



ADDENDUM NO. 08

Date of Issuance: April 27, 2026

Project: **Replacement Elementary on Mustang Rd.**
Alvin Independent School District

Issued by: Arcadis Inc.
P.O. Box 891209
Houston, Texas 77289
281-286-6605

Texas Arcadis Inc.
Project No.: 202502 - 30268973

Prepared for: Prospective Proposers

PART A: NOTICE TO PROPOSERS:

1. Receipt of this Addendum shall be acknowledged on the Proposal Form. Failure to do so may subject Proposers to disqualification. Each proposer shall make necessary adjustments and submit his proposal with full knowledge of all modifications, clarification, and supplemental data included therein.
2. This Addendum forms part of the Contract Documents and shall be incorporated integrally therewith. Where provisions of the following supplemental data differ from those of previously issued documents, this Addendum shall govern.
3. The following Contract Documents have been issued to date delineating the Work (Project).

Contract Documents	April 06, 2026
Addendum 01 (Architectural)	April 13, 2026
Addendum 02 (Pre-Proposal)	April 17, 2026
Addendum 03 (Architectural)	April 21, 2026
Addendum 04 (MEPT)	April 23, 2026
Addendum 05 (Structural)	April 23, 2026
Addendum 06 (Civil)	April 24, 2026
Addendum 07 (Food Service)	April 27, 2026
4. This Addendum consists of: five (5) 8-1/2x11 written pages, four (4) 8-1/2x11 pages Elevation Certificates, seventeen (17) 8-1/2x11 pages Spec Section(s), and one (1) full-size New or Re-issued Sheets / Drawings as described in PARTS E and F below; as prepared by Arcadis Inc. Total pages: twenty-seven (27).

PART B: GENERAL PROJECT CLARIFICATIONS

5. Our insurance company is requesting an elevation certificate to provide a premium for builder's risk. Let me know if there is one available.
 - a. **Response:** Please see attached elevation certificates.
6. Decorative Railings: On the elevations on A5.03 and A5.04 there's a note for Aluminum Perforated infill panels, then in the detail on 3,8,9 on A5.06 it calls out for a Stainless Steel infill panel. Also on the same page detail 5 on A5.06 it calls the handrail Galvanized Steel with Galvanized Wire Mesh infill. Just trying to get some clarification on the finish of the handrail and infill panels..
 - a. **Response:** Please provide Stainless Steel infill panels per specifications. Please see Part E below for sheet changes.
7. Spec 05 12 00, 2.1, A states all structural steel to be produced domestically in the US. Does this mean that steel produced elsewhere will be rejected?
 - a. **Response:** All structural steel to be produced domestically in the US.
8. Sheet C003 calls for the playground to be removed and relocated. Sheet CA2.00 shows the playground as new. Please confirm if we are to relocate the existing playground, as stated on C003 or provide a new playground as stated on CA2.00.
 - a. **Response:** Please provide a new playground as shown on the CA drawings. Please also remove and relocate existing playground (to be coordinated with Owner) as shown on C sheets.
9. Please clarify ceiling in these rooms, the finish schedule and RCP conflict: A101, A140, B100, B117, B136, B154, B155, C101, C102, A200, A207, A233, A224, B214, and B216.
 - a. **Response:** Please see Part F for reissued room finish schedule.
10. The finish schedule indicates ceiling in room B200 Storage. Where is this room located?
 - a. **Response:** This room does not exist in the project, see Part F for revised room finish schedule sheet.
11. Does MPC-1 occur at exterior as well? If so, which areas?
 - a. **Response:** No, MPC-1 uninsulated panels are not used at exterior. Only MP-2 insulated panels are used on exterior.
12. Finish Schedule only list ACT-1 – Armstrong School Zone FF – Specs call for two tiles Ceiling Type C – Armstrong Clean Room VL.
 - a. **Response:** ACT-C is called out in rooms such as in Area 'C1'.
13. Room Finish Schedule only calls out ACT-A – School Zone FF only.
 - a. **Response:** See response above.
14. Metal Ceilings – can you clarify where MPC-2 goes? I only see it in circles in Dining Area C2.
 - a. **Response:** Please see all A10.01 to A10.06 RCP drawings for where MPC-2 occurs.

15. Will the Owner be providing a TDI inspector & certification, or is this the responsibility of the roofing contractor?
 - a. **Response:** Please see Section 01 45 23 Testing and Inspection Services, Part 2, 2.3 Texas Department of Insurance, paragraph A.

16. Division 9 Finishes 09 61 44 Polished Concrete - Calls for (Reactive Chemical Concrete Stain) Section 2.4 Accessories - A. Control Joint Filler: Self-leveling **silicone sealant** as manufactured by Metzger McGuire, Dow, Sika Corporation, Tremco, Metzger McGuire does not sell silicone sealants. They sell polyurea and epoxy. Which do they want? 03 Sealed concrete floors shall have sealant joints filled flush to floor surface prior to application of floor sealer. This is very difficult with a silicone sealant. The polyurea would be over-filled and shaved off flush
 - a. **Response:** Polyurea sealant is acceptable. See Part D below for spec modifications.

17. Section 3.3 Coloring Concrete - A. Stain or Pigmented Micro Stain Application Pigmented Micro Stain is NOT a Reactive Chemical Concrete Stain. Is it ok to use the pigmented stain. The pigmented products WILL fade out over a 2-5 year time line. Reactive Chemical stain will NOT fade out but you are limited in colors.
 - a. **Response:** Please provide stain as specified.

18. Spec 32 18 13 references Section 32 11 23 – Aggregate Base Course for synthetic turf surfacing; however, this section is not provided. Keynote 20 on Sheet C501 indicates that the upper 6” of the playground area is to be lime stabilized. Please clarify if the turf area requires an aggregate base course. If so, provide the required thickness and material type.
 - a. **Response:** The aggregate base course is provided by Synthetic Turf provider as specified. See below Part D for spec modifications.

19. Section 14 24 00 Hydraulic Elevators: Travel on spec indicates 14'-8", but drawings A5.05 shows 15'-0". Please advise.
 - a. **Response:** Travel is as shown in drawings. See spec modification in Part D below.

20. Section 14 24 00 Hydraulic Elevators: The hoistway door and frames (visible from the hallway) call for powder coat (color selection). Wanted to make sure you didn't want SS#4 in lieu of powder coat?
 - a. **Response:** See spec modification in Part D below.

21. Per specification page CB -17, I do not see a specific liquidated damages amount stated. Will a specific liquidated dollar amount be specified?
 - a. **Response:** See Section AB (page 7), 13-Time of Completion, item G.

22. In the SECTION 07 21 00 – THERMAL INSULATION Specifications, our "EnergyShield Pro" Polyisocyanurate was specified to be used behind all metal panel veneer walls. We have replaced that product with our "EnergyShield XR Continuous Insulation" product, which meets these same cavity wall specifications and is less expensive.
 - a. **Response:** Please see Part D below for revision to Energy Shield XR.

PART C: CHANGES TO PRIOR ADDENDUM

23. None

PART D: CHANGES TO THE PROJECT MANUAL

24. Section 07 21 00 – Thermal Insulation
- a. Modify Part 2 – 2.3, paragraph C, per below:
 - i. Metal Panel Veneers: Design of continuous rigid insulation is based on Atlas Roofing Energy Shield ~~PR~~ **XR** Rigid Insulation.
 - b. Modify Part 2 – 2.3, paragraph C, item 02 per below:
 - i. Closed cell, polyisocyanurate (polyiso) foam core faced with a ~~reflective 12 mil reinforced foil facers on one side and a white 12 mil reinforced acrylic-coated aluminum facer on the other~~ **reflective 12 mil reinforced foil facers on one side and a white 12 mil reinforced acrylic-coated aluminum facer on the other** **reflective, impermeable foil faces on both sides.**
25. Section 09 61 44 – Polished Concrete (Reactive Chemical Concrete Stain)
- a. Replace Part 2, 2.4 Accessories:
 - i. Control Joint Filler: Self-leveling ~~silicone sealant~~ **two-component, semi-rigid polyurea control joint filler** as manufactured by Metzger McGuire, Dow, Sika Corporation, Tremco, or equal as approved by Architect.
 - ii. Fill all joints whether indicated on Drawings or not.
 - iii. All saw cuts and expansion joints to be cleaned out prior to flooring installation.
 - iv. ~~Sealed~~ **Polished** concrete floors shall have sealant joints filled flush to floor surface prior to application of floor sealer.
 - v. Color: Gray to match concrete color.
 - vi. **Shore-A Hardness: 80 minimum**
26. Section 08 80 10 – Metal Window Panels
- a. Replace spec section in its entirety with attached spec section 08 80 10.
27. Section 14 24 10 – Hydraulic Elevators
- a. Replace spec section in its entirety with the attached spec section 14 24 10.
28. Section 32 18 13 – Synthetic Turf Surfacing for Playground
- a. Delete Part 2, section 2.4 Materials, paragraph E.
 - b. Add to Part 2, section 2.4 Materials, paragraph F:
 - vii. *Aggregate Base Course: Sound crushed graded stone or gravel complying with ASTM D 448 for Size No. 8 or ASTM D 448 for Size No. 57. **Approx. 3-4 inches thick.***

