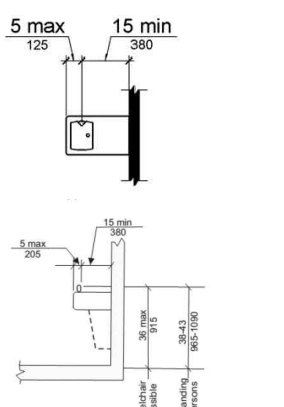
505.10.2 Top Extension at Stairs. At the top of a stair flight, handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beginning directly above the first riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.  
505.10.3 Bottom Extension at Stairs. At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance at least equal to one tread depth beyond the last riser nosing. Extension shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.



CHAPTER 6: PLUMBING ELEMENTS & FACILITIES

601 General  
601.1 Scope. The provisions of Chapter 6 shall apply where required by Chapter 2 or where referenced by a requirement in this document.  
602 Drinking Fountains  
602.1 General. Drinking fountains shall comply with 307 and 602.  
602.2 Clear Floor Space. Units shall have a clear floor or ground space complying with 305 positioned for a forward approach and centered on the unit. Knee and toe clearance complying with 306 shall be provided.  
EXCEPTION: A parallel approach complying with 305 shall be permitted at units for children's use where the spout is 30 inches (760 mm) maximum above the finish floor or ground and is 3 1/2 inches (90 mm) maximum from the front edge of the unit, including bumpers.

602.3 Operable Parts. Operable parts shall comply with 309.  
602.4 Spout Height. Spout outlets shall be 36 inches (915 mm) maximum above the finish floor or ground.  
602.5 Spout Location. The spout shall be located 15 inches (380 mm) minimum from the vertical support and 5 inches (125 mm) maximum from the front edge of the unit, including bumpers. Where only a parallel approach is provided, the spout shall be located 3 1/2 inches (90 mm) maximum from the front edge of the drinking fountain, including bumpers.



602.6 Water Flow. The spout shall provide a flow of water 4 inches (100 mm) high minimum and shall be located 5 inches (125 mm) maximum from the front of the unit. The angle of the water stream shall be measured horizontally relative to the front face of the unit. Where spouts are located less than 3 inches (75 mm) of the front of the unit, the angle of the water stream shall be 30 degrees maximum. Where spouts are located between 3 inches (75 mm) and 5 inches (125 mm) maximum from the front of the unit, the angle of the water stream shall be 15 degrees maximum.

602.7 Drinking Fountains for Standing Persons. Spout outlets of drinking fountains for standing persons shall be 38 inches (965 mm) minimum and 43 inches (1090 mm) maximum above the finish floor or ground.

603 Toilet and Bathing Rooms  
603.1 General. Toilet and bathing rooms shall comply with 603.  
603.2 Clearances. Clearances shall comply with 603.2.

603.2.1 Turning Space. Turning space complying with 304 shall be provided within the room.

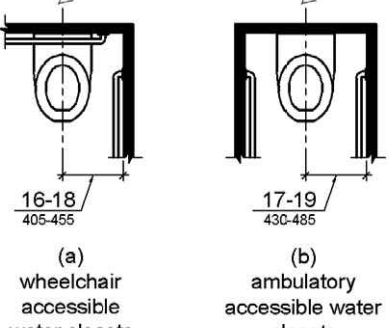
603.2.2 Door Swing. Doors shall not swing into the clear floor space or clearance required for any fixture. Doors shall be permitted to swing into the required turning space.  
EXCEPTIONS:  
1. Doors to a toilet room or bathing room for a single occupant accessed only through a private office and not for common use or public use shall be permitted to swing into the clear floor space or clearance provided the swing of the door can be reversed to comply with 603.2.2.  
2. Where the toilet room or bathing room is for individual use and a clear floor space complying with 305.5 is provided within the room beyond the arc of the door swing, doors shall not be required to comply with 603.2.2.

603.3 Mirrors. Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches (1015 mm) maximum above the finish floor or ground. Mirrors not located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches (1015 mm) maximum above the finish floor or ground.  
EXCEPTION: Other than within Accessible dwelling or sleeping units, mirrors are not required over the lavatories or counters if a mirror is located within the same toilet or bathing room and mounted with the bottom edge of the reflecting surface 35 inches (890 mm) maximum above floor.

