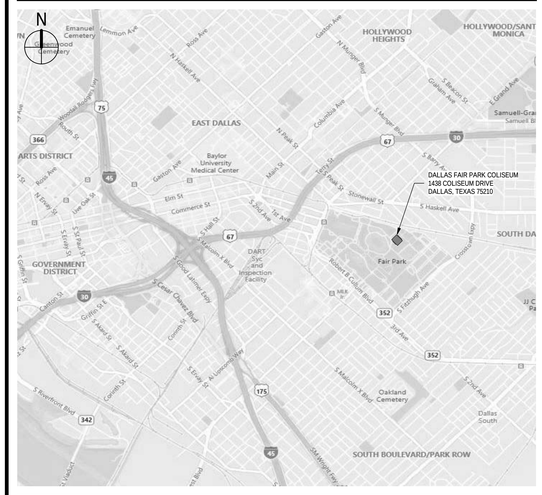
FAIR PARK COLISEUM
CONCESSIONS IMPROVEMENTS
CITY OF DALLAS
DALLAS, TEXAS

VICINITY MAP



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REVISIONS DENOTED BY △

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STATE OF TEXAS
04/15/2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: ELH
ISSUED FOR: CONSTRUCTION	DRAFTER: CTW
DATE: APRIL 15, 2021	CHECKED: ELH

COVER SHEET

SHEET
CVR
OF 1 CVR SHEETS

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(NOTE: THIS IS THE PARTIAL CONTENTS OF THE FULL 2012 TEXAS ACCESSIBILITY STANDARDS (TAS) INFORMATION. YOU MAY OBTAIN A FULL COPY BY CONTACTING:

TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR)
ARCHITECTURAL BARRIERS SECTION
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CHAPTER 1: APPLICATION AND ADMINISTRATION

106 Definitions

106.1 General. For the purpose of this document, the terms defined in 106.5 have the indicated meaning.

106.2 Terms Defined in Referenced Standards. Terms not defined in 106.5 or in regulations issued by the Texas Department of Licensing and Regulation to implement Texas Government Code, Chapter 469, but specifically defined in a referenced standard, shall have the specified meaning from the referenced standard unless otherwise stated.

106.3 Undefined Terms. The meaning of terms not specifically defined in 106.5 or in regulations issued by the Texas Department of Licensing and Regulation to implement the Texas Government Code, Chapter 469, or in referenced standards shall be as defined by collegiate dictionaries in the sense that the context implies.

106.4 Interchangeability. Words, terms and phrases used in the singular include the plural and those used in the plural include the singular.

106.5 Defined Terms.

106.5.1 Accessible. A site, building, facility, or portion thereof that complies with this part.

106.5.2 Accessible Means of Egress. A continuous and unobstructed way of egress travel from any point in a building or facility that provides an accessible route to an area of refuge, a horizontal exit, or a public way.

106.5.3 Addition. An expansion, extension, or increase in the gross floor area or height of a building or facility.

106.5.4 Administrative Authority. A governmental agency that adopts or enforces regulations and guidelines for the design, construction, or alteration of buildings and facilities.

106.5.5 Alteration. A change to a building or facility that affects or could affect the usability of the building or facility or portion thereof. Alterations include, but are not limited to, remodeling, renovation, rehabilitation, reconstruction, historic restoration, resurfacing of circulation paths or vehicular ways, changes or rearrangement of the structural parts or elements, and changes or rearrangement in the plan configuration of walls and full-height partitions. Normal maintenance, reroofing, painting or wallpapering, or changes to mechanical and electrical systems are not alterations unless they affect the usability of the building or facility.

106.5.6 Amusement Attraction. Any facility, or portion of a facility, located within an amusement park or theme park which provides amusement without the use of an amusement device. Amusement attractions include, but are not limited to, fun houses, barrels, and other attractions without seats.

106.5.7 Amusement Ride. A system that moves persons through a fixed course within a defined area for the purpose of amusement.

106.5.8 Amusement Ride Seat. A seat that is built-in or mechanically fastened to an amusement ride intended to be occupied by one or more passengers.

106.5.9 Area of Sport Activity. That portion of a room or space where the play or practice of a sport occurs.

106.5.10 Assembly Area. A building or facility, or portion thereof, used for the purpose of entertainment, educational
or civic gatherings, or similar purposes. For the purposes of these requirements, assembly areas include, but are not limited to, classrooms, lecture halls, courtrooms, public meeting rooms, public hearing rooms, legislative chambers, motion picture houses, auditoria, theaters, playhouses, dinner theaters, concert halls, centers for the performing arts, amphitheaters, arenas, stadiums, grandstands, or convention centers.

106.5.11 Assistive Listening System (ALS). An amplification system utilizing transmitters, receivers, and coupling devices to bypass the acoustical space between a sound source and a listener by means of induction loop, radio frequency, infrared, or direct-wired equipment.

106.5.12 Boarding Pier. A portion of a pier where a boat is temporarily secured for the purpose of embarking or disembarking.

106.5.13 Boat Launch Ramp. A sloped surface designed for launching and retrieving trailered boats and other water
craft to and from a body of water.

106.5.14 Boat Slip. That portion of a pier, main pier, finger pier, or float where a boat is moored for the purpose of berthing, embarking, or disembarking.

106.5.15 Building. Any structure used or intended for supporting or sheltering any use or occupancy.

106.5.16 Catch Pool. A pool or designated section of a pool used as a terminus for water slide flumes.

106.5.17 Characters. Letters, numbers, punctuation marks and typographic symbols.

106.5.18 Children's Use. Describes spaces and elements specifically designed for use primarily by people 12 years old and younger.

106.5.19 Circulation Path. An exterior or interior way of passage provided for pedestrian travel, including but not limited to, walks, hallways, courtyards, elevators, platform lifts, ramps, stairways, and landings.

106.5.20 Closed-Circuit Telephone. A telephone with a dedicated line such as a house phone, courtesy phone or phone that must be used to gain entry to a facility.

106.5.21 Common Use. Interior or exterior circulation paths, rooms, spaces, or elements that are not for public use
and are made available for the shared use of two or more people.

106.5.22 Cross Slope. The slope that is perpendicular to the direction of travel (see running slope).

106.5.23 Curb Ramp. A short ramp cutting through a curb or built up to it.

106.5.24 Detectable Warning. A standardized surface feature built in or applied to walking surfaces or other elements to warn of hazards on a circulation path.

106.5.25 Disproportionality. Alterations made to provide an accessible path of travel to the altered area will be deemed disproportionate to the overall alteration when the cost exceeds 20% of the cost of the alteration to the primary function area. Costs that may be counted as expenditures required to provide an accessible path of travel may include:

(i) Costs associated with providing an accessible entrance and an accessible route to the altered area, for example,
the cost of widening doorways or installing ramps;
(ii) Costs associated with making restrooms accessible, such as installing grab bars, enlarging toilet stalls, insulating
pipes, or installing accessible faucet controls;
(iii) Costs associated with providing accessible telephones, such as relocating the telephone to an accessible height,
installing amplification devices, or installing a text telephone (TTY); and
(iv) Costs associated with relocating an inaccessible drinking fountain.

All determinations of disproportionality are made by the Department in accordance with the variance procedures contained in Chapter 68, Texas Administrative Code.

106.5.26 Element. An architectural or mechanical component of a building, facility, space, or site.

106.5.27 Elevated Play Component. A play component that is approached above or below grade and that is part of
a composite play structure consisting of two or more play components attached or functionally linked to create an integrated unit providing more than one play activity.

106.5.28 Employee Work Area. All or any portion of a space used only by employees and used only for work. Corridors, toilet rooms, kitchenettes and break rooms are not employee work areas.

106.5.29 Entrance. Any access point to a building or portion of a building or facility used for the purpose of entering. An entrance includes the approach walk, the vertical access leading to the entrance platform, the entrance platform itself, vestibule if provided, the entry door or gate, and the hardware of the entry door or gate.

106.5.30 Facility. All or any portion of buildings, structures, site improvements, elements, and pedestrian routes or vehicular ways located on a site.

106.5.31 Gangway. A variable-sloped pedestrian walkway that links a fixed structure or land with a floating structure. Gangways that connect to vessels are not addressed by this document.

106.5.32 Golf Car Passage. A continuous passage on which a motorized golf car can operate.

106.5.33 Ground Level Play Component. A play component that is approached and exited at the ground level.

106.5.34 Key Station. Rapid and light rail stations, and commuter rail stations, as defined under criteria established
by the Department of Transportation in 49 CFR 37.47 and 49 CFR 37.51, respectively.

106.5.35 Mail Boxes. Receptacles for the receipt of documents, packages, or other deliverable matter. Mail boxes include, but are not limited to, post office boxes and receptacles provided by commercial mail-receiving agencies, apartment facilities, or schools.

106.5.36 Marked Crossing. A crosswalk or other identified path intended for pedestrian use in crossing a vehicular way.

106.5.37 Maximum Extent Feasible. Applies to the occasional case where the nature of an existing facility makes it virtually impossible to comply fully with applicable accessibility standards through a planned alteration. In these circumstances, the alteration shall provide the maximum physical accessibility feasible. Any altered features of the facility that can be made accessible shall be made accessible. If providing accessibility in conformance with this section to individuals with certain disabilities (e.g., those who use wheelchairs) would not be feasible, the facility shall be made accessible to persons with other types of disabilities (e.g., those who use crutches, those who have impaired vision or hearing, or those who have other impairments).

All determinations of maximum extent feasible are made by the Department in accordance with the variance procedures contained in Chapter 68, Texas Administrative Code.

106.5.38 Mezzanine. An intermediate level or levels between the floor and ceiling of any story with an aggregate floor area of not more than one-third of the area of the room or space in which the level or levels are located. Mezzanines have sufficient elevation that space for human occupancy can be provided on the floor below.

106.5.39 Occupant Load. The number of persons for which the means of egress of a building or portion of a building is designed.

106.5.40 Operable Part. A component of an element used to insert or withdraw objects, or to activate, deactivate, or adjust the element.

106.5.41 Path of Travel. A continuous, unobstructed way of pedestrian passage by means of which the altered area
may be approached, entered, and exited, and which connects the altered area with an exterior approach (including sidewalks, streets, and parking areas), an entrance to the facility, and other parts of the facility. An accessible path of travel may consist of walks and sidewalks, curb ramps and other interior or exterior pedestrian ramps; clear floor paths through lobbies, corridors, rooms, and other improved areas; parking access aisles; elevators and lifts; or a combination of these elements. The term "path of travel" also includes the restrooms, telephones, and drinking fountains serving the altered area.

The obligation to provide an accessible path of travel may not be evaded by performing a series of small alterations to the area served by a single path of travel if those alterations could have been performed as a single undertaking. If an area containing a primary function has been altered without providing an accessible path of travel to that area, and subsequent alterations of that area, or a different area on the same path of travel, are undertaken within three years of the original alteration, the total cost of alterations to the primary function areas on that path of travel during the preceding three year period shall be considered in determining whether the cost of making that path of travel accessible is disproportionate. Also see definition of "disproportionality".

106.5.42 Pictogram. A pictorial symbol that represents activities, facilities, or concepts.

106.5.43 Play Area. A portion of a site containing play components designed and constructed for children.

106.5.44 Play Component. An element intended to generate specific opportunities for play, socialization, or learning.
Play components are manufactured or natural; and are stand-alone or part of a composite play structure.

106.5.45 Primary Function. A major activity for which the facility is intended. Areas that contain a primary function
include, but are not limited to, the customer services lobby of a bank, the dining area of a cafeteria, the meeting rooms in a conference center, as well as offices and other work areas in which the activities of the public accommodation or other private entity using the facility are carried out. Mechanical rooms, boiler rooms, supply storage rooms, employee lounges or locker rooms, janitorial closets, entrances, corridors, and restrooms are not areas containing a primary function. Alterations that affect the usability of or access to an area containing a primary function include, but are not limited to:

(i) Remodeling merchandise display areas or employee work areas in a department store;
(ii) Replacing an inaccessible floor surface in the customer service or employee work areas of a bank;
(iii) Redesigning the assembly line area of a factory; or
(iv) Installing a computer center in an accounting firm.

For the purposes of this section, alterations to windows, hardware, controls, electrical outlets, and signage shall not be deemed to be alterations that affect the usability of or access to an area containing a primary function.

106.5.46 Private Building or Facility. A place of public accommodation or a commercial building or facility subject to Texas Government Code, Chapter 469.

106.5.47 Professional Office of a Health Care Provider. A location where a person or entity regulated by Texas to provide professional services related to the physical or mental health of an individual makes such services available to the public. The facility housing the "professional office of a health care provider" only includes floor levels housing at least one health care provider, or any floor level designed or intended for use by at least one health care provider.

106.5.48 Public Building or Facility. A building or facility or portion of a building or facility designed, constructed, or
altered by, on behalf of, or for the use of a public entity subject to Texas Government Code, Chapter 469.

106.5.49 Public Entrance. An entrance that is not a service entrance or a restricted entrance.

106.5.50 Public Use. Interior or exterior rooms, spaces, or elements that are made available to the public. Public use may be provided at a building or facility that is privately or publicly owned.

106.5.51 Public Way. Any street, alley or other parcel of land open to the outside air leading to a public street, which has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet (3050 mm).

106.5.52 Qualified Historic Building or Facility. A building or facility that is listed in or eligible for listing in the National Register of Historic Places, or designated as a Recorded Texas Historic Landmark or State Archeological Landmark.

106.5.53 Ramp. A walking surface that has a running slope steeper than 1:20.

106.5.54 Residential Dwelling Unit. A unit intended to be used as a residence that is primarily long- term in nature. Residential dwelling units do not include transient lodging, inpatient medical care, licensed long-term care, and detention or correctional facilities.

106.5.55 Restricted Entrance. An entrance that is made available for common use on a controlled basis but not public use and that is not a service entrance.

106.5.56 Running Slope. The slope that is parallel to the direction of travel (see cross slope).

106.5.57 Safe Harbor. Elements of a path of travel at a subject building or facility that have been previously constructed or altered in accordance with the April 1, 1994 Texas Accessibility Standards (TAS) are not required to be retrofitted to reflect the incremental changes in the 2012 TAS solely because of an alteration to a primary function area served by that path of travel. Those elements would be subject to compliance with the 2012 TAS only when the elements of a path of travel are being altered.

106.5.58 Self-Service Storage. Building or facility designed and used for the purpose of renting or leasing individual
storage spaces to customers for the purpose of storing and removing personal property on a self-service basis.

106.5.59 Service Entrance. An entrance intended primarily for delivery of goods or services.

106.5.60 Shopping Center or Shopping Mall. A building housing five or more sales or rental establishments; or a series of buildings on a common site, either under common ownership or common control or developed either as one project or as a series of related projects, housing five or more sales or rental establishments. For purposes of this standard, places of public accommodation of the types listed in the definition of "place of public accommodation" in Chapter 68, Texas Administrative Code are considered sales or rental establishments. The facility housing a "shopping center or shopping mall" only includes floor levels housing at least one sales or rental establishment, or any floor level designed or intended for use by at least one sales or rental establishment.

106.5.61 Site. A parcel of land bounded by a property line or a designated portion of a public right-of- way.

106.5.62 Soft Contained Play Structure. A play structure made up of one or more play components where the user
enters a fully enclosed play environment that utilizes pliable materials, such as plastic, netting, or fabric.

106.5.63 Space. A definable area, such as a room, toilet room, hall, assembly area, entrance, storage room, alcove, courtyard, or lobby.

106.5.64 Story. That portion of a building or facility designed for human occupancy included between the upper surface of a floor and upper surface of the floor or roof next above. A story containing one or more mezzanines has more than one floor level.

106.5.65 Structural Frame. The columns and the girders, beams, and trusses having direct connections to the columns and all other members that are essential to the stability of the building or facility as a whole.

106.5.66 Structural Impracticability. In new construction, full compliance with the requirements of these standards is
not required where an entity can demonstrate that it is structurally impracticable to meet the requirements. Full compliance will be considered structurally impracticable only in those rare circumstances when the unique characteristics of terrain prevent the incorporation of accessibility features. If full compliance with these standards would be structurally impracticable, compliance with these standards is required to the extent that it is not structurally impracticable. In that case, any portion of the facility that can be made accessible shall be made accessible to the extent that it is not structurally impracticable. If providing accessibility in conformance with these standards to individuals with certain disabilities (e.g., those who use wheelchairs) would be structurally impracticable, accessibility shall nonetheless be ensured to persons with other types of disabilities (e.g., those who use crutches or who have sight, hearing, or mental impairments) in accordance with these standards. All determinations of structural impracticability are made by the Department in accordance with the variance procedures contained in Chapter 68, Texas Administrative Code.

106.5.67 Tactile. An object that can be perceived using the sense of touch.

106.5.68 Technically Infeasible. With respect to an alteration of a building or a facility, something that has little likelihood of being accomplished because existing structural conditions would require removing or altering a load-bearing member that is an essential part of the structural frame; or because other existing physical or site constraints prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with the minimum requirements. All determinations of technical infeasibility are made by the Department in accordance with the variance procedures contained in Chapter 68, Texas Administrative Code.

106.5.69 Teeing Ground. In golf, the starting place for the hole to be played.

106.5.70 Transfer Device. Equipment designed to facilitate the transfer of a person from a wheelchair or other mobility aid to and from an amusement ride seat.

106.5.71 Transient Lodging. A building or facility containing one or more guest room(s) for sleeping that provides accommodations that are primarily short-term in nature. Transient lodging does not include residential dwelling units
intended to be used as a residence, inpatient medical care facilities, licensed long-term care facilities, detention or
correctional facilities, or private buildings or facilities that contain not more than five rooms for rent or hire and that are actually occupied by the proprietor as the residence of such proprietor.

106.5.72 Transition Plate. A sloping pedestrian walking surface located at the end(s) of a gangway.

106.5.73 TTY. An abbreviation for teletypewriter. Machinery that employs interactive text-based communication through the transmission of coded signals across the telephone network. TTYs may include, for example, devices known as TDDs (telecommunication display devices or telecommunication devices for deaf persons) or computers with special modems. TTYs are also called text telephones.

106.5.74 Use Zone. The ground level area beneath and immediately adjacent to a play structure or play equipment that is designated by ASTM F 1487 (incorporated by reference, see "References Standards" in Chapter 1) for unrestricted circulation around the play equipment and where it is predicted that a user would land when falling from or exiting the play equipment.

106.5.75 Vehicular Way. A route provided for vehicular traffic, such as in a street, driveway, or parking facility.

106.5.76 Walk. An exterior prepared surface for pedestrian use, including pedestrian areas such as plazas and courts.

106.5.77 Wheelchair Space. Space for a single wheelchair and its occupant.

106.5.78 Work Area Equipment. Any machine, instrument, engine, motor, pump, conveyor, or other apparatus used to perform work. As used in this document, this term shall apply only to equipment that is permanently installed or built-in in employee work areas. Work area equipment does not include passenger elevators and other accessible means of vertical transportation.

CHAPTER 3: BUILDING BLOCKS

302 Floor or Ground Surfaces

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 exposed edge. Carpet edge trim shall comply with 303.

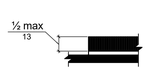

Figure 302.2 Carpet Pile Height

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.

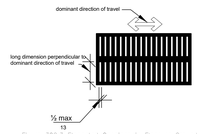

Figure 302.3 Elongated Openings in Floor or Ground Surfaces

303 Changes in Level

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

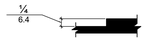

Figure 303.2 Vertical Change in Level

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.

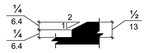

Figure 303.3 Beveled Change in Level

304 Turning Space

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.

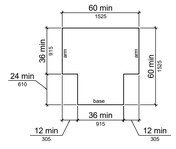

Figure 304.3.2 T-Shaped Turning Space

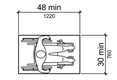

Figure 305.3 Clear Floor or Ground Space

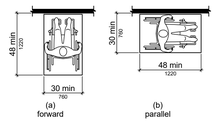

Figure 305.5 Position of Clear Floor or Ground Space

305 Clear Floor or Ground Space

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

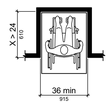

Figure 305.7.1 Maneuvering Clearance in an Alcove, Forward Approach

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

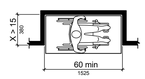

Figure 305.7.2 Maneuvering Clearance in an Alcove, Parallel Approach

306 Knee and Toe Clearance

306.2 Toe Clearance.

306.2.1 General. 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.

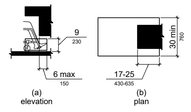

Figure 306.2 Toe Clearance

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.

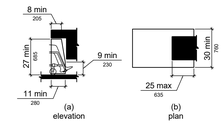

Figure 306.3 Knee Clearance

307 Protruding Objects

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.

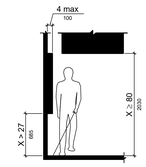

Figure 307.2 Limits of Protruding Objects

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.

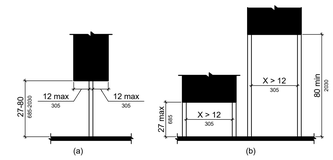

Figure 307.3 Post-Mounted Protruding Objects

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.

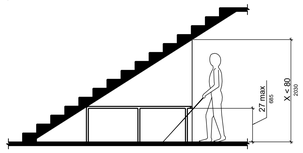

Figure 307.4 Vertical Clearance

308 Reach Ranges

Children's Reach Ranges

	High (maximum)	Low (minimum)
Forward or Side Reach Ages 3 and 4	36 in (915 mm)	20 in (510 mm)
Ages 5 through 8	40 in (1015 mm)	18 in (455 mm)
Ages 9 through 12	44 in (1120 mm)	16 in (405 mm)

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.

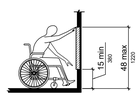

Figure 308.2.1 Obstructed High Forward Reach

308.2.2 Obstructed High 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.

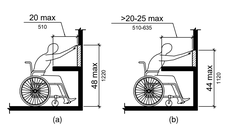

Figure 308.2.2 Obstructed High Forward Reach

REVISIONS DENOTED BY △

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FOOD SERVICE DESIGN
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FARMERS BRANCH, TEXAS 75234
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REGISTERED ARCHITECT
DYLLEE HAHNFELD
13075
STATE OF TEXAS
04/15/2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: ELH
ISSUED FOR: CONSTRUCTION	DRAFTER: JDM
DATE: APRIL 15, 2021	CHECKED: ELH

TEXAS ACCESSIBILITY STANDARDS

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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.

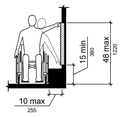

Figure 308.3.1 Unobstructed Side Reach

308.3.2 Obstructed High 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.

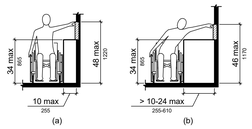

Figure 308.3.2 Obstructed High Side Reach

309 Operable Parts

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.

CHAPTER 4: ACCESSIBLE ROUTES

402 Accessible Routes

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.

Advisory 402.2 Components. Walking surfaces must have running slopes not steeper than 1:20, see 403.3. Other components of accessible routes, such as ramps (405) and curb ramps (406), are permitted to be more steeply sloped.

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 Clearances. Walking surfaces shall provide clearances complying with 403.5.

EXCEPTION: Within employee work areas, clearances on common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

403.5.1 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.

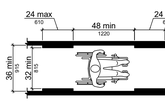

Figure 403.5.1 Clear Width of an Accessible Route

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.

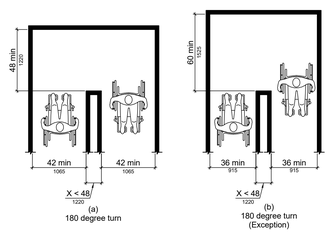

Figure 403.5.2 Clear Width at Turn

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) maximum.

404 Doors, Doorways, and Gates

404.2.3 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 width lower than 34 inches (865 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (865 mm) and 80 inches (2030 mm) above the finish floor or ground shall not exceed 4 inches (100 mm).

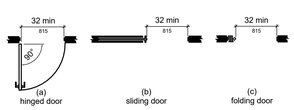

Figure 404.2.3 Clear Width of Doorways

404.2.4 Maneuvering Clearances. Minimum maneuvering clearances at doors and gates shall comply with 404.2.4. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance.

404.2.4.3 Recessed Doors and Gates. Maneuvering clearances for forward approach shall be provided when any obstruction within 18 inches (455 mm) of the latch side of a doorway projects more than 8 inches (205 mm) beyond the face of the door, measured perpendicular to the face of the door or gate.

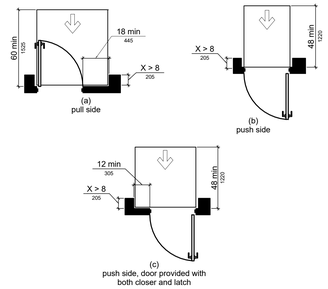

Figure 404.2.4.3 Maneuvering Clearances at Recessed Doors and Gates

404.2.6 Doors in Series and Gates in Series. The distance between two hinged or pivoted doors in series and gates in series shall be 48 inches (1220 mm) minimum plus the width of doors or gates swinging into the space.

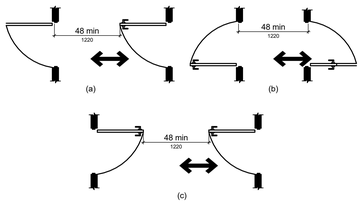

Figure 404.2.6 Doors in Series and Gates in Series

404.2.7 Door and Gate Hardware. Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with 309.4. Operable parts of such hardware shall be 34 inches (865 mm) minimum and 48 inches (1220 mm) maximum above the finish floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.

404.2.8.1 Door Closers and Gate Closers. Door closers and gate closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.

404.2.8.2 Spring Hinges. Door and gate spring hinges shall be adjusted so that from the open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum.

404.2.9 Door and Gate Opening Force. Fire doors shall have a minimum opening force allowable by the appropriate administrative authority. The force for pushing or pulling open a door or gate other than fire doors shall be as follows:

1. Interior hinged doors and gates: 5 pounds (22.2 N) maximum.

2. Sliding or folding doors: 5 pounds (22.2 N) maximum.

These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door or gate in a closed position.

404.2.10 Door and Gate Surfaces. Swinging door and gate surfaces within 10 inches (255 mm) of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within 1/16 inch (1.6 mm) of the same plane as the other. Cavities created by added kick plates shall be capped.

404.2.11 Vision Lights. Doors, gates, and side lights adjacent to doors or gates, containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one glazed panel located 43 inches (1090 mm) maximum above the finish floor.

404.3 Automatic and Power-Assisted Doors and Gates. Automatic doors and automatic gates shall comply with 404.3. Full-powered automatic doors shall comply with ANSI/BHMA A156.10 (incorporated by reference, see "Referenced Standards" in Chapter 1). Low-energy and power-assisted doors shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1).

404.3.2 Maneuvering Clearance. Clearances at power-assisted doors and gates shall comply with 404.2.4. Clearances at automatic doors and gates without standby power and serving an accessible means of egress shall comply with 404.2.4.

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

405 Ramps

405.2 Slope. Ramp runs shall have a running slope not steeper than 1:12.

405.3 Cross Slope. Cross slope of ramp runs shall not be steeper than 1:48.

405.5 Clear Width. The clear width of a ramp run and, where handrails are provided, the clear width between handrails shall be 36 inches (915 mm) minimum.

405.6 Rise. The rise for any ramp run shall be 30 inches (760 mm) maximum.

405.7 Landings. Ramps shall have landings at the top and the bottom of each ramp run. Landings shall comply with 405.7.

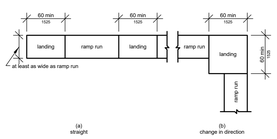

Figure 405.7 Ramp Landings

405.7.1 Slope. Landings shall have slope no steeper than 1:48. Changes in level are not permitted.

405.7.2 Width. The landing clear width shall be at least as wide as the widest ramp run leading to the landing.

405.7.3 Length. The landing clear length shall be 60 inches (1525 mm) long minimum.

405.7.4 Change in Direction. Ramps that change direction between runs at landings shall have a clear landing 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum.

405.7.5 Doorways. Where doorways are located adjacent to a ramp landing, maneuvering clearances required by 404.2.4 and 404.3.2 shall be permitted to overlap the required landing area.

405.8 Handrails. Ramp runs with a rise greater than 6 inches (150 mm) shall have handrails complying with 505.

405.9 Edge Protection. Edge protection complying with 405.9.1 or 405.9.2 shall be provided on each side of ramp runs and at each side of ramp landings.

405.9.1 Extended Floor or Ground Surface. The floor or ground surface of the ramp run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with 505.

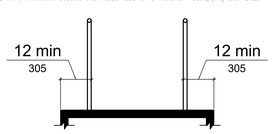

Figure 405.9.1 Extended Floor or Ground Surface Edge Protection

405.9.2 Curb or Barrier. A curb or barrier shall be provided that prevents the passage of a 4 inch (100 mm) diameter sphere, where any portion of the sphere is within 4 inches (100 mm) of the finish floor or ground surface.

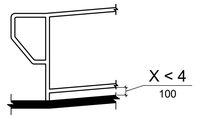

Figure 405.9.2 Curb or Barrier Edge Protection

406 Curb Ramps

406.1 General. Curb ramps on accessible routes shall comply with 406, 405.2 through 405.5, and 405.10.

406.2 Counter Slope. Counter slopes of adjoining gutters and road surfaces immediately adjacent to the curb ramp shall not be steeper than 1:20. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.

Figure 406.2 Counter Slope of Surfaces Adjacent to Curb Ramps

406.3 Sides of Curb Ramps. Where provided, curb ramp flares shall not be steeper than 1:10.

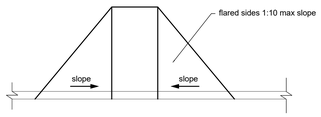

Figure 406.3 Sides of Curb Ramps

406.4 Landings. Landings shall be provided at the tops of curb ramps. The landing clear length shall be 36 inches (915 mm) minimum. The landing clear width shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing.

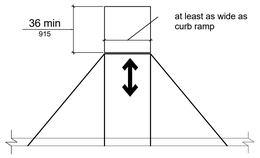

Figure 406.4 Landings at the Top of Curb Ramps

406.5 Location. Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.

406.6 Diagonal Curb Ramps. Diagonal or corner type curb ramps with returned curbs or other well-defined edges shall have the edges parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have a clear space 48 inches (1220 mm) minimum outside active traffic lanes of the roadway. Diagonal curb ramps provided at marked crossings shall provide the 48 inches (1220 mm) minimum clear space within the markings. Diagonal curb ramps with flared sides shall have a segment of curb 24 inches (610 mm) long minimum located on each side of the curb ramp and within the marked crossing.

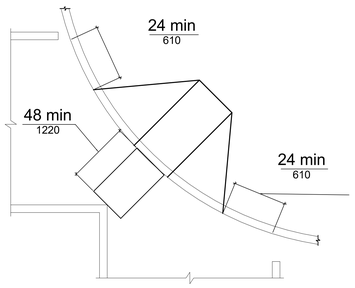

Figure 406.6 Diagonal or Corner Type Curb Ramps

406.7 Islands. Raised islands in crossings shall be cut through level with the street or have curb ramps at both sides. Each curb ramp shall have a level area 48 inches (1220 mm) long minimum by 36 inches (915 mm) wide minimum at the top of the curb ramp in the part of the island intersected by the crossings. Each 48 inch (1220 mm) minimum by 36 inch (915 mm) minimum area shall be oriented so that the 48 inch (1220 mm) minimum length is in the direction of the running slope of the curb ramp it serves. The 48 inch (1220 mm) minimum by 36 inch (915 mm) minimum areas and the accessible route shall be permitted to overlap.

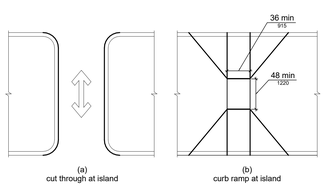

Figure 406.7 Islands in Crossings

407 Elevators

407.1 General. Elevators shall comply with 407 and with ASME A17.1 (incorporated by reference, see "Referenced Standards" in Chapter 1). They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

407.2.1.2 Size. Call buttons shall be 3/4 inch (19 mm) minimum in the smallest dimension.

407.2.2.1 Visible and Audible Signals. A visible and audible signal shall be provided at each hoistway entrance to indicate which car is answering a call and the car's direction of travel. Where in-car signals are provided, they shall be visible from the floor area adjacent to the hall call buttons.

407.2.2.2 Visible Signals. Visible signal fixtures shall be centered at 72 inches (1830 mm) minimum above the finish floor or ground. The visible signal elements shall be 2 1/2 inches (64 mm) minimum measured along the vertical centerline of the element. Signals shall be visible from the floor area adjacent to the hall call button.

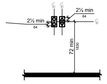

Figure 407.2.2.2 Visible Hall Signals

407.2.3.1 Floor Designation. Floor designations complying with 703.2 and 703.4.1 shall be provided on both jambs of elevator hoistway entrances. Floor designations shall be provided in both tactile characters and braille. Tactile characters shall be 2 inches (51 mm) high minimum. A tactile star shall be provided on both jambs at the main entry level.

Figure 407.2.3.1 Floor Designations on Jambs of Elevator Hoistway Entrances

407.2.3.2 Car Designations. Destination-oriented elevators shall provide tactile car identification complying with 703.2 on both jambs of the hoistway immediately below the floor designation. Car designations shall be provided in both tactile characters and braille. Tactile characters shall be 2 inches (51 mm) high minimum.

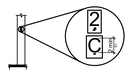

Figure 407.2.3.2 Car Designations on Jambs of Destination-Oriented Elevator Hoistway Entrances

407.3.3.1 Height. The device shall be activated by sensing an obstruction passing through the opening at 5 inches (125 mm) nominal and 29 inches (735 mm) nominal above the finish floor.

407.3.3.3 Duration. Door reopening devices shall remain effective for 20 seconds minimum.

407.3.4 Door and Signal Timing. The minimum acceptable time from notification that a car is answering a call or notification of the car assigned at the means for the entry of destination information until the doors of that car start to close shall be calculated from the following equation:

T = D/(1.5 ft/s) or T = D/(455 mm/s) = 5 seconds minimum where T equals the total time in seconds and D equals the distance (in feet or millimeters) from the point in the lobby or corridor 60 inches (1525 mm) directly in front of the farthest call button controlling that car to the centerline of its hoistway door.

407.3.5 Door Delay. Elevator doors shall remain fully open in response to a car call for 3 seconds

407.3.6 Width. The width of elevator doors shall comply with Table 407.4.1.

407.4 Elevator Car Requirements. Elevator cars shall comply with 407.4.

407.4.1 Car Dimensions. Inside dimensions of elevator cars and clear width of elevator doors shall comply with Table 407.4.1.

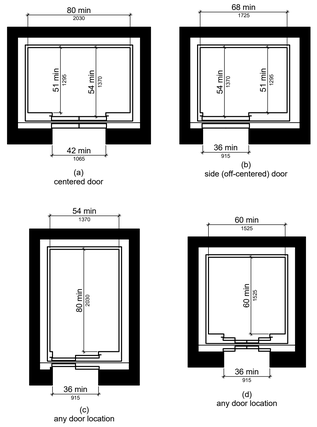

Figure 407.4.1 Elevator Car Dimensions

407.4.3 Platform to Hoistway Clearance. The clearance between the car platform sill and the edge of any hoistway landing shall be 1 1/4 inch (32 mm) maximum.

407.4.4 Leveling. Each car shall be equipped with a self-leveling feature that will automatically bring and maintain the car at floor landings within a tolerance of 1/2 inch (13 mm) under rated loading to zero loading conditions.

407.4.5 Illumination. The level of illumination at the car controls, platform, car threshold and car landing sill shall be 5 foot candles (54 lux) minimum.

407.4.6 Elevator Car Controls. Where provided, elevator car controls shall comply with 407.4.6 and 309.4.

407.4.6.1 Location. Controls shall be located within one of the reach ranges specified in 308.

407.4.6.2 Buttons. Car control buttons with floor designations shall comply with 407.4.6.2 and shall be raised or flush.

407.4.6.2.1 Size. Buttons shall be 3/4 inch (19 mm) minimum in their smallest dimension.

407.4.6.4.1 Height. Emergency control buttons shall have their centerlines 35 inches (890 mm) minimum above the finish floor.

407.4.7.1.1 Type. Control buttons shall be identified by tactile characters complying with 703.2.

407.4.7.1.3 Symbols. The control button for the emergency stop, alarm, door open, door close, main entry floor, and phone, shall be identified with tactile symbols as shown in Table 407.4.7.1.3.

407.4.8.1.1 Size. Characters shall be 1/2 inch (13 mm) high minimum.

407.4.8.2.2 Signal Level. The verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the annunciator.

407.4.8.2.3 Frequency. The verbal annunciator shall have a frequency of 300 Hz minimum to 3000 Hz maximum.

408 Limited-Use/Limited-Application Elevators

408.1 General. Limited-use/limited-application elevators shall comply with 408 and with ASME A17.1 (incorporated by reference, see "Referenced Standards" in Chapter 1). They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

408.2 Elevator Landings. Landings serving limited-use/limited-application elevators shall comply with 408.2.

408.2.1 Call Buttons. Elevator call buttons and keypads shall comply with 407.2.1.

408.2.2 Hall Signals. Hall signals shall comply with 407.2.2.

408.2.3 Hoistway Signs. Signs at elevator hoistways shall comply with 407.2.3.1.

408.3 Elevator Doors. Elevator hoistway doors shall comply with 408.3.

408.3.1 Sliding Doors. Sliding hoistway and car doors shall comply with 407.3.1 through 407.3.3 and 408.4.1.

408.3.2 Swinging Doors. Swinging hoistway doors shall open and close automatically and shall comply with 404, 407.3.2 and 408.3.2.

408.3.2.1 Power Operation. Swinging doors shall be power-operated and shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1).

408.3.2.2 Duration. Power-operated swinging doors shall remain open for 20 seconds minimum when activated.

408.4 Elevator Cars. Elevator cars shall comply with 408.4.

408.4.1 Car Dimensions and Doors. Elevator cars shall provide a clear width of 42 inches (1065 mm) minimum and a clear depth 54 inches (1370 mm) minimum. Car doors shall be positioned at the narrow ends of cars and shall provide 32 inches (815 mm) minimum clear width.

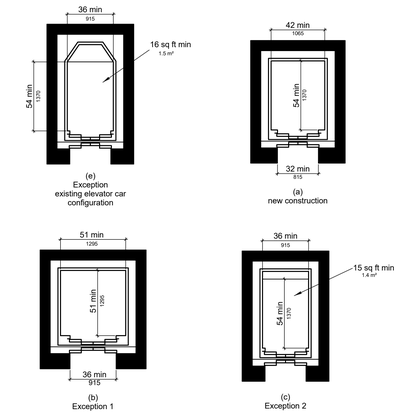

Figure 408.4.1 Limited-Use/Limited-Application (LULA) Elevator Car Dimensions

408.4.2 Floor Surfaces. Floor surfaces in elevator cars shall comply with 302 and 303.

408.4.3 Platform to Hoistway Clearance. The platform to hoistway clearance shall comply with 407.4.3.

408.4.4 Leveling. Elevator car leveling shall comply with 407.4.4.

408.4.5 Illumination. Elevator car illumination shall comply with 407.4.5.

408.4.6 Car Controls. Elevator car controls shall comply with 407.4.6. Control panels shall be centered on a side wall.

408.4.7 Designations and Indicators of Car Controls. Designations and indicators of car controls shall comply with 407.4.7.

408.4.8 Emergency Communications. Car emergency signaling devices complying with 407.4.9 shall be provided.

409 Private Residence Elevators

409.1 General. Private residence elevators that are provided within a residential dwelling unit required to provide mobility features complying with 809.2 through 809.4 shall comply with 409 and with ASME A17.1 (incorporated by reference, see "Referenced Standards" in Chapter 1). They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

409.2 Call Buttons. Call buttons shall be 3/4 inch (19 mm) minimum in the smallest dimension and shall comply with 309.

409.3 Elevator Doors. Hoistway doors, car doors, and car gates shall comply with 409.3 and 404.

409.3.1 Power Operation. Elevator car and hoistway doors and gates shall be power operated and shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1). Power operated doors and gates shall remain open for 20 seconds minimum when activated.

409.3.2 Location. Elevator car doors or gates shall be positioned at the narrow end of the clear floor spaces required by 409.4.1.

409.4 Elevator Cars. Private residence elevator cars shall comply with 409.4.

409.4.1 Inside Dimensions of Elevator Cars. Elevator cars shall provide a clear floor space of 36 inches (915 mm) minimum by 48 inches (1220 mm) minimum and shall comply with 305.

409.4.2 Floor Surfaces. Floor surfaces in elevator cars shall comply with 302 and 303.

409.4.3 Platform to Hoistway Clearance. The clearance between the car platform and the edge of any landing sill shall be 1 1/2 inch (38 mm) maximum.

409.4.4 Leveling. Each car shall automatically stop at a floor landing within a tolerance of 1/2 inch (13 mm) under rated loading to zero loading conditions.

409.4.5 Illumination Levels. Elevator car illumination shall comply with 407.4.5.

409.4.6 Car Controls. Elevator car control buttons shall comply with 409.4.6, 309.3, 309.4, and shall be raised or flush.

409.4.6.1 Size. Control buttons shall be 3/4 inch (19 mm) minimum in their smallest dimension.

409.4.6.2 Location. Control panels shall be on a side wall, 12 inches (305 mm) minimum from any adjacent wall.

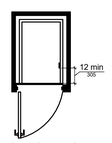

Figure 409.4.6.2 Location of Private Residence Elevator Control Panel

409.4.7 Emergency Communications. Emergency two-way communication systems shall comply with 409.4.7.

409.4.7.1 Type. A telephone and emergency signal device shall be provided in the car.

409.4.7.2 Operable Parts. The telephone and emergency signaling device shall comply with 309.3 and 309.4.

409.4.7.3 Compartment. If the telephone or device is in a closed compartment, the compartment door hardware shall comply with 309.

409.4.7.4 Cord. The telephone cord shall be 29 inches (735 mm) long minimum.

410 Platform Lifts

410.1 General. Platform lifts shall comply with ASME A18.1 (1999 edition or 2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1). Platform lifts shall not be attendant-operated and shall provide unassisted entry and exit from the lift.

Advisory 410.1 General. Inclined stairway chairlifts and inclined and vertical platform lifts are available for short-distance vertical transportation. Because an accessible route requires an 80 inch (2030 mm) vertical clearance, care should be taken in selecting lifts as they may not be equally suitable for use by people using wheelchairs and people standing. If a lift does not provide 80 inch (2030 mm) vertical clearance, it cannot be considered part of an accessible route in new construction.

REVISIONS DENOTED BY △

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FARMERS BRANCH, TEXAS 75234
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REGISTERED ARCHITECT ELAINE HAHNFELD 13079 STATE OF TEXAS
04/15/2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: ELH
ISSUED FOR: CONSTRUCTION	DRAFTER: JDM
DATE: APRIL 15, 2021	CHECKED: ELH

TEXAS ACCESSIBILITY STANDARDS

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The ADA and other Federal civil rights laws require that accessible features be maintained in working order so that they are accessible to and usable by those people they are intended to benefit. Building owners are reminded that the ASME A18 Safety Standard for Platform Lifts and Stairway Chairlifts requires routine maintenance and inspections. Isolated or temporary interruptions in service due to maintenance or repairs may be unavoidable; however, failure to take prompt action to effect repairs could constitute a violation of Federal laws and these requirements.

410.2 Floor Surfaces. Floor surfaces in platform lifts shall comply with 302 and 303.

410.3 Clear Floor Space. Clear floor space in platform lifts shall comply with 305.

410.4 Platform to Runway Clearance. The clearance between the platform sill and the edge of any runway landing shall be 1 inch (32 mm) maximum.

410.5 Operable Parts. Controls for platform lifts shall comply with 309.

410.6 Doors and Gates. Platform lifts shall have low-energy power-operated doors or gates complying with 404.3. Doors shall remain open for 20 seconds minimum. End doors and gates shall provide a clear width 32 inches (815 mm) minimum. Side doors and gates shall provide a clear width 42 inches (1065 mm) minimum.

EXCEPTION: Platform lifts serving two landings maximum and having doors or gates on opposite sides shall be permitted to have self-closing manual doors or gates.

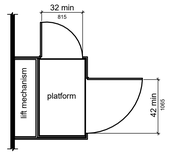

Figure 410.6 Platform Lift Doors and Gates

CHAPTER 5: GENERAL SITE AND BUILDING ELEMENTS

502 Parking Spaces

502.1 General. Car and van parking spaces shall comply with 502. Where parking spaces are marked with lines, width measurements of parking spaces and access aisles shall be made from the centerline of the markings.

EXCEPTION: Where parking spaces or access aisles are not adjacent to another parking space or access aisle, measurements shall be permitted to include the full width of the line defining the parking space or access aisle.

502.2 Vehicle Spaces. Car parking spaces shall be 96 inches (2440 mm) wide minimum and van parking spaces shall be 132 inches (3350 mm) wide minimum, shall be marked to define the width, and shall have an adjacent access aisle complying with 502.3.

EXCEPTION: Van parking spaces shall be permitted to be 96 inches (2440 mm) wide minimum where the access aisle is 96 inches (2440 mm) wide minimum.

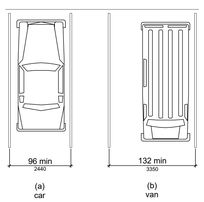

Figure 502.2 Vehicle Parking Spaces

502.3 Access Aisle. Access aisles serving parking spaces shall comply with 502.3. Access aisles shall adjoin an accessible route. Two parking spaces shall be permitted to share a common access aisle.

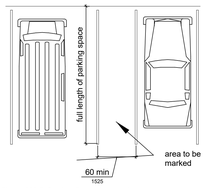

Figure 502.3 Parking Space Access Aisle

502.3.1 Width. Access aisles serving car and van parking spaces shall be 60 inches (1525 mm) wide minimum.

502.3.2 Length. Access aisles shall extend the full length of the parking spaces they serve.

502.3.3 Marking. Access aisles shall be marked so as to discourage parking in them.

502.3.4 Location. Access aisles shall not overlap the vehicular way. Access aisles shall be permitted to be placed on either side of the parking space except for angled van parking spaces which shall have access aisles located on the passenger side of the parking spaces.

502.4 Floor or Ground Surfaces. Parking spaces and access aisles serving them shall comply with 302. Access aisles shall be at the same level as the parking spaces they serve. Changes in level are not permitted.

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

502.5 Vertical Clearance. Parking spaces for vans and access aisles and vehicular routes serving them shall provide a vertical clearance of 98 inches (2490 mm) minimum.

502.6 Identification. Parking space identification signs shall include the International Symbol of Accessibility complying with 703.7.2.1. Signs identifying van parking spaces shall contain the designation "van accessible." Signs shall be 60 inches (1525 mm) minimum above the finish floor or ground surface measured to the bottom of the sign.

502.7 Relationship to Accessible Routes. Parking spaces and access aisles shall be designed so that cars and vans, when parked, cannot obstruct the required clear width of adjacent accessible routes.

503 Passenger Loading Zones

503.2 Vehicle Pull-up Space. Passenger loading zones shall provide a vehicular pull-up space 96 inches (2440 mm) wide minimum and 20 feet (6100 mm) long minimum.

503.3 Access Aisle. Passenger loading zones shall provide access aisles complying with 503 adjacent to the vehicle pull-up space. Access aisles shall adjoin an accessible route and shall not overlap the vehicular way.

503.3.1 Width. Access aisles serving vehicle pull-up spaces shall be 60 inches (1525 mm) wide minimum.

503.3.2 Length. Access aisles shall extend the full length of the vehicle pull-up spaces they serve.

503.3.3 Marking. Access aisles shall be marked so as to discourage parking in them.

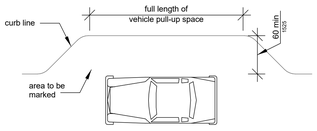

Figure 503.3 Passenger Loading Zone Access Aisle

503.4 Floor and Ground Surfaces. Vehicle pull-up spaces and access aisles serving them shall comply with 302. Access aisles shall be at the same level as the vehicle pull-up space they serve. Changes in level are not permitted.

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

503.5 Vertical Clearance. Vehicle pull-up spaces, access aisles serving them, and a vehicular route from an entrance to the passenger loading zone, and from the passenger loading zone to a vehicular exit shall provide a vertical clearance of 114 inches (2895 mm) minimum.

504 Stairways

504.1 General. Stairs that are part of the means of egress is required to 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.

504.5 Nosings. The radius of curvature at the leading edge of the tread shall be 1/2 inch (13 mm) maximum. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 1 1/2 inches (38 mm) maximum over the tread below.

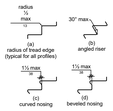

Figure 504.5 Stair Nosings

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.

Advisory 505.1 General. Handrails are required on ramp runs with a rise greater than 6 inches (150 mm) (see 405.8) and on certain stairways (see 504). Handrails are not required on walking surfaces with running slopes less than 1:20. However, handrails are required to comply with 505 when they are provided on walking surfaces with running slopes less than 1:20 (see 403.6). Sections 505.2, 505.3, and 505.10 do not apply to handrails provided on walking surfaces with running slopes less than 1:20 as these sections only reference requirements for ramps and stairs.

505.2 Where Required. Handrails shall be provided on both sides of stairs and ramps.

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.

505.4 Height. Top of gripping surfaces of handrails shall be 34 inches (865 mm) minimum and 38 inches (965 mm) maximum vertically above walking surfaces, stair nosings, and ramp surfaces. Handrails shall be at a consistent height above walking surfaces, stair nosings, and ramp surfaces.

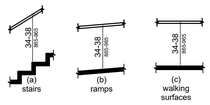

Figure 505.4 Handrail Height

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

Figure 505.5 Handrail Clearance

Figure 505.6 Horizontal Projections Below Gripping Surface

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.

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.

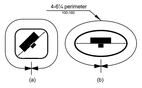

Figure 505.7.2 Handrail Non-Circular Cross Section

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.

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.

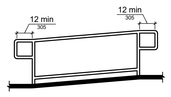

Figure 505.10.1 Top and Bottom Handrail Extension at Ramps

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.

Figure 505.10.2 Top Handrail Extension at Stairs

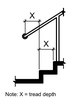

Figure 505.10.3 Bottom Handrail Extension at Stairs

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 AND FACILITIES

602 Drinking Fountains

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.

Figure 602.5 Drinking Fountain Spout Location

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

603.2 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 Overlap. Required clear floor spaces, clearance at fixtures, and turning space shall be permitted to overlap.

603.2.3 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.

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 35 inches (890 mm) maximum above the finish floor or ground.

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

604.2 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.

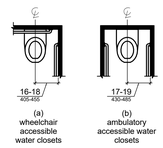

Figure 604.2 Water Closet

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.

Figure 604.3.1 Size of Clearance at Water Closets

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.

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.

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.

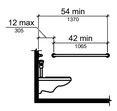

Figure 604.5.1 Side Wall Grab Bar at Water Closets

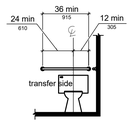

Figure 604.5.2 Rear Wall Grab Bar at Water Closets

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.

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 309.4 and shall be 7 inches (180 mm) minimum and 9 inches (230 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 15 inches (380 mm) minimum and 48 inches (1220 mm) maximum above the finish floor and shall not be located behind grab bars. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

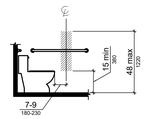

Figure 604.7 Dispenser Outlet Location

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.

604.8.1 Wheelchair Accessible Compartments. Wheelchair accessible compartments shall comply with 604.8.1.

604.8.1.1 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.

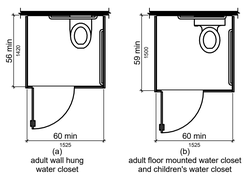

Figure 604.8.1.1 Size of Wheelchair Accessible Toilet Compartment

604.8.1.2 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. 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.

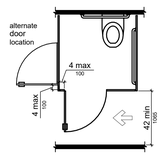

Figure 604.8.1.2 Wheelchair Accessible Toilet Compartment Doors

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

604.8.1.4 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 face 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

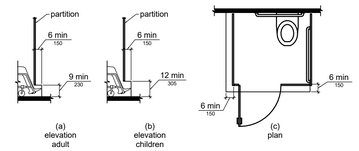

Figure 604.8.1.4 Wheelchair Accessible Toilet Compartment Toe Clearance

604.8.1.5 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.

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

604.8.2.1 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.

604.8.2.2 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.

604.8.2.3 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.

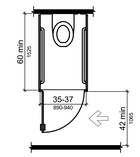

Figure 604.8.2 Ambulatory Accessible Toilet Compartment

604.8.3 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 Water Closets and Toilet Compartments for Children's Use. Water closets and toilet compartments for children's use shall comply with 604.9.

604.9.1 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.

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

604.9.3 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.

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

604.9.5 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.

604.9.6 Dispensers. Toilet paper dispensers shall comply with 309.4 and shall be 7 inches (180 mm) minimum and 9 inches (230 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 14 inches (355 mm) minimum and 19 inches (485 mm) maximum above the finish floor. There shall be a clearance of 1 1/2 inches (38 mm) minimum below the grab bar. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

604.9.7 Toilet Compartments. Toilet compartments shall comply with 604.8.

605 Urinals

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.

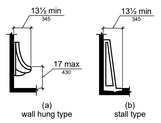

Figure 605.2 Height and Depth of Urinals

605.3 Clear Floor Space. A clear floor or ground space complying with 305 positioned for forward approach shall be provided.

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

606 Lavatories and Sinks

606.2 Clear Floor Space. A clear floor space complying with 305, positioned for a forward approach, and knee and toe clearance complying with 306 shall be provided.

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.

606.4 Faucets. Controls for faucets shall comply with 309. Hand-operated metering faucets shall remain open for 10 seconds minimum.

606.5 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.

607 Bathtubs

607.2 Clearance. Clearance in front of bathtubs shall extend the length of the bathtub and shall be 30 inches (760 mm) wide minimum. A lavatory complying with 606 shall be permitted at the control end of the clearance. Where a permanent seat is provided at the head end of the bathtub, the clearance shall extend 12 inches (305 mm) minimum beyond the wall at the head end of the bathtub.

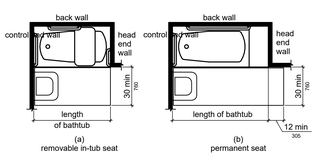

Figure 607.2 Clearance for Bathtubs

607.3 Seat. A permanent seat at the head end of the bathtub or a removable in-tub seat shall be provided. Seats shall comply with 610.

607.4 Grab Bars. Grab bars for bathtubs shall comply with 609 and shall be provided in accordance with 607.4.1 or 607.4.2.

607.4.1 Bathtubs With Permanent Seats. For bathtubs with permanent seats, grab bars shall be provided in accordance with 607.4.1.

607.4.1.1 Back Wall. Two grab bars shall be installed on the back wall, one located in accordance with 609.4 and the other located 8 inches (205 mm) minimum and 10 inches (255 mm) maximum above the rim of the bathtub. Each grab bar shall be installed 15 inches (380 mm) maximum from the head end wall and 12 inches (305 mm) maximum from the control end wall.

607.4.1.2 Control End Wall. A grab bar 24 inches (610 mm) long minimum shall be installed on the control end wall at the front edge of the bathtub.

