ADDENDUM NO. 4
PROJECT MANUAL

MLK ELEMENTARY SCHOOL
WELLNESS CENTER
BAKERSFIELD CITY SCHOOL DISTRICT

Project No.: 5527
DSA File No. 15-6
DSA App No. 03-122605
January 24 2025

This Addendum and Addendum drawings form a part of the Contract Documents. It modifies the original Project Manual and Drawings. Bidders are required to acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to acknowledge receipt of each addendum may subject bidder to disqualification.

GENERAL

4-00 Add Agreement document 005213 to the project manual. See Exhibit 4-00

4-01 "Note: Contractor to include all costs to coordinate pickup, loading, trucking of HVAC equipment from District warehouse located at 1201 Citation Way, Bakersfield, CA 93308. Include delivery to jobsite for installation, 1100 Citadel St., Bakerfield CA 93307."

4-02 Unforeseen Conditions: Include the sum of **$150,000.00** in your Base Bid Grand Total Amount, ($50,000 for the Wellness Center, $50,000 for the Parent Center & $50,000 for the Transitional Kindergarten) for the following: Unforeseen items not identified in the Contract Documents. This allowance shall be listed in the Schedule of Values and shall be tracked on a Time and Material basis. Profit and overhead on top of this Time and Material work will not be allowed. This allowance amount is to be used as directed by the District and is not to be used to fulfill obligations under this contract. All costs used against this allowance must be agreed to by the District before work is started. All unused portions of this allowance shall be credited back to the owner in the form of a deductive change order at 100% of the remaining value. This allowance shall be included in the base bid.

4-03 **BID FORM:** Replace Bid Form and Proposal document 004113 in its entirety. See Exhibit 4-03.

ARCHITECTURAL

4-04 Countertops at all three projects to be Corian.

4-05 Ceramic wall tile at all three projects shall be installed per TCA W244. Ceramic tile over thin set mortar over 5/8 " cement backer board.

ELECTRICAL

4-06 PVC will be allowed underground feeders per sheet E6.0.

4-07 MDF is located in the administration building.

4-08 District security contractor is responsible for installation of security devices.

4-09 District's requirements for installation of smart boards. See Exhibit 4-09.

4-10 Native soil back fill compaction at duct banks shall be 90% minimum at non-paved areas and 95% at paved areas.

4-11 Provide MC cable for lighting circuits above ceilings

4-12 The basis of design for the Fire Alarm is a notifier system.

CLARIFICATION

4-13 C-43 sheet metal contractor and C-16 fire sprinkler contractor needs to be pre-qualified.

PROJECT MANUAL

4-14 **PROJECT MANUAL, SPECIFICATION SECTION 000110 – TABLE OF CONTENTS:** Replace specification section in its entirety. See Exhibit 4-14.

4-15 **PROJECT MANUAL, SPECIFICATION SECNION 075423 – THERMOPLASTIC POLYOLEFIN (TPO) ROOFING**: Replace specification section in its entirety. See exhibit 4-15.

4-16 **PROJECT MANUAL, SPECIFICATION SECTION 093000 – TILING:** Add the following to part 2, section 2.2:

B. Ceramic Tile Type CT-2: Glazed floor tile (restrooms) – Match existing Restroom Floor Tile

1. Basis-of-Design Product: Subject to compliance with requirements, provide Dal-Tile International INC Keystone or comparable product by one of the following:
2. Module Size: 2 by 2 inches.
3. Face Side Variation: Rectified
4. Thickness: 5/16 inch
5. Face: Plain with modified square edges or cushion edges.
6. Finish: slip resistant
7. Told color and pattern: as selected by Architect from manufacturer's full range.
8. Grout Color: As selected by Architect from manufacturer's full range.
9. Trim units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:

    a. Base for Portland Cement Mortar Installations: Coved, module size 2 by 2 inches.
    b. External Corners for Protalnd Cement Mortar Installations: Bullnose shape with radius of at least ¾ inch unless otherwise indicated.
    c. Internal Corners: Field-butted square corners. For coved base and cap use angel pieces designed to fit with stretcher shapes.

4-17 **PROJECT MANUAL, SPECIFICATION SECTION 093000 – TILING:** Add the following to part 3, section 3.5:

F. Interior floor Installations, Concrete:

1. Tile Installations F111: Cement mortar bed with cleavage membrane.

   a. Tile Type: CT-2
   b. Thin-Set Mortar: Latex-portland cement mortar.
   c. Grout: Polymer-modified sanded grout.

4-18 **PROJECT MANUAL, SPECIFICATION SECTION 328400 – PLANTING IRRIGATION:** Note the following:

1. Section 2.1 A. Revise paragraph to read “Provide piping and components designed for a new irrigation system. All materials shall be new and unused”.

2. Section 2.13. Revise paragraph to read “All valves, manual or automatic shall have a valve box, set flush with grade. All valve boxes shall be of heavy duty plastic construction with heavy duty bolt down lids. Valve boxes are to be manufactured by Applied Engineering, or approved equal. Maximum of one (1) valve per valve box, no exceptions. Placement of the valves within the valve boxes shall allow for proper servicing and maintenance space, or the installation will be rejected”.

3. Section 3.3 N. Revise paragraph to read “Install sleeves made of Class 200 PVC and socket fittings, and solvent-cemented joints”.

4. Section 3.15 A. Revise paragraph to read “Design all piping for a new irrigation system”.

5. Section 3.15 H. Revise paragraph to read “Underground Branches and Offsets at Sprinklers and Devices: Schedule 40, PVC pipe; threaded PVC fittings; and threaded joints”.

4-19 **PROJECT MANUAL, SPECIFICATION SECTION 329200 – TURF AND GRASSES:** Note the following:

1. Section 2.1 B 1. Revise paragraph to read “Seed to be comprised of a mix of 75% bermuda grass & 25% perennial ryegrass”.

4-20 **PROJECT MANUAL, SPECIFICATION SECTION 329300 – PLANTS:** Revise the following

1. Section 3.7 A 1. Revise paragraph to read “Excavate approximately two times as wide as ball diameter”.

2. Section 3.12 A. Revise paragraph to read “Install root barrier where trees are planted within ten feet of paving or other hardscape elements, such as walls, curbs, and walkways unless otherwise shown on Drawings”.

3. Section 3.12 C. Revise paragraph in part to read “Install root barrier continuously for a distance of eight feet in each direction from the tree trunk, for a total distance of sixteen feet per tree”.

4. Section 3.13 does NOT apply to the planters shown on the drawings. This portion of the Specification was written for an “Above Grade” constructed planter, not an “At Grade” planting area as shown on the plans. This Section is void and does not apply to the project.

DRAWINGS

LANDSCAPE

4-21 DRAWING, SHEET L1.02 – IRRIGATION PLAN: Note the following

1. Note 8. Revise paragraph in part to read “Sleeves shall be Class 200 and twice the diameter of the pipe unless noted otherwise”.

4-22 DRAWING, SHEET L1.03 – PLANTING DETAIL: Note the following:

1. Detail 1 TREE AND SHRUB PLANTING, Note 2. Revise note in part to the read “Backfill with 2/3 ratio of native soil and 1/3 ratio of compost by volume with Tri-C and Endo 120 Mycorrhizae at 5 pounds each”.

2. Detail 1 TREE AND SHRUB PLANTING, Note 1. Revise note in part to the read “Mix equal proportions of excavated soil with Gypsum and Humus and backfill hole”.

