



Office of Contract Management and Vendor Services
Rio Hondo Community College
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**Bid # 2049 L-Tower Building Seismic and Code Upgrades
Addendum # 1
August 11, 2016**

To: All Prospective Bidders

THE FOLLOWING REVISIONS AND/OR CLARIFICATIONS SHALL BE MADE TO THE BIDDING REQUIREMENTS AND CONTRACT DOCUMENTS. REVISE AND AMEND THE DOCUMENTS FOR THE ABOVE NAMED PROJECT IN ACCORDANCE WITH THIS ADDENDUM. THE BID SHALL REFLECT THESE ADDENDUM CHANGES AND EACH BIDDER SHALL MAKE REFERENCE IN THEIR BID TO THIS ADDENDUM ALL BIDDING REQUIREMENTS AND CONTRACT DOCUMENTS SHALL APPLY TO THIS ADDENDUM AS ORIGINALLY INDICATED IN THE APPLICABLE PORTIONS OF THE CONTRACT DOCUMENTS, UNLESS OTHERWISE MODIFIED BY THIS ADDENDUM.

Acknowledge receipt of this Addendum in the space provided on Bid Form. Failure to do so may result in the bid being deemed non-responsive.

The Addendum consists of the following changes:

- 1. The attached document dated August 9, 2016, titled ADDENDUM 1, which includes revised specification sections.**

Date: August 9, 2016

ADDENDUM 1

To Project Bidding Documents for:

**“L” TOWER BUILDING
SEISMIC AND CODE UPGRADES
RIO HONDO COLLEGE**
3600 Workman Mill Road
Whittier, CA 90601

W+W Proj. No. 15003.00
DSA Appl. No. 03-116761
DSA File No.19-C12

Owner:
RIO HONDO COMMUNITY COLLEGE DISTRICT
3600 Workman Mill Road
Whittier, CA 90601

Architect:
Westberg + White Architects, Inc.
14471 Chambers Road, Suite 210
Tustin, CA 92780
714/508-1780

TO: PROSPECTIVE BIDDERS

This Addendum forms part of Contract Documents and modifies original Bidding Documents dated June 7, 2016. Acknowledge receipt of this Addendum in space provided on Bid Form. Failure to acknowledge may subject Bidder to disqualification.

CHANGES TO TABLE OF CONTENTS

1. Revise Table of Contents as follows:
 - a. Delete following Section:
“26 5200 Emergency Lighting Central Battery”
 - b. Insert following Sections:
“32 8000 Irrigation”
“32 9000 Planting”
2. Table of Contents is not reissued.

CHANGES TO SPECIFICATIONS:

1. **Section 01 1100 – Summary of Work:**
 - a. Article 1.02 – Insert following:

“B. Comply with requirements of these specifications and District’s Division 00 documents.
 1. Where differences may occur between these specifications and District 00 documents, requirements of District’s Division 00 documents shall govern, unless otherwise directed.
 2. Changes to approved documents shall be made by addenda or change order approved by Owner and Architect.

- C. Contract Documents are complementary and what is required by one shall be as binding as if required by all.
 - 1. Errors, inconsistencies, or omissions discovered by Contractor shall be reported promptly to Owner and Architect as request for information.”
- 2. **Section 07 9513 – Expansion Joint Cover Assemblies:**
 - a. Delete Section 07 9513 in its entirety and replace it with revised Section 07 9513 issued with this Addendum.
- 3. **Section 09 5100 – Acoustical Ceilings:**
 - a. Delete Section 09 5100 in its entirety and replace it with revised Section 09 5100 issued with this Addendum.
- 4. **Section 27 5313 – Clock System:**
 - a. Delete Section 27 5313 in its entirety and replace it with revised Section 27 5313 issued with this Addendum.
- 5. **Section 28 1600 – Intrusion Detection System:**
 - a. Delete Section 28 1600 in its entirety and replace it with revised Section 28 1600 issued with this Addendum.

CHANGES TO DRAWINGS:

GENERAL

- 1. **SHEET G001 – SHEET INDEX, SYMBOL, ABBREVIATION AND NOTES**
 - a. Corrected sheet name and number to match.

CIVIL

- 1. **SHEET C5.0 – GRADING PLAN**
 - a. Added estimated earthwork quantities and adjusted limit of excavation note
- 2. **SHEET C5.2 – GRADING SECTIONS**
 - a. Added wall detail and adjusted sections to show accurate wall footing

ARCHITECTURAL

- 1. **SHEET AD003 – PARTIAL ENLARGED SITE DEMOLITION PLAN**
 - a. Removed (E) concrete shade structure in its entirety.
- 2. **SHEET AD100 – BASEMENT & GROUND FLOOR DEMOLITION PLANS**
 - a. Removed (E) concrete shade structure in its entirety.
- 3. **SHEET AD101 – SECOND & THIRD FLOOR DEMOLITION PLANS**
 - a. Removed (E) concrete shade structure in its entirety.
- 4. **SHEET A001 – CAMPUS SITE PLAN**
 - a. Removed (E) concrete shade structure in its entirety.
- 5. **SHEET A002 –SITE PLAN**
 - a. Removed (E) concrete shade structure in its entirety.

6. **SHEET A003 – PARTIAL SITE PLAN**
 - a. Removed (E) concrete shade structure in its entirety.

7. **SHEET A100 – BASEMENT AND GROUND LEVEL FLOOR PLANS**
 - a. Added and concrete equipment pad in Electrical Room B20 to match electrical plan.
 - b. Added shaft enclosure near grid lines 19A and B, ground floor only.
 - c. Deleted (E) Concrete shade structure.

8. **SHEET A101 – SECOND AND THIRD FLOOR PLANS**
 - a. Increased shaft size in Storage 200B and 300B.
 - b. Relocated door at Custodian 208 and 311.
 - c. Remove infilling existing floor opening in Conference Room 302.
 - d. Added shaft enclosure near grid lines 19A and B, both floors.

9. **SHEET A102 – FOURTH AND FIFTH FLOOR PLANS**
 - a. Increased shaft size in Storage 400B and 500B.
 - b. Relocated door at Custodian 412.
 - c. Added shaft enclosure near grid lines 19A and B, both floors.

10. **SHEET A200 – BASEMENT AND GROUND CEILING PLANS**
 - a. Relocated mechanical registers to match mechanical plans.
 - b. Added light fixtures in Electrical Room B20 and Fire Control Room B21 to match electrical lighting plan.
 - c. Added recessed linear diffusers to ceiling legend.
 - d. Added shaft enclosure near grid lines 19A & B, ground floor only.
 - e. Deleted (E) Concrete shade structure.

11. **SHEET A201 – SECOND AND THIRD CEILING PLANS**
 - a. Relocated mechanical registers to match mechanical plans.
 - b. Added recessed linear diffusers to ceiling legend.
 - c. Added shaft enclosure near grid lines 19A and B, both floors.

12. **SHEET A202 – FOURTH AND FIFTH CEILING PLANS**
 - a. Relocated mechanical registers to match mechanical plans.
 - b. Added recessed linear diffusers to ceiling legend.
 - c. Added shaft enclosure near grid lines 19A and B, both floors.

13. **SHEET A300 – MAIN AND PENTHOUSE ROOF PLANS**
 - a. Added and relocated roof openings to match mechanical plans.

14. **SHEET A301 – PENTHOUSE REFLECTED CEILING PLAN**
 - a. Added 24 inches x 24 inches suspended acoustical tile ceiling and gypsum board ceiling at underside of roof deck at Stair No. 1.

15. **SHEET A401 – BUILDING ELEVATIONS**
 - a. Corrected glass fiber reinforced concrete panel size at East Elevation.
 - b. Added material color notation on entire East and South elevations.
 - c. Added material color notation.

16. **SHEET A402 – BUILDING ELEVATIONS**
 - a. Added material color notation on entire East and South elevations.
 - b. Added material color notation.

17. **SHEET A602 – ENLARGED LOBBY PLAN AND INTERIOR ELEVATIONS**
 - a. Added dimensions to HSS column locations.
18. **SHEET A604 – ENLARGED STAIR #1 PLANS AND SECTIONS**
 - a. Added suspended acoustical tile ceiling and gypsum board ceiling at underside of roof deck.
19. **SHEET A702 – WINDOW SCHEDULE**
 - a. Revised glass type at Window Types A and B.
20. **SHEET A711 – COLOR SCHEDULE**
 - a. Added color specification for exterior Portland cement plaster.
21. **SHEET A852 – STAIR DETAILS**
 - a. Added detail 10, vertical air duct support at Stair No. 2.
22. **SHEET A871 – ROOF DETAILS**
 - a. Added detail 8, vent pipe penetration flashing detail.
 - b. Added detail 11, air handler curb flashing detail.
 - c. Added detail 12, exhaust fan curb flashing detail.
23. **SHEET A911 – EXPANSION JOINT DETAILS**
 - a. Added detail 11, expansion joint cover at suspended acoustical ceiling.
24. **SHEET A950 – PATTERN PLANS**
 - a. Revised detail 1 to clarify floor tile pattern at upper floor Lobbies.
 - b. Revised detail 2 to indicate locations of wall tile pattern.
 - c. Revised detail 3, wall tile pattern.
 - d. Added detail 4, floor pattern plan at First Floor Lobby.

STRUCTURAL

1. **SHEET S101 – GENERAL NOTES**
 - a. Construction Sequence notes modified.
2. **SHEET S201 – FOUNDATION PLAN**
 - a. Concrete pad shown on electrical room.
 - b. Footing and basement slab details clarified on lines B-18.2 and B-21.2.
 - c. Sections call out references corrected (1/S401 & 2/S401).
 - d. Slab infill shown on data room adjacent to lines B-19a (key note 13).
3. **SHEET S202 – GROUND FLOOR FRAMING PLAN**
 - a. Connection of new slab adjacent to lines B-18.2 clarified by adding info. and new details 15/S507 and 16/S507.
 - b. Slab infill shown on data room adjacent to lines B-19a.
 - c. Sections call out references corrected (1/S401 and 2/S401).
 - d. Framing around new opening provided at storage area.
 - e. "Reference to HSS6X6 beam, between columns added on line 18.2."
 - f. Key notes 6 and 7 added.
 - g. Note number 5 added.
 - h. Partial demolition of existing concrete canopy adjacent to lines B & 21a eliminated.

