DIVISION 14 CONVEYING EQUIPMENT

Section 14 24 00 – Hydraulic Elevators

PART 1: GENERAL

1.01 Scope of Standard

A. This standard provides general guidance concerning the specific preferences of Texas State University for Hydraulic Elevators.

B. Texas State University recognizes that project conditions and requirements vary, thus precluding the absolute adherence to the items identified herein in all cases. However, unless there is adequate written justification, it is expected that these guidelines will govern the design and specifications for Texas State University projects.

1.02 Design Guidelines

A. Provide at least one passenger elevator for each new and renewed Texas State University building of more than a single story, except as otherwise approved by the Director of Facilities Planning, Design and Construction.

B. Elevators are required in all multi-story buildings to provide accessibility to the disabled.

1. Freight Elevator:

a. Where freight elevators are specifically required, provide elevators with minimum capacity of 5,000 pounds, 150 FPM.

b. Equip freight elevators with horizontal-sliding or center-opening doors.

2. Passenger Elevator:

a. Where hydraulic passenger elevators are required, provide with a minimum capacity of 3500 pounds, 150 FPM.

b. Passenger elevators with horizontal-sliding or center-opening doors.

c. Passenger hydraulic elevators which serve as Freight elevators will be design for 5,000 lb. capacity and shall have hooks at top to receive protective pads.

1.03 References

A. Comply with all applicable current local, University, state, and federal standards, building codes, elevator codes, laws, regulations, and ordinances at the project site, including but not limited to, the following:

1. ANSI A117.1 – Buildings and Facilities: Providing Accessibility and Usability for Physically Handicapped People.

2. ADAAG – Americans with Disabilities Act Accessibility Guidelines.

3. TAS – Texas Accessibility Standards.

4. ANSI/NFPA 70 – National Electrical Code.

5. ANSI/NFPA 80 – Fire Doors and Windows.

6. ASME/ANSI A17.1 – Safety Code for Elevators and Escalators.

7. ANSI/UL 10B – Fire Tests of Door Assemblies.

8. Model Building Codes.

9. All other applicable local, state, and federal codes, laws, regulations and ordinances.

1.04 Quality Assurance

A. Elevator contractor must be able to demonstrate that he has installed and maintained similar elevators to those specified, that he is able to show evidence of satisfactory past performance, that he maintains locally an adequate stock of parts for emergency purposes, that he has under his direct employment and supervision the necessary personnel specifically trained on the type and grade of equipment specified, and that he has been in business for a minimum of five (5) years.

B. Regulatory Requirements: Elevator system design and installation shall comply with the latest versions of all applicable local, state, and federal codes, laws, regulations, and ordinances.

1. TDLR ELEVATOR INSPECTIONS: While it is the responsibility of the CMAR and their Subcontractor to call for elevator inspection, they should inform the A/E and FPDC of the inspection. FPDC representative should be present during these inspections.

C. Permits and Inspections: Provide licenses, permits and certificates of inspection for all elevator equipment, as required by all authorities having jurisdiction. Perform required inspections and tests. The Owner shall select the QEI inspector.

1.05 Submittals

A. Product Data: Submit a minimum of three copies of manufacturer's product data for each system to be used.

1. Car design, dimensions and layout.

Fixtures (car stations, hall stations, hall lanterns, position indicators, etc.).

2. Electrical characteristics and requirements. The Elevator Contractor shall provide data concerning the size and location of the mainline and car lighting switchgear, wiring, fuses and breakers.

3. Heat dissipation of elevator equipment in machine room.

B. Shop Drawings: Submit a minimum of three copies of approval layout drawings.

1. Clearances and travel of car.
2. Clear inside hoistway dimensions.
3. Clear inside pit dimensions.
4. Car, guide rails, buffer springs, and other components in hoistway.
5. Maximum spacing for rail brackets.
6. Maximum loads imposed on guide rails requiring load transfer to building structure.
7. Loads on hoisting beams.
8. Location and sizes of access doors, hoistway entrances, and frames.
9. Interior Cab Design
10. All finishes

C. Operational and Maintenance Manuals: Provide a minimum of three (3) copies of manufacturer's standard operational and maintenance manuals for each system to be used.