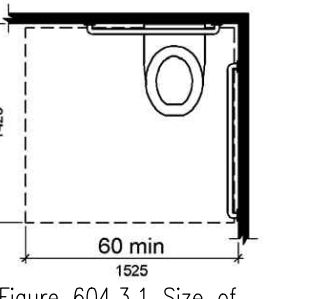
603.4 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish floor.  
604 Water Closets and Toilet Compartments

604.1 General. Water closets and toilet compartments shall comply with 604.2 through 604.8.  
EXCEPTION: Water closets and toilet compartments for children's use shall be permitted to comply with 604.9.

604.2 Location. The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 16 inches (405 mm) minimum to 18 inches (455 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum from the side wall or partition in the ambulatory accessible toilet compartment specified in 604.8.2. Water closets shall be arranged for a left-hand or right-hand approach.



604.3 Clearance. Clearances around water closets and in toilet compartments shall comply with 604.3.  
604.3.1 Size. Clearance around a water closet shall be 60 inches (1525 mm) minimum measured perpendicular from the side wall and 56 inches (1420 mm) minimum measured perpendicular from the rear wall.

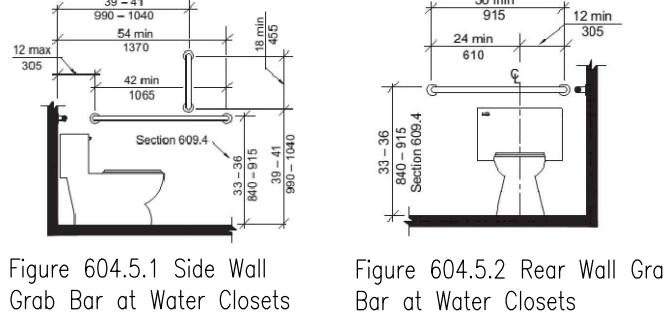


604.3.2 Overlap. The required clearance around the water closet shall be permitted to overlap the water closet, associated grab bars, dispensers, sanitary napkin disposal units, coat hooks, shelves, accessible routes, clear floor space and clearances required at other fixtures, and the turning space. No other fixtures or obstructions shall be located within the required water closet clearance.

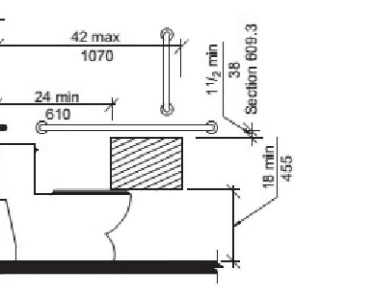
604.4 Seats. The seat height of a water closet above the finish floor shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position.  
EXCEPTIONS:  
1. A water closet in a toilet room for a single occupant accessed only through a private office and not for common use or public use shall be required to comply with 604.4.

604.5 Grab Bars. Grab bars for water closets shall comply with 609. Grab bars shall be provided on the side wall closest to the water closet and on the rear wall.  
EXCEPTIONS:  
1. Grab bars shall not be required to be installed in a toilet room for a single occupant accessed only through a private office and not for common use or public use provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 604.5.  
2. In detention or correction facilities, grab bars shall not be required to be installed in housing or holding cells that are specially designed without protrusions for purposes of suicide prevention.

604.5.1 Side Wall. The side wall grab bar shall be 42 inches (1065 mm) long minimum, located 12 inches (305 mm) maximum from the rear wall and extending 54 inches (1370 mm) minimum from the rear wall.

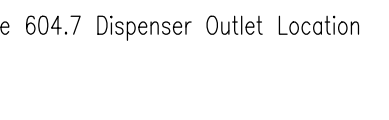


604.5.2 Rear Wall. The rear wall grab bar shall be 36 inches (915 mm) long minimum and extend from the centerline of the water closet 12 inches (305 mm) minimum on one side and 24 inches (610 mm) minimum on the other side.  
EXCEPTIONS:  
1. The rear grab bar shall be permitted to be 24 inches (610 mm) long minimum, centered on the water closet, where wall space does not permit a length of 36 inches (915 mm) minimum due to the location of a recessed fixture adjacent to the water closet.  
2. Where an administrative authority requires flush controls for flush valves to be located in a position that conflicts with the location of the rear grab bar, then the rear grab bar shall be permitted to be split or shifted to the open side of the toilet area.



604.6 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with 604.8.2.

604.7 Dispensers. Toilet paper dispensers shall comply with Section 309.4. Where the dispenser is located about the grab bar, the outlet of the dispenser shall be located within an area 24 inches (610 mm) minimum and 36 inches (915 mm) maximum from the rear wall. Where the dispenser is located below the grab bar, the outlet of the dispenser shall be located within an area 24 inches (610 mm) minimum and 42 inches (1065 mm) maximum from the rear wall. The outlet of the dispenser shall be located 18 inches (455 mm) minimum and 48 inches (1220 mm) maximum above the floor. Dispensers shall comply with Section 609.3. Dispensers shall not be a type that control delivery, or do not allow continuous paper flow.