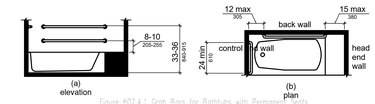

Figure 607.4.1 Grab Bars for Bathtubs With Permanent Seats

607.4.2 Bathtubs Without Permanent Seats. For bathtubs without permanent seats, grab bars shall comply with 607.4.2.

607.4.2.1 Back Wall. Two grab bars shall be installed on the back wall, one located in accordance with 609.4 and other located 8 inches (205 mm) minimum and 10 inches (255 mm) maximum above the rim of the bathtub. Each grab bar shall be 24 inches (610 mm) long minimum and shall be installed 24 inches (610 mm) maximum from the head end wall and 12 inches (305 mm) maximum from the control end wall.

607.4.2.2 Control End Wall. A grab bar 24 inches (610 mm) long minimum shall be installed on the control end wall at the front edge of the bathtub.

607.4.2.3 Head End Wall. A grab bar 12 inches (305 mm) long minimum shall be installed on the head end wall at the front edge of the bathtub.

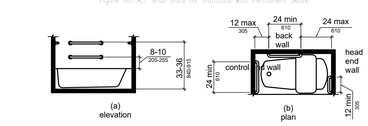

Figure 607.4.2 Grab Bars for Bathtubs With Removable In-Tub Seats

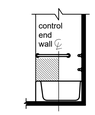

Figure 607.5 Bathtub Control Location

607.5 Controls. Controls, other than drain stoppers, shall be located on an end wall. Controls shall be between the bathtub rim and grab bar, and between the open side of the bathtub and the centerline of the width of the bathtub. Controls shall comply with 309.4.

607.6 Shower Spray Unit and Water. A shower spray unit with a hose 59 inches (1500 mm) long minimum that can be used both as a fixed-position shower head and as a hand-held shower shall be provided. The shower spray unit shall have an on/off control with a non-positive shut-off. If an adjustable-height shower head on a vertical bar is used, the bar shall be installed so as not to obstruct the use of grab bars. Bathtub shower spray units shall deliver water that is 120°F (49°C) maximum.

607.7 Bathtub Enclosures. Enclosures for bathtubs shall not obstruct controls, faucets, shower and spray units or obstruct transfer from wheelchairs onto bathtub seats or into bathtubs. Enclosures on bathtubs shall not have tracks installed on the rim of the open face of the bathtub.

608 Shower Compartments

608.2 Size and Clearances for Shower Compartments. Shower compartments shall have sizes and clearances complying with 608.2.

608.2.1 Transfer Type Shower Compartments. Transfer type shower compartments shall be 36 inches (915 mm) by 36 inches (915 mm) clear inside dimensions measured at the center points of opposing sides and shall have a 36 inch (915 mm) wide minimum entry on the face of the shower compartment. Clearance of 36 inches (915 mm) wide minimum by 48 inches (1220 mm) long minimum measured from the control wall shall be provided.

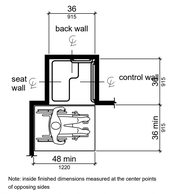

Figure 608.2.1 Transfer Type Shower Compartment Size and Clearance

608.2.2 Standard Roll-in Type Shower Compartments. Standard roll-in type shower compartments shall be 30 inches (760 mm) wide minimum by 60 inches (1525 mm) deep minimum clear inside dimensions measured at center points of opposing sides and shall have a 60 inches (1525 mm) wide minimum entry on the face of the shower compartment.

608.2.2.1 Clearance. A 30 inch (760 mm) wide minimum by 60 inch (1525 mm) long minimum clearance shall be provided adjacent to the open face of the shower compartment.

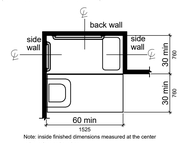

Figure 608.2.2 Standard Roll-in Type Shower Compartment Size and Clearance

608.2.3 Alternate Roll-in Type Shower Compartments. Alternate roll-in type shower compartments shall be 36 inches (915 mm) wide and 60 inches (1525 mm) deep minimum clear inside dimensions measured at center points of opposing sides. A 36 inch (915 mm) wide minimum entry shall be provided at one end of the long side of the compartment.

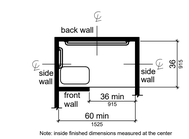

Figure 608.2.3 Alternate Roll-in Type Shower Compartment Size and Clearance

608.3 Grab Bars. Grab bars shall comply with 609 and shall be provided in accordance with 608.3. Where multiple grab bars are used, required horizontal grab bars shall be installed at the same height above the finish floor.

REVISIONS DENOTED BY △

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REGISTERED ARCHITECT ELIZABETH LEE HAHNFELD 13075 STATE OF TEXAS
04/15/2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: ELH
ISSUED FOR:CONSTRUCTION	DRAFTER: JDM
DATE: APRIL 15, 2021	CHECKED: ELH

TEXAS ACCESSIBILITY STANDARDS

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608.3.1 Transfer Type Shower Compartments. In transfer type compartments, grab bars shall be provided across the control wall and back wall to a point 18 inches (455 mm) from the control wall.

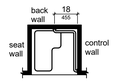

Figure 608.3.1 Grab Bars for Transfer Type Showers

608.3.2 Standard Roll-in Type Shower Compartments. Where a seat is provided in standard roll-in type shower compartments, grab bars shall be provided on the back wall and the side wall opposite the seat. Grab bars shall not be provided above the seat. Where a seat is not provided in standard roll-in type shower compartments, grab bars shall be provided on three walls. Grab bars shall be installed 6 inches (150 mm) maximum from adjacent walls.

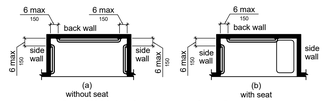

Figure 608.3.2 Grab Bars for Standard Roll-in Type Showers

608.3.3 Alternate Roll-in Type Shower Compartments. In alternate roll-in type shower compartments, grab bars shall be provided on the back wall and the side wall farthest from the compartment entry. Grab bars shall not be provided above the seat. Grab bars shall be installed 6 inches (150 mm) maximum from adjacent walls.

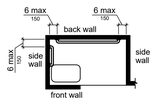

Figure 608.3.3 Grab Bars for Alternate Roll-in Type Showers

608.4 Seats. A folding or non-folding seat shall be provided in transfer type shower compartments. A folding seat shall be provided in roll-in type showers required in transient lodging guest rooms with mobility features complying with 806.2. Seats shall comply with 610.

608.5 Controls. Controls, faucets, and shower spray units shall comply with 309.4.

608.5.1 Transfer Type Shower Compartments. In transfer type shower compartments, the controls, faucets, and shower spray unit shall be installed on the side wall opposite the seat 38 inches (965 mm) minimum and 48 inches (1220 mm) maximum above the shower floor and shall be located on the control wall 15 inches (380 mm) maximum from the centerline of the seat toward the shower opening.

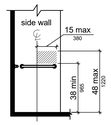

Figure 608.5.1 Transfer Type Shower Compartment Control Location

608.5.2 Standard Roll-in Type Shower Compartments. In standard roll-in type shower compartments, the controls, faucets, and shower spray unit shall be located above the grab bar, but no higher than 48 inches (1220 mm) above the shower floor. Where a seat is provided, the controls, faucets, and shower spray unit shall be installed on the back wall adjacent to the seat wall and shall be located 27 inches (685 mm) maximum from the seat wall.

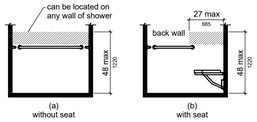

Figure 608.5.2 Standard Roll-in Type Shower Compartment Control Location

608.5.3 Alternate Roll-in Type Shower Compartments. In alternate roll-in type shower compartments,the controls, faucets, and shower spray unit shall be located above the grab bar, but no higher than 48 inches (1220 mm) above the shower floor. Where a seat is provided, the controls, faucets, and shower spray unit shall be located on the side wall adjacent to the seat 27 inches (685 mm) maximum from the side wall behind the seat or shall be located on the back wall opposite the seat 15 inches (380 mm) maximum, left or right, of the centerline of the seat. Where a seat is not provided, the controls, faucets, and shower spray unit shall be installed on the side wall farthest from the compartment entry.

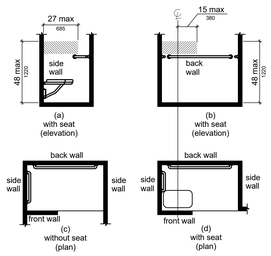

Figure 608.5.3 Alternate Roll-in Type Shower Compartment Control Location

608.6 Shower Spray Unit and Water. A shower spray unit with a hose 59 inches (1500 mm) long minimum that can be used both as a fixed-position shower head and as a hand-held shower shall be provided. The shower spray unit shall have an on/off control with a non-positive shut-off. If an adjustable-height shower head on a vertical bar is used, the bar shall be installed so as not to obstruct the use of grab bars. Shower spray units shall deliver water that is 120F (49C) maximum.

608.7 Thresholds. Thresholds in roll-in type shower compartments shall be 1/2 inch (13 mm) high maximum in accordance with 303. In transfer type shower compartments, thresholds 1/2 inch (13 mm) high maximum shall be beveled, rounded, or vertical.

608.8 Shower Enclosures. Enclosures for shower compartments shall not obstruct controls, faucets, and shower spray units or obstruct transfer from wheelchairs onto shower seats.

609 Grab Bars

609.1 General. Grab bars in toilet facilities and bathing facilities shall comply with 609.

609.2 Cross Section. Grab bars shall have a cross section complying with 609.2.1 or 609.2.2.

609.2.1 Circular Cross Section. Grab bars with circular cross sections shall have an outside diameter of 1 1/4 inches (32 mm) minimum and 2 inches (51 mm) maximum.

609.2.2 Non-Circular Cross Section. Grab bars with non-circular cross sections shall have a cross-section dimension of 2 inches (51 mm) maximum and a perimeter dimension of 4 inches (100 mm) minimum and 4.8 inches (120 mm) maximum.

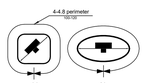

Figure 609.2.2 Grab Bar Non-Circular Cross Section

609.3 Spacing. The space between the wall and the grab bar shall be 1 1/2 inches (38 mm). The space between the grab bar and projecting objects below and at the ends shall be 1 1/2 inches (38 mm) minimum. The space between the grab bar and projecting objects above shall be 12 inches (305 mm) minimum.

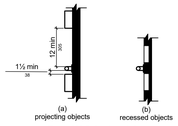

Figure 609.3 Spacing of Grab Bars

609.4 Position of Grab Bars. Grab bars shall be installed in a horizontal position, 33 inches (840 mm) minimum and 36 inches (915 mm) maximum above the finish floor measured to the top of the gripping surface, except that at water closets for children's use complying with 604.9, grab bars shall be installed in a horizontal position 18 inches (455 mm) minimum and 27 inches (685 mm) maximum above the finish floor measured to the top of the gripping surface. The height of the lower grab bar on the back wall of a bathtub shall comply with 607.4.1.1 or 607.4.2.1.

609.5 Surface Hazards. Grab bars and any wall or other surfaces adjacent to grab bars shall be free of sharp or abrasive elements and shall have rounded edges.

609.6 Fittings. Grab bars shall not rotate within their fittings.

609.7 Installation. Grab bars shall be installed in any manner that provides a gripping surface at the specified locations and that does not obstruct the required clear floor space.

609.8 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 grab bar, fastener, mounting device, or supporting structure.

610 Seats

610.2 Bathtub Seats. The top of bathtub seats shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the bathroom finish floor. The depth of a removable in-tub seat shall be 15 inches (380 mm) minimum and 16 inches (405 mm) maximum. The seat shall be capable of secure placement. Permanent seats at the head end of the bathtub shall be 15 inches (380 mm) deep minimum and shall extend from the back wall to or beyond the outer edge of the bathtub.

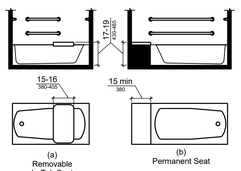

Figure 610.2 Bathtub Seats

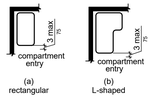

Figure 610.3 Extent of Seat

610.3 Shower Compartment Seats. Where a seat is provided in a standard roll-in shower compartment, it shall be a folding type, shall be installed on the side wall adjacent to the controls, and shall extend from the back wall to a point within 3 inches (75 mm) of the compartment entry. Where a seat is provided in an alternate roll-in type shower compartment, it shall be a folding type, shall be installed on the front wall opposite the back wall, and shall extend from the adjacent side wall to a point within 3 inches (75 mm) of the compartment entry. In transfer-type showers, the seat shall extend from the back wall to a point within 3 inches (75 mm) of the compartment entry. The top of the seat shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the bathroom finish floor. Seats shall comply with 610.3.1 or 610.3.2.

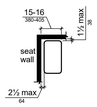

Figure 610.3.1 Rectangular Shower Seat

610.3.1 Rectangular Seats. The rear edge of a rectangular seat shall be 2 1/2 inches (64 mm) maximum and the front edge 15 inches (380 mm) minimum and 16 inches (405 mm) maximum from the seat wall. The side edge of the seat shall be 1 1/2 inches (38 mm) maximum from the adjacent wall.

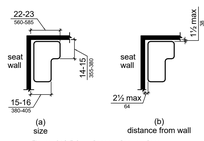

Figure 610.3.2 L-Shaped Shower Seat

610.3.2 L-Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches (64 mm) maximum and the front edge 15 inches (380 mm) minimum and 16 inches (405 mm) maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches (38 mm) maximum from the wall and the front edge shall be 14 inches (355 mm) minimum and 15 inches (380 mm) maximum from the wall. The end of the "L" shall be 22 inches (560 mm) minimum and 23 inches maximum (585 mm) from the main seat wall.

610.4 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.

611 Washing Machines and Clothes Dryers

611.2 Clear Floor Space. A clear floor or ground space complying with 305 positioned for parallel approach shall be provided. The clear floor or ground space shall be centered on the appliance.

611.3 Operable Parts. Operable parts, including doors, lint screens, and detergent and bleach compartments shall comply with 309.

611.4 Height. Top loading machines shall have the door to the laundry compartment located 36 inches (915 mm) maximum above the finish floor. Front loading machines shall have the bottom of the opening to the laundry compartment located 15 inches (380 mm) minimum and 36 inches (915 mm) maximum above the finish floor.

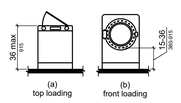

Figure 611.4 Height of Laundry Compartment Opening

612 Saunas and Steam Rooms

612.2 Bench. Where seating is provided in saunas and steam rooms, at least one bench shall comply with 903. Doors shall not swing into the clear floor space required by 903.2.

612.3 Turning Space. A turning space complying with 304 shall be provided within saunas and steam rooms

CHAPTER 7: COMMUNICATION ELEMENTS AND FEATURES

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 4-3.2.1 of NFPA 72 (1999 edition) shall have a sound level no more than 110 dB at the minimum hearing distance from the audible appliance. In addition, alarms in guest 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).

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 Proportions. 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". 703.2.5 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".

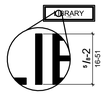

Figure 703.2.5 Height of Raised Characters

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.

703.3 Braille. Braille shall be contracted (Grade 2) and shall comply with 703.3 and 703.4.

703.3.1 Dimensions and Capitalization. Braille 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.

Figure 703.3.1 Braille Measurement

703.3.2 Position. Braille shall be positioned below the corresponding text. If text is multi-lined, braille shall be placed below the entire text. Braille shall be separated 3/8 inch (9.5 mm) minimum from any other tactile characters and 3/8 inch (9.5 mm) minimum from raised borders and decorative elements.

Figure 703.3.2 Position of Braille

703.4 Installation Height and Location. Signs with tactile characters shall comply with 703.4.

703.4.1 Height Above Finish Floor or Ground. Tactile characters on signs shall be located 48 inches (1220 mm) minimum above the finish floor or ground surface, measured from the baseline of the lowest tactile character and 60 inches (1525 mm) maximum above the finish floor or ground surface, measured from the baseline of the highest tactile character.

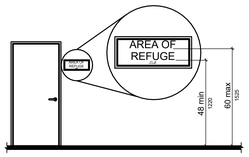

Figure 703.4.1 Height of Tactile Characters Above Finish Floor or Ground

703.4.2 Location. Where a tactile sign is provided at a door, the sign shall be located alongside the door at the latch side. Where a tactile sign is provided at double doors with one active leaf, the sign shall be located on the inactive leaf. Where a tactile sign is provided at double doors with two active leafs, the sign shall be located to the right of the right hand door. Where there is no wall space at the latch side of a single door or at the right side of double doors, signs shall be located on the nearest adjacent wall. Signs containing tactile characters shall be located so that a clear floor space of 18 inches (455 mm) minimum by 18 inches (455 mm) minimum, centered on the tactile characters, is provided beyond the arc of any door swing between the closed position and 45 degree open position.

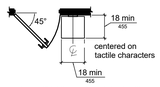

Figure 703.4.2 Location of Tactile Signs at Doors

703.5 Visual Characters. Visual characters shall comply with 703.5.

703.5.1 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.

703.5.2 Case. Characters shall be uppercase or lowercase or a combination of both.

703.5.3 Style. Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.5.4 Character Proportions. 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".

703.5.5 Character Height. Minimum character height shall comply with Table 703.5.5. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign. Character height shall be based on the uppercase letter "I".

703.5.6 Height From Finish Floor or Ground. Visual characters shall be 40 inches (1015 mm) minimum above the finish floor or ground.

703.5.7 Stroke Thickness. Stroke thickness of the uppercase letter "I" shall be 10 percent minimum and 30 percent maximum of the height of the character.

703.5.8 Character Spacing. Character spacing shall be measured between the two closest points of adjacent characters, excluding word spaces. Spacing between individual characters shall be 10 percent minimum and 35 percent maximum of character height.

703.5.9 Line Spacing. Spacing between the baselines of separate lines of characters within a message shall be 135 percent minimum and 170 percent maximum of the character height.

703.6 Pictograms. Pictograms shall comply with 703.6.

703.6.1 Pictogram Field. Pictograms shall have a field height of 6 inches (150 mm) minimum. Characters and braille shall not be located in the pictogram field.

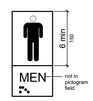

Figure 703.6.1 Pictogram Field dark-on-light.

703.6.2 Finish and Contrast. Pictograms and their field shall have a non-glare finish. Pictograms shall contrast with their field with either a light pictogram on a dark field or a dark pictogram on a light field.

703.6.3 Text Descriptors. Pictograms shall have text descriptors located directly below the pictogram field. Text descriptors shall comply with 703.2, 703.3 and 703.4.

703.7 Symbols of Accessibility. Symbols of accessibility shall comply with 703.7.

703.7.1 Finish and Contrast. Symbols of accessibility and their background shall have a non-glare finish. Symbols of accessibility shall contrast with their background with either a light symbol on a dark background or a dark symbol on a light background.

704 Telephones

704.1 General. Public telephones shall comply with 704.

704.2 Wheelchair Accessible Telephones. Wheelchair accessible telephones shall comply with 704.2.

704.2.1 Clear Floor or Ground Space. A clear floor or ground space complying with 305 shall be provided. The clear floor or ground space shall not be obstructed by bases, enclosures, or seats.

Advisory 704.2.1 Clear Floor or Ground Space. Because clear floor and ground space is required to be unobstructed, telephones, enclosures and related telephone book storage cannot encroach on the required clear floor or ground space and must comply with the provisions for protruding objects. (See Section 307).

704.2.1.1 Parallel Approach. Where a parallel approach is provided, the distance from the edge of the telephone enclosure to the face of the telephone unit shall be 10 inches (255 mm) maximum.

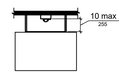

Figure 704.2.1.1 Parallel Approach to Telephone

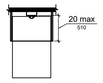

Figure 704.2.1.2 Forward Approach to Telephone

704.2.1.2 Forward Approach. Where a forward approach is provided, the distance from the front edge of a counter within the telephone enclosure to the face of the telephone unit shall be 20 inches (510 mm) maximum.

704.2.2 Operable Parts. Operable parts shall comply with 309. Telephones shall have push-button controls where such service is available.

704.2.3 Telephone Directories. Telephone directories, where provided, shall be located in accordance with 309.

704.2.4 Cord Length. The cord from the telephone to the handset shall be 29 inches (735 mm) long minimum.

704.3 Volume Control Telephones. Public telephones required to have volume controls shall be equipped with a receive volume control that provides a gain adjustable up to 20 dB maximum. For incremental volume control, provide at least one intermediate step of 12 dB of gain minimum. An automatic reset shall be provided.

704.4 TTYs. TTYs required at a public pay telephone shall be permanently affixed within, or adjacent to, the telephone enclosure. Where an acoustic coupler is used, the telephone cord shall be sufficiently long to allow connection of the TTY and the telephone receiver.

704.4.1 Height. When in use, the touch surface of TTY keypads shall be 34 inches (865 mm) minimum above the finish floor.

704.5 TTY Shelf. Public pay telephones required to accommodate portable TTYs shall be equipped with a shelf and an electrical outlet within or adjacent to the telephone enclosure. The telephone handset shall be capable of being placed flush on the surface of the shelf. The shelf shall be capable of accommodating a TTY and shall have 6 inches (150 mm) minimum vertical clearance above the area where the TTY is to be placed.

705 Detectable Warnings

705.1 General. Detectable warnings shall consist of a surface of truncated domes and shall comply with 705.

705.1.1 Dome Size. Truncated domes in a detectable warning surface shall have a base diameter of 0.9 inch (23 mm) minimum and 1.4 inches (36 mm) maximum, a top diameter of 50 percent of the base diameter minimum to 65 percent of the base diameter maximum, and a height of 0.2 inch (5.1 mm).

705.1.2 Dome Spacing. Truncated domes in a detectable warning surface shall have a center-to-center spacing of 1.6 inches (41 mm) minimum and 2.4 inches (61 mm) maximum, and a base-to-base spacing of 0.65 inch (17 mm) minimum, measured between the most adjacent domes on a square grid.

705.1.3 Contrast. Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark, or dark-on-light.

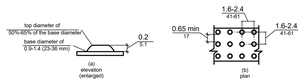

Figure 705.1 Size and Spacing of Truncated Domes

705.2 Platform Edges. Detectable warning surfaces at platform boarding edges shall be 24 inches (610 mm) wide and shall extend the full length of the public use areas of the platform.

706 Assistive Listening Systems

706.2 Receiver Jacks. Receivers required for use with an assistive listening system shall include a 1/8 inch (3.2 mm) standard mono jack.

706.3 Receiver Hearing-Aid Compatibility. Receivers required to be hearing-aid compatible shall interface with telecoils in hearing aids through the provision of necklaps.

706.4 Sound Pressure Level. Assistive listening systems shall be capable of providing a sound pressure level of 110 dB maximum and 118 dB maximum with a dynamic range on the volume control of 50 dB.

706.5 Signal-to-Noise Ratio. The signal-to-noise ratio for internally generated noise in assistive listening systems shall be 18 dB minimum.

706.6 Peak Clipping Level. Peak clipping shall not exceed 18 dB of clipping relative to the peaks of speech.

707 Automatic Teller Machines and Fare Machines

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

707.3 Operable Parts. Operable parts shall comply with 309. Unless a clear or correct key is provided, each operable part shall be able to be differentiated by sound or touch, without activation.

EXCEPTION: Drive-up only automatic teller machines and fare machines shall not be required to comply with 309.2 and 309.3.

707.4 Privacy. Automatic teller machines shall provide the opportunity for the same degree of privacy of input and output available to all individuals.

707.5 Speech Output. Machines shall be speech enabled. Operating instructions and orientation, visible transaction prompts, user input verification, error messages, and all displayed information for full use shall be accessible to and independently usable by individuals with vision impairments. Speech shall be delivered through a mechanism that is readily available to all users, including but not limited to, an industry standard connector or a telephone handset. Speech shall be recorded or digitized human, or synthesized.

707.5.1 User Control. Speech shall be capable of being repeated or interrupted. Volume control shall be provided for the speech function.

707.5.2 Receipts. Where receipts are provided, speech output devices shall provide audible balance inquiry information, error messages, and all other information on the printed receipt necessary to complete or verify the transaction.

707.6 Input. Input devices shall comply with 707.6.

707.6.1 Input Controls. At least one tactilely discernible input control shall be provided for each function. Where provided, key surfaces not on active areas of display screens, shall be raised above surrounding surfaces. Where membrane keys are the only method of input, each shall be tactilely discernible from surrounding surfaces and adjacent keys.

707.6.2 Numeric Keys. Numeric keys shall be arranged in a 12-key ascending or descending telephone keypad layout. The number five key shall be tactilely distinct from the other keys.

707.6.3.1 Contrast. Function keys shall contrast visually from background surfaces. Characters and symbols on key surfaces shall contrast visually from key surfaces. Visual contrast shall be either light-on-dark or

707.6.3.2 Tactile Symbols. Function key surfaces shall have tactile symbols as follows: Enter or Proceed key: raised circle; Clear or Correct key: raised left arrow; Cancel key: raised letter ex; Add Value key: raised plus sign; Decrease Value key: raised minus sign.

707.7 Display Screen. The display screen shall comply with 707.7.

707.7.1 Visibility. The display screen shall be visible from a point located 40 inches (1015 mm) above the center of the clear floor space in front of the machine.

707.7.2 Characters. Characters displayed on the screen shall be in a sans serif font. Characters shall be 3/16 inch (4.8 mm) high minimum based on the uppercase letter "I". Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

707.8 Braille Instructions. Braille instructions for initiating the speech mode shall be provided. Braille shall comply with 703.3.

708 Two-Way Communication Systems

708.1 General. Two-way communication systems shall comply with 708.

708.2 Audible and Visual Indicators. The system shall provide both audible and visual signals.

708.3 Handsets. Handset cords, if provided, shall be 29 inches (735 mm) long minimum.

708.4 Residential Dwelling Unit Communication Systems. Communications systems between a residential dwelling unit and a site, building, or floor entrance shall comply with 708.4.

708.4.1 Common Use or Public Use System Interface. The common use or public use system interface shall include the capability of supporting voice and TTY communication with the residential dwelling unit interface.

CHAPTER 9: BUILT-IN ELEMENTS

902 Dining Surfaces and Work Surfaces

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 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.

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

902.4.1 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. 902.4.2 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

903.2 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.

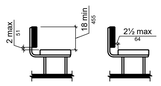

Figure 903.4 Bench Back Support

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.

Figure 904.3.2 Check-Out Aisle Counters

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.

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.

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 308.

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.

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TEXAS ACCESSIBILITY STANDARDS

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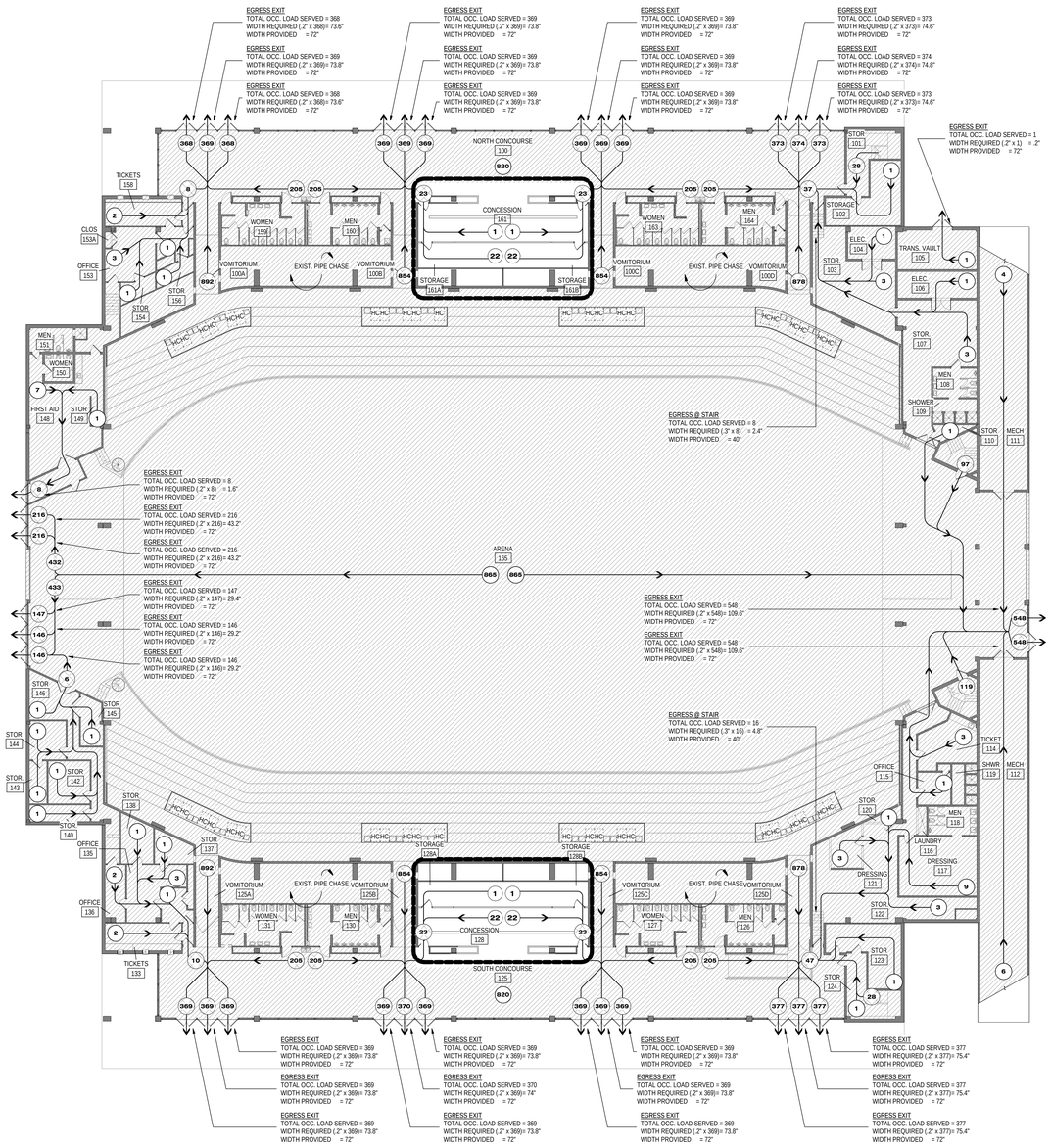
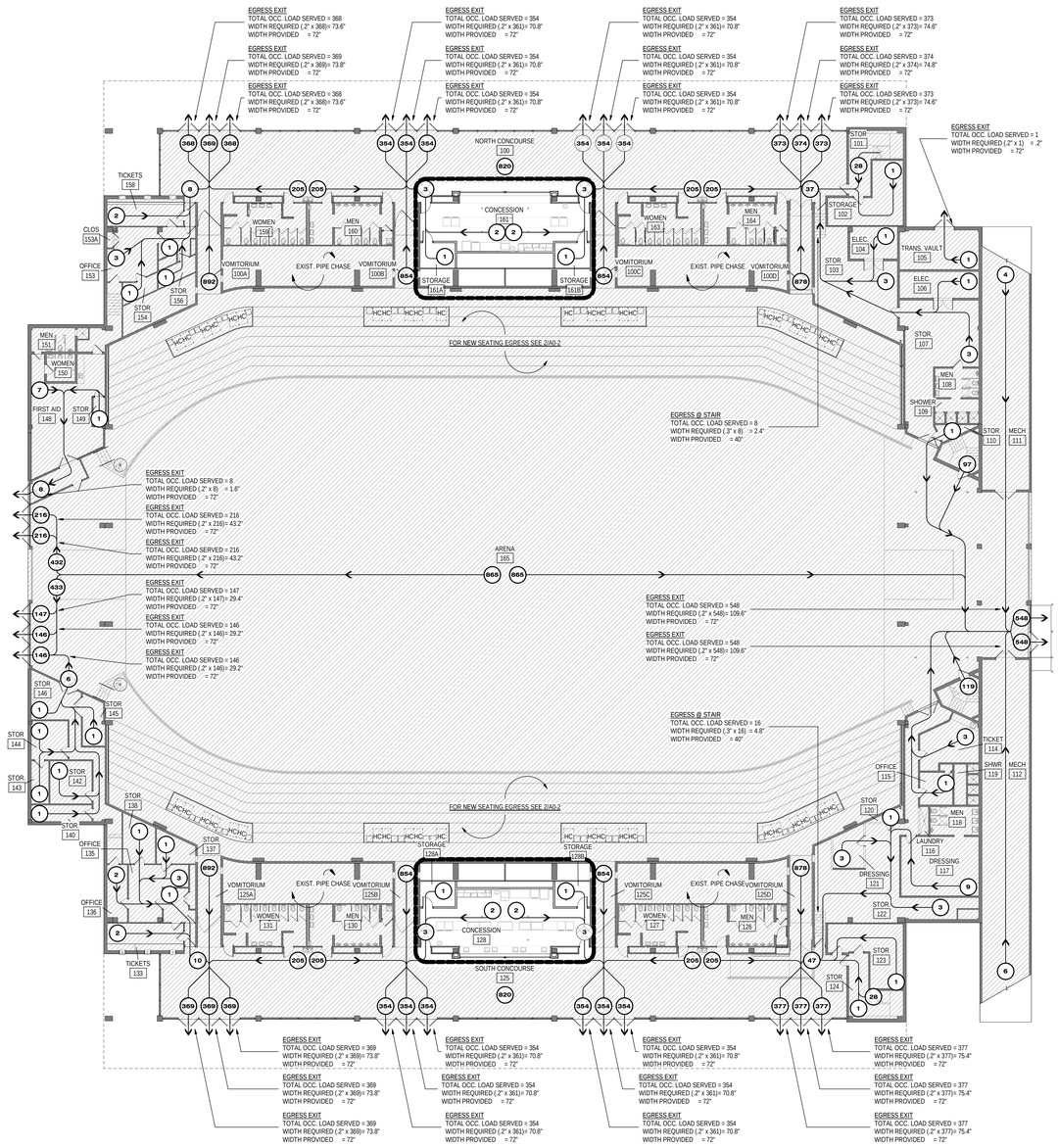


N PLAN NORTH — N TRUE NORTH

2 GROUND FLOOR EGRESS FLOOR PLAN - EXISTING
1/16" = 1'-0"



N PLAN NORTH — N TRUE NORTH

1 GROUND FLOOR EGRESS FLOOR PLAN - NEW
1/16" = 1'-0"

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GROUND FLOOR CODE/EGRESS PLAN, PARTITION TYPES

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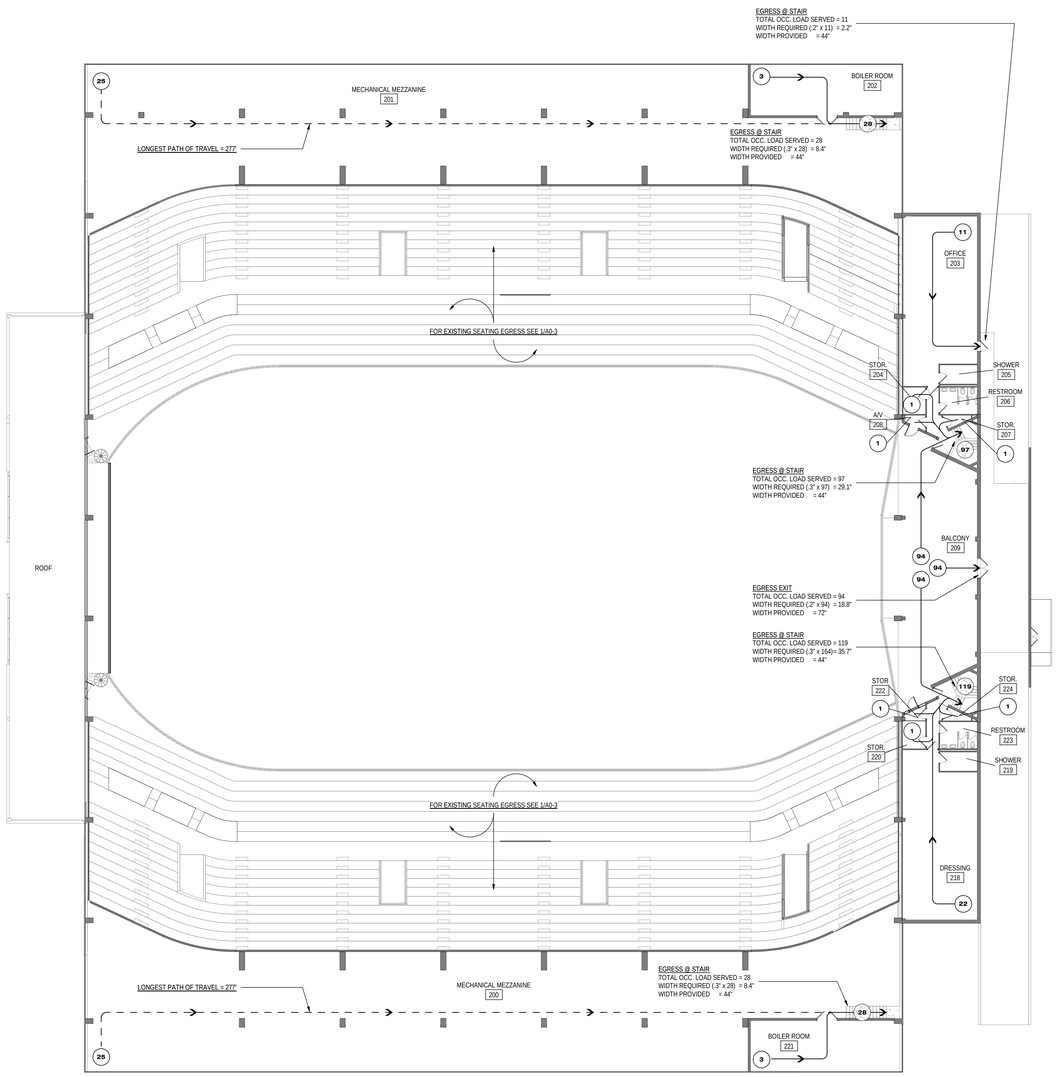
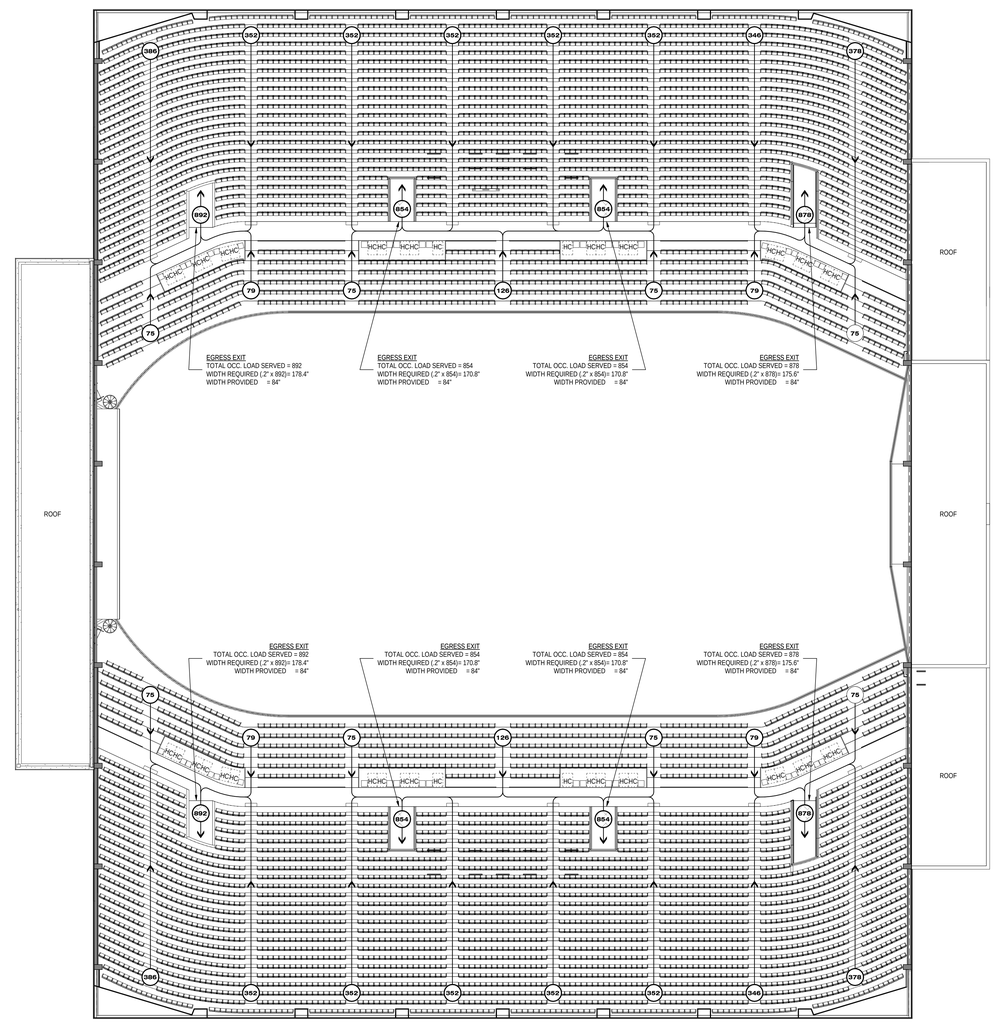


N PLAN NORTH — N TRUE NORTH

1 MEZZANINE CODE/EGRESS FLOOR PLAN - EXISTING

1/16" = 1'-0"



N PLAN NORTH — N TRUE NORTH

2 ARENA SEATING EGRESS

1/16" = 1'-0"

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MEZZANINE AND ARENA CODE/EGRESS FLOOR PLAN

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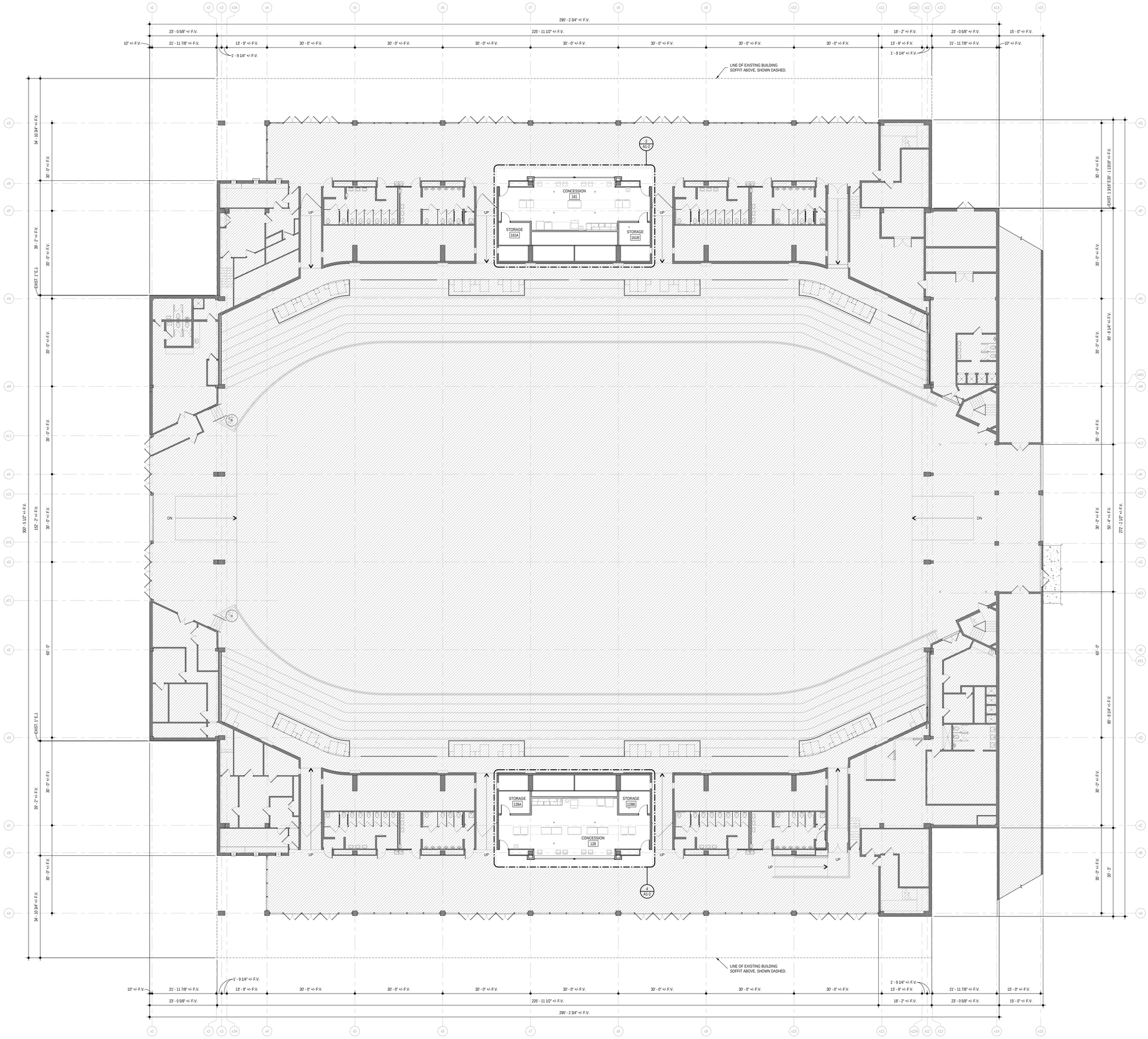

N
PLAN NORTH

N
TRUE NORTH

1 GROUND FLOOR PLAN

3/32" = 1'-0"

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OVERALL GROUND FLOOR PLAN

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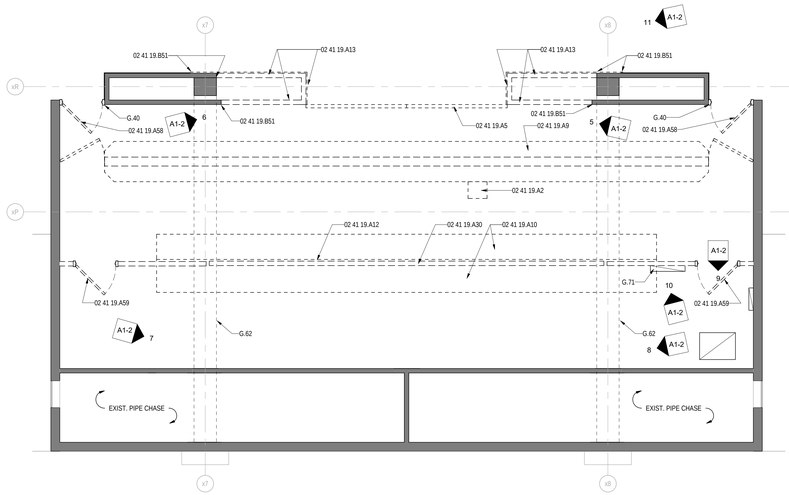

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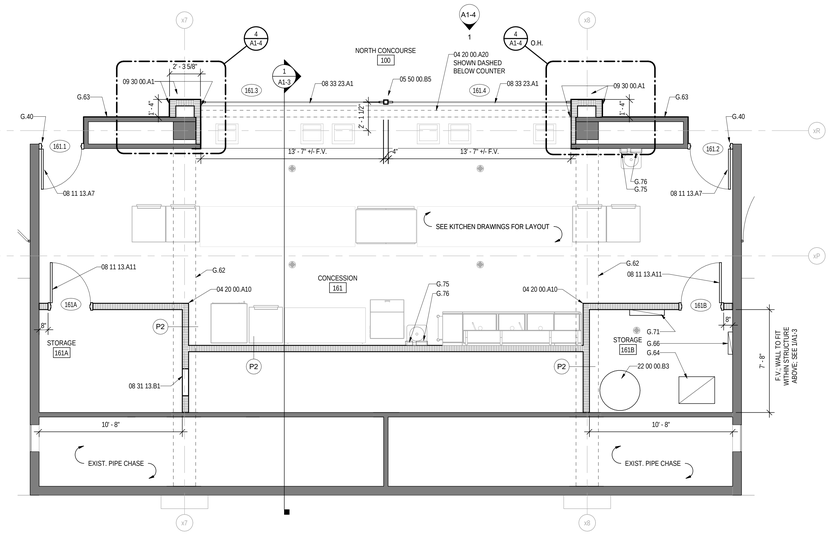
1/4" = 1'-0"



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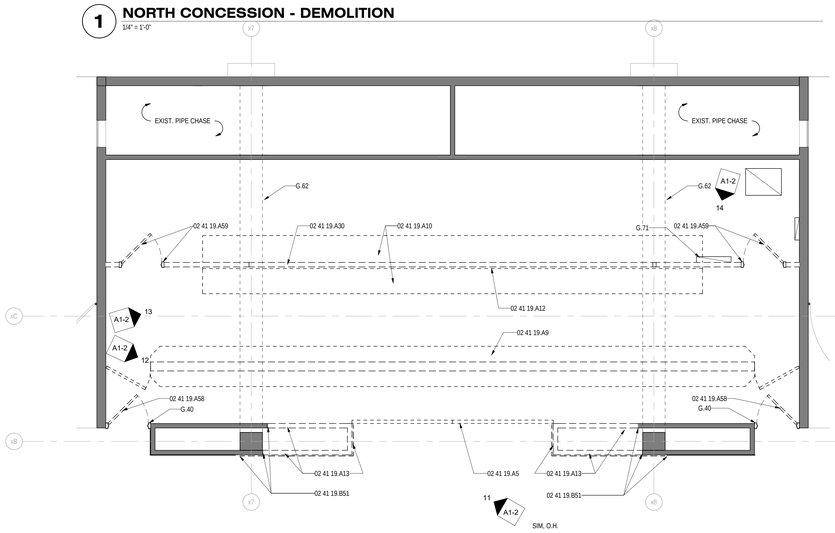
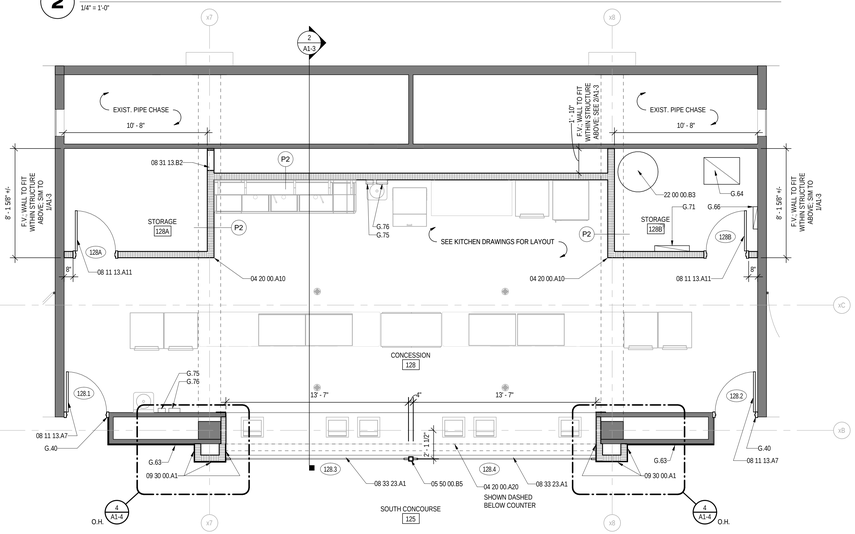


3 SOUTH CONCESSION - DEMOLITION
1/4" = 1'-0"



4 SOUTH CONCESSION - NEW CONSTRUCTION
1/4" = 1'-0"

8 PHOTO (NORTH)
12" = 1'-0"

7 PHOTO (NORTH)
12" = 1'-0"

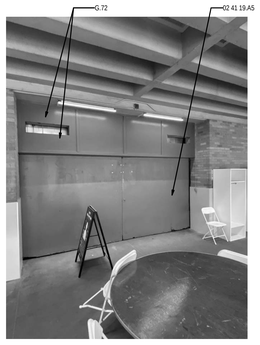
6 PHOTO (NORTH)
12" = 1'-0"

5 PHOTO (NORTH)
12" = 1'-0"

14 PHOTO (SOUTH)
12" = 1'-0"

13 PHOTO (SOUTH)
12" = 1'-0"

12 PHOTO (SOUTH)
12" = 1'-0"



11 PHOTO (NORTH)
12" = 1'-0"

10 PHOTO (NORTH)
12" = 1'-0"

9 PHOTO (NORTH)
12" = 1'-0"

02 41 19.A2	Remove existing hand sink, see Plumbing.
02 41 19.A5	Remove existing sliding doors and hardware.
02 41 19.A9	Remove existing countertop, masonry wall below, and swing doors.
02 41 19.A10	Remove existing countertop and millwork.
02 41 19.A12	Remove existing menu board.
02 41 19.A13	Remove portion of existing masonry wall.
02 41 19.A30	Remove existing masonry wall.
02 41 19.A38	Remove existing light fixture, see Electrical.
02 41 19.A58	Remove existing door; frame to remain.
02 41 19.A59	Remove existing door and frame.
02 41 19.B51	Saw cut existing masonry and tile wainscot and remove. Do not damge existing masonry to remain.
02 41 19.B52	Remove existing speaker and associated conduit.
02 41 19.B53	Remove existing water heater, see Plumbing.
04 20 00.A10	Concrete masonry unit bullnose; typical at outside corners.
04 20 00.A20	6" concrete masonry unit partition.
05 50 00.B5	4"x4"x5/16" steel tube.
08 11 13.A7	Steel door. Coordinate door prep with existing frame.
08 11 13.A11	Steel door and frame.
08 31 13.B1	24"x30" access panel mounted 18" off of floor.
08 31 13.B2	18"x30" access panel mounted 18" off of floor.
08 33 23.A1	Overhead coiling door, hood and guides.
09 30 00.A1	Wall tile; as scheduled.
22 00 00.B3	New water heater, see Plumbing.
23 00 00.B3	Existing ductwork to remain and be modified, see Mechanical.
G.40	Existing door frame to remain and receive new finish. Modify frame as required to receive scheduled hardware.
G.62	Line of existing concrete beam above to remain; paint as scheduled.
G.63	Existing tile wainscot to remain; protect from damage.
G.64	Existing transformer to remain, see Electrical.
G.66	Existing electrical panel ro remain, see Electrical.
G.71	Existing electrical panel to remain; see Electrical. Support panel as required for demo of existing wall and installation of new wall.
G.72	Existing wood paneling to remain; modify as required. Patch as required where existing ductwork and grilles are removed.
G.75	Soap dispenser, Owner purchased, Contractor installed.
G.76	Paper towel dispenser, Owner purchased, Contractor installed.