1. Straight line wiring diagrams of as-installed circuitry, one (1) set for the machine room and two (2) sets for the Owners file.
2. Routine preventive maintenance manuals.
3. Parts catalogs of all components.

D. Project Schedule

1. Submit schedule of events with Bid Proposal.
    a. Material ship dates
    b. Project mobilization date.
    c. Series of events (including sub-contractors schedule) through job completion.
    d. Handover tests and inspections (QEI) date.

1.06 Warranty

A. Provide warranty to repair or replace parts or components that fail or do not operate properly due to engineering, design, or workmanship for a period of twelve (12) months from the date of final acceptance. The guarantee excludes ordinary wear and tear or improper use, vandalism, or neglect, or any other cause beyond the control of the elevator contractor.

1.07 Maintenance

A. Provide regular routine preventative maintenance service for a period of three (3) months after the date of final acceptance. Maintenance service shall consist of regular examinations of the elevator equipment by technicians specifically trained on the type and grade, and shall include 24-hour callback service. Response time for callback service shall be one (1) hour or less during the normal workday. Response time during after normal work hours shall be one and one half (1 ½) hours or less.

1.08 Addenda

A. Any and all changes, additions, clarifications, or interpretations will be in writing through Addenda prior to bid opening.

1.09 Acceptable Elevator Companies (Must be listed in alphabetical order):

A. Otis Elevator Co.
11500 Metric Blvd. Suite 285
Austin, TX 78758
(512) 339-9731

B. Schindler Elevator Corporation

8868 Research Blvd

Austin, TX 78758

(512) 451-3620

C. Tejas Elevator Co.

4424-D Brandt Rd.

Austin, TX 78744

(512)454-7878

D. Thyssen/Krupp Elevator Co.
3615 Willow Springs Rd.
Austin, TX 78704
(512) 447-9511

PART 2: PRODUCTS

2.01 General Characteristics

A. Freight Elevator:

1. Quantity Per architectural plans

2.	Type	Freight
3.	Capacity and Speed	5,000# @ 150 FPM
4.	Stops	Per architectural plans
5.	Openings	Per architectural plans
6.	Rise	FIELD VERIFY
7.	Inside car height	Indicate
8.	Car inside	Indicate, see EXHIBIT 1
9.	Entrance type and size	2 speed, indicate opening type, opening, 4’0” x 7’0”
10.	Main Power Supply	480 volts, 5% of normal, 3 phase, with a separate equipment-grounding conductor.
11.	Lighting Power Supply	120 volts, 1 phase, 15 amps, 60 Hz.

B. Hydraulic Passenger Elevator:

1.	Quantity	Per architectural plans
2.	Type	Freight
3.	Capacity and Speed	3,500# @ 150 FPM
4.	Stops	Per architectural plans
5.	Openings	Per architectural plans
6.	Rise	FIELD VERIFY
7.	Inside car height	Indicate
8.	Car inside	Indicate
9.	Entrance type and size	2 speed, indicate opening type, opening, 4’0” x 7’0”
10.	Main Power Supply	480 volts, +/- 5% of normal, 3 phase, with a separate equipment-grounding conductor.
	a.	If existing Elevator remodel, field verify existing power voltage
11.	Lighting Power Supply	120 volts, 1 phase, 15 amps, 60 Hz.
	a.	If existing Elevator remodel, field verify existing power voltage

2.02 Performance

A.	Speed	+/- 5% under any loading condition.
B.	Capacity	Safely lower, stop and hold up to 125% of rated load.

C.	Leveling accuracy	+/- 3/8” under any loading condition.
D.	Door closing time	Thrust and Kinetic energy shall comply with ASME Code and ADA and shall be the minimum allowable unless otherwise directed by the consultant.
E.	Door opening time	Opening time shall be 80% of closing time.
F.	Ride Quality	Acceleration, run, deceleration, leveling and stopping shall be adjusted for a smooth and comfortable ride.