4. **SHEET S203 – SECOND FLOOR FRAMING PLAN**
 - a. Slab infill shown on data room adjacent to lines B-19a.
 - b. Framing around new opening provided at storage area.
 - c. Key note 7 added.
 - d. Sections call out references corrected (1/S401 and 2/S401).
 - e. Partial demolition of existing concrete canopy adjacent to lines B & 21a eliminated.
5. **SHEET S204 – THIRD FLOOR FRAMING PLAN**
 - a. Slab infill shown on data room adjacent to lines B-19a.
 - b. Framing around new opening provided at storage area.
 - c. Sections call out references corrected (1/S401 and 2/S401).
6. **SHEET S205 – FOURTH FLOOR FRAMING PLAN**
 - a. Slab infill shown on data room adjacent to lines B-19a.
 - b. Framing around new opening provided at storage area.
 - c. Sections call out references corrected (1/S401 and 2/S401).
7. **SHEET S206 – FIFTH FLOOR FRAMING PLAN**
 - a. Slab infill shown on data room adjacent to lines B-19a.
 - b. Framing around new opening provided at storage area.
 - c. Sections call out references corrected (1/S401 and 2/S401).
8. **SHEET S207 – ROOF FRAMING PLAN**
 - a. Framing around new openings provided (key note 6).
 - b. New details (11/S514) for screen wall added.
 - c. Sections call out references corrected (1/S401 and 2/S401).
9. **SHEET S208 – PENTHOUSE ROOF FRAMING PLAN**
 - a. Opening for drains reflected on plan (key note 4).
 - b. New details(10/S514) added at stair adjacent to lines 19a-E.2.
10. **SHEET S301 – (BRB) BRACED FRAME ELEVATIONS**
 - a. Footings elevation added, reference to connection details added.
11. **SHEET S302 – BRACED FRAME ELEVATIONS**
 - a. Footings elevation added, reference to connection details added.
12. **SHEET S303 – MOMENT FRAME ELEVATIONS**
 - a. Footings elevation added.
13. **SHEET S401 – BUILDING SECTIONS**
 - a. Footings elevation added.
14. **SHEET S501 – SECTIONS AND DETAILS**
 - a. Detail 1 – Detail modified to show new slab connection.
 - b. Detail 3 – Notes added to clarify grade beam elevation.
 - c. Detail 10 – Detail modified to show new slab connection.
 - d. Detail 11 – Footing bottom elevation added.
 - e. Detail 18 – Detail modified to show new slab connection.
15. **SHEET S503 – SECTIONS AND DETAILS**
 - a. Detail 12 – Dimensions and reinforcing clarified.

16. **SHEET S504 – PILE SECTIONS AND DETAILS**
 - a. Detail 9 – Slab edge connection modified.
17. **SHEET S506 – PILE SECTIONS AND DETAILS**
 - a. Detail 11 eliminated.
18. **SHEET S507 – SECTIONS AND DETAILS**
 - a. Detail 15 – New detail added.
 - b. Detail 16 – New detail added.
19. **SHEET S511 – BRB FRAME SECTIONS AND DETAILS**
 - a. Detail 14 – Dowel embedment specified.
 - b. Detail 15 – Dowel embedment specified.
 - c. Detail 16 – Anchor bolt spacing added.
20. **SHEET S514 – SECTIONS AND DETAILS**
 - a. Detail 9 – New detail for support around opening added.
 - b. Detail 10 – New detail for metal deck connection at stair no. 1 added.
 - c. Detail 11 – New detail for screen wall support connection added.
21. **SHEET S601 – STAIR #2 FRAMING PLANS**
 - a. Detail 1 – Dimensions to grid lines corrected.
 - b. Detail 2 – Edge of concrete deck modified.
 - c. Detail 3 – Edge of concrete deck modified.
 - d. Detail 4 – Edge of concrete deck modified.
22. **SHEET S602 – STAIR DETAILS**
 - a. Detail 16 – Plate connection specified.

FIRE PROTECTION

1. **SHEET FP001 – FIRE PROTECTION GENERAL NOTES AND SITE PLAN**
 - a. JOB SPECIFIC & GENERAL NOTES:
 - 1) Revised Note #1 to read “SCOPE OF WORK: INSTALL NEW WET PIPE FIRE SPRINKLER SYSTEM TO EXISTING BUILDING AS SHOWN. P.O.C. IS AT A FLANGE 0’-6” A.F.F. INSIDE THE BUILDING. ALL UNDERGROUND WORK IS BY SITE CONTRACTOR”.
 - 2) Revised Note No. 8 to read “ALL PAINT AND PRIMING IS BY GENERAL CONTRACTOR”.
 - 3) Revised Note No. 9 to read “ALL WIRING IS BY ELECTRICAL CONTRACTOR”.
 - 4) Deleted Note No. 15.
2. **SHEET F P100 – FIRE PROTECTION BASEMENT AND FIRST FLOOR REFLECTED CEILING PLANS**
 - a. PLAN 1 – FIRE PRO. BASEMENT REFLECTED CEILING PLAN:
 - 1) Deleted two pendent sprinkler heads.
 - 2) Revised SPRINKLER LEGEND.
 - b. PLAN 2 – FIRE PRO. FIRST FLOOR REFLECTED CEILING PLAN:
 - 1) Identified the lighting fixtures.
3. **SHEET FP101 – FIRE PROTECTION SECOND AND THIRD FLOOR REFLECTED CEILING PLANS**
 - a. PLAN 1 – FIRE PRO. SECOND FLOOR REFLECTED CEILING PLAN:

- 1) Revised head layout in OFFICE 204.
 - b. PLAN 2 – FIRE PRO. THIRD FLOOR REFLECTED CEILING PLAN:
 - 1) Revised head layout in OFFICE 305.
4. **SHEET FP102 – FIRE PROTECTION FOURTH AND FIFTH FLOOR REFLECTED CEILING PLANS**
- a. PLAN 1 – FIRE PRO. SECOND FLOOR REFLECTED CEILING PLAN:
 - 1) Revised head layout in OFFICE 405.
 - b. PLAN 2 – FIRE PRO. SECOND FLOOR REFLECTED CEILING PLAN:
 - 1) Revised head layout in OFFICE 505.
 - 2) Revised head layout in CLASS LAB 506.
5. **SHEET FP103 – FIRE PROTECTION ROOF PENTHOUSE REFLECTED CEILING PLANS**
- a. PLAN 1 – FIRE PRO. ROOF PENTHOUSE REFLECTED CEILING PLAN:
 - 1) Revised SPRINKLER LEGEND.
 - 2) Revised plan title.
6. **SHEET FP200 – FIRE PROTECTION BASEMENT AND FIRST FLOOR PIPING PLANS**
- a. PLAN 1 – FIRE PROTECTION BASEMENT PIPING PLAN:
 - 1) Deleted two pendent sprinkler heads and revised node numbers.
 - 2) Revised SPRINKLER LEGEND.
7. **SHEET FP201 – FIRE PROTECTION SECOND AND THIRD FLOOR PIPING PLANS**
- a. PLAN 1 – FIRE PROTECTION SECOND FLOOR PIPING PLAN:
 - 1) Revised head layout and pipe layout in OFFICE 204.
 - b. PLAN 2 – FIRE PROTECTION SECOND FLOOR PIPING PLAN:
 - 1) Revised head layout and pipe layout in OFFICE 305.
8. **SHEET FP202 – FIRE PROTECTION FOURTH AND FIFTH FLOOR PIPING PLANS**
- a. PLAN 1 – FIRE PROTECTION FOURTH FLOOR PIPING PLAN:
 - 1) Revised head layout and pipe layout in OFFICE 405.
 - b. PLAN 2 – FIRE PROTECTION FIFTH FLOOR PIPING PLAN:
 - 1) Revised head layout and pipe layout in OFFICE 505 and SPRINKLER LEGEND.
 - 2) Revised head layout and pipe layout in CLASS LAB 506.
9. **SHEET FP203 – FIRE PROTECTION ROOF PENTHOUSE PIPING PLAN**
- a. PLAN 1 – FIRE PROTECTION ROOF PENTHOUSE PIPING PLAN:
 - 1) Revised INSPECTOR TEST-N-DRAIN note and SPRINKLER LEGEND.
 - 2) Revised INSPECTOR TEST-N-DRAIN note and FHC-1 note.
10. **SHEET FP302 – FIRE PROTECTION BUILDING CALCULATIONS**
- a. PLAN 1 – RISER DETAIL:
 - 1) Revised RISER DRAIN note.
11. **HYDRAULIC CALCULATIONS (8-1/2 x 11)**
- a. BASEMENT:
 - 1) Revised safety factor due to deleted heads.
 - 2) Revised head node numbers due to deleted heads.

PLUMBING

1. **SHEET P003 – PLUMBING DETAILS**
 - a. Added Detail 6, SEISMIC SEPARATION FITTING DETAIL.
 - b. Added Detail 7, HUB DRAIN DETAIL.

2. **SHEET P100 – PLUMBING BASEMENT & FIRST FLOOR PLANS**
 - a. FLOOR PLAN 1:
 - 1) Revised Plan Note 4, 5, 6, 9 & 10.
 - 2) Added Plan Note 14, 15, 16 & 17.
 - 3) Revised cold water piping layout.
 - 4) Office B12, added Inspector's Test Drain assembly.
 - 5) Women B17, added sanitary vent riser.
 - 6) Added hub-drain assembly at Basement Fire Riser.
 - b. FLOOR PLAN 2:
 - 1) Revised Plan Note 1 & 4.
 - 2) Added Plan Note 14 & 15.
 - 3) Data 103, added SAC-5 assembly.
 - 4) Storage 104, added sanitary vent riser in pipe.

3. **SHEET P101 – PLUMBING SECOND & THIRD FLOOR PLANS**
 - a. FLOOR PLAN 1:
 - 1) Added Plan Note 6 & 7.
 - 2) Data 204, added SAC-4 assembly and sanitary vent riser in pipe chase.
 - a. FLOOR PLAN 2:
 - 1) Added Plan Note 3 & 4.
 - 2) Data 305A, added SAC-3 assembly and sanitary vent riser in pipe.

4. **SHEET P102 – PLUMBING FOURTH & FIFTH FLOOR PLANS**
 - a. FLOOR PLAN 1:
 - 1) Added Plan Note 3 & 4.
 - 2) Data 405A, added SAC-2 assembly.
 - 3) Lounge 406, added sanitary vent riser in pipe chase.
 - b. FLOOR PLAN 2:
 - 1) Revised Plan Note 1.
 - 2) Added Plan Note 6, 7 & 8.
 - 3) Data 505A, added SAC-1 assembly and sanitary vent riser in pipe chase.
 - 4) Added sanitary waste and cold water up to hose bib and floor sink.

5. **SHEET P300 – PLUMBING ROOF PLANS**
 - a. ROOF PLAN 1:
 - 1) Revised Plan Note 4.
 - 2) Added Plan Note 8 & 9.
 - 3) Added hose bib HB-2 at floor sink.
 - 4) Added sanitary vent riser.
 - b. ROOF PLAN 2:
 - 1) Added Plan Note 3.
 - 2) Added sanitary vent riser.