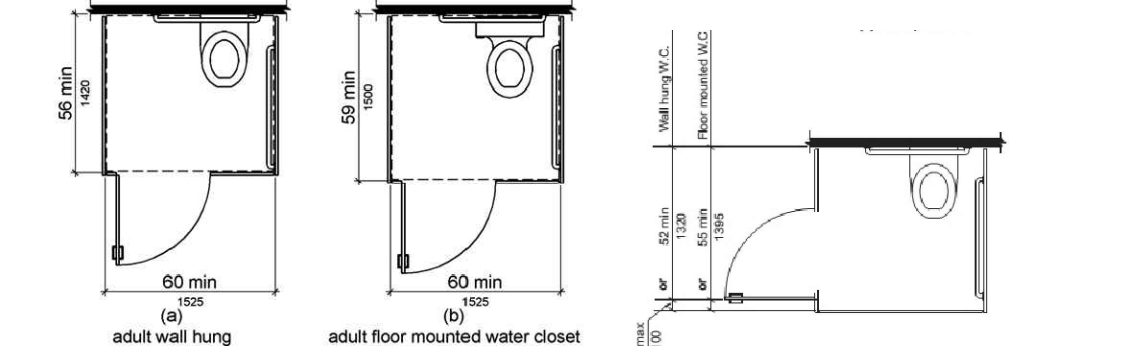


604.8 Toilet Compartments. Wheelchair accessible toilet compartments shall meet the requirements of 604.8.1 and 604.8.3. Compartments containing more than one plumbing fixture shall comply with 603. Ambulatory accessible compartments shall comply with 604.8.2 and 604.8.3.

604.8 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish floor.

604.9 Wheelchair Accessible Compartments. 604.9.1 Wheelchair accessible compartments shall comply with 604.9.

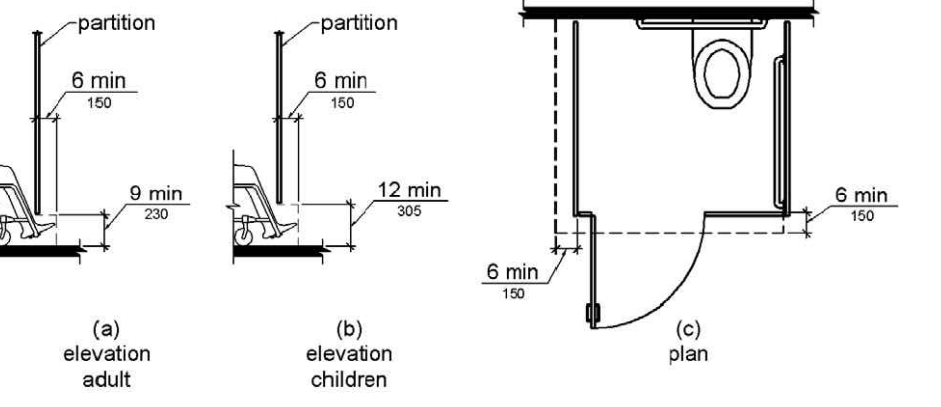
604.9.2 Size. Wheelchair accessible compartments shall be 60 inches (1525 mm) wide minimum measured perpendicular to the side wall, and 56 inches (1420 mm) deep minimum for wall hung water closets and 59 inches (1500 mm) deep minimum for floor mounted water closets measured perpendicular to the rear wall. Wheelchair accessible compartments for children's use shall be 60 inches (1525 mm) wide minimum measured perpendicular to the side wall, and 59 inches (1500 mm) deep minimum for wall hung and floor mounted water closets measured perpendicular to the rear wall.  
EXCEPTIONS:  
1. A parallel approach complying with 305 shall be permitted to a kitchen sink in a space where a cook top or conventional range is not provided and to wet bars.  
2. The requirement for knee and toe clearance shall not apply to a lavatory in a toilet or bathing facility for a single occupant, accessed only through a private office and not for common use or public use.  
3. A knee clearance of 24 inches (610 mm) minimum above the floor shall be permitted at lavatories and sinks used primarily by children ages 6 through 12 where the rim or counter surface is 31 (765 mm) maximum above the floor.  
4. A parallel approach complying with Section 305 and centered on the sink, shall be permitted at lavatories and sinks used primarily by children ages 5 and younger.  
5. The requirement for knee and toe clearance shall not apply to more than one bowl of a multibowl sink.  
6. A parallel approach complying with Section 305 and centered on the sink shall be permitted at wet bars.