2.03 Machine Room Equipment

A. Controls

1. Provide new Motion Control Engineering, Inc., 2000 Series Controller. No substitutions allowed. Minimum required features are as follows:

    a. On-board diagnostics

    b. Out of service timer

    c. Door operation timers

    d. Door pre-opening

    e. Nudging

    f. Car and hall call registration

    g. Fire Service Operation

    h. Independent service operation

    i. Simplex selective collective operation

    j. Simplex home landing operation

    k. 2000 Series landing system

    l. Controller test switch

    m. Relay panel inspection

    n. Un-canceled call bypass

    o. Anti-nuisance

    p. Battery lowering device

    q. Optional peripheral (capability to attach on-site or remote computer terminal)

2. Provide new solid-state type motor starter.

3. The controls shall not have any software embedded which shuts the elevator down when the elevator is operating normally that forces the Owner to contact the manufacturer for service or replacement of major components of the controller.

4. Controls shall be compatible with Integrated Building System (Section 13810), Control Sequence (Section 1320), and Integrated Fire Alarm/Life Safety (Section 13850), where applicable.

C. Pump and Motor Unit

1. Provide new submersible pump and motor unit. Leaks in the pump unit equipment or any other elevator equipment will not be tolerated.

2. Provide new Maxton brand Valve.

D. Provide new “to-from” oil line from the new pump unit to the jack head. The new oil line shall be connected with Victaulic couplings. Leaks in the oil line or any other elevator equipment will not be tolerated.

E. Provide a new shutoff valve in the new “to-from” oil line in the machine room. The new shutoff valve shall have a permanent handle.

F. If existing Elevator is being remodeled, then other wiring including travel cables shall be replaced.

2.04 Hoistway Equipment

A. Hoistway Interlocks

1. Provide new GAL hoistway interlocks.

B. Hoistway Doors and Entrances

1. Stainless Steel hoistway doors and entrances.

2. Provide new aluminum hoistway sills.

3. Provide new unlocking devices at all landings.

4. Provide new stainless steel escutcheons. Escutcheons shall be attached to hoistway door with a clamp device. Spring keepers are not acceptable.

5. Provide two gibs per door panel on all hoistway doors.

C. Provide a new shutoff valve in the oil line in the pit. The new shutoff valve shall have a permanent handle.

D. Provide new top-of-car inspection station.

E. Provide new car floating, adjustable roller guide assemblies.

2.05 Car Enclosure and Car Doors

A. Freight Elevator interior car finishes:

1. New Elevators finish to be approved by Texas State University Project Manager.

2. If doing an existing elevator remodel, sand smooth and paint car ceiling, car walls, and car doors with industrial grade enamel paint. Texas State University personnel shall select paint color.

3. Provide new ¼" aluminum diamond boilerplate floor covering. The aluminum plate shall be bolted down from inside the car and shall be removable without disturbing car panels or car sill. There is to be no wood used in this elevator installation.

4. Provide new nickel silver car sill.

B. Hydraulic passenger Elevator Interior Car Finishes: see EXHIBIT 1

1. Flooring:

a. Fritztile, Classic Flexible Marble Tile, CL 200 Series, 12" x 12" x 1/8" thick, with opaque binding.

2. Ceiling:

a. Ceiling Suspension: As approved by Texas State University.

b. Ceiling Panels: Refer to EXHIBIT 1, or if changes as approved by Texas State University.

c. Emergency ceiling access panel joints shall be aligned with adjacent joints in ceiling.

3. Ceiling Lighting:

a. Type: Refer to EXHIBIT 1: LED downlight fixtures as indicated on drawings complete with emergency lighting, or if changed as approved by Texas State University.

4. Stainless Steel Doors and Frames:

a. Type: AISI Type 302/304.

b. Finish: "Brushed" #4.

5. Stainless Steel Return Panels:

a. Type: 1/8" thick AISI Type 302/304.

b. Finish: "Brushed" #4.

6. Plastic Laminate Wall Panels:

a. Type, Plastic Laminate: Refer to EXHIBIT 1: Panels shall be marine-grade, moisture-resistant plywood core with plastic

laminate cladding on one side and all edges, or if changed as approved by Texas State University.