ARCHITECTURAL

4-23 DRAWING, SHEET A1.03 – SITE DETAILS: Detail 1/A1.03 revise rebar to #4 rebar at 24” OC each way.

4-24 DRAWING, SHEET 3.10 – EXTERIOR ELEVATIONS: Change the following:

1. Keynote 9. Change to “Provide 60” diameter vinyl logo over ¼” aluminum backer plate. Logo design to be provided by the owner.

4-25 DRAWING, SHEET A7.02 – DETAILS: Change the Following:

1. Detail 11. “Change logo plate to 60” diameter vinyl logo over ¼” aluminum backer plate”

ELECTRICAL

4-26 DRAWING, SHEET E4.0 – ELECTRICAL FLOOR PLAN: Change the following:

1. Delete (N) panel Schedule “HWC1” in its entirety. Provide (N) panel schedule “HWC1” per E3.0.

END ADDENDUM NO. 4

DOCUMENT 00 52 13

AGREEMENT

THIS AGREEMENT IS MADE AND ENTERED INTO THIS _____ DAY OF _____ _____, 20___, by and between the Bakersfield City School District ("District") and _____ _____ ("Contractor") ("Agreement").

WITNESSETH: That the parties hereto have mutually covenanted and agreed, and by these presents do covenant and agree with each other, as follows:

1. The Work: Contractor agrees to furnish all tools, equipment, apparatus, facilities, labor, and material necessary to perform and complete in a good and workmanlike manner, the work of the following project:

Martin Luther King Jr. Elementary School - Wellness Center / 22243.00-09-WEL / DSA # 03-122605, Parent Center / 22243.00-09-WEL / DSA # 03-122604 and T-Kinder / 23189.00-09-TK / DSA # 03-123900

("Project" or "Contract" or "Work")

It is understood and agreed that the Work shall be performed and completed as required in the Contract Documents including, without limitation, the Drawings and Specifications and submission of all documents required to secure funding or by the Division of the State Architect for close-out of the Project, under the direction and supervision of, and subject to the approval of, the District or its authorized representative.

2. The Contract Documents: The complete Contract consists of all Contract Documents as defined in the General Conditions and incorporated herein by this reference. Any and all obligations of the District and Contractor are fully set forth and described in the Contract Documents. All Contract Documents are intended to cooperate so that any Work called for in one and not mentioned in the other or vice versa is to be executed the same as if mentioned in all Contract Documents.

3. Interpretation of Contract Documents: Should any question arise concerning the intent or meaning of Contract Documents, including the Drawings or Specifications, the question shall be submitted to the District for interpretation. If a conflict exists in the Contract Documents, valid, written modifications, beginning with the most recent, shall control over this Agreement (if any), which shall control over the Special Conditions, which shall control over any Supplemental Conditions, which shall control over the General Conditions, which shall control over the remaining Division 0 documents, which shall control over Division 1 Documents which shall control over Division 2 through Division 49 documents, which shall control over figured dimensions, which shall control over large-scale drawings, which shall control over small-scale drawings. In the case of a discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In no case shall a document calling for lower quality and/or quantity material or workmanship control. The decision of the District in the matter shall be final.

4. **Time for Completion**: It is hereby understood and agreed that the Work under this Contract shall be completed within four hundred fifteen (415) consecutive calendar days ("Contract Time") from the date specified in the District's Notice to Proceed.

5. **Completion - Extension of Time**: Should the Contractor fail to complete this Contract, and the Work provided herein, within the time fixed for completion, due allowance being made for the contingencies provided for herein, the Contractor shall become liable to the District for all loss and damage that the District may suffer on account thereof. The Contractor shall coordinate its Work with the Work of all other contractors. The District shall not be liable for delays resulting from Contractor's failure to coordinate its Work with other contractors in a manner that will allow timely completion of Contractor's Work. Contractor shall be liable for delays to other contractors caused by Contractor's failure to coordinate its Work with the Work of other contractors.

6. **Liquidated Damages**: Time is of the essence for all work under this Agreement. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of Contractor's delay; therefore, Contractor agrees that it shall pay to the District the sum of one thousand dollars ($ 1,000) per day as liquidated damages for each and every day's delay beyond the time herein prescribed in completion of the Work.
   It is hereby understood and agreed that this amount is not a penalty.
   In the event that any portion of the liquidated damages is not paid to the District, the District may deduct that amount from any money due or that may become due the Contractor under this Agreement, and such deduction does not constitute a withholding or penalty. The District's right to assess liquidated damages is as indicated herein and in the General Conditions.
   The time during which the Contract is delayed for cause, as hereinafter specified, may extend the time of completion for a reasonable time as the District may grant, provided that Contractor has complied with the claims procedure of the Contract Documents. This provision does not exclude the recovery of damages by either party under other provisions in the Contract Documents.

7. **Loss Or Damage**: The District and its agents and authorized representatives shall not in any way or manner be answerable or suffer loss, damage, expense, or liability for any loss or damage that may happen to the Work, or any part thereof, or in or about the same during its construction and before acceptance, and the Contractor shall assume all liabilities of every kind or nature arising from the Work, either by accident, negligence, theft, vandalism, or any cause whatsoever; and shall hold the District and its agents and authorized representatives harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatsoever.

8. **Limitation Of District Liability:** District's financial obligations under this Contract shall be limited to the payment of the compensation provided in this Contract. Notwithstanding any other provision of this Contract, in no event shall District be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost

profits or revenue, lost bonding capacity, arising out of or in connection with this Contract for the services performed in connection with this Contract.

9. **Insurance and Bonds**: Prior to issuance of the Notice to Proceed by the District, Contractor shall provide all required certificates of insurance, insurance endorsements, and payment and performance bonds as evidence thereof.

10. **Prosecution of Work**: If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this Contract, the District, may, pursuant to the General Conditions and without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

11. **Authority of Architect, Project Inspector, and DSA**: Contractor hereby acknowledges that the Architect(s), the Project Inspector(s), and the Division of the State Architect ("DSA") have authority to approve and/or suspend Work if the Contractor's Work does not comply with the requirements of the Contract Documents, Title 24 of the California Code of Regulations, and all applicable laws and regulations. The Contractor shall be liable for any delay caused by its non-compliant Work.

12. **Assignment of Contract**: Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by the Contractor without the prior written approval of the District, nor without the written consent of the Surety on the Contractor's Performance Bond (the "Surety"), unless the Surety has waived in writing its right to notice of assignment.

13. **Classification of Contractor's License**: Contractor hereby acknowledges that it currently holds valid Type B Contractor's license(s) issued by the State of California, Contractors' State License Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.

14. **Registration as Public Works Contractor**: The Contractor and all Subcontractors currently are registered as public works contractors with the Department of Industrial Relations, State of California, in accordance with Labor Code section 1771.1.

15. **Payment of Prevailing Wages**: The Contractor and all Subcontractors shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.

16. **Labor Compliance Monitoring and Enforcement**: This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and Title 8 of the California Code of Regulations. Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code, including, without limitation, the requirement that the Contractor and all of its Subcontractors shall

timely submit complete and accurate electronic certified payroll records as required by the Contract Documents, or the District may not issue payment.