PART E: CHANGES TO THE DRAWINGS

29. A5.03 – ENLARGED STAIR PLANS
- a. Changed Stair Section Details 3 and 7: note on stair guardrails to:
 - i. S.S. GUARDRAIL W/ PERF **S.S.** INFIL TYP.
 - b. Changed Stair Section Details 4 and 8: note on stair guardrails to:
 - i. S.S. GUARDRAIL AND HANDRAIL W/ PERF **S.S.** INFIL TYP
30. A5.04 – ENLARGED STAIR PLANS
- a. Changed Stair Section Details 4 and 8: note on stair guardrails to:
 - ii. S.S. GUARDRAIL AND HANDRAIL W/ PERF **S.S.** INFIL TYP.

PART F: RE-ISSUED SHEETS

31. A2.07 – ROOM FINISH SCHEDULES
 - a. Changed room ceiling finishes on schedule to match RCP plans.

PART G: NEW ISSUED SHEETS

32. None

END OF ADDENDUM NO. 08

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON INSTRUCTION PAGES 1-11

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A – PROPERTY INFORMATION	FOR INSURANCE COMPANY USE
A1. Building Owner's Name: <u>Alvin Independent School District</u>	Policy Number: _____
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: <u>5000 Mustang Road</u>	Company NAIC Number: _____
City: <u>Alvin</u> State: <u>Texas</u> ZIP Code: <u>77511</u>	
A3. Property Description (e.g., Lot and Block Numbers or Legal Description) and/or Tax Parcel Number: <u>Hooper & Wade Survey, Section 16, A-480, Tract 29-30 / Property ID 174517 Brazoria County</u>	
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): <u>Commercial (Education)</u>	
A5. Latitude/Longitude: Lat. <u>29.375094444</u> Long. <u>-95.23108888</u> Horiz. Datum: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983 <input checked="" type="checkbox"/> WGS 84	
A6. Attach at least two and when possible four clear color photographs (one for each side) of the building (see Form pages 7 and 8).	
A7. Building Diagram Number: <u>1a</u>	
A8. For a building with a crawlspace or enclosure(s):	
a) Square footage of crawlspace or enclosure(s): <u>N/A</u> sq. ft.	
b) Is there at least one permanent flood opening on two different sides of each enclosed area? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
c) Enter number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade: Non-engineered flood openings: <u>N/A</u> Engineered flood openings: <u>N/A</u>	
d) Total net open area of non-engineered flood openings in A8.c: <u>N/A</u> sq. in.	
e) Total rated area of engineered flood openings in A8.c (attach documentation – see Instructions): <u>N/A</u> sq. ft.	
f) Sum of A8.d and A8.e rated area (if applicable – see Instructions): <u>N/A</u> sq. ft.	
A9. For a building with an attached garage:	
a) Square footage of attached garage: <u>N/A</u> sq. ft.	
b) Is there at least one permanent flood opening on two different sides of the attached garage? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
c) Enter number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade: Non-engineered flood openings: <u>N/A</u> Engineered flood openings: <u>N/A</u>	
d) Total net open area of non-engineered flood openings in A9.c: <u>N/A</u> sq. in.	
e) Total rated area of engineered flood openings in A9.c (attach documentation – see Instructions): <u>N/A</u> sq. ft.	
f) Sum of A9.d and A9.e rated area (if applicable – see Instructions): <u>N/A</u> sq. ft.	

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1.a. NFIP Community Name: <u>City of Alvin</u>	B1.b. NFIP Community Identification Number: <u>485451</u>
B2. County Name: <u>Brazoria</u>	B3. State: <u>Texas</u> B4. Map/Panel No.: <u>48039C0305</u> B5. Suffix: <u>K</u>
B6. FIRM Index Date: <u>12/30/2020</u>	B7. FIRM Panel Effective/Revised Date: <u>12/30/2020</u>
B8. Flood Zone(s): <u>A/O</u>	B9. Base Flood Elevation(s) (BFE) (Zone AO, use Base Flood Depth): <u>1'</u>
B10. Indicate the source of the BFE data or Base Flood Depth entered in Item B9: <input type="checkbox"/> FIS <input checked="" type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other: _____	
B11. Indicate elevation datum used for BFE in Item B9: <input type="checkbox"/> NGVD 1929 <input checked="" type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____	
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Designation Date: _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA	
B13. Is the building located seaward of the Limit of Moderate Wave Action (LIMWA)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON INSTRUCTION PAGES 1-11

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: <u>5000 Mustang Road</u>	FOR INSURANCE COMPANY USE
City: <u>Alvin</u> State: <u>Texas</u> ZIP Code: <u>77511</u>	Policy Number: _____ Company NAIC Number: _____

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

- C1. Building elevations are based on: Construction Drawings* Building Under Construction* Finished Construction
 *A new Elevation Certificate will be required when construction of the building is complete.
- C2. Elevations – Zones A1–A30, AE, AH, AO, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO, A99. Complete Items C2.a–h below according to the Building Diagram specified in Item A7. In Puerto Rico only, enter meters.
 Benchmark Utilized: NGS PID No AW5547 (HGCS D 56) Vertical Datum: NAVD88

Indicate elevation datum used for the elevations in items a) through h) below.

- NGVD 1929 NAVD 1988 Other: _____

Datum used for building elevations must be the same as that used for the BFE. Conversion factor used? Yes No
 If Yes, describe the source of the conversion factor in the Section D Comments area.

Check the measurement used:
 feet meters

- | | | |
|---|--------------|--|
| a) Top of bottom floor (including basement, crawlspace, or enclosure floor): | <u>33.00</u> | <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters |
| b) Top of the next higher floor (see Instructions): | <u>N/A</u> | <input type="checkbox"/> feet <input type="checkbox"/> meters |
| c) Bottom of the lowest horizontal structural member (see Instructions): | <u>N/A</u> | <input type="checkbox"/> feet <input type="checkbox"/> meters |
| d) Attached garage (top of slab): | <u>N/A</u> | <input type="checkbox"/> feet <input type="checkbox"/> meters |
| e) Lowest elevation of Machinery and Equipment (M&E) servicing the building (describe type of M&E and location in Section D Comments area): | <u>33.00</u> | <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters |
| f) Lowest Adjacent Grade (LAG) next to building: <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Finished | <u>31.30</u> | <input type="checkbox"/> feet <input type="checkbox"/> meters |
| g) Highest Adjacent Grade (HAG) next to building: <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Finished | <u>31.60</u> | <input type="checkbox"/> feet <input type="checkbox"/> meters |
| h) Finished LAG at lowest elevation of attached deck or stairs, including structural support: | <u>N/A</u> | <input type="checkbox"/> feet <input type="checkbox"/> meters |

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by state law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

Were latitude and longitude in Section A provided by a licensed land surveyor? Yes No

Check here if attachments and describe in the Comments area.

Certifier's Name: William J Seybert, P.E. License Number: 92999

Title: Principal

Company Name: S&G Engineering Consultants, LLC

Address: 1796 Ave. D, Suite B

City: Katy State: Texas ZIP Code: 77493

Telephone: 832-437-7377 Ext.: _____ Email: joels@sg-civil.com

Signature:  Date: 02/23/26



Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments (including source of conversion factor in C2; type of equipment and location per C2.e; and description of any attachments):

Chiller pads in service yard to have minimum slab elevation of 33.00.

ELEVATION CERTIFICATE

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City: Alvin State: Texas ZIP Code: 77511	Policy Number: _____ Company NAIC Number: _____

SECTION E – BUILDING MEASUREMENT INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO, ZONE AR/AO, AND ZONE A (WITHOUT BFE)

For Zones AO, AR/AO, and A (without BFE), complete Items E1–E5. For Items E1–E4, use natural grade, if available. If the Certificate is intended to support a Letter of Map Change request, complete Sections A, B, and C. Check the measurement used. In Puerto Rico only, enter meters.