7. Wall Base and Panel Reveals: Plastic laminate adhered directly to steel Cab walls.

8. Aluminum Sills/Thresholds:

   a. Type: Extruded, with grooves and concealed fasteners.

   b. Finish: Mill finish.

9. Car Handrails:

   a. Type: Refer to EXHIBIT 1: Stainless Steel Bar ½" x 4" "Brushed" #4 or if changed as approved by Texas State University.

   b. Fasteners: Concealed type for all handrails.

10. Car Protection Pads:

   a. Type: Cotton ticking on one side and reinforced vinyl over 1" thick cotton batting on opposite side, compatible with car enclosure design indicated on drawings.

      (1) Hooks: Stainless steel type, removable.

      (2) Quantity: 1 set complete with hooks for each elevator.

C. Car Operating Front Panels

1. Type: Integral swing-type assembly manufactured of metal and finish to match entrance columns, complete with the following and as indicated on drawings:

   a. Hinges: Concealed piano hinges of metal and finish to match panels, of sufficient strength to prevent sagging of panels in open position.

   b. Locks: Two cam-operated locks concealed behind each operating panel, complete with tamperproof Allen type keyways with smallest possible access port.

   c. Sound Deadening: Required behind front panels.

   d. Cutouts: Required for protrusions of car buttons, switches, card readers, etc.

   e. Self-illuminating floor registration buttons.

   f. Markings for blind: As indicated on drawings.

      (1) Applied or stick-on markings not acceptable.

   g. Acid Etching: As indicated on drawings. Letter style as specified in this section.

h. Emergency alarm and door control buttons.

i. Car Telephone Compartments: Concealed behind door of type complying with applicable code and governing authorities, complete with permanent telephone complying with ADA requirements.

(1) Door: Flush, 12 gauge metal of type and finish to match front return panels with hairline joint.

(2) Door Hinges: Concealed heavy-duty metal of type to match door finish.

(3) Lock: Bullet catch with flush key cylinder.

(4) Acid-etch each car number (PE-1 etc.) on panel inside telephone compartments.

(5) "Telephone" on door front in raised tactile letters.

(6) Contractor shall provide wiring from telephone to Telephone Room.

(7) Owner shall provide telephone line connection from Telephone Room to Campus Police Station.

(8) Contractor is to provide a Rath Microtech Model 2100-907 RAI phone inside the telephone compartment, so that the phone can be wired for CCTV images.

D. Provide emergency car lighting and alarm bell.

E. Provide new exhaust fan.

F. Provide GFCI convenience outlet in car station service cabinet.

2.06 Door Operator and Door Opening Protection

A. Provide new GAL MOVFR Door Operator.

B. Provide new infrared type door opening protection.

2.07 Fixtures (Car stations, Position Indicators, In-car Lantern, and Hall Stations)

A. Car station, position indicator, external lanterns, and hall stations shall be Innovation Industries "Bruiser" Collection with Stainless Steel AISI #4 satin finish. No substitutions allowed.

B. Provide new Innovation Industries "Bruiser" Collection car station (COP) with Stainless Steel AISI #4 satin finish. The COP shall have round push buttons, digital position indicator and emergency light fixture integrated into the panel, built-in push-to-call emergency telephone, keyed stop switch, and a lockable service cabinet.

1. Switches behind the service cabinet door shall be toggled.

2. Provide new GFCI convenience outlet in car station service cabinet.

C. Provide new Innovation Industries “Bruiser” Collection combination position indicator/hall lantern at all landings with Stainless Steel AISI #4 satin finish.

D. Provide new Innovation Industries “Bruiser” Collection hall stations with Stainless Steel AISI #4 satin finish. Hall stations shall be mounted flush with the wall panels.

E. All lettering (such as Fire Service instructions) shall be engraved and filled. Silk screened lettering or applied panels with lettering will not be accepted. Company logos or any other method of identifying a manufacturer shall not be permitted on any equipment viewed by the riding public.