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ENLARGED PLANS

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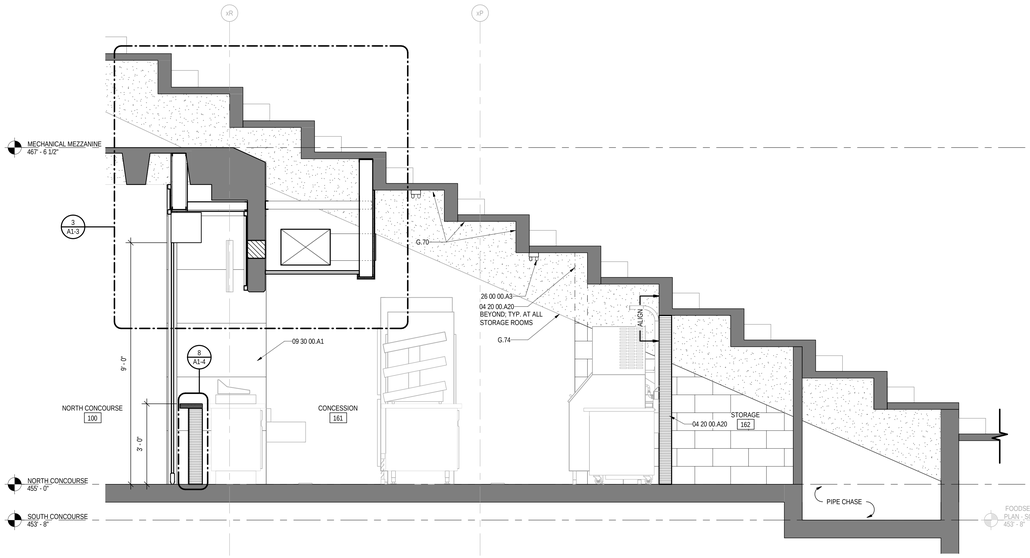

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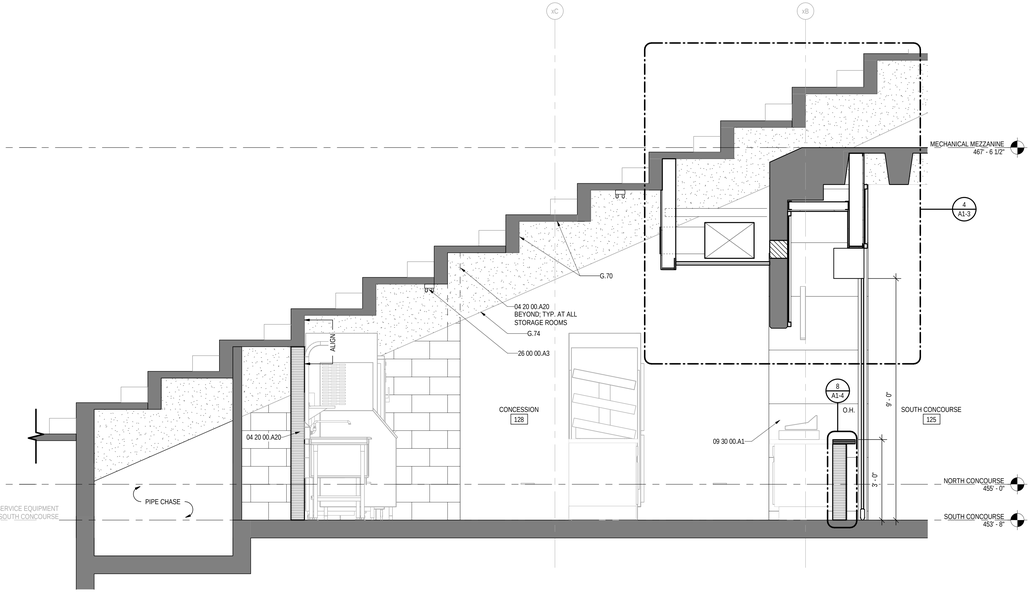

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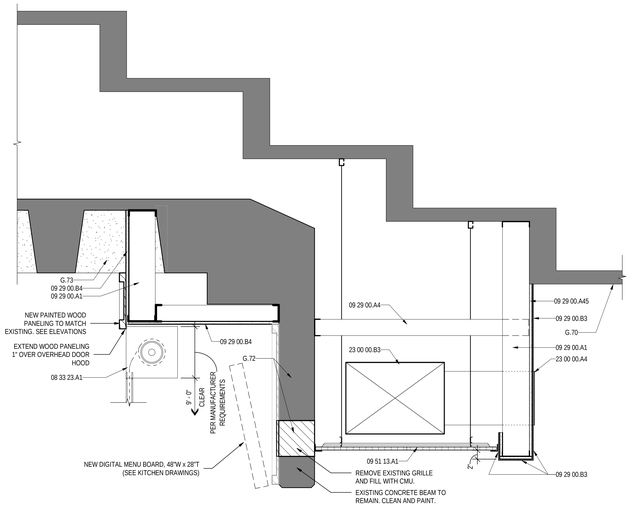
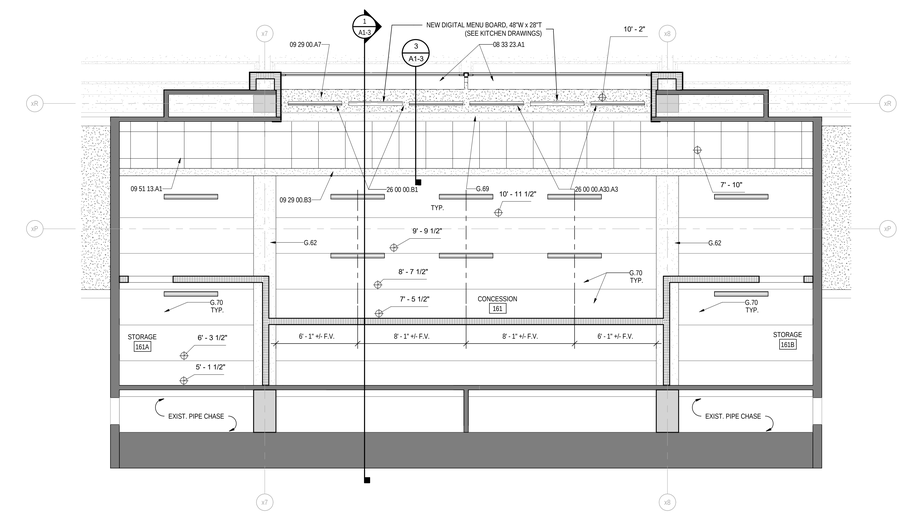
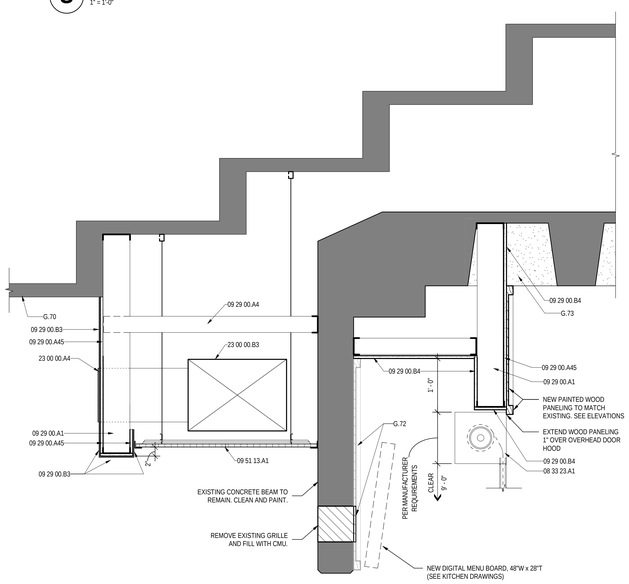


3 OVERHEAD DOOR/CELING DETAIL AT NORTH CONCESSION
1" = 1'-0"



5 NORTH CONCESSIONS REFLECTED CEILING PLAN
1/4" = 1'-0"



4 OVERHEAD DOOR/CELING DETAIL AT SOUTH CONCESSION
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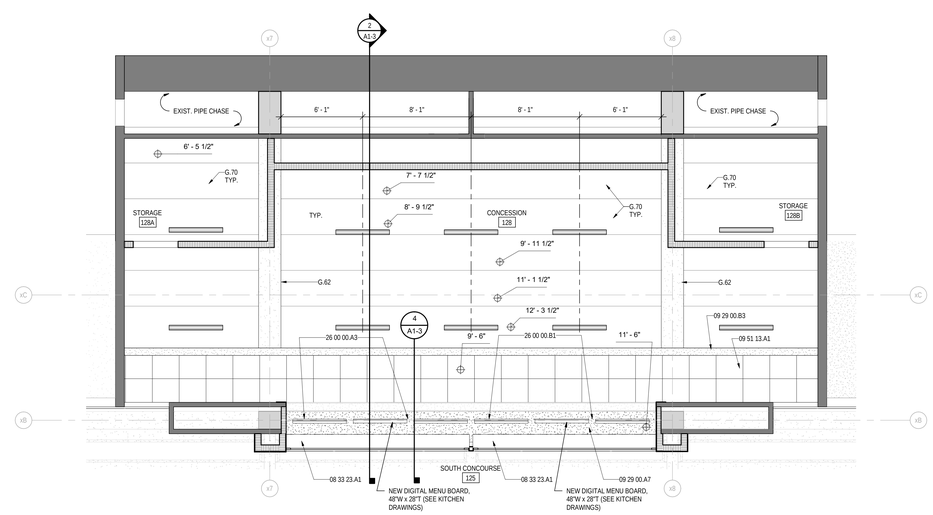

6 SOUTH CONCESSIONS REFLECTED CEILING PLAN
1/4" = 1'-0"

NOTES

04 20 00.A20	6" concrete masonry unit partition.
08 33 23.A1	Overhead coiling door, hood and guides.
09 29 00.A1	Metal stud framing.
09 29 00.A4	Metal stud framing as required to support ceiling furrings.
09 29 00.A7	Gypsum board ceiling assembly.
09 29 00.A45	5/8" gypsum board.
09 29 00.B3	Fiberglass-reinforced plastic (FRP) panel.
09 29 00.B4	5/8" gypsum board, painted.
09 30 00.A1	Wall tile; as scheduled.
09 51 13.A1	Acoustical ceiling panel and grid as scheduled.
23 00 00.A4	Ductwork and/or mechanical unit; see Mechanical for actual sizes, runs and placement.
23 00 00.B3	Existing ductwork to remain and be modified, see Mechanical.
26 00 00.A3	Lighting fixture; see Electrical.
26 00 00.B1	Exsiting light fixture to be reused.
G.62	Line of existing concrete beam above to remain; paint as scheduled.
G.69	Existing concrete beam to remain. Clean and paint.
G.70	Existing stepped concrete risers. Clean and paint.
G.72	Existing wood paneling to remain; modify as required. Patch as required where existing ductwork and grilles are removed.
G.73	Existing concrete structure, touch up paint.
G.74	Existing concrete beam, painted.

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1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: Designer
ISSUED FOR: CONSTRUCTION	DRAFTER: Author
DATE: APRIL 15, 2021	CHECKED: Checker

SECTIONS AND REFLECTED CEILING PLANS

SHEET
A1-3
OF 4 A1 SHEETS

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ROOM NUMBER	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	CEILING TYPE	OTHER	NOTES	Revisions	ROOM NO.
100	NORTH CONCOURSE	ETR	ETR	ETR	ETR	ETR, PCT-1, PCT-2, TR-1	ETR	ETR				100
125	SOUTH CONCOURSE	ETR	ETR	ETR, PCT-1, PCT-2, TR-1	ETR	ETR	ETR	ETR				125
128	CONCESSION	SC-1	---	PT-1	PT-1	PT-1	PT-1	ACP-1, PT-2				128
128A	STORAGE	SC-1	---	PT-1	PT-1	PT-1	PT-1	PT-2				128A
128B	STORAGE	SC-1	---	PT-1	PT-1	PT-1	PT-1	PT-2				128B
161	CONCESSION	SC-1	---	PT-1	PT-1	PT-1	PT-1	ACP-1, PT-2				161
161A	STORAGE	SC-1	---	PT-1	PT-1	PT-1	PT-1	PT-2				161A
161B	STORAGE	SC-1	---	PT-1	PT-1	PT-1	PT-1	PT-2				161B

NOTES

04 20 00.A11	Grout solid.
04 20 00.A19	4" concrete masonry unit.
04 20 00.A20	6" concrete masonry unit partition.
04 20 00.A24	Concrete masonry unit bond beam; fill with concrete.
04 20 00.B1	Grout-fill hollow metal frame.
05 50 00.B5	4"x4"x5/16" steel tube.
05 50 00.B6	4-1/2"x4-1/2"x3/8" steel plate.
05 50 00.B7	5/8" round x 4" expansion bolt.
06 10 53.A4	Shim as required.
06 10 53.B1	3/4" marine-grade plywood.
07 92 00.A1	Sealant.
07 92 00.A2	Sealant w/ backer rod.
07 92 00.A6	Continuous sealant, both sides of door frame.
08 11 13.A1	Steel door frame.
08 11 13.A7	Steel door. Coordinate door prep with existing frame.
08 11 13.A8	Jamb anchors; minimum of three per jamb.
08 33 23.A1	Overhead coiling door, hood and guides.
09 30 00.A1	Wall tile; as scheduled.
G.40	Existing door frame to remain and receive new finish. Modify frame as required to receive scheduled hardware.
G.63	Existing tile wainscot to remain; protect from damage.
G.68	Saw cut existing tile wainscot in order to install new masonry wall and wall tile. Care is to be taken not to damage wall or tile.

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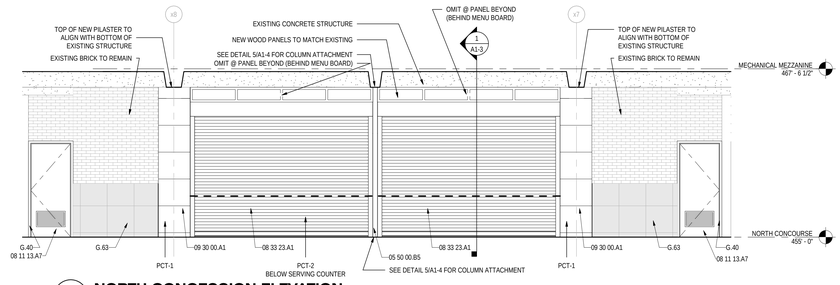
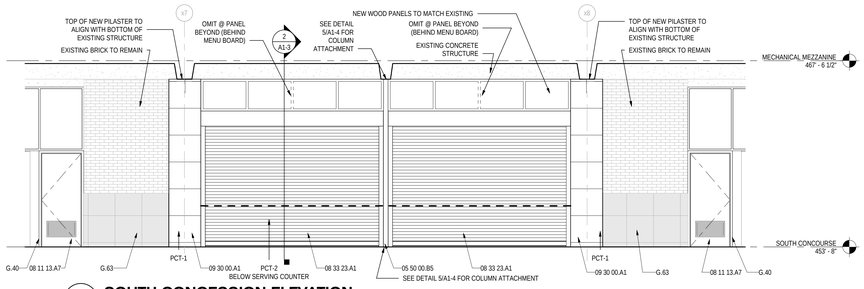


1 NORTH CONCESSION ELEVATION
1/4" = 1'-0"



2 SOUTH CONCESSION ELEVATION
1/4" = 1'-0"

DOOR HARDWARE

HEADING NO. 1

Doors 128.1, 128.2, 128A, 128B, 161.1, 161.2, 161A, and 161B, each shall have:

1 ½ Pr. Butts	(Hager) BB1168 x 4 ½ x 4 ½ x US26D
1 Lock (office)	(Schlage) L9050 x 06 x Less Core x US26D
1 Cylinder Core	(Best) Type Required x "J" keyway* x US26D
1 Closer	(Norton) 7500 x H.O. x AL x SNB
1 Stop	(Trimco) 1270CVPV x US32D
1 Kick Plate	(Trimco) DW-2" x 8" x .050 x US32D

HEADING NO. 2

Doors 128.3, 128.4, 161.3, and 161.4, each shall have:

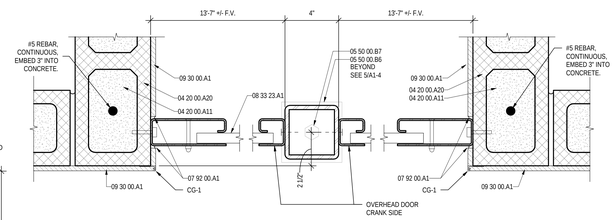
1 Padlock	(Schlage) KS21D1200 x Less Cylinder
1 Cylinder	(Best) Type Required x "J" keyway* x US26D

*Best Permanent Cores. An order for these cores will be placed by the contractor/supplier to Best Access Systems. The order shall reference Fair Park's Best account number. Prior to initiating the order, the supplier shall coordinate with Fair Park to advise of the order and insure a correct description of the facility location for Best. The contractor shall pay for all cores, but the cores will be delivered directly to the Owner and installed by the Owner. Cores must be ordered as early as possible since there can be up to 90-day lead time from receipt of order to delivery. Keying will be the responsibility of Fair Park & Best. Provide two keys per lockset.

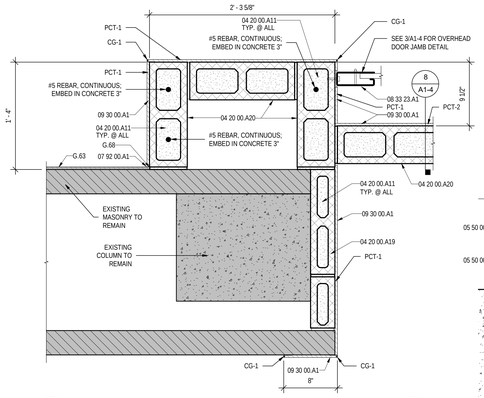
DOOR SCHEDULE

MARK	DOOR WIDTH	DOOR HEIGHT	DOOR MATERIAL	FRAME MATERIAL	DETAILS HEAD	JAMB	JAMB	SILL	OTHER	REVISIONS	MARK
128.1	3' - 0" F.V.	7' - 0" F.V.	HM	ETR	ETR	ETR	ETR	---	24"X12" LOUVER		128.1
128.2	3' - 0" F.V.	7' - 0" F.V.	HM	ETR	ETR	ETR	ETR	---	24"X12" LOUVER		128.2
128.3	13' - 7" F.V.	9' - 0" F.V.	STEEL	STEEL	4/A1-3	3/A1-4	3/A1-4	---			128.3
128.4	13' - 7" F.V.	9' - 0" F.V.	STEEL	STEEL	4/A1-3	3/A1-4	3/A1-4	---			128.4
128A	3' - 0"	7' - 0"	HM	HM	7/A1-4	6/A1-4	---	---			128A
128B	3' - 0"	7' - 0"	HM	HM	7/A1-4	6/A1-4	---	---			128B
161.1	3' - 0" F.V.	7' - 0" F.V.	HM	ETR	ETR	ETR	ETR	---	24"X12" LOUVER		161.1
161.2	3' - 0" F.V.	7' - 0" F.V.	HM	ETR	ETR	ETR	ETR	---	24"X12" LOUVER		161.2
161.3	13' - 7" F.V.	9' - 0" F.V.	STEEL	STEEL	3/A1-3	3/A1-4	3/A1-4	---			161.3
161.4	13' - 7" F.V.	9' - 0" F.V.	STEEL	STEEL	3/A1-3	3/A1-4	3/A1-4	---			161.4
161A	3' - 0"	7' - 0"	HM	HM	7/A1-4	6/A1-4	---	---			161A
161B	3' - 0"	7' - 0"	HM	HM	7/A1-4	6/A1-4	---	---			161B

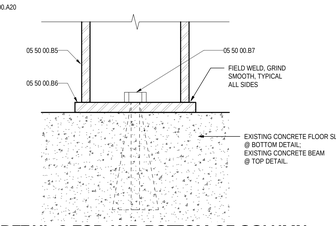
FINISH CODE	DESCRIPTION	CONTACT INFO
FLOORS		
SC-1	EXISTING CONCRETE TO BE CLEANED AND SEALED.	
ETR	EXISTING TO REMAIN: PRESERVE AND PROTECT FINISHES AS REQUIRED THROUGH DURATION OF CONSTRUCTION.	
BASE		
ETR	EXISTING TO REMAIN.	
WALLS		
PCT-1	PORCELAIN TILE/ WALLS: DALTILE, MARAZZI CLASSENTINO MARBLE, COLORBODY PORCELAIN, COLOR: CT31 'CORINTH BEIGE', FINISH: MATTE, SIZE: 24"X48". NOTE: USE GRT-1.	
PCT-2	PORCELAIN TILE/WALLS: DALTILE, MARAZZI CLASSENTINO MARBLE, COLORBODY PORCELAIN, COLOR: CT31 'CORINTH BEIGE', FINISH: MATTE, SIZE: CLASSIC WEAVE MOSAIC, MESH MOUNTED, 7/16" THICK. NOTE: USE GRT-1.	
GRT-1	GROUT/WALLS: CUSTOM BUILDING PRODUCTS, FUSION PRO SINGLE COMPONENT GROUT, COLOR: #183 'CHATEAU'. NOTE: GROUT JOINT 1/8" MAX.	MIKE LITTLE (817) 995-3231
PT-1	PAINT/TYPICAL/WALLS: SHERWIN WILLIAMS, COLOR: SW6105 'DIVINE WHITE'	BRETT HUCKELBURY (214) 728-6696
ETR	EXISTING TO REMAIN	
CEILINGS		
ACP-1	ACOUSTICAL KITCHEN GRADE CEILING TILE: ARMSTRONG CEILINGS, KITCHEN ZONE SQUARE LAY IN #673, COLOR: WHITE, SIZE: 24"X24" X 5/8", NOTE: USE 15/16" PRELUDE GRID IN WHITE FINISH.	GRACE JACOB (214) 531-8907
PT-2	PAINT/ CEILINGS/ PLASTER, CONCRETE STRUCTURE, EXPOSED DUCTWORK, EXPOSED PIPING: SHERWIN WILLIAMS, COLOR: SW7004 'SNOWBOUND'	BRETT HUCKELBURY (214) 728-6696
OTHER		
DR-1	DOOR/PAINTED HOLLOW METAL OR STEEL: SHERWIN WILLIAMS, SW7067 'CITYSCAPE', FINISH: SEMI-GLOSS.	BRETT HUCKELBURY (214) 728-6696
DR-2	OVERHEAD DOOR: COLOR TO BE SELECTED FROM MANUFACTURER'S STANDARD FINISH COLOR OPTIONS.	
TR-1	PAINT/HOLLOW METAL OR STEEL DOOR FRAME AND HANDRAILS: SHERWIN WILLIAMS, COLOR: SW7067 'CITYSCAPE', FINISH: SEMI-GLOSS.	BRETT HUCKELBURY (214) 728-6696
TR-2	OVERHEAD DOOR: COLOR TO BE SELECTED FROM MANUFACTURER'S STANDARD FINISH COLOR OPTIONS.	
CG-1	CORNER GUARD/ OUTSIDE CORNER AT TILE LOCATIONS: SCHLUTER, EDGING AND OUTSIDE WALL CORNERS, JOLLY, COLOR: AE 'SATIN ANODIZED ALUMINUM', SIZE: CONTRACTOR TO VERIFY REQUIRED HEIGHT.	



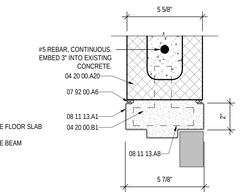
3 OVERHEAD DOOR JAMB DETAIL
3" = 1'-0"



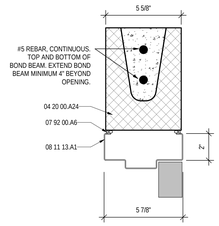
4 DETAIL
1 1/2" = 1'-0"



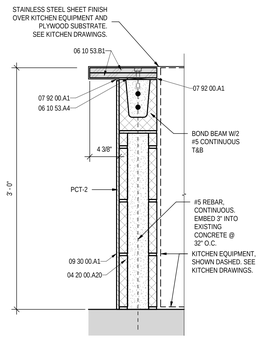
5 DETAIL @ TOP AND BOTTOM OF COLUMN
6" = 1'-0"



6 JAMB
3" = 1'-0"

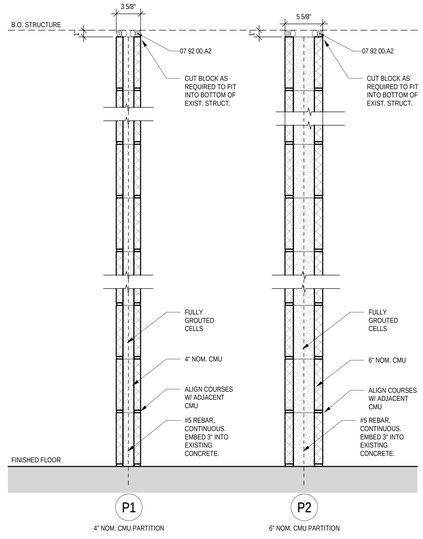


7 HEAD
3" = 1'-0"



8 DETAIL
1 1/2" = 1'-0"

PARTITION TYPES



REVISIONS DENOTED BY △

PROJECT #: 18055-01 MANAGER: LAH
ISSUED FOR: CONSTRUCTION DRAFTER: CYL
DATE: APRIL 15, 2021 CHECKED: ELH

DOOR SCHEDULE & DETAILS, FINISH SCHEDULE, PARTITION TYPES, INTERIOR ELEVATIONS

SHEET
A1-4
OF 4 A1 SHEETS

04/15/2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

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MECHANICAL INSULATION SCHEDULE

APPLICATION	INSULATION TYPE	INSULATION THICKNESS	INSULATION FINISH: INDOOR CONCEALED	INSULATION FINISH: INDOOR EXPOSED INCL. MECH ROOMS	INSULATION FINISH: OUTDOOR
DUCTWORK					
CONCEALED SUPPLY & OA DUCTS:	FIBERGLASS 3i	2"	6F	NA	NA
EXPOSED SUPPLY DUCTS AND OUTSIDE AIR DUCTS IN PUBLIC AREAS:	FIBERGLASS 5i	1.5"	NA	0F	NA
	FIBERGLASS 2i	2"	NA	6F	NA
EXPOSED SUPPLY/OA DUCTS, AND PLENUMS IN MECH ROOMS/ BOH AREAS:	FIBERGLASS 2i	1"	NA	6F	NA
SUPPLY, RETURN AND OUTSIDE AIR DUCTS LOCATED OUTDOORS:	FIBERGLASS 5i & 2i	2 LAYERS OF 2"	NA	NA	7F
KITCHEN HOOD EXHAUST:	FIREMASTER FASTWRAP	2 LAYERS OF 1-1/2"	NA	NA	NA
REFRIGERANT SUCTION AND/OR HOT-GAS LINE PIPING					
INDOOR:	CELLULAR FOAM-4i	1"	0F	0F	NA
OUTDOOR:	CELLULAR FOAM-4i	1"	NA	NA	9F
				REFRIGERANT LIQUID LINES SO NOT NEED TO BE INSULATED	
MISCELLANEOUS PIPING					
AIR COND. CONDENSATION DRAIN PIPING:	CELLULAR FOAM-4i	1/2"	0F	0F	9F

INSULATION MATERIALS:
1i. CALCIUM SILICATE - MAXIMUM K FACTOR AT 500 DEGREES F SHALL BE 0.55, MUST ASTM C411 TO 1200 DEGREES F., AND MUST MEET NFPA 255 AND UL 723 FOR 0/0 FLAME SPREAD AND SMOKE DEVELOPED.
2i. FIBERGLASS BOARD - PROVIDE SEMI-RIGID FIBERGLASS BOARD WITH A DENSITY OF 3 LBS/FT3. MAXIMUM K FACTOR AT 75 DEGREES F SHALL BE 0.24 AND A TEMPERATURE LIMIT OF 250 DEGREES F (FACED) AND 450 DEGREES F (UNFACED). NFPA 255 AND UL 723 FOR 25/50 FLAME SPREAD AND SMOKE DEVELOPED.
3i. FIBERGLASS DUCT WRAP - MAXIMUM K FACTOR AT 75 DEGREES F SHALL BE 0.30, MUST PASS ASTM C411 TO 250 DEGREES F FACED. DENSITY SHALL BE 0.75 LBS/FT3. NFPA 255 AND UL 723 FOR 25/50 FLAME SPREAD AND SMOKE DEVELOPMENT.
4i. CELLULAR FOAM - EQUAL TO AP/ARMAFLEX TUBES OR SHEETS, AS APPLICABLE TO INSTALLATION. MAXIMUM K FACTOR AT 75 DEGREES F SHALL BE 0.28. MAXIMUM OPERATING TEMPERATURE OF 200 DEGREES F, MUST MEET NFPA 255 AND UL723 FOR 25/50 FLAME SPREAD AND SMOKE DEVELOPED AND MUST BE FREE OF ANY CFC'S,HFCS, OR HCFCS
5i. FIBERGLASS DUCT LINER W/ ANTIMICROBIAL RESISTANT COATING OR CLOSED-CELL ELASTOMERIC DUCT LINER - REFER TO SECTION 23313 FOR ADDITIONAL INFORMATION
6i. FIBERGLASS PIPE INSULATION ONLY WHERE SPECIFICALLY CALLED FOR ON DRAWINGS OR IN SPECS - MAXIMUM K FACTOR AT 100 DEGREES F SHALL BE 0.24, MUST PASS ASTM C411 TO 850 DEGREES F. DENSITY SHALL BE 3.5 LBS/FT3/ NFPA 255 AND UL 7723 FOR 25/50 FLAME SPREAD AND SMOKE DEVELOPED.
7i. MINERAL-FIBER, PREFORMED PIPE INSULATION, TYPE I OR II.
NA. NOT APPLICABLE OR NONE REQUIRED.

FINISH TYPES
0F. NO FINISHES REQUIRED
1F. 0.010" T-304 STAINLESS STEEL JACKETING -- CORRUGATED. PROVIDE 3/16" CORRUGATED ROLL JACKETING FOR PIPING AND TANKS LESS THAN 6 FEET DIAMETER AND DEEP CORRUGATED SHEETS FOR DIAMETERS LARGER THAN 6 FEET.
2F. 0.010" T-304 STAINLESS STEEL JACKETING -- SMOOTH FINISH.
3F. CORRUGATED ALUMINUM -- 0.016" UP THROUGH 24" PIPE SIZE, 0.024" LARGER THAN 24".
4F. SMOOTH ALUMINUM -- 0.016" UP THROUGH 12" PIPE SIZE, 0.024" LARGER THAN 12".
5F. 20-MIL PVC (25 FLAME SPREAD AND 50 SMOKE DEVELOPED.)
6F. FOIL/REINFORCED/KRACT JACKET (VAPOR BARRIER).
7F. 1/4-INCH WEATHERPROOF MASTIC WITH GLASS MESH REINFORCEMENT. SLOPE TOP OF DUCT MINIMUM OF 1/4" PER FOOT TO PREVENT PONDING.
8F. WHITE ALL-SERVICE JACKET (VAPOR BARRIER).
9F. WATER BASED LATEX ENAMEL WEATHER RESISTANT AND UV RESISTANT FINISH EQUAL TO ARMAFLEX WB FINISH
10F. 125 MILS THICK EXTRUDED, BLACK, HIGH DENSITY POLYETHYLENE (HDPE). INNER SURFACE SHALL BE OXIDIZED BY MEANS OF CORONA OR FLAME TREATMENT.
NA. NOT APPLICABLE OR NONE REQUIRED.

MEP SHARED SYSTEM COORDINATION SCOPE OF WORK MATRIX

SYSTEM OR COMPONENT	FURNISHED BY	INSTALLED BY
EXPOSED CEILINGS AND INACCESSIBLE CEILINGS		
Conduit for Fire Alarm Wiring	E	E
Conduit for Controls Wiring	TC	TC
EXPOSED CEILINGS AND INACCESSIBLE CEILINGS	M	M
Duct Mounted Smoke Detectors	FA	M
Area Type Smoke Detectors	FA	FA
Fire Alarm Shut-Down Interlock Modules	FA	TC
Motorized Control Dampers	MANUFACTURER	MANUFACTURER
24 Volt Power to Dampers	TC	TC
Damper Actuator	TC	M
VRV FAN COIL UNITS AND CONDENSING UNITS		
24 Volt DDC Controllers	TC AND MANUF.	MANUFACTURER
24 Volt Wiring from Transformer to all Controllers	MANUFACTURER	TC
Control Wiring Between FCU Box and Thermostat	MANUFACTURER	TC
FIRE ALARM		
Fire Alarm Panel (FAP) and Fire Alarm Boosters	FA	FA
Fire Alarm System Conduits	FA	FA
120 Volt Emergency Power (Dedicated Circuits) for Fire Alarm Panel	E	E
120 Volt Emergency Power (Dedicated Circuits) for Fire Alarm Boosters	E	E
MOTORIZED FIRE & COMBINATION FIRE/SMOKE DAMPERS		
Motorized Fire & Combination Fire/Smoke Dampers	M	M
Control Conduit	E	E
Control Wiring	FA	FA
Power Conduit	E	E
Power Wiring	E	E
LIGHTING CONTROL		
Lighting Control Panel	E	E
Lighting Control Panel to FMS Interface Card	MANUFACTURER	MANUFACTURER
Control Wiring to Master Lighting Control Panel Interface Card from FMS	TC	TC
Control Wiring Between Lighting Control Panels	E	E
Satellite Lighting Control Panels	E	E
Override Switch Wiring	E	E
Lighting Control Panel Override Switches	E	E
Lighting Control Panel Programming	E	E

M = MECHANICAL SUB-CONTRACTOR
E = ELECTRICAL SUB-CONTRACTOR
FA = FIRE ALARM SUB-CONTRACTOR
TC = TEMPERATURE CONTROLS/EMS SUB-CONTRACTOR
D= TELECOMMUNICATIONS CONTRACTOR

MECHANICAL GENERAL NOTES:

A. GENERAL NOTES APPLY TO ALL MECHANICAL SHEETS.
B. ALL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES.
C. ALL WORK SHALL BE IN COMPLIANCE WITH THE TENANT/OWNER/CAMPUS DESIGN STANDARDS. CONTRACTOR SHOULD BE FAMILIAR WITH STANDARDS PRIOR TO BID.
D. CONTRACTOR SHALL SPECIFICALLY LIST ANY EXCEPTIONS TO THE CONSTRUCTION DOCUMENTS IN THEIR BID.
E. DRAWINGS ARE SCHEMATIC IN NATURE. EXACT LOCATIONS OF DUCTWORK, PIPING, AND EQUIPMENT, INCLUDING REQUIRED CLEARANCES, TO BE COORDINATED WITH BUILDING STRUCTURE AND WORK OF OTHER CONTRACTORS.
F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SCOPE OF WORK SHOWN IN THE COMPLETE SET OF CONSTRUCTION DOCUMENTS, INCLUDING THE SPECIFICATIONS.
G. THIS CONTRACTOR IS RESPONSIBLE FOR FIRE STOPPING AT ALL MECHANICAL PENETRATIONS OF FIRE AND SMOKE RATED STRUCTURES, FLOORS AND PARTITIONS. REFER TO ARCHITECTURAL FLOOR PLANS FOR LOCATION OF ALL RATED STRUCTURES.
H. PROVIDE FIRE DAMPERS FOR ALL DUCT PENETRATIONS THRU FIRE RATED ASSEMBLIES. PROVIDE COMBINATION FIRE/SMOKE DAMPERS FOR ALL PENETRATIONS THRU SHAFT WALLS AND CORRIDOR WALLS.
I. THIS CONTRACTOR IS TO PROVIDE ALL ADDITIONAL STEEL, HANGER MATERIALS, RODS AND CLAMPS AS REQUIRED FOR INSTALLATION OF THE MECHANICAL SYSTEMS.
J. COORDINATE CEILING DIFFUSERS AND GRILLES WITH LIGHTING FIXTURES. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN.
K. ALL SUPPLY, RETURN AND EXHAUST DUCT SIZES INDICATED ARE FREE AREA.
L. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS PRIOR TO ORDERING MATERIALS AND/OR EQUIPMENT OR BEGINNING ANY WORK WITHOUT AUTHORIZATION. REPORT ANY DISCREPANCIES TO THE OWNER/ARCHITECT IMMEDIATELY.
M. THERMOSTATS TO BE MOUNTED 48" ABOVE FINISHED FLOOR LEVEL UNLESS NOTED OTHERWISE ON THE PLANS. CONTRACTOR TO VERIFY ALL THERMOSTATS LOCATIONS WITH ARCHITECT PRIOR TO ROUGH IN.
N. ELECTRICAL CONTRACTOR TO PROVIDE J-BOX AND CONDUIT TO ACCESSIBLE CEILING FOR ALL T-STATS AND SENSORS. COORDINATE LOCATIONS OF T-STATS AND SENSORS WITH ELECTRICAL CONTRACTOR.
O. INDIVIDUAL DUCT RUN-OUTS TO EACH DIFFUSER SHALL BE SIZED IN ACCORDANCE TO THE DIFFUSER NECK SIZE FOUND IN THE GRILLES-REGISTERS-DIFFUSERS SCHEDULE.
P. PIPES AND DUCTS TO BE COORDINATED ON JOB WITH BUILDING STRUCTURE AND WORK OF OTHER CONTRACTORS. ROUTE AS HIGH AS PHYSICALLY POSSIBLE. OFFSET DUCTS INTO JOIST SPACE FOR CLEARANCE WHERE SPACE ABOVE CEILING IS NOT SUFFICIENT FOR DUCTS TO CROSS OTHER DUCTS OR WORK OF OTHER TRADES.
Q. PROVIDE TEMPORARY HIGH EFFICIENCY FILTER MEDIA ON ALL RETURN AIR AND EXHAUST OPENINGS AT BEGINNING OF PROJECT AND REPLACED AT TWO (2) WEEK INTERVALS UNTIL PROJECT COMPLETION AT WHICH TIME THE FILTER MEDIA SHALL BE REMOVED.
R. CONNECTIONS BETWEEN FERROUS AND NON-FERROUS PIPING SYSTEMS, AND BETWEEN FERROUS PIPING SYSTEMS AND NON-FERROUS CONNECTIONS TO EQUIPMENT SHALL BE MADE BY THE USE OF DIELECTRIC UNIONS, COUPLINGS OR FLANGES AS MANUFACTURED BY CRANE, EPCO, F.M. MALONEY, UNIVERSAL MANUFACTURING CO.
S. MATERIALS USED FOR INSULATION, ACOUSTICAL LININGS, ADHESIVES, JACKETS AND COATINGS, AND COMBINATIONS OF THESE MATERIALS, SHALL EACH HAVE A FLAME SPREAD RATING OF 25 OR LESS, AND A SMOKE DEVELOPED RATING OF 50 OR LESS, AS DETERMINED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH NFPA-255.

MECHANICAL PIPING, FITTINGS, & JOINTS SCHEDULE

APPLICATION	MATERIAL	FITTINGS	JOINTS
CONDENSATE			
	COPPER	WROUGHT COPPER	SOLDERED
REFRIGERANT			
	ACR	WROUGHT COPPER	BRAZED

1. *SHARKBITE IS NOT ACCEPTED. ACCEPTABLE PRESS FITTINGS MANUFACTURER ARE: NIBCO, VIEGA-PROPRESS, VIEGA MEGAPRESS, PARKER-ZOOMLOCK (REFRIGERANT PIPING ONLY).
2. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. NOT ALL PIPE TYPES MAY BE USED. REFER TO PLANS FOR FURTHER DETAILS.

BASE DESIGN CRITERIA LIST

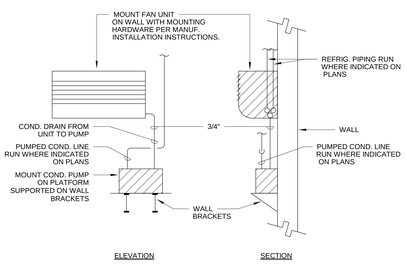
OUTDOOR DESIGN CONDITIONS FOR CITY, STATE
SUMMER:
DRY BULB TEMPERATURE = 102 DEG F
WET BULB TEMPERATURE = 75 DEG F
WINTER:
DRY BULB TEMPERATURE = 12 DEG F

INDOOR DESIGN CONDITIONS FOR CITY, STATE
SUMMER:
DRY BULB TEMPERATURE = 75 DEG F
WET BULB TEMPERATURE = 63 DEG F
HUMIDITY = 50%
WINTER:
DRY BULB TEMPERATURE = 70 DEG F
HUMIDITY = NO MINIMUM

INDOOR DESIGN CONDITIONS FOR IT/IDF/MDF/ELECTRICAL ROOMS
SUMMER:
DRY BULB TEMPERATURE = 75 DEG F
WET BULB TEMPERATURE = 63 DEG F
HUMIDITY = 50%
WINTER:
DRY BULB TEMPERATURE = 70 DEG F
HUMIDITY = NO MINIMUM

MECHANICAL APPLICABLE CODES

- 2015 INTERNATIONAL MECHANICAL CODE
- 2015 INTERNATIONAL ENERGY CONSERVATION (IECC)
- NFPA STANDARDS



1 DUCTLESS SPLIT SYSTEM DETAIL
NOT TO SCALE

REVISIONS DENOTED BY △

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PMI JOB NO.	18122.002
PROJECT MGR.	SCOTT BROWN
MECHANICAL	BRUCE ISONHART
PLUMBING	CHRIS WOODYARD
ELECTRICAL	KRISTIN STEWART

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D. SCOTT BROWN
89097
LICENSED
PROFESSIONAL ENGINEER
4-13-2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: PMI
ISSUED FOR:CONSTRUCTION	DRAFTER: PMI
DATE: April 15, 2021	CHECKED: PMI

MECHANICAL NOTES & SYMBOLS

SHEET
M001
OF 1-14 SHEETS

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DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING

SECTION 230500 - COMMON WORK RESULTS
PART 1 - GENERAL
1.1 GENERAL NOTES AND SCOPE OF WORK
A. REFER TO SECTION 220500 ON PLUMBING SHEET P1.01 FOR INFORMATION RELATED TO HVAC GENERAL CONDITIONS, MISCELLANEOUS EQUIPMENT AND MATERIALS, AND CONSTRUCTION REQUIREMENTS.
1.2 RELATED SECTIONS
A. SECTIONS 230523, 230529, 230553 AND 230700 ARE APPLICABLE BUT THEY DO NOT APPEAR IN THESE DIVISION 23 SPECIFICATIONS. REFER TO GENERAL NOTES.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 230548 - VIBRATION CONTROLS
PART 1 - GENERAL
1.1 SCOPE OF WORK.
A. REFER TO SECTION 230500.

PART 2 - PRODUCTS
2.1 EQUIPMENT PADS
A. PADS SHALL BE 3/4 INCH WATER RESISTANT NEOPRENE WITH WAFFLE PATTERN, MASON TYPE WSW, OR EQUAL.
2.2 ELASTOMERIC HANGERS
A. HANGER SHALL CONSIST OF RODS WITH STEEL BOX HOUSING NEOPRENE ISOLATION ELEMENT AND SPRING, MASON SERIES 30N, OR EQUAL.
2.3 RESTRAINED SPRING ISOLATORS
A. ISOLATORS SHALL UTILIZE A STEEL BASE WITH WAFFLED NEOPRENE PAD, WELDED STEEL ENCLOSURE WITH SPRING AND RESTRAINING BOLTS, MASON TYPE SLR, OR EQUAL.
2.4 INERTIA BASES
A. PROVIDE STEEL POURING FORM FOR REINFORCED CONCRETE BLOCKS WITH FLOOR MOUNTED SPRINGS, MASON KSL, OR EQUAL.

PART 3 - EXECUTION
3.1 SCHEDULE
A. EQUIPMENT PADS - SMALL FLOOR MOUNTED EQUIPMENT OR PACKAGED EQUIPMENT WITH INTERNAL ISOLATION.
B. ELASTOMERIC HANGERS - SUSPENDED AIR HANDLING UNITS, EXHAUST FANS, TERMINAL UNITS, HEAT PUMPS, PUMPS, ETC.
C. RESTRAINED SPRING ISOLATORS - FLOOR MOUNTED FANS GREATER THAN ½ HP.
D. ROOF CURB ISOLATORS - FACTORY FABRICATED ROOFTOP UNITS.
E. INERTIA BASES - FLOOR MOUNTED PUMPS GREATER THAN ½ HP.
3.2 INSTALLATION
A. INSTALL VIBRATION CONTROLS PER THE MANUFACTURER'S INSTRUCTIONS.

END OF SECTION

SECTION 230553 - IDENTIFICATION
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 230500.
B. LABEL ALL NEW EQUIPMENT AND PIPING SYSTEMS.

PART 2 - PRODUCTS
2.1 PIPE LABELS
A. PRETENSION PIPE LABELS OF SEMI-RIGID PLASTIC FORMED TO COVER THE FULL CIRCUMFERENCE OF PIPE.
B. IDENTIFY THE SERVICE AND DIRECTION OF FLOW. LABELS SHALL CONTAIN AT LEAST ½ INCH HIGH LETTERING AND BE PLACED SO THEY ARE EASY TO READ.
2.2 VALVE TAGS
A. MULTILAYER, MULTICOLOR PLASTIC LABELS WITH MECHANICAL ENGRAVING AND CHAIN FOR ATTACHMENT TO VALVE.
2.3 EQUIPMENT LABELS
A. MULTILAYER, MULTICOLOR PLASTIC LABELS WITH MECHANICAL ENGRAVING AND HOLES FOR ATTACHMENT TO EQUIPMENT.

PART 3 - EXECUTION
3.1 PIPE LABELS
A. INSTALL PIPE LABELS WHERE PIPING IS EXPOSED OR ABOVE AN ACCESSIBLE CEILING AT MAXIMUM 20 FT. CENTERS.
3.2 VALVE TAGS
A. ATTACH TAGS TO VALVES USING CHAIN. PROVIDE A VALVE SCHEDULE FOR MOUNTING IN THE MECHANICAL ROOM.
3.3 EQUIPMENT LABELS
A. PERMANENTLY ATTACH LABELS TO EQUIPMENT. LOCATE WHERE LABEL CAN BE EASILY SEEN AND READ.

END OF SECTION.

SECTION 230593 - TESTING ADJUSTING AND BALANCING
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. THE WORK INCLUDED IN THIS SECTION CONSISTS OF FURNISHING ALL LABOR, MATERIALS, INSTRUMENTS, TOOLS, AND SERVICES REQUIRED IN CONNECTION WITH THE TESTING, ADJUSTING AND BALANCING (TAB) OF THE HEATING, VENTILATING AND AIR CONDITIONING (HVAC) SYSTEMS AS DESCRIBED IN THE MECHANICAL SPECIFICATIONS AND/OR SHOWN ON THE MECHANICAL PLANS, OR REASONABLY IMPLIED THERE FROM.
B. THE TAB FIRM SHALL HAVE A LICENSED PROFESSIONAL ENGINEER SUPERVISING ALL WORK AND THE FIRM SHALL HOLD A CURRENT AABC OR NEBB CERTIFICATION.
C. REFER TO SECTION 230500.
1.2 START-UP, TEST AND ADJUST
A. PROVIDE ALL TESTS OF EQUIPMENT AND SYSTEMS REQUIRED TO PROVE COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. OWNER SHALL BE MADE COMPLETELY FAMILIAR WITH THE COMPLETE WORKING OF ALL THE MECHANICAL SYSTEMS.
B. THE TESTS SHALL DEMONSTRATE THE SPECIFIED CAPACITIES AND OPERATION OF ALL EQUIPMENT AND MATERIALS COMPRISING THE SYSTEMS. ALL DATA REQUIRED BY THESE SPECIFICATIONS SHALL BE PREPARED ON TYPED FORMS AND SUBMITTED TO THE ENGINEER FOR APPROVAL. COMPLETE APPROVAL WILL BE NECESSARY BEFORE FINAL PAYMENT CAN BE MADE. THE CONTRACTOR SHALL THEN MAKE AVAILABLE SUCH INSTRUMENTS NECESSARY FOR SPOT CHECKS ON THE SYSTEM.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION
3.1 HVAC SYSTEM
A. THE HVAC CONTRACTOR SHALL WORK IN CONJUNCTION WITH THE TAB CONTRACTOR TO START-UP AND OPERATE ALL EQUIPMENT NECESSARY TO PROVIDE A COMPLETE AIR AND WATER TEST AND BALANCE REPORT.
B. TAB CONTRACTOR SHALL MEASURE CFM AT ALL DIFFUSERS, REGISTERS AND GRILLES, AND HVAC UNITS, AS WELL AS WATER FLOWS AT COILS AND PUMPS. TO ASSURE THAT THEY MATCH THE QUANTITIES SHOWN ON THE PLANS (PLUS OR MINUS 5 PERCENT). CONFIRM ALL SEQUENCES OF OPERATION ARE PERFORMING CORRECTLY.
C. TAB CONTRACTOR SHALL CALIBRATE ALL EQUIPMENT AND SENSORS TO WORK PROPERLY AND GIVE CORRECT INFORMATION TO THE BMS SYSTEM.

END OF SECTION

SECTION 230900 - CONTROLS
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 230500.

PART 2 - PRODUCTS
2.1 CONTROLS SYSTEM
A. PROVIDE NEW, MODIFY OR EXTEND AUTOMATIC TEMPERATURE CONTROLS TO ALL NEW EQUIPMENT SHOWN ON THE DRAWINGS.
B. REFER TO THE DRAWINGS FOR ANY SPECIAL SEQUENCES OF CONTROL AND LOCATION OF EQUIPMENT.
C. REMODEL PROJECTS SHALL UTILIZE EQUIPMENT BY THE SAME MANUFACTURER AS CURRENTLY EXISTS.

PART - EXECUTION
3.1 DESIGN AND LAYOUT
A. THE CONTROL SYSTEM DESIGN AND LAYOUT SHALL BE PERFORMED BY A FACTORY AUTHORIZED AGENT OF THE MANUFACTURER USED.
3.2 SYSTEM OPERATION
A. AT THE CONCLUSION OF WORK, ALL EQUIPMENT AND SYSTEMS SHALL BE PROVEN TO THE ENGINEER TO OPERATE IN ACCORDANCE WITH THE NEW OR EXISTING MAIN CONTROL PANEL AND NEW/EXISTING SEQUENCES OF OPERATION ON THE DRAWINGS.
B. PROVIDE ALL WIRING REQUIRED TO CONNECT INPUT/OUTPUT DEVICES TO CONTROL PANELS.
C. TEST AND ADJUST ALL DEVICES AND DOCUMENT CALIBRATION.
D. PROVIDE NECESSARY INSTRUCTION TO THE OWNER'S PERSONNEL.

END OF SECTION

SECTION 232300 - REFRIGERANT PIPING
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 230500.

PART 2 - PRODUCTS
2.1 COPPER PIPE
A. PIPING SHALL BE COPPER TYPE ACR WITH WROUGHT COPPER FITTINGS AND BRAZED JOINTS.

PART 3 - EXECUTION
3.1 INSTALLATION
A. REFER TO SECTION 230529 FOR METHODS OF SUPPORTING ALL PIPING.

END OF SECTION

SECTION 233113 - DUCTWORK
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 230500.

PART 2 - PRODUCTS
2.1 GENERAL
A. CONCEALED DUCTWORK SHALL BE CONSTRUCTED OF NEW, PRIME GRADE, CONTINUOUS HOT-DIP MILL GALVANIZED, LOCK-FORMING, QUALITY STEEL. REFER TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
B. WHERE DUCTS EXPOSED TO VIEW PASS THROUGH WALLS, FLOORS OR CEILINGS, PROVIDE SHEET METAL COLLARS TO COVER VOIDS AROUND THE DUCTS.
C. SQUARE AND ROUND ELBOWS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SMACNA STANDARDS. ELBOWS NOT CONSTRUCTED WITH A CENTERLINE RADIUS OF AT LEAST 50 PERCENT OF THE DUCT WIDTH OR DIAMETER SHALL BE PROVIDED WITH TURNING VANES IN ACCORDANCE WITH SMACNA STANDARDS.
D. "FIBERBOARD" DUCTWORK WILL NOT BE ACCEPTED ON THIS PROJECT.
2.2 MEDIUM PRESSURE DUCT CONSTRUCTION
A. UNLESS NOTED OTHERWISE, MEDIUM PRESSURE DUCTS SHALL BE CONSTRUCTED TO A PRESSURIZATION CLASSIFICATION OF THREE (3) INCHES WG POSITIVE.
B. ALL ROUND MEDIUM PRESSURE DUCTS SHALL BE SPIRAL TYPE.
2.3 LOW PRESSURE DUCT CONSTRUCTION
A. LOW PRESSURE DUCTS CONNECTING SMALL AIR HANDLING EQUIPMENT, SHALL BE CONSTRUCTED TO A PRESSURIZATION CLASSIFICATION OF TWO (2) INCHES WG, POSITIVE OR NEGATIVE AS APPROPRIATE. THESE LOW PRESSURE ROUND DUCTS SHALL BE SPIRAL TYPE.
B. DUCTWORK DOWN STREAM OF AIR TERMINAL UNITS SHALL BE CONSTRUCTED TO A PRESSURE CLASSIFICATION OF ONE (1) INCHES WG POSITIVE. THESE LOW PRESSURE ROUND DUCTS MAY BE SPIRAL OR SNAP-LOCK TYPE.
C. SHOP FABRICATED DUCTS SHALL BE CONSTRUCTED, BRACED AND REINFORCED IN ACCORDANCE WITH SMACNA STANDARDS.
2.4 DUCT SEALING
A. SEAL ALL DUCTWORK ON THE PROJECT TO SMACNA CLASSIFICATION A.
2.5 DAMPERS
A. DAMPER AND SPLITTER HARDWARE FOR LOW PRESSURE DUCTS SHALL BE:
END BEARINGS - VENTLOK #607
REGULATOR FINISHED AREAS - VENTLOK #666, PLAIN COVER
REGULATOR UNFINISHED AREAS - VENTLOK #640, 3/8 MSH.
B. VOLUME DAMPERS SHALL BE LOCATED AT BRANCH TAKE-OFFS AT MAIN TRUNK DUCT. NO DAMPERS (SPLITTER DAMPERS) SHALL BE LOCATED IN THE CENTER OF DUCTS.

PART 3 - EXECUTION
3.1 FABRICATION
A. DUCTWORK SHOWN ON THE DRAWINGS, SPECIFIED, OR REQUIRED FOR HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS SHALL BE CONSTRUCTED AND INSTALLED IN A FIRST CLASS MANNER.
B. DUCTS SHALL BE REINFORCED IN ACCORDANCE WITH THE APPROPRIATE SMACNA STANDARDS TO PREVENT BUCKLING, BREATHING, VIBRATION AND UNNECESSARY NOISE.
C. PROVIDE MANUALLY OPERATED VOLUME CONTROL DAMPERS IN DUCT BRANCHES, FOR PROPER BALANCING OF AIR DISTRIBUTION. DAMPERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROPRIATE SMACNA STANDARDS.
D. PROVIDE HINGED ACCESS DOORS IN DUCTWORK FOR ACCESS TO ALL SMOKE DETECTORS, SENSORS, AND OTHER CONTROL DEVICES, MANUAL DAMPERS, AND FOR CLEANING OPERATIONS. FACTORY FABRICATED DOORS SIMILAR AND EQUAL TO MILCOR AND MEETING THESE SPECIFICATIONS SHALL BE ACCEPTABLE.
E. WHERE DUCTS CONNECT TO FANS, INCLUDING ROOF EXHAUSTERS, PROVIDE FLEXIBLE DUCT FABRIC CONNECTIONS. PROVIDE A MINIMUM OF ½ INCH SLACK IN THE CONNECTIONS, AND A MINIMUM OF 2-1/2 INCH DISTANCE BETWEEN THE EDGES OF THE DUCTS, PLUS AN ADDITIONAL MINIMUM IF 1 INCH OF SLACK FOR EACH INCH OF STATIC PRESSURE ON THE FAN SYSTEM.
F. PROVIDE SCREENS ON DUCTS, FANS AND OPENINGS WHICH LEAD TO, OR ARE OUTDOORS. SCREENS SHALL BE 16 GAUGE, ½ INCH MESH, IN REMOVABLE GALVANIZED STEEL FRAMES.
G. FURNISH TEST OPENINGS WITH COVERS IN EACH DUCT FOR TAKING READINGS OF AIR VELOCITIES AND PRESSURES IN DUCTS. REFER TO THE APPROPRIATE SMACNA STANDARD FOR COVER CONSTRUCTION.
3.2 DUCT SUPPORTS
A. HORIZONTAL AND VERTICAL SHEET METAL DUCTWORK SHALL BE SUPPORTED IN ACCORDANCE WITH THE APPROPRIATE SMACNA STANDARDS.
B. HANGER DESIGN AND METHODS OF HANGING AND SUPPORTING SHALL BE COMPATIBLE WITH THE STRUCTURE.

