

EL MONTE UNION HIGH SCHOOL DISTRICT Purchasing Department 3537 JOHNSON AVENUE, EL MONTE, CA 91731 Phone: (626) 444-9005 Email: purchasing@emuhsd.org

December 2, 2024

ТО	:	All Bidders
FROM	:	El Monte Union High School District
BID #	:	2024-25 (B5)
PROJECT	:	Rosemead Adult Education and Transition Center Addition/Modernization REBID
SUBJECT	:	Addendum No. 2

The following changes, omissions, and/or additions to the Project Manual and/or Drawings shall apply to proposals made for and to the execution of the various parts of the work affected thereby, and all other conditions shall remain the same.

Careful note of the Addendum shall be taken by all parties of interest so that the proper allowances may be made in strict accordance with the Addendum, and that all trades shall be fully advised in the performance of the work which will be required of them.

Bidder shall acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject Bidder to disqualification.

In case of conflict between Drawings, Project Manual, and this Addendum, this Addendum shall govern.

### **BID FORM(S) REPLACED: NO**

### CLARIFICATIONS

**General Conditions Section 11.3 BUILDER'S RISK/ALL RISK INSURANCE** – remove this requirement in its entirety. District will obtain this coverage.

### **ATTACHEMENTS:** Yes

- 1. DLR Group Addendum 04 dated December 2, 2024
- 2. Drawings: A0.4, A3.2, A3.3, A6.1, A6.2, A6.3, A6.4, A6.5, A6.6, A9.1, A10.03, A11.10, A13.A, A13.B, A14.6, S1.3, S2.2, S8.1
- 3. Specification Sections: 07 26 00, 28 31 00

### END OF ADDENDUM 2



DLR Group inc. a California corporation

700 South Flower Street, 22<sup>nd</sup> Floor Los Angeles, CA 90017

December 2, 2024

### ADDENDUM 04

### Pre-Bid Revision for Contractors' Incorporation into:

Rosemead Adult Education and T	ransition Center
El Monte Union High School Distri	ct
DSA Application No:	03-122743
File No.	19-H10
DLR Group Project No.:	75-20223-02
Prepared By:	DLR Group 700 South Flower Street, 22 <sup>nd</sup> Floor Los Angeles, CA 90017 (213) 800-9400

### NOTICE TO BIDDERS:

The following revisions are being made to the Bidding Documents to the above referenced project:

### Pre-Bid Requests for Information

The following pre-bid requests for information were received. The responses are incorporated into this Addendum via the answer directly below the RFI.

- **RFI 134.....** Regarding the document titled '2024-25-B5 Rosemead Transition Center REBID Bid Documents', on page 5 of the table of contents, Exhibits A, B, C & D are indicated to be DLR Architects Addendums 1, 2, 3 and the CWA. Please note that these exhibits were found in the provided bid docs but each of them appear to just consist of a single cover page. Please provide the entire narrative and drawings for each of these three addendums and please provide the CWA.
- Answer.....See Addendum No. 1 issued 11/13/24.
- *RFI* 135 ...... Currently the bid date is scheduled for Friday, December 6 at 10:00AM. We respectfully request the bid time be changed to 2:00PM to allow suppliers and subcontractors sufficient time to provide pricing on bid day
- Answer......Bid date cannot be changed due to construction schedule and Board meeting dates.
- **RFI 136**...... Pre-qualified license C43 is stated for MEP's. The Sheet metal has a C43 license and does not do any part of the MEP scope. Is a sheet metal subcontractor who does not do any MEP work required to be pre-qualified to bid and work on this project?
- Answer......All licenses listed must be prequalified.
- Answer......This system is indicated BR-1 on the Finish Schedule A12.2 as issued in Addendum 02. The location is noted on the finish plans.

- **RFI 139**.....In Front End Document Exhibit B, the Addendum 2 drawing A12.1 indicates flooring type RF-2 is not used. On drawing A13.A flooring type RF-2 is called out in room B-101 and on drawing A13.B in room A-205. Please clarify what flooring type is required at rooms B-101 and A-205.
- Answer......RF-1 is required at these rooms. See revised finish plans A13.A and A13.B.
- Answer.....Both are required. 033000 Cast-In-Place Concrete, paragraph 2.01G is used for curing the concrete. 090561.13 Moisture Vapor Emission Control, paragraph 1.2.A.1 is for controlling emissions that may affect floor finishes. Below slab vapor barrier to be installed per ASTM E1745 Class A, per section 033000 and 072600.

*RFI* 141 ...... Please provide a specification for the sunshades on windows 00-XX, QQ, RR, KK and DD shown on A8.4. *Answer*.....*Sunshades are indicated in section* 08 41 13.

- *RFI* 142 ...... Is R-30 unfaced fiber glass batts required above the ceiling / below floor? It's noted in section 072100 article 2.4.a.2 but not shown on the plans.
- Answer.....Insulation that is removed or damaged during construction is to be replaced with new.
- *RFI* 143 ...... Is sound board insulation at the furring walls shown in details 3 & 4 / A6.3 required? No wall types or materials are noted on the plans.
- Answer.....Sound board insulation is not indicated at these details.
- *RFI* 144 ...... May a contract amount in a subcontract agreements be for an amount in excess of the Districts prequalified contract amount for that specific subcontractor?
- Answer......Prequalification amounts are only provided in the event that the contractor is bidding as a prime. MEP subcontractors are required to be prequalified, however, the approved amount is not applicable.
- *RFI* 145..... Please provide a copy of the District provided Builder's Risk Insurance policy.
- Answer......We do not have that available yet, the policy will not be issued until after bids are received.
- *RFI* **146** ...... Please provide the deductible amount for the District provided Builder's Risk Insurance policy. *Answer*......*We do not have that available yet, the policy will not be issued until after bids are received.*
- *RFI* 147 ...... No irrigation is shown at the raised planter boxes on IR1.0. Please confirm if irrigation is required for the raised planter boxes?
- Answer......Raised planters intended for culinary gardening. Hose bib provided near planter boxes for hand watering application and/or district provided irrigation POC. See sheet IR1.0 and detail 'N' on sheet IR1.1.
- **RFI 148**........... On Sheet A1.4, RF-1 calls for 5/8" dens-deck as part of the roofing assembly. Roofing spec 075430 section 2.4 A.2 is calling for 1/4" or 1/2" roof cover board. Please confirm what thickness is required for the dens deck coverboard?
- Answer.....Provide 5/8" thick densdeck prime coverboard as indicated on the plans.

	concrete walks. Please confirm that medium broom finish is acceptable or provide concrete finish recommendations for site concrete walks.
Answer	Specification indicates walks to be medium broom finish unless otherwise noted. See 3.11.2.
RFI 150	. Regarding the planters at the courtyard shown on G2.2, detail 54/A0.4 does not show any information regarding the depth and type of soil required. Please clarify.
Answer	.Fill planters with premium garden soil – provide cut sheet submittal for review and approval. Fill depth to 2" under deck board cap.
RFI 151	No planting is shown at the raised planter boxes on L1.0. Please confirm if planting is required for the raised planter boxes?
Answer	.Garden planting will be provided by district staff for educational purposes.
RFI 152	On drawing A10.03, detail 55 shows waterproofing and references sheet A5.1.2. This sheet was not found in the plan set. Please clarify.
Answer	.Refer to revised detail.
<b>RFI 153</b>	. Please clarify if the elevator pit waterproofing shown on 55/A10.03 applies to spec section 071326. Will only the interior of the elevator pit require waterproofing?Confirmed. Refer to revised detail.
Answer	. Please clarify where spec section 095300 - Wood Baffle Ceiling and Wall System applies to the project. Spec section 09 53 00 is not used.
RFI 155	. Can you please confirm that \$1M Single/\$2M Aggregate General Liability and \$8M Umbrella/Excess is sufficient for subcontractors on this project?
Answer	.Please see General Conditions; Article 11; Section 11.1.2 and 11.1.3.
RFI 156	This proposal is to request that the use of Viega Megapress fitting technology be allowed in place of material for galvanized fittings within the defined scope of work. Please see attached RFI Request reflecting additional information regarding this request.
Answer	.Press-system is not a form of joining galvanized/black steel pipe and fittings material per Contract Documents and Specifications.
RFI 157	This proposal is to request that the use of Viega Propress fitting technology be allowed in place of any brazing or soldering material for copper fittings within the defined scope of work for the water system.
Answer	Press-system is not a form of joining copper pipe and fittings material per Contract Documents and Specifications.
RFI 158	Please confirm 6" wide metal studs will be acceptable at all locations where '550' $(5-1/2")$ wide studs are shown (e.g. 14/A9.3).
Answer	6" metal studs are acceptable in lieu of $5 \cdot 1/2$ " metal studs at the canopy.
RFI 159	Light cove detail 32/A10.44 not found referenced. Please clarify if this detail applies and if so, please provide all ceiling locations where it occurs.
Answer	.Light cove detail 32/A10.44 is not being used.
RFI 160	. Please reference 51/S8.4. Please indicate all wall-hung items that apply to each metal backing detail (A, B, & C) shown. Including but not limited to each of following wall hung items, where shown at metal stud walls: Restroom mirrors, restroom grab bars, wall mounted cabinets, and wall mounted monitors
Answer	.Reference note E1 on A12.2.

