

**SURFACE MOUNTED RACEWAY SYSTEM SPECIFICATIONS:**

- ALL MATERIAL SHALL BE NEW, OF CURRENT DESIGN, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF NEMA, UL, ANSI AS WELL AS LOCAL JURISDICTION REQUIREMENTS, THE LATEST PUBLISHED EDITION OF THE FOLLOWING DOCUMENTS SHALL APPLY TO THE MANUFACTURING AND INSTALLATION OF THE SURFACE MOUNTED RACEWAY SYSTEM:
  - UL 5 SURFACE METAL RACEWAYS AND FITTINGS
  - UL-LISTED VIA CURRENT UL FILE NUMBER FOR NONMETALLIC RACEWAYS AND FITTINGS
  - TIA/EIA 569-A COMMERCIAL BUILDING STANDARDS FOR TELECOMMUNICATIONS
  - CEC ART. 386 SURFACE METAL RACEWAYS
  - CEC ART. 388 SURFACE NONMETALLIC RACEWAYS
- ALL COMPONENTS OF THE SURFACE MOUNTED RACEWAY SYSTEM SHALL BE MANUFACTURED BY A SINGLE MANUFACTURER, THE ENTIRE SYSTEM SHALL BE COVERED BY A ONE YEAR WARRANTY.
  - THE CONTRACTOR SHALL PROVIDE ALL COMPONENTS FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM, INCLUDING BUT NOT LIMITED TO, THE FOLLOWING COMPONENTS:
    - PANDUIT #770BWB, PAN-WAY T-70 NON-METALLIC RACEWAY BASE
    - PANDUIT #770BWCW-X, PAN-WAY T-70 RACEWAY BASE COUPLING
    - PANDUIT #770BWF/BFI, T-70 NON-METALLIC BACKFEED FITTING/INSERT
    - PANDUIT #770CWB, PAN-WAY T-70 NON-METALLIC RACEWAY COVER
    - PANDUIT #770CWCW-X, PAN-WAY T-70 RACEWAY COVER COUPLING
    - PANDUIT #770DWS, T-70 / TWIN-70 DIVIDER WALL 8 FEET
    - PANDUIT #770EWF, T-70 ENTRANCE END FITTING
    - PANDUIT #770CWC, T-70 NON-METALLIC RACEWAY OUTSIDE CORNER FITTING
    - PANDUIT #770CWCW, T-70 NON-METALLIC RACEWAY INSIDE CORNER FITTING
    - PANDUIT #770RAW, T-70 NON-METALLIC RACEWAY RIGHT ANGLE FITTING
    - PANDUIT #770TWF, T-70 NON-METALLIC RACEWAY TEE FITTING
    - PANDUIT #770TD, T-70 NON-METALLIC RACEWAY TEE FITTING INSERT
    - PANDUIT #770TRW, T-70 NON-METALLIC RACEWAY TRANSITION FITTING BASE/COVER
    - PANDUIT #770WR-X, T-70 NON-METALLIC RACEWAY WIRE RETAINER
    - PANDUIT #770SDR-X, GREY, STANDARD FACEPLATE BRACKET
    - PANDUIT #770WC2W, T-70 NON-METALLIC RACEWAY WORKSTATION OFFSET BOX