END OF SECTION

SECTION 233713 - DIFFUSERS, REGISTERS AND GRILLES
PART 1 - GENERAL
1.1 GENERAL NOTES
A. REFER TO SECTION 230500

PART 2- PRODUCTS
2.1 AIR INLETS AND OUTLETS
A. DIFFUSERS, REGISTERS, CEILING OUTLETS, AND CEILING INLETS SHALL BE AS INDICATED ON THE DRAWING, AND SHALL BE PROVIDED WITH HEAVY DUTY SPONGE, OR SOFT FELT GASKETS. THE THROW SHALL BE SUCH THAT THE VELOCITY AT THE END OF THE THROW IN THE FIVE (5) FOOT OCCUPANCY ZONE WILL NOT BE MORE THAN 50 FPM NOT LESS THAN 25 FPM. NOISE LEVELS (NC CURVE) SHALL NOT EXCEED 40.
B. IF PRODUCTS OF A MANUFACTURER OTHER THAN THE ONES INDICATED ON THE DRAWINGS ARE USED, THE SIZES SHOWN ON THE DRAWING SHALL BE CHECKED FOR PERFORMANCE, NOISE LEVEL, FACE VELOCITY, THROW AND PRESSURE DROP BEFORE THE SUBMITTAL IS MADE. SELECTIONS SHALL MEET THE MANUFACTURERS OWN PUBLISHED DATA FOR THE ABOVE PERFORMANCE CRITERIA. SHOULD DEVICES OTHER THAN THOSE SCHEDULED BY NAME BE FURNISHED, THE MANUFACTURER SHALL DEMONSTRATE COMPLIANCE WITH NOISE CRITERIA, ON REQUEST, TO THE ARCHITECT'S SATISFACTION.
C. WHERE CALLED FOR IN SCHEDULES, THE GRILLES, REGISTERS, CEILING OUTLETS, AND CEILING INLETS SHALL BE PROVIDED WITH DEFLECTING DEVICES
AND MANUAL DAMPERS. THESE SHALL BE STANDARD PRODUCTS OF THE MANUFACTURER, SUBJECT TO REVIEW BY THE ARCHITECT, AND SHALL BE SIMILAR AND EQUAL TO THOSE SCHEDULED.

PART 3 - EXECUTION
3.1 INSTALLATION
A. LOCATIONS OF OUTLETS SHOWN ON THE DRAWINGS ARE APPROXIMATE. COORDINATE THE EXACT LOCATION WITH REFLECTED CEILING PLAN AND OTHER TRADES.
B. VERIFY THE TYPE OF CEILING SYSTEM AND MATERIAL INTO EACH OF THE AIR INLETS AND OUTLETS IS TO BE INSTALLED, AND PROVIDE EQUIPMENT, WHICH PROPERLY "FITS" WHETHER SPECIFICALLY, SO INDICATED OR NOT ON THE DRAWINGS.

END OF SECTION

SECTION 23 8126 – SPLIT-SYSTEM AIR-CONDITIONERS

PART 1 - GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
A. This Section includes ductless split-system units consisting of separate evaporator-fan and compressor-condenser components. Units are designed for exposed mounting.
1.3 SUBMITTALS
A. Product Data: Include rated capacities, furnished specialties, and accessories for each type of product indicated. Include performance data in terms of capacities, outlet velocities, static pressures, sound power characteristics, motor requirements, and electrical characteristics.
1.4 QUALITY ASSURANCE
A. Product Options: Drawings indicate size, profiles, and dimensional requirements of split-system units and are based on the specific system indicated. Refer to Division 01 Section "Product Requirements."
B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
C. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."
D. ASHRAE/IESNA 90.1 Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6 - "Heating, Ventilating, and Air-Conditioning."
1.5 COORDINATION
A. Coordinate size and location of concrete bases for units. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork are specified in Division 03 Section "Cast-in-Place Concrete."
1.6 WARRANTY
A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace compressors of split-system air-conditioning units that fail in materials or workmanship within specified warranty period..

PART 2 - PRODUCTS
2.1 SPLIT-SYSTEMS
A. Manufacturers: Subject to compliance with requirements, provide products by one of the approved manufacturers shown on the drawings.
2.2 INDOOR UNITS (5 Tons or Less)
A. Wall-Mounted Evaporator-Fan Components
1. Cabinet: Enameled steel with removable panels on front and ends in color selected by Architect, and discharge drain pans with drain connection.
a. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.
b. Drain Pan and Drain Connection: Comply with ASHRAE 62.1.
2. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins, complying with ARI 210/240, and with thermal-expansion valve.
3. Electric Coil: Helical, nickel-chrome, resistance-wire heating elements with refractory ceramic support bushings; automatic-reset thermal cutout; built-in magnetic contactors; manual-reset thermal cutout; airflow proving device; and one-time fuses in terminal box for overcurrent protection.
4. Fan: Direct drive, centrifugal fan.
5. Fan Motors: Comply with requirements in Division 23 Section "Common Motor Requirements for HVAC Equipment."
a. Special Motor Features: Multistapped, multispeed with internal thermal protection and permanent lubrication.
6. Filters: Permanent, cleanable.
2.3 OUTDOOR UNITS (5 Tons or Less)
A. Casing: Steel, finished with baked enamel in color selected by Architect, with removable panels for access to controls, weep holes for water drainage, and mounting holes in base. Provide brass service valves, fittings, and gage ports on exterior of casing.
B. Compressor: Hermetically sealed with crankcase heater and mounted on vibration isolation. Compressor motor shall have thermal- and current-sensitive overload devices, start capacitor, relay, and contactor.
1. Compressor Type: Scroll.
2. Two-speed compressor motor with manual-reset high-pressure switch and automatic-reset low-pressure switch.
3. Refrigerant: R-407C or R-410A.
C. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins, complying with ARI 210/240, and with liquid subcooler.
D. Heat Pump Components: Reversing valve and low-temperature air cut-off thermostat.
E. Fan: Aluminum-propeller type, directly connected to motor.
F. Motor: Permanently lubricated, with integral thermal-overload protection.
G. Low Ambient Kit: Permits operation down to 0 deg F (7 deg C).
H. Mounting Base: Polyethylene
I. Minimum Energy Efficiency: Comply with ASHRAE/IESNA 90.1, "Energy Standard for Buildings except Low-Rise Residential Buildings."
2.4 ACCESSORIES
A. Control equipment and sequence of operation are specified in Division 23 Sections "Instrumentation and Control for HVAC" and "Sequence of Operations for HVAC Controls."
B. Thermostat: Wireless infrared functioning to remotely control compressor and evaporator fan, with the following features:
1. Compressor time delay.
2. 24-hour time control of system stop and start.
3. Liquid-crystal display indicating temperature, set-point temperature, time setting, operating mode, and fan speed.
4. Fan-speed selection, including auto setting.
C. Automatic-reset timer to prevent rapid cycling of compressor.
D. Refrigerant Line Kits: Soft-annealed copper suction and liquid lines factory cleaned, dried, pressurized, and sealed; factory-insulated suction line with flared fittings at both ends.
1. Minimum Insulation Thickness: 1 inch (25 mm) thick.

PART 3 - EXECUTION
3.1 INSTALLATION
A. Install units level and plumb.
B. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.
C. Install ground-mounting, compressor-condenser components on 4-inch- (100-mm-) thick, reinforced concrete base; 4 inches (100 mm) larger on each side than unit. Concrete, reinforcement, and formwork are specified in Division 03 Section "Cast-in-Place Concrete." Coordinate anchor installation with concrete base.
D. Install and connect precharged refrigerant tubing to component's quick-connect fittings. Install tubing to allow access to unit.
3.2 FIELD QUALITY CONTROL
A. Perform the following field tests and inspections and prepare test reports:
1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
B. Remove and replace malfunctioning units and retest as specified above.
C. Compile and maintain all field quality control reports and make available to the AHJ, owner, architect and engineer as needed.
3.3 STARTUP SERVICE
A. Perform startup service.
1. Complete installation and startup checks according to manufacturer's written instructions.

END OF SECTION 23 8126

SECTION 233423 - HVAC POWER VENTILATORS
PART 1 - GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
A. This Section includes the following:
1. Propeller fans.
1.3 PERFORMANCE REQUIREMENTS
A. Project Altitude: Base fan-performance ratings on actual Project site elevations.
B. Operating Limits: Classify according to AMCA 99.
1.4 SUBMITTALS
A. Product Data: Include rated capacities, furnished specialties, and accessories for each type of product indicated and include the following:
1. Certified fan performance curves with system operating conditions indicated.
2. Certified fan sound-power ratings.
3. Motor ratings and electrical characteristics, plus motor and electrical accessories.
4. Material thickness and finishes, including color charts.
5. Dampers, including housings, linkages, and operators.
6. Fan speed controllers.
1.5 QUALITY ASSURANCE
A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
B. AMCA Compliance: Products shall comply with performance requirements and shall be licensed to use the AMCA-Certified Ratings Seal.
C. NEMA Compliance: Motors and electrical accessories shall comply with NEMA standards.
D. UL Standard: Power ventilators shall comply with UL 705.
1.6 DELIVERY, STORAGE, AND HANDLING
A. Deliver fans as factory-assembled unit, to the extent allowable by shipping limitations, with protective crating and covering.
B. Disassemble and reassemble units, as required for moving to final location, according to manufacturer's written instructions.
C. Lift and support units with manufacturer's designated lifting or supporting points.
1.7 EXTRA MATERIALS
A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Belts: One set(s) for each belt-driven unit.
PART 2 - PRODUCTS
2.1 PROPELLER FANS
A. Manufacturers: Subject to compliance with requirements, provide products by one of the approved manufacturers shown on the drawings.
B. Description: Direct- or belt-driven propeller fans consisting of fan blades, hub, housing, orifice ring, motor, drive assembly, and accessories.
C. Housing: Galvanized-steel sheet with flanged edges and integral orifice ring with baked-enamel finish coat applied after assembly.
D. Steel Fan Wheels: Formed-steel blades riveted to heavy-gage steel spider bolted to cast-iron hub.
E. Fan Wheel: Replaceable, extruded-aluminum, airfoil blades fastened to cast-aluminum hub; factory set pitch angle of blades.
F. Belt-Driven Drive Assembly: Resiliently mounted to housing, statically and dynamically balanced and selected for continuous operation at maximum rated fan speed and motor horsepower, with final alignment and belt adjustment made after installation.
1. Service Factor Based on Fan Motor Size: 1.4.
2. Fan Shaft: Turned, ground, and polished steel; keyed to wheel hub.
3. Shaft Bearings: Permanently lubricated, permanently sealed, self-aligning ball bearings.
a. Ball-Bearing Rating Life: ABMA 9, L_{10} of 100,000 hours.
4. Pulleys: Cast iron with split, tapered bushing; dynamically balanced at factory.
5. Motor Pulleys: Adjustable pitch for use with motors through 5 hp; fixed pitch for use with larger motors. Select pulley so pitch adjustment is at the middle of adjustment range at fan design conditions.
6. Belts: Oil resistant, nonsparking, and nonstatic; matched sets for multiple belt drives.
7. Belt Guards: Fabricate of steel for motors mounted on outside of fan cabinet.
G. Accessories:
1. Gravity Shutters: Aluminum blades in aluminum frame; interlocked blades with nylon bearings.
2. Motor Belt Back Guard: Galvanized steel, complying with OSHA specifications, removable for maintenance.
3. Wall Sleeve: Galvanized steel to match fan and accessory size.
4. Disconnect Switch: Nonfusible type, with thermal-overload protection mounted inside fan housing, factory wired through an internal aluminum conduit.
5. Other accessories as listed on the drawings.
2.2 MOTORS
A. Comply with requirements in Division 23 Section "Common Motor Requirements for HVAC Equipment."
B. Motor controllers, except where they are to be mounted inside a motor control center or specifically identified and scheduled in Division 26 on the drawings, shall be furnished by the M/C or P/C for installation by the E/C. Refer to Section 220513 for details.
2.3 SOURCE QUALITY CONTROL
A. Sound-Power Level Ratings: Comply with AMCA 301, "Methods for Calculating Fan Sound Ratings from Laboratory Test Data." Factory test fans according to AMCA 300, "Reverberant Room Method for Sound Testing of Fans." Label fans with the AMCA-Certified Ratings Seal.
B. Fan Performance Ratings: Establish flow rate, pressure, power, air density, speed of rotation, and efficiency by factory tests and ratings according to AMCA 210, "Laboratory Methods of Testing Fans for Rating."
PART 3 - EXECUTION
3.1 INSTALLATION
A. Install power ventilators level and plumb.
B. Support units using elastomeric mounts, restrained elastomeric mounts, spring isolators or restrained spring isolators having a static deflection of 1 inch (25 mm). Vibration- and seismic-control devices are specified in Division 23 Section "Vibration Controls for HVAC Piping and Equipment."
1. Secure vibration controls to concrete bases using anchor bolts cast in concrete base.
C. Ceiling Units: Suspend units from structure; use steel wire or metal straps.
D. Install units with clearances for service and maintenance.
E. Label units according to requirements specified in Division 23 Section "Identification for HVAC Piping and Equipment."
3.2 CONNECTIONS
A. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."
B. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."
3.3 FIELD QUALITY CONTROL
A. Perform the following field tests and inspections and prepare test reports:
1. Verify that shipping, blocking, and bracing are removed.
2. Verify that unit is secure on mountings and supporting devices and that connections to ducts and electrical components are complete. Verify that proper thermal-overload protection is installed in motors, starters, and disconnect switches.
3. Verify that cleaning and adjusting are complete.
4. Disconnect fan drive from motor, verify proper motor rotation direction, and verify fan wheel free rotation and smooth bearing operation. Reconnect fan drive system, align and adjust belts, and install belt guards.
5. Adjust belt tension.
6. Adjust damper linkages for proper damper operation.
7. Verify lubrication for bearings and other moving parts.
8. Verify that manual and automatic volume control and fire and smoke dampers in connected ductwork systems are in fully open position.
9. Disable automatic temperature-control operators, energize motor and adjust fan to indicated rpm, and measure and record motor voltage and amperage.
10. Shut unit down and reconnect automatic temperature-control operators.
11. Remove and replace malfunctioning units and retest as specified above.
B. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
C. Compile and maintain all field quality control reports and make available to the AHJ, owner, architect and engineer as needed.
3.4 ADJUSTING
A. Adjust damper linkages for proper damper operation.
B. Adjust belt tension.
C. Refer to Division 23 Section "Testing, Adjusting, and Balancing for HVAC" for testing, adjusting, and balancing procedures.
D. Replace fan and motor pulleys as required to achieve design airflow.
E. Lubricate bearings.
END OF SECTION 233423

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PROJECT MGR. SCOTT BROWN
MECHANICAL BRUCE ISGRANIT
PLUMBING KRISTEN STEWART
ELECTRICAL KRISTEN STEWART
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4-13-2021

CITY OF DALLAS
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1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: PMI
ISSUED FOR: CONSTRUCTION	DRAFTER: PMI
DATE: April 15, 2021	CHECKED: PMI

MECHANICAL SPECIFICATIONS

SHEET
M101
OF 2-14 SHEETS

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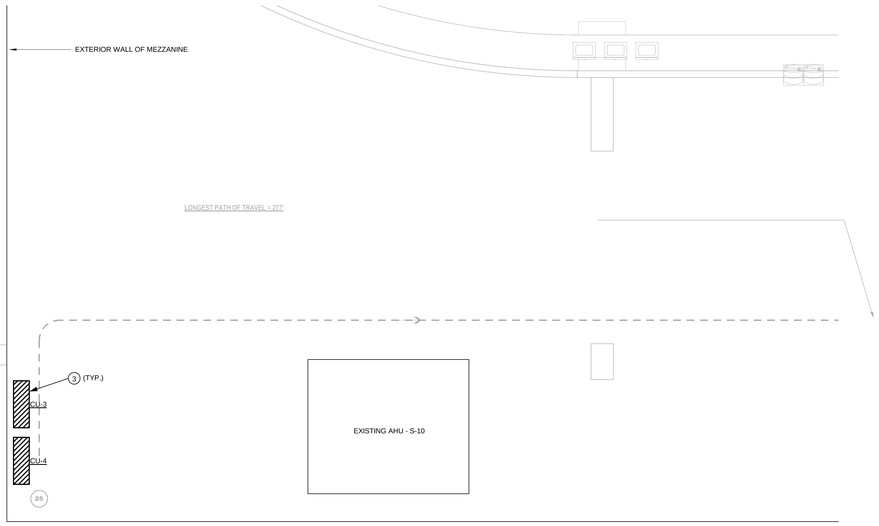
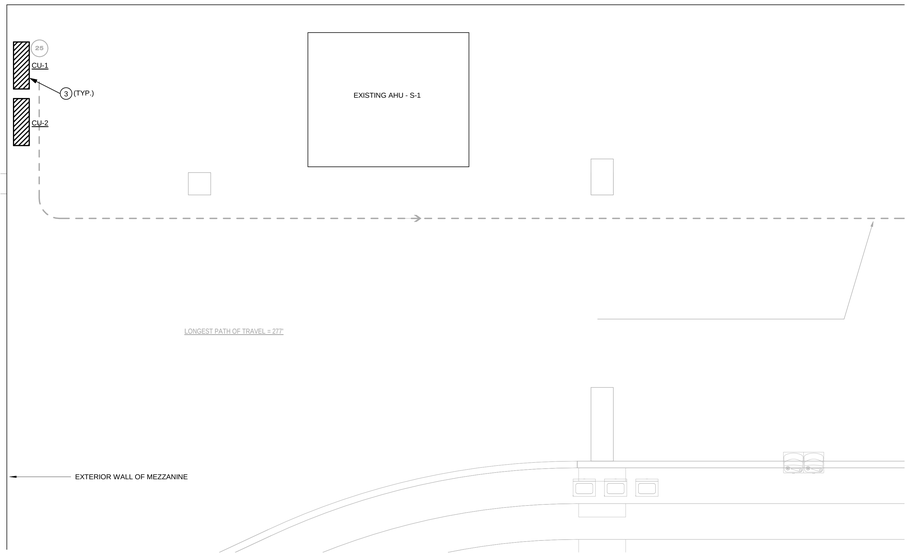
KEYED NOTES - M201

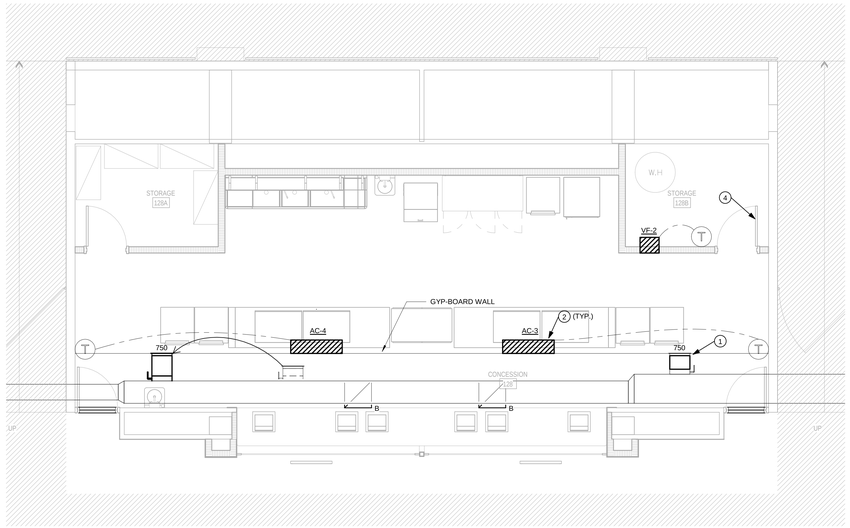
1. EXTEND EXISTING DUCT WORK AND CONNECT TO EXISTING GRILLE. GRILLE TO BE SURFACE MOUNTED TO NEW GYP-BOARD WALL.
2. AC TO BE WALL MOUNTED. PROVIDE WITH ONE HARTELL CONDENSATE PUMP A3X-11. PROVIDE LEAK DETECTION EQUAL TO LIEBERT (24V). PROVIDE PAN UNDER UNIT AND CONDENSATE PUMP AND LEAK DETECTIN IN PAN. COORDINATE CONDENSATE ROUTING TO NEAREST HUB DRAIN. COORDINATE REFRIGERANT LINE ROUTING FROM AC UNIT TO CU UNIT. SIZE AND INSTALL REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE MANUFACTURE'S REQUIRED CLEARANCES. POWER IS SINGLE POINT WITH POWER TO CU AND THEN ELECTRICAL CONTRACTOR IS TO RUN POWER WIRING FROM CU TO AC. (TYPICAL)
3. MECHANICAL CONTRACTOR TO COORDINATE EXACT LOCATION OF CU SO THAT IT DOES NOT CONFLICT WITH EXISTING EQUIPMENT IN AREA. PROVIDE CU WITH WITH ONE HARTELL CONDENSATE PUMP A3X-11. PROVIDE LEAK DETECTION EQUAL TO LIEBERT (24V). PROVIDE PAN UNDER UNIT AND CONDENSATE PUMP AND LEAK DETECTIN IN PAN. ROUTE CONDENSATE TO NEAREST HUB DRAIN. (TYPICAL)
4. 24"X24" RETURN LOUVER TO BE PLACED IN DOOR. MECHANICAL CONTRACTOR TO COORDINATE LOUVER TYPE, LOUVER FINISH, AND EXACT SIZE OF LOUVER WITH THE ARCHITECT. LOUVER TYPE TO MATCH EXISTING DOOR LOUVERS ALREADY INSTALLED AT FAIR PARK.



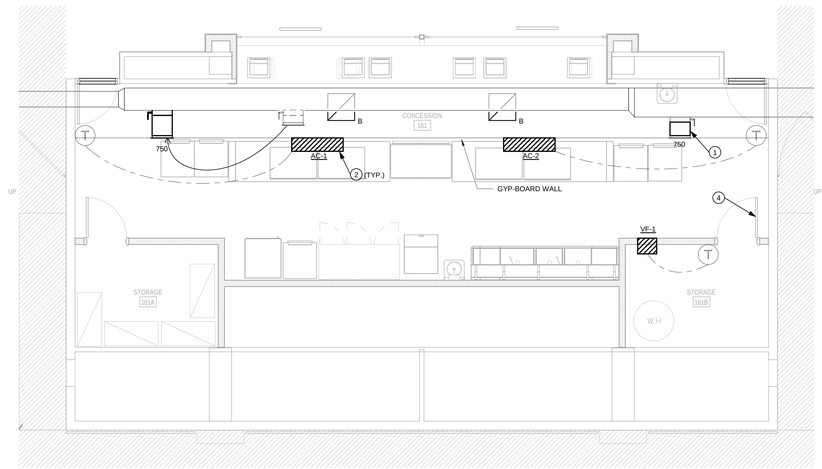
1 ENLARGED MECHANICAL MEZZANINE PLAN - SOUTH MEZZANINE
1/4" = 1'-0"



3 ENLARGED MECHANICAL MEZZANINE PLAN - NORTH MEZZANINE
1/4" = 1'-0"



2 ENLARGED MECHANICAL CONCESSION PLAN - SOUTH CONCOURSE
1/4" = 1'-0"



4 ENLARGED MECHANICAL CONCESSION PLAN - NORTH CONCOURSE
1/4" = 1'-0"

SPLIT SYSTEM AC SCHEDULE

DESIGNATION				COOLING			ELECTRICAL		BASIS OF DESIGN	
TYPE	MARK	SERVES	CFM	TOTAL MBH	SENS MBH	EER	VOLT	PH	MANUFACTURER	MODEL
AC	1	NORTH CONCESSION	920	36	25.2	10.8	208 V	1	MITSUBISHI	TPKA0A036
AC	2	NORTH CONCESSION	920	36	25.2	10.8	208 V	1	MITSUBISHI	TPKA0A036
AC	3	SOUTH CONCESSION	920	36	25.2	10.8	208 V	1	MITSUBISHI	TPKA0A036
AC	4	SOUTH CONCESSION	920	36	25.2	10.8	208 V	1	MITSUBISHI	TPKA0A036

NOTES:

1. PROVIDE WITH R410 REFRIGERANT. PROVIDE WITH R410 REFRIGERANT.
2. POWER FOR CU/AC IS SINGLE POINT, POWER IS TO CU AND DIV 26 IS RUN POWER FROM CU TO AC UNITS.
3. DIV 26 TO PROVIDE DISCONNECTS FOR ALL AC UNITS.
4. APPROVED MANUFACTURER'S ARE MITSUBISHI, DAIKEN, TRANE, LG, AND CARRIER.
5. REFRIGERANT PIPING SYSTEM SHALL BE ENGINEERED BY VRV MANUFACTURER.
6. THERMOSTATS TO BE HARD WIRED, REMOTE THERMOSTATS WHICH REQUIRE BATTERIES WILL NOT BE ALLOWED.
7. THERMOSTAT TO BE CAPABLE OF COOLING/HEATING AUTOMATIC CHANGE OVER.
8. COOLING CAPACITIES SHOWN ARE AT 95 DEG. F.
9. PROVIDE WITH FACTORY CONDENSATE HIGH LEVEL SWITCH TO BE FACTORY WIRED TO SHUT FAN OFF IN CASE OF HIGH CONDENSATE LEVEL EVENT.
10. AC UNITS TIE INTO BUILDING AUTOMATION SYSTEM.
11. INSTALL WITH MANUFACTURERS RECOMMENDED CLEARANCES FOR MAINTENANCE.

SPLIT SYSTEM CU SCHEDULE

DESIGNATION		AMBIENT	ELECTRICAL				BASIS OF DESIGN	
TYPE	MARK	TEMP	MCA	MOCP	VOLT	PH	MANUFACTURER	MODEL
CU	1	105	25	31	208 V	1	MITSUBISHI	TRUZA036
CU	2	105	25	31	208 V	1	MITSUBISHI	TRUZA036
CU	3	105	25	31	208 V	1	MITSUBISHI	TRUZA036
CU	4	105	25	31	208 V	1	MITSUBISHI	TRUZA036

NOTES:

1. DIVISION 26 TO PROVIDE DISCONNECTS FOR ALL CONDENSING UNITS.
2. PROVIDE WITH WIND BAFFLE KIT FOR AMBIENT OPERATION DOWN TO 0 DEG. F
3. INSULATE ALL REFRIGERANT LINES WITH 1/2" ARMEFLEX INSULATION.
4. PROVIDE WITH BAS INTERFACE, PROTOCOL TO BE COORDINATED WITH BAS CONTRACTOR.
5. INSTALL UNIT WITH MANUFACTURERS RECOMMENDED CLEARANCES.
6. REFER TO SPECIFICATIONS/MANUFACTURES REQUIREMENTS FOR ADDITIONAL INFORMATION.

VENTILATION FAN SCHEDULE

DESIGNATION		MECHANICAL											ELECTRICAL			
											BASIS OF DESIGN					
TYPE	MARK	SERVICE	LOCATION	TYPE	CONTROL	CFM	ESP (IN W.G.)	DRIVE	ACCESSORIES (SEE BELOW)	WEIGHT (LBS)	MANUFACTURER	MODEL	HP	RPM	VOLT	PH
VF	1	STORAGE ROOM 161B	WALL	PROPELLER	TSTAT	1100	0.25	DIRECT	A, C, I, J, K	25	COOK	12XW40D17EC	0.25	1684	115	1
VF	2	STORAGE ROOM 128B	WALL	PROPELLER	TSTAT	1100	0.25	DIRECT	A, C, I, J, K	25	COOK	12XW40D17EC	0.25	1684	115	1

ACCESSORIES:
(A) BACKDRAFT DAMPER
(B) BIRDSCREEN
(C) PRE-WIRED NON-FUSED SERVICE DISCONNECT
(D) ROOF CURB
(E) SPEED CONTROL
(F) SPRING ISOLATION
(G) INTERLOCK WITH AHU SUPPLY FAN
(H) VFD CONTROLLED
(I) EC MOTOR
(J) WALL COLLAR
(K) WIRE GUARD

NOTES:
1) REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2) CONTROL DESCRIPTION (WHERE PROVIDED, REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL INFORMATION)
- BMS - BUILDING AUTOMATION SYSTEM
- T-STAT - LINE VOLTAGE THERMOSTAT PROVIDED BY DIV 23.
- H-STAT - HUMIDISTAT CONTROL
- TCLOCK - TIMECLOCK FOR OPERATION (PROVIDED BY DIV. 23 AND INSTALLED BY DIV. 26)
- SWITCH- MOTOR RATED SWITCH BY DIV. 26
- CONT. - CONTINUOUS OPERATION
- HOA - COMBINATION STARTER WITH HOA AND PILOT LIGHT IN COVER FURNISHED BY MANUFACTURER

3) ALL ROOF CURBS ARE STANDARD INSULATED TC-2 CURBS WITH GASKET, UNLESS OTHERWISE NOTED.
4) PROVIDE VFD RATED MOTOR WHEN FAN IS EQUIPPED WITH VFD. PROVIDE STARTER WHEN VFD IS NOT REQUIRED.
5) PROVIDE FANS WITH OSHA RATED GUARDS.
6) APPROVED MANUFACTURERS - COOK, GREENHECK, TWIN CITIES
7) ALL SUBSTITUTIONS SHALL BE PRE-APPROVED, IN WRITING, PRIOR TO BID.

GRILLES- REGISTERS-DIFFUSERS

DESIGN.	DUTY	TYPE	MOUNTING LOCATION	MATERIAL	VOLUME CONTROL	FINISH	AIR PATTERN CONTROL	METHOD OF SUPPORT	EQUAL TO MANUFACTURER AND MODEL NO	REMARKS
B	RETURN	PERFORATED	LAY-IN CLG	STEEL	NO	OFF WHITE	NO	T-BAR	TITUS PAR 24X24 FACE	SEE NOTE 1

NOTES:

1. FOR TYPE B DIFFUSERS LOCATED IN GYP-BOARD CEILINGS OR WALLS, PROVIDE DIFFUSER WITH A TRIM KIT.

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MECHANICAL BRUCE ISONHART
PLUMBING JOHN HUNTSMAN
ELECTRICAL KRISTIN STEWART

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4-15-2021

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REVISIONS DENOTED BY △

PROJECT #: 18055-01 MANAGER: PMI
ISSUED FOR:CONSTRUCTION DRAFTER: PMI
DATE: April 15, 2021 CHECKED: PMI

ENLARGED MECHANICAL CONCESSION PLAN

SHEET
M201
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PLUMBING CITY OF DALLAS CH 61 GREEN BUILDING NOTES:

SECTION 701 GENERAL WATER RESOURCE CONSERVATION, QUALITY, AND EFFICIENCY

702.1 FITTING AND FIXTURE CONSUMPTION. FIXTURES SHALL COMPLY WITH TABLE 702.1.

702.7 HOT AND TEMPERED WATER DISTRIBUTION. WATER SUPPLY PIPING SHALL BE IN ACCORDANCE WITH SECTION 702.7.1 OR SECTION 702.7.2. THE FLOW RATE THROUGH 1/4-INCH (6.4 MM) TUBING SHALL NOT EXCEED 0.5 GPM (1.9 LPM). THE FLOW RATE THROUGH 5/16-INCH (7.9 MM) TUBING SHALL NOT EXCEED 1 GPM (3.8 LPM). THE FLOW RATE THROUGH 3/8-INCH (9.5 MM) TUBING SHALL NOT EXCEED 1.5 GPM (5.7 LPM).

702.7.1 MAXIMUM ALLOWABLE PIPE LENGTH METHOD. THE MAXIMUM ALLOWABLE PIPE LENGTH FROM THE SOURCE OF HOT OR TEMPERED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE IN ACCORDANCE WITH THE MAXIMUM PIPE LENGTH COLUMNS IN TABLES 702.7.2(2) THROUGH 702.7.2(10), AS APPROPRIATE FOR THE TYPE OF PIPE TO BE INSTALLED. WHERE THE TYPE OF PIPE TO BE INSTALLED IS UNKNOWN OR THE TYPE OF PIPE IS NOT COVERED BY TABLES 702.7.2(2) THROUGH 702.7.2(10), TABLE 702.7.2(1) SHALL BE USED FOR DESIGN PURPOSES. WHERE THE LENGTH CONTAINS MORE THAN ONE SIZE OF PIPE, THE LARGEST SIZE SHALL BE USED FOR DETERMINING THE MAXIMUM ALLOWABLE LENGTH OF THE PIPE IN THE TABLES.

702.7.2 MAXIMUM ALLOWABLE PIPE VOLUME METHOD. THE WATER VOLUME IN THE PIPING SHALL BE CALCULATED IN ACCORDANCE WITH SECTION 702.7.2.1. THE MAXIMUM VOLUME OF HOT OR TEMPERED WATER IN THE PIPING TO PUBLIC LAVATORY FAUCETS, METERING OR NONMETERING, SHALL BE 2 OUNCES (0.06 L). FOR FIXTURES OTHER THAN PUBLIC LAVATORY FAUCETS, THE MAXIMUM VOLUME SHALL BE 64 OUNCES (1.89 L) FOR HOT OR TEMPERED WATER FROM A WATER HEATER OR BOILER; AND 24 OUNCES (0.7 L) FOR HOT OR TEMPERED WATER FROM A CIRCULATION LOOP PIPE OR AN ELECTRICALLY HEAT-TRACED PIPE. THE WATER VOLUME IN THE PIPING SHALL BE CALCULATED IN ACCORDANCE WITH SECTION 702.7.2.1.

702.7.2.1 WATER VOLUME DETERMINATION. THE VOLUME SHALL BE THE SUM OF THE INTERNAL VOLUMES OF PIPE, FITTINGS, VALVES, METERS AND MANIFOLDS BETWEEN THE SOURCE OF HOT WATER AND THE TERMINATION OF THE FIXTURE SUPPLY PIPE. THE VOLUME SHALL BE DETERMINED FROM THE LIQUID OUNCES PER FOOT COLUMN OF TABLES 702.7.2(2) THROUGH 702.7.2(10) AS APPROPRIATE FOR THE TYPE OF PIPE. WHERE THE TYPE OF PIPE IS UNKNOWN OR THE TYPE OF PIPE IS NOT COVERED BY TABLES 702.7.2(2) THROUGH 702.7.2(10), TABLE 702.7.2(1) SHALL BE USED TO DETERMINE THE VOLUME. THE VOLUME CONTAINED WITHIN FIXTURE SHUTOFF VALVES, FLEXIBLE WATER SUPPLY CONNECTORS TO A FIXTURE FITTING, OR WITHIN A FIXTURE FITTING SHALL NOT BE INCLUDED IN THE WATER VOLUME DETERMINATION. WHERE HOT OR TEMPERED WATER IS SUPPLIED BY A CIRCULATION LOOP PIPE OR AN ELECTRICALLY HEAT-TRACED PIPE, THE VOLUME SHALL INCLUDE THE PORTION OF THE FITTING ON THE SOURCE PIPE THAT SUPPLIES WATER TO THE FIXTURE.
SECTION 704 WATER TREATMENT DEVICES AND EQUIPMENT

704.1 WATER SOFTENERS. WATER SOFTENERS SHALL COMPLY WITH SECTIONS 704.1.1 THROUGH 704.1.4.

704.1.1 DEMAND INITIATED REGENERATION. WATER SOFTENERS SHALL BE EQUIPPED WITH DEMAND INITIATED REGENERATION CONTROL SYSTEMS. SUCH CONTROL SYSTEMS SHALL AUTOMATICALLY INITIATE THE REGENERATION CYCLE AFTER DETERMINING THE DEPLETION, OR IMPENDING DEPLETION OF SOFTENING CAPACITY.

704.1.2 WATER CONSUMPTION. WATER SOFTENERS SHALL HAVE MAXIMUM WATER CONSUMPTION DURING REGENERATION OF 4 GALLONS (15.1 L) PER 1000 GRAINS (17.1 GL) OF HARDNESS REMOVED AS MEASURED IN ACCORDANCE WITH NSF 44.

704.1.3 WASTE CONNECTIONS. WASTE WATER FROM WATER SOFTENER REGENERATION SHALL NOT DISCHARGE TO RECLAIMED WATER COLLECTION SYSTEMS AND SHALL DISCHARGE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.

704.1.4 EFFICIENCY AND LISTING. WATER SOFTENERS THAT REGENERATE IN PLACE, THAT ARE CONNECTED TO THE WATER SYSTEM THEY SERVE BY PIPING NOT EXCEEDING 1-1/4 INCHES IN DIAMETER, OR THAT HAVE A VOLUME OF 3 CUBIC FEET OR MORE OF CATION EXCHANGE MEDIA SHALL HAVE A RATED SALT EFFICIENCY OF NOT LESS THAN 4,000 GRAINS OF TOTAL HARDNESS EXCHANGE PER POUND OF SALT, BASED ON SODIUM CHLORIDE EQUIVALENCY AND SHALL BE LISTED AND LABELED IN ACCORDANCE WITH NSF 44. ALL OTHER WATER SOFTENERS SHALL HAVE A RATED SALT EFFICIENCY OF NOT LESS THAN 3,500 GRAINS OF TOTAL HARDNESS EXCHANGE PER POUND OF SALT, BASED ON SODIUM CHLORIDE EQUIVALENCY.

704.2 REVERSE OSMOSIS WATER TREATMENT SYSTEMS. POINT-OF-USE REVERSE OSMOSIS TREATMENT SYSTEMS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH NSF 58. THE DISCHARGE PIPE FROM A REVERSE OSMOSIS DRINKING WATER TREATMENT UNIT SHALL CONNECT TO THE BUILDING DRAINAGE SYSTEM IN ACCORDANCE WITH SECTION 611.2 OF THE INTERNATIONAL PLUMBING CODE. POINT-OF-USE REVERSE OSMOSIS SYSTEMS SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF VALVE THAT PREVENTS THE PRODUCTION OF REJECT WATER WHEN THERE IS NO DEMAND FOR TREATED WATER.

704.3 ONSITE RECLAIMED WATER TREATMENT SYSTEMS. ONSITE RECLAIMED WATER TREATMENT SYSTEMS, INCLUDING GRAY WATER REUSE TREATMENT SYSTEMS AND WASTE WATER TREATMENT SYSTEMS, USED TO PRODUCE NONPOTABLE WATER FOR USE IN WATER CLOSET AND URINAL FLUSHING, SURFACE IRRIGATION AND SIMILAR APPLICATIONS SHALL BE LISTED AND LABELED TO NSF 350.

KITCHEN PLUMBING GENERAL NOTES:

A. REFER TO FOOD SERVICE DRAWINGS FOR ALL PLUMBING CONNECTIONS, SIZES, AND REQUIREMENTS TO FOOD SERVICE EQUIPMENT.
B. INSTALL A THERMOSTATIC POINT OF USE MIXING VALVE (ASSE 1070 COMPLIANT) WITH INTEGRAL CHECK VALVE PRIOR TO CONNECTION OF HANDWASHING SINKS, LAVATORIES, AND SINKS IN PUBLIC USE SPACES, SET TO 120 DEG F.
C. ALL KITCHEN EQUIPMENT DRAIN LINES WILL BE INDIRECTLY CONNECTED TO THE WASTE LINES WITH A MINIMUM 2" OR 2X PIPE DIAMETER AIR GAP. WHICHEVER IS GREATER.
D. PROVIDE SHUT-OFF VALVES ON DOMESTIC HOT AND COLD WATER CONNECTIONS TO ALL FIXTURE IN AN ACCESSIBLE LOCATION.
E. PROVIDE CHECK VALVE EQUAL TO WATTS SERIES LF601 CHECK VALVE ON THE HOT AND COLD WATER SUPPLY LINES TO THE FOLLOWING PIECES OF EQUIPMENT TO PREVENT MIGRATION OF HOT AND COLD WATER INTO OPPOSITE LINES: PRE-RINSE SPRAYER FAUCETS, MOP SINK, AND KETTLE FAUCETS. FEED WATER OVERHEAD AND MOUNT CHECK VALVE ABOVE ACCESSIBLE CEILING.

PLUMBING GENERAL NOTES:

A. ALL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES, RULES, REGULATIONS AND REQUIREMENTS.
B. ALL WORK SHALL COMPLY WITH THE BUILDING TENANT CONSTRUCTION GUIDE. COORDINATE WITH BUILDING MANAGEMENT/OWNER FOR ACCESS TO ANY TENANT LEASE SPACES THAT MIGHT BE REQUIRED FOR THE INSTALLATION. UNLESS DIRECTED BY LANDLORD ALL EQUIPMENT AND WORKMANSHIP SHALL BE GUARANTEED FOR NO LESS THAN 1 YEAR.
C. EXISTING CONDITIONS ARE BASED ON INFORMATION PROVIDED BY SITE SURVEY DATED 07/17/2020. HOWEVER, IT IS NOT INTENDED TO BE A TRUE REPRESENTATION OF ACTUAL CONDITIONS. CONTRACTOR SHALL VISIT JOB SITE PRIOR TO BIDDING TO ASCERTAIN EXISTING CONDITIONS AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCES PRIOR TO BID.
D. PIPING LAYOUT IS SCHEMATIC, EXACT LOCATION OF PIPES TO BE COORDINATED WITH BUILDING STRUCTURE AND WORK OF OTHER CONTRACTORS.
E. CONTRACTOR SHALL COORDINATE PLUMBING ROUGH-IN WITH ARCHITECTURAL DRAWINGS TO PROVIDE EXACT PLUMBING LOCATION FOR FIXTURES.
F. COORDINATE EXACT LOCATION OF ALL WATER AND DRAIN CONNECTIONS FOR EQUIPMENT PROVIDED BY OTHERS.
G. RUN ALL WATER LINES LEVEL.
H. THIS CONTRACTOR IS TO PROVIDE ALL ADDITIONAL STEEL, HANGER MATERIALS, RODS AND CLAMPS AS REQUIRED FOR COORDINATION WITH WORK OF OTHER TRADES.
I. SUPPORT CAST IRON SANITARY PIPING NOT IN EARTH, ON 5'-0" CENTERS, ALL STEEL PIPING ON 10'-0" CENTERS AND COPPER PIPING ON 8'-0" CENTERS.
J. THIS CONTRACTOR IS RESPONSIBLE FOR FIRESTOPPING AT ALL PLUMBING RELATED PENETRATIONS OF FIRE AND SMOKE RATED STRUCTURES, FLOORS AND PARTITIONS. REFER TO ARCHITECTURAL FLOOR PLANS FOR LOCATIONS OF ALL RATED STRUCTURES.
K. ALL FIXTURES TO BE EQUIPPED WITH STOP VALVE IN ACCESSIBLE LOCATION.
L. CONTRACTOR SHALL PROVIDE SHUT-OFF VALVE AT EACH BRANCH LINE CONNECTING TO THE MAIN. PROVIDE BRASS VALVE TAGS WITH DOCUMENTATION IN CLOSEOUT DOCUMENTS.
M. MAIN WATER SHUT-OFFS SHALL BE ACCESSIBLE.
N. PROVIDE ACCESSIBLE CLEANOUTS AT BASE OF ALL SANITARY STACKS AND OTHER PLACES AS REQUIRED BY CODE.
P. WATER HEATER SHALL HAVE BOTH WATER AND ELECTRICAL SHUT-OFFS AT EASILY ACCESSIBLE LOCATIONS.
Q. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF ALL ABANDONED PLUMBING LINES.
R. PLUMBING CONTRACTOR SHALL X-RAY SLAB PRIOR TO ANY CORE-DRILLING. COORDINATE WITH BUILDING MANAGEMENT FOR AFTER-HOURS ACCESS TO SPACE. PRIOR TO CORE DRILLING ANY EXISTING FLOORS, OBTAIN APPROVAL FROM THE STRUCTURAL ENGINEER.
S. REFER TO PLUMBING RISER DIAGRAMS FOR PIPING SIZES NOT SHOWN ON PLAN.
T. IT IS THE INTENTION OF THESE DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. WHEREVER THE WORD 'PROVIDE' IS USED, IT SHALL MEAN 'FURNISH AND INSTALL, COMPLETE AND READY TO USE.'
U. MATERIALS USED FOR INSULATION, ACOUSTICAL LININGS, ADHESIVES, JACKETS AND COATINGS, AND COMBINATIONS OF THESE MATERIALS, SHALL EACH HAVE A FLAME SPREAD RATING OF 25 OR LESS, AND A SMOKE DEVELOPED RATING OF 50 OR LESS, AS DETERMINED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH NFPA-255.

SINCE SANITARY AND DOMESTIC WATER CONNECTION POINTS ARE NOT KNOWN, UTILIZE CONCEPT ABOVE FOR MAGNITUDE ONLY. DO NOT INSTALL ANY OF THIS WORK UNTIL TIE-INS AND INVERTS ARE FIELD VERIFIED.

FIRE PROTECTION SPECIFICATION:

A. MODIFY THE EXISTING WET PIPE FIRE SPRINKLER SYSTEM AS REQUIRED FOR THE NEW TENANT LAYOUT INCLUDING RELOCATING PIPING TO CLEAR NEW DUCTWORK, ADDING NEW HEADS, RELOCATING EXISTING HEADS, AND LEAVING CERTAIN EXISTING HEADS IN PLACE. THE SPRINKLER DESIGN SHALL COMPLY WITH NFPA 13. THE REQUIREMENTS OF THE LOCAL AUTHORITIES HAVING JURISDICTION AND THE REQUIREMENTS OF THE OWNER'S INSURANCE COMPANY. EXISTING SPRINKLER HEADS TO BE RELOCATED MAY BE REUSED. EXISTING PIPING WHICH IS REMOVED IN THE MODIFICATION WORK SHALL NOT BE REUSED. NEW SPRINKLER PIPING SHALL BE ROUTED AS REQUIRED TO CLEAR NEW DUCTWORK, EXISTING DUCTWORK TO REMAIN, LIGHT FIXTURES, STRUCTURAL INTERFERENCES, ETC. THE NEW SPRINKLER HEADS SHALL MATCH EXISTING SPRINKLER HEADS. ALL PIPING SHALL BE SCHEDULE 40 WITH USA FITTINGS.

B. IN ALL GYP. BOARD CEILING AREA, PROVIDE CONCEALED SPRINKLER HEADS WITH CAPS TO BE FACTORY PAINTED TO MATCH CEILING. ALL SPRINKLER HEADS IN LAY-IN CEILING SHALL BE LOCATED IN CENTER OF TILE AND ALIGNED WITH LIGHT FIXTURES.

C. SPRINKLER CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF CALCULATIONS AND SPRINKLER HEAD LOCATIONS FOR ARCHITECT TO REVIEW PRIOR TO ANY INSTALLATION. NO EXCEPTION TAKEN.

D. ALL SPRINKLER HEADS IN EXPOSED CEILING SHALL BE TURNED TO THE UPRIGHT POSITION AND REPLACE HEADS IF REQUIRED.

PLUMBING DESIGN CRITERIA		
		NOTES
DOMESTIC WATER PRESSURE	55 PSI	BASED ON ASSUMPTION
FIRE PROTECTION PRESSURE	55 PSI	BASED ON ASSUMPTION
MINIMUM INCOMING WATER TEMPERATURE	50°F	
STARTING INVERT ELEVATION	24" BFF	TYPICAL UNLESS NOTED OTHERWISE
ENDING INVERT ELEVATION	REFER TO UNDERFLOOR PLANS	

PLUMBING INSULATION SCHEDULE

APPLICATION	INSULATION		INSULATION FINISH (OR PIPE FINISH IF NO INSULATION PRESENT)		
	INSULATION TYPE	INSULATION THICKNESS	INDOOR CONCEALED	INDOOR EXPOSED (C)	OUTDOOR
DOMESTIC COLD WATER PIPING					
INDOOR: PIPE DIAMETER 1-1/4" & SMALLER	6i	1/2"	8F	5F	NA
INDOOR: PIPE DIAMETER 1-1/2" & LARGER	6i	1"	8F	5F	NA
OUTDOOR: ALL SIZES	6i	2"	NA	NA	3F
DOMESTIC HOT WATER PIPING					
INDOOR: PIPE DIAMETER 1-1/4" & SMALLER	6i	1"	8F	5F	NA
INDOOR: PIPE DIAMETER 1-1/2" & LARGER	6i	1-1/2"	8F	5F	NA
BELOW GRADE: ALL SIZES	4i	1-1/2"	NA	NA	NA
OUTDOOR: ALL SIZES	6i	2"	NA	NA	3F
STORM AND STORM OVERFLOW PIPING					
INDOOR: ALL SIZES	6i	1"	8F	5F	NA
OUTDOOR: ALL SIZES	NA	NA	NA	NA	NA
INDOOR: ROOF DRAIN AND OVERFLOW DRAIN BODIES	6i	1"	8F	8F	NA
SANITARY SEWER AND GREASE WASTE PIPING					
INDOOR: CONCEALED, ALL SIZES	NA	NA	NA	NA	NA
OUTDOOR: EXPOSED OR CONCEALED, ALL SIZES	NA	NA	NA	NA	NA
INDOOR: EXPOSED (C)(D), ALL SIZES	6i (A) (D)	1/2"	NA	5F (D)	NA
WITH HEAT TRACE - INDOOR: ALL SIZES	6i	1-1/2"	8F	5F	NA
WITH HEAT TRACE - OUTDOOR: ALL SIZES	6i	2"	NA	NA	3F
ABOVE GRADE: 1ST 10FT PIPING RECEIVING COLD CONDENSATE INCLUDING THE FLOOR DRAIN AND P-TRAP	6i (A)	1"	8F	5F	NA
BELOW GRADE: 1ST 10FT PIPING RECEIVING COLD CONDENSATE INCLUDING THE FLOOR DRAIN AND P-TRAP	NA	NA	NA	NA	NA
ABOVE GRADE: 1ST 25FT PIPING RECEIVING HOT WATER DISCHARGE INCLUDING THE FLOOR DRAIN AND P-TRAP (E)	6i (A)	1"	8F	5F	NA
BELOW GRADE: 1ST 25FT PIPING RECEIVING HOT WATER DISCHARGE INCLUDING THE FLOOR DRAIN AND P-TRAP	NA	NA	NA	NA	NA
COLD CONDENSATE DRAIN LINES					
INDOOR OR OUTDOOR: EXPOSED OR CONCEALED, ALL SIZES	6i (A)	1/2"	8F	5F	9F
VENT PIPING					
INDOOR: CONCEALED, ALL SIZES	NA	NA	NA	NA	NA
OUTDOOR: EXPOSED OR CONCEALED, ALL SIZES	NA	NA	NA	NA	NA
INDOOR: EXPOSED (C)(D), ALL SIZES	6i (A) (D)	1/2"	NA	5F (D)	NA
NATURAL GAS					
INDOOR: CONCEALED, ALL SIZES	NA	NA	NA	NA	NA
INDOOR: EXPOSED (C), ALL SIZES	NA	NA	NA	NA	NA
OUTDOOR: EXPOSED OR CONCEALED, ALL SIZES	NA	NA	NA	NA	NA

NOTES:
A. **NOT ALL PIPE TYPES MAY BE USED IN PLAN. REFER TO FLOOR PLANS FOR MORE INFORMATION.**
B. CELLULAR FOAM MAY BE SUBSTITUTED
C. USE 9F FINISH FOR CELLULAR FOAM
D. THIS INCLUDES BUT IS NOT LIMITED TO, PIPING EXPOSED IN MECHANICAL ROOMS, PIPING IN OPEN CEILINGS EXPOSED TO THE PUBLIC OR PRIVATE PERSONNEL, OR EXPOSED PIPING DOWN KITCHENS WALLS, ETC.
E. INSULATION ON INDOOR EXPOSED SANITARY PIPING IS FOR AESTHETIC APPEAL ONLY AND ONLY PROVIDED AT THE DIRECTION OF THE ARCHITECT IN VERY LIMITED LOCATIONS. THE CONTRACTOR SHALL ONLY PROVIDE THIS INSULATION WHERE IT IS SPECIFICALLY CALLED OUT ON THE PLUMBING FLOOR PLANS. IF NOT INDICATED ON THE PLUMBING FLOOR PLANS, THE CONTRACTOR SHALL TREAT INDOOR EXPOSED SANITARY PIPING THE SAME WAY INDOOR CONCEALED SANITARY PIPING IS TREATED IN THIS SCHEDULE. REFER TO THE PLUMBING FLOOR PLANS FOR LOCATIONS. REFER TO THE ARCHITECTURAL PLANS FOR COLOR SELECTIONS.
F. DRAIN SERVING ANY WATER HEATING APPLIANCE (120 °F AND HIGHER). THIS INCLUDES BUT IS NOT LIMITED TO DRAINS BESIDE DOMESTIC WATER HEATERS, HEATING WATER BOILERS, AND DIRECT CONNECTIONS OR DRAINS RECEIVING WATER FROM DISHWASHERS, ETC.

INSULATION MATERIALS:
1i. CALCIUM SILICATE - MAXIMUM K FACTOR AT 500 DEGREES F SHALL BE 0.55, MUST ASTM C411 TO 1200 DEGREES F, AND MUST MEET NFPA 255 AND UL 723 FOR 0/0 FLAME SPREAD AND SMOKE DEVELOPED.
2i. FIBERGLASS BOARD - PROVIDE SEMI-RIGID FIBERGLASS BOARD WITH A DENSITY OF 3 LBS/FT3. MAXIMUM K FACTOR AT 75 DEGREES F SHALL BE 0.24 AND A TEMPERATURE LIMIT OF 250 DEGREES F (FACED) AND 450 DEGREES F (UNFACED). NFPA 255 AND UL 723 FOR 25/50 FLAME SPREAD AND SMOKE DEVELOPED.
3i. FIBERGLASS DUCT WRAP - MAXIMUM K FACTOR AT 75 DEGREES F SHALL BE 0.30, MUST PASS ASTM C411 TO 250 DEGREES F FACED. DENSITY SHALL BE 0.75 LBS/FT3. NFPA 255 AND UL 723 FOR 25/50 FLAME SPREAD AND SMOKE DEVELOPMENT.
4i. CELLULAR FOAM - EQUAL TO AP/ARMAFLEX TUBES OR SHEETS, AS APPLICABLE TO INSTALLATION. MAXIMUM K FACTOR AT 75 DEGREES F SHALL BE 0.28. MAXIMUM OPERATING TEMPERATURE OF 200 DEGREES F. MUST MEET NFPA 255 AND UL723 FOR 25/50 FLAME SPREAD AND SMOKE DEVELOPED AND MUST BE FREE OF ANY CFC5,HFC5, OR HCFC5
5i. FIBERGLASS DUCT LINER - REFER TO SECTION 23313 FOR ADDITIONAL INFORMATION
6i. FIBERGLASS PIPE INSULATION - MAXIMUM K FACTOR AT 100 DEGREES F SHALL BE 0.24, MUST PASS ASTM C411 TO 850 DEGREES F. DENSITY SHALL BE 3.5 LBS/FT3/ NFPA 255 AND UL 7723 FOR 25/50 FLAME SPREAD AND SMOKE DEVELOPED.
7i. MINERAL-FIBER, PREFORMED PIPE INSULATION, TYPE I OR II.
NA. NOT APPLICABLE OR NONE REQUIRED.