6. **SHEET P400 – PLUMBING ENLARGED FLOOR PLANS**
 - a. FLOOR PLAN 1:
 - 1) Revised Plan Note 4, 5, 8, 9, 13, 14, 15, 19 & 20.
 - 2) Revised main sanitary sewer line routing.
 - 3) Extend hot water to lavatories.

- 4) Deleted existing 3" OD riser call-out.
 - b. FLOOR PLAN 2:
 - 1) Revised Plan Note 1, 2, 3, 6, 7, 13 & 14.
 - 2) Noted floor drains and trap primers.
 - 3) Extended hot water to lavatories.
 - 4) Noted sanitary vent riser.
 - 5) Deleted existing 3" OD riser call-out.
 - c. FLOOR PLAN 3:
 - 1) Revised Plan Note 6, 7, 13, 14, 15 & 16.
 - 2) Extended hot water to lavatories.
 - 3) Noted trap primers.
 - 4) Deleted existing 3" OD riser call-out.
 - d. FLOOR PLAN 4:
 - 1) Revised Plan Note 1, 2, 3, 6 & 7.
 - 2) Revised sanitary vent piping layout.
 - 3) Revised water supply layout to fixtures.
 - 4) Extended hot water to lavatories.
7. **SHEET PD100 – PLUMBING BASEMENT & FIRST FLOOR DEMOLITION PLANS**
- a. FLOOR PLAN 1:
 - 1) Revised Demolition Note 6.
 - 2) Added Demolition Note 12, 13, 14, 15, 16, 17 & 18.
 - 3) Noted additional demolition work on floor plan near Elevator No. 3.
 - b. FLOOR PLAN 2:
 - 1) Revised Demolition Note 3 & 4.
 - 2) Added Demolition Note 9, 10 & 11.
 - 3) Noted additional demolition work on floor plan at Utility Space.
 - 4) Noted additional demolition work on floor plan near Elevator No. 3.
8. **SHEET PD101 – PLUMBING SECOND & THIRD FLOOR DEMOLITION PLANS**
- a. FLOOR PLAN 1:
 - 1) Demolished sanitary vent at Passage 202A.
 - b. FLOOR PLAN 2
 - 1) Demolished sanitary vent at Workroom 302D .
9. **SHEET PD102 – PLUMBING FOURTH & FIFTH FLOOR DEMOLITION PLANS**
- a. FLOOR PLAN 1:
 - 1) Revised Demolition Note 1, 2 & 3.
 - b. FLOOR PLAN 2:
 - 1) Revised Demolition Note 1, 2, 3, 4 & 10.
 - 2) Note existing cold water up to hose bib to remain.
10. **SHEET PD300 – PLUMBING DEMOLITION ROOF PLANS**
- a. ROOF PLAN 1
 - 1) Revised Demolition Note 4 & 5.

HVAC

- 1. **SHEET M001 – MECHANICAL ABBREVIATIONS AND SYMBOLS LIST**
 - a. DEMOLITION NOTES:
 - 1) Revised notes .
- 2. **SHEET M002 – MECHANICAL SCHEDULES**
 - a. AIR HANDLER SCHEDULE:

- 1) Revised Equipment Performance and Remarks.
 - b. SUPPLY FAN SCHEDULE - STAIR PRESSURIZATION SYSTEM:
 - 1) Revised equipment selection for SF-1 and SF-2.
 - 2) Revised Remark 6 .
 - c. SPLIT AIR CONDITIONER SCHEDULE (COOLING ONLY):
 - 1) Removed detail in its entirety .
 - d. VARIABLE REFRIGERANT FLOW SCHEDULE (COOLING ONLY):
 - 1) Added .
 - e. EXHAUST FAN SCHEDULE
 - 1) Revised Equipment Performance and.
 - 2) Added EF-4 .
 - f. LINEAR SLOT SUPPLY DIFFUSERS & RETURN GRILLES:
 - 1) Added schedule .
 - g. ARCHITECTURAL CEILING SQUARE SUPPLY AIR DIFFUSER (T-BAR CEILING):
 - 1) Added schedule .
 - h. ARCHITECTURAL CEILING SQUARE RETURN, TRANSFER, & EXHAUST AIR DIFFUSER:
 - 1) Added schedule .
3. **SHEET M003 – MECHANICAL SCHEDULES**
- a. SINGLE DUCT TERMINAL UNIT WITH HOT WATER REHEAT SCHEDULE:
 - 1) Revised VAV schedule/performance and added additional VAV units.
4. **SHEET M004 – MECHANICAL DETAILS**
- a. ROUND VOLUME DAMPER:
 - 1) Revised detail .
 - b. PIPE THRU ROOF DETAIL
 - 1) Removed detail in its entirety .
 - c. RETURN SOUND TRAP AND TRANSFER DUCT
 - 1) Revised detail .
5. **SHEET M005 – MECHANICAL DETAILS**
- a. SUPPLY FAN CURB AND ANCHORAGE DETAIL:
 - 1) Added detail .
 - b. REFRIGERANT PIPE THRU ROOF DETAIL:
 - 1) Revised detail .
 - c. SLOT AIR DIFFUSER AND GRILLE DETAIL:
 - 1) Removed detail in its entirety .
 - d. EXHAUST DIFFUSER/GRILLES DETAIL:
 - 1) Removed detail in its entirety and replaced with "SUPPLY DIFFUSER INSTALLATION DETAIL" .
 - e. SPLIT AIR CONDITIONER DETAIL:
 - 1) Removed detail in its entirety .
 - f. CONDENSER UNIT INSTALLATION DETAIL:
 - 1) Removed detail in its entirety and replaced with "VRF - CONDENSER UNIT INSTALLATION DETAIL" .
6. **SHEET M006 – MECHANICAL DETAILS**
- a. SINGLE DUCT AIR TERMINAL UNIT (VAV) DETAIL”:
 - 1) Revised detail .
 - b. AIR HANDLER CURB AND SEISMIC STRAP DETAIL:
 - 1) Revised detail .
 - c. AIR HANDLER STACK COOLING COIL PIPING DIAGRAM:
 - 1) Revised detail .

7. **SHEET M007 – MECHANICAL DETAILS**
 - a. HYDRONIC PIPE RISER SUPPORT DETAIL:
 - 1) Added detail .
 - b. SUPPORT/ANCHOR FOR PIPE RISER:
 - 1) Removed detail in its entirety .

8. **SHEET M008 – MECHANICAL DETAILS**
 - a. DUCT THRU ROOF TO EQUIPMENT ON ROOF DETAIL:
 - 1) Revised detail .

9. **SHEET M009 – CONTROL SCHEMATICS**
 - a. Revised and added Control Diagrams.

10. **SHEET M100 – MECHANICAL BASEMENT & GROUND FLOOR PLANS**
 - a. PLAN 1 - PLAN NOTES:
 - 1) Revised Plan Note 4, 9, 10, 12, 13 & 14.
 - 2) Added Plan Note 16, 17, 18 & 19 per Sketch.
 - b. PLAN 1 - MECHANICAL FLOOR PLAN - BASEMENT LEVEL:
 - 1) Revised air distribution system and associated controls.
 - c. PLAN 2 - PLAN NOTES
 - 1) Revised Plan Note 1, 2, 4, 6, 9, 11 & 13.
 - 2) Added Plan Note 3, 14, 15, 16, 17, 18, 19 & 20.
 - d. PLAN 2 - MECHANICAL FLOOR PLAN - GROUND LEVEL
 - 1) Revised air distribution system and associated controls.

11. **SHEET M101 – MECHANICAL SECOND & THIRD FLOOR PLANS**
 - a. PLAN 1 - PLAN NOTES:
 - 1) Revised Plan Note 1, 2, 7, 9, 10, 11 & 14.
 - 2) Added Plan Note 16, 17, 18, 19, 20 & 21.
 - b. PLAN 1 - MECHANICAL FLOOR PLAN - SECOND LEVEL:
 - 1) Revised air distribution system and associated controls.
 - c. PLAN 2 - PLAN NOTES:
 - 1) Revised Plan Note 1, 2, 7, 9, 10, 11 & 14.
 - 2) Added Plan Note 3, 17, 18, 19, 20 & 21.
 - d. PLAN 2 - MECHANICAL FLOOR PLAN - THIRD LEVEL:
 - 1) Revised air distribution system and associated controls.

12. **SHEET M102 – MECHANICAL FOURTH & FIFTH FLOOR PLANS**
 - a. PLAN 1 - PLAN NOTES:
 - 1) Revised Plan Note 1, 2, 3, 4, 5, 10, 12, 13, 14, 18 & 19.
 - 2) Added Plan Note 20, 21, 22, 23 & 24.
 - b. PLAN 1 - MECHANICAL FLOOR PLAN - FOURTH LEVEL:
 - 1) Revised air distribution system and associated controls.
 - c. PLAN 2 - PLAN NOTES:
 - 1) Revised Plan Note 1, 2, 3, 4, 5, 6, 7, 11, 13, 14, 15, 16, 18, 21, 22 & 24.
 - 2) Added Plan Note 25, 26, 27, 28, 29, 30, 31 & 32.
 - d. PLAN 2 - MECHANICAL FLOOR PLAN - FIFTH LEVEL:
 - 1) Revised air distribution system and associated controls.

13. **SHEET M200 – MECHANICAL HYDRONIC BASEMENT & GROUND FLOOR PLANS**
 - a. PLAN 1 - MECHANICAL HYDRONIC FLOOR PLAN - BASEMENT LEVEL:
 - 1) Revised hydronic piping layout.
 - b. PLAN 2 - MECHANICAL HYDRONIC FLOOR PLAN - GROUND LEVEL:
 - 1) Revised hydronic piping layout.

14. **SHEET M201 – MECHANICAL HYDRONIC SECOND & THIRD FLOOR PLANS**
 - a. PLAN 1 - MECHANICAL HYDRONIC FLOOR PLAN - SECOND LEVEL:
 - 1) Revised hydronic piping layout.
 - b. PLAN 2 - MECHANICAL HYDRONIC FLOOR PLAN - THIRD LEVEL:
 - 1) Revised hydronic piping layout.

15. **SHEET M202 – MECHANICAL HYDRONIC FOURTH & FIFTH FLOOR PLANS**
 - a. PLAN 1 - MECHANICAL HYDRONIC FLOOR PLAN - FOURTH LEVEL:
 - 1) Revised hydronic piping layout.
 - b. PLAN 2 - MECHANICAL HYDRONIC FLOOR PLAN - FIFTH LEVEL:
 - 1) Revised hydronic piping layout.

16. **SHEET M300 – MECANICAL ROOF PLAN**
 - a. PLAN 1 - PLAN NOTES:
 - 1) Revised Plan Note 2, 9 & 10 .
 - 2) Removed Plan Note 14 .
 - 3) Added Plan Note 13.
 - b. PLAN 1 - MECHANICAL ROOF PLAN:
 - 1) Revised air distribution system.
 - 2) Added exhaust fan EF-4 .
 - 3) Removed SAC units on roof .