    - PANDUIT #770ECW, T-70 NON-METALLIC SURFACE RACEWAY END CAP FITTING
- SURFACE MOUNTED RACEWAY SYSTEM SHALL HAVE THE FOLLOWING CHARACTERISTICS:
  - SINGLE AND MULTI-COMPARTMENT RACEWAYS SHALL CONSIST OF (BUT NOT LIMITED TO) A CONTINUOUS SYSTEM OF BASE CHANNEL(S), COVERS, WIRE CLIPS, FITTINGS, TRANSITIONS, ELBOWS, COUPLINGS, CONNECTORS, TEES, END CAPS, ENTRANCE END FITTINGS, BACKFEED FITTINGS, TRANSITION FITTINGS, DIVIDERS (AS APPLICABLE), WIRE RETAINERS, DEVICE BRACKETS, DEVICE PLATES, OUTLETS (AS APPLICABLE), OUTLET BOXES (AS APPLICABLE), MOUNTING HARDWARE, LABELING, CONDUCTORS AND WIRING DEVICES (AS APPLICABLE), COMPLETE PER MANUFACTURER'S RECOMMENDATIONS.
  - RACEWAY SHALL BE 2-CHANNEL TYPE UNLESS OTHERWISE NOTED ON THE PLANS OR IN THIS DOCUMENT. MULTI-CHANNEL SURFACE MOUNTED RACEWAY SYSTEMS SHALL SUPPORT BRANCH-CIRCUIT, LINE VOLTAGE WIRING AND/OR DATA, VOICE, AV, VIDEO OR OTHER LOW VOLTAGE WIRING.
  - WHEN INDICATED ON THE PLANS AS PLASTIC, SURFACE MOUNTED RACEWAY SHALL BE FORMED FROM RIGID PVC EXHIBITING UL94V-0 AND FT4 NONFLAMMABLE, SELF-EXTINGUISHING CHARACTERISTICS.
  - FULL CAPACITY CORNER ELBOWS AND TEE FITTINGS SHALL BE PROVIDED IN ORDER TO MAINTAIN A CONTROLLED 1-INCH BEND RADIUS NECESSARY TO SUPPORT COMMUNICATIONS, AV AND OTHER LOW VOLTAGE CABLING PER TIA/EIA PATHWAY STANDARDS.
  - COLOR OF RACEWAY AND ALL ASSOCIATED FITTINGS, DEVICES, BOXES, ETC. SHALL BE FACTORY "OFF WHITE", UNLESS OTHERWISE NOTED.
  - SURFACE MOUNTED RACEWAY SYSTEM SHALL CONSIST OF STANDARD LENGTHS WITH ANY REQUIRED CUSTOM LENGTHS FIELD-CUT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS UTILIZING MANUFACTURER-RECOMMENDED CUTTING TOOLS. USE OF HACKSAWS OR CUTTING DEVICES NOT LISTED IN THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE PROHIBITED.
  - DEVICES AND DEVICE COVER PLATES SHALL BE PROVIDED FOR EACH OUTLET AND ITS RESPECTIVE CONFIGURATION AND/OR AMPACITY AS SHOWN ON THE DRAWINGS.
  - FACTORY MANUFACTURED TRANSITION FITTINGS SHALL BE PROVIDED WHEN REQUIRED TO CONNECT DIFFERENT SURFACE MOUNTED RACEWAY TYPES.