FINISH TYPES
1F. 0.010" T-304 STAINLESS STEEL JACKETING – CORRUGATED. PROVIDE 3/16" CORRUGATED ROLL JACKETING FOR PIPING AND TANKS LESS THAN 6 FEET DIAMETER AND DEEP CORRUGATED SHEETS FOR DIAMETERS LARGER THAN 6 FEET.
2F. 0.010" T-304 STAINLESS STEEL JACKETING – SMOOTH FINISH.
3F. CORRUGATED ALUMINUM – 0.016" UP THROUGH 24" PIPE SIZE. 0.024" LARGER THAN 24".
4F. SMOOTH ALUMINUM – 0.016" UP THROUGH 12" PIPE SIZE. 0.024" LARGER THAN 12" .
5F. 20-MIL PVC (25 FLAME SPREAD AND 50 SMOKE DEVELOPED.)
6F. FOIL/REINFORCED/KRACT JACKET (VAPOR BARRIER).
7F. 1/4-INCH WEATHERPROOF MASTIC WITH GLASS MESH REINFORCEMENT. SLOPE TOP OF DUCT MINIMUM OF 1/4" PER FOOT TO PREVENT PONDING.
8F. WHITE ALL-SERVICE JACKET (VAPOR BARRIER).
9F. WATER BASED LATEX ENAMEL WEATHER RESISTANT AND UV RESISTANT FINISH EQUAL TO ARMAFLEX WB FINISH.
10F. 125 MILS THICK EXTRUDED, BLACK, HIGH DENSITY POLYETHYLENE (HDPE). INNER SURFACE SHALL BE OXIDIZED BY MEANS OF CORONA OR FLAME TREATMENT.
NA. NOT APPLICABLE OR NO FINISH REQUIRED.

PLUMBING PIPING, FITTINGS, & JOINTS SCHEDULE

APPLICATION	MATERIAL	FITTINGS	JOINTS
DOMESTIC			
UNDERSLAB (4" AND SMALLER)			
	COPPER	SOLDER	BRAZED
ABOVEGROUND			
2" AND SMALLER	COPPER	FLANGES	BRAZED
		SOLDER	SOLDER
		*PRESS FITTINGS ACCEPTED	
LARGER THAN 2"	COPPER	FLANGES	BRAZED
		SOLDER	SOLDER
MAKEUP-WATER PIPING			
	COPPER	WROUGHT COPPER	SOLDERED
CONDENSATE			
	COPPER	WROUGHT COPPER	SOLDERED

1. *SHARKBITE IS NOT ACCEPTED. ACCEPTABLE PRESS FITTINGS MANUFACTURER ARE: NIBCO, VIEGA-PROPRESS, VIEGA MEGAPRESS.
2. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
3. NOT ALL PIPE TYPES MAY BE USED. REFER TO FLOOR PLAN FOR FURTHER INFORMATION.

WATER HAMMER ARRESTOR SCHEDULE

PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	½	1-11
B	¾"	12-32
C	1"	33-60
D	1¼"	61-113
E	1½"	114-154
F	2"	154-330

FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URINAL	5	--
LAVATORY/SINK	1.5	1.5
JANITOR SINK	3	3
SHOWER/BATHTUB	2	2

NOTES:
PC TO PROVIDE WATER HAMMER ARRESTORS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, OR WATTS WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE.

PLUMBING SYMBOLS LEGEND

SYMBOL	DESCRIPTION
—SAN—	SANITARY SEWER
—ST—	STORM DRAIN
—RD—	ROOF DRAIN
—OFD—	OVERFLOW DRAIN
—V—	VENT
—DCW—	DOMESTIC COLD WATER
—RO—	REVERSE OSMOSIS
—DI—	DEIONIZED WATER
—SCW—	SOFT COLD WATER
—DHW—	DOMESTIC HOT WATER
—DHWR—	DOMESTIC HOT WATER RETURN
—CD—	CONDENSATE DRAIN PIPING
—F—	FIRE PROTECTION PIPING
	PIPING DOWN
	PIPING UP -OR- PIPING UP & DOWN
FCO	CLEANOUT (CO) OR WALL CLEANOUT (WCO)
FCO	FLOOR (FCO) OR GRADE (GCO) CLEANOUT
	CAP ON END OF PIPE
	DIRECTION OF FLOW
	DIRECTION OF SLOPE
	ISOLATION / SHUT-OFF VALVE / GAS COCK
	UNION
	BALANCING VALVE / CIRCUIT SETTER
	GAS REGULATOR
	PRESSURE REDUCING VALVE
	CHECK VALVE
	CONNECT TO EXISTING

PLUMBING ABBREVIATIONS

SYMBOL	DESCRIPTION
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
BFF	BELOW FINISHED FLOOR
DFU	DRAIN FIXTURE UNIT
E / e	EXISTING ITEM TO REMAIN
ER / er	EXISTING ITEM TO BE RELOCATED
ED / ed	EXISTING ITEM TO BE REMOVED
FDC	FIRE DEPARTMENT CONNECTION
FU	FIXTURE UNITS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
IE	INVERT ELEVATION
N/A	NOT APPLICABLE
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
QTY	QUANTITY
UNO	UNLESS NOTED OTHERWISE
VTR	VENT THROUGH ROOF

PLUMBING APPLICABLE CODES

- 2018 INTERNATIONAL PLUMBING CODE (IPC)
- 2018 INTERNATIONAL ENERGY CONSERVATION (IECC)
- CITY OF DALLAS LOCAL AMENDMENTS

FIRE SUPPRESSION APPLICABLE CODES

- FM GLOBAL
- 2018 INTERNATIONAL FIRE CODE (IFC)
- CITY OF DALLAS LOCAL AMENDMENTS

REVISIONS DENOTED BY △

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PROJECT MGR. SCOTT BROWN
MECHANICAL BRUCE ISGNARIT
PLUMBING CHRIS WOODYARD
ELECTRICAL KRISTIN STEWART

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D. SCOTT BROWN
89097
LICENSED
PROFESSIONAL ENGINEER
4-13-2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01 MANAGER: PMI
ISSUED FOR: CONSTRUCTION DRAFTER: PMI
DATE: April 15, 2021 CHECKED: PMI

PLUMBING NOTES & SYMBOLS

SHEET
P001
OF 1-P0 SHEETS

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DIVISION 22 - PLUMBING

SECTION 220500 - COMMON WORK RESULTS
PART 1 - GENERAL
1.1 GENERAL NOTES
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS, APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 22.
B. THE CONTRACTOR FOR THIS DIVISION OF WORK IS REQUIRED TO OBTAIN A COMPLETE SET OF BID DOCUMENTS (DRAWINGS AND SPECIFICATIONS) AND FULLY REVIEW THEM. COORDINATE DIVISION 22 WORK WITH THAT OF ALL OTHER DIVISIONS OF WORK.
C. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER. ANY LABOR OR MATERIAL CALLED FOR IN ONE SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. ANY LABOR OR MATERIAL WHICH IS NEITHER SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS OBVIOUSLY REQUIRED TO COMPLETE THE WORK, AND WHICH IS NORMALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE FURNISHED AND INSTALLED AS PART OF THIS CONTRACT.
D. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THE COMPLETION AND INSPECTION OF THIS WORK TO COMPLY WITH THE OWNER'S SCHEDULE AND PROJECT COMPLETION DATE.
1.2 SCOPE OF WORK
A. THE DESCRIPTION OF GENERAL CONDITION WORK IN THIS DIVISION SHALL ALSO APPLY TO DIVISIONS 21 AND 23.
B. THIS CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE A COMPLETE FIRE PROTECTION, PLUMBING AND HVAC SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS AND AS REQUIRED BY JOB CONDITIONS. WORK IS TO BE COMPLETE IN EVERY RESPECT, WHETHER SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS OR NOT.
C. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE OWNER (BUILDING OWNER, LANDLORD OR TENANT), SHALL BE PROVIDED BY THIS CONTRACTOR.
D. THIS WORK, MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING ITEMS:
a. FIRE PROTECTION MODIFICATIONS AND ADDITIONS INCLUDING, BUT LIMITED TO PIPING, SPRINKLER HEADS AND CONTROL VALVES.
b. PLUMBING WORK INCLUDING, BUT NOT LIMITED TO WASTE AND VENT PIPING, DOMESTIC WATER SERVICE AND DISTRIBUTION, PLUMBING FIXTURES, WATER HEATERS AND ROUGH-INCONNECTION TO EQUIPMENT FURNISHED BY THE OWNER OR OTHER SECTIONS OF THE SPECIFICATIONS.
c. HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS INCLUDING, BUT NOT LIMITED TO HEATING AND COOLING UNITS, VENTILATING SYSTEMS, COMPLETE DUCT SYSTEMS, GRILLES REGISTERS AND DIFFUSERS, INSULATION, ACCESSORIES AND TEMPERATURE CONTROL SYSTEMS.
1.3 CODES
A. ALL WORK SHALL CONFORM TO THE OWNER'S CRITERIA, STATE, COUNTY, CITY AND LOCAL CODES AND ORDINANCES, SAFETY AND HEALTH CODES, NFPA CODES, ENERGY CODES AND ALL OTHER APPLICABLE CODES AND REQUIREMENTS. THIS CONTRACTOR SHALL INQUIRE INTO AND COMPLY WITH ALL APPLICABLE CODES, ORDINANCES AND REGULATIONS. THIS CONTRACTOR SHALL INCLUDE ANY CHANGES REQUIRED BY CODES IN THE BID AND IF THESE CHANGES ARE NOT INCLUDED IN THE BID, THEY MUST BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. AFTER CONTRACT IS AWARDED, CHANGE ORDERS FOR INCREASED COSTS DUE TO CODE ISSUES WILL NOT BE ACCEPTED UNLESS ALLOWANCES HAVE BEEN PREVIOUSLY AGREED UPON.
B. WHERE THE DRAWINGS AND SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODE OR THE OWNER'S CRITERIA, THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE SYSTEM WITH THE MORE STRINGENT REQUIREMENTS.
1.4 LICENSES, PERMITS, INSPECTIONS AND FEES
A. THIS CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, INSPECTIONS AND FEES REQUIRED OR RELATED TO THIS WORK. ALL COSTS ASSOCIATED WITH THESE SHALL BE PAID FOR BY THE CONTRACTOR AND INCLUDED AS PART OF THE BID.
B. FURNISH TO THE OWNER ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT THE COMPLETION OF THE PROJECT.
1.5 GUARANTEE
A. ALL MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF 1 YEAR FROM THE SUBSTANTIAL COMPLETION (OFFICIAL DATE IN WRITING) OF THIS PROJECT. ALL WORK FOUND TO BE DEFECTIVE SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
B. WHERE SPECIFIC EQUIPMENT IS NOTED TO HAVE EXTENDED WARRANTIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER REGISTRATION SO THE OWNER CAN MAKE ALL APPROPRIATE CLAIMS.
1.6 RECORD DRAWINGS
A. THIS CONTRACTOR SHALL MAINTAIN ONE SET OF DRAWINGS ON THE JOBSITE, UPDATED WEEKLY, TO RECORD ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS SUCH AS:
a. LOCATIONS OF CONCEALED PIPING AND DUCTS
b. REVISIONS, ADDENDUMS AND CHANGE ORDERS
c. SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS, AND CONTRACTOR'S COORDINATION WITH OTHER TRADES.
B. DELIVER RECORD DRAWINGS TO THE OWNER AT PROJECT COMPLETION.
1.7 DEMOLITION
A. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING WORK AND THE DEMOLITION PROVIDED BY THE GENERAL CONTRACTOR. COORDINATE WITH THE GENERAL CONTRACTOR ALL EXISTING EQUIPMENT REQUIRED TO BE LEFT INTACT.
B. THIS CONTRACTOR SHALL INCLUDE AND BE RESPONSIBLE FOR THE REMOVAL OF ALL FIRE PROTECTION, PLUMBING AND HVAC SYSTEMS NOTED ON THE DRAWINGS OR REQUIRED TO ACCOMPLISH THE STATED WORK.
PART 2 - PRODUCTS
2.1 MATERIALS
A. MATERIALS UTILIZED IN THE CONSTRUCTION OF THIS PROJECT SHALL BE NEW AND CARRY UL LABELS WHERE APPLICABLE, UNLESS APPROVED BY THE OWNER.
B. ANY USED EQUIPMENT OR MATERIALS USED SHALL STILL CARRY THE SPECIFIED 1 YEAR GUARANTEE AND APPROVAL OF THE USE OF THIS EQUIPMENT OR MATERIALS DOES NOT RELIEVE THE CONTRACTOR FROM ENSURING EVERYTHING IS OPERATIONAL.
2.2 MANUFACTURERS
A. WHERE TRADE NAMES OR MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE CONSIDERED THE BASIS OF DESIGN AND USED AS A MINIMUM FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUAL OR BETTER IN ALL ASPECTS TO THAT SPECIFIED, WILL BE SUBJECT TO APPROVAL IN WRITING BY THE ENGINEER THROUGH THE SHOP DRAWING SUBMITTAL PROCESS, FOR ACCEPTANCE PRIOR TO INSTALLATION. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
2.3 SLEEVES
A. PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH ITS RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2 INCHES ABOVE THE FLOOR.
B. CONTRACTOR SHALL COORDINATE THROUGH THE GENERAL CONTRACTOR AND OWNER ANY CORE DRILLING OR CUTTING OF OPENINGS IN MASONRY WALLS OR CONCRETE FLOORS.
C. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND FLOORS SHALL BE FIRED SEALED. REFER TO "FIRE STOPPING."
D. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS AND PARTITIONS SHALL BE STANDARD WEIGHT STEEL PIPE FINISHED WITH SMOOTH EDGES, FOR OTHER THAN MASONRY PARTITIONS , THROUGH SUSPENDED CEILINGS, OR FOR CONCEALED VERTICAL PIPING. SLEEVES SHALL BE MINIMUM NO. 22 USG GALVANIZED STEEL.
2.4 FLAME SPREAD PROPERTIES OF MATERIALS
A. MATERIALS USED ON THIS PROJECT SHALL EACH HAVE A FLAME SPREAD RATING OF 25 OR LESS, AND A SMOKE DEVELOPED RATING OF 50 OR LESS, AS DETERMINED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH NFPA-255.
2.5 FIRE STOPPING
A. PROVIDE FIRE STOPPING IN SEALING OF PENETRATIONS IN FIRE-RATED CONSTRUCTION, HORIZONTAL AND VERTICAL, INCLUDING THE FOLLOWING MATERIALS:
a. FOAM: DOW CORNING FIRESTOP SILICONE RTV FOAM, CAT #2001 LIQUID COMPONENT PART A (BLACK) AND LIQUID COMPONENT PART B (OFF-WHITE).
b. SEALANT: 3M 1000 NS AND 1003 SL SILICONE ADHESIVE SEALANT.
c. DAMMING MATERIALS: MINERAL FIBERBOARD, MINERAL FIBER MATTING, MINERAL FIBER PUTTY, PLYWOOD OR PARTICLE BOARD, AS SELECTED BY THE APPLICATOR.
B. MIXES SHALL CONFORM TO THE MANUFACTURER'S DIRECTIONS.
2.6 FLOOR, CEILING AND WALL PLATES
A. PROVIDE CHROME-PLATED, ONE-PIECE, ESCUTCHEONS ON PIPES AND HANGER RODS PENETRATING WALLS, FLOORS AND CEILINGS IN FINISHED AREAS OF THE BUILDING. SPLIT RING ESCUTCHEONS ARE NOT ACCEPTABLE.
2.7 DIELECTRIC CONNECTIONS
A. CONNECTIONS BETWEEN FERROUS AND NON-FERROUS PIPING SYSTEMS, AND BETWEEN FERROUS PIPING SYSTEMS AND NON-FERROUS CONNECTIONS TO EQUIPMENT SHALL BE MADE BY THE USE OF DIELECTRIC UNIONS, COUPLINGS OR FLANGES.

PART 3 - EXECUTION
3.1 SPACE AND EQUIPMENT ARRANGEMENT
A. EACH CONTRACTOR SHALL BE RESPONSIBLE TO SEE THAT THEIR PURCHASED EQUIPMENT WILL FIT THE SPACES AVAILABLE. IN CERTAIN INSTANCES NOTE THAT THE EQUIPMENT IS MENTIONED BY NAME IN THE EQUIPMENT SCHEDULES. IN THESE CASES IT IS THAT EQUIPMENT WHOSE DIMENSIONS AND CONNECTION ARRANGEMENTS HAVE BEEN USED FOR THE PREPARATION OF THE LAYOUTS SHOWN ON THE WORKING DRAWINGS. SHOULD THE USE OF EQUIPMENT BY OTHER APPROVED MANUFACTURERS OR OF OTHER PHYSICAL SHAPE THAN THOSE SHOWN ON THE DRAWINGS BE PROPOSED, THE CONTRACTOR SHALL CONFIRM THE EQUIPMENT WILL FIT WITHIN THE ALLOTTED SPACE WITHOUT ARCHITECTURAL MODIFICATIONS OR IMPACT ON OTHER TRADES.
B. ALL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING, AND REPAIRING. PROVIDE SUFFICIENT SERVICE ACCESS TO ALL EQUIPMENT.
C. BEFORE STARTING WORK THIS CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, STRUCTURAL, POWER, LIGHTING AND FIRE ALARM PLANS, SHOP DRAWINGS AND SPECIFICATIONS TO SEQUENCE, COORDINATE AND INTEGRATE THE VARIOUS ELEMENTS OF THE MECHANICAL SYSTEMS TO AVOID INTERFERENCES AND CONFLICTS.
3.2 MANUFACTURER'S DIRECTIONS
A. THE MANUFACTURER'S PUBLISHED DIRECTIONS SHALL BE FOLLOWED IN THE DELIVERY, STORAGE, PROTECTION, INSTALLATION, PIPING AND WIRING OF ALL EQUIPMENT AND MATERIAL. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER IN WRITING OF ANY CONFLICT BETWEEN THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND THE MANUFACTURER'S DIRECTIONS, AND SHALL OBTAIN INSTRUCTIONS BEFORE PROCEEDING WITH THE WORK. SHOULD THE CONTRACTOR PERFORM ANY WORK BEFORE RECEIVING SUCH INSTRUCTIONS, HE SHALL BEAR ALL COSTS ARISING IN CONNECTION WITH THE DEFICIENCIES.
3.3 CONSTRUCTION REQUIREMENTS
A. THE DRAWINGS AND SPECIFICATIONS SHOW PIPE AND DUCT SIZES, GENERAL ROUTING AND LOCATION, AND DESCRIBE THE VARIOUS SYSTEMS. THESE DOCUMENTS DESCRIBE AND SIZE EQUIPMENT, ITS GENERAL LOCATION, USAGE, SUPPORT AND AUXILIARY REQUIREMENTS. THEY DESCRIBE MOST, BUT NOT ALL OF THE MATERIALS AND THEIR USAGE FOR THIS PROJECT.
B. CONTRACT DOCUMENTS DO NOT DETAIL ALL JOB REQUIREMENTS. THEY DO NOT SHOW LAYOUTS, LOCATIONS OR ELEVATIONS OF DUCTS, ANCHORS, SLEEVES, HANGERS, UNDERFLOOR DRAINS, OR ACCESS DOORS. THEY DO NOT SHOW FINAL PRECISE LOCATIONS OF EQUIPMENT BY DIMENSIONS IN ALL INSTANCES.
C. THE EXACT LOCATION OF EACH ITEM SHALL BE DETERMINED BY REFERENCE TO THE PROJECT CONTRACT DRAWINGS, AND TO DETAILS, EQUIPMENT DRAWINGS, AND ROUGH-IN DRAWINGS, BY MEASUREMENTS AT THE BUILDING, AND IN COOPERATION WITH THE VARIOUS TRADES. MINOR RELOCATION NECESSITATED BY THE CONDITIONS AT THE SITE OR DIRECTED BY THE OWNER SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER. WHERE CONFLICTS OCCUR, WORK WITH ALL INVOLVED TRADES AND RESOLVE THE CONFLICT PRIOR TO ERECTION OF ANY WORK IN THE AREA INVOLVED.
3.4 FABRICATION OF PIPE
A. PIPING SHALL FOLLOW AS CLOSELY AS POSSIBLE THE ROUTES SHOWN ON THE DRAWINGS, TAKING INTO CONSIDERATION CONDITIONS TO BE MET AT THE SITE.
B. SHOULD ANY UNFORESEEN CONDITIONS ARISE, PIPING SHALL BE CHANGED OR REROUTED AS REQUIRED AFTER PROPER APPROVAL HAS BEEN OBTAINED BY OWNER.
C. PIPING SHALL BE CLEANED WHEN IT IS INSTALLED. BEFORE INSTALLATION IT SHALL BE CHECKED, UP ENDED, SWABBED IF NECESSARY, AND ANY RUST AND DIRT REMOVED.
3.5 EQUIPMENT FOUNDATIONS, HANGERS AND SUPPORTS
A. SUSPENSIED EQUIPMENT SHALL HAVE SUPPORTS CONSISTING OF MANUFACTURED METAL FRAMING OR HANGERS CONFORMING TO SECTION 220529.
3.6 INSTRUCTIONS OF OWNER'S PERSONNEL
A. PROVIDE THE SERVICES OF COMPETENT ENGINEERS OR TECHNICIANS TO INSTRUCT REPRESENTATIVES OF THE OWNER IN COMPLETE AND DETAILED OPERATION AND MAINTENANCE OF EACH ITEM OF EQUIPMENT AND EACH SYSTEM.
B. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROPER MAINTENANCE OF EQUIPMENT AND SYSTEMS UNTIL THE INSTRUCTIONS HAVE BEEN GIVEN TO THE OWNER'S PERSONNEL AND THE LETTER OF RELEASE ACKNOWLEDGED.
C. PROVIDE OPERATION & MAINTENANCE MANUALS (3 COPIES), ALONG WITH AS-BUILT SET OF PRINTS PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT.
3.7 ELECTRIC WIRING OF MOTORS AND EQUIPMENT
A. LOW VOLTAGE HVAC CONTROL WIRING WILL BE INSTALLED BY THE HVAC CONTRACTOR WITH FINAL CONNECTION TO THE HVAC EQUIPMENT BY THE HVAC CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL DISCONNECT SWITCHES AS REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT UNLESS SUCH EQUIPMENT IS SPECIFIED TO BE PROVIDED WITH FACTORY MOUNTED DISCONNECT SWITCHES.
B. THE ELECTRICAL DESIGN AND DRAWINGS ARE BASED ON THE EQUIPMENT SCHEDULED AND SHOWN ON THE DRAWINGS, SHOULD ANY CONTRACTOR SUBMIT FOR APPROVAL EQUIPMENT REQUIRING CHANGES TO THE ELECTRICAL DESIGN FOR WHICH THE ELECTRICAL CONTRACTOR WILL REQUEST AN EXTRA, THIS EXTRA SHALL BE PAID BY THE CONTRACTOR PROVIDING THE ALTERNATE EQUIPMENT REQUIRING THE CHANGE.
3.8 QUIET OPERATION
A. THIS WORK SHALL BE INSTALLED IN SUCH A MANNER THAT UNDER ALL CONDITIONS OF LOAD IT SHALL OPERATE WITHOUT SOUND OR VIBRATION, WHICH IS OBJECTIONABLE IN THE OCCUPIED SPACES IN THE OPINION OF THE OWNER. IN THE CASE OF MOVING MACHINERY, SOUND OR VIBRATION ANNOYINGLY NOTICEABLE INSIDE ITS OWN ROOM CAN BE CONSIDERED AS OBJECTIONABLE. IN ANY CASE, SITUATION SHALL BE REMEDIED AT NOT COST TO THE OWNER.
3.9 CUTTING AND PATCHING
A. PROVIDE ALL CUTTING, CHASING AND CHANNELING REQUIRED FOR ANY WORK UNDER THIS DIVISION. CUTTING SHALL HAVE PRIOR APPROVAL FROM ARCHITECT AND OWNER.
B. ALL PATCHING SHALL BE BY GENERAL CONTRACTOR AND SHALL MATCH THE SURROUNDING SURFACES.
3.10 TESTS
A. THE CONTRACTOR INSTALLING THE PLUMBING SYSTEMS SHALL FOLLOW ALL TESTS AS REQUIRED TO PROVE COMPLIANCE WITH ALL LOCAL CODES. TESTS PERFORMED SHALL BE EQUAL TO OR EXCEED THAT HEREINAFTER SPECIFIED. ALL PIPING SYSTEMS SHALL BE TESTED BEFORE THEY ARE COVERED OR MADE UNAVAILABLE FOR THE COMPLETE INSPECTION OF ALL JOINTS. IN ADDITION TO THE ABOVE, EACH AND EVERY SYSTEM TO BE INSULATED SHALL BE THOROUGHLY TESTED BEFORE THE INSTALLATION IS APPLIED.
B. DOMESTIC WATER PIPING SYSTEM: UPON COMPLETION OF A SECTION OF THE ENTIRE WATER SUPPLY SYSTEM, IT SHALL BE TESTED AND PROVED TIGHT UNDER A WATER PRESSURE OF 125 PSIG, BUT NOT LESS THAN 10 PERCENT IN EXCESS OF THE WORKING PRESSURE UNDER WHICH IT IS TO BE USED. THE WATER USED FOR TESTS SHALL BE OBTAINED FROM A POTABLE SOURCE OF SUPPLY.
C. SANITARY SYSTEMS: ALL SANITARY SEWER SYSTEMS SHALL BE TESTED EITHER IN SECTIONS OR IN THEIR ENTIRETY IN ACCORDANCE WITH ALL THE REQUIREMENTS OF THE LOCAL PLUMBING CODE AND TO THE SATISFACTION OF THE LOCAL PLUMBING INSPECTOR. THESE TESTS SHALL BE EXAMINED IF DESIRED BY THE ARCHITECT OR HIS REPRESENTATIVE DURING THE TEST PERIOD AND AMPLE NOTICE OF PERFORMANCE OF THESE TESTS SHALL BE GIVEN.

END OF SECTION.

SECTION 220523 - GENERAL DUTY VALVES
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 220500.

PART 2 - PRODUCTS
2.1 WATER SYSTEM VALVES
A. DOMESTIC HOT WATER SYSTEMS: PROVIDE VALVES, WHERE SHOWN ON THE DRAWINGS AND ELSEWHERE AS SPECIFIED OR REQUIRED, TO PROVIDE ISOLATION OF EQUIPMENT AND FIXTURES AND TO PROVIDE DRAINAGE OF LOW POINTS IN WATER LINES. VALVES SHALL BE IN ACCORDANCE WITH THE FOLLOWING DETAILED SPECIFICATIONS:
a. SIZES 2 INCH AND SMALLER: BALL VALVE: NIBCO 585-70, FULL PORT, BRONZE BODY WITH STAINLESS STEEL TRIM.
b. SIZES 2 INCH AND SMALLER: CHECK VALVE: NIBCO S-433 CLASS 150, BRONZE.
c. SIZES 2-1/2 INCH AND LARGER: BUTTERFLY VALVE: NIBCO LC2000 LUG STYLE, CAST IRON, 200 PSIG WITH STAINLESS STEEL TRIM AND EPDM SEAT.
d. SIZES 2-1/2 INCH AND LARGER: CHECK VALVE: NIBCO F-918-B CAST IRON, FLANGED, 200 PSIG WITH BRONZE TRIM.

PART 3 - EXECUTION
3.1 INSTALLATION
A. VALVES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS, AND IN SUCH MANNER AS TO PERMIT DISASSEMBLY, REMOVAL, REASSEMBLY AND REPLACEMENT.

END OF SECTION.

SECTION 220529 - HANGERS AND SUPPORTS
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 220500.

PART 2 - PRODUCTS
2.1 GENERAL
A. PIPE HANGERS AND SUPPORTS SHALL CONFORM TO THE RECOMMENDATIONS OF ASHRAE, ASPE, ANSI AND MSS.
B. PROVIDE FACTORY-FABRICATED PIPE HANGERS AND SUPPORTS IN WHICH MATERIALS, DESIGN AND MANUFACTURE COMPLY WITH ANSI/MSS SP-58. SELECT AND APPLY PIPE HANGERS AND SUPPORTS IN COMPLIANCE WITH MSS SP-69, AND MANUFACTURER'S PUBLISHED PRODUCT INFORMATION. FABRICATE AND INSTALL PIPE HANGERS AND SUPPORTS IN COMPLIANCE WITH MSS SP-89.
C. USE ONLY ONE TYPE OF HANGER AND SUPPORT, BY ONE MANUFACTURER, FOR EACH PIPING SERVICE.
D. PROVIDE COPPER-PLATED HANGERS AND SUPPORTS FOR COPPER PIPING SYSTEMS WHERE HANGERS ARE IN CONTACT WITH BARE PIPE.
E. PROVIDE PROTECTIVE COATINGS ON HANGERS AND SUPPORTS WHEN LOCATED IN OUTDOOR AND/OR CORROSIVE ENVIRONMENTS. PROTECTIVE COATINGS SHALL BE AS RECOMMENDED BY THE COATING MANUFACTURER'S REQUIREMENTS.
2.2 HORIZONTAL PIPING HANGERS AND SUPPORTS
A. SELECT SIZE OF HANGERS AND SUPPORTS TO EXACTLY FIT PIPE SIZE FOR BARE PIPING, AND AROUND PIPING INSULATION WITH SADDLE OR SHIELD FOR INSULATED PIPING.
2.3 HANGER ROD ATTACHMENTS
A. SELECT SIZE OF HANGER ROD ATTACHMENTS TO SUIT HANGER RODS.
2.4 BUILDING ATTACHMENTS
A. SELECT SIZE AND TYPE OF BUILDING ATTACHMENTS TO SUIT HANGER RODS AND STRUCTURE.
2.5 PIPE INSULATION HANGER SHIELD INSERTS AND SHIELDS
A. THERMAL HANGER INSERTS SHALL BE DESIGNED TO PREVENT INSULATION FROM BEING CRUSHED BY THE WEIGHT OF THE PIPING AND CONTENTS.
B. SHIELDS SHALL BE FIELD OR FACTORY FABRICATED OF GALVANIZED SHEET METAL.

PART 3 - EXECUTION
3.1 PREPARATION
A. PROCEED WITH INSTALLATION OF HANGERS, SUPPORTS AND ANCHORS ONLY AFTER REQUIRED BUILDING STRUCTURAL WORK HAS BEEN COMPLETED IN AREAS WHERE THE WORK IS TO BE INSTALLED.
3.2 INSTALLATION OF BUILDING ATTACHMENTS
A. INSTALL BUILDING ATTACHMENTS AT REQUIRED LOCATIONS, ON STRUCTURE FOR PROPER SUPPORT. SPACE ATTACHMENTS WITHIN MAXIMUM PIPING SPAN LENGTH SPECIFIED IN THIS SECTION. INSTALL ADDITIONAL BUILDING ATTACHMENTS WHERE SUPPORT IS REQUIRED FOR ADDITIONAL CONCENTRATED LOADS, INCLUDING VALVES, FLANGES, GUIDES, STRAINERS AND EXPANSION JOINTS. ALSO PROVIDE ATTACHMENTS AT CHANGES IN DIRECTION OF PIPING AND WHERE REQUIRED BY A LIMITED CARRYING CAPACITY OF THE STRUCTURE.
3.3 INSTALLATION OF HANGERS AND SUPPORTS
A. INSTALL HANGERS, SUPPORTS, CLAMPS AND ATTACHMENTS TO SUPPORT PIPING PROPERLY FROM BUILDING STRUCTURE IN COMPLIANCE WITH MSS SP-69. ARRANGE THE GROUPING OF PARALLEL RUNS OF HORIZONTAL PIPING TO BE SUPPORTED TOGETHER IN TRAPEZE-TYPE HANGERS WHERE POSSIBLE. WHERE PIPING OF VARIOUS SIZES ARE TO BE SUPPORTED TOGETHER BY TRAPEZE HANGERS, SPACE HANGERS FOR SMALLEST PIPE SIZE OR INSTALL INTERMEDIATE SUPPORTS FOR SMALL DIAMETER PIPE. DO NOT USE WIRE OR PERFORATED METAL TO SUPPORT PIPING, AND DO NOT SUPPORT PIPING FROM OTHER PIPING.
B. INSTALL HANGER AND SUPPORTS COMPLETE WITH NECESSARY BOLTS, RODS, NUT WASHERS AND OTHER ACCESSORIES. EXCEPT AS OTHERWISE INDICATED FOR EXPOSED CONTINUOUS PIPE RUNS, INSTALL HANGERS AND SUPPORTS OF SAME TYPE AND STYLE AS INSTALLED FOR ADJACENT SIMILAR PIPING.
C. SUPPORT FIRE PROTECTION WATER PIPING INDEPENDENTLY OF OTHER PIPING.
3.4 PROVISIONS FOR MOVEMENT
A. INSTALL HANGERS AND SUPPORTS TO ALLOW MOVEMENT OF PIPING SYSTEMS AND TO PERMIT FREEDOM OF MOVEMENT BETWEEN PIPE ANCHORS, AND TO FACILITATE ACTION OF EXPANSION JOINTS, EXPANSION LOOPS, OFFSETS, EXPANSION BENDS AND SIMILAR UNITS.
B. INSTALL HANGERS AND SUPPORTS SO THAT PIPING, LOADING, AND STRESSES FROM MOVEMENT WILL NOT BE TRANSMITTED TO CONNECTED EQUIPMENT
3.5 INSULATED PIPING REQUIREMENTS
A. HANGERS FOR INSULATED COLD PIPING SHALL BE PLACED AROUND THE OUTSIDE OF THE INSULATION AND VAPOR BARRIER.
a. PROVIDE A 180 DEGREE THERMAL INSERT ON THE BOTTOM OF THE PIPE. EXTEND VAPOR BARRIER ON TOP OF INSERT AND INSULATION AND PROVIDE INSULATION SHIELD BETWEEN INSERT AND HANGER.
B. HANGERS FOR OTHER INSULATED PIPING MAY BE PLACED DIRECTLY AGAINST THE PIPING WITH INSULATION CARRIED COMPLETELY OVER AND AROUND HANGER AND ROD.
3.6 HANGER SPACING AND ROD SIZES
A. HANGERS SHALL BE SPACED SO AS TO SUPPORT PIPING PROPERLY. CAST IRON SOIL PIPES SHALL BE SUPPORTED ON HANGERS SPACED NOT MORE THAN PIPE LENGTH BEING EMPLOYED. HANGERS FOR ALL OTHER COPPER OR STEEL PIPING SHALL BE SPACED ACCORDING TO THE FOLLOWING SCHEDULE:

PIPE SIZE	MAXIMUM HANGER SPACING	MINIMUM ROD SIZE
1/2 INCH	5 FEET	3/8 INCH
3/4 INCH	5 FEET	3/8 INCH
1 INCH	6 FEET	3/8 INCH
1-1/4 INCH	6 FEET	3/8 INCH
1-1/2 INCH	8 FEET	3/8 INCH
2 INCH AND LARGER	8 FEET	1/2 INCH

B. AT NO TIME SHALL ANY SECTION OF PIPE HAVE LESS THAN TWO SUPPORTS.

END OF SECTION.

SECTION 220553 - IDENTIFICATION
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 220500.
B. LABEL ALL NEW EQUIPMENT AND PIPING SYSTEMS.

PART 2 - PRODUCTS
2.1 PIPE LABELS
A. PRETENSION PIPE LABELS OF SEMI-RIGID PLASTIC FORMED TO COVER THE FULL CIRCUMFERENCE OF PIPE.
B. IDENTIFY THE SERVICE AND DIRECTION OF FLOW. LABELS SHALL CONTAIN AT LEAST ½ INCH HIGH LETTERING AND BE PLACED SO THEY ARE EASY TO READ.
2.2 VALVE TAGS
A. MULTILAYER, MULTICOLOR PLASTIC LABELS WITH MECHANICAL ENGRAVING AND CHAIN FOR ATTACHMENT TO VALVE.
2.3 EQUIPMENT LABELS
A. MULTILAYER, MULTICOLOR PLASTIC LABELS WITH MECHANICAL ENGRAVING AND HOLES FOR ATTACHMENT TO EQUIPMENT.

PART 3 - EXECUTION
3.1 PIPE LABELS
A. INSTALL PIPE LABELS WHERE PIPING IS EXPOSED OR ABOVE AN ACCESSIBLE CEILING AT MAXIMUM 20 FT. CENTERS.
3.2 VALVE TAGS
A. ATTACH TAGS TO VALVES USING CHAIN. PROVIDE A VALVE SCHEDULE FOR MOUNTING IN THE MECHANICAL
3.3 EQUIPMENT LABELS
A. PERMANENTLY ATTACH LABELS TO EQUIPMENT. LOCATE WHERE LABEL CAN BE EASILY SEEN AND READ.

END OF SECTION.

SECTION 221116 - DOMESTIC WATER PIPING
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 220500

PART 2 - PRODUCTS
2.1 COPPER PIPING
A. PROVIDE SOFT COPPER TUBE, TYPE "K", WITH SOLDER-JOINT FITTINGS FOR UNDER SLAB INSTALLATIONS.
B. PROVIDE HARD COPPER TUBE, TYPE "L", WITH SOLDER JOINT FITTINGS FOR ALL ABOVE GRADE INSTALLATIONS.

PART 3 - EXECUTION
3.1 INSTALLATION
A. CLEAN AND DISINFECT ALL NEW PIPING WITH WATER/CHLORINE SOLUTION.
B. INSTALL WATER PIPING LEVEL AND PLUMB. PROVIDE DRAIN VALVES AT ALL LOW POINTS.
C. PIPING BELOW SLAB SHALL BE INSTALLED WITHOUT JOINTS.

END OF SECTION.

SECTION 221316 - SANITARY WASTE AND VENT PIPING
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 220500

PART 2 - PRODUCTS
2.1 EXISTING CONDITIONS
A. PROVIDE PIPING MATERIALS TO MATCH EXISTING IN ALL CASES.
2.2 CAST IRON PIPING
A. PROVIDE NO-HUB DWV PIPING FOR ALL ABOVE GRADE INSTALLATIONS WITH STANDARD COUPLINGS.
B. PROVIDE BELL AND SPIGOT CAST IRON PIPING BELOW GRADE WHERE REQUIRED TO MATCH EXISTING CONDITIONS.
2.3 PVC PIPING
A. WHERE ALLOWED BY CODE AND THE OWNER'S CRITERIA. PROVIDE SCHEDULE 40 PVC PIPING ABOVE GRADE WITH SOLVENT-CEMENTED JOINTS.
B. BELOW GRADE, PROVIDE SCHEDULE 40 PVC PIPING WITH SOLVENT-CEMENTED JOINTS.

PART 3 - EXECUTION
3.1 INSTALLATION
A. INSTALL WASTE PIPING AT 1/4 INCH PER FOOT SLOPE WHERE POSSIBLE. MINIMUM SLOPE SHALL BE 1/8 INCH PER FOOT.
B. PROVIDE CLEANOUTS AS REQUIRED BY CODE AND PROVIDE ADDITIONAL CLEANOUT LOCATIONS AS INDICATED ON THE DRAWINGS.

END OF SECTION.

REVISIONS DENOTED BY △

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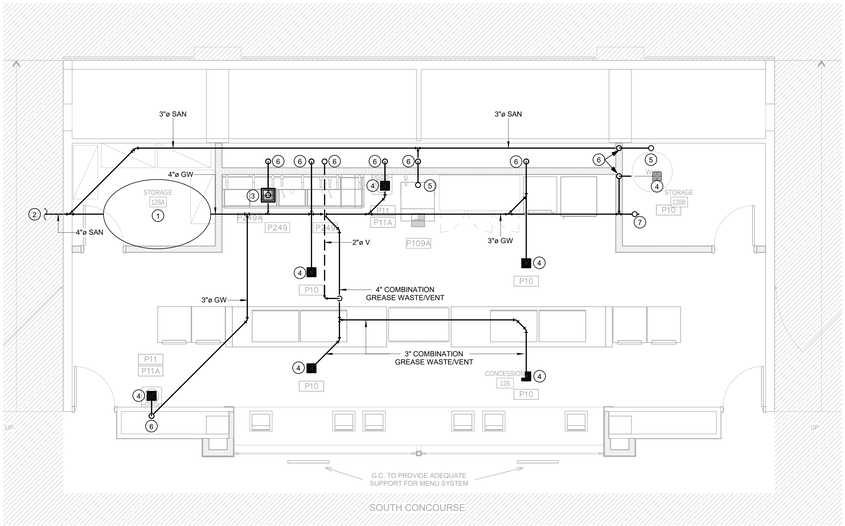
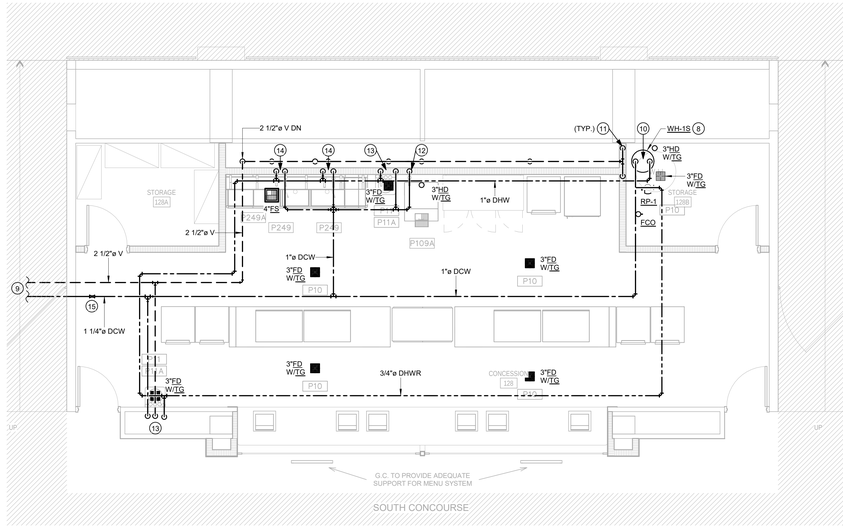


1 ENLARGED UNDERFLOOR PLUMBING CONCESSION PLAN - SOUTH CONCOURSE
1/4" = 1'-0"



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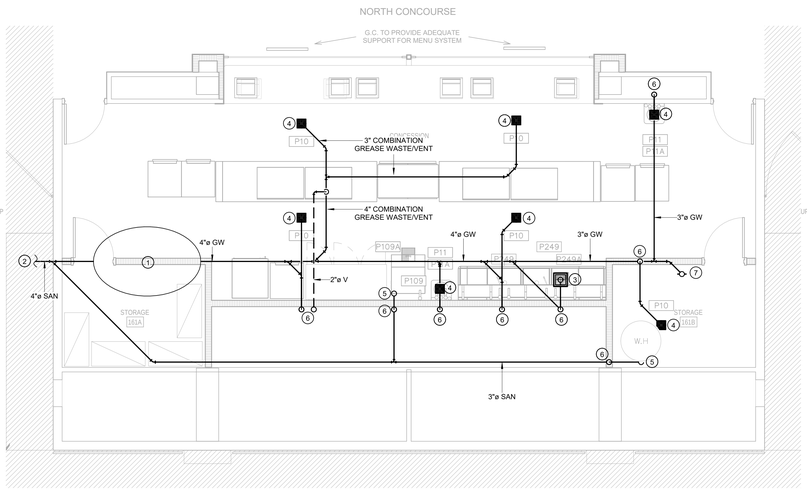
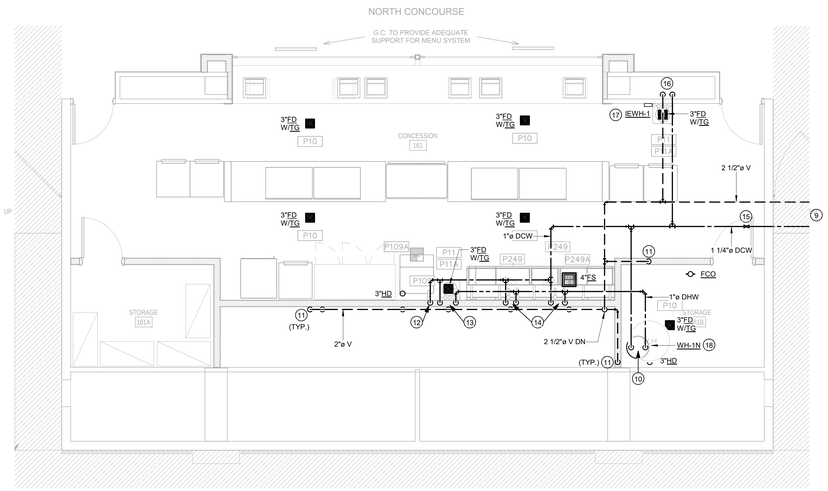
1/4" = 1'-0"



3 ENLARGED UNDERFLOOR PLUMBING CONCESSION PLAN - NORTH CONCOURSE
1/4" = 1'-0"



4 ENLARGED PLUMBING CONCESSION PLAN - NORTH CONCOURSE
1/4" = 1'-0"

KEYED NOTES - P201

1 ZURN MODEL # GMC 500-P-UPC GREASE INTERCEPTOR. REFER TO DETAIL 10 ON SHEET P501 FOR INSTALLATION REQUIREMENTS.
2 EXTEND NEW 4" SANITARY TO NEAREST EXISTING SANITARY LINE. CONTRACTOR TO VERIFY LOCATION, SIZE AND ELEVATION OF EXISTING SANITARY LINE PRIOR TO NEW INSTALLATION.
3 4" GREASE WASTE UP TO FLOOR SINK.
4 3" GREASE WASTE UP TO FLOOR DRAIN.
5 3" SANITARY UP TO HUB DRAIN.
6 2" VENT UP.
7 GREASE WASTE UP TO FLOOR CLEANOUT (FCO).
8 50 GALLON ELECTRIC WATER HEATER TO SERVE CONCESSION 3-COMPARTMENT SINK AND HAND SINK. REFER TO SHEET P601 FOR WATER HEATER SPECIFICATION AND DETAIL 9 ON SHEET P501 FOR WATER HEATER PIPING INSTALLATION.
9 EXTEND NEW 2-1/2" VENT AND 1-1/4" COLD WATER TO NEAREST EXISTING VENT AND COLD WATER PIPING. CONTRACTOR TO VERIFY SIZE AND LOCATION OF EXISTING VENT AND COLD WATER PIPING PRIOR TO NEW INSTALLATION.
10 1" HOT AND COLD WATER DOWN TO WATER HEATER. REFER TO DETAIL 9 ON SHEET P501 FOR PIPING INSTALLATION REQUIREMENTS.
11 2" VENT DOWN.
12 3/4" COLD WATER DOWN TO FILTRATION SYSTEM AND ICE MACHINE. REFER TO FOOD SERVICE DRAWINGS FOR FILTRATION AND ICE MACHINE SPECIFICATIONS.
13 1/2" HOT AND COLD WATER DOWN TO HAND SINK. REFER TO FOOD SERVICE DRAWINGS FOR HAND SINK SPECIFICATION.
14 3/4" HOT AND COLD WATER DOWN TO 3-COMPARTMENT SINK. REFER TO FOOD SERVICE DRAWINGS FOR 3-COMPARTMENT SPECIFICATION.
15 ACCESSIBLE SHUT OFF VALVE.
16 2" VENT AND 1/2" COLD WATER DOWN TO HAND SINK. REFER TO FOOD SERVICE DRAWINGS FOR HAND SINK SPECIFICATION.
17 INSTANTANEOUS WATER HEATER TO SERVE HAND SINK. REFER TO WATER HEATER SCHEDULE ON SHEET P601 FOR WATER HEATER SPECIFICATION.
18 30 GALLON ELECTRIC WATER HEATER TO SERVE CONCESSION 3-COMPARTMENT SINK AND HAND SINK. REFER TO SHEET P601 FOR WATER HEATER SPECIFICATION AND DETAIL 9 ON SHEET P501 FOR WATER HEATER PIPING INSTALLATION.

PLUMBING GENERAL NOTES:

- INSTALL A POINT OF USE THERMOSTATIC MIXING VALVE PRIOR TO CONNECTION TO ALL HOT WATER FIXTURES.
- INSTALL WATER AND VENT PIPING TIGHT TO STRUCTURE.

REVISIONS DENOTED BY △

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MECHANICAL BRUCE BONHART
PLUMBING KEITH WEAVER
ELECTRICAL KRISTIN STEWART

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D. SCOTT BROWN
89097
LICENSED
PROFESSIONAL ENGINEER
4-15-2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: PMI
ISSUED FOR:CONSTRUCTION	DRAFTER: PMI
DATE: April 15, 2021	CHECKED: PMI

ENLARGED PLUMBING CONCESSION PLAN

SHEET
P201
OF 1-P2 SHEETS

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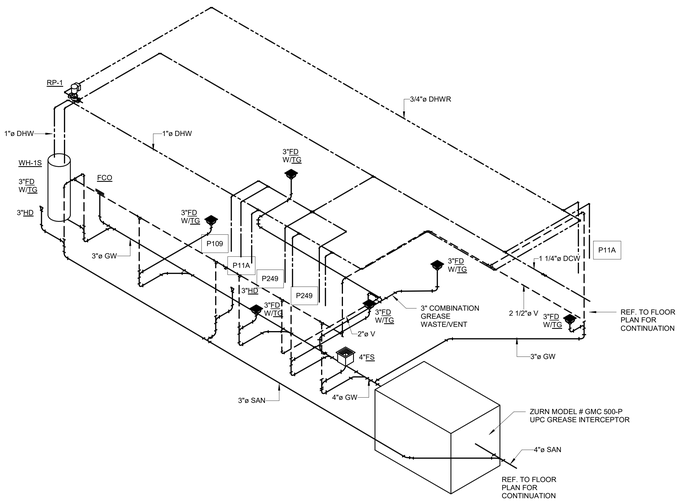
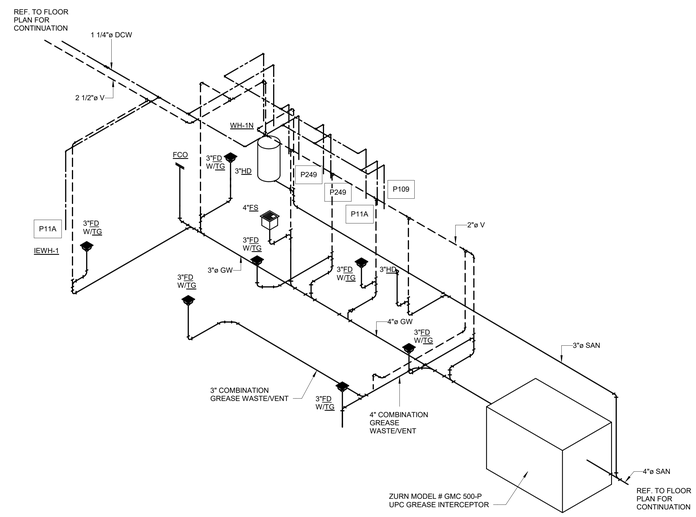


1 SOUTH CONCESSION PLUMBING RISER



2 NORTH CONCESSION PLUMBING RISER

PLUMBING RISER GENERAL NOTES

1 NOT ALL P-TRAPS MAY BE SHOWN IN THE RISER DIAGRAMS, HOWEVER THE PLUMBING CONTRACTOR SHALL PROVIDE P-TRAPS FOR ALL FLOOR DRAINS, FLOOR SINKS, LAVATORIES, SINKS, MOP SINKS, ETC.

2 REFER TO PLUMBING ROUGH-IN SCHEDULE ON THIS SHEET AND/OR ON THE PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL SIZES TO FIXTURES, ONLY BRANCH SIZES ARE SHOWN ON THE PLANS AND RISERS.

3 REFER TO KITCHEN CONSULTANT DRAWINGS FOR PIPE SIZES TO ALL FIXTURES REPRESENTED BY BOXED IN TEXT ON RISERS.

PLUMBING ROUGH-IN SIZES

	ROUGH-IN CONNECTION SIZES			
DESIGN.	DCW	DHW	SAN	VENT
FD	-	-	3"	2"
FS	-	-	4"	2"
FCO	-	-	REF: PLANS	-
WCO	-	-	REF: PLANS	-
HSA	REF: PLANS	REF: PLANS	-	-
TG	-	-	REF: FDx	-
BFP	REF: PLANS	REF: PLANS	-	-
RPZ	REF: PLANS	REF: PLANS	-	-

REVISIONS DENOTED BY △

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PMI JOB NO. 18122.002
PROJECT MGR. SCOTT BROWN
MECHANICAL BRUCE BONNART
PLUMBING BRUCE BONNART
ELECTRICAL KRISTIN STEWART

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D. SCOTT BROWN
89097
LICENSED PROFESSIONAL ENGINEER
4-15-2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: PMI
ISSUED FOR:CONSTRUCTION	DRAFTER: PMI
DATE: April 15, 2021	CHECKED: PMI

PLUMBING RISER

SHEET
P401
OF 1-P4 SHEETS

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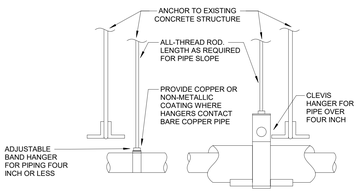
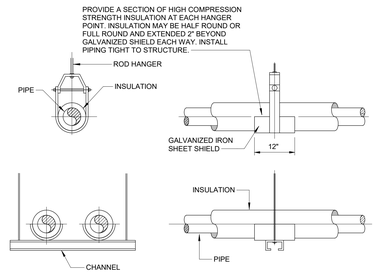


DO NOT HANG PIPE LARGER THAN 3" FROM BOTTOM OF JOIST.

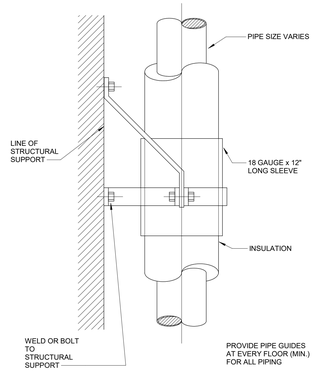
PROVIDE GALVANIZED STEEL SADDLE FOR ALL INSULATED PIPE LARGER THAN 3/4". VERIFY INSULATION THICKNESS WHEN SIZING HANGERS.