17. **Contract Price**: In consideration of the foregoing covenants, promises, and agreements on the part of the Contractor, and the strict and literal fulfillment of each and every covenant, promise, and agreement, and as compensation agreed upon for the Work and construction, erection, and completion as aforesaid, the District covenants, promises, and agrees that it will well and truly pay and cause to be paid to the Contractor in full, and as the full Contract Price and compensation for construction, erection, and completion of the Work hereinabove agreed to be performed by the Contractor, the following price:

_____ Dollars

($_____),

in lawful money of the United States, which sum is to be paid according to the schedule provided by the Contractor and accepted by the District and subject to additions and deductions as provided in the Contract. This amount supersedes any previously stated and/or agreed to amount(s).

18. **No Representations:** No representations have been made other than as set forth in writing in the Contract Documents, including this Agreement. Each of the Parties to this Agreement warrants that it has carefully read and understood the terms and conditions of this Agreement and all Contract Documents, and that it has not relied upon the representations or advice of any other Party or any attorney not its own.

19. **Entire Agreement:** The Contract Documents, including this Agreement, set forth the entire agreement between the parties hereto and fully supersede any and all prior agreements, understandings, written or oral, between the parties hereto pertaining to the subject matter thereof.

20. **Severability**: If any term, covenant, condition, or provision in any of the Contract Documents is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions in the Contract Documents shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.

21. **Authority of Signatories**: Each party has the full power and authority to enter into and perform this Contract, and the person signing this Contract on behalf of each party has been properly authorized and empowered to enter into this Contract. This Contract may be executed in one or more counterparts, each of which shall be deemed an original. For this Agreement, and for all Contract Documents requiring a signature, a facsimile or electronic signature shall be deemed to be the equivalent of the actual original signature. All counterparts so executed shall constitute one Contract binding all the Parties hereto.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, accepted and agreed on the date indicated above:

[CONTRACTOR NAME]	**BAKERSFIELD CITY SCHOOL DISTRICT**
By: _____	By: Sherry Gladin
Title: _____	Title: Assistant Superintendent, Business Services

NOTE: If the party executing this Contract is a corporation, a certified copy of the by-laws, or of the resolution of the Board of Directors, authorizing the officers of said corporation to execute the Contract and the bonds required thereby must be attached hereto.

END OF DOCUMENT

DOCUMENT 00 41 13

BID FORM AND PROPOSAL

To: Governing Board of the Bakersfield City School District ("District" or "Owner")

From: _____
(Proper Name of Bidder)

The undersigned declares that Bidder has read and understands the Contract Documents, including, without limitation, the Notice to Bidders and the Instructions to Bidders, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications of for the following projects known as:

Martin Luther King Jr. Elementary School - Wellness Center / 22243.00-09-WEL / DSA # 03-122605, Parent Center / 22243.00-09-PRC / DSA # 03-122604, T-Kindergarten / 23189.00-09-TK / DSA # 03-123900

("Project" or "Contract") and will accept in full payment for that Work the following grand total lump sum amount, all taxes included:

_____ dollars $ _____

WELLNESS CENTER TOTAL

_____ dollars $ _____

PARENT CENTER TOTAL

_____ dollars $ _____

TRANSITIONAL KINDERGARTEN TOTAL

_____ dollars $ _____

BASE BID GRAND TOTAL

Bidder acknowledges and agrees that the Base Bid Grand Total accounts for any and all Allowance(s)

Additive/Deductive Alternates: None

1. The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this Proposal, understands the construction and project management function(s) is described in the Contract Documents, and that each Bidder who is awarded a contract shall be in fact a prime

contractor, not a subcontractor, to the District, and agrees that its Proposal, if accepted by the District, will be the basis for the Bidder to enter into a contract with the District in accordance with the intent of the Contract Documents.

2. The undersigned has notified the District in writing of any discrepancies or omissions or of any doubt, questions, or ambiguities about the meaning of any of the Contract Documents, and has contacted the Construction Manager before bid date to verify the issuance of any clarifying Addenda.

3. The undersigned agrees to commence work under this Contract on the date established in the Contract Documents and to complete all work within the time specified in the Contract Documents.

4. The liquidated damages clause of the General Conditions and Agreement is hereby acknowledged.

5. It is understood that the District reserves the right to reject this bid and that the bid shall remain open to acceptance and is irrevocable for a period of ninety (90) days.

6. The following documents are attached hereto:

   - Bid Bond on the District's form or other security
   - Designated Subcontractors List
   - Non-Collusion Declaration
   - Iran Contracting Act Certification

7. Receipt and acceptance of the following Addenda is hereby acknowledged:

Wellness Center – 03-122605

No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____

Parent Center – 03-122604

No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____

Transitional Kindergarten – 03-123900

No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____

8. Bidder acknowledges that the license required for performance of the Work is a B license.

9. Bidder hereby certifies that Bidder is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.

10. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with all requirements of the Department of Industrial Relations.

11. Bidder hereby certifies that its bid includes sufficient funds to permit Bidder to comply with all local, state or federal labor laws or regulations during the Project, including payment of prevailing wage, and that Bidder will comply with the provisions of Labor Code section 2810(d) if awarded the Contract

12. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with the Davis Bacon Act, applicable reporting requirements, and any and all other applicable requirements for federal funding. If a conflict exists, the more stringent requirement shall control.

13. Bidder represents that it is competent, knowledgeable, and has special skills with respect to the nature, extent, and inherent conditions of the Work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the Work that may create, during the Work, unusual or peculiar unsafe conditions hazardous to persons and property.

14. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the Work with respect to such hazards.

15. Bidder expressly acknowledges that it is familiar with and capable of complying with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol.

16. Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Gov. Code, § 12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act. It may also be considered fraud and the Contractor may be subject to criminal prosecution.

17. The undersigned Bidder certifies that it is, at the time of bidding, and shall be throughout the period of the Contract, licensed by the State of California to do the type of work required under the terms of the Contract Documents and registered as a public works contractor with the Department of Industrial Relations. Bidder further certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

Furthermore, Bidder hereby certifies to the District that all representations, certifications, and statements made by Bidder, as set forth in this bid form, are true and correct and are made under penalty of perjury.

Dated this _____ day of _____ 20 ____

Name of Bidder: _____

Type of Organization: _____

Signature: _____

Print Name: _____

Title: _____

Address of Bidder: _____

Taxpayer Identification No. of Bidder: _____

Telephone Number: _____

Fax Number: _____

E-mail: _____ Web Page: _____

Contractor's License No(s): No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class:_____ Expiration Date: _____

No.: _____ Class:_____ Expiration Date: _____

Public Works Contractor Registration No.: _____

END OF DOCUMENT

INSTALLING OF A SMART BOARD IQ, LCD, AND WALL CONNECTION DEVICE.

Smart Board IQ / LCD Display

Mounting bracket:

Unless otherwise approved by the district, a Premier Mounts low profile or articulating wall mount with a correct weight tolerance per the display being installed must be used.

Unless otherwise approved by the district, the Premier Mounts universal rectangular washer is required to be installed at each M screw position in relation to the securement of the Smart Board IQ or LCD to the bracket.

The low profile wall mounted bracket is required to be secured to three studs. In absence of a third wall stud Toggle Anchors with a minimum of a 200 pound load tolerance will be required. The wall mount bracket is required to be installed with six of the appropriate lags.

The articulating wall mount bracket is required to be secured to two studs. In the absence of a second wall stud Toggle Anchors with a minimum of a 200 pound load tolerance will be required. The wall mount bracket is required to be installed with four of the appropriate lags.