Building measurements are based on: Construction Drawings* Building Under Construction* Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

E1. Provide measurements (C.2.a in applicable Building Diagram) for the following and check the appropriate boxes to show whether the measurement is above or below the natural HAG and the LAG.

a) Top of bottom floor (including basement, crawlspace, or enclosure) is: 1.4 feet meters above or below the HAG.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is: 1.7 feet meters above or below the LAG.

E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 1–2 of Instructions), the next higher floor (C2.b in applicable Building Diagram) of the building is: N/A feet meters above or below the HAG.

E3. Attached garage (top of slab) is: N/A feet meters above or below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is: 1.4 feet meters above or below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? Yes No Unknown The local official must certify this information in Section G.

SECTION F – PROPERTY OWNER (OR OWNER'S AUTHORIZED REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without BFE) or Zone AO must sign here. *The statements in Sections A, B, and E are correct to the best of my knowledge*

Check here if attachments and describe in the Comments area.

Property Owner or Owner's Authorized Representative Name: Bill VanWagner / Director of Planning & Construction

Address: 2200 Stapp Maxwell

City: Alvin State: TX ZIP Code: 77511

Telephone: 281-245-2555 Ext.: _____ Email: bvanwagner@alvinisd.net

Signature:  Date: 02 / 23 / 26

Comments:

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON INSTRUCTION PAGES 1-11

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: _____	FOR INSURANCE COMPANY USE
City: _____ State: _____ ZIP Code: _____	Policy Number: _____ Company NAIC Number: _____

SECTION G – COMMUNITY INFORMATION (RECOMMENDED FOR COMMUNITY OFFICIAL COMPLETION)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Section A, B, C, E, G, or H of this Elevation Certificate. Complete the applicable item(s) and sign below when:

- G1. The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by state law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)
- G2.a. A local official completed Section E for a building located in Zone A (without a BFE), Zone AO, or Zone AR/AO, or when item E5 is completed for a building located in Zone AO.
- G2.b. A local official completed Section H for insurance purposes.
- G3. In the Comments area of Section G, the local official describes specific corrections to the information in Sections A, B, E and H.
- G4. The following information (Items G5–G11) is provided for community floodplain management purposes.
- G5. Permit Number: _____ G6. Date Permit Issued: _____
- G7. Date Certificate of Compliance/Occupancy Issued: _____
- G8. This permit has been issued for: New Construction Substantial Improvement
- G9.a. Elevation of as-built lowest floor (including basement) of the building: _____ feet meters Datum: _____
- G9.b. Elevation of bottom of as-built lowest horizontal structural member: _____ feet meters Datum: _____
- G10.a. BFE (or depth in Zone AO) of flooding at the building site: _____ feet meters Datum: _____
- G10.b. Community's minimum elevation (or depth in Zone AO) requirement for the lowest floor or lowest horizontal structural member: _____ feet meters Datum: _____
- G11. Variance issued? Yes No If yes, attach documentation and describe in the Comments area.

The local official who provides information in Section G must sign here. *I have completed the information in Section G and certify that it is correct to the best of my knowledge. If applicable, I have also provided specific corrections in the Comments area of this section.*

Local Official's Name: _____ Title: _____

NFIP Community Name: _____

Telephone: _____ Ext.: _____ Email: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Signature: _____ Date: _____

Comments (including type of equipment and location, per C2.e; description of any attachments; and corrections to specific information in Sections A, B, D, E, or H):

SECTION 08 80 10

METAL WINDOW PANELS

CONDITIONS OF THE CONTRACT, SECTIONS AA THROUGH CB AND DIVISION 1 APPLY TO THIS SECTION.

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Refer to Section AB – Instructions to Proposers, Section AF – Subcontractor / Manufacturer Prequalification, and Section 01 25 00 – Request for Substitution Procedures.
- B. This project is in the TWIA Zone: Building envelope components shall meet the requirements for certification / approval of Texas Department of Insurance. (TDI.). Refer to Structural Drawings for additional information and requirements.
- C. Scope of Work:
 - 01 Providing metal skins laminated to stabilizer substrates with an insulating core material. Panels are designed to be glazed into a window system or curtain wall system.
 - 02 Provide at locations designated as pre-finished infill panel on drawings.
- D. Related Work:
 - 01 Section 07 92 00 – Joint Sealants
 - 02 Section 08 80 00 – Glazed Systems: Windows in which panels are to be installed.

1.2 SUBMITTALS

- A. Review and comply with all provisions of Section 01 33 00 – Submittal Procedures.
- B. Product Data: Submit manufacturer's literature, product data, certifications and supporting information for all products proposed to be furnished, as necessary to demonstrate compliance with the specified requirements.
- C. Shop Drawings: Submit complete Shop Drawings consisting of design, fabrication and erection / installation of proposed assemblies.
 - 01 Show profiles, sizes, spacing and locations of assembled components.
 - 02 Show details of shop fabrications, connections and details.
 - 03 Show details of field fabrications, connections and details.
 - 04 Provide calculations demonstrating compliance with wind load and other requirements.
- D. Installation Instructions: Submit manufacturer's complete installation instructions, including fastening, for all products and / or assemblies proposed to be furnished.
 - 01 Installation details submitted for review shall be specific to the Work of this Contract and accurately depict interface within the assembly(s) indicated on the Drawings.
 - 02 Generic details that do not depict actual conditions shall not be acceptable.

- E. Maintenance Instructions: Submit manufacturer's complete maintenance instructions and recommendations for all products and / or assemblies proposed to be furnished.
 - 01 Include recommended cleaning products and instructions for use.
 - 02 Where applicable, provide recommended maintenance schedules and procedures.
- F. Color / Finish Samples:
 - 01 Provide two (2) samples of each finish for selection by the Architect.
 - 02 Finish samples shall be provided of / on actual material; paper or digital samples shall not be accepted.
 - 03 Minimum size shall be 3" x 3" but must be large enough to convey attributes of the proposed product.
- G. Certifications:
 - 01 Letter of certification from manufacturer that installer is in compliance and meets specified requirements.
 - 02 Manufacturer's affidavit that materials used in Project contain no asbestos.
 - 03 Provide Texas Department of Insurance (TDI) certification that the proposed system is a TDI accepted system for the specified wind load requirements.

1.3 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Shall have a minimum of twenty-five (25) years of experience manufacturing panels of the type specified for this Project. A letter certifying compliance should accompany the product material submittal.
- B. Installer's Qualifications: Installer shall be an approved installer, certified and authorized by the manufacturer as trained and qualified to install the manufacturer's product. Provide a letter of certification from manufacturer that installer has a minimum of three (3) years of metal panel installation experience preceding the date upon which Work is to commence.
- C. Field measurements shall be taken prior to completion of manufacturing and cutting.
- D. Maximum deviation from vertical and horizontal alignment of installed panels is 1/8 inch in 20 feet 0 inches non-commutative.
- E. *Both insulated and non-insulated panels are to be sourced from the same Manufacturer.***

1.4 REFERENCES

- A. ASTM International (ASTM):
 - 01 E330, Structural Performance of Exterior Windows, Curtain Walls and Doors under the influence of wind loads.
 - 02 D1781, Climbing Drum Peel Test for Adhesives.
 - 03 D3363, Method for Film Hardness by Pencil Test.
 - 04 D2794, Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
 - 05 D3359, Method for Measuring Adhesion by the Tape Test.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Protect finish and edge in accordance with panel manufacturer's recommendations.
- B. Store materials in accordance with panel manufacturer's recommendations.

1.6 COORDINATION

- A. Coordinate work with window installation specified in **Section 08 80 00 - Glazing** and building sealants specified in **Section 07 92 00 – Joint Sealants**.

1.7 WARRANTY

- A. Warrant the work specified herein for twenty-five (25) years against defects in materials and against becoming unserviceable or causing an objectionable appearance resulting from defective or nonconforming workmanship.
- B. Defects shall include, but not be limited to the following:
 - 01 Crazing.
 - 02 Cracking.
 - 03 Peeling.
 - 04 Fading.

PART 2 - PRODUCTS

2.1 APPROVED MANUFACTURER

A. Insulated Metal Window Panel:

- 01 Specification are based on Laminated metal faced panels Mapes-R+ as manufactured by Mapes Industries, Inc., Lincoln, Nebraska; (800) 228-2391. Other manufacturers must have a minimum of twenty-five (25) years of experience manufacturing products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.
 - a. Substitutions must be submitted and approved by Architect and Owner prior to bid.
- 02 Finish
 - a. Exterior: Clear Anodized
 - b. Interior: Smooth Baked enamel Finish.
- 03 Panel Fabrication:
 - a. Substrates: High density tempered hardboard under interior and exterior skins.
 - b. Glazing Leg Core and main core: isocyanurate.
 - c. Tolerances: 0.8 percent of panels dimension length and width or (+/-) 1/16 inch thickness.
 - d. Panel Thickness: One (1) inch Glazing Legs and 4" total thickness.
 - e. R-Value: 28.9 approximately.
 - f. Panel shall be rated for plenum use.