604.9.3 Doors. Toilet compartment doors, including door hardware, shall comply with 404 except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42 inches (1065 mm) minimum. Doors shall be located in the front partition or in the side wall or partition farthest from the water closet. Where located in the front partition, the door opening shall be 4 inches (100 mm) maximum from the side wall or partition farthest from the water closet. Where located in the side wall or partition, the door opening shall be 4 inches (100 mm) maximum from the front partition. The door shall be self-closing. A door pull complying with 404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

604.9.4 Approach. Compartments shall be arranged for left-hand or right-hand approach to the water closet.

604.9.5 Toe Clearance. The front partition and at least one side partition shall provide a toe clearance of 9 inches (230 mm) minimum above the finish floor and 6 inches (150 mm) deep minimum beyond the compartment-side, exclusive of the partition, exclusive of partition support members. Compartments for children's use shall provide a toe clearance of 12 inches (305 mm) minimum above the finish floor.  
EXCEPTION: Toe clearance at the front partition is not required in a compartment greater than 62 inches (1575 mm) deep with a wall-hung water closet or 65 inches (1650 mm) deep with a floor-mounted water closet. Toe clearance at the side partition is not required in a compartment greater than 66 inches (1675 mm) wide. Toe clearance at the front partition is not required in a compartment for children's use that is greater than 65 inches (1650 mm) deep.



604.9.6 Grab Bars. Grab bars shall comply with 609. A side-wall grab bar complying with 604.5.1 shall be provided and shall be located on the wall closest to the water closet. In addition, a rear-wall grab bar complying with 604.5.2 shall be provided.

604.10 Ambulatory Accessible Compartments. Ambulatory accessible compartments shall comply with 604.8.2.

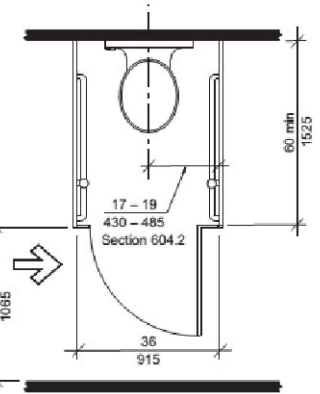
604.10.2 Size. Ambulatory accessible compartments shall have a depth of 60 inches (1525 mm) minimum and a width of 35 inches (890 mm) minimum and 37 inches (940 mm) maximum.

604.10.3 Doors. Toilet compartment doors, including door hardware, shall comply with 404, except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42 inches (1065 mm) minimum. The door shall be self-closing. A door pull complying with 404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

604.10.4 Grab Bars. Grab bars shall comply with 609. A side-wall grab bar complying with 604.5.1 shall be provided on both sides of the compartment.

604.11 Water Closets and Toilet Compartments for Children's Use. Water closets and toilet compartments for children's use shall comply with 604.11.

604.11.2 Location. The water closet shall be located with a wall or partition to the rear and to one side. The centerline of the water closet shall be 12 inches (305 mm) minimum and 18 inches (455 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum from the side wall or partition in the ambulatory accessible toilet compartment specified in 604.8.2. Compartments shall be arranged for left-hand or right-hand approach to the water closet.



Advisory Specifications for Water Closets Serving Children Ages 3 through 12				
	Ages 3 and 4	Ages 5 through 8	Ages 9 through 12	
Water Closet Centerline	12 inches	12 to 15 inches	15 to 18 inches	
Toilet Seat Height	11 to 12 inches	12 to 15 inches	15 to 17 inches	
Grab Bar Height	18 to 20 inches	20 to 25 inches	25 to 27 inches	
Dispenser Height	14 inches	14 to 17 inches	17 to 19 inches	

604.11.3 Clearance. Clearance around a water closet shall comply with 604.3.

604.11.4 Height. The height of water closets shall be 11 inches (280 mm) minimum and 17 inches (430 mm) maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

604.11.5 Grab Bars. Grab bars for water closets shall comply with 604.5.

604.11.6 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309.2 and 309.4 and shall be installed 36 inches (915 mm) maximum above the finish floor. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with 604.8.2.