**SURFACE MOUNTED RACEWAY SYSTEM BE SHALL INSTALLED AS FOLLOWS:**

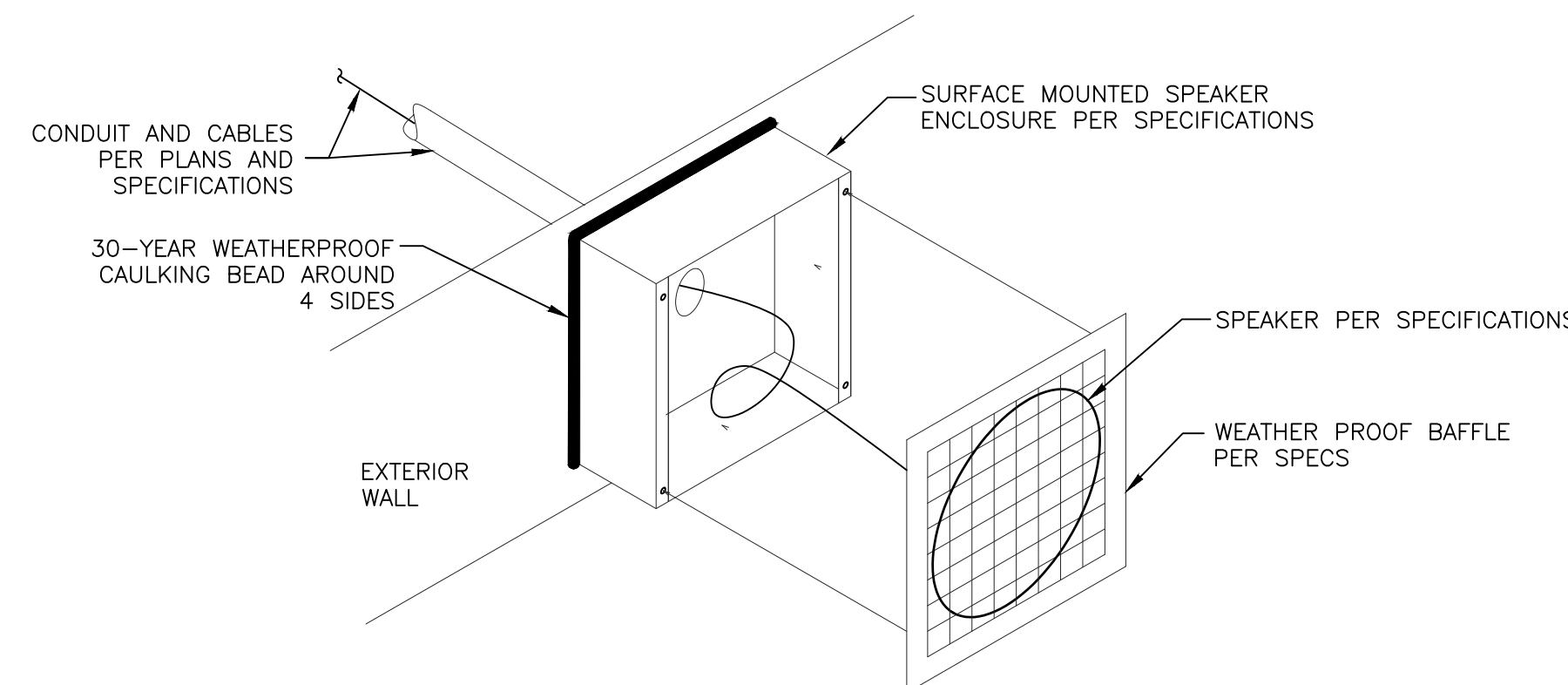
- IN A MANNER THAT SHALL NOT CONFLICT WITH DOORS, CASEWORK, MILLWORK, FURNITURE, WINDOWS, MULLIONS ETCETERA. COORDINATE AS REQUIRED WITH CASEWORK/MILLWORK CONTRACTOR TO ALLOW FOR CUTOUTS/NOTCHING AS MAY BE REQUIRED FOR INSTALLATION OF THE RACEWAY.
- PARALLEL AND PERPENDICULAR TO ADJACENT BUILDING SURFACES. LEVEL WHEN IN THE HORIZONTAL.
- MOUNTING HEIGHT(S) VARY. CONFIRM MOUNTING HEIGHT(S) OF EACH RUN OF SURFACE MOUNTED RACEWAY WITH ARCHITECT PRIOR TO ROUGH-IN.
- WHERE MULTI-OUTLET RACEWAYS EXTEND THROUGH BUILDING PARTITIONS OR NOTCHED MILLWORK/CASEWORK, THE RACEWAY COVER SHALL BE REMOVABLE TO WITHIN 3" OF THE PARTITION/ MILLWORK/CASEWORK.
- FOR NEW CONSTRUCTION OR EXISTING CONDITIONS WITH STUD WALLS OF SUFFICIENT DEPTH, RECESSED OUTLET BOX(ES) WITH CONCEALED CONDUIT(S) SHALL BE USED TO FEED WALL-MOUNTED SURFACE MOUNTED RACEWAY SYSTEM(S). OUTLET BOXES SHALL BE ORIENTED AND SIZES IN SUCH A WAY AS TO BE COMPLETELY COVERED BY THE SURFACE MOUNTED RACEWAY SYSTEM. PROVIDE AND UTILIZE CUTOUTS IN WALL-MOUNTED SURFACE OF SURFACE MOUNTED RACEWAY. SIZED TO MATCH THE OUTLET BOX BEHIND THE RACEWAY. WHERE MULTI-CHANNEL RACEWAY IS INSTALLED, CUTOUT(S) SHALL NOT EXTEND PAST THE RESPECTIVE CHANNEL DIVIDER(S). PROVIDE A CONTINUOUS GROMMET AROUND PERIMETER EDGES OF ALL CUTOUTS.
- WHEN PLANS DO NOT INDICATE THE SIZES AND/OR QUANTITIES OF CONCEALED CONDUITS SERVING LOW VOLTAGE SURFACE MOUNTED RACEWAY SYSTEMS CHANNELS, PROVIDE A MINIMUM OF (1) 1-1/2" PER LOW VOLTAGE RACEWAY CHANNEL FOR EVERY 15 LINEAR FEET OF CHANNEL.