B. Non-Insulated Metal Window Panel:

- 01 **Non-Insulated Veneer and Glazing Panel as manufactured by Mapes Industries, Inc., Lincoln, Nebraska; (800) 228-2391. Other manufacturers must have a minimum of twenty-five (25) years of**

- experience manufacturing products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.*
- 02 Finish: Clear Anodized (both sides)*
 - 03 Substrates: 3/16" Tempered Hardboard*
 - 04 Application: Glazing Replacement*
 - 05 Provide all accessories needed for complete installation in frame system.*

2.2 ACCESSORIES

- A. Type recommended to suit application and to complete installation as recommended by the panel manufacturer.
- B. Joint Sealants: As specified in **Section 07 92 00 – Joint Sealants**.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Ensure windows are properly installed and ready to receive Work of this Section.
- B. Examine panel surfaces to ensure they are free from defects prior to installation.

3.2 INSTALLATION

- A. Install panels plumb, level and true.
- B. Glaze panels securely and in accordance with approved Shop Drawings and manufacturer's instructions to allow for necessary thermal movement and structural support.
- C. Do not install panels that are observed to be defective including warped, bowed, dented, scratched and delaminated components.
- D. Weatherseal all joints as required using methods and materials in accordance with manufacturer's instructions and in accordance with provisions of Section 07 92 00 – Joint Sealants.
- E. Separate dissimilar metals using gasketed fasteners and blocking to eliminate the possibility of electrolytic reaction.

3.3 ADJUSTING AND CLEANING

- A. Remove masking film as soon as possible after installation. Masking intentionally left in place after panel installation will be the responsibility of the Contractor.
- B. Weep holes and drainage channels must be unobstructed and free from dirt and sealant.

3.4 PROTECTION

- A. Protect panels from damage and discoloration.

- B. Repair or replace damaged or discolored panels at no additional expense to Owner.

END OF SECTION

SECTION 14 24 00

HYDRAULIC ELEVATORS

CONDITIONS OF THE CONTRACT, SECTIONS AA THROUGH CB AND DIVISION 1 APPLY TO THIS SECTION.

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Refer to Section AB – Instructions to Proposers, Section AF – Subcontractor / Manufacturer Prequalification, and Section 01 25 00 – Request for Substitution Procedures.
- B. This project is in the TWIA Zone: Building envelope components shall meet the requirements for certification / approval of Texas Department of Insurance. (TDI.). Refer to Structural Drawings for additional information and requirements.
- C. Scope of Work:
 - 01 Provide a pre-engineered, holeless hydraulic passenger elevator as indicated on the Drawings, complete with cab, door frames and trim, jacks, controls and all other accessories required for a complete installation.
- D. Related Work:
 - 01 Section 03 30 00 – Cast-In-Place Concrete
 - 02 Section 04 20 00 – Unit Masonry
 - 03 Section 05 12 00 – Structural Steel Framing
 - 04 Section 05 50 00 – Metal Fabrications
 - 05 Section 08 71 00 – Door Hardware
 - 06 Division 09 – Finishes
 - 07 Section 09 21 16 – Gypsum Board Assemblies
 - 08 Section 10 10 00 – Miscellaneous Specialties
 - 09 Division 22 - Plumbing
 - 10 Division 26 – Electrical
 - 11 Division 27 - Communication

1.2 SUBMITTALS

- A. Review and comply with all provisions of section 01 33 00 – Submittal Procedures.
- B. Product Data: Submit manufacturer's literature, product data, certifications and supporting information for all products proposed to be furnished, as necessary to demonstrate compliance with the specified requirements.
- C. Shop Drawings: Submit complete shop drawings consisting of design, fabrication and erection / installation of proposed assemblies.
 - 01 Show profiles, sizes, spacing and locations of assembled components.
 - 02 Show details of shop fabrications, connections and details.
 - 03 Show details of field fabrications, connections and details.

- D. Installation Instructions: Submit manufacturer's complete installation instructions, including fastening, for all products and / or assemblies proposed to be furnished.
 - 01 Installation details submitted for review shall be specific to the work of this contract and accurately depict interface within the assembly(s) indicated on the Drawings.
 - 02 Generic details that do not depict actual conditions shall not be acceptable.

- E. Maintenance Instructions: Submit manufacturer's complete maintenance instructions and recommendations for all products and / or assemblies proposed to be furnished.
 - 01 Include recommended cleaning products and instructions for use.
 - 02 Where applicable, provide recommended maintenance schedules and procedures.

- F. Color / Finish Samples:
 - 01 Provide two (2) samples of each finish for selection by the Architect.
 - 02 Finish samples shall be provided of / on actual material; paper or digital samples shall not be accepted.
 - 03 Minimum size shall be 3" x 3", but must be large enough to convey attributes of the proposed product.

- G. Operations and Maintenance Manuals:
 - 01 Provide complete operations and maintenance manuals to the Owner.
 - 02 Refer to section 01 78 23 – Operations and Maintenance Manuals
 - 03 O & M manuals must be reviewed, accepted and delivered to the Owner prior to Owner demonstration(s).

- H. For warranties longer than one (1) year, submit a sample of the warranty proposed to be furnished.

1.3 REFERENCES

- A. American National Standards Institute (ANSI) / NFPA
 - 01 ANSI A117.1, Buildings and Facilities, Providing Accessibility and Usability for Physically Handicapped People.
 - 02 ANSI/NFPA 70, National Electrical Code.
 - 03 ANSI/NFPA 80, Fire Doors and Windows.
 - 04 ASME/ANSI A17.7, Safety Code for Elevators and Escalators.
 - 05 ANSI/UL 10B, Fire Tests of Door Assemblies.
 - 06 EN 12016 (May 1998): "EMC Product Family Standards for lifts, escalators, and passenger conveyors Part 2 – immunity"
 - 07 Local Building Codes.

- B. National Electric Code - Latest edition with supplements

- C. Americans with Disabilities Act (ADA)
 - 01 ADAAG, Americans with Disabilities Act Accessibility Guidelines.

- D. State of Texas Revised Civil Statutes, Article 601b, Article 7

1.4 WARRANTY

- A. The elevator contractor's acceptance is conditional on the understanding that their warranty covers defective material and workmanship.

- B. The warranty period shall two (2) years from the date of Substantial Completion.
- C. The warranty shall cover
 - 01 All operating components.
 - 02 All cab components furnished and installed by the elevator manufacturer.
 - 03 All communication and electrical components furnished and installed by the elevator manufacturer.

1.5 MAINTENANCE

- A. Provide a maintenance program for twelve (12) months from the date of Substantial Completion.
- B. Service shall consist of periodic examination of the equipment, adjustment, lubrication, cleaning, supplies and parts to keep the elevators in proper operation. Maintenance work, including emergency call back repair service, shall be performed by trained employees of the elevator contractor during regular working hours.
- C. Submit parts catalog and show evidence of local parts inventory with complete list of recommended spare parts. Parts shall be produced by manufacturer of original equipment.
- D. Manufacturer shall have a service office and full time service personnel within a 100 mile radius of the project site.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: An approved manufacturer with minimum 15 years of experience in manufacturing, installing, and servicing elevators of the type required for the project.
 - 01 The manufacturer of machines, signal fixtures, door operators cabs, entrances, and all other major parts of elevator operating equipment.
 - 02 The manufacturer shall have a documented, on-going quality assurance program.
- B. Installer Qualifications: The manufacturer or an authorized agent of the manufacturer with not less than 15 years of satisfactory experience installing elevators equal in character and performance to the project elevators.
- C. Regulatory Requirements:
 - 01 ASME A17.1 Safety Code for Elevators and Escalators, latest edition or as required by the local building code.
 - 02 Building Code: International Building Code (IBC), 2024 edition.
 - 03 NFPA 70 National Electrical Code.
 - 04 NFPA 80 Fire Doors and Windows.
 - 05 Americans with Disabilities Act – Texas Accessibility Standards, 2012 version.
- D. Fire-rated entrance assemblies: Opening protective assemblies including frames, hardware, and operation shall comply with ASTM E2074, and NFPA Standard 80. Provide entrance assembly units bearing Class B or 1 1/2 hour label by a Nationally Recognized Testing Laboratory.
- E. Inspection and testing:
 - 01 Elevator Installer shall obtain and pay for all required inspections, tests, permits and fees for elevator installation.