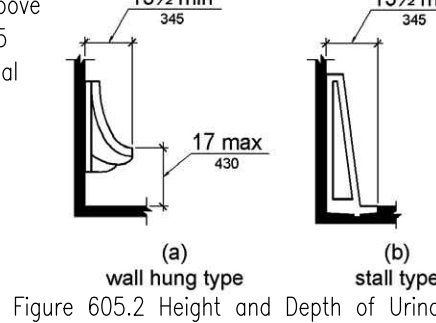
604.11.7 Dispensers. Toilet paper dispensers shall comply with 309.4 and shall be located within an area 24 inches (610 mm) minimum and 42 inches (1065 mm) maximum from the rear wall. The outlet of the dispenser shall be 14 inches (355 mm) minimum and 19 inches (485 mm) maximum above the floor. There shall be a clearance of 1 1/2 inches (38 mm) minimum below the grab bar. Dispensers shall not be a type that control delivery or do not allow continuous paper flow.

604.11.8 Toilet Compartments. Toilet compartments shall comply with 604.6 and 604.10, as applicable.

605 Urinals

605.1 General. Urinals shall comply with 605.

605.2 Height and Depth. Urinals shall be the stall-type or the wall-hung type with the rim 17 inches (430 mm) maximum above the finish floor or ground. Urinals shall be 13 1/2 inches (345 mm) deep minimum measured from the outer face of the urinal rim to the back of the fixture.



605.4 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309.

606 Lavatories and Sinks  
606.1 General. Lavatories and sinks shall comply with 606.  
606.2 Clear Floor Space. A clear floor space complying with 305.3, positioned for a forward approach, and knee and toe clearance complying with 306 shall be provided.  
EXCEPTIONS:  
1. A lavatory in a toilet or bathing facility for a single occupant accessed only through a private office and not for common use or public use.  
3. A knee clearance of 24 inches (610 mm) minimum above the floor shall be permitted at lavatories and sinks used primarily by children ages 6 through 12 where the rim or counter surface is 31 (765 mm) maximum above the floor.  
4. A parallel approach complying with Section 305 and centered on the sink, shall be permitted at lavatories and sinks used primarily by children ages 5 and younger.  
5. The requirement for knee and toe clearance shall not apply to more than one bowl of a multibowl sink.  
6. A parallel approach complying with Section 305 and centered on the sink shall be permitted at wet bars.

606.3 Height. Lavatories and sinks shall be installed with the front of the higher of the rim or counter surface 34 inches (865 mm) maximum above the finish floor or ground.  
EXCEPTIONS:  
1. A lavatory in a toilet or bathing facility for a single occupant accessed only through a private office and not for common use or public use shall be required to comply with 606.3.  
606.4 Faucets. Controls for faucets shall comply with 309. Hand-operated metering faucets shall remain open for 10 seconds minimum.  
606.5 Lavatories with Enhanced Reach Range. Where enhanced reach range is required at lavatories, faucets and soap dispenser controls shall have a reach depth of 11 inches (280 mm) maximum or, if automatic, shall be activated within a reach depth of 11 inches (280 mm) maximum. Water and soap flow shall be provided with a reach depth of 11 inches (280 mm) maximum.

606.6 Exposed Pipes and Surfaces. Water supply and drain pipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks.  
CHAPTER 7: COMMUNICATION ELEMENTS AND FEATURES  
701 General  
701.1 Scope. The provisions of Chapter 7 shall apply where required by Chapter 2 or where referenced by a requirement in this document.  
702 Fire Alarm Systems  
702.1 General. Fire alarm systems shall have permanently installed audible and visible alarms complying with NFPA 72 (1999 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1), except that the maximum allowable sound level of audible notification appliances complying with section 7.4.1 of NFPA 72 (1999 edition) shall have a sound level not more than 110 dB at the minimum hearing distance from the audible appliance. In addition, alarms in quiet rooms required to provide communication features shall comply with sections 4-3 and 4-4 of NFPA 72 (1999 edition) or sections 7.4 and 7.5 of NFPA 72 (2002 edition).  
EXCEPTION: Fire alarm systems in medical care facilities shall be permitted to be provided in accordance with industry practice.

703 Signs  
703.1 General. Signs shall comply with 703. Where both visual and tactile characters are required, either one sign with both visual and tactile characters, or two separate signs, one with visual, and one with tactile characters, shall be provided.  
703.2 Raised Characters. Raised characters shall comply with 703.2 and shall be duplicated in braille complying with 703.3. Raised characters shall be installed in accordance with 703.4.  
703.2.1 Depth. Raised characters shall be 1/32 inch (0.8 mm) minimum above their background.  
703.2.2 Case. Characters shall be uppercase.  
703.2.3 Style. Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.2.4 Character Height. Character height measured vertically from the baseline of the character shall be 5/8 inch (16 mm) minimum and 2 inches (51 mm) maximum based on the height of the uppercase letter "I".  
EXCEPTION: Where separate raised and visual characters with the same information are provided, raised character height shall be permitted to be 1/2 inch (13 mm) minimum.