- WHEN EXISTING CONDITIONS, SUCH AS EXISTING CMU WALLS, PRECLUDE(S) USE OF CONCEALED CONDUIT(S) TO SERVE THE SURFACE MOUNTED RACEWAY SYSTEM(S), USE OF VERTICAL RUNS OF SURFACE MOUNTED RACEWAYS IS REQUIRED. SUCH RUNS SHALL BE GENERALLY LOCATED AS FOLLOWS:
  - WITHIN 3 INCHES OF ROOM CORNERS WHERE NO CORNER TRANSITION OR MILLWORK/CASEWORK IS PRESENT.
  - WITHIN 12 INCHES OF ROOM CORNERS WHERE CASEWORK/MILLWORK MEETS WALL SO LONG AS PLACEMENT DOES NOT RESTRICT MILLWORK/ CASEWORK DOOR SWING/DRAWER OPENING.
- COORDINATE EXACT LOCATIONS WITH ARCHITECT VIA SHOP DRAWING SUBMITTAL AND, IF REQUIRED, SURFACE MOUNTED RACEWAY MOCK-UP.
- VERTICAL RUNS OF SURFACE MOUNTED RACEWAY SHALL TERMINATE AT THE UNDERSIDE OF THE CEILING UTILIZING ENTRANCE END FITTING(S) DESIGNED FOR THAT PURPOSE. RACEWAYS PASSING THRU A CEILING OR CONDUITS EXTENDING AND/OR VISIBLE BELOW A CEILING ARE UNACCEPTABLE INSTALLATION PRACTICES. ENTRANCE END FITTINGS/KNOCK-OUTS SHALL BE SIZED AS APPROPRIATE FOR THE SERVICE FEEDING THE RACEWAY SYSTEM. ALL LOW VOLTAGE CABLING ENTRANCES SHALL BE APPROPRIATELY GROMMETED.
- ATTACH SURFACE MOUNTED RACEWAY(S) TO BUILDING STRUCTURE AT INTERVALS NOT MORE THAN 18" ON CENTER. RACEWAY ATTACHMENT ANCHOR SHALL BE MADE DIRECTLY TO BUILDING STUD, BACKING MASONRY SURFACE, OR STRUCTURAL MEMBER. DO NOT ANCHOR RACEWAYS TO DRYWALL, PLASTER OR TILE SURFACES AS THE ONLY SUPPORT FOR THE RACEWAY. PROVIDE WALL BLOCKING AS NECESSARY TO MAINTAIN PRESCRIBED MOUNTING INTERVALS.
  - SINGLE CHANNEL RACEWAY: PROVIDE ONE #14 TRUSS HEAD SCREW EVERY 18" IN WOOD STUD WALLS.
  - TWO CHANNEL RACEWAY: PROVIDE TWO #14 TRUSS HEAD SCREWS EVER 18" IN WOOD STUD WALLS.