- **RFI 161**...... Please reference A3.2 at detail references 11/A14.2 along grid line B. This detail conflicts with wall types indicated along grid line B, where detail reference 11/A14.2 is shown Wall Types W6B and W7G show gypsum board full height both sides of wall per A8.1. However, 11/A14.2 shows gypsum board at wall terminating +0'-6" above ceiling height. Please clarify and also provide opposite side of detail 11/A14.2 where gypsum board soffit meets APC-1 ceiling.
- Answer.....Gypsum board should be installed full height to underside of deck or plywood sheathing structure above, typical. Where GB and APC ceiling meet and align in elevation, refer to 22/A10.44. Refer to note N on A3.2 and A3.3.
- **RFI 162**...... Please reference A3.2 at interior soffit detail reference 36/A14.2 parallel and between grid lines 9.1 & 9.3. This detail occurs at the new addition with metal stud framing, however this detail shows wood framing. Please provide revised detail to show required metal framing. Please confirm this applies at all interior soffits, at the new addition only, indicated with keynote 9.08..
- Answer.....Disregard Keynote 9.08 detail reference to 36/A14.2. All new gypsum board ceilings in new construction side to be framed per 41/S8.3, per Note M on A3.2. In this location, GB is flush with APC, reference 22/A10.44.
- Answer......It is acceptable to in-fill gaps with plywood sheathing so the wall substrate is flush prior to installation of new gypsum board as long as it does not damage structural plywood sheathing.
- Answer.....This note applies to new wood framed walls without wall type markers at the existing building. Refer to drawings for work at locations listed above; including, but not limited to the Floor Plans and Finish Floor Plans.
- Answer......Replacement gypsum board or cement board should be installed full height to underside of deck or plywood sheathing structure above, typical. See Note 'O' on A3.2 and A3.3.
- **RFI 166**............ Please reference 5/A6.1 which occurs along grid lines 8 & 8.1, between grid lines A-B. The wall along grid line 8 is existing, and indicates exterior lath & plaster full-height as shown. Since this wall is existing and this is where the first floor demolition will start per A1.0 (no demolition at second floor this area), it's assumed that the lath & plaster is existing above the existing first floor building area and that horizontal plaster patching will be required only where the existing first floor roof line will be removed.

It's also assumed that the remainder of the existing plaster above will remain and be painted only per wall type X-0, per 6/A9.0. Are our assumptions correct? Please clarify and provide an elevation or details as needed

- Answer.....The existing lath and plaster above the first-floor roof line can remain, provided that the final finish of this concealed wall is a complete and watertight system. The final plaster that will be concealed does not need to be painted.
- Answer.....No replacement of existing sheathing is required for walls with halftone symbols unless sheathing is damaged during construction, or removed due to the addition of hold-downs, conduits, and pipes per pertinent details; in which case this kind of work can proceed from the inside where it causes less impact to the façade. If there is a shear wall with a full tone symbol, this is an indication of new shear panels per 41/S6.1, for single sheathing, the sheathing should be shown on sections; it can also be assumed that it's located on the interior side of the building, UNO.
- Answer......Reference revised details 33, 34, 54 & 56/A14.6 for low wall framing information.

### A. PROJECT MANUAL - Narrative of Changes

### 1. SECTION 07 26 00 - VAPOR RETARDERS

A. ADDED Under-slab vapor retarders, products, accessories, and installation information.

### 2. SECTION 28 31 00 - ANALOG ADDRESSABLE FIRE ALARM SYSTEM

A. REVISED portions of Part 1, 1.1, Section A.

### B. DRAWINGS – Narrative of Changes

### 1. SHEET A0.4 - DETAILS - SITE

A. Added Note 3 in Detail 54/A0.4.

### 2. SHEET A3.2 - FIRST FLOOR REFLECTED CEILING PLAN

A. Added REFLECTED CEILING PLAN GENERAL NOTES 'N', 'O', and 'P'.

### 3. SHEET A3.3 - SECOND FLOOR REFLECTED CEILING PLAN

A. Added REFLECTED CEILING PLAN GENERAL NOTES 'N', 'O', and 'P'.

### 4. SHEET A6.1 WALL SECTIONS

A. Details updated to provide clarity for structural connections, member sizes, and drift joint locations.

### 5. SHEET A6.2 WALL SECTIONS

A. Details updated to provide clarity for structural connections, member sizes, and drift joint locations.

### 6. SHEET A6.3 WALL SECTIONS

A. Details updated to provide clarity for structural connections, member sizes, and drift joint locations.

### 7. SHEET A6.4 WALL SECTIONS

A. Details updated to provide clarity for structural connections, member sizes, and drift joint locations.

### 8. SHEET A6.5 WALL SECTIONS

A. Details updated to provide clarity for structural connections, member sizes, and drift joint locations.

### 9. SHEET A6.6 WALL SECTIONS

A. Details updated to provide clarity for structural connections, member sizes, and drift joint locations.

### 10. SHEET A9.1 EXTERIOR DETAILS

A. Detail 51 updated to provide clarity for structural connections, member sizes, and drift joint locations.

### 11. SHEET A10.03 - ELEVATOR DETAILS

A. Revised detail 51/ & 55/A10.03.

### 12. SHEET A11.10 - INTERIOR ELEVATIONS - TRANS. CTR. TYP. CLASSROOMS, SKILL LAB

A. Revised detail reference on 1A/A11.10.

### 13. SHEET A13.A - FINISH PLAN - LEVEL 1

A. Revised floor finish tag at B-101.

### 14. SHEET A13.B – FINISH PLAN – LEVEL 2

A. Revised floor finish tag at A-205.

### 15. SHEET A14.6 - CASEWORK DETAILS

A. Revised details 14, 24, 33, 34, 54 and 56/A14.6.

### 16. SHEET S1.3 - ROOF STRUCTURAL PLAN

A. Edge of Slab along Grid 10.9 extended 6.75 inches plan left.

### **17. SHEET S2.2 EXTERIOR WALL ELEVATIONS**

- A. Detail 15 background updated to align with annotations.
- B. Detail 21 Stud callout made 600S162-54 (no change to stud size, only callout clarified).
- C. Detail 21 Studs at Level 03 broken to reflect extended slab edge.
- D. Detail 21 Connections for studs near level 03 updated to reflect extended slab edge condition.