- 02 Arrange for inspections and make required tests.
- 03 Deliver to the Owner upon completion and acceptance of elevator work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Design of the elevator is based on products manufactured by Fujitec.
- B. The following manufacturers are acceptable provide proposed products meet or exceed all specified requirements and fit designed spaces available as indicated on the Drawings.
 - 01 KONE
 - 02 Otis Elevator Company
 - 03 Shindler Elevator Company
- C. Any supplier requesting approval shall have a minimum of five (5) years' experience in the installation of similar equipment, and have a maintenance representative in the area with parts stocked.

2.2 MATERIALS

- A. Design of elevator is based on Fujitec Hydraulic Elevator.
- B. Colors, patterns, and finishes: As selected by the Architect from manufacturer's full range of standard colors, patterns, and finishes.
- C. **Stainless Steel:**
 - 01 Shapes and bars: ~~Carbon~~ **ASTM A276, Type 304 or Type 316.**
 - 02 Sheet: ~~Cold-rolled steel sheet, commercial quality, Class 1, matte finish.~~ **ASTM A276, Type 304 or Type 316, cold-rolled.**
 - 03 Finish: ~~Factory applied baked enamel for structural parts, powder coat for architectural parts. Color selection must be based on elevator manufacture's standard selections.~~ **Directional satin finish (No. 4) for architectural parts, or as selected by the Architect.**
- D. Plastic laminate: Decorative high-pressure type, complying with NEMA LD3, Type GP-50 General Purpose Grade, nominal 0.050" thickness.

2.3 HOISTWAY EQUIPMENT

- A. Platform: Fabricated frame of formed or structural steel shapes, gusseted and rigidly welded with a wood sub-floor. Underside of the platform shall be fireproofed. The car platform shall be designed and fabricated to support one-piece loads weighing up to 25% of the rated capacity.
- B. Sling: Steel stiles bolted or welded to a steel crosshead and bolstered with bracing members to remove strain from the car enclosure.
- C. Guide Rails: Steel, omega shaped, fastened to the building structure with steel brackets.
- D. Guides: Slide guides shall be mounted on top and bottom of the car.

- E. Buffers: Provide substantial buffers in the elevator pit. Mount buffers on continuous channels fastened to the elevator guide rail or securely anchored to the pit floor. Provide extensions if required by project conditions.
- F. Jack: A jack unit shall be of sufficient size to lift the gross load the height specified. Factory test jack to ensure adequate strength and freedom from leakage. Brittle material, such as gray cast iron, is prohibited in the jack construction. Provide the following jack type: Twin post holeless. Two jacks piped together, mounted one on each side of the car with a polished steel hydraulic plunger housed in a sealed steel casing having sufficient clearance space to allow for alignment during installation. Each plunger shall have a high pressure sealing system which will not allow for seal movement or displacement during the course of operation. Each Jack Assembly shall have a check valve built into the assembly to allow for automatically re-syncing the two plunger sections by moving the jack to its fully contracted position. The jack shall be designed to be mounted on the pit floor or in a recess in the pit floor. Each jack section shall have a bleeder valve to discharge any air trapped in the section.
 - 01 Inverted jacks are not permissible.
- G. Automatic Self-Leveling: Provide each elevator car with a self-leveling feature to automatically bring the car to the floor landings and correct for over travel or under travel. Self-leveling shall, within its zone, be automatic and independent of the operating device. The car shall be maintained approximately level with the landing irrespective of its load.
- H. Wiring, Piping, and Oil: Provide all necessary hoistway wiring in accordance with the
- I. National Electrical Code. All necessary code compliant pipe and fittings shall be provided to connect the power unit to the jack unit. Provide proper viscosity grade inherently biodegradable oil as specified by the manufacturer of the power unit.

2.4 POWER UNIT

- A. Power Unit (Oil Pumping and Control Mechanism): A self-contained unit consisting of the following items:
 - 01 An oil reservoir with tank cover.
 - 02 An oil hydraulic pump.
 - 03 An electric motor.
 - 04 An oil control valve with the following components built into single housing; high pressure relief valve, check valve, automatic unloading up start valve, lowering and leveling valve, and electro-magnetic controlling solenoids.
- B. Pump: Positive displacement type pump specifically manufactured for oil-hydraulic elevator service. Pump shall be designed for steady discharge with minimum pulsation to give smooth and quiet operation. Output of pump shall not vary more than 10 percent between no load and full load on the elevator car.
- C. Motor: Standard manufacture motor specifically designed for oil-hydraulic elevator service. Duty rating shall be selected for specified speed and load.
- D. Oil Control Unit: The following components shall be built into a single housing. Welded manifolds with separate valves to accomplish each function are not acceptable. Adjustments shall be accessible and be made without removing the assembly from the oil line.

- 01 Relief valve shall be adjustable and be capable of bypassing the total oil flow without increasing back pressure more than 10 percent above that required to barely open the valve.
- 02 Up start and stop valve shall be adjustable and designed to bypass oil flow during start and stop of motor pump assembly. Valve shall close slowly, gradually diverting oil to or from the jack unit, ensuring smooth up starts and up stops.
- 03 Check valve shall be designed to close quietly without permitting any perceptible reverse flow.
- 04 Lowering valve and leveling valve shall be adjustable for down start speed, lowering speed, leveling speed and stopping speed to ensure smooth "down" starts and stops. The leveling valve shall be designed to level the car to the floor in the direction the car is traveling after slowdown is initiated.
- 05 Solid State Starting: Provide an electronic starter featuring adjustable starting currents.
- 06 Oil Type: As recommended by Manufacturer.

2.5 HOISTWAY ENTRANCES

- A. Doors and Frames: Provide complete hollow metal type hoistway entrances at each hoistway opening bolted\knock down construction.
 - 01 Manufacturer's standard entrance design consisting of hangers, doors, hanger supports, hanger covers, fascia plates (where required), sight guards, and necessary hardware.
 - 02 Main landing door & frame finish: ~~ASTM A1008 steel panels, factory applied powder coat finish with factory applied powder coat finish entrance frame.~~ **ASTM A240, Type 304 stainless steel panels, minimum 14-gauge. Finish: No. 4 directional satin finish or manufacturer's standard textured finish to resist marring and fingerprints.**
 - 03 Typical door & frame finish: ~~ASTM A366 steel panels, factory applied powder coat enamel finish with factory applied powder coat finish entrance frame.~~ **ASTM A240, Type 304 stainless steel panels with No. 4 directional satin finish.**
- B. Interlocks: Equip each hoistway entrance with an approved type interlock tested as required by code. Provide door restriction devices as required by code.
- C. Door Hanger and Tracks: Provide sheave type two-point suspension hangers and tracks for each hoistway horizontal sliding door.
 - 01 Sheaves: Polyurethane tires with ball bearings properly sealed to retain grease.
 - 02 Hangers: Provide an adjustable device beneath the track to limit the up-thrust of the doors during operation.
 - 03 Tracks: Drawn steel shapes, smooth surface and shaped to conform to the hanger sheaves.
- D. Hoistway Sills: Extruded metal, with groove(s) in top surface. Provide mill finish on aluminum.

2.6 PASSENGER ELEVATOR CAR ENCLOSURE

- A. Car Enclosure:
- 01 Walls: Brushed Stainless Steel 400 series (SS#4) finish with permanent protection pad studs on top.
 - 02 Reveals and frieze: ~~Powder coated.~~ **ASTM A240, Type 304 stainless steel with No. 4 directional satin finish to match wall panels.**
 - 03 Canopy: ~~Cold-rolled steel with hinged exit.~~ **ASTM A240, Type 304 stainless steel with integrated, hinged emergency exit.**
 - 04 Ceiling: SS#4 with LED downlights.
 - 05 Cab Fronts, Return, Transom, Soffit and Strike: Provide panels faced with brushed stainless steel
 - 06 Doors: Horizontal sliding car doors reinforced with steel for panel rigidity. Hang doors on sheave type hangers with polyurethane tires that roll on a polished steel track and are guided at the bottom by non-metallic sliding guides.
 - a. Door Finish: Stainless steel panels: No. 4 brushed finish.
 - b. Cab Sills: Extruded aluminum, mill finish.
- B. Handrail: None.
- C. Ventilation: Manufacturer's standard exhaust fan, mounted on the car top.
- D. Protection pads and buttons: Provide one set of vinyl protection pads for each cab. Provide on cab front(s) and walls.
- 01 Pads to be full height with factory-installed permanent studs for hanging.
- E. Car Top Inspection: Provide a car top inspection station with an "Auto-Inspection" switch, an "emergency stop" switch, and constant pressure "up and down" direction and safety buttons to make the normal operating devices inoperative. The station shall give the inspector complete control of the elevator. The car top inspection station shall be mounted in the door operator assembly.