**SURFACE MOUNTED RACEWAY SYSTEM DETAIL KEY NOTES:**

- SINGLE CHANNEL SURFACE MOUNTED RACEWAY SYSTEMS AS SPECIFIED ON PLANS AND PER SURFACE MOUNTED RACEWAY SYSTEM SPECIFICATIONS.
- PROVIDE POWER FEEDS AND/OR LOW VOLTAGE CONDUCTORS
- DUAL CHANNEL SURFACE MOUNTED RACEWAY SYSTEMS AS SPECIFIED ON PLANS AND PER SURFACE MOUNTED RACEWAY SYSTEM SPECIFICATIONS.
- ENTRANCE END FITTING(S), KNOCKED OUT FOR THE CORRECT SIZE OF CABLING INSTALLED, AND SECURELY INSTALLED. END FITTING(S) AT CEILINGS TO BE LOCATED BELOW AND FLUSH TO CEILING TILE WITH THREADED CONDUIT NIPPLES W/SUITABLE ANTI-ABRASION BUSHINGS EXTENDING THROUGH CEILING TILE.
- RACEWAY END CAP KNOCKOUTS
- DEVICE(S), FACEPLATE(S) AND LABELING AS REQUIRED PER PLANS AND SPECIFICATIONS. EXACT LABELING STANDARDS VARY BY OWNER, VERIFY EXACT REQUIREMENTS PRIOR TO ORDERING LABELS.
- SINGLE GANG SURFACE MOUNT BOX WITH DEVICES, FACEPLATE AND LABELING AS REQUIRED PER PLANS AND SPECIFICATIONS.

**SURFACE MOUNTED RACEWAY SYSTEM DETAIL**

SCALE: N.T.S.