### 18. SHEET S8.1 TYPICAL EXTERIOR METAL STUD DETAILS

A. Detail 34 updated to use Simpson DSSCB46 and 48 ICC ESR-4294 to used fixed option where needed.

### INCLUDED ATTACHMENTS:

Drawings: A0.4, A3.2, A3.3, A6.1, A6.2, A6.3, A6.4, A6.5, A6.6, A9.1, A10.03, A11.10, A13.A, A13.B, A14.6, S1.3, S2.2, S8.1

Specification Sections: 07 26 00, 28 31 00

\*\*\*\* END OF ADDENDUM 04 \*\*\*\*



### 0 LOCKABLE CABINETS 0 **\**\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ 0 | ° || 0 || 0 0 2' - 4 1/2" 1 CABINET DEPTH 0 10

2' - 0"

3' - 0"

## 00 · ↓ ↓ 0 4 SEE P2.1 <u>o</u> [2] 8 0 0 0 0 0 0

5' - 10" - <u>-</u> -\_\_\_\_~ <u>2' - 9 3/4"</u> 2'-10" MAX OPEN FOR KNEE SPACE 

'TRANSCEND' COMPOSITE DECKING, COLOR: ROPE SWING, OR APPROVED EQUAL.





ADD04

EFLECTED CEILING PLAN LEGEND						WINDOW SHA	
	ACOUSTIC CEILING TILE IN		PANEL TO CONTAIN NO ACOUSTIC CEILING TILE	P	SMOKE DETECTOR	WINDOW SHADE WALL MC NO POCKET, SEE DETAIL	
	ACOUSTIC CEILING TILE IN SUSPENDED GRID (2X4)	$\square$	MECHANICAL SUPPLY GRILLE	$\bigcirc$	LIGHTING FIXTURE	WINDOW SHADE WALL MC	
	GYPSUM BOARD CEILING (GB-1), PAINTED P-1 U.N.O.		MECHANICAL RETURN GRILLE	Ē	FA STROBE	ACOUSTI CEILING PANEL,	
	MINIMAL CEILING SCOPE; PATCH AND REPAIR AS REQUIRED		MECHANICAL EXHAUST GRILLE	Ś	CEILING SPEAKER. COORDINATE REQUIREMENTS AND	WINDOW SHADE WALL MC WITH RECESSED POCKET GYP.BD. CEILING, SEE DET	
	EXPOSED STRUCTURAL DECK, PAINTED PT-1 U.N.O.	$\bigvee$	ACCESS PANEL, SEE 14 / A14.2		WIRING WITH DISTRICT AND MANUFACTURER		
	PIPES, PAINTED PT-1 U.N.O.			$\bigotimes$	EXIT SIGN		
ACT-1 10' - 0"	DENOTES CEILING TYPE AND HEIGHT						
<u>OTS-1</u>	OPEN TO STRUCTURE, HEIGHT VARIES						





ADD04

KEFLEG	TED CEILING PLAN LEGE	ND			
	ACOUSTIC CEILING TILE IN		PANEL TO CONTAIN NO ACOUSTIC CEILING TILE	P	SMOKE DETECTOR
	ACOUSTIC CEILING TILE IN SUSPENDED GRID (2X4)	$\square$	MECHANICAL SUPPLY GRILLE	$\bigcirc$	LIGHTING FIXTURE
	GYPSUM BOARD CEILING (GB-1), PAINTED P-1 U.N.O.		MECHANICAL RETURN GRILLE	Ê	FA STROBE
	MINIMAL CEILING SCOPE; PATCH AND REPAIR AS REQUIRED		MECHANICAL EXHAUST GRILLE	Ś	CEILING SPEAKER. COORDINATE REQUIREMENTS AND
	EXPOSED STRUCTURAL DECK, PAINTED PT-1 U.N.O. EXPOSED STRUCTURAL DUCTS, CONDUIT		ACCESS PANEL, SEE 14 / A14.2		WIRING WITH DISTRICT AND MANUFACTURER
	PIPES, PAINTED PT-1 U.N.O.			$\bigotimes$	EXIT SIGN
<u>ACT-1</u> 10' - 0"	DENOTES CEILING TYPE AND HEIGHT				
OTS-1 	OPEN TO STRUCTURE, HEIGHT VARIES				
NOTE					



todesk Docs://75-20223-02 El Monte UHSD Rosemead Adult School Building/75-20223-02\_PCC\_AR\_2



odesk Docs://75-20223-02 El Monte UHSD Rosemead Adult School Building/75-20223-02\_PCC\_AF





lesk Docs://75-20223-02 EI Monte UHSD Rosemead Adult School Building/75-20223-02\_PCC\_AR\_2022.

![](_page_13_Figure_0.jpeg)

![](_page_14_Figure_0.jpeg)

![](_page_14_Figure_2.jpeg)

![](_page_15_Figure_2.jpeg)

(3.02) 

(7.07)-

 $\left( E \right)$ 

![](_page_15_Figure_17.jpeg)

![](_page_15_Figure_18.jpeg)

![](_page_15_Figure_19.jpeg)

![](_page_16_Figure_0.jpeg)

![](_page_16_Figure_3.jpeg)

# - <u>T.O.Q</u> 29' - 0"

<u>T.O.P</u> 32' - 1"

![](_page_16_Figure_7.jpeg)

![](_page_16_Picture_9.jpeg)

![](_page_17_Figure_1.jpeg)

![](_page_17_Figure_3.jpeg)

### - STEEL ANGLE BY ELEVATOR INSTALLER (DEFERRED SUBMITAL) FIRESTOP AROUND ENTIRE PENETRATION OF ANGLE FOR CONTINUOUS RATING. - HSS TUBE CENTERED IN PARTITION PER STRUCTURAL

- 1 HR RATED BEAM ENCLOSURE

SHAFT WALL AS SCHEDULED.
 REFER TO WALL TYPE AND
 DIMENSION PLAN.

 STEEL CLOSURE PLATE REFER TO STRUCTURAL 25/S5.2 ----- 2-1/2" STUD AS REQUIRED

- MINERAL WOOL 

LEVEL 3 EL +108' - 6" STRUCTURAL SLAB.
 REFER TO STRUCTURAL.

SHAFT WALL AS SCHEDULED.
 REFER TO PARTITION AND
 DIMENSION PLAN.

FIRE RATED SEALANT SEALANT 2-WAY COMMUNICATION SYSTEM - WALL TYPE PER FLOOR PLAN

- FRAME CLIP (3 PER JAMB)

— ELEVATOR DOORS LINE OF CAR - FRAME (GROUT SOLID)

REFER TO WALL TYPE AND DIMENSION PLAN.

· SHAFT WALL AS SCHEDULED.

- TAPE TO COVER MINERAL WOOL BOTH SIDES

- 1 HR RATED BEAM ENCLOSURE

— 2-1/2" STUD AS REQUIRED

— MINERAL WOOL — FIRE RATED SEALANT

![](_page_17_Figure_51.jpeg)

STRUCTURAL ROOF SLAB.
 REFER TO STRUCTURAL.

![](_page_17_Figure_52.jpeg)

- RATED ELEVATOR SHAFT WALL. REFER TO PLAN FOR TYPE AND LOCATION. - TUBE STEEL PER 11/S5.3 - STEEL ANGLE BY ELEVATOR

![](_page_17_Figure_54.jpeg)

55 ELEVATOR SHAFT WALL TRANSITION TO PIT A10.03 SCALE: 1 1/2" = 1'-0"

![](_page_17_Figure_57.jpeg)

INSTALLER (DEFERRED SUBMITAL) 15 ELEVATOR COLUMN ENLARGED PLAN A10.03 SCALE: 3" = 1'-0"

![](_page_17_Picture_61.jpeg)

LEVEL 2 & 3 VARIES

![](_page_18_Figure_0.jpeg)

![](_page_19_Figure_0.jpeg)

![](_page_20_Figure_0.jpeg)

Key Value	Keynote Text
9.19	EXISTING FLOOR FINISH TO REMAIN, PATCH AND REPAIR EXISTING WALL SURFACES TO REMAIN PRIOR TO PAINTING ALL WALLS P-1, U.O.N.
9.21	CLEAN EXISTING GUARDRAIL, SAND SMOOTH AND PREP FOR PAINT, ADD PRIMER AND FINISH COATS, PAINT P-15, SEMI-GLOSS FINISH

![](_page_21_Figure_0.jpeg)

![](_page_22_Figure_0.jpeg)