Wood Studs:

When securing to a wood stud the installation requirements are 3” 5/16” wood lags with the appropriate flat standard washer.

Metal Studs:

When securing to a metal stud the installation requirements are #12 3”metal self-tapping lag with the appropriate flat standard washer.

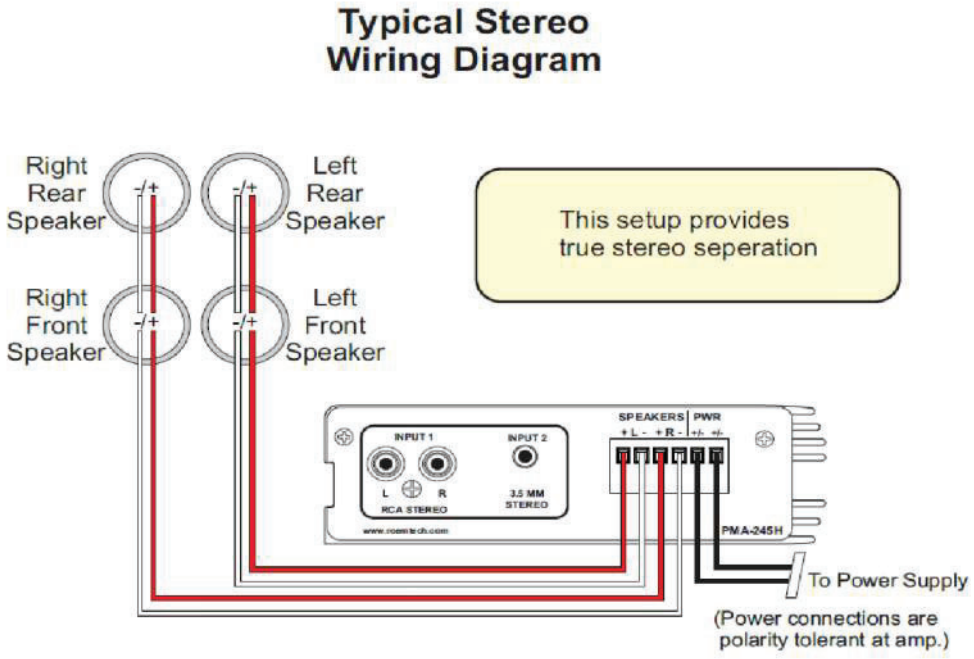
Concrete Wall

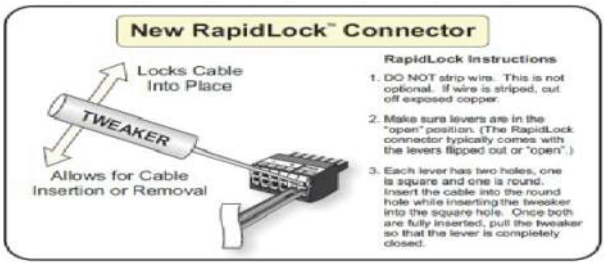
When securing to a concrete wall the installation requirements are 3’ X 3/8” Red Head Wedge Anchor with the appropriate flat standard washer.

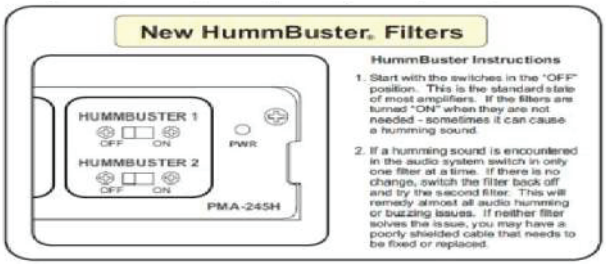
Wall Connection Device

1. Unless otherwise approved by the district, all wall connection devices in relation to the connection for the Smart Board or LCD will be at the standard duplex height in relation to the classroom.
2. Connection devices are required to be installed near or next to existing data ports.
3. Unless otherwise approved by the district, all connection devices will be required to be installed on the same teaching wall as the Smart Board or LCD.
4. Unless otherwise approved by the district, all wall connection devices need to have a protective device cover installed. All covers must be approved by the district.

Installing Classroom Amplifier (typical)



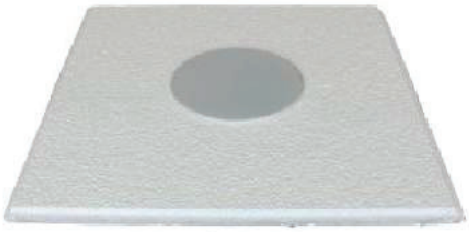




When installing a classroom amplifier, install the AMP below the IQ Smart Board / LCD shroud, above the ceiling tile or behind the LCD. The preferred method of installation for the district is behind the shroud. The AMP is required to be secured with two of the appropriate screws for the wall surface using the two notches located on the sides of the AMP. The power brick will be required to be secured to the wall surface with industrial grade 1 ½" Velcro with a minimum of a ten pound tolerance load. When Velcro is used, the portion that is attached to the wall surface will be required to be secured with the appropriate screws.

Ceiling Speaker Installation Guide

Pictures of finished installation

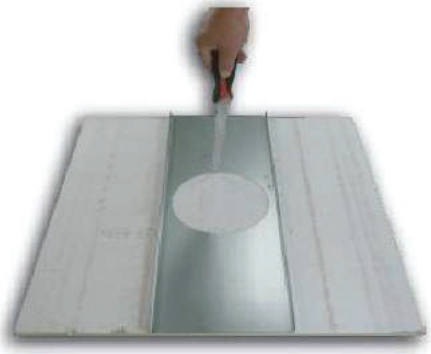


Front/grill side

Rear/speaker can side

STEP 1 - Place the ceiling tile face down on a clean surface.

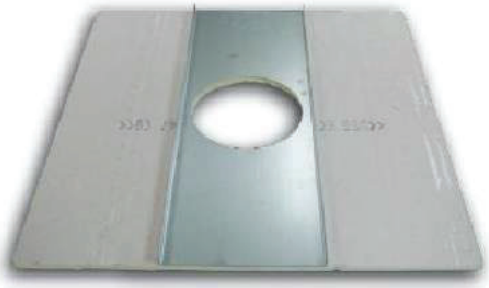
STEP 2 - Measure across the tile to find the exact center. Place the tile brige on the back of the tile and align the tile bridge so that it is centered on the tile.



STEP 3 - Use the tile bridge as a template to trace the outline for the hole to be cut in the tile.

STEP 4 - Remove the tile bridge and use a roto tool, keyhole saw, or saber saw to cut the hole in the tile.

STEP 5 - Place the tile bridge on the tile and align it with the hole.



STEP 6 - While holding the tile bridge to the back of the tile, turn the tile and bridge over and place it so the sides are supported while allowing an opening for the speaker to be placed into the hole. A cardboard box or trash bin can be used to support the tile.

STEP 7 - Lower the speaker into the hole. The photo shows the speaker being lowered from the side for clarity.

Front view of a properly installed speaker with its grill in place.

Rear view of a properly mounted speaker with tile bridge. Note three of the speaker clamps are visible.

STEP 8- Release the 4 speaker clamps so they are firmly holding the speaker to the tile, with a twist and drop motion.