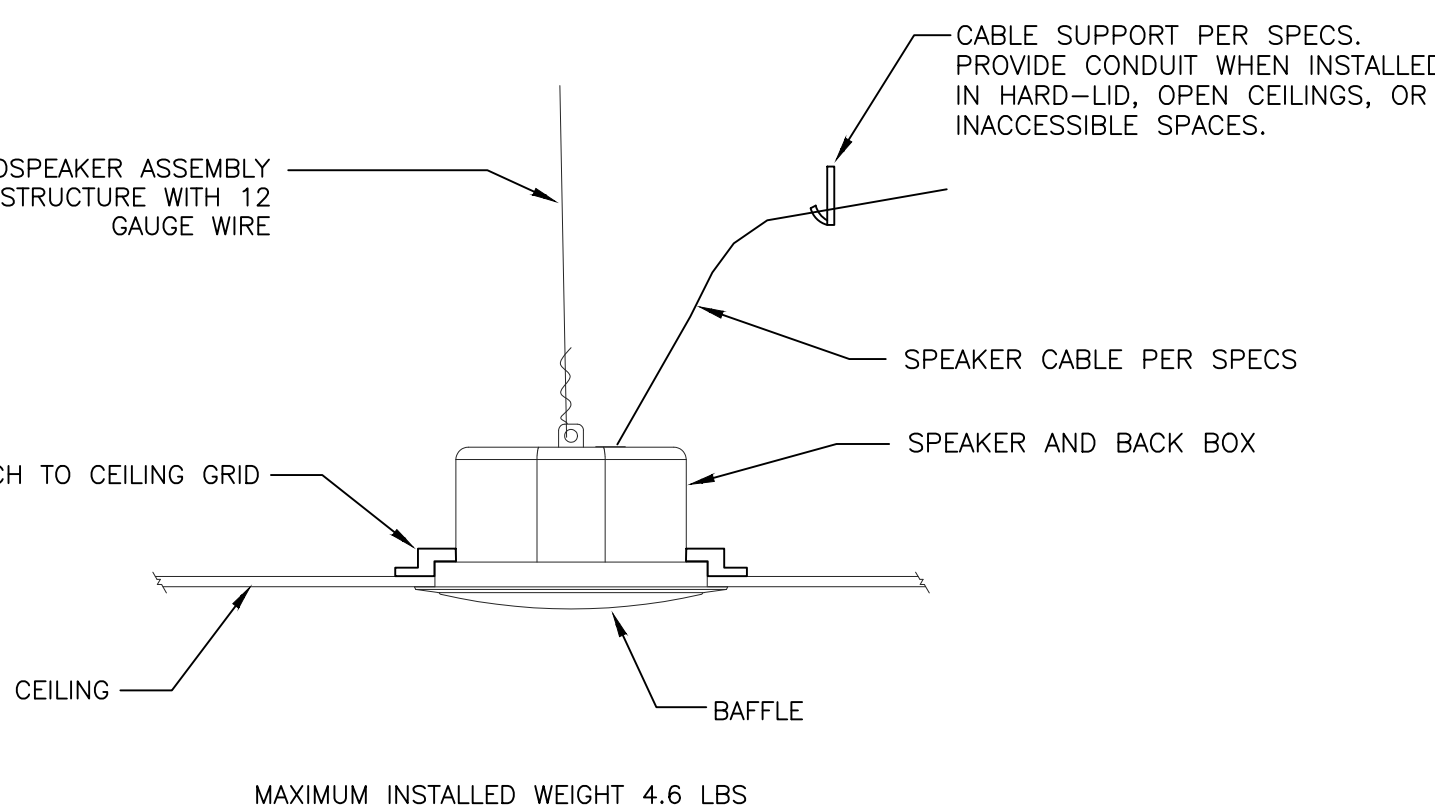
**NOTES:**

- SEE SPECIFICATIONS FOR SPEAKER AND BACKBOX PART NUMBERS.
- PROVIDE WEATHERPROOF SEAL AROUND BOX AND BUILDING STRUCTURE.
- CONTRACTOR SHALL PAINT BAFFLE AND BOX TO MATCH SURROUNDING SURFACES.
- PROVIDE CABLING PER SYSTEM SPECIFICATIONS.
- VERIFY FINAL MOUNTING HEIGHT WITH OWNER IN FIELD PRIOR TO ROUGH-IN.
- MAX. INSTALLED WEIGHT NOT TO EXCEED 10 POUNDS.

**EXTERIOR SPEAKER - SURFACE MOUNT DETAIL**

SCALE: N.T.S.

6



**CEILING-MOUNTED SPEAKER - MOUNTING DETAIL**

SCALE: N.T.S.