ELECTRICAL

1. **SHEET E009 – PANEL SCHEDULES**
 - a. Revise circuit breakers at panels “MLB”, “ML1”, “ML2”, “ML3”, and “ML4” as shown.

2. **SHEET E010 – PANEL SCHEDULES**
 - a. Revise circuit breakers at panels “DPH6”, “EHLM”, “ML5”, and “ML6” as shown.

3. **SHEET E100 – BASEMENT AND GROUND FLOOR LIGHTING PLANS**
 - a. Basement:
 - 1) In room B10, delete fixtures type K1.
 - 2) In Stair No. 1, provide fixtures type K1 and connect as shown.
 - 3) Between lines A & A.7 and lines 20 @21, delete fixtures type F1.
 - b. Ground Floor:
 - 1) In room 101, delete fixtures type K1.
 - 2) In Stair No. 1, provide fixtures type K1 and connect as shown.

4. **SHEET E101 – SECOND AND THIRD FLOOR LIGHTING PLANS**
 - a. 2nd Floor:
 - 1) In room 200, delete fixtures type K1.
 - 2) In Stair No. 1, provide fixtures type K1 and connect as shown.
 - 3) In room 201, rearrange fixtures type L1 as shown.
 - 4) In room 208, provide lighting control type L in lieu of type D.
 - b. 3rd Floor:
 - 1) In room 300, delete fixtures type K1.
 - 2) In Stair No. 1, provide fixtures type K1 and connect as shown.
 - 3) In room 301, rearrange fixtures type L1 as shown.

5. **SHEET E102 – FOURTH AND FIFTH FLOOR LIGHTING PLANS**
 - a. 4th Floor:
 - 1) In room 400, delete fixtures type K1.
 - 2) In Stair No. 1, provide fixtures type K1 and connect as shown. In room 401, rearrange fixtures type L1 as shown.
 - b. 5th Floor:
 - 1) In room 500 delete fixtures type K1.
 - 2) In Stair No. 1, provide fixtures type K1 and connect as shown.
 - 3) In room 501, rearrange fixtures type L1 as shown.
6. **SHEET E103 – ROOF LEVEL LIGHTING PLAN**
 - a. In Stair No. 1, provide fixtures type K1 and connect as shown.
 - b. In room 602, rearrange fixtures type F1 as shown.
7. **SHEET E200 – BASEMENT AND GROUND FLOOR POWER PLANS**
 - a. Provide connections for SAC-5 and SAC-6 as shown.
8. **SHEET E201 – SECOND AND THIRD FLOOR POWER PLANS**
 - a. Provide connections for SAC-3 and SAC-4 as shown.
9. **SHEET E202 – FOURTH AND FIFTH FLOOR POWER PLANS**
 - a. Provide connections for SAC-1, SAC-2, and for control panels in room 204 as shown.
10. **SHEET E203 – ROOF LEVEL POWER PLAN**
 - a. Provide connections for AHU-1, AHU-2, SF-1, and SF-2 control panels as shown.
 - b. Delete connections to SAC-1, SAC-2, SAC-3 and SAC-4.
 - c. Revise connections for AHU-1, AHU-2, SF-1, and SF-2 as shown.
 - d. Provide connection for CU-1 unit as shown.
 - e. Provide connection for EF-4 unit as shown.
11. **SHEET E402 – FOURTH AND FIFTH FLOOR FIRE ALARM PLANS**
 - a. Provide four relay modules and delete two relay modules as shown.
12. **SHEET E405 – FIRE ALARM RISER DIAGRAM**
 - a. Fire Alarm Riser Diagram: on 5th floor:
 - 1) Provide four relay modules in lieu of two as shown.

ATTACHMENTS:

Following specification sections are part of Addendum 1:

Specifications:

07 9513, 09 5100, 27 5313, and 28 1600.

Following revised previously issued Drawings, dated 8/9/2016, are part of Addendum 1. Drawings are 30 inches x 42 inches:

General Drawings:

G001

Civil Drawings:

C5.0 and C5.2

Architectural Drawings:

AD003, AD100, A001, A003, A100, A101, A102, A200, A201, A202, A300, A301, A401, A402, A602, A604, A702, A852, A871, A911, and A950

Structural Drawings:

S101, S201, S202, S203, S204, S205, S206, S207, S208, S310, S302, S303, S 401, S501, S503, S504, S506, S507, S511, S514, S601, and S 602

Plumbing Drawings:

P100, P101, P102, P300, P400, PD100, PD101, PD102, and PD 300

HVAC Drawings:

M001, M002, M003, M004, M005, M006, M007, M008, M009, M100, M101, M102, M200, M201, M202, AND M300

Electrical Drawings:

E009, E010, E100 E101, E102, E103, E200, E201, E202, E203, E402, and E405

W+W Architects, Inc.

IDS Group

Pezeshki Engineering, Inc.

FBA Engineering

END OF ADDENDUM 1

SECTION 07 9513

EXPANSION JOINT COVER ASSEMBLIES

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Expansion and seismic joint cover assemblies for building interior and exterior.

- B. Related Sections:
 - 1. Section 03 3000: Cast-in-Place Concrete
 - 2. Section 07 0150: Roof Repairs
 - 3. Section 07 4243: Aluminum Composite Metal Panel System
 - 4. Section 07 6200: Sheet Metal Flashing and Trim
 - 5. Section 07 9200: Joint Sealants
 - 6. Section 08 4413: Aluminum Curtain Wall
 - 7. Section 09 5100: Acoustical Ceilings

1.02 REFERENCES

- A. California Code of Regulations (CCR), Title 24, Part 2, California Building Code (CBC), Volumes 1 and 2, 2013 edition.

- B. ASTM International (ASTM):
 - 1. ASTM B209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
 - 2. ASTM D882 – Standard Test Method for Tensile Properties of Thin Plastic Sheeting
 - 3. ASTM D2240 – Standard Test Method for Rubber Property—Durometer Hardness
 - 4. ASTM D2582 – Standard Test Method for Puncture-Propagation Tear Resistance of Plastic Film and Thin Sheeting
 - 5. ASTM D4833 – Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products
 - 6. ASTM E119 – Standard Test Methods for Fire Tests of Building Construction and Materials.
 - 7. ASTM E1745 – Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs
 - 8. ASTM E1399 – Standard Test Method for Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems.
 - 9. ASTM E1966 – Standard Test Method for Fire-Resistive Joint Systems

- C. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Architectural Extrusions and Panels.

- D. UL, LLC (UL):
 - 1. UL 2079 – Standard for Tests for Fire Resistance of Building Joint Systems

1.03 QUALITY ASSURANCE

- A. Installer Qualifications: Approved by manufacturer.
- B. Single Source Responsibility: Obtain expansion joint cover assemblies from one source from single manufacturer.
 - 1. Coordinate compatibility with expansion joint cover assemblies specified in other sections.
- C. Product Options: Drawings indicate size, profiles, and dimensional requirements of expansion joint systems and are based on specific systems indicated.
 - 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval.
 - a. Should modifications be proposed, submit comprehensive explanatory data to Architect for review.
- D. Loading Characteristics:
 - 1. Standard Loading: Refers to covers that are capable of withstanding up to 500 lb. point loads.
 - 2. Heavy Duty Loading: Refers to covers that are capable of withstanding up to 2000 lb. point loads.
- E. Fire Test Response Characteristics: Where indicated, provide architectural joint system and fire barrier assemblies identical to those of assemblies tested for fire resistance per UL 2079 or ASTM E 1966 by testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Fire rating not less than the rating of adjacent construction.

1.04 SUBMITTALS

- A. Shop Drawings: Provide following for each joint system specified and obtain approval prior to fabrication and shipment of materials to Project Site:
 - 1. Placement Drawings: Include line diagrams showing plans, elevations, sections, details, splices, blockout requirement, entire route of each joint system, and attachments to other work.
 - a. Show fabrication and installation of expansion joint cover assembly.
 - 2. Where joint systems change planes, provide isometric or clearly detailed drawing depicting how components interconnect.
- B. Product Data: Copies of manufacturer's latest published literature for each type of expansion joint cover assembly specified.
 - 1. Including, but not limited to, manufacturer's product specifications, installation instructions, details of construction relative to materials, dimensions of individual components, profiles, and finishes.
 - 2. Obtain approval before materials are fabricated and delivered to Project Site.
 - 3. Data to clearly indicate movement capability of cover assemblies and suitability of material used in exterior seal for UV exposure.

- C. Samples for Verification: Full size units of each type of expansion joint cover assembly indicated.
 - 1. For each finish and profile specified.
 - 2. Include related components to show complete joint assembly.

1.05 DEFINITIONS

- A. Maximum Joint Width: Widest linear gap joint system tolerates and in which it performs its designed function without damaging its functional capabilities.
- B. Minimum Joint Width: Narrowest linear gap joint system tolerates and in which it performs its designed function without damaging its functional capabilities.
- C. Movement Capability: Value obtained from difference between widest and narrowest widths of joint.
- D. Nominal Joint Width: Width of linear opening specified in practice and in which joint system is installed.

1.06 COORDINATION

- A. Coordinate installation of exterior wall joint systems with roof expansion assemblies to ensure that wall transitions are watertight.