703.2.5 Character Width. Characters shall be selected from fonts where the width of the uppercase letter "O" is 55 percent minimum and 110 percent maximum of the height of the uppercase letter "I".

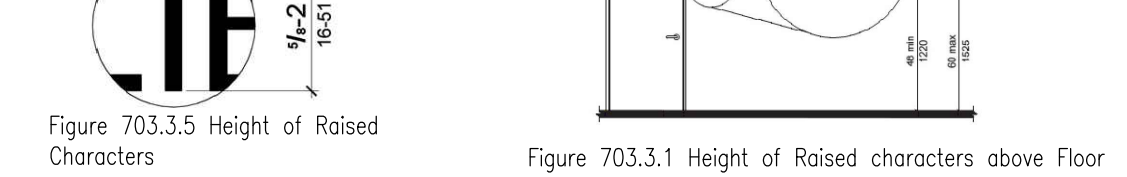
703.2.6 Stroke Thickness. Stroke thickness of the uppercase letter "I" shall be 15 percent maximum of the height of the character.

703.2.7 Character Spacing. Character spacing shall be measured between the two closest points of adjacent raised characters within a message, excluding word spaces. Where characters have rectangular cross sections, spacing between individual raised characters shall be 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum. Where characters have other cross sections, spacing between individual raised characters shall be 1/16 inch (1.6 mm) minimum and 4 times the raised character stroke width maximum at the base of the cross sections, and 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum at the top of the cross sections. Characters shall be separated from raised borders and decorative elements 3/8 inch (9.5 mm) minimum.

703.2.8 Line Spacing. Spacing between the baselines of separate lines of raised characters within a message shall be 135 percent minimum and 170 percent maximum of the raised character height.  
703.2.9 Height Above Floor. Visual characters shall be 40 inches (1015 mm) minimum above the floor of the viewing position, measured to the baseline of the character. Heights shall comply with Table 703.2.4 based on the size of the characters on the sign. EXCEPTION: Visual characters indicating elevator car controls shall not be required to comply with Section 703.2.9.

703.2.10 Finish and Contrast. Characters and their background shall have a non-glare finish. Characters shall contrast with their background, with either light characters on a dark background, or dark characters on a light background.

703.3 Raised Characters. Braille shall be contracted (Grade 2) and shall comply with 703.3 and 703.4.  
703.3.1 Dimensions and Capitalization. Raised characters dots shall have a domed or rounded shape and shall comply with Table 703.3.1. The indication of an uppercase letter or letters shall only be used before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, and acronyms.



703.3.2 Braille Indicators. Braille indicators shall be used to indicate the start of a new sentence, a new section, or a new list item.

703.3.3 Braille Characters. Braille characters shall be selected from fonts where the width of the uppercase letter "O" is 55 percent minimum and 110 percent maximum of the height of the uppercase letter "I".  
703.3.4 Braille Spacing. Braille spacing shall be measured between the two closest points of adjacent raised characters within a message, excluding word spaces. Where characters have rectangular cross sections, spacing between individual raised characters shall be 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum. Where characters have other cross sections, spacing between individual raised characters shall be 1/16 inch (1.6 mm) minimum and 4 times the raised character stroke width maximum at the base of the cross sections, and 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum at the top of the cross sections. Characters shall be separated from raised borders and decorative elements 3/8 inch (9.5 mm) minimum.

703.3.5 Braille Height. Braille height measured vertically from the baseline of the character shall be 5/8 inch (16 mm) minimum and 2 inches (51 mm) maximum based on the height of the uppercase letter "I".  
EXCEPTION: Where separate raised and visual characters with the same information are provided, raised character height shall be permitted to be 1/2 inch (13 mm) minimum.

703.3.6 Braille Width. Braille characters shall be selected from fonts where the width of the uppercase letter "O" is 55 percent minimum and 110 percent maximum of the height of the uppercase letter "I".  
703.3.7 Braille Stroke Thickness. Stroke thickness of the uppercase letter "I" shall be 15 percent maximum of the height of the character.