STEP 9 - Drop the speaker wire down from the empty tile hole in the ceiling and connect it to the speaker. Remove the insulation from the end of the wires. While pushing the plastic tab to open the terminal insert the bare wire into the terminal hole and release the tab. Connect the red wire to the red terminal and the black wire to the black terminal.

Add your safety wire to this attachment point, as required by local code. Safety wire will support the entire speaker and tile bridge assembly.

STEP 10 - Gently place the speaker/tile assembly into the ceiling.

Installation Requirements

Ceiling Speaker Installations:

1. Each speaker must be secured with the provided manufacturer tile bridge assembly and a contractor provided seismic safety cable with a minimum of a 3 pound load tolerance at the attachment point on each ceiling speaker.

   Wood Rafter

   When anchoring the safety cable to the closest wood rafter to the ceiling speaker, a ¼" X 3" Acoustical Eye Lag is required.

   Metal Rafter

   When anchoring the safety cable to the closest metal rafter to the ceiling speaker, a ¼" X 2" Self Tapping Acoustical Eye Lag is required.

2. The preferred placement of ceiling speakers is a four position pattern that encompasses the student area of the classroom without creating an excessive overlap or dead zone.
3. The preferred placement of ceiling speakers within the ceiling tile is directly center and must mirror the same placement as the adjoining speaker. If the pathway of the speaker is blocked, the speaker can be installed in a half tile pattern.

Wall Speaker Installations:

1. The installation of the raceway must reflect a "T" pattern, each wall speaker is required to be 3ft from the center of the raceway main pathway leading up from the Smart Board or LCD Display.
2. Each wall speaker is required to be installed at 58 ½" from the bottom of the Smart Board or Display, unless otherwise approved by the district.
3. The provided manufacturer wall speaker bracket is required to be installed horizontally and secured in two separate positions within the bracket.

   Drywall / Tact Board Wall:

   When securing to a drywall or tact board wall, a wall anchor with a minimum of a 20 pound load tolerance is required. Depending on the size of the appropriate screw to the anchor a standard flat washer will be required.

Wood Wall:

When securing to a plywood or plywood backed wall, a #8 X 1-¼" or #8 X 1-5/8" wood screw with the appropriate standard flat washer will be required.

Surface Mounted Raceway:

1. The path of the raceway must be clear of any obstruction, including any existing raceway and cannot be installed over any décor.
2. Surface mounted raceway that is installed on a non-concrete or brick wall will be secured with #8 X 1 5/8" or #8 X 1 ¼" wood screws and will not be secured with any adhesive backing.
3. When raceway is installed on a concrete or brick wall, it will be secured with concrete anchors and screws. Adhesive raceway backing may be used during the installation.

Drop Ceiling Installations:

1. Unless otherwise noted the preferred installation pathway of cabling will be from the Smart Board IQ or LCD up through the drop ceiling tile and back down through a drop ceiling tile that is near a teacher's computer station location.
2. "J Hooks" will be used at each entrance through the ceiling tile and at the appropriate locations to ensure that the cabling is not touching or resting on other ceiling tiles or electrical lines.
3. Cabling for the Smart Board, LCD and Speakers cannot be intertwined with any existing cables, conduits or be laying on fluorescent light panels.
4. Unless otherwise approved by the district, entrance fittings are required to be installed at each breach of the ceiling tile in relation to raceway pathways.
5. Service Loops of the cabling are required above each breach of the ceiling tile or installed equipment.

Hard Cap Ceiling Installations:

1. The preferred installation pathway of cabling will be from under the Smart Board or LCD to the teacher's location.
2. The installation of the raceway must reflect an "L" pattern to the appropriate drop location.
3. In relation to the Smart Board or Display any excess cabling must be secured to the wall behind the unit that does not affect the mounting location or securement of the unit.

Placement / Cabling Installations:

1. The placement of the Smart Board IQ / LCD unless otherwise approved by the District will always be center of the front teaching wall. If an object IE: a White Board or pull down screen is blocking the pathway, the contractor will be required to remove the object and place it in the rear of the room.
2. To allow proper ease of cable management, the shroud will be required to be notched in a manner that is not visible from the front of the Smart Board IQ. Installation of a section of Hubbell PL1ABC7 wil need to be installed below the center of the Smart Board IQ unit that will clear from behind the unit and into the shroud will be required. All cabling from the Smart Board IQ into the shroud will be required to pass through the raceway section.
3. In relation to a Smart Board IQ with a lower shroud, any excess cabling must be secured to the wall below the unit that does not affect the mounting location or securement of the unit and must be concealed from view with the placement of the shroud. The following items can be used as cable management: Nylon mounting zip ties, Velcro strips or B-Line / Eaton BCH21 “J Hook”.
4. Unless otherwise approved by the district, the termination of LAN to the Smart Board IQ will be required to be terminated to a RJ45 CAT6 punch down jack in the shroud area. A provided CAT6 Patch Cable will be required to complete the connection from the modular jack to the Smart Board IQ LAN Port.
5. Unless otherwise approved by the district, two space differentials are required for the securement of the HDBaseT Receiver located under the shroud. The following items can be used as a space differential: 5/16 stainless steel nuts, Nylon mounting holes from a zip tie or a Premier Mount universal spacer.
6. All cable management will be required to be “clean” to aid in identification of cabling.
7. Unless otherwise approved when installing a power strip or power brick behind the shroud, securement of the device is required to be attached to the wall surface with industrial grade 1 ½” Velcro with a minimum of a ten pound tolerance load. When Velcro is used, the portion that is attached to the wall surface will be required to be secured with the appropriate screws.

Hubbell Raceway Systems:

1. Unless otherwise approved by the district, only Hubbell Poly Track Non-metallic Raceway is approved for installation of the Smart Board or LCD cabling. Refer to Installation Scope of each job for approved raceway systems.

General Housekeeping:

1. After each installation is complete the work area will be required to be free of any associated hardware, material packaging and dust or debris.
2. The floors that were in the immediate area of installation are required to be vacuumed to ensure that all hazards have been removed.

Installation Heights:

Unless otherwise approved by the district, see installation heights listed below.

Grade Level	Height in Inches
T-K Kindergarten Special Ed Grade Levels 1st through 2nd 1st through 2nd	32” To the bottom of the Smart Board IQ or LCD to the finish floor.
Special Ed Grade Levels 3rd through 8th 3rd through 8th	36” To the bottom of the Smart Board IQ or LCD to the finish floor.
Parent Resource Centers Library Conference Room	40” To the bottom of the Smart Board IQ or LCD to the finish floor.

Installation of Cabling and Modules Below the Shroud:

Below the Smart Board IQ the wall area is to be sectioned into a quadrant for cable management and quick cable and module identification. IE: Audio, Receiver, Power, LAN.

Unless otherwise approved by the district a 6" clearance space will be required from the outside edge of the Smart Board IQ to the inside module placement. No equipment, cabling or hardware can be installed in the clearance area.

Unless otherwise approved, two CAT6 LAN cables will be required to be installed below the shroud, both lines are to be terminated to a CAT6 punch down jack.

A. Installation of one 7' CAT6 Patch Cable from one of the terminated jacks to the input LAN port on the Smart Board IQ is required.

Unless otherwise approved the Roemtech 45+ amplifier is to be installed directly to the wall surface with the appropriate screws. A service 16/2 speaker cable loop is required to be installed near the receiver.