1.07 WARRANTY

- A. Warranty: Provide manufacturer's 5 year warranty for expansion joint covers.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Basis-of-Design: Design for expansion joints is based on products as manufactured by Construction Specialties, Inc.
 - 1. Provide expansion joints of types indicated on Drawings.
 - 2. Subject to compliance with specified requirements, provide named product or comparable product by one of following manufacturers:
 - a. Balco, Inc.
 - b. InPro Jointmaster by InPro Corporation
 - c. MM Systems Corporation
 - d. Watson Bowman Acme Corporation

2.02 MATERIALS

- A. Aluminum:
 - 1. Extrusions: ASTM B 221, Alloy 6005A-T61, 6063-T5, 6061-T5, 6105-T5
 - 2. Sheet and Plate: ASTM B 209, Alloy 6061-T6, 3003-H14, 5005-H34
 - 3. Apply manufacturer's standard protective coating on aluminum surfaces to be placed in contact with cementitious materials.
- B. Compression Seals: Preformed rectangular elastomeric extrusions having internal baffle system and designed to function under compression.
 - 1. Joint Assemblies EJ-3:

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- a. Primary Seal: Elastomeric
 - 1) Dual Durometer: 65 Shore A; ASTM D 2240.
 2. Joint Assemblies EJ-4:
 - a. Primary Seal: Elastomeric
 - 1) Single Durometer: 70 Shore A; ASTM D 2240.
 - b. Secondary Seal: PVC
 - 1) Single Durometer: 65 Shore A; ASTM D 2240.
 3. Joint Assemblies EJ-5, EJ-6, EJ-7, EJ-10, and EJ-12:
 - a. Primary Seal: Thermoplastic
 - 1) Single Durometer: 70 Shore A; ASTM D 2240.
 4. Joint Assemblies EJ-8, EJ-9 and EJ-11:
 - a. Gasket: Duroflex
 - 1) Durometer 80 Shore A; ASTM D 2240
 - b. Vapor Barrier: Polyethylene; ASTM E 1745
 - 1) 3 inch Tensile Strength, ASTM D 882: 275 lbs.
 - 2) Puncture Strength, ASTM D 4833: 72 lbs.
 - 3) PPT Resistance, ASTM D 2582: 45 lbs.
 - c. Fire Barrier:
 - 1) Reflex (RFX) compressible block of insulation housed in continuous stainless steel foil.
 - a) UL FF-D-1056.
 - 2) Monoflex (OFX) Blanket type fire barrier designed for floor and wall expansion joints.
 - a) UL FF-D-1094.
 - 3) As manufactured by Construction Specialties, Inc., conforming to following:
 - a) UL-2079, ASTM E-1966, ASTM E1399, and ASTM E-119.
 5. Elastomeric Material: Santoprene
 - a. Colors: As scheduled.
- C. Fire Barriers: Material or material combination, when fire tested after cycling, designated to resist passage of flame and hot gases through movement joint and to meet performance criteria for required rating period.
- D. Moisture Barrier: 7-ply laminate reinforced Polyethylene.
- E. Accessories: Manufacturer's standard anchors, clips, fasteners, set screws, spacers, and other accessories compatible with material in contact, as indicated or required for complete installations.

2.03 EXPANSION JOINT SYSTEMS – GENERAL

- A. Provide expansion joint systems of design, basic profile, materials, and operation indicated.
 1. Select units comparable to those indicated or required to suit joint size and to absorb variations in adjacent surfaces and structural movement
 2. Provide units with capability to accommodate variations in adjacent surfaces.
 3. Provide expansion joint Type EJ-4 with factory-fabricated miters at 90 degree transitions.
 - a. Field miters are not acceptable.

- B. Design expansion joint systems for following movement characteristics as indicated on Structural Drawings:
1. Nominal Joint Width
 2. Maximum Joint Width
 3. Minimum Joint Width
 4. Lateral Shear Movement Capability
- C. Fire-Resistance Rating: Provide joint system and fire-barrier assembly with rating not less than that of adjacent construction.

2.04 SCHEDULE OF EXPANSION JOINT COVERS/ASSEMBLIES

- A. Scheduled manufacturer and model number are given here only to identify quality, function, and characteristics, of Basis-of-Design products.
1. Other listed manufacturers may be used where equal in quality, function, and appearance, as judged solely by Architect.
 2. Following items are products of Construction Specialties, Inc.
 - a. Refer to Drawings for locations.
- B. Expansion Joint Covers/Assemblies:

Type:	Model No./Description:	Finish:
EJ-1	SJPF- 200: Floor Joint System – aluminum frame with aluminum cover plate	Mill finish aluminum
EJ-2	SJPF- 500: Floor Joint System – aluminum frame with aluminum cover plate	Mill finish aluminum
EJ-3	SGRW-500: Floor Joint System – aluminum frame with aluminum cover plate and elastomeric primary seal	Mill finish aluminum [color] elastomeric seal
EJ-4	SF-400: Exterior Wall Cover – aluminum frame with Santoprene primary seal and PVC secondary seal	Mill finish aluminum [color] Santoprene seal [color] PVC seal
EJ-5	FWF-400: Wall to Wall Joint System – aluminum frame with extruded flexible primary seal	Mill finish aluminum [color] extruded flexible seal
EJ-6	FWF-500: Wall to Wall Joint System – aluminum frame with elastomeric primary seal	Mill finish aluminum [color] elastomeric seal
EJ-7	FCFC-400: Ceiling to Ceiling Joint System - aluminum frame with extruded flexible primary seal.	Mill finish aluminum [color] extruded flexible seal

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Type:	Model No./Description:	Finish:
EJ-8	SRJW-500: Roof Cover – aluminum cover plate and frame with continuous moisture seal, polyethylene vapor barrier and 2 hour fire barrier.	Aluminum Cover Plate finished to match prefinished metal flashing
EJ-9	SRJW-400: Roof Cover – aluminum cover plate and frame with continuous moisture seal, polyethylene vapor barrier and 2 hour fire barrier.	Aluminum Cover Plate finished to match prefinished metal flashing
EJ-10	SF-500: Wall to Wall Joint System – aluminum frame with extruded flexible primary seal and PVC secondary seal.	Mill finish aluminum [color] extruded flexible seal
EJ-11	SRJ-600: Roof Cover – aluminum cover plate and frame with continuous moisture seal, polyethylene vapor barrier and 2 hour fire barrier.	Aluminum Cover Plate finished to match prefinished metal flashing
EJ-12	FCF-500: Ceiling to Ceiling Joint System - aluminum frame with extruded flexible primary seal.	Mill finish aluminum [color] extruded flexible seal

2.05 METAL FINISHES

- A. Comply with NAAMM – Metal Finishes Manual, for finish designation and application recommendations, except as otherwise indicated.
 - 1. Apply finishes in factory after fabrication.
 - 2. Protect mechanical finishes on exposed surfaces by applying strippable, temporary protective covering prior to shipment.

- B. Aluminum Finishes:
 - 1. Mill Finish:
 - a. Aluminum Association (AA): AA-M10 (unspecified mill finish).
 - 2. Color Finish:
 - a. High performance pigmented organic coil coating, meeting or exceeding performance and test provisions of AAMA 2605 for ten years minimum.
 - b. Minimum fluoropolymer 70 percent PVDF (Kynar 500 or Hylar 5000) resin system base by weight complying with AAMA 2605.
 - c. PPG Duranar Coil Coating System, or approved equal by Valspar.
 - 3. Appearance of Finished Work: Noticeable variations in same piece are not acceptable.

- C. Factory-Primed Concealed Surfaces: Protect concealed metal surfaces to be placed in contact with concrete or masonry with shop-coat of manufacturer's standard primer on contact surfaces.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine surfaces and blockouts where expansion joint systems will be installed for installation tolerances and other conditions affecting performance of Work.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Manufacturer's Instructions: In addition to specified requirements, comply with manufacturer's instructions and recommendations for Work, including preparing substrates, applying materials, and protecting installed units.
- B. Repair concrete slabs and blockouts using manufacturer's recommended repair grout of compressive strength adequate for anticipated structural loadings.
- C. Coordinate and furnish anchorages, setting drawings, templates, and instructions, installation of expansion joint cover assemblies to be embedded in concrete or have recesses formed into edges of concrete slab for later placement and grouting-in of frames.
- D. Cast-In Frames: Coordinate and furnish frames to be cast into concrete.

3.03 INSTALLATION

- A. Comply with manufacturer's written instructions for storing, handling, and installing expansion joint cover assemblies and materials, unless more stringent requirements are indicated.
- B. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of expansion joint covers.
 - 1. Install joint cover assemblies in true alignment and proper relationship to expansion joints and adjoining finished surfaces, measured from established lines and levels.
 - 2. Allow adequate free movement for thermal expansion and contraction of metal to avoid buckling of frames.
 - 3. Set floor frames at elevations to be flush with adjacent finished floor materials.
 - 4. Locate wall, ceiling, roof, and soffit covers in continuous contact with adjacent surfaces.
 - 5. Securely attach in place with required accessories.
 - 6. Locate anchors at interval recommended by manufacturer, but not less than 3 inches from each end and 24 inches on centers.
- C. Joinery and Continuity: Maintain continuity of expansion joint cover assemblies with end joints held to minimum and metal members aligned mechanically using splice joints.
 - 1. Adhere flexible filler materials to seating member with adhesive or pressure sensitive tape as recommended by manufacturer.
 - 2. Adjust for differences between actual structural gap and nominal design gap due to ambient temperature at time of installation.

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3. Notify Architect where discrepancies occur that will affect proper joint installation and performance.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing expansion joint covers to in-place construction, including threaded fasteners with drilled-in expansion shields for masonry and concrete where anchoring members are not embedded in concrete.
1. Provide fasteners or proper metal, type, and size to suit type of construction indicated and provide for secure attachment of expansion joint cover assemblies.
 2. Standard-Duty Systems: Shim to level where required.
 - a. Support underside of frames continuously to prevent vertical deflection when in service.
 3. Heavy-Duty Systems: Repair or grout blockout as required for continuous frame support and to bring frame to proper level.
 - a. Shimming is not allowed.
- E. Elastomeric Seal Joint Assemblies: Install elastomeric seals and membranes in frames to comply with manufacturer's written instructions.
1. Provide in continuous lengths for straight sections.
 2. Install with minimum number of end joints.
 3. Seal end joints within continuous runs, and joints at transitions according to manufacturer's written instructions to provide watertight installation.
 4. Vulcanize or heat-weld field-spliced joints as recommended by manufacturer.
 5. Mechanically lock seals into frames or adhere to frames with adhesive or pressure-sensitive tape as recommended by manufacturer.
- F. Extruded Preformed Seals: Install seals complying with manufacturer's written instructions and with minimum number of end joints.
1. For straight sections provide preformed seals in continual lengths.
 2. Vulcanize or heat-weld field splice joints in preformed seal material to provide watertight joints using procedures recommended by manufacturer.
 3. Apply adhesive, epoxy, or lubricant-adhesive approved by manufacturer to both frame interfaces before installing preformed seal.
 4. Seal transitions according to manufacturer's instructions.
- G. Compression Seals: Apply adhesive or lubricant adhesive as recommended by manufacturer before installing compression seals.
- H. Moisture/Vapor Barrier: Provide moisture/vapor barrier at exterior joints and where called for on Drawings.
1. Provide drainage fittings where indicated.
- I. Fire-Resistance-Rated Assemblies: Coordinate installation of architectural joint assembly materials and associated work so complete assemblies comply with assembly performance requirements.
1. Fire Barriers: Install fire barriers to provide continuous, uninterrupted fire resistance throughout length of joint, including transitions and field splices.

3.04 CLEANING AND PROTECTION

- A. Do not remove strippable protective covering until finish work in adjacent areas is complete.
 - 1. When protective covering is removed, clean exposed metal surfaces to comply with manufacturer's written instructions.

- B. Protect installation from damage by work of other Sections.
 - 1. When necessary due to heavy construction traffic, remove and properly store cover plates or seals and install temporary protection over joints.
 - 2. Reinstall cover plates or seals prior to Substantial Completion of Work.