– PER PLN		FULLY GROUTED CMU (CONCRETE MASONRY UNIT) WALL. THICKNESS SHALL BE 12" UNO ON PLAN	(E) 4X6 FLAT	EXISTING FLOOR OR ROOF 4X COLLECTOR, FV.	
THK PER PLN		INDICATES WALL BELOW	(X) CMST12	NEW FLOOR OR ROOF CMST12 COLLECTOR STRAP(S). PROVIDE STRAP END LENGTHS AS SHOWN ON PLAN. SEE S6.3 FOR ADDITIONAL INFORMATION.	
		BEARING WALL/BEARING WALL INFILL/EXTERIOR WALL INFILL			
		NEW (N) BEARING SHEAR WALL OR BEARING SHEAR WALL INFILL. SEE	8 8 ES 4-5-2	EDGE STIFFENER, INDICATES # OF BARS, BAR SIZE AND # OF CORES. THIS EXAMPLE INDICATES (4) #5 BARS IN 2 CORES, 1 EACH FACE.	
\$5.3		EXISTING (E) BEARING SHEAR WALL OR EXTERIOR SHEAR WALL, FV. SEE	(#)	KEYNOTE, SEE EXISTING FRAMING KEY NOTES ON THIS SHEET	
		EXISTING (E) BEARING WALL/EXTERIOR WALL		ROOF OR FLOOR PENETRATION, SEE	
	/x	-NEW SHEAR WALL			
	L=x'-x" -				
	/x	-EXISTING SHEAR WALL			
	=x'-x" -				

![](_page_23_Figure_0.jpeg)

![](_page_23_Picture_6.jpeg)

![](_page_24_Figure_0.jpeg)

1" MIN

(EA SIDE)

TYP

CONC OVER

METAL DECK

PER PLAN ------

++

**BUILDING ELEVATION NOTES:** 

ON STRUCTURAL DRAWINGS.

SCHEDULES ON THIS SHEET, UNO.

1. VERIFY ALL DIMENSIONS PRIOR TO START OF WORK. SEE ARCHITECTURAL

DRAWINGS FOR REMAINDER OF DIMENSIONS NOT SHOWN ON THIS PLAN.

3. CONSTRUCT LIGHT GAUGE METAL FRAMING PER DETAILS, ELEVATIONS AND

SEE ARCHITECTURAL DRAWINGS FOR CONCRETE SLAB ELEVATIONS, DEPRESSIONS

SLOPES, OPENINGS, CURBS, DRAINS, TRENCHES, SLAB EDGE LOCATIONS, ETC., AND

FOR WALL OVERALL DIMENSIONS, LOCATIONS OF OPENINGS, ETC., NOT INDICATED

![](_page_24_Figure_2.jpeg)

SECTION 07 26 00 - VAPOR RETARDERS

- 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. Section Includes:
    - 1. Polyethylene vapor retarders.
    - 2. Under-slab vapor retarders. ADD 04
- 1.3 ACTION SUBMITTALS
  - A. Product Data: For each type of product.
- 1.4 INFORMATIONAL SUBMITTALS
  - A. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- PART 2 PRODUCTS
- 2.1 POLYETHYLENE VAPOR RETARDERS
  - A. Polyethylene Vapor Retarders: ASTM D4397, 6-mil-thick sheet, with maximum permeance rating of 0.1 perm.
- 2.2 UNDER-SLAB VAPOR RETARDERS ADD 04
  - A. Sheet Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape and pipe penetration boots. Membrane shall have a permeance rate no greater than 0.01 grains/( $ft^2 \cdot hr \cdot inHg$ ) after mandatory conditioning tests per ASTM E 1745 (7.1.1 7.1.5) when tested in accordance with ASTM E96. Not less than 15 mils thick.

### VAPOR RETARDERS

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- B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
  - 1. Barrier-Bac; Interplast Group, Ltd.
  - 2. Fortifiber Bulding Systems Group
  - 3. Raven Industries, Inc.
  - 4. Stego Industries, Inc.
  - 5. W.R. Meadows, Inc.

### 2.3 ACCESSORIES

- A. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
- B. Adhesive for Vapor Retarders: Product recommended by vapor-retarder manufacturer and has demonstrated capability to bond vapor retarders securely to substrates indicated.
- C. Vapor-Retarder Fasteners: Pancake-head, self-tapping steel drill screws; with fender washers.

### PART 3 - EXECUTION

### 3.1 PREPARATION

A. Clean substrates of substances that are harmful to vapor retarders, including removing projections capable of puncturing vapor retarders.

### 3.2 INSTALLATION OF VAPOR RETARDERS ON FRAMING

- A. Place vapor retarders on side of construction indicated on Drawings.
- B. Extend vapor retarders to extremities of areas to protect from vapor transmission. Secure vapor retarders in place with adhesives, vapor retarder fasteners, or other anchorage system as recommended by manufacturer. Extend vapor retarders to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.
- C. Seal vertical joints in vapor retarders over framing by lapping no fewer than two studs and sealing with vapor-retarder tape according to vapor-retarder manufacturer's written instructions. Locate all joints over framing members or other solid substrates.
- D. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarders.
- E. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarders.

### 3.3 UNDER-SLAB VAPOR RETARDER INSTALLATION ADD 04

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643, ACI 302, and manufacturer's written instructions.
  - 1. Lap joints 6 inches (150mm) and seal with manufacturer's recommended tape.
  - 2. Refer to geotechnical recommendations.
- B. Bituminous Vapor Retarders: Place, protect, and repair bituminous vapor retarder according to manufacturer's written instructions.

### 3.4 PROTECTION

A. Protect vapor retarders from damage until concealed by permanent construction.

END OF SECTION 07 26 00

### SECTION 28 31 00 - ANALOG ADDRESSABLE FIRE ALARM SYSTEM WITH INTEGRAL EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM ADD 04

### PART 1 - GENERAL

### 1.1 SCOPE

The contractor shall furnish and install a Silent Knight Farenhyt Series IFP-2000ECS 24VDC analog addressable fire alarm system with integral Emergency Voice/Alarm Communication System, IDP protocol addressable initiation devices and System Sensor two-wire synchronized notification devices. This system is the Board of Education approved District Standard for Fire Alarm Systems. The Fire Alarm System shall be UL 864, 9<sup>th</sup> edition compliant and California State Fire Marshal listed.

- A. By submission of a Prime Bid for this project, the Prime Bidder assumes complete and total responsibility for himself and his subcontractors' compliance with this specification in its entirety. If found to be not in compliance with any part of this specification, the Prime Bidder shall bear any burden, financial or otherwise, required to complete the work of this specification to the total satisfaction of El Monte Unified School District.
  - The Fire Alarm System shall be furnished and installed by a Silent Knight Select Farenhyt Engineered Systems Distributor in good standing at the time of the bid. Upon demand by the owner or his representative, the Prime Contractor shall provide proof that he or his listed subcontractor was a Silent Knight Select Farenhyt Engineered Systems Distributor at the time of the bid. Failure to produce said proof shall render the Prime Contractor's bid nonresponsive and shall be considered grounds for immediate disqualification of his prime bid.
    - a) For the purposes of this bid, Prime Bidders shall include the Fire Alarm Contractor on their List of Subcontractors that is submitted with their bid. regardless of subcontractor tier. Failure to list the Fire Alarm Contractor shall render the Prime Bidder in noncompliance with this specification and shall render his bid non-responsive and shall be considered grounds for immediate disqualification of his prime bid.
    - b) The Silent Knight Select Farenhyt Engineered Systems Distributor shall furnish all labor, materials, appliances, cabling, tools, equipment, facilities, transportation and services necessary for and incidental to the performance of all operations in connection with furnishing, delivery and installation of all equipment, cabling, programming, configuration, testing and training required by this Section, complete as indicated in the applicable Contract Drawings and/or specified herein.
      - Systems furnished and/or installed by contractors who are not Silent Knight Select Farenhyt Engineered Systems Distributor shall be considered in noncompliance with this specification and subject to replacement at the expense of the Prime Contractor.
- B. This specification provides the requirements for the installation, programming, configuration, testing and maintenance of a complete analog addressable fire alarm system. This system shall include, but shall not be limited to:
  - 1. Main Fire Alarm Control Panel (FACP)