2.7 DOOR OPERATION

- A. Door Operation: Provide a direct or alternating current motor driven heavy duty operator designed to operate the car and hoistway doors simultaneously. The door control system shall be digital closed loop and the closed loop circuit shall give constant feedback on the position and velocity of the elevator door. The motor torque shall be constantly adjusted to maintain the correct door speed based on its position and load. All adjustments and setup shall be through the computer based service tool. Door movements shall follow a field programmable speed pattern with smooth acceleration and deceleration at the ends of travel. The mechanical door operating mechanism shall be arranged for manual operation in event of power failure. Doors shall automatically open when the car arrives at the landing and automatically close after an adjustable time interval or when the car is dispatched to another landing. AC controlled units with oil checks, or other deviations are not acceptable.
- 01 No Un-Necessary Door Operation: The car door shall open only if the car is stopping for a car or hall call, answering a car or hall call at the present position or selected as a dispatch car.
 - 02 Door Open Time Saver: If a car is stopping in response to a car call assignment only (no coincident hall call), the current door hold open time is changed to a shorter field programmable time when the electronic door protection device is activated.

- 03 Double Door Operation: When a car stops at a landing with concurrent up and down hall calls, no car calls, and no other hall call assignments, the car door opens to answer the hall call in the direction of the car's current travel. If an onward car call is not registered before the door closes to within 6 inches of fully closed, the travel shall reverse and the door shall reopen to answer the other call.
 - 04 Nudging Operation: The doors shall remain open as long as the electronic detector senses the presence of a passenger or object in the door opening. If door closing is prevented for a field programmable time, a buzzer shall sound. When the obstruction is removed, the door shall begin to close at reduced speed. If the infra-red door protection system detects a person or object while closing on nudging, the doors shall stop and resume closing only after the obstruction has been removed.
 - 05 Door Reversal: If the doors are closing and the infra-red beam(s) is interrupted, the doors shall reverse and reopen. After the obstruction is cleared, the doors shall begin to close.
 - 06 Door Open Watchdog: If the doors are opening, but do not fully open after a field adjustable time, the doors shall recycle closed then attempt to open six times to try and correct the fault.
 - 07 Door Close Watchdog: If the doors are closing, but do not fully close after a field adjustable time, the doors shall recycle open then attempt to close six times to try and correct the fault.
 - 08 Door Close Assist: When the doors have failed to fully close and are in the recycle mode, the door drive motor shall have increased torque applied to possibly overcome mechanical resistance or differential air pressure and allow the door to close.
- B. Door Protection Device: Provide a door protection system using microprocessor controlled infra-red light beams. The beams shall project across the car opening detecting the presence of a passenger or object. If door movement is obstructed, the doors shall immediately reopen.

2.8 CAR OPERATING STATION

- A. Car Operating Station, General: The main car control in each car shall contain the devices required for specific operation mounted in an integral swing return panel requiring no applied faceplate. Wrap return shall have a brushed stainless steel finish. The main car operating panel shall be mounted in the return and comply with handicap requirements. Pushbuttons that illuminate using long lasting LED's shall be included for each floor served, and emergency buttons and switches shall be provided per code. Switches for car light and accessories shall be provided.
- B. Emergency Communications System: Integral phone system provided.
- C. Column Mounted Car Riding Lantern: A car riding lantern shall be installed in the elevator cab and located in the entrance. The lantern, when illuminated, will indicate the intended direction of travel. The lantern will illuminate and a signal will sound when the car arrives at a floor where it will stop. The lantern shall remain illuminated until the door(s) begin to close.
 - 01 Special Equipment: Key switch

2.9 CONTROL SYSTEMS

- A. Provide Smart Rise non-proprietary controls ONLY – No alternates will be accepted.
- B. Controller: The elevator control system shall be microprocessor based and software oriented. Control of the elevator shall be automatic in operation by means of push buttons in the car numbered to correspond to floors served, for registering car stops, and by "up-down" push buttons at each intermediate landing and "call" push buttons at terminal landings.
- C. Automatic Light and Fan shut down: The control system shall evaluate the system activity and automatically turn off the cab lighting and ventilation fan during periods of inactivity. The settings shall be field programmable.

2.10 HALL STATIONS

- A. Hall Stations, General: Buttons shall illuminate to indicate call has been registered at that floor for the indicated direction.
 - 01 Provide one pushbutton riser with faceplates and pushbuttons having a brushed stainless steel finish and buttons should be vandal resistant.
 - a. Phase 1 firefighter's service key switch, with instructions, shall be incorporated into the hall station at the designated level.
- B. Floor Identification Pads: Provide door jamb pads at each floor. Jamb pads shall comply with Americans with Disabilities Act (ADA) requirements.
- C. Hall Position Indicator: None
- D. Hall lanterns: Not Applicable
- E. Special Equipment: Key switch operation in each hall station for hall call lock-out to match owners master keying system. Removable cylinder cores provided under **Section 08 71 00 – Door Hardware**.
 - 01 Provide switch accepting removable cylinder keyed to Owner's master keying requirements. Removable cylinder provided under **Section 08 71 00 – Door Hardware**.

2.11 MISCELLANEOUS ELEVATOR COMPONENTS

- A. Oil Hydraulic Silencer: Install multiple oil hydraulic silencers (muffler device) at the power unit location. The silencers shall contain pulsation absorbing material inserted in a blowout proof housing.
- B. Provide tamper resistant Knox Box for elevator door key. Refer to Section 10 10 00 – Miscellaneous Specialties for requirements. Locate near the first floor cab call button.

2.12 ELEVATOR SCHEDULE

- A. Elevator Qty. 1
 - 01 Elevator Model: Fujitec Hydraulic Elevator
 - 02 Elevator Type: Hydraulic Passenger Elevator
 - 03 Rated Capacity: 3500 lbs.
 - 04 Rated Speed: 100 ft./min.
 - 05 Operation System: Smartrise Controls

- 06 Travel: ~~44'-8"~~ **As shown in drawings.**
- 07 Landings: 2 total
- 08 Openings:
- 09 Front: 2
- 10 Rear: 0
- 11 Platform size: 7" wide x 6'-3" deep
- 12 Inside clear height: 7'-4" standard
- 13 Door clear height: 7'-0" standard
- 14 Hoistway Entrance Size: 3'-6" wide x 7'-0" high
- 15 Door Type: One-speed | LH Side opening
- 16 Power Characteristics: 208 volts, 3 Phase, 60 Hz.
- 17 Seismic Requirements: Zone 1
- 18 Hoistway Dimensions: 8'-8" wide x 7'-0" deep
- 19 Pit Depth: 4'-0"
- 20 Button & Fixture Style: Vandal resistant SS#4
- 21 Special Operations: Limited Access key switch

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Before starting elevator installation, inspect hoistway, hoistway openings, pits and/or control room, as constructed, verify all critical dimensions, and examine supporting structures and all other conditions under which elevator work is to be installed. Do not proceed with elevator installation until unsatisfactory conditions have been corrected in a manner acceptable to the installer.
- B. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

3.2 INSTALLATION

- A. Install the work of this section in strict accordance with the reviewed shop drawings, the original design, and all pertinent regulations and codes, anchoring all components firmly into position for long life under hard use.
- B. Install elevator systems components and coordinate installation of hoistway wall construction.
 - 01 Work shall be performed by competent elevator installation personnel in accordance with ASME A17.1, manufacturer's installation instructions and approved shop drawings.
 - 02 Comply with the National Electrical Code for electrical work required during installation.
- C. Jack unit excavation (if required by the type of jack provided): Install as directed by Manufacturer.
- D. Perform work with competent, skilled workmen under the direct control and supervision of the elevator manufacturer's experienced foreman.
- E. Supply in ample time for installation by other trades, inserts, anchors, bearing plates, brackets, supports, and bracing including all setting templates and diagrams for placement.
- F. Welded construction: Provide welded connections for installation of elevator work where bolted connections are not required for subsequent removal or for normal

operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualification of welding operators.

- G. Coordination: Coordinate elevator work with the work of other trades, for proper time and sequence to avoid construction delays. Use benchmarks, lines, and levels designated by the Contractor, to ensure dimensional coordination of the work.
- H. Install machinery, guides, controls, car and all equipment and accessories to provide a quiet, smoothly operating installation, free from side sway, oscillation or vibration.
- I. Alignment: Coordinate installation of hoistway entrances with installation of elevator guide rails for accurate alignment of entrances with cars. Where possible, delay final adjustment of sills and doors until car is operable in shaft. Reduce clearances to minimum safe, workable dimensions at each landing.
- J. Erect hoistway sills, headers, and frames before erection of rough walls and doors; erect fascia and toe guards after rough walls finished. Set sill units accurately aligned and slightly above finish floor at landings.
- K. Lubricate operating parts of system, where recommended by manufacturer.