PROVIDE UPPER ATTACHMENT AS REQUIRED FOR CASES NOT SHOWN HERE. DO NOT INSTALL HANGER INSIDE INSULATION OR OTHERWISE PENETRATE VAPOR BARRIER. DO NOT HANG ONE PIPE FROM ANOTHER EXCEPT IN CHASES. TRAPEZE HANGERS MAY BE USED FOR MULTIPLE PARALLEL PIPES. HANGER SPACING FOR PIPE SIZE: COPPER: 4"=12' 3"=11' 2-1/2"=10' 2"=9' 1"=7' 1"=6' 3/4"=6' 1/2"=5'. CAST IRON: 10' AND ONE NEAR ALL JOISTS. STEEL: 4"=14' 3"=12' 2-1/2"=11' 2"=10' 1-1/2"=9' 1"=7' 3/4"=6' 1/2"=5'. LOCATE HANGERS AS CLOSE AS POSSIBLE TO TURNS AND TEES OF PIPE. PROVIDE SUPPLEMENTARY STEEL STRUTS BETWEEN JOISTS IF REQUIRED. LOCATE HANGERS TO TAKE LOAD OFF EQUIPMENT CONNECTIONS. ANCHOR WATER PIPE AGAINST SWAYING DUE TO CHANGES IN WATER VELOCITY. PROVIDE SEISMIC BRACING IF/AS REQUIRED BY LOCAL AUTHORITIES. CHAINS OR PERFORATED STRAP IRON OR STEEL IS NOT ACCEPTABLE. REFER TO CODES FOR FURTHER INFORMATION.

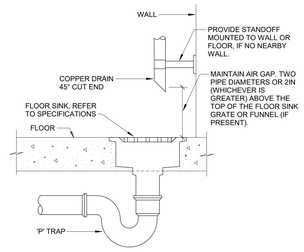
1 PIPE INSULATION/HANGER DETAIL
NOT TO SCALE



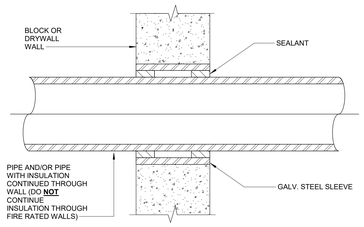
2 PIPE HANGING SUPPORT DETAILS
NOT TO SCALE



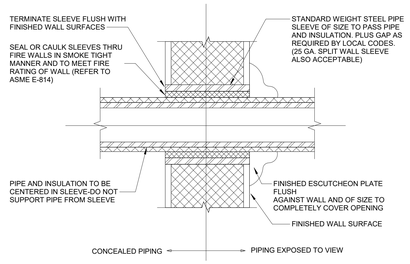
3 PIPING SUPPORT
NOT TO SCALE



4 INDIRECT WASTE DETAIL
NOT TO SCALE

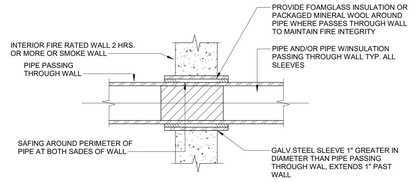


5 PIPE SLEEVE DETAIL
NOT TO SCALE

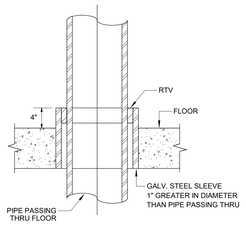


NOTE: PROVIDE FOR ALL MASONRY WALLS AND FIRE-RATED WALLS.

6 PIPE SLEEVE INTERIOR WALLS
NOT TO SCALE



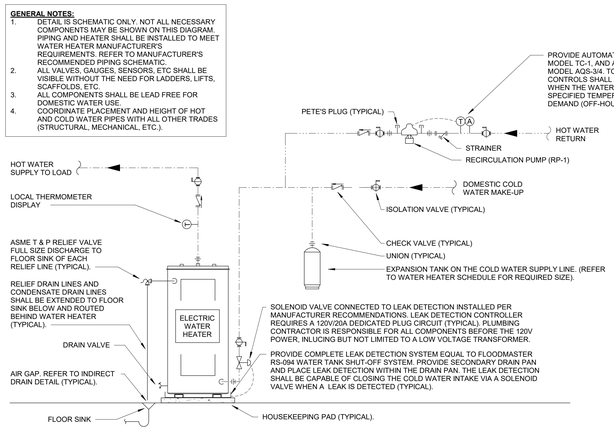
7 FIRE RATED PIPE SLEEVE DETAIL
NOT TO SCALE



8 TYPICAL FIRE RATED SLAB PENETRATION DETAIL
NOT TO SCALE

GENERAL NOTES:

1. DETAIL IS SCHEMATIC ONLY. NOT ALL NECESSARY COMPONENTS MAY BE SHOWN ON THIS DIAGRAM. PIPING AND HEATER SHALL BE INSTALLED TO MEET WATER HEATER MANUFACTURER'S REQUIREMENTS. REFER TO MANUFACTURER'S RECOMMENDED PIPING SCHEMATIC.
2. ALL VALVES, GAUGES, SENSORS, ETC SHALL BE VISIBLE WITHOUT THE NEED FOR LADDERS, LIFTS, SCAFFOLDS, ETC.
3. ALL COMPONENTS SHALL BE LEAD FREE FOR DOMESTIC WATER USE.
4. COORDINATE PLACEMENT AND HEIGHT OF HOT AND COLD WATER PIPES WITH ALL OTHER TRADES (STRUCTURAL, MECHANICAL, ETC.).



9 WATER HEATER DETAIL - SINGLE ELECTRIC UNIT
NOT TO SCALE

NOTES:

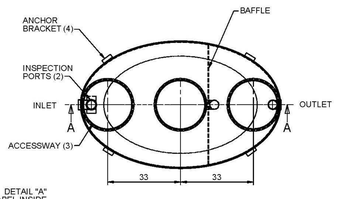
1. FOR GRAVITY APPLICATIONS ONLY.
2. ALL PROCEPTOR UNITS ARE MANUFACTURED WITH FIBERGLASS REINFORCED PLASTICS.
   PHYSICAL CHARACTERISTICS AND THICKNESS:
   POLYESTER RESIN AND E GLASS.
   MINIMUM THICKNESS 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS.
3. ALL PROCEPTOR UNITS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTION.
4. STANDARD PIPING IS SCH. 40 PVC.
5. ALL PIPE CONNECTIONS ARE THE SAME STANDARD WITH 4" INLET AND OUTLET (OTHER PIPE SIZE OPTIONS AVAILABLE ON REQUEST).
6. EXTENSION COLLAR TO BE ORDERED TO MEET FINISHED GRADE, CUT ON SITE FOR FINAL ADJUSTMENT AND CAULKED WITH SIKAFLEX BY CONTRACTOR FOR WATERTIGHT SEAL.
7. COVERS AVAILABLE FOR H20 TRAFFIC LOADING, PEDESTRIAN LOADING OR ABOVE GROUND INSTALLATION.
8. CONSULT GREEN TURTLE FOR OTHER SIZES.
9. 30 YEAR WARRANTY AGAINST LEAKS AND STRUCTURAL FAILURE.
10. U.S. PATENT #5,745,912, CDN PATENT #2,195,022

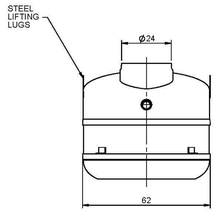
US PAT. # 5745912

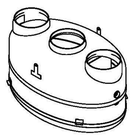
Proceptor®

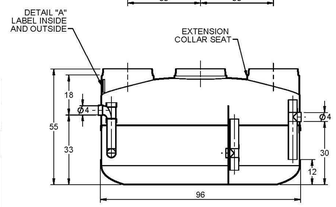
MANUFACTURER:	ZURN GREEN TURTLE
PROCEPTOR MODEL NUMBER:	GMC 500-P UPC
LOADED CAPACITY (MORNING VOLUME):	500 US GAL.
MAX. FLOW RATE:	
STD. MAX BURIAL DEPTH TO TOP OF TANK:	4 FT
MAX VERTICAL LOAD:	1133 PSF
MONTH/YEAR OF MANUFACTURE:	

DETAIL "A"









SECTION A-A
SCALE 1 : 35

FOR UPC/IAPMO INSTALLATIONS

FOR UPC/IAPMO INSTALLATIONS
APPROVED UNDER PS 80-2008
MEETS ASTM C-581

TITLE: PROCEPTOR SEPARATOR GMC 500-P UPC GALLON INTERCEPTOR 4" INLET & OUTLET 24" TRIPLE ACCESSWAY	REV.	DATE	DRAWN
PROJECT: WO:	1.		
	2.		
	3.		
	4.		
	5.		
	6.		
	7.		
	8.		
	9.		
	10.		
AVAILABLE OPTIONS (CHECKED IF REQUESTED)			
OIL/GREASE SENSOR ALARM			
SUCTION PIPE FOR INDOOR INSTALLATION			
ABOVE GROUND CONFIGURATION			
DOUBLE WALL CONSTRUCTION			
OIL DRAW OFF PIPE TO CONNECT TO EXTERNAL OIL HOLDING TANK(FOR OIL ONLY)	DRAWN BY: L. SIMKING		
	DATE DRAWN: 20/08/06/00		

Proceptor® ZURN.

SIZE: A	DWG. NO.: GMC 500-P UPC	REV.: 0
SCALE:NS	DO NOT SCALE DRAWING	SHEET 1 OF 1

10 GREASE INTERCEPTOR DETAIL
NOT TO SCALE

Zurn Green Turtle Sizing Method Module

Fixture and Dishwasher Information

Fixture Description	Compartments or Fixture Compartments	Is each effluent emulsified?	Dimensions of each compartment (inches) Length	Width	Height	Output Volume (Gallons)	Sizing to meet 100ppm
Prepmp sink	1		25	25	15	58	232
3rd part of 3-comp sk	1		25	30	15	37	185
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
Mop Sink						0	0
Floor Drain	8					8	48
						103 Total Fixture Volume	515 Sizing to meet 100 ppm

Dishwasher Make & Model

Number of washes per hour		Dishwasher Peak Rate of Drain Flow (GPM) (If unknown, 38 gpm standard)		0 Proceptor Dishwasher Sizing
		Total Proceptor Volume (Fixture + Dishwasher)		515

11 GREASE INTERCEPTOR SIZER
NOT TO SCALE

REVISIONS DENOTED BY △

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www.purdy-mcguire.com

PM JOB NO.	18122.002
PROJECT MGR.	SCOTT BROWN
MECHANICAL	BRUCE BONHART
PLUMBING	SCOTT BROWN
ELECTRICAL	KRISTIN STEWART

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D. SCOTT BROWN 89097 LICENSED PROFESSIONAL ENGINEER 4-15-2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: PMI
ISSUED FOR:CONSTRUCTION	DRAFTER: PMI
DATE: April 15, 2021	CHECKED: PMI

PLUMBING DETAILS

SHEET
P501
OF 1-P5 SHEETS

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PLUMBING FIXTURE SCHEDULE WITH IMAGES

IMAGE	DESIGN.	FIXTURE	MANUFACTURER	MODEL NUMBER	ADDITIONAL COMPONENTS	GPF/GPM	ROUGH-IN CONNECTION SIZES DCW	DHW	SAN	VENT	DESCRIPTION
	FD	FLOOR DRAIN ROUND	JOSAM	MODEL # 30000-A	-	-	-	-	3"	2"	ROUND, COATED CAST IRON FLOOR DRAIN, TWO-PIECE BODY WITH DOUBLE DRAINAGE FLANGE, FLASHING COLLAR, WEEP-HOLES, AND BOTTOM OUTLET. PROVIDE CHROME PLATED STRAINER. DRAIN SHALL BE COVERED DURING CONSTRUCTION. PROVIDE WITH PROTECTIVE DEBRIS COVER.
	FS	FLOOR SINK	JOSAM	SERIES 49320A-NB-3-55	-	-	-	-	4"	2"	SQUARE CAST IRON FLOOR SINK WITH PORCELAIN COATED INTERIOR, DOUBLE DRAINAGE FLANGE WITH WEEPHOLES, BOTTOM OUTLET, ALUMINUM INTERNAL DOME STRAINER, NON-TRAFFIC, ANTI-TILTING GRATE. 12" X 12" TOP SIZE WITH 1/2 CAST IRON GRATE. PROVIDE WITH TRAP GUARD, "W/TG" OR TRAP PRIMER "W/TP" AS INDICATED PER PLANS.
	FCO	FLOOR CLEANOUT	JOSAM	SERIES 55000-2-31	-	-	-	-	REF: PLANS	-	CAST IRON BODY WITH SATIN FINISH NIKOLAY TOP. CONFIRM FINISH COLOR WITH ARCHITECT. CONFIRM EXACT LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.
	WCO	WALL CLEANOUT	JOSAM	SERIES 58910	-	-	-	-	REF: PLANS	-	COATED CAST IRON CLEANOUT TEE WITH RECESSED, TAPPED PLUG AND POLISHED STAINLESS STEEL COVER (SERIES 58600).
	HSA	HYDRAULIC SHOCK ABSORBER	JOSAM	SERIES 75000	-	-	REF: PLANS	REF: PLANS	-	-	WROUGHT COPPER SHELL SIZE AND LOCATE IN ACCORDANCE WITH P.D.I. STANDARDS.
	TG	TRAP GUARD	PRO-SET	TRAP GUARD	-	-	-	-	REF: FDx	-	INSTALL ON ALL FLOOR DRAINS, FLOOR SINKS, FLOOR TROUGHS AND HUB DRAINS THAT ARE INDICATED "W/TG" WITH TRAP GUARD. NOTE THAT ANY ALTERNATE TRAP GUARD SUBMITTED MUST BE OF THIS "LAMBS TONGUE" OR "CURLING FLAP" TYPE FORM. NO OTHER FORMS OF TRAP GUARDS WILL BE ACCEPTED.
	BFP	SMALL DUAL CHECK VALVE WITH ATMOSPHERIC PORT AND STRAINER FOR COFFEE OR BEVERAGE MACHINE	WATTS	MODEL # SD-3	-	-	REF: PLANS	REF: PLANS	-	-	ASSE 1022 BACKFLOW PREVENTER FOR CARBONATED BEVERAGE MACHINES. SHALL BE LEAD FREE. PROVIDE FULL SIZE COPPER DRAIN PIPING FROM VALVE ASSEMBLY AND PROVIDE FLOOR SINK FOR DRAIN NEAR PREVENTER AS SHOWN ON DRAWINGS.
	RPZ	SMALL REDUCED PRESS RELIEF ASSEMBLY FOR MAKEUP WATER TO MECHANICAL EQUIPMENT	WATTS	1/2" MODEL #LF009QT	-	-	REF: PLANS	REF: PLANS	-	-	ASSE 1013 COMPLIANT REDUCED PRESSURE ZONE ASSEMBLY. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. PROVIDE WITH SHUTOFF VALVES, LEAD FREE. FDA EPOXY COATED. PROVIDE FULL SIZE COPPER DRAIN PIPING FROM VALVE ASSEMBLY AND PROVIDE FLOOR SINK FOR DRAIN NEAR ASSEMBLY AS SHOWN ON DRAWINGS. ENSURE ASSEMBLY IS ACCESSIBLE PER LOCAL JURISDICTION'S GUIDELINES.

GENERAL NOTES:
1 REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2 EQUIPMENT SHALL BE INSTALLED TO MEET ALL RECOMMENDATIONS OF THE MANUFACTURERS, MANUFACTURERS PIPING DIAGRAM, ETC.
3 ALL WATER CLOSET FLUSH VALVES, URINAL FLUSH VALVES, LAVATORY FAUCETS, KITCHEN/BREAKROOM FAUCETS AND SHOWERHEAD FAUCETS SHALL BE LEED WATERSENSE LABELED. NO EXCEPTIONS. EVEN IF THE PROJECT IS NOT A LEED PROJECT PURDY-MCGUIRE STILL REQUIRES ALL THESE FIXTURE TYPES TO BE WATERSENSE LABELED.
4 SUBJECT TO COMPLIANCE WITH ALL REQUIREMENTS LISTED IN THE SCHEDULE AND SPECIFICATIONS, EQUAL MANUFACTURERS INCLUDE THE FOLLOWING:
A. FIXTURE SUPPORTS: JOSAM, MIFAB, JAY R. SMITH, TYLER PIPE WADE DIV., WATTS DRAINAGE PRODUCTS AND ZURN.
B. DRAINS AND CLEAN-OUTS: JOSAM, MIFAB, JAY R SMITH, WATTS, AND ZURN.
C. TRAP GUARDS: PRO-SET. SEE THE TRAP GUARD DESCRIPTION ABOVE FOR OTHER EQUAL ALTERNATE MANUFACTURERS.
D. BACKFLOW PREVENTERS: WATTS, AND BEECO.

WATER HEATER SCHEDULE

DESIGNATION	TYPE	SERVES	STORAGE CAPACITY (GALLONS)	RECOVERY (GPH/GPM)	AVERAGE GROUND WATER (°F) (ENTERING WATER TEMPERATURE)	DEGREE RISE (°F)	MINIMUM SETPOINT (°F) (LEAVING WATER TEMPERATURE)	ELECTRICAL INPUT (WATTS)	VOLTAGE	PHASE	FULL LOAD AMPS	PHYSICAL DIMENSIONS	BASIS OF DESIGN MANUFACTURER	MODEL	NOTES
WH-1N	ELECTRIC	NORTH CONCESSION 3-COMP SK AND HS	30	110 GPH	62 - 67	90	140	24 KW	480	3	28.9	20" DIAMETER AT 36" HEIGHT	A.O. SMITH	DSE-30-24	NOTE 1 & 2
IEWH-1	INSTANTANEOUS ELECTRIC	HAND SINK	-	1.0 GPM	62 - 67	50	110	8310	208	1	40	6-1/4" (H) x 9-5/8" x 2-3/4"	CHRONOMITE	CM-40L208	NOTE 3 & 4
WH-1S	ELECTRIC	SOUTH CONCESSION	50	123 GPH	62 - 67	90	140	27 KW	480	3	32.5	21-3/4" DIAMETER AT 63" HEIGHT	A.O. SMITH	DRE-52-27	NOTE 1 & 2

GENERAL NOTES:
A REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
B EQUIPMENT SHALL BE INSTALLED TO MEET ALL RECOMMENDATIONS OF THE MANUFACTURERS, MANUFACTURERS PIPING DIAGRAM, ETC.
C WATER HEATER SHALL BE NSF61 CERTIFIED LEAD FREE, FOR USE IN A DOMESTIC WATER SYSTEM.
D SUBJECT TO COMPLIANCE WITH ALL REQUIREMENTS LISTED IN THE SCHEDULE AND NOTES ABOVE, EQUAL MANUFACTURERS INCLUDE THE FOLLOWING:
A. CHRONOMITE LABORATORIES, INC.
B. EEMAX, INC.
C. RHEEM WATER HEATER DIV.; RHEEM MANUFACTURING COMPANY
D. RUUD WATER HEATER DIV., RUUD MANUFACTURING COMPANY
E. BIRADFORD WHITE CORPORATION
F. A.O. SMITH WATER PRODUCTS
G. STATE INDUSTRIES
H. LOCHINVAR
I. PVI
E ALL SUBSTITUTIONS MUST BE APPROVED, IN WRITING, PRIOR TO BID.

NOTES:
1 PROVIDE SOLENOID VALVE AND LEAK DETECTION. COORDINATE CONNECTION WITH ELECTRICAL CONTRACTOR.
2 FOR ELECTRIC TANK WATER HEATERS, UPPER AND LOWER ELEMENTS TO BE WIRED FOR BOTH INDEPENDANT AND SIMULTANEOUS OPERATION.
3 PROVIDE THIS HEATER WITH THE MANUFACTURER'S INTEGRAL DISCONNECT, EQUAL TO "CHRONOMITE DISCONNECT SWITCH, ROTARY 40A – LOCKABLE NEMA 4X (2095-01)"
4 HEATER SHALL HAVE FIELD ADJUSTABLE TEMPERATURE OUTPUT. EQUAL TO "CHRONOMITE FIELD ADJUSTABLE TEMPERATURE (ADJ)".
5 PROVIDE HEATER WITH STAINLESS HOUSING, EQUAL TO "CHRONOMITE SATIN FINISH STAINLESS STEEL HOUSING (SS)" AS HEATER WILL BE EXPOSED AND VISIBLE UNDER THE SINK.

DOMESTIC HOT WATER RECIRCULATION PUMP SCHEDULE

DESIG.	SERVES	TYPE	GPM	HEAD (FT)	MOTOR DATA HP	RPM	VFD	BASIS OF DESIGN MANUFACTURER	MODEL	ELECTRICAL VOLT	PH	NOTES
RP-1	WH-1S	POTABLE WATER	5	10	1/6	3300	YES	BELL & GOSSETT (B&G)	PL-36	120	1	ALL

DOMESTIC WATER RECIRCULATION PUMP NOTES:
1 REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS
2 SUBJECT TO COMPLIANCE WITH ALL REQUIREMENTS LISTED IN THE SCHEDULE AND SPECIFICATIONS, APPROVED MANUFACTURERS ARE: B&G, PACO/GRUNDFOS, TACO, ARMSTRONG.
3 ALL SUBSTITUTIONS SHALL BE APPROVED, IN WRITING, PRIOR TO BID.
4 ALL PUMPS IN POTABLE WATER APPLICATIONS SHALL BE NSF 61 CERTIFIED LEAD FREE AND OF ALL BRONZE OR STAINLESS STEEL CONSTRUCTION.
5 PROVIDE MOTOR RATED CONNECTION SWITCH (FOR HARDWIRED PUMPS) OR A RECEPTACLE (FOR PLUG-IN PUMPS) AT UNIT FOR LOCAL MEANS OF DISCONNECT. REFER TO ELECTRICAL PLANS FOR MORE INFORMATION.
6 PROVIDE AUTOMATIC TIMER KIT AND AQUASTAT TO MEET IECC 2015+ COMPLIANCE.

EXPANSION TANK SCHEDULE

DESIGNATION	TYPE	SERVES	TANK TOTAL VOLUME (GAL)	TANK ACCEPTANCE VOLUME (GAL)	MAXIMUM PRESSURE (PSI)	MAXIMUM OPPERATING TEMPERATURE (°F)	PHYSICAL DIMENSIONS	FILLED WEIGHT (LBS)	MOUNTING	BASIS OF DESIGN MANUFACTURER	MODEL	NOTES
ET-1	BLADDER	WH-1S	3.5	2.3	150	240	10" DIAMETER 14" HEIGHT	22	HUNG	WATTS	DELTA-5	

GENERAL NOTES:
A REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
B EQUIPMENT SHALL BE INSTALLED TO MEET ALL RECOMMENDATIONS OF THE MANUFACTURERS, MANUFACTURERS PIPING DIAGRAM, ETC.
C EXPANSION TANK SHALL BE ASME RATED.
D EXPANSION TANK SHALL BE NSF61 CERTIFIED LEAD FREE, FOR USE IN A DOMESTIC WATER SYSTEM.
E PLUMBING CONTRACTOR SHALL SET THE EXPANSION TANK PRESSURE CHARGE IN THE FIELD BASED ON THE PRESSURE OF THE COMPLETED SYSTEM FULLY INSTALLED WITH INCOMING CITY PRESSURE CONNECTED. PLUMBING CONTRACTOR SHALL FOLLOW MANUFACTURERS INSTRUCTIONS FOR SETTING THIS CHARGE IN THE FIELD. THE EXPANSION TANK SHALL NOT BE LEFT AT THE FACTORY PRE-CHARGE SETTING OF 40 PSI.
F SUBJECT TO COMPLIANCE WITH ALL REQUIREMENTS LISTED IN THE SCHEDULE AND NOTES ABOVE, EQUAL MANUFACTURERS INCLUDE THE FOLLOWING:
A. WATTS
B. AMTROL
C. BELL & GOSSETT (B&G)
D. SAME MANUFACTURER AS THE SPECIFIED WATER HEATER
G ALL SUBSTITUTIONS MUST BE APPROVED, IN WRITING, PRIOR TO BID.

NOTES:
1 NOT USED.

REVISIONS DENOTED BY △

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PROJECT MGR. SCOTT BROWN
MECHANICAL BRUCE ISONHART
PLUMBING BRUCE ISONHART
ELECTRICAL KRISTIN STEWART

THIS DRAWING SHALL NOT BE REPRODUCED FOR ANY PROJECT OTHER THAN THE PROJECT NOTED IN THE TITLE BLOCK, WITHOUT THE WRITTEN CONSENT OF PURDY MCGUIRE, INC. DALLAS, TX

D. SCOTT BROWN
89097
LICENSED
PROFESSIONAL ENGINEER
4-15-2021

CITY OF DALLAS
FAIR PARK COLISEUM
CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: PMI
ISSUED FOR:CONSTRUCTION	DRAFTER: PMI
DATE: April 15, 2021	CHECKED: PMI

PLUMBING SCHEDULES

SHEET
P601
OF 1-P6 SHEETS

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POWER GENERAL NOTES:

A. ALL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES, RULES, REGULATIONS AND REQUIREMENTS OF THE SERVICE UTILITY COMPANY.
B. REFER TO ARCHITECTURAL DRAWINGS AND ELEVATIONS FOR DEVICE MOUNTING HEIGHTS AND DIMENSIONED LOCATIONS PRIOR TO ROUGH-IN.
C. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL NOTES, SYMBOLS AND DETAILS.
D. COMMISSIONING REQUIREMENT: REFER TO M001 FOR COMMISIONING REQUIREMENTS.
E. CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES PRIOR TO ROUGH-IN.
F. NO CONDUCTORS SMALLER THAN AWG #12 SHALL BE USED FOR POWER CIRCUITS GREATER THAN 24 VOLTS AC.
G. WHERE CONDUCTOR SIZES ARE NOTED ON DRAWINGS, THAT WIRE SIZE SHALL BE THROUGH THE ENTIRE RUN UNLESS NOTED OTHERWISE.
H. ALL CONDUCTORS GREATER THAN 60' IN LENGTH SHALL BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3% OVER THE TOTAL LENGTH OF THE CIRCUIT CALCULATED AT 80% OF FULL LOAD OF THE OVERCURRENT DEVICE PROTECTING THE CONDUCTOR. CONTRACTOR SHALL PROVIDE PIG-TAIL OR ENCLOSED TERMINATION BLOCKS AS REQUIRED TO LAND CIRCUITS ON DEVICES OR EQUIPMENT.
I. ALL CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE.
J. NEUTRAL CONDUCTORS SHALL NOT BE SHARED BETWEEN MULTIPLE SINGLE PHASE CIRCUITS. EACH SINGLE PHASE CIRCUIT SHALL HAVE A FULL SIZE DEDICATED NEUTRAL CONDUCTOR.
K. ALL INTERIOR ELECTRICAL HOMERUNS FROM PANELBOARD TO FIRST J-BOX OR DEVICE SERVED SHALL BE IN EMT CONDUIT.
L. ALL SPARE CONDUITS AND EMPTY CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR FUTURE USE. PULL STRING SHALL BE SECURED AT EACH END TO PREVENT ACCIDENTAL REMOVAL.
M. PANELBOARD DIRECTORIES SHALL BE COMPLETELY FILLED OUT TO ACCURATELY IDENTIFY EACH CIRCUIT (EXISTING [IF APPLICABLE] AND NEW CIRCUITS) IN ALL PANELS WITHIN THE SCOPE OF WORK. OBTAIN BUILDING MANAGEMENT/OWNER'S APPROVAL OF IDENTIFICATION. DIRECTORIES SHALL BE TYPEWRITTEN.
N. ALL ELECTRICAL PANELS, TRANSFORMERS, SWITCH BOARDS, MOTOR CONTROL CENTERS AND ALL OTHER ELECTRICAL EQUIPMENT SHALL BE LABELED WITH AN ENGRAVED NAMEPLATE INDICATING THE EQUIPMENT DESIGNATION.
O. ELECTRIC CONNECTIONS TO PANELBOARDS SHALL BE MADE ONLY WHILE PANELBOARD HAS BEEN DE-ENERGIZED.
P. JUNCTION BOXES AND/OR DEVICE BOXES SHALL NOT BE MOUNTED BACK TO BACK WHEN FLUSH MOUNTED IN A WALL. JUNCTION BOXES AND/OR DEVICE BOXES FLUSH MOUNTED ON OPPOSITE SIDES OF A WALL SHALL NOT BE INSTALLED IN THE SAME STUD SPACE.
Q. ALL RECEPTACLES MOUNTED ABOVE OR BELOW KITCHEN COUNTERS OR COUNTERS WITH A SINK OR ANY OTHER WATER DISPENSING MECHANISM SHALL BE GFCI PROTECTED. ALL RECEPTACLES INSTALLED IN AN OUTDOOR LOCATION OR INTENDED TO PROVIDE POWER FOR VENDING MACHINES SHALL BE GFCI TYPE DEVICES.
R. LOW VOLTAGE COORDINATION: REFER TO TECHNOLOGY DRAWINGS FOR ALL DIVISION 26 RESPONSIBILITIES REGARDING ROUGH-IN, POWER REQUIREMENTS, AND OTHER COORDINATION ITEMS FOR IT, SECURITY, A/V AND OTHER LOW VOLTAGE SYSTEMS.
S. COORDINATE ALL CEILING MOUNTED ITEMS WITH ARCHITECTURAL REFLECTED PLANS (RCP). IF ARCHITECTURAL RCP DOES NOT INDICATE THE LOCATION FOR ANY CEILING MOUNTED ITEMS, CONFIRM WITH ARCHITECT THE EXACT LOCATION PRIOR TO INSTALLATION.
T. REFER TO MECHANICAL KITCHEN SHEETS FOR EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT.
U. ANY CONDUIT THAT IS ROUTED UNDERGROUND OR IN-SLAB SHALL BE A MINIMUM OF 1" CONDUIT.
V. ALL EXISTING CIRCUITS WITHIN THE SCOPE OF WORK AREA THAT ARE NOT REUSED FOR THIS REMODEL SHALL BE REMOVED BACK TO THE PANELS AND THE PLACARDS SHALL INDICATE THE BREAKERS AS SPARES.

ELECTRICAL APPLICABLE CODES

- 2017 NATIONAL ELECTRIC CODE
- 2015 INTERNATIONAL ENERGY CONSERVATION (IECC)
- CITY OF DALLAS LOCAL AMENDMENTS

FIRE ALARM APPLICABLE CODES

- FM GLOBAL
- 2015 INTERNATIONAL FIRE CODE (IFC)
- NATIONAL FIRE PROTECTION AGENCY CODES (NFPA)
- CITY OF DALLAS LOCAL AMENDMENTS

WIRING AT EXPOSED STRUCTURE

UNLESS NOTED OTHERWISE ON DRAWINGS, AT ALL LOCATIONS WHERE THERE IS NO CEILING, ALL WIRE/CABLES SHALL BE INSTALLED IN CONDUIT (INCLUDING ALL FIRE ALARM, TECHNOLOGY, SECURITY, BMS, ETC). ALL CONDUITS SHALL BE PROVIDED AS PART OF THIS CONTRACT. CONDUITS SHALL BE INSTALLED AS HIGH AS POSSIBLE IN A NEAT AND PROFESSIONAL MANNER, RUNNING LEVEL AND PARALLEL TO THE BUILDING LINES.

LIGHTING GENERAL NOTES:

A. MOUNT LIGHT SWITCHES AS INDICATED ON ARCHITECTURAL DRAWINGS (48" AFF UNLESS NOTED OTHERWISE).
B. ALL GANGED SWITCHES SHALL HAVE A COMMON SEAMLESS FACEPLATE. EACH MULTI-GANG BOX SHALL BE NO MORE THAN SIX (6) SWITCHES WIDE. WHERE MORE THAN SIX (6) SWITCHES ARE SHOWN AT ONE (1) LOCATION, ADDITIONAL MULTI-GANG BOXES SHALL BE STACKED VERTICALLY AND THE WIDTH OF THE MULTI-GANGS SHALL BE AS EVEN AS POSSIBLE.
C. ALL EMERGENCY LIGHT FIXTURES SHALL BE FED FROM EXISTING EMERGENCY LIGHTING CIRCUITS UNLESS NOTED OTHERWISE.
D. ALL EXIT SIGNS SHALL BE FED FROM EXISTING EXIT SIGN CIRCUITS EXCEPT AS OTHERWISE NOTED.
E. WHEN SPECIFIC LIGHT FIXTURE TYPE HAS BEEN SPECIFIED IN THE FIXTURE INFORMATION, ELECTRICAL CONTRACTOR SHALL PROVIDE COMPLETE ASSEMBLY INCLUSIVE OF ALL PARTS AND HARDWARE.
F. ALL EXIT SIGNS SHALL BE SELF TESTING. ALL EMERGENCY LIGHTING WITH INDIVIDUAL BATTERIES (IF PRESENT IN THE PROJECT) SHALL BE SELF TESTING.
G. ALL LIGHT FIXTURES SHALL HAVE SEPARATE GROUNDING CONDUCTORS. INTEGRAL GROUNDING IN LUMINAIRE IS NOT ACCEPTABLE.
H. COORDINATE ALL CEILING MOUNTED ITEMS WITH ARCHITECTURAL REFLECTED PLANS (RCP). IF ARCHITECTURAL RCP DOES NOT INDICATE THE LOCATION FOR ANY CEILING MOUNTED ITEMS, CONFIRM WITH ARCHITECT THE EXACT LOCATION PRIOR TO INSTALLATION.
I. FINAL MOUNTING LOCATION OF OCCUPANCY SENSORS WILL BE PROVIDED BY EQUIPMENT MANUFACTURER. DEVICES SHOWN ON PLAN ARE FOR REFERENCE AND DO NOT NECESSARILY INDICATE EXACT MOUNTING LOCATION.
J. LIGHTING CONTROL SENSORS AND SWITCHES SHALL BE WIRED DEVICES. NO WIRELESS DEVICES USING BATTERIES AS THE SOLE SOURCE OF POWER SHALL BE SUBMITTED WITHOUT PRIOR WRITTEN APPROVAL BY OWNER/BUILDING MANAGEMENT.

LIGHTING CONTROL NARRATIVE:

THE FOLLOWING SUMMARY PROVIDES THE DESIGN INTENT FOR LIGHTING CONTROLS AND ZONES THAT COMPLIES WITH THE ENERGY CODE LISTED ON THIS SHEET UNDER THE "ELECTRICAL APPLICABLE CODE" NOTE.

CONNECT TO THE EXISTING LIGHTING CONTROL SYSTEM PROVIDED IN THE COLISEUM SCOPE.

LIGHTING CONTROL SYSTEM SHALL BE INTEGRATED INTO BMS VIA **BMS PROTOCOL** INTEGRATION FOR BMS SCHEDULE AND ON/OFF SWEEPS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH BMS CONTRACTOR AND LIGHTING CONTROL VENDOR FOR ALL INTEGRATION REQUIREMENTS INTO THE EXISTING LIGHTING CONTROL SYSTEM PROVIDED IN THE COLISEUM SCOPE.

A NARRATIVE DESCRIPTION OF THE SEQUENCE OF OPERATIONS FOR EACH SPACE WITHIN THE SCOPE OF WORK SHALL BE INCLUDED IN THE CONTROLS SUBMITTAL. IN ADDITION TO THE DIAGRAMS AND PRODUCT DATA. ANY CONTROLS SUBMITTAL WITHOUT CLEAR NARRATIVES OF THE CONTROLS IN EACH SPACE (THAT A LAY PERSON COULD UNDERSTAND) WILL BE REJECTED AND REQUIRED TO BE RESUBMITTED WITH NARRATIVES.

CONTRACTOR SHALL PROVIDE DEDICATED POWER TO LIGHTING CONTROL SYSTEM PROCESSORS, GATEWAYS, AND ALL NECESSARY ACCESSORIES AS REQUIRED BY SPECIFIC LIGHTING CONTROL MANUFACTURER.

ENCLOSED ROOMS (STORAGE)
-PROVIDE DUAL TECHNOLOGY OCCUPANCY SENSORS AND LOW VOLTAGE SWITCH AS INDICATED ON ELECTRICAL PLANS.
-LIGHTING SHALL BE MANUAL ON, AUTO OFF

CONCESSIONS
-PROVIDE DUAL TECHNOLOGY OCCUPANCY SENSORS AND LOW VOLTAGE SWITCH.
-LIGHTING SHALL BE MANUAL ON, AUTO OFF.
-EMERGENCY LIGHTS SHALL BE CONTROLLED WITH ADJACENT LIGHTING VIA UL924 DEVICE. PROVIDE DIMMING TYPE UL924 DEVICE WHERE LIGHTING IS SHOWN TO BE DIMMABLE.

GENERAL FIRE ALARM NOTES

A. THE CONTRACTOR SHALL DESIGN, PROVIDE, AND INSTALL ADDITIONAL, DEVICES AND SYSTEM COMPONENTS TO THE EXISTING FIRE ALARM SYSTEM SO THAT THE TOTAL SYSTEM IS A COMPLETE FIRE ALARM SYSTEM THROUGHOUT THE CONTRACT AREA. THE CONTRACTOR SHALL BE A FIRM LICENSED TO DESIGN AND INSTALL FIRE ALARM SYSTEMS IN THE PHYSICAL JURISDICTION IN WHICH THE SYSTEM IS TO BE INSTALLED. THE FIRM SHALL HAVE ALL CREDENTIALS AND PROOF OF REQUIRED INSURANCE SUBMITTED WITH THE BID DOCUMENTS.

B. FIRE ALARM PLANS OF IN THE CONTRACT AREA AND EQUIPMENT CUT SHEETS FOR ALL NEW FIRE ALARM DEVICES SHALL BE SUBMITTED TO THE LOCAL AUTHORITY HAVING JURISDICTION FOR REVIEW, APPROVAL AND PERMIT PRIOR TO INSTALLATION. SUBMITTAL DOCUMENTS SHALL INCLUDE VOLTAGE DROP CALCULATIONS FOR ALL FIRE ALARM CONDUCTORS WITHIN THE CONTRACT AREA. THESE SAME DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW TO ENSURE THE SYSTEM DOES NOT, WITHIN THE LIMITS OF APPLICABLE CODES AND REQUIREMENTS, CONFLICT WITH THE ARCHITECTURAL INTENT OF THE FACILITY.

C. THE COMPLETED FIRE ALARM SYSTEM SHALL BE AN INTELLIGENT ADDRESSABLE SYSTEM AND SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES AND STANDARDS. ALL DEVICES AND EQUIPMENT INSTALLED AS PART OF THIS CONTRACT WORK SHALL MATCH AS CLOSELY AS POSSIBLE THE EXISTING SYSTEM AND SHALL BE INTEGRATED COMPLETELY INTO THE EXISTING SYSTEM. THE SYSTEM SHALL INCLUDE ALL DEVICES SUCH AS, BUT NOT LIMITED TO, FLOW AND TAMPER SWITCHES, CEILING MOUNTED SMOKE DETECTORS, CEILING MOUNTED HEAT DETECTORS, DUCT SMOKE DETECTORS IN THE SUPPLY AND/OR RETURN DUCTS AS REQUIRED BY CODE AND BY THE LOCAL AUTHORITY HAVING JURISDICTION, DETECTORS AT ALL FIRE/SMOKE DAMPERS, SHUNT/TRIP CONTROL OF ELEVATORS, NOTIFICATION DEVICES AS REQUIRED BY APPLICABLE CODE, LOCAL AUTHORITY HAVING JURISDICTION, AND OWNER'S DESIGN STANDARDS. NOTIFICATION DEVICES SHALL BE IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT AND ALL OTHER SUCH LOCAL CODES.

D. ALL NEW DEVICES AND EQUIPMENT SHALL BE FULLY INTEGRATED INTO THE EXISTING FIRE ALARM SYSTEM AND THE FIRE ALARM CONTROL PANEL SHALL BE PROGRAMMED BY A FACTORY AUTHORIZED PROGRAMMER TO FUNCTION AS DESIGNED WITH THE NEW DEVICES AND EQUIPMENT.

E. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL APPLICABLE CODES, REQUIREMENTS BY THE LOCAL AUTHORITY HAVING JURISDICTION, AND OWNER STANDARDS FOR CONSTRUCTION AND OPERATION OF FIRE ALARM SYSTEMS. ANY CHANGES TO THE FINAL INSTALLATION DUE TO THE CONTRACTOR NOT HAVING BEEN AWARE OF ANY OF THE ABOVE, SHALL BE MADE AT NO COST TO THE OWNER.

ELECTRICAL SYMBOLS LEGEND

RECEPTACLES:

	SPECIAL RECEPTACLE AS NOTED
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	QUADRUPLEX RECEPTACLE
	DUPLEX RECEPTACLE ABOVE COUNTER
	QUADRUPLEX RECEPTACLE ABOVE COUNTER
GFI	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
GFI/WP	GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE IN WEATHER-PROOF ENCLOSURE WITH WHILE-IN-USE COVER
AFCI	ARC FAULT CIRCUIT INTERRUPTER RECEPTACLE
USB	DUPLEX RECEPTACLE WITH 2 USB PORTS
	HALF SWITCHED DUPLEX RECEPTACLE
	HALF SWITCHED QUADRUPLEX RECEPTACLE
	FULLY SWITCHED DUPLEX RECEPTACLE
	FULLY SWITCHED QUADRUPLEX RECEPTACLE
IG	ISOLATED GROUND DUPLEX RECEPTACLE
IG	ISOLATED GROUND QUADRUPLEX RECEPTACLE. REFER TO THE CIRCUIT TAGS ON THE FLOOR PLANS FOR ADDITIONAL INFORMATION. ONLY HALF OR ALL OF THE RECEPTACLE MAY BE ISOLATED GROUND.
	CEILING MOUNTED SIMPLEX RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE
	CEILING MOUNTED QUADRUPLEX RECEPTACLE

POWER:

J	CEILING MOUNTED JUNCTION BOX
J	WALL JUNCTION BOX
S M	SINGLE PHASE MANUAL MOTOR STARTER UP TO 1 HP
	MOTOR
VW/X/Y/Z	COMBINATION MAGNETIC STARTER AND FUSED SWITCH V - SWITCH AMPERAGE RATING W - NUMBER OF POLES X - FUSE SIZE Y - NEMA RATING IF OTHER THAN NEMA 1 Z - STARTER SIZE EXAMPLE: 100/3/80/3R/3
Z	VARIABLE FREQUENCY DRIVE (VFD)
VW/X/Y	FUSED HEAVY DUTY DISCONNECT SWITCH V - SWITCH AMPERAGE RATING W - NUMBER OF POLES X - FUSE SIZE OR NON-FUSED (NF) Y - NEMA RATING IF OTHER THAN NEMA 1 EXAMPLE: 100/3/80/3R
M M	METER
	GROUND BAR
	TRANSFORMER - PLAN VIEW SOLID LINES INDICATE EQUIPMENT AND DASHED LINES INDICATE REQUIRED CLEARANCES.
	ELECTRICAL PANEL OR DISTRIBUTION BOARD - PLAN VIEW SOLID LINES INDICATE EQUIPMENT AND DASHED LINES INDICATE REQUIRED CLEARANCES.
	AUTOMATIC TRANSFER SWITCH - ON ONE-LINE OR RISER DIAGRAM ONLY
	GROUND - ON ONE-LINE OR RISER DIAGRAM ONLY
	DELTA-WYE TRANSFORMER - ON ONE-LINE OR RISER DIAGRAM ONLY
	STANDARD TRANSFORMER - ON ONE-LINE OR RISER DIAGRAM ONLY
	CIRCUIT BREAKER - ON ONE-LINE OR RISER DIAGRAM ONLY
	FUSE - ON ONE-LINE OR RISER DIAGRAM ONLY
SPD	SURGE PROTECTIVE DEVICE (SPD)

AUDIOVISUAL / DATA / IT:

TV	TV OUTLET REFER TO FLOOR PLAN NOTES ABOUT CEILING, WALL OR FLOOR MOUNTING.
CR	CARD READER
DC	DOOR CONTACT
ML	MAGNETIC LOCK
EPO	EMERGENCY POWER OFF PUSHBUTTON
▽	DATA / COMMUNICATION ROUGH-IN
J	CEILING MOUNTED JUNCTION BOX
J	WALL JUNCTION BOX
	CAMERA

TEXT LABELS:

E / e	INDICATES EXISTING ITEM TO REMAIN
ER / er	INDICATES EXISTING ITEM TO BE RELOCATED
ED / ed	INDICATES EXISTING ITEM TO BE REMOVED
N	"N", BOLD AND/OR BLANK/NOTHING - INDICATES NEW, BY CONTRACTOR
D	INDICATES RECEPTACLE SHALL BE ON DEDICATED CIRCUIT. IF CIRCUITING IS NOT YET INDICATED. RECEPTACLE MAY STILL BE DEDICATED WITHOUT "D" ANNOTATION IF IT IS SHOWN AS THE ONLY DEVICE ON A INDICATED CIRCUIT.
H-1,3,5	ONE (1) THREE-POLE CIRCUIT
L-1	ONE (1) SINGE-POLE CIRCUIT
L-1	UNDERLINE OF CIRCUIT NUMBER INDICATES ISOLATED GROUND CIRCUIT
	CONTINUATION
+XX"	INDICATES HEIGHT ABOVE FINISHED FLOOR ALL OUTLETS ARE 18" A.F.F. UNLESS NOTED OTHERWISE

CONDUIT:

	CONDUIT
	CONDUIT IN OR UNDER FLOOR
	HOMERUN TO PANEL
	CONDUIT STUBBED UP
	CONDUIT STUBBED DOWN

LEGEND NOTES:

1. NOT ALL SYMBOLS MAY BE USED IN PLANS.
2. DIMENSIONS MAY DIFFER FROM PLANS. REFER TO FLOOR PLANS AND ELECTRICAL SCHEDULES FOR ACTUAL SIZES.
3. IF ONLY THE ELECTRICAL OR LIGHTING SYMBOLS LEGEND IS PRESENT ON THIS SHEET, REFER TO THE OTHER SHEET (ELECTRICAL OR LIGHTING) FOR ADDITIONAL SYMBOLS.
4. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ACCESSORIES FOR PROPER MOUNTING OF ALL LIGHT FIXTURES AND ELECTRICAL DEVICES IN SPECIFIC CEILING OR WALL CONDITIONS. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
5. REFER TO ARCHITECTURAL PLANS FOR ALL FINISH COLORS.
6. FLOOR DEVICE AND POWERED FURNITURE NOTES:
   A. REFER TO SYMBOLS ON THE FLOOR PLANS FOR ADDITIONAL REQUIREMENTS FOR DEVICES (IG, USB, ETC).
   B. A/V AND DATA CONDUITS SHALL BE ROUTED TO ABOVE THE NEAREST ACCESSIBLE CEILING OR TO THE NEAREST IDF/ MDF/ IT ROOM.
   C. COORDINATE ALL LOW VOLTAGE CONDUIT REQUIREMENTS WITH TECHNOLOGY DRAWINGS AND TECHNOLOGY CONSULTANT.
   D. FOR FURNITURE FEEDS, COORDINATE WIRING CONFIGURATION WITH FURNITURE CONSULTANT (3+1 OR 2+2) PRIOR TO ORDER. CONFIGURATION SHOWN ON THESE DRAWINGS IS FOR PLACEHOLDER ONLY.
   E. REFER TO ARCHITECTURAL PLANS FOR ALL FINISH COLORS. CONTRACTOR SHALL INCLUDE PRICING FOR A PREMIUM FINISH IN THE BASE BID TO BE SELECTED BY THE ARCHITECT.
   F. SUBJECT TO COMPLIANCE WITH ALL REQUIREMENTS LISTED IN THE SCHEDULE AND NOTES ABOVE, EQUAL MANUFACTURERS INCLUDE THE FOLLOWING: LEGRAND, HUBBELL, FSR INC.
7. CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE ENGINEER OF ALL LIGHTING FIXTURES AND ELECTRICAL DEVICES (NEW OR SUBSTITUTES).

LIGHTING SYMBOLS LEGEND

LIGHTING CONTROLS:

DS	DAYLIGHT SENSOR
	DAYLIGHT ZONE
OS OS	WALL MOUNTED VACANCY OR OCCUPANCY SENSORS ARE REQUIRED IN THIS SPACE. PROVIDE ALL POWER PACKS AND ACCESSORIES AS REQUIRED FOR A COMPLETE SYSTEM TO CONTROL ALL LIGHTS IN ROOM. THE PRESENCE OF THIS SYMBOL IN A ROOM ONLY INDICATES THAT THE ROOM SHALL HAVE VACANCY OR OCCUPANCY CAPABILITIES. THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED SENSOR SPACING. SENSORS SHOWN ON THE FLOOR PLANS DO NOT NECESSARILY INDICATE ACTUAL PLACEMENT AND COUNT OF DEVICES, BUT RATHER ONLY SHOW WHICH ROOMS ARE REQUIRED TO BE COVERED BY VACANCY SENSORS. THE ACTUAL NUMBER OF SENSORS AND PLACEMENT IN EACH ROOM SHALL BE BY THE SENSOR MANUFACTURER'S RECOMMENDATIONS. THIS SENSOR SHALL BE CAPABLE OF SWITCHING PROGRAMMING FROM OCCUPANCY TO VACANCY AND VICE VERSA WITHOUT ANY ADDED PARTS.
OS OS OS OS	CEILING MOUNTED VACANCY OR OCCUPANCY SENSORS ARE REQUIRED IN THIS SPACE. PROVIDE ALL POWER PACKS AND ACCESSORIES AS REQUIRED FOR A COMPLETE SYSTEM TO CONTROL ALL LIGHTS IN ROOM. THE PRESENCE OF THIS SYMBOL IN A ROOM ONLY INDICATES THAT THE ROOM SHALL HAVE VACANCY OR OCCUPANCY CAPABILITIES. THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED SENSOR SPACING. SENSORS SHOWN ON THE FLOOR PLANS DO NOT NECESSARILY INDICATE ACTUAL PLACEMENT AND COUNT OF DEVICES, BUT RATHER ONLY SHOW WHICH ROOMS ARE REQUIRED TO BE COVERED BY VACANCY SENSORS. THE ACTUAL NUMBER OF SENSORS AND PLACEMENT IN EACH ROOM SHALL BE BY THE SENSOR MANUFACTURER'S RECOMMENDATIONS. PROVIDE A SENSOR CAPABLE OF SWITCHING PROGRAMMING FROM OCCUPANCY TO VACANCY AND VICE VERSA WITHOUT ANY ADDED PARTS.
	VACANCY OR OCCUPANCY SENSOR ZONE
$	SINGLE POLE SWITCH
$LV	LOW VOLTAGE SWITCH
$VS $OS	VACANCY OR OCCUPANCY SENSOR SWITCH. PROVIDE A SENSOR CAPABLE OF SWITCHING PROGRAMMING FROM OCCUPANCY TO VACANCY AND VICE VERSA WITHOUT ANY ADDED PARTS.
D	DIMMING LINE VOLTAGE SWITCH
DLV	DIMMING LOW VOLTAGE SWITCH
DVS DOS	DIMMING VACANCY OR OCCUPANCY SENSOR SWITCH. PROVIDE A SENSOR CAPABLE OF SWITCHING PROGRAMMING FROM OCCUPANCY TO VACANCY AND VICE VERSA WITHOUT ANY ADDED PARTS.
K	KEYPAD STATION (MULTIPLE BUTTONS OR TOUCH SCREEN). REFER TO LIGHTING CONTROLS PLANS AND NARRATIVE FOR MORE INFORMATION.
$K	KEY OPERATED SWITCH
$4	FOUR WAY SWITCH
$3	THREE WAY SWITCH
$DR	DOOR SWITCH
$P	PILOT SWITCH
$T	TIMER SWITCH

LIGHTING:

EM	INDICATES FIXTURE SHALL BE AN EMERGENCY
NL	INDICATES FIXTURE SHALL BE NIGHT LIGHT AND SHALL NOT BE SWITCHED
	SINGLE FACE EXIT SIGNS - REFER TO PLAN FOR DIRECTIONAL ARROWS AND WALL OR CEILING MOUNTING
	DOUBLE FACE EXIT SIGNS - REFER TO PLAN FOR DIRECTIONAL ARROWS AND WALL OR CEILING MOUNTING
X-x HA-XX	CAPITAL LETTERS - LIGHT FIXTURE TYPE DESIGNATION LOWER CASE LETTERS - SWITCH DESIGNATION PANEL & CIRCUIT DESIGNATION

LEGEND NOTES:

1. NOT ALL SYMBOLS MAY BE USED IN PLANS.
2. DIMENSIONS MAY DIFFER FROM PLANS. REFER TO FLOOR PLANS AND ELECTRICAL SCHEDULES FOR ACTUAL SIZES.
3. IF ONLY THE ELECTRICAL OR LIGHTING SYMBOLS LEGEND IS PRESENT ON THIS SHEET, REFER TO THE OTHER SHEET (ELECTRICAL OR LIGHTING) FOR ADDITIONAL SYMBOLS.
4. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ACCESSORIES FOR PROPER MOUNTING OF ALL LIGHT FIXTURES AND ELECTRICAL DEVICES IN SPECIFIC CEILING OR WALL CONDITIONS. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE ENGINEER OF ALL LIGHTING FIXTURES AND ELECTRICAL DEVICES (NEW OR SUBSTITUTES).