END OF SECTION 07 9513

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SECTION 09 5100
ACOUSTICAL CEILINGS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Work Included:
 - 1. Lay-in acoustical ceiling systems.
 - 2. Specialty ceiling trim

- B. Related Work:
 - 1. Section 06 1000: Rough Carpentry.
 - 2. Section 09 2900: Gypsum Board.
 - 3. Division 23 Sections for HVAC.
 - 4. Division 26 Sections for Electrical.

1.02 QUALITY ASSURANCE

- A. Qualifications of Installer: Minimum 5 years experience in installing acoustical ceiling systems of the types specified.

- B. Design Criteria:
 - 1. Deflection of finished surface to 1/360 of span or less.
 - 2. 1/8 inch maximum permissible variation from true plane measured from 10-foot straightedge placed on surface of finished acoustical fiber units.

- C. Requirements of Regulatory Agencies:
 - 1. Conform to 2013 CBC requirements and UL - Tunnel Test for Fire Hazard Classification of Building Materials.
 - 2. CISCA Code of Practices.
 - 3. Acoustical Materials:
 - a. Acoustical and Insulating Materials Association Bulletin - Performance Data for Architectural Acoustic Materials.
 - b. FS SS-S-118A, Sound Control Blocks & Board (Acoustical Tiles & Panels, Prefabricated).

1.03 SUBMITTALS

- A. Samples:
 - 1. Lay-in panels, 6 inch x 6-inch minimum size.
 - 2. Lay-in Systems: Sample of assembly system to indicate all typical members, connections, splices, wall angle, and colors.

- B. Shop Drawings:
 - 1. Indicate complete plan layouts and installation details.
 - 2. Indicate related Work of other sections that is installed in, attached to, or penetrates ceiling areas, such as air distribution and electrical devices.

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SEISMIC AND CODE UPGRADES
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- C. Product Data:
 - 1. Suspension System for Lay-in Ceiling: Printed data for all suspension system components, including load tests.
- D. Maintenance Materials: Provide extra panels equal to 1 percent of area of each typical module size of acoustical panel, but not less than 8 of each size, style and color.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Project site in original sealed packages.
- B. Storage: Store materials in building area where they will be installed, in original package. Keep clean and free from damage due to water or deteriorating elements.
- C. Handle in manner to prevent damage during storage and installation.

1.05 PROJECT CONDITIONS

- A. Environmental Requirements: Maintain temperature in space at 55 degrees F or above for 24 hours before, during and after installation of materials.
- B. Scheduling:
 - 1. Before concealing Work of other sections, verify required tests and inspections have been completed.
 - 2. Coordinate with related Work of other sections. Coordinate location and symmetrical placement of air distribution devices, electrical devices, and penetrations with related Work section.

1.06 WARRANTY

- A. Provide 10-year material warranty.
- B. Provide 2-year labor warranty.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Armstrong World Industries.
- B. USG Corporation.
- C. Approved equal.

2.02 MATERIALS

- A. Ceiling systems shall consist of lay-in acoustical ceiling panels and suspension systems manufactured by same company.

- B. 24 inch x 48 inch Module Ceiling System:
1. Acoustical Ceiling Panels:
 - a. ASTM E 1264, Type III, Form 2, Pattern C E
 - b. Size: 24 by 48 inches
 - c. Thickness: 5/8 inch
 - d. Edge: Square.
 - e. Light Reflectance: 0.85 minimum, complying with ASTM E 1477.
 - f. CAC: Minimum 35, UL Classified, complying with ASTM E 1414.
 - g. Class: UL Class A, in accordance with ASTM E 1264.
 - h. NRC: Minimum 0.50, UL Classified, complying with ASTM C 423.
 - i. Color: White.
 - j. Recycled Content: Minimum 36 percent.
 - k. Mold and Mildew Resistance: Panels and faces shall be treated with biocide paint additive to inhibit mold and mildew or anti-microbial solution.
 - l. Product: Armstrong Item No. 1729 Fine Fissured mineral fiber ceiling board with Humigard Plus coating.
- C. Suspension System:
1. Suspension System Name: Suprafine XL 9/16 inch by Armstrong.
 2. Fire Class: Class A.
 3. Duty: Heavy Duty.
 4. Color: White.
- D. Brace Attachment Clip: Manufacturers' standards to fit system furnished for acoustical panels, as indicated.
- E. Vertical Strut: USG Donn Compression Post, or equal, or as indicated; types and designs complying with requirements of authorities having jurisdiction and seismic requirements.
- F. Hanger Wire: No. 12 gage (9 gage for pendant fixtures), galvanized carbon steel per ASTM A 641, soft tempered, prestretched.
- G. Specialty Ceiling Trim:
1. Extruded aluminum perimeter trim for use as an exposed custom decorative trim with suspended lay-in panels.
 2. Trim Channel: Aluminum extrusions formed with distinct architectural detail groove on top and bottom flanges and special bosses to receive T-Bar Connection Clip, Hanging Clip, and Splice Plate.
 - a. Provide positive mechanical lock with no visible fasteners.
 - b. Factory mitered conforming to approved shop drawings.
 - c. Factory-finished to match adjacent grid system.
 3. Axiom Classic Trim No. AX6STR 3 WH, by Armstrong World Industries

PART 3 – EXECUTION

3.01 PREPARATION

- A. Furnish layouts for inserts, clips or other supports and struts required to be installed by the Work of other trades that depend upon support by the suspended ceiling system.
- B. Coordinate related Work to ensure completion prior to installation of clips or fasteners.

**“L” TOWER BUILDING
SEISMIC AND CODE UPGRADES
RIO HONDO COLLEGE**

- C. Lay-In Ceiling Systems: Compare layouts with construction conditions. Tile shall be spaced symmetrically about the centerlines of the room or space, and shall start with a tile or joint line as required to avoid narrow tiles at the finish edges unless indicated otherwise. Joints shall be tight with joint lines straight and aligned with the walls. Ceiling moldings shall be provided where tile abuts wall with matching caulking to eliminate any space.

3.02 INSTALLATION OF SUSPENSION SYSTEMS

- A. General:
1. System shall be complete; with joints neatly and tightly joined and securely fastened; suspension members shall be installed in true, flat, level plane.
 2. Hanger Wires: 12-gage minimum; larger sizes as indicated or required.
 - a. Fasten wires to panel points and structure above per most stringent requirements of fabricator and 2013 CBC and as indicated on Drawings.
 - b. Wires exceeding 1:6 out-of-plumb shall be braced with counter-sloping wires.
 - c. Maintain wires 6 inches minimum clear of non-braced ducts, pipes, and other items.
 - d. Install wire within 6 inches of ends of main runners and cross-tees at ceiling perimeters.
 - e. Where obstructions prevent direct suspension, provide trapezes or equivalent devices; 1-1/2 inches minimum cold-rolled channels back to back may be installed for spans to 6 feet max.
 - f. Wire to be straight, without extraneous kinks or bends and tolerate 200 pound pull without stretching or shifting suspension clip.
 3. Bracing Wires to Resist Seismic Forces: 12 gage minimum, larger sizes as indicated or required.
 - a. System for Bracing Ceilings: Lay-In Ceiling Systems: Install one four-wire set of sway-bracing wires and vertical strut for each 144 square feet maximum of ceiling area. Locate wire-sets and struts at 12 feet maximum on center. At ceiling perimeters, wire-sets shall be within 6 feet of walls.
 - b. Install four-wire sets and struts within 2 inches of cross-runner intersection with main runner; space wires 90 degrees from each other.
 - c. Do not install sway bracing wires at angle greater than 45 degrees with ceiling plane.
 - d. Wires shall be tight, without causing ceiling to lift.
 - e. Fasten struts in accordance with 2013 CBC requirements.
 4. Provide additional wires, 12 gage minimum, necessary to properly support suspension at electrical devices, air distribution devices, vertical soffits, and other concentrated loads.
 5. Suspension:
 - a. Suspension members shall be fastened to 2 adjacent walls; but shall be 1/2 inch minimum clear of other walls.
 - b. Suspension members not fastened to walls shall be interconnected to prevent spreading, near their free end, with horizontal metal strut or 7445 stabilizer bar or 16-gage taut tie wire.
 - c. Provide additional tees or sub-tees to frame openings for lights, air distribution devices, electrical devices, and other items penetrating through ceiling, which do not have integral flange to support and conceal cut edges of acoustic panels. Provide cross-bracing necessary to securely support surface mounted fixtures or other items.

6. Attachment of Wires:
 - a. To Metal Deck or Steel Framing Members: Install as required by current code.
 - b. To Suspension Members: Insert through holes in members or supporting clips.
 - c. All wires to be fastened with tight turns; three tight turns minimum for hanger wires; four tight turns minimum for bracing wires. All turns to be made in a 1-1/2 inches maximum distance.
- B. Suspension System for 24 inch x 48 inch, Lay-in Acoustical Ceilings:
 1. Main Runners: Install main runners 48 inches apart; 12 gage hanger wires space 48 inches on center maximum along runners, and within 6 inches of ends.
 2. Install wall moldings.
 3. Cross-Tees: Install between main runners in a repetitive pattern of 2-foot spacings.
 4. Sub-Tees: Install at edges of penetrations.
- C. Specialty Ceiling Trim:
 1. Install specialty ceiling trim in accordance with manufacturer's instructions and as detailed.

3.03 INSTALLATION OF ACOUSTICAL PANELS

- A. Install panels into suspension system. Partial panels are to be neatly cut and fitted to suspension and around penetrations and/or obstructions. Duplicate edges at partial panels; cuts to be straight. Repaint cut tiles to match color or as directed by manufacturer for Mylar facing at visually exposed conditions or as required by the Architect.

3.04 AIR DISTRIBUTION DEVICES

- A. Refer to and coordinate with Division 23.
- B. Install air distribution grilles and other devices into suspension system. Install 4 taut wires, each 12-gage minimum, to each device within 3 inches of device corners, to support their weight independent of the suspension system.

3.05 LIGHT FIXTURES

- A. Refer to and coordinate with Division 26: Electrical.
- B. Fixtures weighing less than 56 Pounds: Install fixtures into suspension systems and fasten earthquake clips to suspension members. Install minimum 2 slack safety wires, each 12-gage minimum, to each fixture at diagonally opposite corners, to support their weight independent of the system.
- C. Fixtures weighing more than 56 Pounds: Install fixtures into suspension system and fasten earthquake clips to suspension system members. Install not less than 4 taut 2 gage wires capable of supporting four times the fixture load.

3.06 CLEANING

- A. General: After installation of acoustical material has been completed, clean all surfaces of the material, removing any dirt or discolorations.

**“L” TOWER BUILDING
SEISMIC AND CODE UPGRADES
RIO HONDO COLLEGE**

- B. Acoustical Panels: Minor abraded spots and cut edges shall be touched up with the same paint as was used for factory applied finish of the lay-in panels.