3.3 FIELD QUALITY CONTROL

- A. Acceptance testing: Upon completion of the elevator installation and before permitting use of elevator, perform acceptance tests as required and recommended by Code and governing regulations or agencies. Perform other tests, if any, as required by governing regulations or agencies.
- B. Advise Owner, Contractor, Architect, and governing authorities in advance of dates and times tests are to be performed on the elevator.
- C. Provide all necessary equipment and personnel and perform all tests required. Secure all required approvals from agencies having jurisdiction.

3.4 CLEANING

- A. Before final acceptance, remove protection from finished surfaces and clean and polish surfaces in accordance with manufacturer's recommendations for type of material and finish provided.
- B. At completion of elevator work, remove tools, equipment, and surplus materials from site. Clean equipment rooms and hoistway. Remove trash and debris.

3.5 PROTECTION

- A. Provide suitable protective coverings, barriers, devices, signs, or other such methods or procedures to protect elevator work from damage or deterioration. Maintain protective measures throughout remainder of construction period.

3.6 DEMONSTRATION

- A. Instruct Owner's personnel in proper use, operations, and daily maintenance of elevators. Review emergency provisions, including emergency access and procedures to be followed at time of failure in operation and other building emergencies. Train Owner's personnel in normal procedures to be followed in checking for sources of operational failures or malfunctions.

- B. Make a final check of each elevator operation, with Owner's personnel present, immediately before date of substantial completion. Determine that control systems and operating devices are functioning properly.

END OF SECTION

AREA 'A2' - ROOM FINISH SCHEDULE						
ROOM #	ROOM NAME	FLOOR FINISHES		WALL FINISHES		ROOM #
		FLOOR	BASE	COORD. WI AT & A11	COORD. WIA10	
A200	FLEX	CPT-7	RB-1	VWC-1.5	MPC-1	A200
A201	5	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A201
A202	5	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A202
A203	CORR	TZ-1.2.6, CPT-7	-	VWC-1, PORW-1.2, TW-7	ACT-A	A203
A204	5	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A204
A205	5	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A205
A207	RESOURCE	RTF-1	RB-1	PT-1	ACT-A	A207
A208	5	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A208
A209	ELEV	-	-	-	-	A209
A210	IDF	SC-1	-	PT-1	EXP. STRUC. PAINT	A210
A211	ELEC	SC-1	-	PT-1	EXP. STRUC. PAINT	A211
A212	5	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A212
A213	MECH	SC-1	-	PT-1	EXP. STRUC. PAINT	A213
A214	4	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A214
A215	STOR 4	SC-1	RB-1	PT-1	ACT-A	A215
A216	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	A216
A217	GT	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A217
A218	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	A218
A219	WK RM	PC-1	RB-1	PT-1	ACT-A	A219
A220	CORR	TZ-1.3.6	-	VWC-1, PORW-1.2, TW-2	ACT-A	A220
A221	STOR 2	SC-1	RB-1	PT-1	ACT-A	A221
A223	ELEC	SC-1	-	PT-1	EXP. STRUC. PAINT	A223
A224	RESOURCE	RTF-1	RB-1	PT-1	ACT-A	A224
A225	CUST	SC-1	RB-1	PT-1, FRP	ACT-A	A225
A226	3	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A226
A227	GIRLS	PORF-2, WM-1	-	PT-1, TW-1.2.3.6	ACT-A	A227
A228	2	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A228
A229	BOYS	PORF-2, WM-1	-	PT-1, TW-1.2.3.4	ACT-A	A229
A230	STAIR	PORF-1	-	-	-	A230
A231	STAIR	PORF-1	-	ABD-1	ACT-A	A231
A232	2	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A232
A233	FLEX	CPT-4	RB-1	VWC-1.2	MPC-1	A233
A234	2	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A234
A235	CORR	TZ-1.2.3, CPT-4	-	VWC-1, PORW-1.2, TW-4	ACT-A	A235
A236	2	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A236
A237	2	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A237
A238	2	RTF-1.2.3.6	RB-1	PT-1	ACT-A	A238

AREA 'B2' - ROOM FINISH SCHEDULE						
ROOM #	ROOM NAME	FLOOR FINISHES		WALL FINISHES		ROOM #
		FLOOR	BASE	COORD. WI AT & A11	COORD. WIA10	
B201	4	RTF-1.2.3.6	RB-1	PT-1	ACT-A	B201
B202	INNOV	PC-1	RB-1	PT-1	ACT-A	B202
B203	4	RTF-1.2.3.6	RB-1	PT-1	ACT-A	B203
B204	CUST	SC-1	RB-1	PT-1, FRP	ACT-A	B204
B205	CORR	TZ-1.2.6	-	VWC-1, PORW-1.2, TW-7	ACT-A	B205
B206	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	B206
B207	4	RTF-1.2.3.6	RB-1	PT-1	ACT-A	B207
B208	BOYS	PORF-2, WM-1	-	PT-1, TW-1.2.3.4	ACT-A	B208
B209	4	RTF-1.2.3.6	RB-1	PT-1	ACT-A	B209
B210	RESOURCE	RTF-1	RB-1	PT-1	ACT-A	B210
B211	4	RTF-1.2.3.6	RB-1	PT-1	ACT-A	B211
B212	GIRLS	PORF-2, WM-1	-	PT-1, TW-1.2.3.6	ACT-A	B212
B213	PRINT HUB	TZ-1	RB-1	PT-1	ACT-A	B213
B214	BOOK STOR	SC-1	RB-1	PT-1	ACT-A	B214
B215	MECH	SC-1	-	PT-1	EXP. STRUC. PAINT	B215
B216	RESOURCE	RTF-1	RB-1	PT-1	ACT-A	B216
B217	CORR	TZ-1	-	VWC-1, PORW-1.2, TW-2	ACT-A	B217
B218	IDF	SC-1	-	PT-1	EXP. STRUC. PAINT	B218
B219	MECH	SC-1	-	PT-1	EXP. STRUC. PAINT	B219
B220	PRINT HUB	TZ-1	RB-1	PT-1	ACT-A	B220
B221	3	RTF-1.2.3.6	RB-1	PT-1	ACT-A	B221
B222	STAIR	PORF-1	-	VWC-1	ACT-A	B222
B223	3	RTF-1.2.3.6	RB-1	PT-1	ACT-A	B223
B224	BOYS	PORF-2, WM-1	-	PT-1, TW-1.2.3.4	ACT-A	B224
B225	3	RTF-1.2.3.6	RB-1	PT-1	ACT-A	B225
B226	GIRLS	PORF-2, WM-1	-	PT-1, TW-1.2.3.6	ACT-A	B226
B227	CORR	TZ-1.2.3	-	VWC-1, PORW-1.2, TW-4	ACT-A	B227
B228	RESOURCE	RTF-1	RB-1	PT-1	ACT-A	B228
B229	STOR 3	SC-1	RB-1	PT-1	ACT-A	B229
B230	CORR	TZ-1.3.6	-	VWC-1, PORW-1.2, TW-2	ACT-A	B230
B231	STOR 5	SC-1	RB-1	PT-1	ACT-A	B231
B232	STAIR	PORF-1	-	VWC-1	ACT-A	B232
B233	3	RTF-1.2.3.6	RB-1	PT-1	ACT-A	B233
B234	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	B234
B235	3	RTF-1.2.3.6	RB-1	PT-1	ACT-A	B235
B236	INNOV	PC-1	RB-1	PT-1	ACT-A	B236
B238	STOR INNOV	SC-1	RB-1	PT-1	ACT-A	B238