REVISIONS DENOTED BY △

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PROFESSIONAL ENGINEER
4-13-2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01	MANAGER: PMI
ISSUED FOR:CONSTRUCTION	DRAFTER: PMI
DATE: April 15, 2021	CHECKED: PMI

ELECTRICAL NOTES & SYMBOLS

SHEET
E001
OF 1-E1 SHEETS

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DIVISION 26 - ELECTRICAL

SECTION 260500 - COMMON WORK RESULTS
PART 1 - GENERAL
1.1 GENERAL NOTES
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS, APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 26.
B. THE CONTRACTOR FOR THIS DIVISION OF WORK IS REQUIRED TO OBTAIN A COMPLETE SET OF BID DOCUMENTS (DRAWINGS AND SPECIFICATIONS) AND FULLY REVIEW THEM. COORDINATE DIVISION 26 WORK WITH THAT OF ALL OTHER DIVISIONS OF WORK.
C. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER. ANY LABOR OR MATERIAL CALLED FOR IN ONE SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. ANY LABOR OR MATERIAL WHICH IS NEITHER SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS OBVIOUSLY REQUIRED TO COMPLETE THE WORK, AND WHICH IS NORMALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE FURNISHED AND INSTALLED AS PART OF THIS CONTRACT.
D. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THE COMPLETION AND INSPECTION OF THIS WORK TO COMPLY WITH THE OWNER'S SCHEDULE AND PROJECT COMPLETION DATE.
1.2 SCOPE OF WORK
A. THE DESCRIPTION OF GENERAL CONDITION WORK IN THIS DIVISION SHALL ALSO APPLY TO DIVISION 28.
B. THIS CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE A COMPLETE ELECTRICAL AND FIRE ALARM SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS AND AS REQUIRED BY JOB CONDITIONS. WORK IS TO BE COMPLETE IN EVERY RESPECT, WHETHER SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS OR NOT.
C. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE OWNER (BUILDING OWNER, LANDLORD OR TENANT), SHALL BE PROVIDED BY THIS CONTRACTOR.
D. THIS WORK, MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING ITEMS:
a. THE RELOCATION AND/OR INSTALLATION OF ELECTRICAL PANELBOARDS, TRANSFORMERS, SAFETY AND DISCONNECT SWITCHES, MOTOR STARTERS, VFD'S AND LIGHTING. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO INCLUDE IN HIS BID FOR PROVIDING SERVICE EQUIPMENT NECESSARY FOR TIE-IN TO OWNER'S DISTRIBUTION EQUIPMENT. REFER TO ELECTRICAL RISER DIAGRAM FOR ADDITIONAL INFORMATION.
b. CONTRACTOR MUST ALSO INCLUDE IN BID ALL NECESSARY MATERIALS REQUIRED TO COMPLETE THE SYSTEM INCLUDING, BUT NOT LIMITED TO, FEEDERS, BRANCH CIRCUITS, JUNCTION BOXES, OUTLET BOXES, WIRING DEVICES, COVER PLATES, CONDUITS, ETC.
c. THE WIRING OF MECHANICAL EQUIPMENT SHALL BE AS OUTLINED ON THE BID SET DRAWINGS AND IN THE SPECIFICATIONS. WORK SHALL INCLUDE WIRING OF ALL STARTERS, DISCONNECTS, VFD'S, AND POWER WIRING OF MECHANICAL EQUIPMENT EXCEPT AS SPECIFICALLY NOTED OTHERWISE. ALL LOW VOLTAGE (24 VOLT) EMS TEMPERATURE CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR UNLESS NOTED SPECIFICALLY ON DRAWING.
d. INSTALLATION OF LIGHT FIXTURES AND LAMPS AS SHOWN ON THE DRAWINGS INCLUDING ALL DEVICES, EQUIPMENT, ETC. REQUIRED FOR MOUNTING.
e. A COMPLETE CONDUIT SYSTEM FOR TELEPHONE/DATA INCLUDING BRANCH CONDUITS, OUTLET BOXES, PULL WIRES, GROUND CONDUCTORS, COVER PLATES, ETC. OR AS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.
f. A COMPLETE EMERGENCY AND EXIT LIGHTING SYSTEM AS SHOWN ON THE DRAWINGS.
g. TEMPORARY SERVICE AS REQUIRED FOR CONSTRUCTION, INCLUDING ITS REMOVAL.
h. SMOKE/FIRE ALARM WIRING, DEVICES AND CONDUIT, AS DESCRIBED ON DRAWINGS OR AS NECESSARY TO MEET OWNER, STATE, LOCAL, INSURANCE AND FIRE DEPARTMENT REQUIREMENTS.
i. INSTALLATION OF CONDUITS STUBBED TO ABOVE CEILING FOR HVAC CONTROLS AND FUTURE LOADS.
E. WORK NOT INCLUDED - THE FOLLOWING ITEMS OF ELECTRICAL CONSTRUCTION ARE NOT INCLUDED IN THIS CONTRACT:
a. TELEPHONE INSTRUMENTS AND WIRING UNLESS NOTED OTHERWISE.
b. DATA CABLE WIRING UNLESS NOTED OTHERWISE.
1.3 CODES
A. ALL WORK SHALL CONFORM TO THE OWNER'S CRITERIA, STATE, COUNTY, CITY AND LOCAL CODES AND ORDINANCES, SAFETY AND HEALTH CODES, NFPA CODES, ENERGY CODES AND ALL OTHER APPLICABLE CODES AND REQUIREMENTS. THIS CONTRACTOR SHALL INQUIRE INTO AND COMPLY WITH ALL APPLICABLE CODES, ORDINANCES AND REGULATIONS. THIS CONTRACTOR SHALL INCLUDE ANY CHANGES REQUIRED BY CODES IN THE BID AND IF THESE CHANGES ARE NOT INCLUDED IN THE BID, THEY MUST BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. AFTER CONTRACT IS AWARDED, CHANGE ORDERS FOR INCREASED COSTS DUE TO CODE ISSUES WILL NOT BE ACCEPTED UNLESS ALLOWANCES HAVE BEEN PREVIOUSLY AGREED UPON.
B. WHERE THE DRAWINGS AND SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODE OR THE OWNER'S CRITERIA, THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE SYSTEM WITH THE MORE STRINGENT REQUIREMENTS.
1.4 LICENSES, PERMITS, INSPECTION AND FEES
A. THIS CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, INSPECTIONS AND FEES REQUIRED OR RELATED TO THIS WORK. ALL COSTS ASSOCIATED WITH THESE SHALL BE PAID FOR BY THE CONTRACTOR AND INCLUDED AS PART OF THE BID.
B. FURNISH TO THE OWNER ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT THE COMPLETION OF THE PROJECT.
1.5 GUARANTEE
A. ALL MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL BE GUARANTEED FOR PERIOD OF 1 YEAR FROM THE DATE OF SUBSTANCIAL COMPLETION (OFFICIAL DATE IN WRITING) OF THE PROJECT. ALL WORK FOUND TO BE DEFECTIVE SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
B. WHERE SPECIFIC EQUIPMENT IS NOTED TO HAVE EXTENDED WARRANTIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER REGISTRATION SO THE OWNER CAN MAKE ALL APPROPRIATE CLAIMS.
1.6 RECORD DRAWINGS
A. THIS CONTRACTOR SHALL MAINTAIN ONE SET OF DRAWINGS ON THE JOBSITE, UPDATED WEEKLY, TO RECORD ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS SUCH AS:
a. LOCATIONS OF CONCEALED CONDUITS
b. PANEL DESCRIPTIONS, CIRCUIT DIRECTORIES AND LABELS
c. REVISIONS, ADDENDUMS AND CHANGE ORDERS
d. SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS, AND CONTRACTOR'S COORDINATION WITH OTHER TRADES.
B. DELIVER RECORD DRAWINGS TO THE OWNER AT PROJECT COMPLETION.
1.7 DEMOLITION
A. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING WORK AND THE DEMOLITION PROVIDED BY THE GENERAL CONTRACTOR. COORDINATE WITH THE GENERAL CONTRACTOR ALL EXISTING EQUIPMENT REQUIRED TO BE LEFT INTACT.
B. THIS CONTRACTOR SHALL INCLUDE, AND WILL BE RESPONSIBLE FOR, THE REMOVAL OF ALL EXISTING CONDUIT, FIRE ALARM COMPONENTS, AND EQUIPMENT, ETC. UNLESS SPECIFICALLY NOTED OTHERWISE. CONTRACTOR MUST VERIFY WITH THE OWNER ALL PRESUMED ABANDONED EQUIPMENT. CONDUITAND SWITCH GEAR PRIOR TO REMOVAL. EXISTING ABANDONED CONDUIT OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE, OR OTHERWISE INACCESSIBLE, ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT TO BE REUSED IN THIS PROJECT. IF REQUIRED BY OWNER OR CODES, ABANDONED CONDUIT MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE PROPOSAL.
1.8 TEMPORARY LIGHT AND POWER
A. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY WIRING AND RELATED GROUND FAULT INTERRUPTION PROTECTION FOR LIGHT AND POWER FOR ALL CONTRACTORS DURING CONSTRUCTION AND IS RESPONSIBLE FOR ITS REMOVAL.

PART 2 - PRODUCTS
2.1 MATERIALS
A. MATERIALS UTILIZED IN THE CONSTRUCTION OF THIS PROJECT SHALL BE NEW AND CARRY ALL UL LABELS WHERE APPLICABLE, UNLESS APPROVED BY THE OWNER.
B. ANY USED EQUIPMENT OR MATERIALS USED SHALL STILL CARRY THE SPECIFIED 1 YEAR GUARANTEE AND APPROVAL OF THE USE OF THIS EQUIPMENT OR MATERIALS DOES NOT RELIEVE THE CONTRACTOR FROM ENSURING EVERYTHING IS OPERATIONAL.
2.2 MANUFACTURERS
A. WHERE TRADE NAMES OR MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE CONSIDERED THE BASIS OF DESIGN AND USED AS A MINIMUM FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUAL OR BETTER IN ALL ASPECTS TO THAT SPECIFIED, WILL BE SUBJECT TO APPROVAL IN WRITING BY THE ENGINEER THROUGH THE SHOP DRAWING SUBMITTAL PROCESS, FOR ACCEPTANCE PRIOR TO INSTALLATION. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
2.3 SLEEVES
A. PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH ITS RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2 INCHES ABOVE THE FLOOR.
B. CONTRACTOR SHALL COORDINATE THROUGH THE GENERAL CONTRACTOR AND OWNER ANY CORE DRILLING OR CUTTING OF OPENINGS IN MASONRY WALLS OR CONCRETE FLOORS.
C. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND FLOORS SHALL BE FIRE SEALED. REFER TO "FIRE STOPPING".
D. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS AND PARTITIONS SHALL BE STANDARD WEIGHT STEEL PIPE FINISHED WITH SMOOTH EDGES. FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS OR FOR CONCEALED VERTICAL PIPING, SLEEVES SHALL BE MINIMUM NO. 22 USG GALVANIZED STEEL.
2.4 FLAME SPREAD PROPERTIES OF MATERIALS
A. MATERIALS USED ON THIS PROJECT SHALL EACH HAVE A FLAME SPREAD RATING OF 25 OR LESS, AND A SMOKE DEVELOPED RATING OF 50 OR LESS, AS DETERMINED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH NFPA-255.
2.5 FIRE STOPPING
A. PROVIDE FIRE STOPPING IN SEALING OF PENETRATIONS IN FIRE-RATED CONSTRUCTION, HORIZONTAL AND VERTICAL, INCLUDING THE FOLLOWING MATERIALS:
a. FOAM: DOW CORNING FIRESTOP SILICONE RTV FOAM, CAT #2001 LIQUID COMPONENT PART A (BLACK) AND LIQUID COMPONENT PART B (OFF-WHITE).
b. SEALANT: 3M 1000 NS AND 1003 SL SILICONE ADHESIVE SEALANT.
c. DAMMING MATERIALS: MINERAL FIBERBOARD, AS SELECTED BY THE APPLICATOR.
B. MIXES SHALL CONFORM TO THE MANUFACTURER'S DIRECTIONS.
2.6 FLOOR, CEILING AND WALL PLATES
A. PROVIDE CHROME-PLATED, ONE-PIECE, ESCUTCHEONS ON CONDUITS AND HANGER RODS PENETRATING THE WALLS, FLOORS, AND CEILINGS IN FINISHED AREAS OF THE BUILDING. SPLIT RING ESCUTCHEONS ARE NOT ACCEPTABLE.

PART 3 - EXECUTION
3.1 SPACE AND EQUIPMENT ARRANGEMENT
A. EACH CONTRACTOR SHALL BE RESPONSIBLE TO SEE THAT THEIR PURCHASED EQUIPMENT WILL FIT THE SPACES AVAILABLE. IN CERTAIN INSTANCES HE WILL NOTE THAT THE EQUIPMENT IS MENTIONED BY NAME IN THE EQUIPMENT SCHEDULES. IN THESE CASES IT IS THAT EQUIPMENT WHOSE DIMENSIONS AND CONNECTION ARRANGEMENTS HAVE BEEN USED FOR THE PREPARATION OF THE LAYOUTS SHOWN ON THE WORKING DRAWINGS. SHOULD THE USE OF EQUIPMENT BY OTHER APPROVED MANUFACTURERS OR OF THEIR PHYSICAL SHAPE THAN THOSE SHOWN ON THE DRAWINGS BE PROPOSED, THE CONTRACTOR SHALL CONFIRM THE EQUIPMENT WILL FIT WITHIN THE ALLOTTED SPACE WITHOUT ARCHITECTURAL MODIFICATIONS OR IMPACT ON OTHER TRADES.
B. ALL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING, AND REPAIRING. PROVIDE SUFFICIENT SERVICE ACCESS TO ALL EQUIPMENT.
C. BEFORE STARTING WORK, THIS CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, STRUCTURAL, FIRE PROTECTION, MECHANICAL, AND PLUMBING PLANS, SHOP DRAWINGS, AND SPECIFICATIONS TO SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF THE ELECTRICAL SYSTEM TO AVOID INTERFERENCES AND CONFLICTS.
3.2 MANUFACTURER'S DIRECTIONS
A. THE MANUFACTURER'S PUBLISHED DIRECTIONS SHALL BE FOLLOWED IN THE DELIVERY, STORAGE, PROTECTION, INSTALLATION, AND WIRING OF ALL EQUIPMENT AND MATERIAL. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER IN WRITING OF ANY CONFLICT BETWEEN THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND THE MANUFACTURER'S DIRECTIONS, AND SHALL OBTAIN INSTRUCTIONS BEFORE PROCEEDING WITH THE WORK. SHOULD THE CONTRACTOR PERFORM ANY WORK BEFORE RECEIVING SUCH INSTRUCTIONS, HE SHALL BEAR ALL COSTS ARISING IN CONNECTIONS WITH THE DEFICIENCIES.
3.3 CONSTRUCTION REQUIREMENTS
A. THE DRAWINGS AND SPECIFICATIONS SHOW EQUIPMENT CONNECTIONS, CONDUIT, AND WIRE SIZE, GENERAL ROUTING AND LOCATION, AND DESCRIBE THE VARIOUS SYSTEMS. THESE DOCUMENTS DESCRIBE AND SIZE EQUIPMENT, ITS GENERAL LOCATION, USAGE, SUPPORT, AND AUXILIARY REQUIREMENTS. THEY DESCRIBE MOST, BUT NOT ALL OF THE MATERIALS AND THEIR USAGE FOR THIS PROJECT.
B. CONTRACT DOCUMENTS DO NOT DETAIL ALL JOB REQUIREMENTS. THEY DO NOT SHOW LAYOUTS, LOCATIONS, OR ELEVATIONS OF CONDUITS, ANCHORS, SLEEVES, HANGERS, JUNCTION BOXES, OR ACCESS DOORS. THEY DO NOT SHOW FINAL PRECISE LOCATIONS OF EQUIPMENT BY DIMENSIONS IN ALL INSTANCES.
C. THE EXACT LOCATION OF EACH ITEM SHALL BE DETERMINED BY REFERENCE TO THE PROJECT CONTRACT DRAWINGS, AND TO DETAILS, EQUIPMENT DRAWINGS, AND ROUGH-IN DRAWINGS, BY MEASUREMENTS AT THE BUILDING, AND IN COOPERATION WITH THE VARIOUS TRADES. MINOR RELOCATION NECESSITATED BY THE CONDITIONS AT THE SITE OR DIRECTED BY THE OWNER SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER. WHERE CONFLICTS OCCUR, WORK IN THE AREA INVOLVED.
3.4 EQUIPMENT HANGERS AND SUPPORTS
A. SUSPENDED EQUIPMENT SHALL HAVE SUPPORTS CONSISTING OF MANUFACTURED METAL FRAMING OR HANGERS CONFORMING TO SECTION 260529.
3.5 INSTRUCTIONS TO OWNER'S PERSONNEL
A. PROVIDE THE SERVICES OF COMPETENT ENGINEERS OR TECHNICIANS TO INSTRUCT REPRESENTATIVES OF THE OWNER IN COMPLETE AND DETAILED OPERATION AND MAINTENANCE OF EACH ITEM OF EQUIPMENT AND EACH SYSTEM.
B. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROPER MAINTENANCE OF EQUIPMENT AND SYSTEMS UNTIL THE INSTRUCTIONS HAVE BEEN GIVEN TO THE OWNER'S PERSONNEL AND THE LETTER OF RELEASE ACKNOWLEDGED.
C. PROVIDE OPERATION & MAINTENANCE MANUALS (3 COPIES), ALONG WITH AS-BUILT SET OF PRINTS PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT.
3.6 ELECTRICAL WIRING OF MOTORS
A. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL DISCONNECT SWITCHES AND MOTOR CONTROLS AS REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT, UNLESS SUCH EQUIPMENT IS SPECIFIED TO BE PROVIDED WITH FACTORY MOUNTED DISCONNECT SWITCHES, STARTERS, OR VFD'S. THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO EQUIPMENT AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.
B. THE MECHANICAL AND PLUMBING DESIGN AND DRAWINGS ARE BASED ON THE EQUIPMENT SCHEDULED AND SHOWN ON THE DRAWINGS, SHOULD ANY CONTRACTOR SUBMIT FOR APPROVAL EQUIPMENT REQUIRING CHANGES TO THE MECHANICAL AND PLUMBING DESIGN FOR WHICH THE MECHANICAL OR PLUMBING CONTRACTOR WILL REQUEST AN EXTRA, THIS EXTRA SHALL BE PAID BY THE CONTRACTOR PROVIDING THE ALTERNATE EQUIPMENT REQUIRING THE CHANGE.
C. ELECTRICAL CONTRACTOR SHALL REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL ELECTRICAL WORK TO BE INCLUDED IN HIS BID.
D. ELECTRICAL CONTRACTOR SHALL DO ALL POWER WIRING, LINE VOLTAGE WIRING, AND LINE VOLTAGE CONTROL WIRING INDICATED UNDER THE HEATING, VENTILATION AND AIR CONDITIONING, PLUMBING, AND FIRE PROTECTION SPECIFICATIONS AND DRAWINGS. THIS CONTRACTOR SHALL ALSO DO ALL INTERCONNECTING LINE VOLTAGE WIRING BETWEEN RELAYS AND SWITCHES AS REQUIRED.
E. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING CONDUIT FOR HVAC CONTROL WIRING WHERE REQUIRED BY CODE OR SHOWN ON PRINTS TO BE IN CONDUIT. REFER TO PLANS FOR REQUIREMENTS AND SIZES.
3.7 QUIET OPERATION
A. THIS WORK SHALL BE INSTALLED IN SUCH A MANNER THAT UNDER ALL CONDITIONS OF LOAD IT SHALL OPERATE WITHOUT SOUND OR VIBRATION, WHICH IS OBJECTIONABLE IN THE OCCUPIED SPACES IN THE OPINION OF THE OWNER. IN THE CASE OF MOVING MACHINERY, SOUND OR VIBRATION ANNOYINGLY NOTICEABLE INSIDE ITS OWN ROOM CAN BE CONSIDERED AS OBJECTIONABLE. IN ANY CASE, THE SITUATION SHALL BE REMEDIED AT NO COST TO THE OWNER.
3.8 CUTTING AND PATCHING
A. PROVIDE ALL CUTTING, CHASING AND CHANNELING REQUIRED FOR ANY WORK UNDER THIS DIVISION. CUTTING SHALL HAVE PRIOR APPROVAL FROM ARCHITECT AND OWNER.
B. ALL PATCHING SHALL BE BY THE GENERAL CONTRACTOR AND SHALL MATCH THE SURROUNDING SURFACES.
3.9 TESTS
A. THE CONTRACTOR INSTALLING THE ELECTRICAL SYSTEMS SHALL FOLLOW ALL TESTS AS REQUIRED TO PROVE COMPLIANCE WITH ALL LOCAL CODES.

END OF SECTION.

SECTION 260519 - CONDUCTORS
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 260500.

PART 2 - PRODUCTS
2.1 SINGLE CONDUCTORS
A. CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS SHALL BE COPPER AND THE AWG SIZE AND TYPE AS SHOWN ON DRAWINGS. MINIMUM WIRE SIZE #12 UNLESS NOTED OTHERWISE ON PLAN OR IN GENERAL NOTES FOR VOLTAGE DROP. THE CONDUCTORS SHALL BE 600 VOLT INSULATION, TYPE THW, THWN OR THHN
B. CONDUCTORS MAY BE STRANDED FOR SIZES #8 AWG AND LARGER. CONDUCTOR SIZES #12 AND #10 SHALL BE SOLID (NOT STRANDED).
C. ALUMINUM CONDUCTORS ARE NOT PERMITTED. CONTRACTOR MUST OBTAIN WRITTEN PERMISSION FROM GENERAL CONTRACTOR AND ENGINEER WHEN USED.
2.2 MULTICONDUCTOR CABLES
A. PROVIDE TYPE MC MULTICONDUCTOR CABLE IN COMPLIANCE WITH NEMA WC 70, WITH METAL CLAD AND GROUND WIRE.
2.3 CONNECTORS
A. WIRE CONNECTORS SHALL BE EQUAL TO "SCOTCH LOCK" FOR #8 AWG WIRE AND SMALLER. USE T&B "LOCKTIGHT" FOR #6 AWG WIRE AND LARGER.

PART 3 - EXECUTION
3.1 APPLICATIONS AND INSTALLATION
A. ALL WIRING SHALL BE IN CONDUIT, UNLESS NOTED OTHERWISE (IE-LOW VOLTAGE PLENUM RATED WIRE).
B. THE USE OF SHARED NEUTRALS IS REQUIRED FOR LIGHTING CIRCUITS AND ALLOWED PER DRAWING NOTES. IT SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND LOCAL CODES.
C. THE USE OF ROMEX, BX, ETC. IS NOT PERMITTED.
D. ALL WIRING TO BE COLOR-CODED AS FOLLOWS:
120/208 VOLT SYSTEM
NEUTRAL - WHITE
PHASE A OR L1 - BLACK
PHASE B OR L2 - RED
PHASE C OR L3 - BLUE
GROUND - GREEN
ISOLATED GROUND - GREEN WITH YELLOW TRACER

277/480 VOLT SYSTEM
NEUTRAL - GRAY
PHASE A OR L1 - BROWN
PHASE B OR L2 - ORANGE
PHASE C OR L3 - YELLOW
GROUND - GREEN WITH YELLOW TRACER
E. UNLESS NOTED OTHERWISE, MC CABLE IS ONLY ALLOWED WITHIN PARTITIONS OR MILLWORK AND LOCATIONS DESCRIBED IN SECTION 260533.

END OF SECTION.

SECTION 260526 - GROUNDING
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 260500.

PART 2 - PRODUCTS
2.1 CONDUCTORS AND JUMPERS
A. ALL CONDUIT, INCLUDING FLEXIBLE CONDUIT, SHALL BE GROUNDED WITH A GREEN COPPER GROUNDING CONDUCTOR.
B. GROUNDING CONNECTIONS MADE TO THE WATER PIPING SYSTEM SHALL BE COORDINATED WITH THE PLUMBING CONTRACTOR AND A BONDING JUMPERS INSTALLED AROUND WATER METER PER CODES AND AS INDICATED ON DRAWING.
C. ALL DEVICES SHALL BE BONDED TO THE CONDUIT SYSTEM. USE A BONDING JUMPER BETWEEN THE OUTLET BOX AND THE DEVICE GROUNDING TERMINAL. METAL-TO-METAL CONTACT BETWEEN THE DEVICE YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE AS A BOND FOR EITHER SURFACE MOUNTED BOXES OR FLUSH TYPE BOXES. ALL JUNCTION BOXES, OUTLET BOXES, AND PULL BOXES SHALL BE BONDED TO THE CONDUIT SYSTEM.

PART 3 - EXECUTION
3.1 INSTALLATION
A. RUN A SEPARATE ISOLATED GROUNDING CONDUCTOR, #12 AWG MINIMUM, IN EACH CONDUIT FEEDING ISOLATED GROUND RECEPTACLES AND OTHER COMPUTERIZED EQUIPMENT AS SHOWN ON DRAWINGS.
B. ALL ENCLOSURES AND NON-CURRENT CARRYING METAL PARTS ARE TO BE GROUNDED. CONDUIT SYSTEM IS TO BE ELECTRICALLY CONTINUOUS. ALL LOCKNUTS MUST CUT THROUGH ENAMELED OR PAINTED SURFACES ON CONDUIT SYSTEM. USE BONDING JUMPERS WITH APPROVED CLAMPS. ALL GROUND CLAMPS SHALL BE "PENN-UNION" OR EQUAL, SIMILAR TO "GPL" TYPE.

END OF SECTION.

SECTION 260529 - HANGERS AND SUPPORTS
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 260500.

PART 2 - PRODUCTS
2.1 STEEL SLOTTED SUPPORTS
A. HOT-DIP GALVANIZED AFTER FABRICATION OF DIMENSIONS REQUIRED FOR THE SIZE OF SUPPORTED ITEMS AND ANTICIPATED LOAD.
B. RACEWAY AND CABLE SUPPORTS AS DESCRIBED IN NECA 1 AND 101.
C. USE STEEL HANGERS, CLAMPS AND ASSOCIATED FITTINGS, DESIGNED FOR TYPES AND SIZES OF RACEWAYS TO BE SUPPORTED.

PART 3 - EXECUTION
3.1 INSTALLATION
A. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS ANGLE IRON, BANDS, C-CLAMPS WITH RETAINING CLIPS, CHANNELS, HANGER RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK.
B. HANGERS SHALL BE FASTENED TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO PIPING. HANGING FROM METAL DECK IS NOT PERMITTED. HANGERS MUST BE ATTACHED TO UPPER CHORD OF BAR JOIST. WHERE INTERFERENCES OCCUR, AND IN ORDER TO SUPPORT CONDUIT, THE CONTRACTOR MUST INSTALL TRAPEZE TYPE HANGERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO OTHER SYSTEMS AND EQUIPMENT. HANGER TYPES AND INSTALLATION METHODS ARE ALSO SUBJECT TO OWNER CRITERIA.
C. HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE DI-ELECTRICALLY SEPARATED.

END OF SECTION.

SECTION 260533 - RACEWAYS AND BOXES
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. REFER TO SECTION 260500.
B. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUITS SERVING ALL EQUIPMENT, INCLUDING BUT NOT LIMITED TO LIGHTING, RECEPTACLES, HEATING, AIR CONDITIONING, PLUMBING EQUIPMENT, TELEPHONE, DATA, AUDIO/VISUAL, SECURITY, AND ELECTRICAL EQUIPMENT.

PART 2 - PRODUCTS
2.1 RACEWAYS
A. ALL CONDUITS SHALL BE GALVANIZED IMC, EMT OR MC TYPE UNLESS OTHERWISE SPECIFIED IN SPECIFICATIONS OR ON DRAWINGS. ALL CONDUIT IS TO BE UL LABELED.
a. EMT CONNECTORS SHALL BE STEEL COMPRESSION TYPE.
b. CONDUIT UNDER SLAB ON GRADE SHALL BE RIGID STEEL, OR SCHEDULE 40 PVC WITH RIGID STEEL ELLS WHERE PERMITTED BY OWNER OR CODE.
B. MINIMUM SIZE OF CONDUIT SHALL BE:
a. 3/4 INCH FOR INDIVIDUAL LIGHTING FIXTURE CONNECTIONS OR TO INDIVIDUAL LIGHT SWITCHES AND 3/4 INCH FOR ALL OTHER LIGHTING AND POWER CIRCUITING.
b. IF HVAC CONTROL WIRING IS REQUIRED TO BE RUN IN CONDUIT, IT SHALL BE A MINIMUM OF 3/4 INCH, UNLESS NOTED OTHERWISE ON DRAWINGS.
C. ALL UNDER FLOOR CONDUIT SHALL BE OF MINIMUM 3/4 INCH SIZE.
2.2 OUTLET BOXES
A. ALL OUTLET BOXES SHALL BE GALVANIZED PRESSED STEEL OF THE STANDARD KNOCKOUT TYPE. NO ROUND OUTLET BOXES SHALL BE PERMITTED UNLESS INDICATED AND FOR LIGHTING THAT REQUIRE SUCH CONFIGURATION. CONCEALED BOXES SHALL NOT BE LESS THAN 4 INCH SQUARE AND 1-½ INCH DEEP, WITH PLASTER RINGS.
B. ALL KNOCKOUT BOXES, UPON WHICH LIGHTING FIXTURES ARE TO BE INSTALLED, SHALL BE EQUIPPED WITH 3/8 INCH FIXTURE STUDS.
2.3 JUNCTION AND PULL BOXES
A. BOXES AND COVERS SHALL BE GALVANIZED STEEL OF CODE GAUGE AND SIZE.

PART 3 - EXECUTION
3.1 INSTALLATION
A. SUPPORT ALL CONDUIT IN ACCORDANCE WITH THE NEC AND LOCAL CODES.
B. GENERALLY, ALL CONDUIT SHALL BE CONCEALED EXCEPT FOR UNFINISHED AREAS, SUCH AS EQUIPMENT ROOMS. EXPOSED CONDUIT SHALL BE ALLOWED ONLY AS NOTED ON PLAN AND AS APPROVED BY TENANT'S PROJECT MANAGER. PAINTING OF CONDUITS, NOTED ON DRAWINGS OR SPECIFICATIONS WILL BE BY GENERAL CONTRACTOR.
C. FLEXIBLE METAL CONDUIT OR MC TYPE CABLE IS NOT ALLOWED.
D. THE USE OF ROMEX, BX, ETC. IS NOT PERMITTED.
E. PROVIDE PULL-WIRE IN ALL EMPTY CONDUITS EXCEPT AS NOTED OTHERWISE ON DRAWINGS.
F. HOME RUNS ARE BETWEEN RELAYS AND SWITCHES AS REQUIRED.
G. ALL CONDUITS MUST BE SIZED PER NEC AND LOCAL CODES.
H. INSTALL BOXES RIGIDLY FROM BUILDING STRUCTURE AND SUPPORT INDEPENDENTLY OF THE CONDUIT SYSTEM. ALSO PROVIDE SUITABLE BOX EXTENSIONS TO EXTEND BOXES TO FINISHED FACES OF FLOORS, CEILINGS, WALLS, ETC. ALL OUTLET BOXES TO BE PROVIDED WITH CADDY "QUICK-MOUNT BOX SUPPORT" TO MINIMIZE THE DEFLECTION THAT OCCURS WHEN PLUGGING/UNPLUGGING INTO THESE DEVICES.
I. UNLESS OTHERWISE NOTED ON DRAWINGS OR OTHERWISE REQUIRED BY THE NATIONAL ELECTRIC CODE, HANDICAP CODES OR LOCAL CODES, OUTLET HEIGHTS SHALL BE AS FOLLOWS:
a. SWITCH HEIGHT 48 INCHES FROM FINISHED FLOOR TO CENTERLINE OF OUTLET
b. CONVENIENCE OUTLETS: 18 INCHES FROM FINISHED FLOOR TO CENTERLINE OF OUTLET
c. TELEPHONE OUTLETS SHALL BE LOCATED AS NOTED ON DRAWINGS
J. ARRANGE CIRCUITS TO AVOID THE USE OF JUNCTION BOXES IN INACCESSIBLE LOCATIONS. THE USE OF JUNCTION BOXES ABOVE DRYWALL CEILINGS SHOULD BE LIMITED TO LOCATIONS NEAR ACCESS FRAMES USED FOR DIFFUSERS AND RETURN AIR GRILLES OR ACCESS PANELS AS LOCATED ON PLANS.
K. JUNCTION AND PULL BOXES MUST BE LABELED WITH CIRCUIT NUMBER IDENTIFICATION AND SYSTEM TYPE ON COVER.
L. JUNCTION AND PULL BOXES MUST BE ACCESSIBLE ACCORDING TO NEC 314.29. REFER TO ARCHITECTURAL S

KITCHEN ELECTRICAL ROUGH-IN SCHEDULE

REFERENCE ELECTRICAL FLOOR PLANS FOR APPROXIMATE EQUIPMENT LOCATIONS

NUMBER	MACHINE DESIGNATION	VOLTAGE	PHASE	C.B. SIZE	FEEDER	LOCATION	TERMINATION	LOAD	REMARKS
E10	CONVENIENCE OUTLET	120	1	20	2#12, #12G, 3/4"C	WALL (24" AFF)	DUPLEX RECEPTACLE (MOUNT HORIZONTAL)	16 A	
E13	CONVENIENCE OUTLET	120	1	20	2#12, #12G, 3/4"C	WALL (48" AFF)	WEATHERPROOF RECEPTACLE WITH SPRING COVER	16 A	
E109	ICE MACHINE	120	1	20	2#12, #12G, 3/4"C	WALL (60" AFF)	DUPLEX RECEPTACLE (MOUNT HORIZONTAL)	16 A	
E139	MOBILE HEATED CABINET	120	1	20	2#10, #10G, 3/4"C	WALL (47" AFF)	SINGLE PURPOSE RECEPTACLE	20 A	
E190	REACH-IN HEATED CABINET 1DR	208	1	30	2#10, #10G, 3/4"C	WALL (90" AFF)	SINGLE PURPOSE NEMA 6-30R RECEPTACLE	30 A	
E192	REACH-IN REFRIGERATOR 1DR	120	1	20	2#12, #12G, 3/4"C	WALL (90" AFF)	DUPLEX RECEPTACLE (MOUNT HORIZONTAL)	2.2 A	
E194	FREEZER	120	1	20	2#12, #12G, 3/4"C	WALL (86" AFF)	DUPLEX RECEPTACLE (MOUNT HORIZONTAL)	3.7 A	
E203	HEATED MERCHANDISER	120/208	1	20	4#12, #12G, 3/4"C	WALL (24" AFF)	DUPLEX RECEPTACLE (MOUNT HORIZONTAL)	11.3 A	
E214	CASH REGISTER	120	1	20	2#12, #12G, 3/4"C	WALL (24" AFF)	DUPLEX RECEPTACLE (MOUNT HORIZONTAL)	16 A	DEDICATED CIRCUIT FOR EACH POS
E214A	POS	-	-	-	3/4"C	WALL (24" AFF)	JUNCTION BOX	-	EMPTY 3/4" CONDUIT RUN FROM CASHIER STATION FOR POS SYSTEM BY ELECTRICAL CONTRACTOR. COORDINATE END LOCATION OF CONDUIT RUN FOOD SERVICE DESIGNERS AND ARCHITECT. BRANCH TO CONNECTION ON EQUIPMENT.
E543	2 DOOR REFRIGERATOR / TABLE RECEPTACLE	120	1	20	2#12, #12G, 3/4"C	RECESSED UNDER TABLE	DUPLEX RECEPTACLE (MOUNT HORIZONTAL)	8.5 A	EXTEND CONDUIT AND CONDUCTOR THRU UTILITY CHASE UNDER THE TABLE TO A RECESSED RECEPTACLE.
E615	VIDEO/DATA SYSTEM	120	1	20	2#12, #12G, 3/4"C	CEILING (VERIFY AFF)	DUPLEX RECEPTACLE (MOUNT HORIZONTAL)	5 A	PROVIDE AND INSTALL DROP CORD AT VIDEO LOCATION
E615A	VIDEO/DATA SYSTEM	-	-	-	-	CEILING (VERIFY AFF)	JUNCTION BOX	-	PROVIDE AND INSTALL JUNCTION BOX AT DATA LOCATION
E802	WORKTOP FREEZER	120	1	20	2#12, #12G, 3/4"C	WALL (48" AFF)	DUPLEX RECEPTACLE (MOUNT HORIZONTAL)	5 A	

GENERAL NOTES - E201

A. PROVIDE LEGRAND SERIES #2000 SURFACE MOUNTED WIREMOLD LARGE STEEL RACEWAY SYSTEMS FOR ALL AREAS WHERE SURFACE MOUNTED WIREWAYS FOR BRANCH CIRCUITING IS REQUIRED IN AREAS OPEN TO THE PUBLIC.

B. ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUITING FOR ALL EGRESS LIGHTING THROUGHOUT THE BUILDING FROM PANELBOARD X. PROVIDE EGRESS LIGHTING TO MAINTAIN AN AVERAGE OF 1 FOOT-CANDLE ILLUMINATION WITHIN THE EGRESS PATHWAY. THERE SHALL BE NO AREA LESS THAN 0.1 FOOT-CANDLE ALLOWED WITHIN THE EGRESS PATHWAY. EGRESS LIGHTING SHALL HAVE NO MORE THAN 1200W PER CIRCUIT. PROVIDE UL924 DEVICE FOR ALL EGRESS LIGHTING SUCH THAT THE EGRESS LIGHTING SHALL BE CONTROLLED WITH THE ADJACENT NORMAL LIGHTING, AS INDICATED IN LIGHTING CONTROL NARRATIVE ON SHEET E001.

C. ELECTRICAL CONTRACTOR SHALL REMOVE ALL EXISTING LIGHTING AND THEIR ASSOCIATED CONDUCTORS AND CONDUITS BACK TO THEIR POWER SOURCE THROUGHOUT THE CONCESSIONS AREA.

D. ALL EXISTING FIRE ALARM THROUGHOUT THE CONCESSIONS AREA SHALL BE REMOVED. REFER TO GENERAL FIRE ALARM NOTES ON E001 FOR FURTHER INFORMATION.

E. ALL EXISTING HORIZONTAL BRANCH CIRCUITS, CONDUITS, AND CONDUCTORS THROUGHOUT THE CONCESSIONS AREA SHALL BE REMOVED BACK TO THE PANELBOARD.

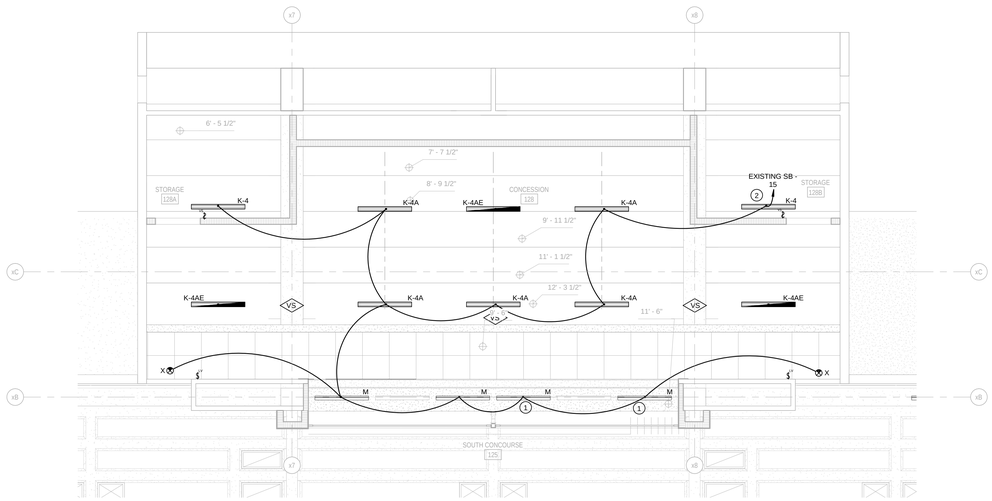
ⓧ KEYED NOTES - E201

1. EXISTING LIGHT FIXTURE M SHALL BE RELOCATED TO INDICATED POSITION. RECIRCUIT THE FIXTURE'S POWER CIRCUIT AS SHOWN ON THE DRAWINGS.
2. LIGHTING PLACEMENT SHALL NOT CONFLICT WITH THE DEDICATED ELECTRICAL SPACE OF THE PANELBOARD.
3. SUPPORT AND PROTECT EXISTING PANELBOARD AS REQUIRED FOR DEMO OF EXISTING WALL AND INSTALLATION OF NEW WALL. SURFACE MOUNT PANELBOARD AS SHOWN ON THE DRAWINGS AT THE NEW WALL LOCATION.
4. ELECTRICAL PANELBOARD, TRANSFORMER, AND DISCONNECT EQUIPMENT SHALL BE EXISTING TO REMAIN. EQUIPMENT SHALL BE PROTECTED DURING SURROUNDING DEMOLITION.

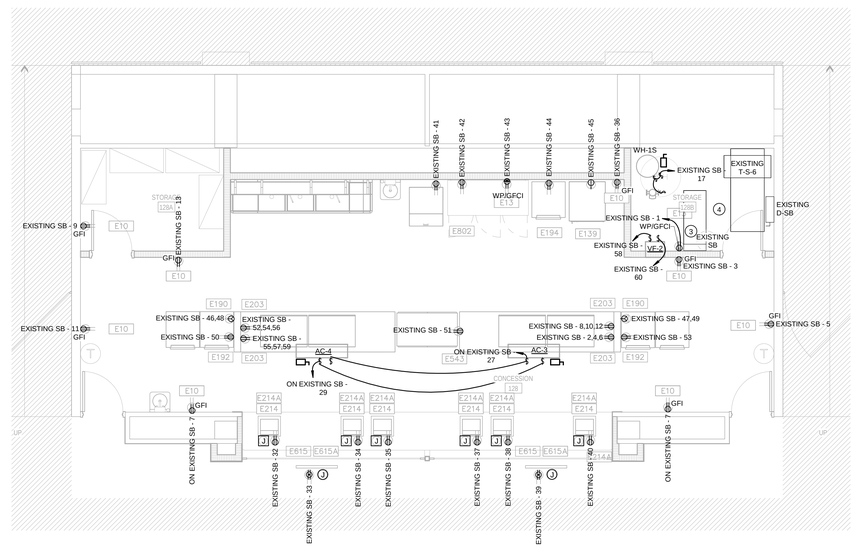
EMERGENCY LIGHTING NOTE:

ALL EMERGENCY LIGHTING SHALL BE CONTROLLED WITH NORMAL LIGHTING IN SAME SPACE/CONTROL ZONE VIA UL924 DEVICE.

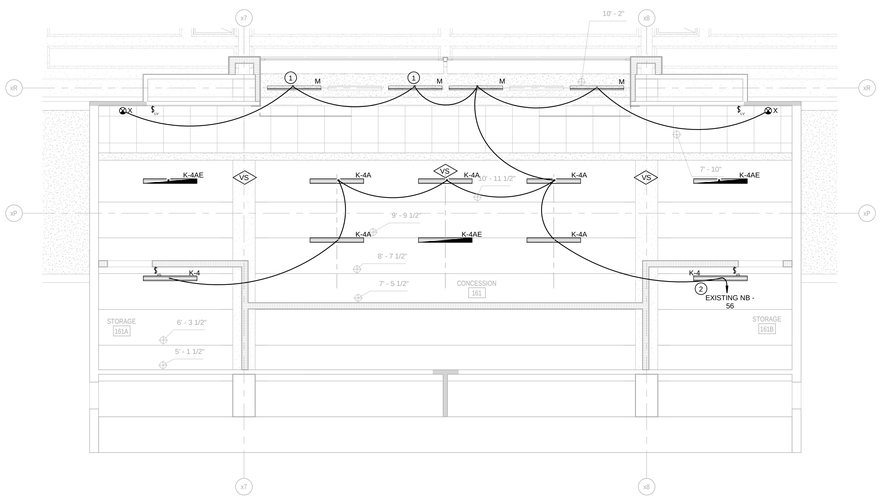
REFER TO FOOD SERVICE DRAWINGS AND SCHEDULES FOR ELECTRICAL SCOPE AND POWER REQUIREMENTS.



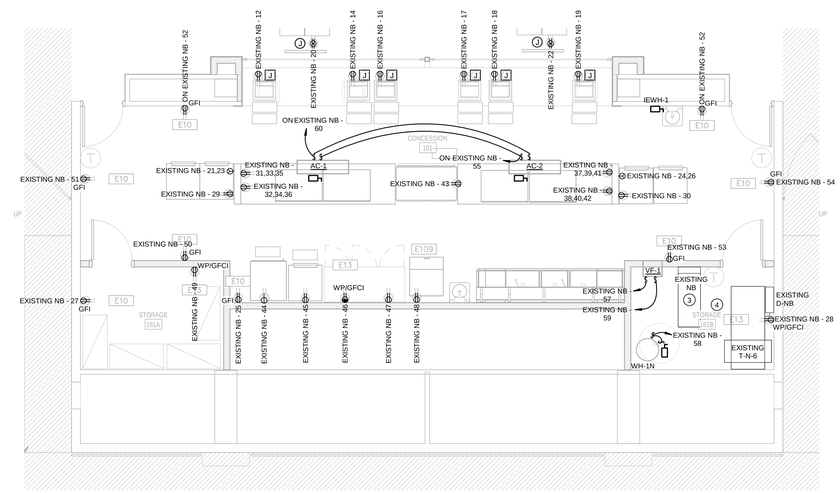
4 ENLARGED LIGHTING EQUIPMENT PLAN - SOUTH CONCOURSE
1/4" = 1'-0"



2 ENLARGED ELECTRICAL CONCESSION PLAN - SOUTH CONCOURSE
1/4" = 1'-0"



3 ENLARGED LIGHTING EQUIPMENT PLAN - NORTH CONCOURSE
1/4" = 1'-0"



1 ENLARGED ELECTRICAL CONCESSION PLAN - NORTH CONCOURSE
1/4" = 1'-0"

REVISIONS DENOTED BY △

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ELECTRICAL	KRISTIN STOWART

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D. SCOTT BROWN 89097 LICENSED PROFESSIONAL ENGINEER
4-15-2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT # 18055-01	MANAGER: PMI
ISSUED FOR:CONSTRUCTION	DRAFTER: PMI
DATE: April 15, 2021	CHECKED: PMI

ENLARGED ELECTRICAL CONCESSION PLAN

SHEET
E201
OF 1-E2 SHEETS

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LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL NUMBER	LAMPS	VOLT	WATTS	DIMMING	REMARKS
K-4	4' SURFACE MOUNTED LOW PROFILE LED WRAPAROUND LENS	LITHONIA	BLWP4-48L-ADP-120-GZ10-LP840	INTEGRAL 4000K LED	120 V	40 W	0-10V	
K-4A	4' SURFACE MOUNTED LOW PROFILE LED WRAPAROUND LENS	LITHONIA	BLWP4-72L-ADP-120-GZ10-LP840	INTEGRAL 4000K LED	120 V	59 W	0-10V	
K-4AE	4' SURFACE MOUNTED LOW PROFILE LED WRAPAROUND LENS; CONNECT TO EXISTING EMERGENCY INVERTER	LITHONIA	BLWP4-72L-ADP-120-GZ10-LP840	INTEGRAL 4000K LED	120 V	59 W	0-10V	
M	4' SURFACE MOUNTED COVE	ECOSENSE	FIXTURE: L50 I 48 06 40 80 MULT [OPTICS] LEADER: CBL 3P L UNV [LENGTH]	INTEGRAL 4000K LED	120 V	24 W	ELV	
X	EDGE LIT EXIT SIGN	LITHONIA	EDGR-1-RMR-EL-SD		120 V	5 W		

GENERAL NOTES:

A CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ACCESSORIES FOR PROPER MOUNTING OF FIXTURES IN SPECIFIC CEILING PER LOCATION OF FIXTURES.
B CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE ENGINEER OF ALL LIGHTING FIXTURES (NEW OR SUBSTITUTES).
C CONTRACTOR SHALL COORDINATE FINISH, MOUNTING HEIGHTS (IF SUSPENDED), LENSING, AND OTHER AESTHETIC FEATURES OF ALL FIXTURES WITH ARCHITECT.
D CONTRACTOR SHALL PROVIDE AN ADDITIONAL 5 EXIT SIGNS OR 10%, WHICHEVER IS GREATER, AS ATTIC STOCK FOR FUTURE USE. ATTIC STOCK EXIT SIGN SPECIFICATION SHALL MATCH ALL THE OTHER EXIT SIGNS ON THIS PROJECT, AS SPECIFIED IN THE LIGHT FIXTURE SCHEDULE.

NOTES:

1 PROVIDE CONTINUOUS LENGTH AS SHOWN ON PLANS. CONFIRM EXACT LENGTH WITH ARCHITECTURAL DETAILS AND ARCHITECT. PROVIDE ALL ACCESSORIES FOR A FULLY FUNCTIONING SYSTEM.
2 PROVIDE NUMBER OF FACES AND CHEVRONS PER PLANS.
3 COORDINATE MOUNTING, LENGTH, AND OTHER DETAILS WITH ARCHITECT AS FIXTURE IS INCORPORATED INTO ARCHITECTURAL FEATURE.
4 FIXTURE REQUIRES REMOTE TRANSFORMER/ DRIVER. CONTRACTOR SHALL SIZE AND SPACE REMOTE TRANSFORMERS/ DRIVERS TO ELIMINATE VOLTAGE DROP. TRANSFORMERS/ DRIVERS SHALL BE VISUALLY AND ACOUSTICALLY CONCEALED.

MECHANICAL EQUIPMENT POWER SCHEDULE

EQUIPMENT DESIGNATION	ELECTRICAL INFORMATION							DISCONNECT				REMARKS
	ELEC LOAD	VOLT	PHASE	OCPD RATING	PANEL	CIRCUIT NO.	FEEDER	TYPE	SIZE	POLES	FUSE	
CU-1/AC-1	25 MCA, 31 MOCP	208	1	35	NE	7,9	4#8, #10G, 3/4"C	HEAVY DUTY	60	2	NF	SEE NOTE 1, 3, 4, & 6
CU-2/AC-2	25 MCA, 31 MOCP	208	1	35	NE	11,12	4#8, #10G, 3/4"C	HEAVY DUTY	60	2	NF	SEE NOTE 1, 3, 4, & 6
CU-3/AC-3	25 MCA, 31 MOCP	208	1	35	SE	5,7	4#8, #10G, 3/4"C	HEAVY DUTY	60	2	NF	SEE NOTE 1, 3, 4, & 6
CU-4/AC-4	25 MCA, 31 MOCP	208	1	35	SE	9,11	4#8, #10G, 3/4"C	HEAVY DUTY	60	2	NF	SEE NOTE 1, 3, 4, & 6
IEWH-1N	8.3 KW, 30 FLA	208	1	30	NB	1,3	2#8, #10G, 3/4"C	PROVIDED BY PLUMBING	-	-	-	SEE NOTE 1
RP-1	1/6 HP	120	1	20	SB	17	2#12, #12G, 3/4"C	MOTOR RATED SWITCH	-	-	-	SEE NOTE 1 & 2
VF-1	1/4 HP	120	1	15	NB	57	2#12, #12G, 3/4"C	PROVIDED BY MECHANICAL	-	-	-	SEE NOTE 1 & 5
VF-2	1/4 HP	120	1	15	SB	58	2#12, #12G, 3/4"C	PROVIDED BY MECHANICAL	-	-	-	SEE NOTE 1 & 5
WH-1N	24 KW, 29 FLA	480	3	30	PN	26	3#8, #10G, 3/4"C	HEAVY DUTY	30	3	NF	SEE NOTE 1 & 2
WH-1S	27 KW, 32.5 FLA	480	3	40	PS	31	3#8, #10G, 3/4"C	HEAVY DUTY	60	3	NF	SEE NOTE 1 & 2

NOTES:

1 REFER TO HVAC AND PLUMBING PLANS FOR LOCATIONS OF EQUIPMENT. COORDINATE FINAL LOCATIONS IN FIELD.
2 PROVIDE POWER TO LEAK DETECTION AND SOLENOID VALVE FOR WATER HEATER FROM SAME CIRCUIT AS RECIRCULATION PUMP. CIRCUIT LEAK DETECTION AND SOLENOID VALVE UPSTREAM OF MOTOR RATED SWITCH FOR RECIRCULATION PUMP.
3 INDOOR AC UNIT IS POWERED FROM MEZZANINE CU UNIT. ELECTRICAL CONTRACTOR SHALL ROUTE CONDUCTORS AND CONDUIT FROM MEZZANINE CU UNIT TO CORRESPONDING INDOOR AC UNIT. COORDINATE CONDUCTOR AND CONDUIT SIZE WITH EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN.
4 FOR THE AC UNIT, PROVIDE (1) 120V, 20A POWER CIRCUIT TO LEAK DETECTION WITH MOTOR RATED SWITCH AND (1) 120V, 20A POWER CIRCUIT TO CONDENSATE PUMP WITH MOTOR RATED SWITCH AS SHOWN ON SHEET E201. FOR CU UNIT, PROVIDE (1) 120V, 20A POWER CIRCUIT TO CONDENSATE PUMP WITH LEAK DETECTION FROM THE CLOSEST 120V PANELBOARD WITH AVAILABLE CAPACITY.
5 FOR VF UNIT, PROVIDE (1) DEDICATED 120V, 20A POWER CIRCUIT TO AIR BALANCE KIT.
6 FOR ALL AC UNITS, PROVIDE A HEAVY DUTY 30A/2/NF DISCONNECTING MEANS.

PANELBOARD: EXISTING NB

Mounting: EXISTING **Volts:** 120/208 Wye **Mains Type:** MLO
Enclosure: NEMA 4X STAINLESS STEEL **Phases:** 3 **Frame Rating:** 225 A
A.I.C. Rating: EXISTING **Wires:** 4 **Supply From:** EXISTING T-N-6

CKT	Circuit Description	Trip	Poles	Wire Size	A		B		C		Wire Size	Poles	Trip	Circuit Description	CKT
1	IEWH-1	30 A	2	SEE E701	4155 VA	1200 VA					--	1	20 A	X HARDWIRED FIXTURES	2
3	--	--	--	--			4155 VA	950 VA			--	1	20 A	X MEN 164 HAND DRYER	4
5	SPARE	20 A	1	--					0 VA	950 VA	--	1	20 A	X WOMEN 163 HAND DRYER	6
7	X MEN 164 HAND DRYER	20 A	1	--	950 VA	500 VA					--	1	20 A	X HARDWIRED FIXTURES	8
9	X WOMEN 163 HAND DRYER	20 A	1	--			950 VA	950 VA			--	1	20 A	X MEN 160 HAND DRYER	10
11	X WOMEN 159 HAND DRYER	20 A	1	--					950 VA	1920 VA	SEE E201	1	20 A	*E214-CASH REGISTER	12
13	X WOMEN 159 HAND DRYER	20 A	1	--	950 VA	1920 VA					SEE E201	1	20 A	*E214-CASH REGISTER	14
15	X MEN 160 HAND DRYER	20 A	1	--			950 VA	1920 VA			SEE E201	1	20 A	*E214-CASH REGISTER	16
17	*E214-CASH REGISTER	20 A	1	SEE E201					1920 VA	1920 VA	SEE E201	1	20 A	*E214-CASH REGISTER	18
19	*E214-CASH REGISTER	20 A	1	SEE E201	1920 VA	600 VA					SEE E201	1	20 A	*E615-VIDEO/DATA SYSTEM	20
21	*E190-HEATED CABINET	30 A	2	SEE E201			3120 VA	600 VA			SEE E201	1	20 A	*E615-VIDEO/DATA SYSTEM	22
23	--	--	--	--					3120 VA	3120 VA	SEE E201	2	30 A	*E190-HEATED CABINET	24
25	E10-CONVENIENCE RECEPT	20 A	1	SEE E201	180 VA	3120 VA					--	--	--	--	26
27	E10-CONVENIENCE RECEPT	20 A	1	SEE E201			180 VA	180 VA			SEE E201	1	20 A	E13-CONVENIENCE RECEPT	28
29	*E192-REFRIGERATOR	20 A	1	SEE E201					960 VA	960 VA	SEE E201	1	20 A	*E192-REFRIGERATOR	30
31	*E203-HEATED MERCH	20 A	3	SEE E201	1357 VA	1357 VA					SEE E201	3	20 A	*E203-HEATED MERCH	32
33	--	--	--	--			1357 VA	1357 VA			--	--	--	--	34
35	--	--	--	--					1357 VA	1357 VA	--	--	--	--	36
37	*E203-HEATED MERCH	20 A	3	SEE E201	1357 VA	1357 VA					SEE E201	3	20 A	*E203-HEATED MERCH	38
39	--	--	--	--			1357 VA	1357 VA			--	--	--	--	40
41	--	--	--	--					1357 VA	1357 VA	--	--	--	--	42
43	*E543-2DR REFRIGERATOR	20 A	1	SEE E201	1020 VA	1992 VA					SEE E201	1	20 A	*E139-MOBILE HEATED CAB	44
45	E194-FREEZER	20 A	1	SEE E201			444 VA	180 VA			SEE E201	1	20 A	E13-CONVENIENCE RECEPT	46
47	*E802-WORKTOP FREEZER	20 A	1	SEE E201					600 VA	1920 VA	SEE E201	1	20 A	*E109-ICE MACHINE	48
49	E13-CONVENIENCE RECEPT	20 A	1	SEE E201	180 VA	180 VA					SEE E201	1	20 A	E10-CONVENIENCE RECEPT	50
51	E10-CONVENIENCE RECEPT	20 A	1	SEE E201			180 VA	360 VA			SEE E201	1	20 A	E10-CONVENIENCE RECEPT	52
53	E10-CONVENIENCE RECEPT	20 A	1	SEE E201					180 VA	180 VA	SEE E201	1	20 A	E10-CONVENIENCE RECEPT	54
55	AC-1,2 CONDENSATE PUMP	20 A	1	2#12, #12G, 3/4"C	400 VA	481 VA					2#12, #12G, 3/4"C	1	20 A	CONCESSION LIGHTING	56
57	VF-1	15 A	1	SEE E701			696 VA	400 VA			2#12, #12G, 3/4"C	1	20 A	WH-1N LEAK DET/SOL VALV	58
59	VF-1 AIR BALANCING KIT	20 A	1	2#12, #12G, 3/4"C					200 VA	400 VA	2#12, #12G, 3/4"C	1	20 A	AC-1,2 LEAK DETECTION	60
				Total Load:	25176 VA		21643 VA		24728 VA						
				Total Amps:	214 A		180 A		210 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	481 VA	125.00%	601 VA		
Motor	2096 VA	100.00%	2096 VA	**Total Conn. Load:**	71547 VA
Power	1200 VA	100.00%	1200 VA	**Total Est. Demand:**	54897 VA
Receptacle	2244 VA	100.00%	2244 VA	**Total Conn. Current:**	199 A
Heating	8310 VA	100.00%	8310 VA	**Total Est. Demand Current:**	152 A
Kitchen	47916 VA	65.00%	31145 VA		

Notes:
1. PANELBOARD IS EXISTING TO REMAIN.
2. ANY INSTANCE OF "X" INDICATES AN EXISTING CIRCUIT BREAKER.
3. ANY INSTANCE OF * INDICATES A GFCI TYPE BREAKER.