3.07 CLEAN UP

- A. Remove and legally dispose rubbish, debris and waste materials off of the Project site.

3.08 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION 09 5100

SECTION 27 5313

CLOCK SYSTEM

PART 1- GENERAL

1.01 SCOPE

- A. Work Included: All labor, materials, appliances tools, equipment, facilities transportation and services necessary for and incidental to performing all operations in connection with furnishing, delivery and installation of the work of this Section, complete as shown on the Drawings and/or specified herein. Work includes, but is not necessarily limited to the following:
1. Examine all other Sections for work related to those other Sections and required to be included as work under this Section.
 2. General provisions and requirements for electrical work.

1.02 PERFORMANCE REQUIREMENTS AND SCOPE

- A. Furnish and Install conduit and power connections only for a complete new GPS Wireless clock system using Primex Wireless Inc. GPS Wireless system or equal by American Time and Signal, Sapling. All equipment specified herein is future and is indicated for reference only. Provide all conduit, boxes and power connections only as indicated on the Drawings at this time.

1.03 RELATED SECTIONS

- A. Division 26 – Electrical (120 volt grounded outlet required for transmitter).

1.04 REFERENCES

- A. This Technical Specification and Associated Drawings, Primex Wireless GPS Satellite Time System User Manual.

1.05 DEFINITIONS

- A. GPS: Global Positioning System, a worldwide system that employs twenty-four satellites in an integrated network to determine geographic location anywhere in the world, and which employs and transmits Universal Coordinated Time, the world's most accurate and reliable time.

1.06 SYSTEM DESCRIPTION

- A. GPS Wireless Clock System shall continually synchronize clocks throughout the facility, and shall be capable of clock readouts in multiple time zones where desired.
- B. The System shall provide wireless time using GPS and be synchronized to UTC. The system shall not require hard wiring. Clocks shall automatically adjust for Daylight Saving Time

**“L” TOWER BUILDING
SEISMIC AND CODE UPGRADES
RIO HONDO COLLEGE**

- C. Analog Clocks shall be synchronized to within 10-milliseconds 6-times per day, and the system shall have an internal oscillator that maintains plus or minus one second per day between synchronizations, so that clock accuracy shall not exceed plus or minus 0.2 seconds.
- D. The System shall include an internal clock reference so that failure of the GPS signal shall not cause the clocks to fail in indicating time.
- E. The System shall incorporate a “Fail-Safe” design so that failure of any component shall not cause failure of the system. Upon restoration of power or repair of failed component, the system shall resume normal Operation without the need to reset the system or any component thereof.
- F. Clock Locations shall be as indicated, and clocks shall be fully portable, capable of being relocated at any time.
- G. The System must operate in accordance with a “Radio Station Authorization”, Form FCC 601 – LM, granted by the Federal Communications Commission (FCC). This license will be issued to and held by the end user.

1.07 REGULATORY REQUIREMENTS

- A. Equipment and Components Furnished shall be of Manufacturer’s latest model.
- B. The End User Will Hold a License, known as a “Radio Station Authorization” granted by the FCC.
 - 1. This license grants the end user protected use for wireless transmission at the designated frequency.
 - 2. This license will designate a unique “call sign” for each end user.
- C. Transmitter and Receiver shall comply with Part 90 of FCC rules as follows:
 - 1. This device may not cause harmful interference, and
 - 2. This device must accept interference received, including interference that may cause undesired operation.
 - 3. Transmitter frequency shall be governed by FCC Part 90.35.
 - 4. Transmitter output power shall be governed by FCC Part 90 257 (b)
- D. System shall be installed in compliance with Local and State Authorities Having Jurisdiction.
- E. Operating License: Submit evidence of application for FCC Radio Station Authorization prior to installing equipment. Furnish the license or a copy of the application for the license, to the District/End User prior to operating the equipment. The original license must be delivered to the District/End User.
- F. Samples: Submit one clock for approval. Approved sample shall be tagged and shall be installed in the work at location directed.
- G. Manufacturer's Instructions: Submit complete installation, set-up and maintenance instructions.
- H. Floor Plans indicating the location of system transmitter(s), approved by Manufacturer, will be submitted to District prior to installation.

1.08 QUALITY ASSURANCE

- A. Permits: Obtain Operating License for the Transmitter from the FCC.
 - 1. Qualifications:
 - a. Manufacturer: Company specializing in manufacturing commercial time system products with a minimum of 30 continuous years of documented experience including 4 years' experience producing GPS wireless time systems.
 - b. Installer: Company with documented experience in the installation of commercial time systems.
 - 2. Prior to installation, a site survey must be performed to determine proper transmitter placement.

1.09 DELIVERY STORAGE AND HANDLING

- A. Deliver all Components to the Site in the Manufacturer's original packaging. Packaging shall contain Manufacturer's name and address, product identification number, and other related information.
- B. Store Equipment in finished building, unopened containers until ready for installation.

1.10 PROJECT SITE CONDITIONS

Clocks shall not be installed until painting and other finish work in each room is complete. Coordinate installation of GPS receiver for access to the roof or exterior side wall so that the bracket and related fasteners are watertight.

1.11 SYSTEM STARTUP

At completion of installation and prior to final acceptance, turn on the equipment; ensure that all equipment is operating properly, and that all clocks are functioning.

1.12 WARRANTY

Manufacturer will provide a 1-year warranty on GPS receiver, transmitter, and satellite transmitter. All other components will have a 1-year warranty.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. GPS Wireless Clock System shall be manufactured by Primex Wireless, Inc., N3211 County Road H, Lake Geneva WI 53147, telephone (800) 537-0464, Fax (262) 248-0061, www.primexwireless.com or equal by American Time and Signal, Sapling.

2.02 SEQUENCE OF OPERATION

- A. Transmitter Operation: When power is first applied to the transmitter, it checks for and displays the software version. It then checks the position of the switches and stores their position in memory. The transmitter looks for the GPS time signal. Once the transmitter has received the GPS time, it sets its internal clock to that time. The transmitter then starts to transmit its internal time once every second. The transmitter updates its internal clock every time it receives valid time data from the GPS.

**“L” TOWER BUILDING
SEISMIC AND CODE UPGRADES
RIO HONDO COLLEGE**

- B. Analog Clock Operation:
1. Apply power or insert batteries. Follow set up procedures detailed in Manufacturer’s instructions.
 2. After initial setup, the clock will shut off the receiver. Six times each day, the microprocessor will activate the receiver and starting with the stored channel, it will again look for a valid time signal. If necessary, the clocks will resynchronize to the correct time.
 3. If the clock has not decoded a valid time signal for a pre-determined number of days, it will go to a step mode. Non signal reception can be caused by low battery voltage. If this occurs, replace the batteries.

2.03 EQUIPMENT

- A. General: The Clock System shall include a transmitter, a roof or window mounted GPS receiver, indicating clocks, and all accessories for complete operation.
- B. The GPS Receiver shall be a complete GPS receiver including antenna in a waterproof case, designed for roof or outdoor mounting. Provide mounting bracket for attachment to roof structure.
- C. The GPS Receiver cable must be plenum rated where required by local code.
- D. Transmitter: Primex Wireless Model 14400, consisting of wireless transmitter with GPS receiver, a surge suppressor/battery backup, and a mounting shelf. Unit shall obtain current atomic time from satellite. The clock system shall transmit time continuously to all clocks in the system.
1. Transmission:
 - a. Frequency Range: 72.100 to 72.400 MHz.
 - b. Transmission Power: 1 watt (30dBm) maximum
 - c. Radio technology: narrow band FM
 - d. Number of channels: 16
 - e. Channel bandwidth: 20kHz maximum
 - f. Transition mode: one-way communication
 - g. Data rate: 2 Kbps
 - h. Operating range: 32 degree F to 158 degrees F (0 degree C. to 70 degrees C).
 2. Transmitter:
 - a. Transmitter output power: +26 to +30 dBm
 - b. Frequency deviation: +/- 4 kHz
 - c. Transmitter power requirements: 120 VAC 60 Hz
 - d. Internal power requirements: 5 VDC
 - e. Carrier frequency stability: +/- 20 ppm
 3. Transmitter shall have 16 selectable channels to assure interference-free reception.
 4. Transmitter shall have the following switches:
 - a. Time zone adjustment switches for all time zones in the world. Includes: Eastern, Central, Mountain, Pacific, Alaska, and Hawaii.
 - b. Daylight Saving Time bypass switch.
 - c. 12-hours or 24-hours display.
 5. Transmitter housing shall be black metal case, 16-3/4 inches (424.4mm) by 12 inches (304.8mm) by 1-7/8 inches (46.4mm) in size.

6. Antenna shall be 46-inches (1168mm) high, commercial type, mounted on top center of transmitter housing. Antenna gain shall be < 2.2 dB. Antenna polarization shall be vertical.
 7. Transmitter housing shall incorporate a display which shall include the following:
 - a. Time readout
 - b. AM and PM indicator if 12-hour time display is set
 - c. Day and date readout
 - d. Indicator for daylight savings or standard time
 - e. LED which shall flash red in event of reception problem
 - f. GPS reception indicator
 8. Transmitter shall contain an internal clock such that failure of reception from the GPS will not disable the operation of the clocks.
 9. Power supply (included):
Input: 120 volt AC 50/60 Hz, 0.4 amps.
Output: 9 volt DC, 1.5 amps.
- E. Surge Protector/Battery Backup (included).
Input: 120 volt AC 60 Hz +/- 1 Hz.
Output: 120 volt AC, 500VA, 300 watts
Surge Energy Rating: 365 joules
- F. Additional Equipment
1. Wireless Receiver Switches: Switches shall receive time packets from the Primary Transmitter and relay the synchronized time to the Satellite Transmitter connected to it. The unit shall include the following:
 - a. Antenna mounted on top of the switch housing, 11½-inches (292mm) long.
Power Supply:
·Input 120 VAC 50/60Hz, 0.4 amps
·Output: 9 volt DC, 1.5 amps RS 232 data cable, 5 feet (1.5mm) long
 - b. Daylight Savings Time bypass switch
 - c. Dimensions: 4¼-inches (108mm) long, 5¾-inches (146mm) wide, 1¼-inches (31.75mm) deep.
 - d. Weight: 12 ounces (.34kg)
 - e. Operating Range: 32 degrees F to 158 degrees F (0 to 70 degrees C)
 2. Satellite Transmitters Primex Wireless Model 14401: Satellite Transmitters shall receive the signal from the Wireless Receiver Switches and transmit the signal to the devices in its vicinity, which are out of the range from the Master Transmitter. The unit shall include the following:
 - a. Antenna mounted on top of the housing, 46 inches (1168mm) long.
 - b. Wireless Receiver Switch.
 - c. Power Supply Input: 120
 - d. VAC, 50/60Hz, 0.4 amps
 - e. Output: 9 volt DC, 1.5 amps.
 - f. 6 foot (1.83m) cord
 - g. Surge Suppressor/Battery Backup
 - h. Mounting Shelf.
 - i. Transmission Power: 1 watt maximum
 - j. 72 MHz frequency.
 3. Traditional analog clocks (battery): Analog clocks shall be wall mounted. Clocks shall have polycarbonate frame and polycarbonate lens. Face shall be white. Hour and minute hands shall be black.