A. When installing the 3.5mm cable from the receiver to the Smart Board IQ, install one 15' 3.5mm stereo cable from the 3.5mm input port on the amplifier to the output port on the Smart Board IQ.
B. Unless otherwise approved the output volume level is required to be set at a ¾ output volume level.
C. The "Hum Buster " ground loop isolator is required to be activated on the output port that is connected to the 3.5mm stereo cable.

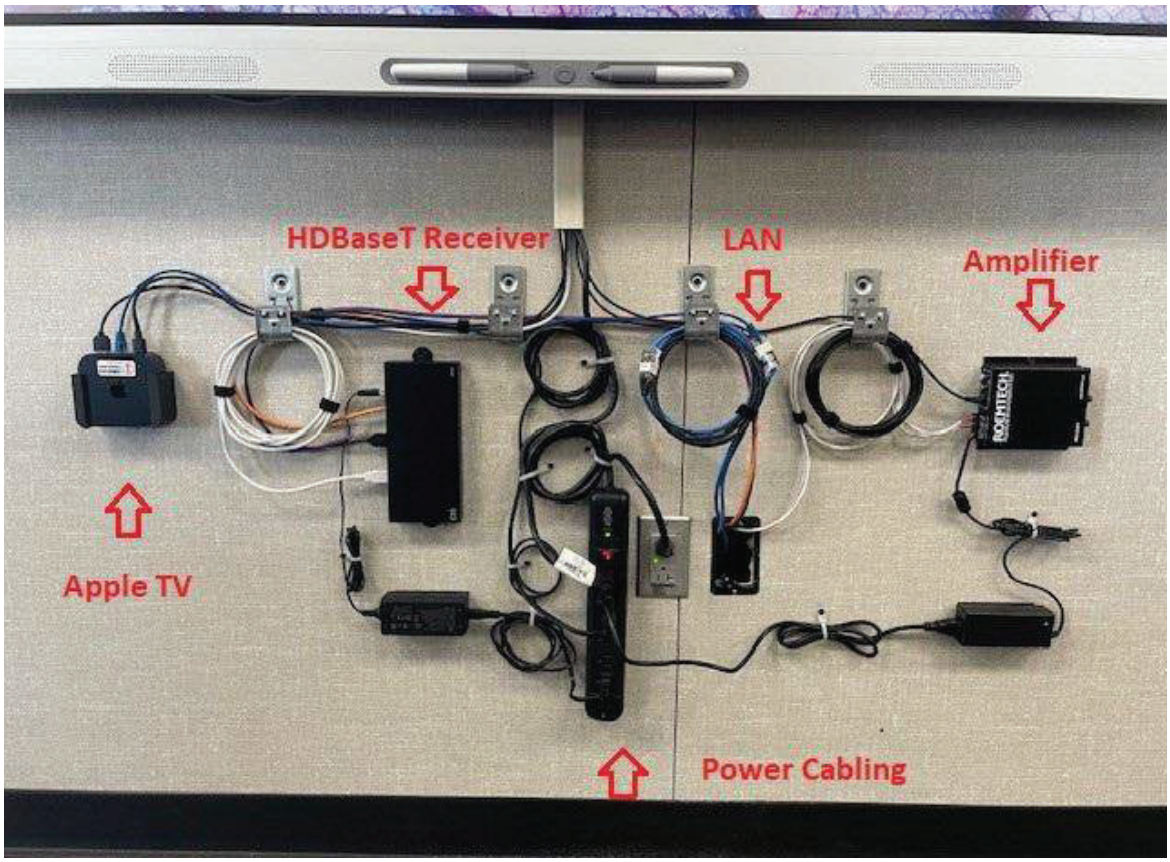
At no time can the exhaust ports located on the sides of the HDBaseT receiver be blocked by any module. IE: Power brick, Amplifier, Apple TV.

A. When installing the HDMI cabling from the receiver to the Smart Board IQ, install one 6' HDMI cable from the output HDMI port on the module to the HDMI input port #2 on the IQ.
B. When installing the USB cabling from the receiver to the Smart Board IQ, unless otherwise specified the district standard USB cables are a 2.0 A/B 5m, 3m or 3.0 A/B. Install one of the specified USB cables from the 1.4 output USB port on the module to the HDMI input port #2 on the IQ.
C. When installing the CAT6 to the HDBaseT receiver a service loop of the primary (orange) and secondary (purple) CAT6 will be required. Both lines are required to be terminated to a RJ45 modular crimp jack.

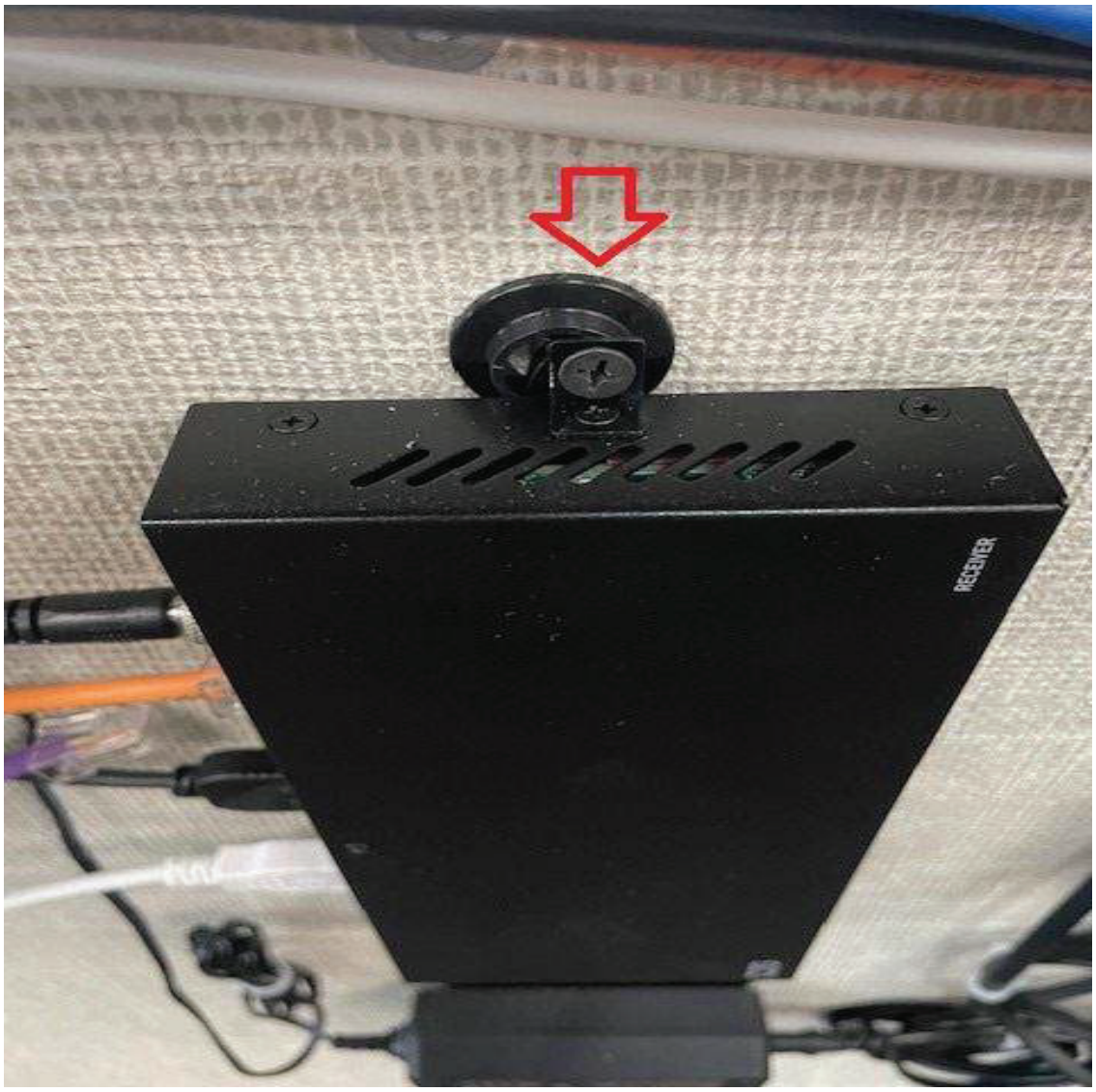
6. When applicable the Apple TV module will be required to be attached to the wall with the appropriate wall mount and screws.