- a) Network Nodes (on network systems only)
  - 1) Network Interface Module
  - 2) Fiber optic or copper network connection circuits
- b) System cabinet
- c) Power supply
- 2. Digital Signaling Line Circuits (SLC)
- 3. Notification Appliance Circuits (NAC)
- 4. RS-485 Serial Communication Bus (S-bus)
- 5. Voice Communication Bus (V-bus, on systems with voice evacuation only)
- 6. Annunciators both integral and remote
- 7. Batteries
- 8. Wiring
- 9. Conduit
- 10. Associated peripheral devices and modules
- 11. Other relevant components and accessories required to furnish and install a complete and operational fully automatic, addressable reporting Life Safety System.
- C. The fire alarm system shall be capable of providing, at a minimum, the following:
  - 1. Fire Alarm Control Panel (FACP)
    - a) Integral Digital Alarm Communications Transmitter (DACT).
    - b) Network Interface capability via copper and/or fiber optic network.
  - 2. Analog addressable initiation devices
  - 3. Analog addressable monitor and/or control modules
  - 4. Notification appliances
    - a) Compatible with combination horn/strobe two-wire synchronized circuit.
  - 5. Notification Appliance Circuit (NAC) remote power supply
    - a) RPS-1000 Remote Power Supply shall provide the capability of housing the 5815XL SLC Expander for remote SLC generation.
    - b) Combination horn/strobe two-wire circuit.
    - c) Built-in synchronization capabilities
  - 6. Integral Voice Evacuation capability
  - 7. Firefighter Telephone capability
- D. Any material and/or equipment necessary for the proper operation of the system, which is not specified or described herein, shall be deemed part of this Specification.
- E. The Analog Addressable Fire Alarm System specified herein shall be connected to a UL Listed Central Station Monitoring Company via UL and California State Fire Marshal listed radio transmitter.
  - 1. Radio Transmitter for Central Station Monitoring shall be AES Intellinet provided by Allen Alarms.

F. Contractor shall offer code required fire alarm system inspection and maintenance contract.

### 1.2 QUALIFICATIONS

- A. Equipment
  - 1. This specification is based on the equipment of manufacturer(s) who have been approved by the Owner and the Manufacturer(s) herein named shall be considered as meeting the requirements of this specification.
  - 2. The equipment manufacturer shall be a United States manufacturer, who has been regularly engaged in the manufacture of fire alarm systems for at least twenty-five (25) years.
  - 3. The Board of Education approved District Standard for Fire Alarm Systems is Silent Knight Farenhyt IFP-2000 (IFP-2000ECS for voice evacuation systems).
    - a) Equipment provided for this project shall be the product of Silent Knight Farenhyt by Honeywell. No substitutions shall be approved.
      - Contact Silent Knight West Coast Regional Sales Manager Charlie Gallardo (763) 493-6400 for a list of Silent Knight Select Farenhyt Engineered Systems Distributors for the Southern California Area.
  - 4. It is the Contractor's responsibility to meet the entire intent of these specifications. Deviations from the specified items shall be at the risk of the Contractor until the date of final acceptance by the Architect of Record, Engineer of Record and the Owner's representative. All costs for removal, relocation or replacement of a substituted item shall be at the risk of the Prime Contractor.
  - 5. All equipment shall conform to currently adopted applicable codes and ordinances.
  - 6. All equipment shall be California State Fire Marshal (CSFM) listed.
  - 7. All equipment shall bear the label of a Nationally Recognized Testing Laboratory (NRTL) such as Intertek Testing Services NA, Inc. (ITSNA formerly ETL) or Underwriters Laboratories Inc. (UL) and be listed by their re-examination service.
- B. System Supplier/Installer
  - 1. The system shall be furnished and installed by a Silent Knight Select Farenhyt Engineered Systems Distributor who is trained and certified by the Manufacturer in the proper installation, programming, configuration, testing, service and maintenance of the systems specified herein.
  - 2. Subsequent to a successful bid and upon request of the Owner the System Supplier/Installer shall submit a qualification documentation package which shall include the following:
    - a) Evidence of current status as a Silent Knight Select Farenhyt Engineered Systems Distributor.
    - b) Certificate indicating that the contractor employs a minimum of four (4) Farenhyt PHD Certified Technicians.
    - c) Certificates indicating that a minimum of four (4) technicians have attended and completed all requirements of the IFP-2000 training course.
    - d) A list of twenty (20) completed projects of equal scope, with associated Owners Representative contact names and telephone numbers.
    - e) Evidence of current State of California Contractor's License, C-10.

- f) Evidence of current State of California Alarm Company Operator License, ACO.
- g) Per California law all individuals involved in the installation of the fire alarm system shall hold a valid State of California, Division of Apprenticeship Standards (DAS), Fire/Life Safety Technician Certification.
  - 1) Evidence of DAS certification shall be provided immediately upon request at the project site.
- h) The System Supplier/Installer shall show satisfactory evidence, upon request, that he maintains a fully equipped service organization capable of furnishing adequate inspection, service and maintenance of the system.
- i) The System Supplier/Installer shall maintain at his facility the necessary spare parts in the proper proportion as recommended by the manufacturer to maintain and service the equipment being supplied.
- j) The System Supplier/Installer shall be prepared to offer a service contract for the maintenance of the system beyond the warranty period.
- k) The System Supplier/Installer shall provide proof that they maintain a complete service and maintenance center within 50 miles of the project address. A complete service center shall include replacement parts in stock in the quantities deemed sufficient by the owner or its representatives.

### 1.3 RELATED SPECIFICATIONS

- A. The conditions of the General Contract (General, Supplementary, and other Conditions) and the Division 1 General Requirements specifications are hereby made a part of this Section.
  - 1. Section 26 01 00 Basic Electrical Requirements
  - 2. Section 26 01 11 Conduit
  - 3. Section 26 01 30 Boxes
  - 4. Section 26 01 60 Cabinets and Enclosures
  - 5. Section 26 05 32 Identification for Electrical Systems

### 1.4 RELATED WORK BY OTHERS

A. Reference Part 3, sub-section 3.01 of this specification.

### 1.5 RELATED DOCUMENTS

A. In the event of a conflict between this specification and the construction drawings this specification shall take precedence.

### 1.6 APPLICABLE CODES & STANDARDS

- A. The Fire Alarm System shall comply with the currently adopted versions of the following:
  - 1. Building Standards Administrative Code, Part 1, Title 24, California Code of Regulations
  - 2. California Building Code (CBC) Part 2, Title 24, California Code of Regulations (International Building Code, with California Amendments)

- 3. California Electrical Code (CEC) Part 3, Title 24, California Code of Regulations (National Electrical Code with California Amendments)
- 4. California Mechanical Code (CFC) Part 4, Title 24, California Code of Regulations (Uniform Mechanical Code with California Amendments)
- 5. California Fire Code (CFC) Part 9, Title 24, California Code of Regulations (International Fire Code with California Amendments)
- B. NFPA Standards
  - 1. The fire alarm system shall comply with the applicable provisions of the following current National Fire Protection Association (NFPA) standards:
    - a) NFPA 12 Carbon Dioxide Extinguishing Systems
    - b) NFPA 12A Halon 1301 Fire Extinguishing Systems
    - c) NFPA 13 Installation of Sprinkler Systems
    - d) NFPA 15 Water Spray Fixed Systems
    - e) NFPA 16 Foam-Water Sprinkler Systems
    - f) NFPA 17 Dry Chemical Extinguishing Systems
    - g) NFPA 17A Wet Chemical Extinguishing Systems
    - h) NFPA 72, National Fire Alarm and Signaling Code:
      - 1) Central Station Fire Alarm Systems
      - 2) Local Fire Alarm Systems
      - 3) Auxiliary Fire Alarm Systems
      - 4) Remote Station Fire Alarm Systems
      - 5) Proprietary Fire Alarm Systems
    - i) NFPA 90A, Installation of Air Conditioning and Ventilating Systems
    - j) NFPA 101, Life Safety Code Safety to Life from Fire in Buildings and Structures
    - k) NFPA 750 Water Mist Fire Protection Systems
    - I) NFPA 2001 Clean Agent Fire Extinguishing Systems
- C. ADA Americans with Disabilities Act
- D. CAC California Administrative Code, Title 24
- E. U.L. Standards
  - 1. The system shall comply with the applicable provisions of the following U.L. Standards and Classifications:
    - a) UL 38, Manual Signaling Boxes for Fire Alarm Systems
    - b) UL 268, Smoke Detectors for Fire Alarm Systems
    - c) UL 268A, Smoke Detectors for Duct Applications
    - d) UL 346, Waterflow Indicators for Fire Protective Signaling Systems
    - e) UL 464, Audible Signal Appliances
    - f) UL 521, Heat Detectors for Fire Protective Signaling Systems
    - g) UL 864, Control Units and Accessories for Fire Alarm Systems
    - h) UL 1480, Speakers for Fire Alarm Use
    - i) UL 1481, Power Supplies for Fire Protective Signaling Systems