PART 3: EXECUTION

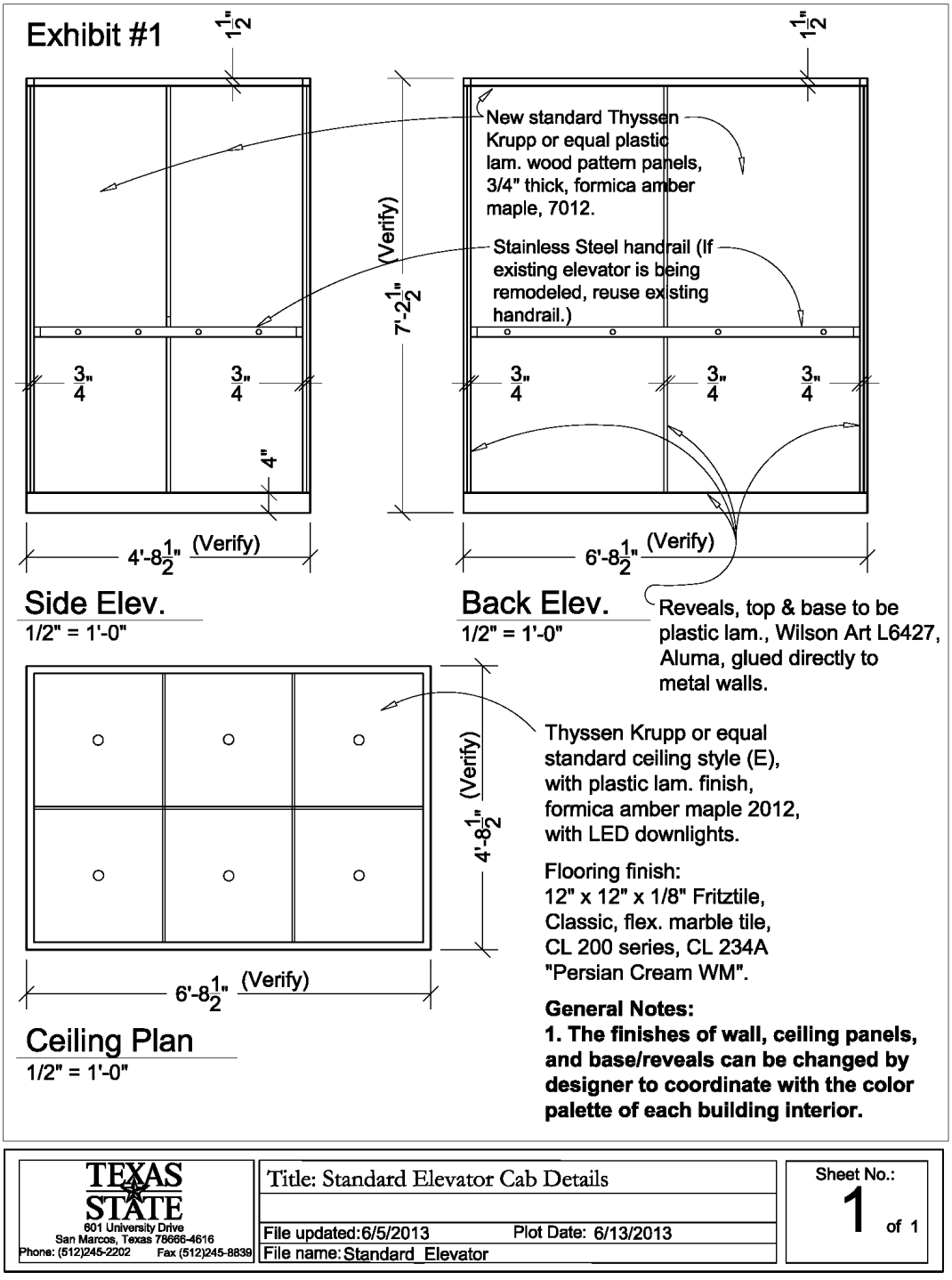
3.01 Scope

A. Installation shall meet all standard and generally accepted requirements for elevator construction. All work required for a first-class and complete installation shall be the responsibility of the contractor.

B. All equipment shall be finish painted after the installation is complete. The Owner shall select paint colors.

C. Trash shall be removed daily from all areas.

D. Final acceptance for all elevator equipment shall have the same date and will be after all inspections and tests are complete, and the Owners representative is confident that the installation is complete.



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