**“L” TOWER BUILDING
SEISMIC AND CODE UPGRADES
RIO HONDO COLLEGE**

- a. 9 inches (228.6mm) diameter analog clock: Primex Wireless Model 14280
 - b. 12½-inch (317.5mm) diameter analog clock: Primex Wireless Model 14155
 - c. 16 inches (406.4mm) diameter analog clock: Primex Wireless Model 14163
 - d. 24 inches (610mm) diameter analog clock: Primex Wireless Model 14346
4. Additional colors, finishes, and dial faces are available from Manufacturer.
- a. Analog clocks shall be battery-operated,
 - b. Analog clocks shall be capable of automatically adjusting for Daylight Saving Time. An on-off switch located on the transmitter shall disable this function if desired.
 - c. Time shall be automatically updated from the transmitter 6 times per day.
 - d. Analog clocks shall remember the time during changing of batteries.
 - e. 9 inches (228.6mm) and 12.5 inches (317.5mm) analog clocks shall have a tamper proof/ theft resistant clock lock mounting slots.
5. Analog clock receivers shall be as follows:
- a. Receiver sensitivity: >-110 dBm
 - b. Receiver power: 24 VAC or 120 VAC (see model #)
 - c. Antenna type: internal
 - d. Antenna gain: -7 dBd
- If transmitter stops transmitting valid time signals due to power failure, the clocks will continue to function as accurate quartz clocks until a valid time signal is decoded. If signal transmission is not restored after 96 hours, the second hand will “five step” as a visual indicator that the signal has been lost. Should the clocks lose power and signal, the clocks will not function.
6. Wire guards: Provide one for each analog clock as follows:
- a. Analog clock wire guard Primex Wireless Model 14131, 14-inches by 14-inches (355.6 by 355.6 mm) size, for nominal 12½-inch (317.5 mm) diameter analog clocks.
 - b. Analog clock wire guard Primex Wireless Model 14123, 18-inches by 18-inches (457.2 by 457.2mm) size, for 16 inches (406.4mm) diameter analog clocks.
7. Cable Connection Sealant: Radio Shack Coaxial Cable Connector Sealant 278-1645, or approved electrical grade silicone sealant.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that construction is complete in spaces to receive equipment and that rooms are clean and dry.
- B. Verify that 120-volt electrical outlet is located within 6 feet (1.83m) of location of transmitter and the outlet is operational and properly grounded.

3.02 INSTALLATION

- A. Transmitter:
Locate transmitter where indicated, a minimum of 2 feet to 3 feet (.6 to 1 meter) above the floor, away from large metal objects such as filing cabinets, lockers or metal framed walls. Transmitter(s) will be placed at locations indicated below:
 1. Attach receiver to transmitter using cable.
 2. Connect antenna to transmitter, using care not to strip threads.

3. Connect power supply to the transmitter. Set the channel number on the display to correspond to the FCC license.
 4. Plug power supply into electrical outlet.
- B. Analog Clocks shall perform the following operations with each clock:
1. Set clock to correct time in accordance with Manufacturer's instructions.
 2. Observe analog clock until valid signals are received and analog clock adjusts itself to correct time.
 3. Install the analog clock on the wall in the indicated location, plumb, level and tight against the wall. If using 12½-inch (317.5mm) clock, attach using clock-lock hanging method and suitable fasteners as approved by Clock Manufacturer.
 4. Wire guards: Secure to wall, using approved theft-resistant fasteners.

**END OF SECTION 27 5313
062016/223015**

**"L" TOWER BUILDING
SEISMIC AND CODE UPGRADES
RIO HONDO COLLEGE**

SECTION 28 1600

INTRUSION DETECTION SYSTEM

PART 1 GENERAL

1.01 SCOPE

- A. Work Included: All labor, materials, appliances, tools, equipment necessary for and incidental to performing all operations in connection with furnishing, delivery and installation of the work of this Section, complete, as shown on the Drawings and/or specified herein. Work includes, but is not necessarily limited to the following:
 - 1. Examine all other Specifications Sections and Drawings for related work required to be included as work under Division 26 0000, 27 0000, and 28 0000.
 - 2. General provisions and requirements for electrical work.

1.02 PERFORMANCE REQUIREMENTS AND SCOPE

- A. All intrusion detection equipment as specified herein is future and is indicated for reference only. Provide all conduit outlet boxes and power connections only for all devices as indicated on the Drawings.

PART 2 PRODUCTS

2.01 SYSTEM FUNCTIONS

- A. Provide provisions only for a complete supervised Intrusion Detection System as shown on the Plans including but not limited to master control panel, key pad stations, motion detectors, connections to door switches, a State Fire Marshal listed digital communicator and an automatic dialer.
- B. Upon detection of an intruder by initiation of any device in the system, the system shall cause the annunciator LED to light and sound an alarm signal on the school's telecommunication system. Alarm information shall be sent by digital dialer to Central Station Alarm Monitoring Agency.
- C. Systems shall detect the motion of a body taking not more than four steps in an area secured with motion detection equipment where entry doors or windows are possible access.
- D. Each building area shall be on a separate zone with each zone controlled separately so that any building area may be secured while others remain unsecured.
- E. The System shall be capable of off-site computerized access for remote access, programming and control.

2.02 CONTROL PANEL

- A. Control/Communicator Panel shall be a DMP #XR-500N control panel with an integral digital communicator and shall be Underwriters Laboratories listed. All external circuit connections shall be UL listed as power limited in accordance with the provisions of Article 760 of the California Electrical Code (CEC).

**"L" TOWER BUILDING
SEISMIC AND CODE UPGRADES
RIO HONDO COLLEGE**

1. Provide Point of Protection (POPEX) modules at the control panel for Popit module supervision.
 2. Provide Point of Protection Identification Transponders (Popit) modules at building terminal cabinets to individually identify each detector in the system.
- B. The Control/Communicator shall be IP based.
- C. System shall include the following features:
1. Real time clock and test timer.
 2. Battery charging circuit.
 3. Battery voltage supervision.
 4. Supervised automatic reset circuit breakers.
 5. Onboard warning buzzer and diagnostic LEDs.
 6. Automatic answer modem.
 7. Lightning and RFI protection.
 8. Central Station reporting format.
 9. Printer/CRT interface module for on-site serial data printer recording or CRT display of events.
 10. Quad serial output module for enhanced serial data interface capability for specific accessory modules and devices.
 11. Individual zone responses.
 12. Custom annunciator text.
 13. Audible alarm output, steady or pulsed.
 14. Automatic silencing.
 15. Attack-Resistant enclosure and lock meeting Underwriters Laboratory Local Burglary requirements.
 16. A minimum of eight auxiliary form "C" dry contacts for a variety of programmable responses to alarm and trouble conditions.
 17. Transformer enclosure for internal mounting of Class 2 transformer.
 18. Two telephone numbers with selective signaling options.
 19. Individual zone responses.
 20. Automatic test reports.

2.03 BAR-CODE

Bar-code programmer for diagnostics and programming capability.

2.04 RECEIVER

- A. Receiver shall be Bosch Security System #D6600 Series, UL listed for fire and intrusion detection.
- B. Provide a 50VA Class 2 plug in transformer for power input.
- C. System shall contain 48 hours of standby power utilizing rechargeable sealed lead acid batteries and a battery charger.
- D. System shall be FCC approved for telephone connections.
- E. An alphanumeric LCD Display shall indicate account number, area number, time, date, event, zone or point number, line or group number, status and external devices.
- F. Twenty-four hour Clock and 128 year calendar.

- G. Forty Character Line internal printer and interface capability with an external serial printer.
- H. Transmission Verification appropriate with the format utilized.
- I. Storage of 249 separate events.
- J. Transmission Format shall support the control panel.
- K. Turn the Receiver over to the District for Central Station or Campus Monitoring.

2.05 REMOTE ACCOUNT MANAGER

- A. System shall be Bosch Security Systems #D5300 Series or equal with all equipment necessary for computerized access, programming, diagnostics, and remote control of the system. It shall be possible to remotely change passcodes, locate faults, shunt problem zones, arm and disarm the system, silence alarms, and control the auxiliary output contacts in the control panel.
- B. System shall permit remote diagnostics including utility and battery power conditions, phone line condition, event memory by zone, and current clock and calendar settings.
- C. System shall be 100% IBM compatible for use with personal computers.
- D. System shall include a plug-in modem and software necessary for a complete and operable installation. Furnish the District with a Software License Agreement for updated software enhancements as they develop.

2.06 KEYPADS

- A. Master Keypad shall be DMP or equal capable of displaying system status and controlling the alarm system. Unit shall receive its operating power from the main control panel. Keypad shall be flush-mounted on a wall near the entry doors of each building. Faceplate shall be brass or stainless steel as selected by the Architect.
- B. Sub-Zone Keypads shall be DMP or equal to allow individual zones to be bypassed. Keypad shall be flush wall where shown on Plans Faceplate shall be brass or stainless steel as selected by the Architect.

2.07 MOTION SENSORS

Motion sensors shall be Honeywell DT-7450 with Bosch B328 mounting bracket. Sensors shall be dual performance, dual event devices to minimize false alarms or equal passive infrared devices detecting thermal motion signals. Sensor coverage patterns shall be as required for optimum coverage at each individual location. Sensor shall be adjustable Gimbal mounted with plate and outlet box. Provide an attack resistant enclosure DS AE774 at Multipurpose and Gymnasium areas.

2.08 MAGNETIC SWITCH

Magnetic switch shall be fully concealed in the door frame, Admeco, Sentrol or equal.

2.09 INTRUSION DETECTION SYSTEM

Each intrusion detection system terminal cabinet shall contain a power supply for motion sensors and/or POPIT/POPEX (Zonex) modules.

2.10 CABLING

Cabling shall be as required for system operation. All cabling shall be shielded.

2.11 SIREN

Siren shall be ATW (Mascon) PR-D550PW or equal.

PART 3 EXECUTION

3.01 MOTION SENSORS

Locate motion sensors to provide optimum coverage of the space and to avoid conflicts with the architectural aesthetics of the building. Submittal Drawings shall show the exact locations of all system sensors and keypads for approval by District's maintenance managers.

3.02 CONCEALED DOOR SWITCH

Coordinate concealed door switch installations with finish hardware Manufacturer.

**END OF SECTION 28 1600
062016/223015**