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- j) UL 1635, Digital Alarm Communicator System Units
- k) UL 1638, Visual Signaling Appliances
- I) UL 1971, Signaling Devices for the Hearing Impaired
- m) UOJZ, Control Units, System
- n) SYZV, Control Units, Releasing Device
- o) UOXX, Control Unit Accessories, System
- p) SYSW, Accessories, Releasing Device Service

### 1.7 SUBSTITUTIONS

A. Silent Knight is the Board of Education Approved District Standard for Fire Alarm Systems. No substitutions shall be approved.

### 1.8 SUBMITTALS

- A. Within thirty-five (35) calendar days after the date of the award of the contract, the Contractor shall submit to the Architect for review, eight (8) copies of a complete Submittal Package. The Submittal Package shall consist of the following sections, with each section separated with index tabs.
  - 1. Title Page
    - a) Project Title
    - b) Owner's name
    - c) Architect's name
    - d) Electrical Engineer's name
    - e) Contractor's name
  - 2. Index of Submittal Contents
    - a) Each Section of the Submittal Package shall be numbered chronologically and shall be summarized in the Index.
  - 3. Certifications
    - a) Index of Certification Section Contents
    - b) Valid State of California Contractors License
    - c) Manufacturer's Certifications
      - 1) Silent Knight Select Farenhyt Engineered Systems Distributor
      - 2) Silent Knight Farenhyt PHD Certified Technician
      - 3) Factory Trained Technician (IFP-2000)
    - d) California DAS, Fire/Life Safety Technician Certifications
  - 4. Project List
    - a) A substantial list (minimum of 20) of completed projects equal in scope to that specified herein.
      - 1) Contact information shall be made available upon request.

- 5. Product Data
  - a) Index of Equipment Data Sheets
  - b) Manufacturer's Data Sheets including cable types
  - c) Applicable Listings and Approvals

### PART 2 - PRODUCTS

### 2.1 SYSTEM REQUIREMENTS

- A. Basic Performance and Capabilities
  - 1. System shall be fully programmable and configurable on site to accommodate system expansions and facilitate changes in operation.
  - 2. All software programs shall be stored in non-volatile programmable memory within the FACP.
    - a) Loss of primary and secondary power shall not erase the instructions stored in the memory.
    - b) System programming shall be password protected.
  - 3. Alarm, supervisory and trouble signals from analog addressable devices shall be encoded onto NFPA Class B signaling line circuits (SLC).
  - 4. Initiation device circuits (IDC) shall be wired NFPA Class B.
  - 5. Notification appliance circuits shall be wired NFPA Class B.
  - 6. A single ground or open on any system SLC, IDC or NAC shall not cause a system malfunction, loss of operating power or the ability to report an alarm.
  - 7. Alarm signals arriving at the main FACP shall not be lost due to a power failure.
  - 8. Per NFPA 72, the system shall be provided with sufficient battery capacity to operate the entire system upon loss of 120 VAC power in a normal supervisory mode for a period of twenty four (24) hours with fifteen (15) minutes of alarm indication at the end of this period.
  - 9. The system shall automatically transfer to the standby batteries upon power failure. All battery charging and recharging operations shall be automatic. Batteries, once discharged, shall recharge at a rate that complies with NFPA 72 section 10.6.10.3.
- B. System Functional Operation
  - 1. The actuation of any approved alarm initiating device shall automatically initiate the following functions:
    - a) Alarm LED on the FACP shall flash.
    - b) Local audible piezo electronic signal in the FACP shall sound.
    - c) The alarm condition description, including the type of point and the location within the protected premises, shall be displayed on the LCD display at the FACP and any remote annunciator(s).
    - d) System shall transmit the condition to a UL Listed Central Station Monitoring Facility. Supervising station shall be approved per CFC section 907.6.5.3 (2013).
    - e) Printing and history storage equipment shall log the information associated with the condition, including the time and date of the alarm occurrence.

- f) System output programs configured via control-by-event (CBE) programming to be activated by the particular point in alarm shall be executed, and the associated system output (alarm notification appliances and relays) shall be activated on either local outputs or points located on other network nodes.
- 2. The actuation of any approved supervisory alarm initiating device shall automatically initiate the following functions:
  - a) Supervisory LED on the FACP shall flash.
  - b) Local audible piezo electronic signal in the FACP shall sound.
  - c) The supervisory condition description, including the type of point and the location within the protected premises, shall be displayed on the LCD display at the FACP and any remote annunciator(s).
  - d) System shall transmit the condition to a UL Listed Central Station Monitoring Facility. Supervising station shall be approved per CFC section 907.6.5.3 (2013).
  - e) Printing and history storage equipment shall log the information associated with the condition, including the time and date of the supervisory alarm occurrence.
  - f) System output programs configured via control-by-event (CBE) programming to be activated by the particular point in supervisory alarm shall be executed, and the associated system outputs (relays) shall be activated on either local outputs or points located on other network nodes.
- 3. Whenever a trouble condition is detected and reported the FACP shall automatically initiate the following functions:
  - a) Trouble LED on the FACP shall flash.
  - b) Local audible piezo electronic signal in the FACP shall sound.
  - c) The trouble condition description, including the type of point and the location within the protected premises, shall be displayed on the LCD display at the FACP and any remote annunciator(s).
  - d) System shall transmit the condition to a UL Listed Central Station Monitoring Facility. Supervising station shall be approved per CFC section 907.6.5.3 (2013).
  - e) Printing and history storage equipment shall log the information associated with the condition, including the time and date of the trouble condition occurrence.
  - f) System output programs configured via control-by-event (CBE) programming to be activated by the particular point in trouble condition shall be executed, and the associated system outputs (relays) shall be activated on either local outputs or points located on other network nodes.
- C. Test Functions
  - 1. A "Lamp Test" or "Indicator Test mode shall be a standard feature of the FACP and shall test all LED's and the LCD display on the main FACP and remote annunciators.
  - 2. A "Walk Test" mode shall be a standard feature of the FACP.
    - a) The Walk Test feature shall function so that each alarm input tested shall operate the associated notification appliance for two seconds. The FACP will then automatically reset and confirm normal device operation.
    - b) The event memory shall contain the information on the point tested, the zone tripped, the zone restore and the individual point's return to normal.

- 3. A "Fire Drill mode shall allow the manual testing of the Fire Alarm System notification circuits. The Fire Drill shall be capable of being initiated at the main annunciator, remote annunciators and via a remote contact input.
- 4. "Bypass Mode" shall allow for any point or NAC circuit to be bypassed without affecting the operation of the total Fire Alarm System.
- D. Remote Monitoring Connection
  - 1. The fire alarm system shall be connected via Digital Alarm Communicator Transmitter (DACT) and an NFPA 72, Chapter 26 compliant transmission channel(s) to a UL Listed Central Station Monitoring Company.
    - a) The fire alarm control panel shall provide an integral Digital Alarm Communicator Transmitter (DACT) for signaling to a UL Listed Central Station Monitoring Company.
      - 1) The fire alarm system shall transmit alarm, supervisory alarm and trouble signals with the alarms having priority over the trouble signal.