703.3.8 Braille Spacing. Braille spacing shall be measured between the two closest points of adjacent raised characters within a message, excluding word spaces. Where characters have rectangular cross sections, spacing between individual raised characters shall be 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum. Where characters have other cross sections, spacing between individual raised characters shall be 1/16 inch (1.6 mm) minimum and 4 times the raised character stroke width maximum at the base of the cross sections, and 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum at the top of the cross sections. Characters shall be separated from raised borders and decorative elements 3/8 inch (9.5 mm) minimum.

703.3.9 Braille Height. Braille height measured vertically from the baseline of the character shall be 5/8 inch (16 mm) minimum and 2 inches (51 mm) maximum based on the height of the uppercase letter "I".  
EXCEPTION: Where separate raised and visual characters with the same information are provided, raised character height shall be permitted to be 1/2 inch (13 mm) minimum.

703.3.10 Braille Width. Braille characters shall be selected from fonts where the width of the uppercase letter "O" is 55 percent minimum and 110 percent maximum of the height of the uppercase letter "I".

703.3.11 Braille Stroke Thickness. Stroke thickness of the uppercase letter "I" shall be 15 percent maximum of the height of the character.

703.3.12 Braille Spacing. Braille spacing shall



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703.7.2.4 Assistive Listening Systems. Assistive listening systems shall be identified by the International Symbol of Access for Hearing Loss complying with Figure 703.7.2.4.



Figure 703.6.3.1 International Symbol of Accessibility



Figure 703.6.3.2 International Symbol of TTY



Figure 703.6.3.3 International Symbol of Access for Hearing Loss



Figure 703.6.3.4 Volume Control Telephone

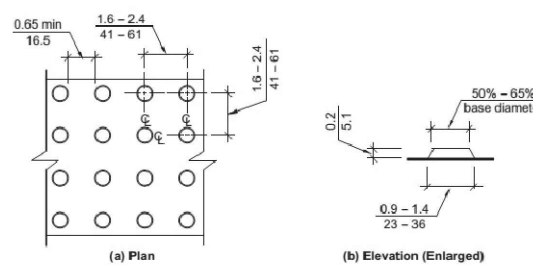


FIG. 705.6 TRUNCATED DOME SIZE AND SPACING

CHAPTER 8: SPECIAL ROOMS, SPACES AND ELEMENTS

NOT USED

CHAPTER 9: BUILT-IN ELEMENTS

901 General

901.1 Scope. The provisions of Chapter 9 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

902 Dining Surfaces and Work Surfaces

902.1 General. Dining surfaces and work surfaces shall comply with 902.2 and 902.3.

EXCEPTION: Dining surfaces and work surfaces for children's use shall be permitted to comply with 902.4.

902.2 Clear Floor or Ground Space. A clear floor space complying with 305 positioned for a forward approach shall be provided. Knee and toe clearance complying with 306 shall be provided.

902.3 Exposed Surfaces. There shall be no sharp or abrasive surfaces under the exposed portions of dining surfaces and work surfaces.

902.4 Height. The tops of dining surfaces and work surfaces shall be 28 inches (710 mm) minimum and 34 inches (865 mm) maximum above the finish floor or ground.

902.5 Dining Surfaces and Work Surfaces for Children's Use. Accessible dining surfaces and work surfaces for children's use shall comply with 902.4.

EXCEPTION: Dining surfaces and work surfaces that are used primarily by children 5 years and younger shall not be required to comply with 902.4 where a clear floor or ground space complying with 305 positioned for a parallel approach is provided.

902.5.1 Clear Floor or Ground Space. A clear floor space complying with 305 positioned for forward approach shall be provided. Knee and toe clearance complying with 306 shall be provided, except that knee clearance 24 inches (610 mm) minimum above the finish floor or ground shall be permitted.

902.5.2 Height. The tops of tables and counters shall be 26 inches (660 mm) minimum and 30 inches (760 mm) maximum above the finish floor or ground.

903 Benches

903.1 General. Benches shall comply with 903.

903.2 Clear Floor or Ground Space. Clear floor or ground space complying with 305 shall be provided and shall be positioned at the end of the bench seat and parallel to the short axis of the bench.

903.3 Size. Benches shall have seats that are 42 inches (1065 mm) long minimum and 20 inches (510 mm) deep minimum and 24 inches (610 mm) deep maximum.

903.4 Back Support. The bench shall provide for back support or shall be affixed to a wall. Back support shall be 42 inches (1065 mm) long minimum and shall extend from a point 2 inches (51 mm) maximum above the seat surface to a point 18 inches (455 mm) minimum above the seat surface. Back support shall be 2 1/2 inches (64 mm) maximum from the rear edge of the seat measured horizontally.