A. When installing the HDMI cabling from the Apple TV to the Smart Board IQ, install one 6’ HDMI cable from the output HDMi port on the module to the HDMI input port #1 on the IQ.
B. When installing the CAT6 patch cable from the Apple TV to the terminated CAT6 punch down jack, install one 3’ CAT6 patch cable from the input port on the Apple TV to the secondary CAT6 punch down jack LAN.

INSTALLATION EXAMPLES (typical)



Typical layout of modules and cabling below the shroud.

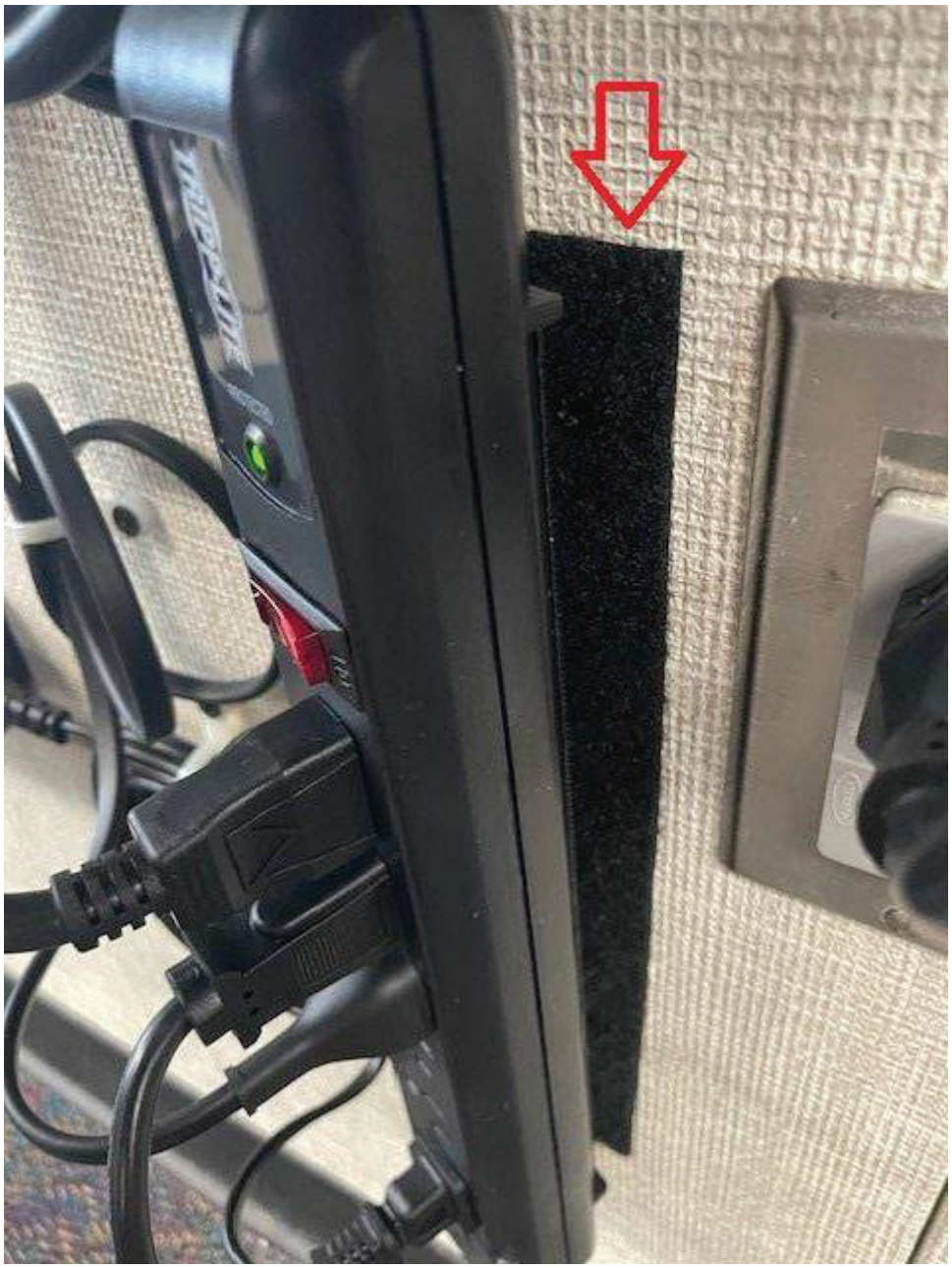


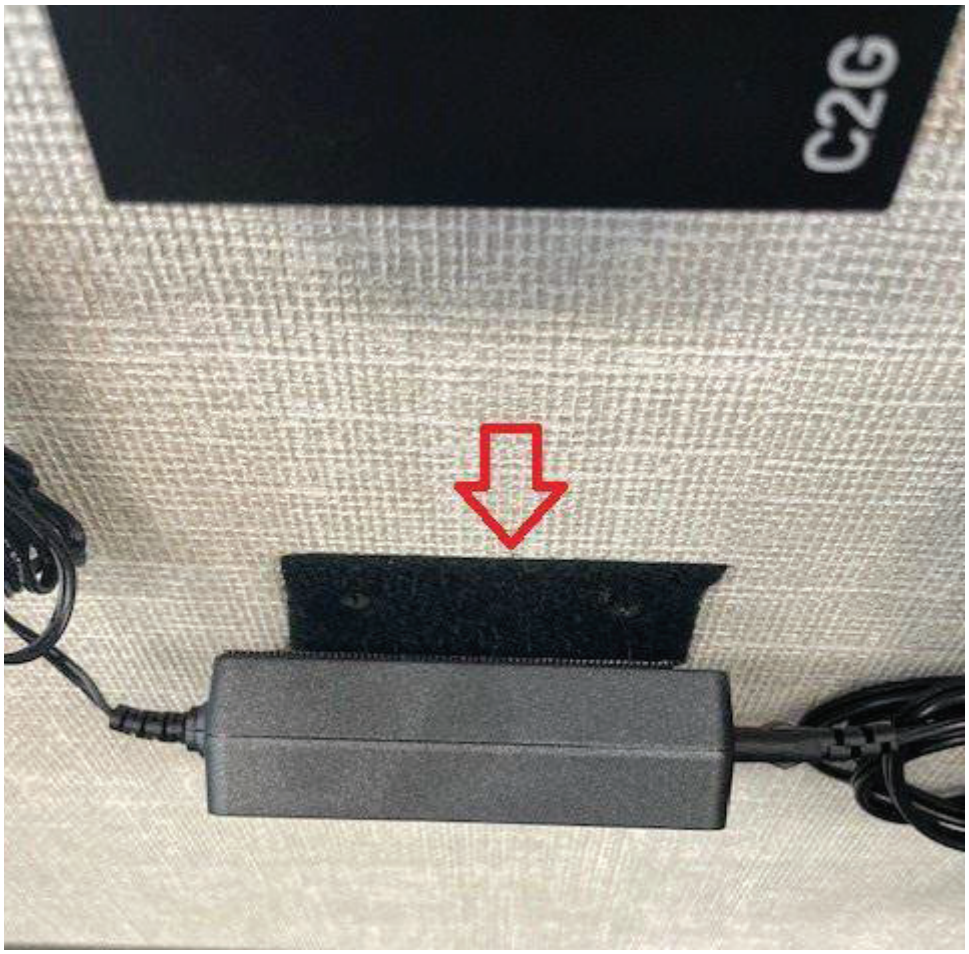
Placement of spacer to allow the receiver to exhaust heat.