AREA 'A1' - ROOM FINISH SCHEDULE						
ROOM #	ROOM NAME	FLOOR FINISHES		WALL FINISHES		ROOM #
		FLOOR	BASE	COORD. WI AT & A11	COORD. WIA10	
A101	VEST	TZ-1.2.3.4.5.6, WM-1	-	PT-1.5.6	MPC-1	A101
A102	RECEP	CPT-1	RB-1	PT-1, 3, 5, 6	ACT-A	A102
A103	STOR REC	SC-1	RB-1	PT-1	ACT-A	A103
A104	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	A104
A105	ATT	CPT-1	RB-1	PT-1	ACT-A	A105
A106	CLINIC	PC-1	RB-1	PT-1	ACT-A	A106
A108	OFF	CPT-1	RB-1	PT-1	ACT-A	A108
A110	ISO	PC-1	RB-1	PT-1	ACT-A	A110
A111	SEC	CPT-1	RB-1	PT-1	ACT-A	A111
A112	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	A112
A113	COUNSFLEX	CPT-1	RB-1	PT-1	ACT-A	A113
A114	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	A114
A115	AP	CPT-1	RB-1	PT-1	ACT-A	A115
A116	WK RM	PC-1	RB-1	PT-1	ACT-A	A116
A117	OFFTEST	CPT-1	RB-1	PT-1	ACT-A	A117
A118	HALL	CPT-1	RB-1	PT-1	ACT-A	A118
A119	PRINC	CPT-1	RB-1	PT-1	ACT-A	A119
A121	STOR	SC-1	RB-1	PT-1	ACT-A	A121
A122	CORR	TZ-1.2.4, WM-1	-	VWC-1, TW	ACT-A	A122
A123	1	RTF-1.2.4.5	RB-1	PT-1	ACT-A	A123
A124	STOR PAPER	SC-1	RB-1	PT-1	ACT-A	A124
A125	1	RTF-1.2.4.5	RB-1	PT-1	ACT-A	A125
A126	AV	SC-1	RB-1	PT-1	ACT-A	A126
A129	ELEC	SC-1	-	PT-1	EXP. STRUC. PAINT	A129
A132	ELEV	-	-	-	-	A132
A134	MECH RM	SC-1	-	PT-1	EXP. STRUC. PAINT	A134
A138	STAIR	PORF-1	-	-	-	A138
A139	STAIR	PORF-1	-	ABD-1	ACT-A	A139
A140	MEDIA CENTER	CPT-2.3.5	RB-1	PT. ABD	MPC-1	A140
A141	OFF/WRK RM	CPT-2, PC-1	RB-1	PT-1	ACT-A	A141
A142	GI	CPT-1	RB-1	PT-1	ACT-A	A142
A143	KIVA	CPT-5	RB-1	PT, VWC	MPC-1	A143
A144	LOUNGE	PC-1	RB-1	PT-1	ACT-A	A144
A145	CORR	TZ-1.2.5, WM-1	-	VWC-1, PORW-1.2, TW-6	ACT-A	A145
A146	STOR PK	SC-1	RB-1	PT-1	GYP. BD.	A146
A147	PK	RTF-1.2.4.5	RB-1	PT-1	ACT-A	A147
A148	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	A148
A149	PK	RTF-1.2.4.5	RB-1	PT-1	ACT-A	A149
A150	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	A150
A151	PK	RTF-1.2.4.5	RB-1	PT-1	ACT-A	A151
A152	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	A152
A153	PK	RTF-1.2.4.5	RB-1	PT-1	ACT-A	A153
A154	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	A154
A155	K	RTF-1.2.4.5	RB-1	PT-1	ACT-A	A155
A156	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	A156
A157	K	RTF-1.2.4.5	RB-1	PT-1	ACT-A	A157
A158	ELEC	SC-1	-	PT-1	EXP. STRUC. PAINT	A158
A159	CR FLEX	PC-1	RB-1	PT-1	ACT-A	A159
A161	CORR	TZ-1.4.5	-	VWC-1, PORW-1.2, TW-2	ACT-A	A161
A162	TECH OFF	SC-1	RB-1	PT-1	ACT-A	A162
A163	LIT/LIB	SC-1	RB-1	PT-1	ACT-A	A163
A164	OFF	CPT-1	RB-1	PT-1	ACT-A	A164

AREA 'B1' - ROOM FINISH SCHEDULE						
ROOM #	ROOM NAME	FLOOR FINISHES		WALL FINISHES		ROOM #
		FLOOR	BASE	COORD. WI AT & A11	COORD. WIA10	
B100	RESOURCE	RTF-1	RB-1	PT-1	ACT-A	B100
B101	1	RTF-1.2.4.5	RB-1	PT-1	ACT-A	B101
B102	CUST	SC-1	RB-1	PT-1, FRP	ACT-A	B102
B103	1	RTF-1.2.4.5	RB-1	PT-1	ACT-A	B103
B104	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	B104
B105	CORR	TZ-1.2.4, WM-1	-	VWC-1, PORW-1.2, TW-5	ACT-A	B105
B106	BOYS	PORF-2, WM-1	-	PT-1, TW-1.2.3.4	ACT-A	B106
B107	1	RTF-1.2.4.5	RB-1	PT-1	ACT-A	B107
B108	GIRLS	PORF-2, WM-1	-	PT-1, TW-1.2.3.6	ACT-A	B108
B109	1	RTF-1.2.4.5	RB-1	PT-1	ACT-A	B109
B111	PPCD	RTF-1.2.4.5	RB-1	AWC-1, PT-1	ACT-A	B111
B112	LSSP	RTF-1	RB-1	PT-1	ACT-A	B112
B113	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	B113
B114	SPEECH	RTF-1	RB-1	PT-1	ACT-A	B114
B115	LS FUND	RTF-1.2.4.5	RB-1	AWC-1, PT-1	ACT-A	B115
B116	DBC/PASS	RTF-1.2.4.5	RB-1	AWC-1, PT-1	ACT-A	B116
B117	RR	PORF-2	TB-1	PT-1, TW-1.2.3	GYP. BD.	B117
B118	ELEC	SC-1	-	PT-1	EXP. STRUC. PAINT	B118
B119	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	B119
B120	STOR	SC-1	RB-1	PT-1	GYP. BD.	B120
B121	STAIR	PORF-1	-	VWC-1	ACT-A	B121
B122	BOYS	PORF-2, WM-1	-	PT-1, TW-1.2.3.4	ACT-A	B122
B123	STAIR	PORF-1	-	VWC-1	ACT-A	B123
B124	GIRLS	PORF-2, WM-1	-	PT-1, TW-1.2.3.6	ACT-A	B124
B125	CORR	TZ-1.2, WM-1	-	VWC-1, AWP, PORW-1.2, TW-2	ACT-A	B125
B127	STOR	SC-1	RB-1	PT-1	GYP. BD.	B127
B128	STOR K	SC-1	RB-1	PT-1	ACT-A	B128
B129	ART	PC-1	RB-1	PT-1	ACT-A	B129
B131	STOR	SC-1	RB-1	PT-1	ACT-A	B131
B132	STOR BOOK	SC-1	RB-1	PT-1	ACT-A	B132
B133	K	RTF-1.2.4.5	RB-1	PT-1	ACT-A	B133
B134	AROSCHED	RTF-1	RB-1	PT-1	ACT-A	B134
B135	CORR	TZ-1.4.5	-	VWC-1, PORW-1.2, TW-2	ACT-A	B135
B136	MDF	SC-1	-	PT-1	EXP. STRUC. PAINT	B136
B137	COUNSFLEX	RTF-1	RB-1	PT-1	ACT-A	B137
B139	DVS	RTF-1	RB-1	PT-1	ACT-A	B139
B141	RR	PORF-2	TB-1	PT-1, TW-1.2.3	ACT-A	B141
B142	K	RTF-1.2.4.5	RB-1	PT-1	ACT-A	B142
B143	CUST	SC-1	RB-1	PT-1, FRP	ACT-A	B143
B144	K	RTF-1.2.4.5	RB-1	PT-1	ACT-A	B144
B145	BOYS	PORF-2, WM-1	-	PT-1, TW-1.2.3.4	ACT-A	B145
B146	GIRLS	PORF-2, WM-1	-	PT-1, TW-1.2.3.6	ACT-A	B146
B147	CORR	TZ-1.2.5, WM-1	-	VWC-1, PORW-1.2, TW-6	ACT-A	B147
B148	RESOURCE	RTF-1	RB-1	PT-1	ACT-A	B148
B149	FLEX	CPT-6	RB-1	VWC-1.4	MPC-1	B149
B150	K	RTF-1.2.4.5	RB-1	PT-1	ACT-A	B150
B151	MECH	SC-1	-	PT-1	EXP. STRUC. PAINT	B151
B152	RESOURCE	RTF-1	RB-1	PT-1	ACT-A	B152
B153	STOR 1	SC-1	RB-1	PT-1	ACT-A	B153
B154	FLEX	CPT-5	RB-1	VWC-1.3	MPC-1	B154
B155	RESOURCE	RTF-1	RB-1	PT-1	ACT-A	B155

AREA 'C1' - ROOM FINISH SCHEDULE						
ROOM #	ROOM NAME	FLOOR FINISHES		WALL FINISHES		ROOM #
		FLOOR	BASE	COORD. WI AT & A11	COORD. WIA10	
C101	PLATFORM	RTF-7, WD-1, SC-1	RB-2	PT-8	EXP. STRUC. PAINT	C101
C102	STOR PLATFORM	SC-1	RB-1	PT-1	EXP. STRUC. PAINT	C102
C103	RAMP	RTF-7				