### 2.2 SYSTEM COMPONENTS

- A. Fire Alarm Control Panel (FACP)
  - 1. The FACP shall be a Silent Knight Farenhyt IFP-2000 or IFP-2000ECS
    - a) The basic control panel shall provide:
      - 1) 9 amp power supply expandable to 45 amps via bus connected expander modules
      - 2) Network Interface Module (only required if this system is to be a part of a network)
        - (a) The network interface module shall be a Silent Knight Farenhyt IFP-RPT-FO-KIT Network Repeater KIT for fiber optic or unshielded twisted pair cable connections.
          - 16AWG unshielded twisted pair FPL (SLC) cable shall be used for copper wiring network connections up to a maximum distance of 3000 feet.
          - (2) 6-strand, 62.5/125 micron multimode fiber optic cable with ST connectors shall be used for fiber optic cable connections.
            - (i) Installers of fiber optic cable shall be certified by the manufacturer of the cable and connectivity used.
            - (ii) Fiber optic cable shall be tested utilizing and industry standardized method.
            - (iii) Provide fiber optic patch cables as required for a complete and operable system.
      - 3) One (1) Signaling Line Circuit (SLC) capable of supporting 159 addressable detectors and 159 addressable modules

- (a) Additional SLC's may be added via expander modules to a maximum of 636 addressable points per panel, 10,176 addressable points per network
- 4) Eight (8) programmable "Flexputs"
  - (a) Programmable Flexput Circuits shall be capable of being programmed as supervised reverse polarity notification appliance circuits, supervised auxiliary power circuits (continuous or resettable), door holder power or as input circuits in Class A or Class B configuration to support dry contact devices or compatible two-wire smoke detectors
- 5) 160 character LCD annunciator
  - (a) Capability of supervising 8 additional remote annunciators
- 6) Integral UL listed Digital Alarm Communicator Transmitter (DACT)
- 7) Ability to automatically test smoke detectors in compliance with NFPA Standards to ensure that they are within listed sensitivity parameters
- 8) Compensation for accumulation of contaminants that affect detector sensitivity
- 9) Day/night sensitivity adjustments
- 10) Maintenance alert feature (differentiated from trouble condition)
- 11) Detector sensitivity selection
- 12) Over-current Protection
  - (a) All low-voltage circuits shall be protected by microprocessor controlled power limiting or have a self-restoring polyswitch.
- 13) Ground Fault Detection
  - (a) The ground fault detector shall operate the general trouble devices as specified but shall not cause an alarm to be sounded.
  - (b) Ground fault shall not interfere with the normal operation of the system, such as alarm or trouble conditions.
- 14) Auto-programming mode (Jumpstart)
  - (a) Jumpstart feature shall automatically enroll all properly connected devices into a functional system within 60 seconds of power up of the panel
- 15) Ability to upgrade the core operating software on site or over the telephone
- 16) RS-485 Serial Communication Bus (S-bus). Systems that do not communicate with Intelligent Modules via RS-485 Serial Communication Bus shall not be deemed equal and shall not be acceptable for this project.
  - (a) S-bus shall be of Class A or Class B configuration with a total bus length of 6000 feet.

- 2. The FACP shall be capable of operating and supervising notification appliance devices as well as addressable initiating detection devices and an integrated supervised dual line digital communicator.
- B. Fire Alarm Control Panel with integral Emergency Voice/Alarm Communication System.
  - 1. The Voice Evacuation Control Panel shall be Silent Knight Farenhyt IFP-2000ECS.
    - a) The IFP-2000ECS shall be the FACP on all systems where Networking is not required (Small elementary schools and middle schools) for compliance with CFC required Emergency Voice/Alarm Communication in K -12 schools.
    - b) Remote Voice Evacuation Amplifiers shall be:
      - 1) Silent Knight Farenhyt ECS-50W
      - 2) Silent Knight Farenhyt ECS-DUAL50W
      - 3) Silent Knight Farenhyt ECS-125W.
- C. Network Nodes
  - 1. Network Nodes, if required, shall be Silent Knight Farenhyt IFP-2000 or IFP-2000ECS.
    - a) All Network systems shall have at least one (1) IFP-2000ECS node for compliance with CFC required Emergency Voice/Alarm Communication in K -12 schools.
    - b) All Network Nodes shall have the capability of being connected with either copper cable or fiber optic cable.
- D. Remote Annunciator
  - 1. The remote annunciator shall be Silent Knight Farenhyt RA-2000
    - a) The remote annunciator shall have 160 character LCD display and 5 LED's for general alarm, supervisory, systems trouble, system silence and system power.
    - b) The remote annunciator shall have the same control and display layout as the integrated annunciator at the FACP.
    - c) The remote annunciator shall have the same functionality and operation as the integrated annunciator at the FACP.
    - d) The remote annunciator shall have twenty (20) levels of user codes to limit access to the system to authorized individuals.
    - e) The remote annunciators shall be capable of operating at a maximum wiring distance of 6,000 feet from the control unit on unshielded, non-twisted cable.
    - f) The system shall support a maximum of eight (8) remote annunciators.
- E. The Serial/Parallel Interface Gateway Module shall be Silent Knight Farenhyt 5824
  - 1. The 5824 shall be connected to the S-bus and provide serial and parallel ports for connection to peripheral devices.
- F. Remote Power Supply
  - 1. The Intelligent Remote Power Supply shall be Silent Knight Farenhyt RPS-1000 or Silent Knight 5496.

- a) The Intelligent Remote Power Supply shall be connected to the FACP via S-bus.
  - 1) The RPS-1000 shall have the capability of accommodating all IFP-2000 add-on modules including the 5815XL SLC Expander.
  - 2) The RPS-1000 shall have 6 amps of output power, six flexput circuits rated at 3 amps each and two form C relay circuits rated at 2.5 amps at 24VDC.
  - 3) The 5496 shall have 6 amps of output power, 4 output circuits that may be programmed as NAC or Auxiliary Power.
- b) The Intelligent Remote Power Supply shall act as a bus repeater allowing connection of additional S-bus devices to a maximum wiring distance of 6,000 feet from the power supply.
- c) The Intelligent Remote Power Supply shall have on-board synchronization for System Sensor NAC devices.
  - 1) Horns and strobes shall be synchronized on the same two-wire NAC circuit.
- G. Signaling Line Circuit (SLC) Devices
  - 1. Each SLC shall be capable to accommodating 159 addressable detectors and 159 addressable modules.
  - 2. Provide SLC devices as indicated on the construction drawings. All devices shall be listed for compatibility with the IFP-2000 FACP.
    - a) SLC Isolation Module shall be Silent Knight IDP-ISO.
    - b) Ceiling mounted smoke detector shall be Silent Knight IDP-Photo.
    - c) Ceiling mounted fixed temperature heat detector shall be Silent Knight IDP-Heat-HT.
    - d) Attic mounted heat detector shall be Silent Knight IDP-Heat-HT or System Sensor 5602 with IDP-Minimon Monitor Module.
    - e) Outdoor elevator lobby device shall be Weatherproof Conventional Heat Detector Thermotech #302-AW-135 with IDP-Minimon Monitor Module.
    - f) Addressable Relay Module shall be Silent Knight IDP-Relay.
    - g) Addressable Input Module shall be Silent Knight IDP-Monitor.
    - h) Addressable Mini Input Module shall be Silent Knight IDP-Minimon.
    - i) Addressable Beam Detector shall be Silent Knight IDP-Beam-T
    - j) Addressable Manual Pull Station shall be Silent Knight IDP-Pull-DA.
    - k) Addressable Duct Mounted Smoke Detector shall be Silent Knight IDP-PhotoR with DNR Housing and Sampling Tubes.
      - 1) Where allowed by code, addressable relay modules shall be utilized for code required HVAC unit shut down in lieu of duct mounted smoke detectors.
      - Where allowed by code, addressable relay modules in conjunction with linevoltage isolation relays shall be utilized to control Fire/Smoke Damper power circuits, in lieu of duct mounted smoke detectors.
- H. Notification Appliance Circuit (NAC) Devices
  - 1. NAC devices shall be the product of System Sensor. All devices shall be listed for compatibility with the IFP-2000 FACP.