The Amplifier is set to ¾ on the output audio level.

The “Hum Buster” ground loop isolator is turned on.

The appropriate screw is securing the unit to the wall surface.





The Velcro section that is attached to the wall is secured with the appropriate screw.

5527 BAKERSFIELD CITY SCHOOL DISTRICT
MLK WELLNESS CENTER
TABLE OF CONTENTS

SECTION 075423 - THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

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. Adhered TPO membrane roofing system.
2. Adhered TPO walkway traffic pads.
3. Cover board.
4. All fasteners and accessories.

B. Related Sections:

1. Section 05 31 10 “Steel Decking” for steel deck substrate below roofing system.
2. Section 06 10 00 "Rough Carpentry" for wood nailers, curbs, and blocking.
3. Section 06 16 00 “Sheathing” for wood roof deck substrate below roofing system.
4. Section 07 62 00 "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counterflashings.
5. Section 07 92 00 "Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

A. TPO: Thermoplastic polyolefin.

B. Roofing Terminology: See ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 PERFORMANCE REQUIREMENTS

A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures per detail 2/S1.01, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.

C. Energy Performance: Provide roofing system that is listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.

D. Energy Performance: Provide roofing system with initial solar reflectance not less than and emissivity not less than 0.75 when tested according to CRRC-1.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.

1. Base flashings and membrane terminations.
2. Tapered insulation, including slopes.

C. Samples for Verification: For the following products:

1. Sheet roofing, of color specified, including T-shaped side and end lap seam.
2. Walkway pads or rolls.
3. Metal termination bars.
4. Battens.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer and manufacturer.

B. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

1. Submit evidence of compliance with performance requirements.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.

D. Research/Evaluation Reports: For components of membrane roofing system, from the ICC-ES.

E. Warranties: Sample of special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for membrane roofing system identical to that used for this Project.

B. Source Limitations: Obtain components including roof insulation fasteners for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.

C. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.

D. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck

Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.

2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.10 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

A. Special Warranty: Manufacturer's standard or customized form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period.

1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, cover boards, roofing accessories, and other components of membrane roofing system.
2. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 TPO MEMBRANE ROOFING

A. Fabric-Reinforced Thermoplastic Polyolefin Sheet: ASTM D 6878, internally fabric or scrim reinforced, uniform, flexible fabric backed TPO sheet.

1. 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:

a. Carlisle SynTec Incorporated.
b. Custom Seal Roofing.
c. Firestone Building Products Company.
d. GAF Materials Corporation.
e. GenFlex Roofing Systems.
f. Johns Manville.
g. Mule-Hide Products Co., Inc.
h. Stevens Roofing Systems; Division of JPS Elastomerics.

2. Thickness: 60 mils, nominal.
3. Exposed Face Color: White.

2.2 AUXILIARY MEMBRANE ROOFING MATERIALS

A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use, and compatible with membrane roofing.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

a. Plastic Foam Adhesives: 50 g/L.
b. Multipurpose Construction Adhesives: 70 g/L.
c. Fiberglass Adhesives: 80 g/L.
d. Single-Ply Roof Membrane Adhesives: 250 g/L.
e. Other Adhesives: 250 g/L.
f. Single-Ply Roof Membrane Sealants: 450 g/L.
g. Nonmembrane Roof Sealants: 300 g/L.
h. Sealant Primers for Nonporous Substrates: 250 g/L.
i. Sealant Primers for Porous Substrates: 775 g/L.

3. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

B. Sheet Flashing: Manufacturer's standard unreinforced thermoplastic polyolefin sheet flashing, 55 mils thick, minimum, of same color as sheet membrane.

C. Bonding Adhesive: Manufacturer's standard, water based.

D. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

E. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick, prepunched.

F. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.

G. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.3 SUBSTRATE BOARDS

A. Substrate Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum cover board, 1/2 inch thick.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Georgia-Pacific Corporation; Dens Deck Prime.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate cover board to roof deck.

2.4 WA LKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway rolls, approximately 80 mil thick, and acceptable to membrane roofing system manufacturer.

1. 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:

a. Carlisle SynTec Incorporated.
b. Custom Seal Roofing.
c. Firestone Building Products Company.
d. GAF Materials Corporation.
e. GenFlex Roofing Systems.
f. Johns Manville.
g. Mule-Hide Products Co., Inc.
h. Stevens Roofing Systems; Division of JPS Elastomerics.

2. Thickness: 80 mils, nominal.
3. Exposed Face Color: Gray.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:

1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.3 INSULATION INSTALLATION

A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Install tapered insulation under area of roofing to conform to slopes indicated.

D. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.

1. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.

E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

F. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.

1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.

G. Mechanically Fastened and Adhered Insulation: Install each layer of insulation and secure first layer of insulation to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.

1. Fasten first layer of insulation to resist uplift pressure at corners, perimeter, and field of roof.
2. Set each subsequent layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

H. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction. Loosely butt cover boards together.

1. Fasten cover boards to resist uplift pressure at corners, perimeter, and field of roof.

3.4 ADHERED MEMBRANE ROOFING INSTALLATION

A. Adhere membrane roofing over area to receive roofing and install according to membrane roofing system manufacturer's written instructions.

B. Start installation of membrane roofing in presence of membrane roofing system manufacturer's technical personnel.

C. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

D. Bonding Adhesive: Apply to substrate and underside of membrane roofing at rate required by manufacturer and allow to partially dry before installing membrane roofing. Do not apply to splice area of membrane roofing.

E. In addition to adhering, mechanically fasten membrane roofing securely at terminations, penetrations, and perimeter of roofing.

F. Apply membrane roofing with side laps shingled with slope of roof deck where possible.

G. Seams: Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet membrane.
2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.

H. Spread sealant bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.

3.5 BASE FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions. Where possible within manufacturers guidelines, install base flashing up and over top of parapet walls.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation. Utilize battens to securely anchor top edge of lower sheet at intermediate horizontal seam laps as recommended by manufacturer.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars, except where base flashing can be installed up and over top of parapet walls, in accordance with manufacturer’s recommendations.

3.6 WALKWAY INSTALLATION

A. Flexible Walkways: Install walkway products in locations indicated. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.7 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

B. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.

C. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.8 PROTECTING AND CLEANING

A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements; repair substrates; and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

END OF SECTION 075423