PANELBOARD: EXISTING SB

Mounting: EXISTING **Volts:** 120/208 Wye **Mains Type:** MLO
Enclosure: NEMA 4X STAINLESS STEEL **Phases:** 3 **Frame Rating:** 225 A
A.I.C. Rating: EXISTING **Wires:** 4 **Supply From:** EXISTING T-S-6

CKT	Circuit Description	Trip	Poles	Wire Size	A		B		C		Wire Size	Poles	Trip	Circuit Description	CKT
1	E13-CONVENIENCE RECEPT	20 A	1	SEE E201	180 VA	1357 VA					SEE E201	3	20 A	*E203-HEATED MERCH	2
3	E10-CONVENIENCE RECEPT	20 A	1	SEE E201			180 VA	1357 VA			--	--	--	--	4
5	E10-CONVENIENCE RECEPT	20 A	1	SEE E201					180 VA	1357 VA	--	--	--	--	6
7	E10-CONVENIENCE RECEPT	20 A	1	SEE E201	360 VA	1357 VA					SEE E201	3	20 A	*E203-HEATED MERCH	8
9	E10-CONVENIENCE RECEPT	20 A	1	SEE E201			180 VA	1357 VA			--	--	--	--	10
11	E10-CONVENIENCE RECEPT	20 A	1	SEE E201					180 VA	1357 VA	--	--	--	--	12
13	E10-CONVENIENCE RECEPT	20 A	1	SEE E201	180 VA	500 VA					--	1	20 A	X HARDWIRED FIXTURES	14
15	CONCESSION LIGHTING	20 A	1	2#12, #12G, 3/4"C			481 VA	950 VA			--	1	20 A	X WOMEN 131 HAND DRYER	16
17	WH-1S LEAK/SOL.	20 A	1	2#12, #12G, 3/4"C					600 VA	950 VA	--	1	20 A	X WOMEN 131 HAND DRYER	18
19	SPARE	20 A	1	--	0 VA	950 VA					--	1	20 A	X MEN 130 HAND DRYER	20
21	SPARE	20 A	1	--			0 VA	950 VA			--	1	20 A	X WOMEN 127 HAND DRYER	22
23	SPARE	20 A	1	--					0 VA	950 VA	--	1	20 A	X MEN 126 HAND DRYER	24
25	SPARE	20 A	1	--	0 VA	950 VA					--	1	20 A	X MEN 130 HAND DRYER	26
27	AC-3,4 LEAK DETECTION	20 A	1	2#12, #12G, 3/4"C			400 VA	950 VA			--	1	20 A	X WOMEN 127 HAND DRYER	28
29	AC-3,4 COND PUMP	20 A	1	2#12, #12G, 3/4"C					400 VA	950 VA	--	1	20 A	X MEN 126 HAND DRYER	30
31	X HARDWIRED FIXTURES	30 A	1	--	500 VA	1920 VA					SEE E201	1	20 A	*E214-CASH REGISTER	32
33	*E615-VIDEO/DATA SYSTEM	20 A	1	SEE E201			600 VA	1920 VA			SEE E201	1	20 A	*E214-CASH REGISTER	34
35	*E214-CASH REGISTER	20 A	1	SEE E201					1920 VA	180 VA	SEE E201	1	20 A	E10-CONVENIENCE RECEPT	36
37	*E214-CASH REGISTER	20 A	1	SEE E201	1920 VA	1920 VA					SEE E201	1	20 A	*E214-CASH REGISTER	38
39	*E615-VIDEO/DATA SYSTEM	20 A	1	SEE E201			600 VA	1920 VA			SEE E201	1	20 A	*E214-CASH REGISTER	40
41	*E109-ICE MACHINE	20 A	1	SEE E201					1920 VA	600 VA	SEE E201	1	20 A	*E802-WORKTOP FREEZER	42
43	E13-CONVENIENCE RECEPT	20 A	1	SEE E201	180 VA	444 VA					SEE E201	1	20 A	*E194-FREEZER	44
45	*E139-MOBILE HEATED CAB	20 A	1	SEE E201			1992 VA	3120 VA			SEE E201	2	30 A	*E190-HEATED CABINET	46
47	*E190-HEATED CABINET	30 A	2	SEE E201					3120 VA	3120 VA	--	--	--	--	48
49	--	--	--	--	3120 VA	264 VA					SEE E201	1	20 A	*E192-REFRIGERATOR	50
51	*E543-2DR REFRIGERATOR	20 A	1	SEE E201			1020 VA	1357 VA			SEE E201	3	20 A	*E203-HEATED MERCH	52
53	*E192-REFRIGERATOR	20 A	1	SEE E201					264 VA	1357 VA	--	--	--	--	54
55	*E203-HEATED MERCH	20 A	3	SEE E201	1357 VA	1357 VA					--	--	--	--	56
57	--	--	--	--			1357 VA	696 VA			SEE E701	1	15 A	VF-2	58
59	--	--	--	--					1357 VA	200 VA	2#12, #12G, 3/4"C	1	20 A	VF-2 AIR BALANCING KIT	60
				Total Load:	18816 VA		21387 VA		20962 VA						
				Total Amps:	157 A		181 A		177 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	481 VA	125.00%	601 VA		
Motor	2296 VA	100.00%	2296 VA	**Total Conn. Load:**	61165 VA
Power	1200 VA	100.00%	1200 VA	**Total Est. Demand:**	45119 VA
Receptacle	2400 VA	100.00%	2400 VA	**Total Conn. Current:**	170 A
Kitchen	46188 VA	65.00%	30022 VA	**Total Est. Demand Current:**	125 A

Notes:
1. PANELBOARD IS EXISTING TO REMAIN.
2. ANY INSTANCE OF "X" INDICATES AN EXISTING CIRCUIT BREAKER.
3. ANY INSTANCE OF * INDICATES A GFCI TYPE BREAKER.

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PROJECT MGR. SCOTT BROWN
MECHANICAL BRUCE ISONHART
PLUMBING JOHN HAMILTON
ELECTRICAL KRISTIN STEWART

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D. SCOTT BROWN 89097 LICENSED PROFESSIONAL ENGINEER
4-15-2021

CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

REVISIONS DENOTED BY △

PROJECT #: 18055-01 MANAGER: PMI
ISSUED FOR: CONSTRUCTION DRAFTER: PMI
DATE: April 15, 2021 CHECKED: PMI

ELECTRICAL SCHEDULES

SHEET
E701
OF 1-E7 SHEETS

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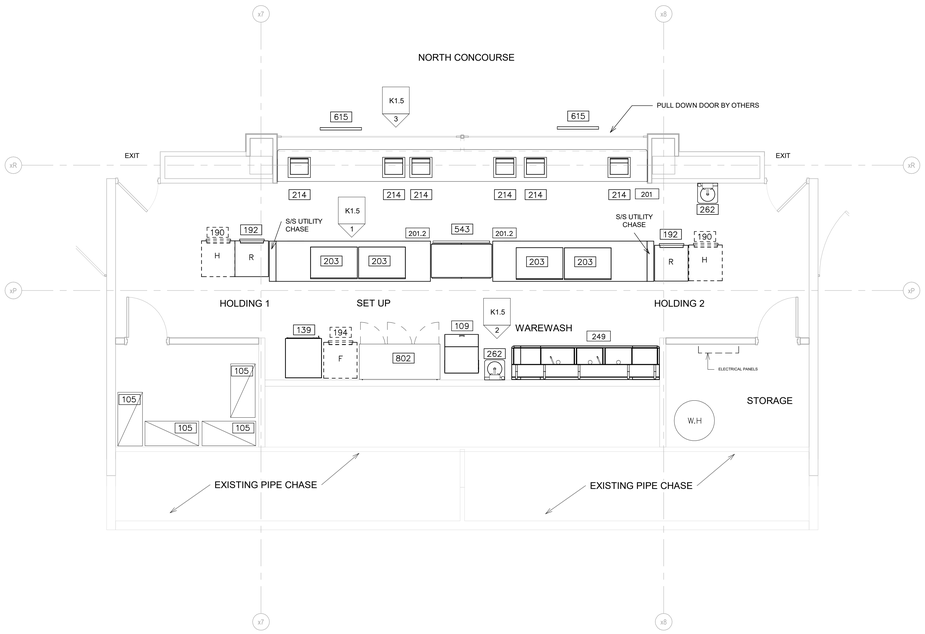
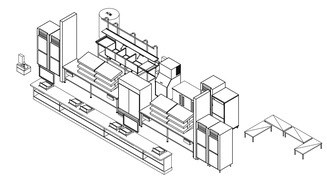


1 FOODSERVICE EQUIPMENT PLAN - NORTH CONCOURSE
1/4" = 1'-0"



3 FS EQUIPMENT ONLY - NORTH CONCOURSE

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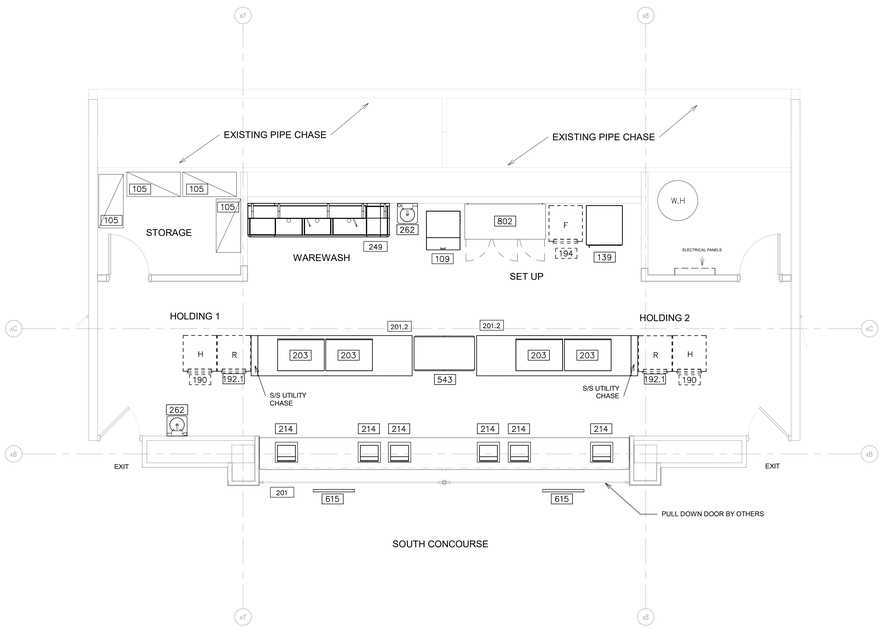
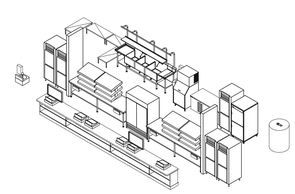
FOODSERVICE EQUIPMENT SCHEDULE

FDP ITEM	QTY	FDP DESCRIPTION	FDP REMARKS
105	8	DUNNAGE RACK	
109	2	ICE MACHINE W/ BIN	
139	2	INSUL MOBILE HEATED CABINET	
190	4	REACH-IN HEATED CABINET- 1DR	EXISTING/RELOCATED
192	2	REACH-IN REFRIGERATOR - 1DR	
192.1	2	REACH-IN REFRIGERATOR - 1DR	EXISTING/RELOCATED
194	2	REACH-IN FREEZER - 1DR	EXISTING/RELOCATED
201	2	SERVING COUNTER	
201.2	4	SERVING COUNTER	
203	8	HEATED MERCHANDISER	
214	12	CASH REGISTER	OWNER FURNISHED
249	2	THREE COMPARTMENT SINK	
262	4	HAND SINK	
543	2	2DR REFRIGERATOR	
615	4	VIDEO MONITOR SYSTEM	
802	2	WORKTOP FREEZER	



2 FOODSERVICE EQUIPMENT PLAN - SOUTH CONCOURSE
1/4" = 1'-0"



4 FS EQUIPMENT ONLY - SOUTH CONCOURSE

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CITY OF DALLAS
FAIR PARK COLISEUM CONCESSIONS IMPROVEMENTS
1438 COLISEUM DRIVE, DALLAS, TX 75210

PROJECT #: 18055-01 MANAGER: TC
ISSUED FOR CONSTRUCTION DRAFTER: LW
DATE: 04.15.2021 CHECKED: TC

FS EQUIPMENT PLAN

SHEET
K1
OF 6 K SHEETS

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DALLAS FAIR PARK COLISEUM - Project Name
DALLAS, TX - Project Location
TC / TC / RM / MRM

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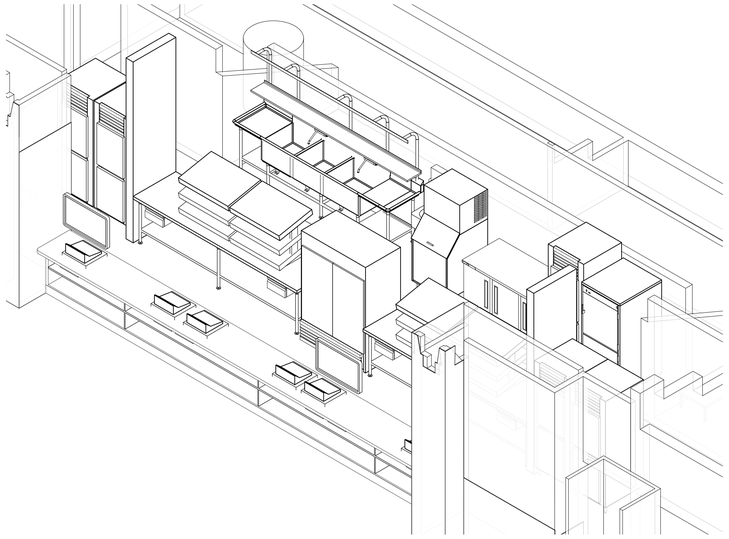
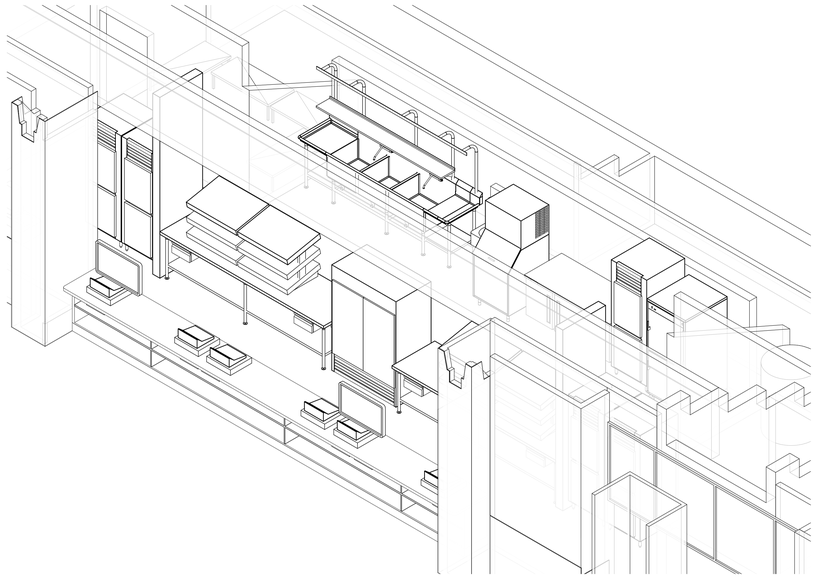


1 FS FACILITY MODEL - NORTH CONCOURSE



2 FS FACILITY MODEL - SOUTH CONCOURSE

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PROJECT #: 18055-01	MANAGER: Designer
ISSUED FOR: CONSTRUCTION	DRAFTER: LW
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FS FACILITY MODEL

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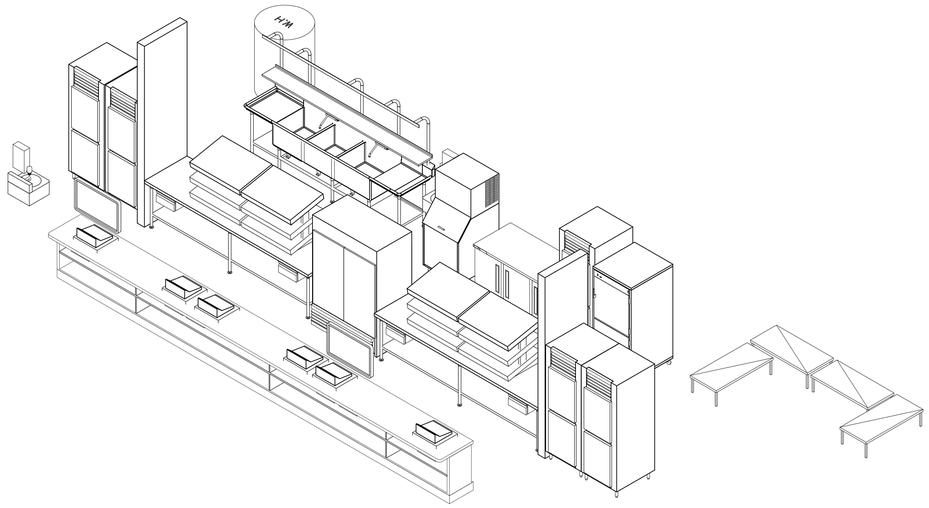
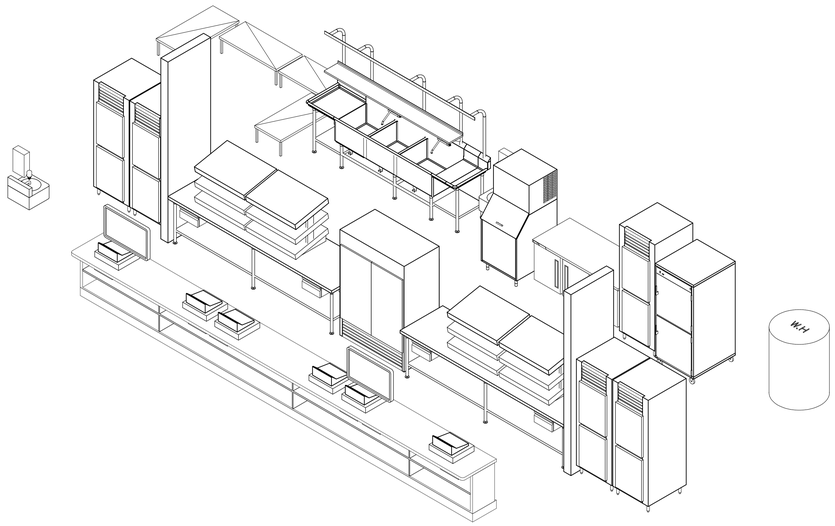


1 FS EQUIPMENT MODEL - NORTH CONCOURSE



2 FS EQUIPMENT MODEL - SOUTH CONCOURSE

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FS EQUIPMENT MODEL

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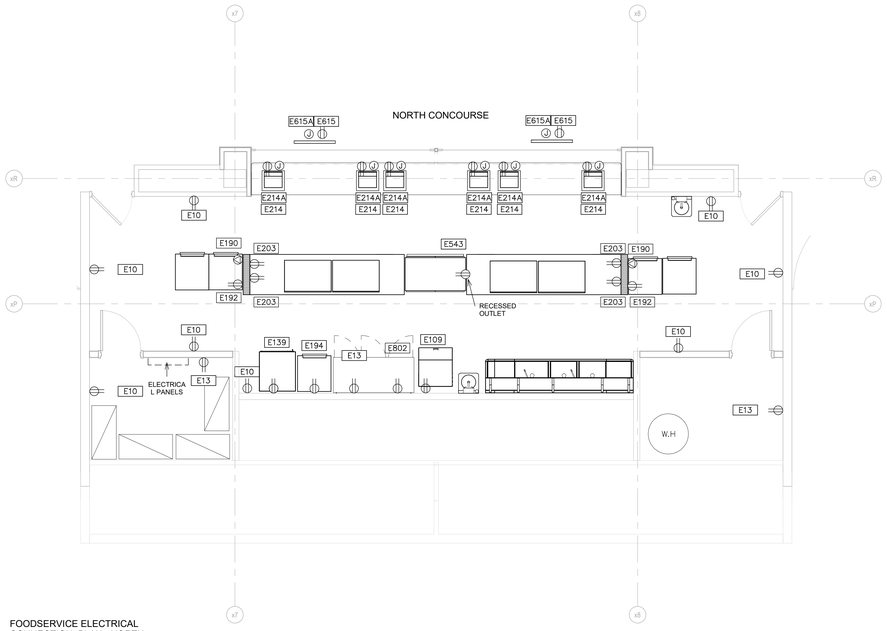
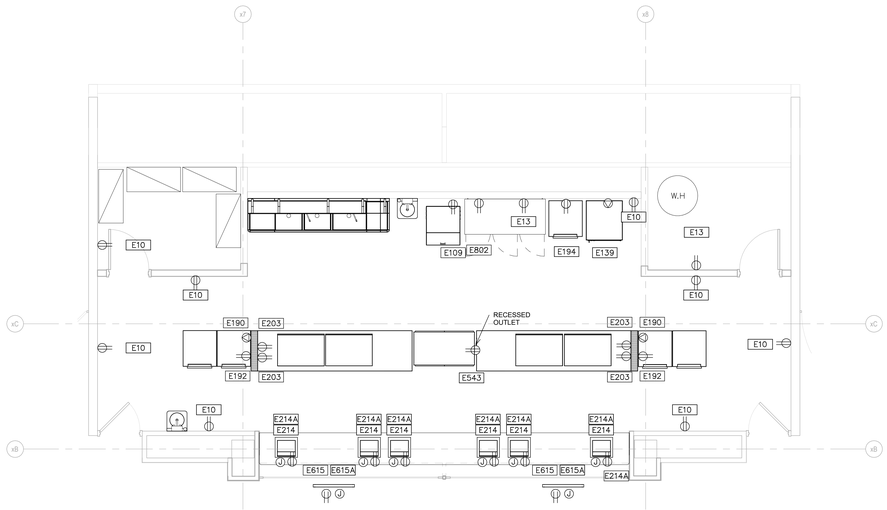


FOODSERVICE ELECTRICAL CONNECTION PLAN - NORTH CONCOURSE
1/4" = 1'-0"



FOODSERVICE ELECTRICAL CONNECTION PLAN - SOUTH CONCOURSE
1/4" = 1'-0"

FOODSERVICE ELECTRICAL SCHEDULE

FDP ENO	FDP ECONN	FDP ELOAD	FDP EVOLT	FDP EPH	FDP ESERVICE TO	FDP ELOC	FDP EAFF	FDP EREMARKS
E10	DR	16.0A	120	1	CONVENIENCE OUTLET	WALL	24"	---
E13	WPR	16.0A	120	1	CONVENIENCE OUTLET	WALL	48"	---
E109	DR	16.0A	120	1	ICE MACHINE	WALL	60"	---
E139	SR	20.0A	120	1	MOBILE HEATED CABINET	WALL	47"	--
E190	SR	30.0A	208	1	REACH-IN HEATED CABINET 1DR	WALL	90"	---
E192	DR	2.2A	120	1	REACH-IN REFRIGERATOR 1 DR	WALL	90"	---
E194	DR	3.7A	120	1	FREEZER	WALL	86"	---
E203	DR	11.3A	120/208	1	HEATED MERCHAINDISER	WALL	24"	---
E214	DR	16.0A	120	1	CASH REGISTER	WALL	24"	DEDICATED CIRCUIT FOR EACH POS
E214A	JB	---	---		POS	WALL	24"	BTC; RE: NOTE #14 - EMPTY CONDUIT
E543	DR	8.5A	120	1	2DR REFRIGERATOR / TABLE RECEPTACLE	VERIFY	VERIFY	EXTEND ELECTRICITY FROM UTILITY CHASE UNDER TABLE
E615	DR	5.0A	120	1	VIDEO/DATA SYSTEM	CLG	VERIFY	PROVIDE DCR AT VIDEO LOCATION
E615A	JB	---	---	---	VIDEO / DATA SYSTEM	CLG	VERIFY	PROVIDE JB AT DATA LOCATION
E802	DR	5.0A	120	1	WORKTOP FREEZER	WALL	48"	MOUNT HORIZONTAL

	SCR	CONDUIT STUB BTC ON RECEPT FURNISH WITH EQUIPMENT		CC	CONDUIT FOR COMPUTER CABLES
	CS	CONDUIT STUB UP/OUT FOR DIRECT CONNECTION		BTC	BRANCH TO CONNECTION ON EQUIPMENT
	DR	20 AMP DUPLEX RECEPTACLE (MOUNT HORIZONTAL)		WPR	20 AMP WEATHERPROOF RECEPTACLE (SPRING COVER)
	SR	SINGLE PURPOSE RECEPTACLE		FPB	FIRE PROTECTION BUZZER
	SR	SINGLE PURPOSE RECPT. 208V 1PH		BSC	BEVERAGE SYSTEM CONDUIT
	FR	FLUSH FLOOR RECEPTACLE		DFA	DROP FROM ABOVE
	PMR	PEDESTAL MOUNTED RECPTACLE		AFF	ABOVE FINISH FLOOR
	DCR	DROP CORD RECEPTACLE		CSJB	JUNCTION BOX ON PEDSTAL
	JB	JUNCTION BOX IN WALL		DS	DISCONNECT SWITCH
	JB	JUNCTION BOX ON CEILING			
	JB/DS	JUNCTION BOX WITH DISCONNECT BY DIV.26		JB/DS	CONDUIT STUB-UP WITH DISCONNECTI BY DIV.26

ELECTRICAL SYMBOLS1
NONE

NOTE: ELECTRICAL CONNECTIONS INDICATED ARE THOSE REQUIRED FOR THE FOODSERVICE EQUIPMENT AND THOSE REQUIRED FOR SUPPORT EQUIPMENT FURNISHED BY DIVISION 26. FOR ADDITIONAL REQUIREMENTS REFER TO ELECTRICAL ENGINEER'S DRAWINGS.

ELECTRICAL COORDINATION NOTES1
NTS

1. DO NOT ROUGH-IN FROM THIS DRAWING. REFER TO THE CONTRACTOR'S DIMENSIONED DRAWINGS.
2. VERIFY ALL ELECTRICAL CHARACTERISTICS WITH ENGINEERING DRAWINGS.
3. DIMENSIONS INDICATED ARE TO BE VERIFIED BY CONTRACTOR AND ADJUSTED AS REQUIRED BY FOODSERVICE EQUIPMENT AND/OR FIELD CONDITIONS.
4. ACCESSORIES AND FITTINGS PROVIDED LOOSE WITH FOODSERVICE EQUIPMENT BY SECTION 11 40 00. FIELD INSTALLED BY DIVISION 26.
5. STAINLESS STEEL DISCONNECT SWITCH PROVIDED AND INSTALLED BY DIVISION 26.
6. ALL ELECTRICAL CONNECTIONS BENEATH EXHAUST HOOD TO EXTEND TO SHUNT TRIP BREAKERS WITHIN ELECTRICAL PANEL BOX FOR SHUT-DOWN DURING FIRE MODE - BY DIVISION 26.
7. DOOR HEATER(S), LIGHT(S), COIL(S) AND PRESSURE RELIEF PORT(S) PRE-WIRED TO JUNCTION BOX AT TOP OF COLD STORAGE ASSEMBLY BY SECTION 11 40 00. FINAL CONNECTION BY DIVISION 26.
8. N/A
9. INTERCONNECT TO EXHAUST HOOD FAN(S) AND SWITCH BY DIVISION 26.
10. INTERCONNECT TO EXHAUST HOOD LIGHT(S) AND SWITCH BY DIVISION 26.
11. INTERCONNECT FIRE PROTECTION SYSTEM TO PANEL BOX SHUNT TRIP(S) AND BUILDING ALARM - BY DIVISION 26.
12. RECEPTACLE(S) TO BE PRE-WIRED TO JUNCTION BOX OR LOAD CENTER FOR FINAL CONNECTION BY DIVISION 26.
13. SECTION 11 40 00 TO VERIFY UTILITY REQUIREMENTS OF EXISTING EQUIPMENT.
14. EMPTY CONDUIT RUN FROM CASHIER STATION TO MANAGERS OFFICE FOR POS SYSTEM BY DIVISION 26. LOCATION OF MANAGER'S OFFICE TO BE VERIFIED.

ELECTRICAL GENERAL NOTES1
NONE

REVISIONS DENOTED BY △

20.0007 FDP Project Number
DALLAS FAIR PARK COLISEUM Project Name
DALLAS, TX Project Location
TX / TC Prev. Office

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PROJECT #: 18055-01	MANAGER: Designer
ISSUED FOR: CONSTRUCTION	DRAFTER: LW
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FS ELECTRICAL PLAN

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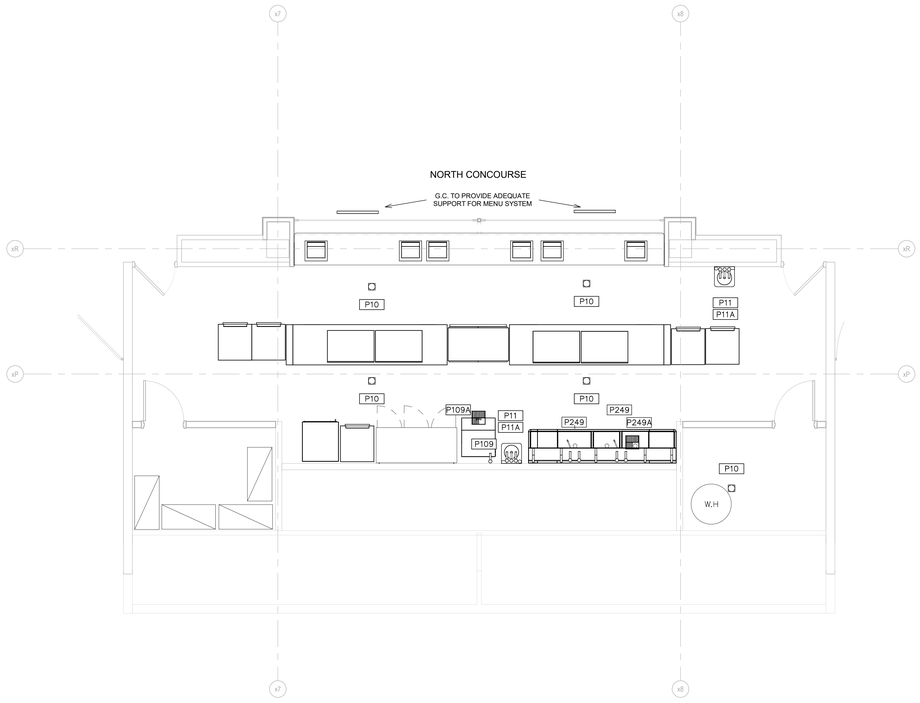


4 FOODSERVICE PLUMBING CONNECTION PLAN - NORTH CONCOURSE
1/4" = 1'-0"

FOODSERVICE PLUMBING SCHEDULE						
FPD PNO	FDP PSIZE	FDP PCONN	FDP PSERVICE TO	FDP PLOC	FDP PAFF	FDP PREMARKS
P10	VERIFY	FLOOR DRAIN	GENERAL AREA DRAIN	FLOOR	VERIFY	LOCATE PER ENGINEER'S DRAWING
P11	1/2"	H & C WATER	FAUCET	WALL	18"	FURNISHED BY SECTION 11 40 00; INSTALLED BY DIV. 22
P11A	1 1/2"	DIRECT DRAIN	HAND SINK	WALL	15"	FURNISHED BY SECTION 11 40 00; INSTALLED BY DIV. 22
P109	3/4"	COLD WATER	WATER FILTER / ICE MAKER	WALL	60"	BTC: RE: NOTE #3 & #17
P109A	12"SQ.	FLOOR SINKS	ICE MACHINE	FLOOR	0"	3/4 GRATE - RE: NOTE #4
P249	3/4"	H & C WATER	FAUCET	WALL	13"	BTC: RE: NOTE #3
P249A	12" SQ.	FLOOR SINK	SINK	FLOOR	0"	THREE QUARTER GRATE

	HW	HOT WATER		IW	INDIRECT WASTE (EXTEND TO F.D.)
	CW	COLD WATER		FFD	FUNNEL FLOOR DRAIN
	HTW	180 F HOT WATER		EVC	EXHAUST VENT CONNECTION
	CWS	CHILLED WATER		SVC	SUPPLY VENT CONNECTION
	C	GAS SUPPLY		FR	DIRECT-CONNECTED FLUE RISER
	SS	STEAM SUPPLY		PS	PIPE SLEEVE
	CR	CONDENSATE RETURN		AFF	ABOVE FINISHED FLOOR
	DR	DRAIN		ST	STUB UP/OUT
	FD	FLOOR DRAIN		BTC	BRANCH TO CONN. ON EQUIP
	FS	FLOOR SINK		DFA	DROP FROM ABOVE

3 PLUMBING SYMBOLS1
NONE

NOTE: WATER AND DRAIN CONNECTIONS INDICATED ARE THOSE REQUIRED FOR THE FOODSERVICE EQUIPMENT AND THOSE REQUIRED FOR SUPPORT EQUIPMENT FURNISHED BY DIVISION 22. FOR ADDTIONAL WATER AND DRAIN REQUIRMENTS REFER TO MECHANICAL DRAWINGS.

NOTE: REFER TO ELECTRICAL/MECHANICAL DRAWINGS FOR REQUIREMENTS OF EXHAUST FANS AND MAKE-UP AIR HANDLERS AND LOCATION OF AN INTERLOCK AND START/STOP CONTROLS TO BE LOCATED WITHIN FOODSERVICE AREA BY DIVISION 26.

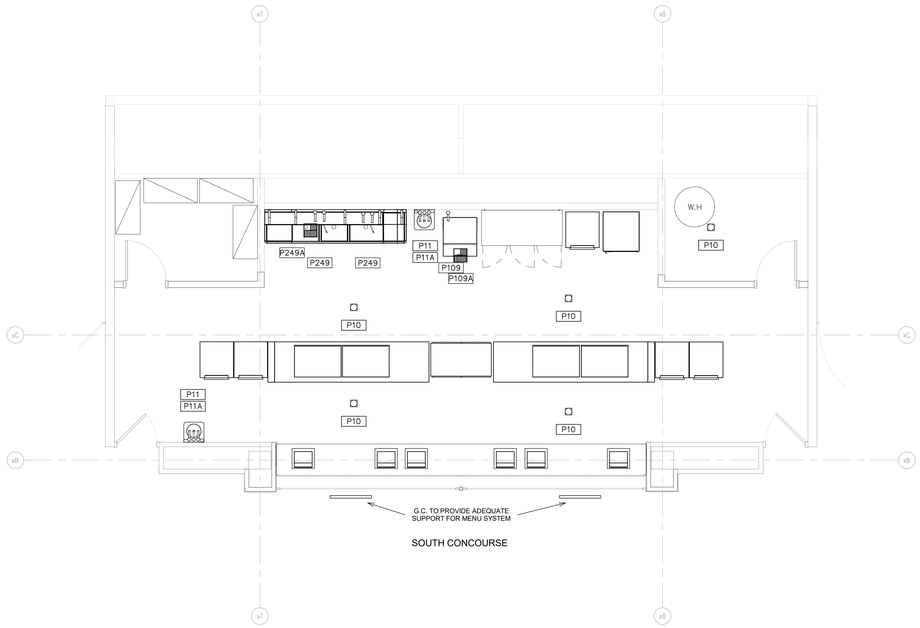
2 PLUMBING COORDINATION NOTES1
N.T.S.

1. DO NOT ROUGH-IN FROM THIS DRAWING. REFER TO THE FOODSERVICE EQUIPMENT SUPPLIER'S DIMENSIONED SHOP DRAWINGS.
2. DIMENSIONS INDICATED ARE TO BE VERIFIED BY FOODSERVICE EQUIPMENT SUPPLIER AND ADJUSTED AS REQUIRED BY EQUIPMENT AND/OR FIELD CONDITIONS.
3. ACCESSORIES PROVIDED LOOSE WITH FOODSERVICE EQUIPMENT BY SECTION 11 40 00 TO BE FIELD INSTALLED BY DIVISION 22.
4. DRAINAGE AND PIPING SYSTEMS TO BE CLEANED PRIOR TO FINAL CONNECTION WITH FOODSERVICE EQUIPMENT.
5. HAND LAVATORY PROVIDED BY SECTION 11 40 00 AND INSTALLED BY DIVISION 22. DIV. 22 TO PROVIDE HOT WATER TEMPERING VALVE, IF REQ'D.
6. JANITOR SINK/FAUCET PROVIDED AND INSTALLED BY DIVISION 22.
7. INTERCONNECTION OF 1/2" CW TO PRE-RINSE AND DISPOSER'S CONE/BODY INLETS PIPED THRU SOLENOID AND VACUUM BREAKER BY DIVISION 22.

** 8. ENGINEER TO VERIFY W/ LOCAL CODE TO BYPASS OR PIPE THRU GREASE TRAP AND/OR INTERCEPTOR.

9. 6" W.C. AT EQUIPMENT. MECHANICAL GAS SHUT-OFF VALVE BY SECTION 11 40 00. FINAL CONNECTION TO EQUIPMENT AND INSTALLATION OF MECHANICAL GAS VALVE BY DIVISION 22.
10. ALL EXHAUST HOOD CONNECTIONS AND CONDENSATE CONNECTIONS FURNISHED INSTALLED BY DIVISION 22.
11. ALL EXPOSED FIRE SYSTEM PIPING TO BE CHROME PLATED OR STAINLESS STEEL.
12. NUMBER NOT USED.
13. ALL PIPING WITHIN COUNTER BODY OR UNDER FABRICATED COUNTERS TO BE RUN TO A CONNECTION POINT BELOW COUNTER BODY BY SECTION 11 40 00. FINAL CONNECTION BY DIVISION 22.
14. NUMBER NOT USED.
15. QUICK DISCONNECTS TO BE SUPPLIED BY SECTION 11 40 00 W/ALL GAS & WATER EQUIPMENT.
16. PROTECTIVE DEVICES TO PROTECT AGAINST BACK FLOW. BACK SYPHONAGE SHALL BE INSTALLED AT ALL FIXTURES AND EQUIPMENT WHERE BACKFLOW AND/OR BACKSYPHONAGE MAY OCCUR AND WHERE A MINIMUM AIR GAP CANNOT BE PROVIDED BETWEEN THE WATER TO THE FIXTURE OR EQUIPMENT AND ITS FLOOD/LEVEL RIM. TO BE PROVIDED AND INSTALLED BY DIVISION 22. VACUUM BREAKERS, WHEN FURNISHED WITH EQUIPMENT, SHALL OVERRIDE ABOVE, IF ACCEPTABLE WITH APPLICABLE CODES, BUT DIV. 22 TO PIPE WHEN NOT PREIPPED BY FACTORY. INTERCONNECT THRU WATER FILTER TO EQUIPMENT BY DIVISION 22.
17. BACKFLOW PREVENTION BY DIVISION 22

1 PLUMBING GENERAL NOTES1
NONE



5 FOODSERVICE PLUMBING CONNECTION PLAN - SOUTH CONCOURSE
1/4" = 1'-0"

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PROJECT #: 18055-01	MANAGER: Designer
ISSUED FOR: CONSTRUCTION	DRAFTER: LW
DATE: 04.15.2021	CHECKED: TC

FS PLUMBING PLAN

26.0027 - FDP Project Number
DALLAS FAIR PARK COLISEUM
DALLAS, TX - PROCLAMATION
TC / TC / PM / APM

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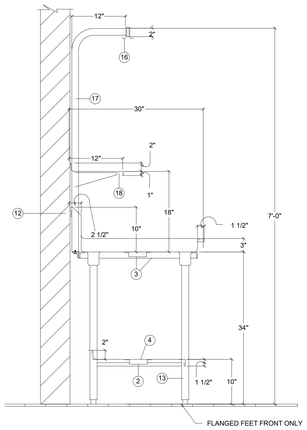

5 SECTION AT UTENSIL WASH DRAINBOARD
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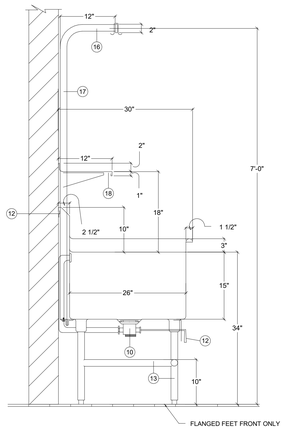

4 SECTION AT UTENSIL WASH SINK
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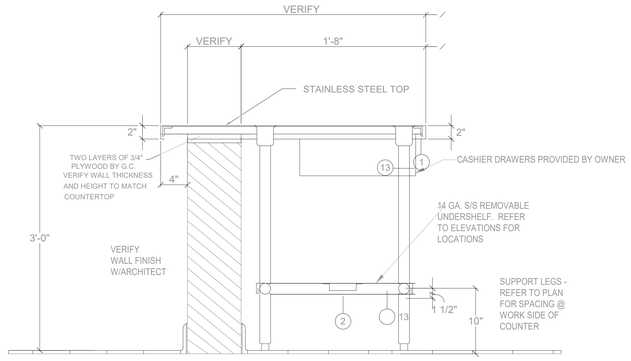
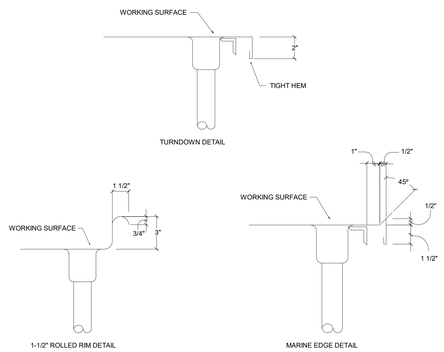
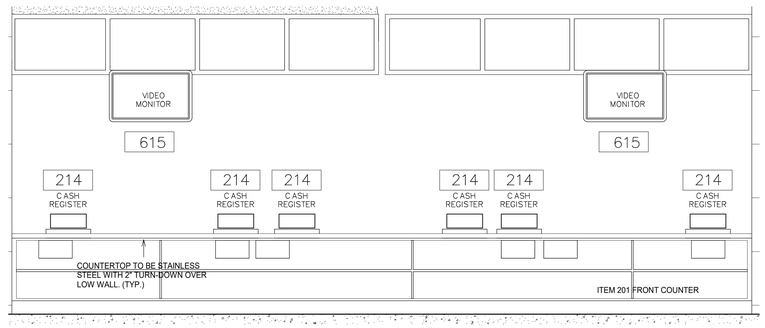


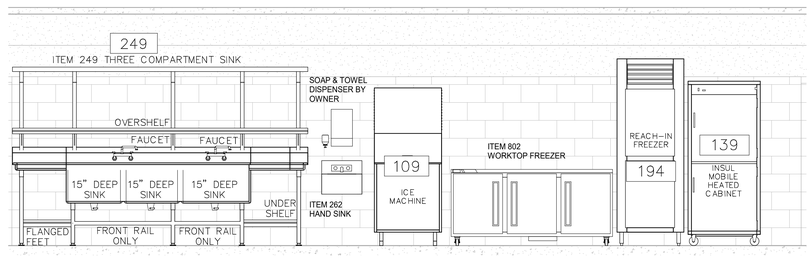
9 SECTION @ FRONT COUNTER W/ CASHIER DRAWER
N.T.S.



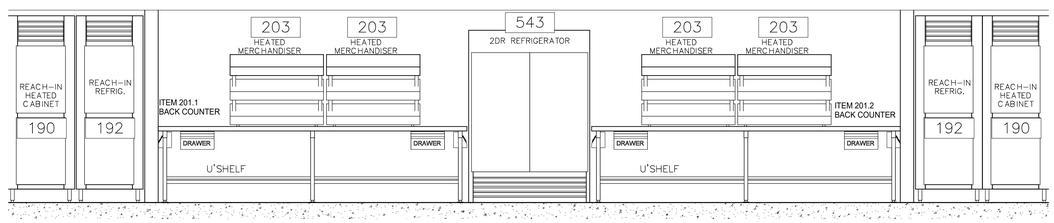
6 EDGE DETAILS
N.T.S.



3 ELEVATION @ FRONT COUNTER
1/2" = 1'-0"



2 ELEVATION @ BACK WALL
1/2" = 1'-0"



1 ELEVATION @ BACK COUNTERS
1/2" = 1'-0"

1. 1 1/2" X 1 1/2" X 1/8" GALVANIZED ANGLE IRON.
2. 1" X 4" 14 GAUGE STAINLESS STEEL HAT CHANNEL.
3. 16 GAUGE STAINLESS STEEL C-CHANNEL.
4. 16 GAUGE STAINLESS STEEL UNDERSHELF, COVE UP REAR 2", TURN DOWN FRONT 1 1/2".
5. 3/4" MARINE GRADE PLYWOOD BY SECTION 11 40 00 WITH TILE FRONT BY TRADE CONTRACTOR. VERIFY FINISH WITH ARCHITECTURAL DRAWINGS.
6. COLD PAN - 2" RIGID INSULATION WITH 1" C.P. DRAIN - 16 GAUGE STAINLESS STEEL SE CTION FALSE BOTTOM. PERFORATE FALSE BOTTOM WITH 1/4" DIA. HOLES AT 3" O.C.
7. 18 GAUGE STAINLESS STEEL INSULATED DOUBLE PAN DOOR WITH RECESSED PULL.
8. MANIFOLD DRAINS AT HOT FOOD UNITS WITH 1" TYPE 'K' COPPER AND EXTEND TO VAVLE IN PLUMBING COMPARTMENT.
9. FINISHED TRUE AND LEVEL MASONRY BASE BY DIVISION 9. CLOSE COUNTER BODY AT BASE AND SEAL BY SECTION 11 40 00.
10. FISHER #22314 DRAIN WITH TAILPIECE AND OVERFLOW.
11. 14 GAUGE STAINLESS STEEL BRACKET WITH DRAIN HANDLE BUSHING.
12. 16 GAUGE STAINLESS STEEL 'Z' CLIP TO WALL AND SEAL.
13. 1 5/8" DIA. 16 GAUGE STAINLESS STEEL LEGS AND CROSS RAILS.
14. 1/2" S/S TUBING DRAIN LINE - STRAP TO SHELF AND WALL - EXTEND DOWN TO TOP OF SPLASH.
15. 1 5/8" DIA. 16 GAUGE STAINLESS STEEL TUBING - SUPPORT FRONT OF SHELF WITH 1/2" ALL-THREAD INSIDE TUBING EXTENDING TO STRUCTURE ABOVE.
16. 1/4" S/S BAR STOCK WELDED TO TOP OF EACH POST - POT HOOKS TO BE COMPONENT HARDWARE #J77-4401 SPACED 8" O.C.
17. 1 5/8" 16 GAUGE STAINLESS STEEL TUBING - BOLT TO ANGLE IRON AND EXTEND UP THRU SPLASH TO 7'-0" A.F.F.
18. OVERSHELF - 16 GAUGE STAINLESS STEEL, COVE UP REAR 2", TURN FRONT AND ENDS DOWN 1", ENDS TO BE CAPPED WITH EASED CORNERS WHERE ADJACENT TO WALL / FIXTURE.
19. 18 GA. S/S LOUVERED PANEL.
20. 18 GAUGE STAINLESS STEEL LOUVERED DOUBLE PAN DOOR WITH RECESSED PULL.
21. NUMBER NOT USED.
22. 18 GA. STAINLESS STEEL INSULATED DOUBLE PAN SLIDING DOOR WITH COMPONENT HARDWARE COMPONENTS
    - A. #B57 - (VERIFY LENGTH) EXTRUDED ALUMINUM TRACK
    - B. #B58-5511 & #B58-5521 FRONT & REAR DOOR SHEAVES.
    - C. #B62-1093 DOOR GUIDE
    - D. #B60-1086 DOOR STOPS WHERE NEEDED
    - E. #P62-1010 RECESS PULLS

8 SECTION DETAIL NOTES
N.T.S.

A. WORK SHALL BE DONE IN AN APPROVED WORKMANLIKE MANNER, TO COMPLETE SATISFACTION OF THE CONSULTANT.

B. STAINLESS STEEL SHALL BE U.S. STANDARD GAUGES AS CALLED FOR. 18-8, TYPE 304, NOT OVER .012% MAXIMUM CARBON, NO. 4 FINISH.

C. GALVANIZED IRON SHALL BE ARMCO OR EQUAL. FRAMEWORK OF GALVANIZED IRON SHALL BE WELDED CONSTRUCTION, HAVING WELDS SMOOTH, AND WHERE GALVANIZING HAS BURNED OFF, TOUCHED UP WITH HIGH-GRADE ALUMINUM BRONZE.

D. LEGS AND CROSSRAILS SHALL BE CONTINUOUSLY WELDED, UNLESS OTHERWISE NOTED, AND GROUND SMOOTH.

E. BOTTOM OF LEGS AT FLOOR SHALL BE FITTED WITH SANITARY STAINLESS STEEL BULLET-TYPE FOOT, WITH NO LESS THAN 1/2" ADJUSTMENT.

F. LEGS SHALL BE FASTENED TO EQUIPMENT AS FOLLOWS:
    - 01. TO SINKS BY MEANS OF CLOSED GUSSETS. GUSSETS SHALL BE STAINLESS STEEL, REINFORCED WITH BUSHING, HAVING SET SCREWS FOR SECURING LEGS.
    - 02. TO TABLES AND DRAINBOARDS WITH CLOSED GUSSETS WHICH SHALL BE WELDED TO GALVANIZED HAT SECTIONS OR CHANNELS, 14 GAUGE OR HEAVIER, EXPOSED HAT SECTIONS HAVING CLOSED ENDS. BRACING SHALL BE UNDERSIDE OF TOPS.

G. CLOSED GUSSETS SHALL BE 3" MINIMUM DIAMETER AT TOP, WELDED TO FRAME MEMBERS OR TO SINK BOTTOM.

H. ROLLS SHALL BE 1 1/2" DIAMETER, EXCEPT AS DETAILED TO THE CONTRARY, WITH CORNERS BULLNOSED, GROUND, AND POLISHED.

I. SEAMS AND JOINTS SHALL BE SHOP-WELDED WHERE POSSIBLE. WELDS TO BE GROUND AND POLISHED TO MATCH ORIGINAL FINISH. MATERIALS 18 GAUGE OR HEAVIER SHALL BE WELDED.

J. METAL TOPS SHALL BE ONE-PIECE WELDED CONSTRUCTION UNLESS SPECIFIED OTHERWISE, REINFORCED ON UNDERSIDE WITH GALVANIZED HAT SECTIONS OR CHANNELS WELDED IN PLACE. CROSSBRACE TO BE NOT MORE THAN 30" ON CENTERS.

K. HARDWARE SHALL BE SOLID MATERIALS AND EXCEPT WHERE EXPOSED OR SPECIFIED TO THE CONTRARY, OF CAST BRASS, CHROME-PLATED. IDENTIFY ALL HARDWARE WITH MANUFACTURER'S NAME AND NUMBER SO THAT BROKEN OR WORN PARTS MAY BE ORDERED AND REPLACED.

L. FABRICATE SINK COMPARTMENTS WITH 3/4" COVERED VERTICAL AND HORIZONTAL CORNERS. MULTIPLE-COMPARTMENT PARTITIONS TO BE DOUBLE THICKNESS, CONTINUOUSLY WELDED WHERE SHEETS JOIN AT TOP. FRONT OF MULTIPLE-COMPARTMENT PARTITIONS TO BE CONTINUOUS ON EXTERIOR. BOTTOMS SHALL BE CREASED TO DRAIN.

M. ENDS OF FIXTURES, SPLASHBACKS, SHELVES, ETC., SHALL BE FINISHED FLUSH TO WALLS OR ADJOINING FIXTURES.

N. DISHTABLES, DRAINBOARDS, SPLASHBACKS, AND TURN-UP EDGES SHALL HAVE RADIUS BENDS IN ALL HORIZONTAL AND VERTICAL CORNERS, COVED AT INTERSECTIONS.

O. ROUNDED AND COVED CORNERS OR RADIUS BENDS SHALL BE 1/2" RADIUS OR LONGER.

P. UNDERSIDES OF TOPS TO BE COATED WITH HEAVY-BODIED RESINOUS MATERIAL COMPOUND FOR PERMANENT, NON-FLAKING ADHESION TO METAL, 1/8" THICK, APPLIED AFTER REINFORCING MEMBERS HAVE BEEN INSTALLED, DRYING WITHOUT DIRT-CATCHING CREVICES.

Q. SHELVES ARE TO BE TURNED UP 2" ON THE BACK EDGE. TURN OTHER EDGES DOWN 1 1/2" TO FORM OPEN CHANNELS. REINFORCE SHELF UNITS TO SUPPORT 40 LBS. PER SQUARE FOOT LOADING, PLUS 100% IMPACT LOADING.

R. TRIMWORK AND FRAMING AT MASONRY OPENINGS SHALL BE 18 GAUGE STAINLESS STEEL AND FORMED SO AS TO FIT SNUG TO WALLS AND ADJACENT SURFACES. FRAMING SHALL EXTEND A MINIMUM OF 2" ON EACH SURFACE. SEAL TRIMWORK TO WALLS. REFER TO DRAWINGS.

S. METAL COMPONENTS, UNLESS SPECIFIED OR NOTED OTHERWISE, TO BE THE FOLLOWING GAUGES:

TABLETOPS	14 GAUGE STAINLESS STEEL
WALL SHELVES	16 GAUGE STAINLESS STEEL
UNDERSHELVES	16 GAUGE STAINLESS STEEL
SINKS & DRAINBOARDS	14 GAUGE STAINLESS STEEL
EXHAUST DUCTS	18 GAUGE STAINLESS STEEL
LEGS - 1 5/8" DIA.	16 GAUGE STAINLESS STEEL

7 CUSTOM FAB NOTES
NONE

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