- a) Wall mount multi-candela horn/strobe shall be System Sensor P2R, two-wire, red in color.
- b) Ceiling mount multi-candela horn/strobe shall be System Sensor PC2W, two-wire, white in color.
- c) Wall mounted multi-candela strobe shall be System Sensor SR, red in color.
- d) Ceiling mount multi-candela strobe shall be System Sensor SCW, white in color.
- e) Exterior weatherproof horn shall be System Sensor HRK, red in color.
- f) Wall mount multi-candela speaker/strobe shall be System Sensor SPSR, four-wire, red in color. (For use in voice evacuation applications only)
- g) Ceiling mount multi-candela speaker/strobe shall be System Sensor SPSCW, fourwire, white in color. (For use in voice evacuation applications only)
- h) Exterior weatherproof speaker shall be System Sensor SPRK-R, red in color. (For use in voice evacuation applications only)
- I. Line-Voltage Isolation Relay
  - 1. Line-Voltage Isolation Relay shall be System Sensor PR-1, Air Products PAM-1, MR101C or RIC-1.
    - a) All relays shall be California State Fire Marshal (CSFM) listed.
- J. System Wire/Cable
  - 1. All Fire Alarm System Wire and Cable shall be installed in conduit, unless noted otherwise.
    - a) Interior
      - 1) SLC cable shall be #16AWG, 2-conductor, unshielded, FPL, red jacket by Falcon Fine Wire #450216R, or equal.
        - (a) SLC cable shall be California State Fire Marshal (CSFM) listed.
      - 2) NAC Wire shall be #12 AWG THHN/THWN, stranded color red and black.
      - 3) S-bus cable shall be #16AWG, 4-conductor, unshielded, FPL, red or black jacket by Falcon Fine Wire #450416R, or equal.
        - (a) S-Bus cable shall be California State Fire Marshal (CSFM) listed.
      - 4) Speaker cable shall be #18AWG, 2-conductor, shielded, FPL, red jacket by Falcon Fine Wire #460218R, or equal.
        - (a) Speaker cable shall be California State Fire Marshal (CSFM) listed.
      - 5) Network Fiber Optic Cable shall be 6-strand 62.5/125 micron multimode Indoor/Outdoor OCC DX006DWLS9KR, or equal, with ST connectors.
    - b) Exterior

2)

- 1) SLC cable shall be #16AWG, 2-conductor, unshielded, FPL, water-blocked, black jacket by Falcon Fine Wire #400216H2O, or equal.
  - (a) SLC cable shall be California State Fire Marshal (CSFM) listed.
  - NAC Wire shall be #12 AWG THHN/THWN, stranded color red and black.
- 3) S-bus cable shall be #16AWG, 4-conductor, unshielded, FPL, water-blocked, black jacket by Falcon Fine Wire #400416H2O, or equal.
  - (a) S-Bus cable shall be California State Fire Marshal (CSFM) listed.
- 4) Speaker cable shall be #18AWG, 2-conductor, shielded, FPL, water-blocked, black jacket by Falcon Fine Wire #410218H2O, or equal.
  - (a) Speaker cable shall be California State Fire Marshal (CSFM) listed.

- 5) V-Bus cable shall be #18AWG, 2-conductor, shielded, FPL, water-blocked, black jacket by Falcon Fine Wire #410218H2O, or equal.
- (a) Speaker cable shall be California State Fire Marshal (CSFM) listed.
  6) Network Fiber Optic Cable shall be 6-strand 62.5/125 micron multimode Indoor/Outdoor OCC #DX006DWLS9KR, or equal, with ST connectors.

PART 3 - EXECUTION

### 3.1 DIVISION OF WORK

- A. While all work included under this specification is the complete responsibility of the Electrical Contractor, the division of actual work listed following shall occur.
  - 1. All conduits with pull cords, all electrical pull boxes, grounding rods, all outlet boxes, terminal cabinets, backboards, etc., which form part of the rough-in work shall be provided and installed completely by the Electrical Contractor. Coordinate as necessary for proper installation.
    - a) Equipment specific boxes provided by the system manufacturer shall be provided by System Supplier/Installer and installed by the Electrical Contractor.
  - 2. The balance of the system, including installation of initiating devices, notification appliances and equipment, making all connections, etc., shall be performed by the System Supplier/Installer.
  - 3. All 120VAC power conductors and conduits associated with power circuits to all fire alarm system equipment locations shall be provided and installed by the Electrical Contractor.
  - 4. An insulated stranded copper ground wire shall be provided from each control unit to the building grounding system, in compliance with CEC Article 250, by the Electrical Contractor.
  - 5. Labeling of pullboxes and terminal cabinets shall be provided and installed by the Electrical Contractor.
  - 6. HVAC Unit Shut-down
    - a) Conduit for code required HVAC unit shut-down shall be provided and installed by the Electrical Contractor.
    - b) Conductors for code required HVAC unit shut-down shall be provided, installed and terminated by the Mechanical Contractor.
    - c) Addressable Relay Modules for code required HVAC unit shut-down shall be provided and installed by the Fire Alarm System Supplier/Installer.

### 3.2 INSTALLATION

- A. All work shall be completed in strict accordance with all applicable codes and ordinances, by a Silent Knight Select Farenhyt Engineered Systems Distributor.
- B. Cable/Wire
  - 1. All cable/wire for the system specified herein shall be new, unless otherwise noted on plans.
  - 2. System cable/wire and equipment installation shall be in accordance with good engineering practices as established by the California Electrical Code (CEC). Wiring shall meet all applicable electrical codes. All cable/wire shall test free from all grounds and shorts.
    - a) All cable/wire shall be continuous between terminals with no splices.

- 3. All cable/wire shall be labeled at all points of termination. All labeling shall be based on the room numbers as provided by the District/Owner or his representative.
- 4. Underground cables
  - a) Any cable/wire pulled through manholes or pullboxes located below grade, shall be continuous between terminals with no splices underground. The cable/wire shall be intact with no cuts in the protective outer jacket.
  - b) All cable/wire in underground vaults/boxes shall be neatly dressed with service loops attached to the sides of the vault/box. Cable/wire shall not come in contact with the ground.

### 3.3 SYSTEM START-UP

A. All start-up programming and system commissioning shall be performed by a manufacturer's trained and certified technician currently employed by the System Supplier/Installer.

### 3.4 SYSTEM VERIFICATION

- A. Subsequent to system start-up the system installer shall perform a 100% system pre-test to verify that the following features are functioning properly.
  - 1. All notification appliances
  - 2. All initiation devices
  - 3. All control modules
  - 4. All monitor modules
  - 5. Communication link to monitoring service

### 3.5 ACCEPTANCE TESTING

A. The system installer shall, in the presence of the Inspector of Record (IOR), perform 100% testing as noted in System Verification above.

### 3.6 IN SERVICE TRAINING

- A. The Contractor shall instruct personnel designated by the District/Owner in the proper use, basic care and maintenance of the system beyond the warranty period. Contractor shall provide up to eight hours of in-service training with this system.
- 3.7 FACTORY TRAINING & CERTIFICATION
  - A. When requested by Owner, provide Factory Training for a maximum of two District Technicians.
- 3.8 RECORD DRAWINGS AND CLOSE-OUT DOCUMENTATION
  - A. System supplier/installer shall periodically update the General Contractor's master set of record drawings kept on site.

- B. Contractor shall provide the following at close-out.
  - 1. Three (3) hard copies of manufacturer's maintenance and operation manuals.
  - 2. Three (3) wet signed copies of system warranty.

### 3.9 WARRANTY

A. The Contractor shall warrant the equipment and/or materials to be new and free from defects in material and workmanship, and will, within three (3) years from the date of final acceptance, repair or replace any equipment and/or materials found to be defective. This warranty shall not apply to any equipment or materials that have been subject to misuse, abuse, negligence or modification by owner or contractors other than the original installer that provided this warranty.

END OF SECTION 28 31 00