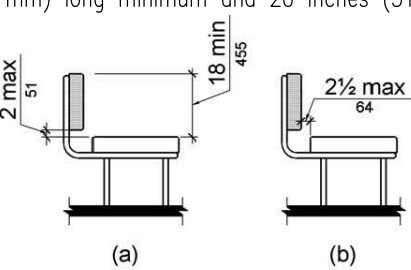


Figure 903.4 Bench Back Support

903.5 Height. The top of the bench seat surface shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the finish floor or ground.

903.6 Structural Strength. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the seat, fastener, mounting device, or supporting structure.

903.7 Wet Locations. Where installed in wet locations, the surface of the seat shall be slip resistant and shall not accumulate water.

904 Check-Out Aisles and Sales and Service Counters

904.1 General. Check-out aisles and sales and service counters shall comply with the applicable requirements of 904.

904.2 Approach. All portions of counters required to comply with 904 shall be located adjacent to a walking surface complying with 403.

904.3 Check-Out Aisles. Check-out aisles shall comply with 904.3.

904.3.1 Aisle. Aisles shall comply with 403.

904.3.2 Counter. The counter surface height shall be 38 inches (965 mm) maximum above the finish floor or ground. The top of the counter edge protection shall be 2 inches (51 mm) maximum above the top of the counter surface on the aisle side of the check-out counter.

904.3.3 Check Writing Surfaces. Where provided, check writing surfaces shall comply with 902.3.

904.4 Sales and Service Counters. Sales counters and service counters shall comply with 904.4.1 or 904.4.2. The accessible portion of the counter top shall extend the same depth as the sales or service counter top.

EXCEPTION: In alterations, when the provision of a counter complying with 904.4 would result in a reduction of the number of existing counters at work stations or a reduction of the number of existing mail boxes, the counter shall be permitted to have a portion which is 24 inches (610 mm) long minimum complying with 904.4.1 provided that the required clear floor or ground space is centered on the accessible length of the counter.

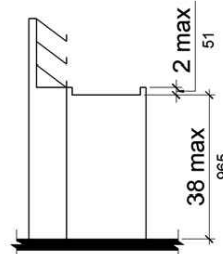


Figure 904.3.2 Check-Out Aisle Counters

904.4.1 Parallel Approach. A portion of the counter surface

that is 36 inches (915 mm) long minimum and 36 inches (915 mm) high maximum above the finish floor shall be provided. A clear floor or ground space complying with 305 shall be positioned for a parallel approach adjacent to the 36 inch (915 mm) minimum length of counter.

EXCEPTION: Where the provided counter surface is less than 36 inches (915 mm) long, the entire counter surface shall be 36 inches (915 mm) high maximum above the finish floor.

Figure 904.4 (Exception) Alteration of Sales and Service Counters

plan view showing a 24 min x 610 mm clear floor space centered under a 36 inch counter section.

904.4.2 Forward Approach. A portion of the counter surface that is 30 inches (760 mm) long minimum and 36 inches (915 mm) high maximum shall be provided. Knee and toe space complying with 306 shall be provided under the counter. A clear floor or ground space complying with 305 shall be positioned for a forward approach to the counter.

904.5 Food Service Lines. Counters in food service lines shall comply with 904.5.

904.5.1 Self-Service Shelves and Dispensing Devices. Self-service shelves and dispensing devices for tableware, dishware, condiments, food and beverages shall comply with 306.

904.5.2 Tray Slides. The tops of tray slides shall be 28 inches (710 mm) minimum and 34 inches (865 mm) maximum above the finish floor or ground.

904.6 Security Glazing. Where counters or teller windows have security glazing to separate personnel from the public, a method to facilitate voice communication shall be provided. Telephone handset devices, if provided, shall comply with 704.3.

CHAPTER 10: RECREATIONAL FACILITIES

NOT USED

PRELIMINARY  
NOT TO BE USED  
FOR  
REGULATORY  
APPROVAL,  
PERMITTING OR  
CONSTRUCTION



(817) 737-9922

4055 International Plaza Suite 100  
Ft. Worth, Texas 76109

STRICKLAND BROTHERS  
TURNERSBURG HWY  
STATESVILLE, NC

Revisions:

File Name: 22189-ADA-3  
Project No: 22189  
Date: 08/04/22  
Drawn By: FKA  
Checked By: TI

SHEET

ADA-3

ACCESSIBILITY  
GUIDELINES