5

**KEY NOTES**

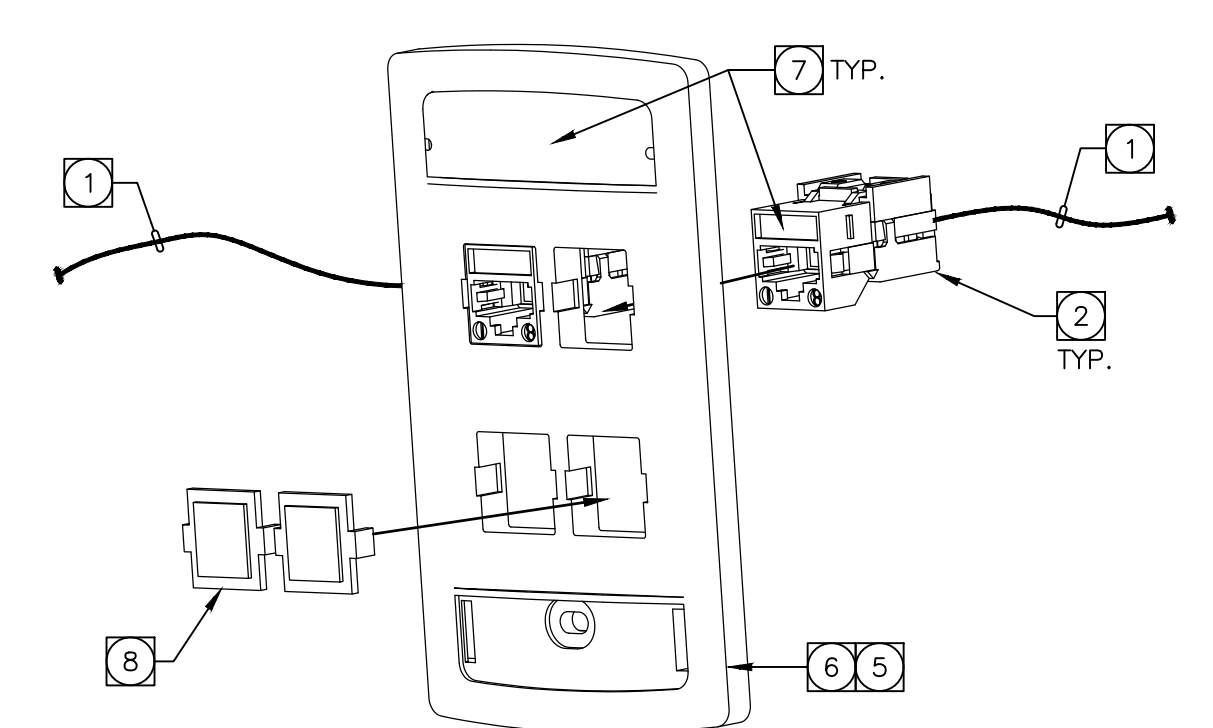
- PROVIDE (1) CAT-6, 4-PAIR UTP CABLE(S) TO RESPECTIVE IDF, COLOR OF CABLE(S) PER DISTRICT STANDARDS. TERMINATE STATION END(S) IN STATION CONNECTOR(S) PER SPECIFICATIONS. TERMINATE RACK END(S) ON CAT-6 PATCH PANEL(S) PER SPECIFICATIONS.
- PROVIDE CAT-6 STATION CONNECTOR PER SPECIFICATIONS.
- INSTALL DEDICATED SUSPENDED CEILING WIRE/HANGAR OR SUPPORT ROD/ROD HANGAR DIRECTLY TO STRUCTURAL CEILING ABOVE TO SUPPORT WAP 2-PORT HOUSING.
- PROVIDE (1) SURFACE MOUNT, PLENUM-RATED DUAL-PORT HOUSING, MOUNTED TO IN-CEILING BRACKET WITH SPRING WIRE MOUNT(LEVITON 49223-CBG OR EQUAL) WHERE APPLICABLE. PROVIDE 15-FT SLACK LOOP NEAR WAP SUSPENSION POINT.
- FOR WALL PHONE DEVICES, PROVIDE A STAINLESS STEEL FACEPLATE WITH STANDARD MOUNTING POSTS TOP AND BOTTOM. MOUNT AT 44" AFF UNLESS OTHERWISE INDICATED ON PLANS. COORDINATE FINAL FACEPLATE TYPE REQUIREMENTS WITH DISTRICT STAFF IN FIELD PRIOR TO ORDERING MATERIALS.
- PROVIDE FACEPLATE PER SPECIFICATIONS. FACEPLATE MATERIAL SHALL BE PLASTIC. COLOR SHALL MATCH ADJACENT ELECTRICAL FACEPLATES.
- PROVIDE FACEPLATE LABELING PER SPECIFICATIONS. SEE SPECIFICATIONS FOR ALL OTHER LABELING REQUIREMENTS.
- BLANK INSERT: ALL UNUSED OPENINGS SHALL BE COVERED WITH A BLANK INSERT MATCHING THE COLOR OF THE FACEPLATE.
- PROVIDE (1) CAT-6A, 4-PAIR UTP CABLE(S) TO RESPECTIVE IDF, COLOR OF CABLE(S) PER DISTRICT STANDARDS. TERMINATE STATION END(S) IN CAT-6A STATION CONNECTOR(S) PER SPECIFICATIONS. TERMINATE RACK END(S) ON CAT-6A PATCH PANEL(S) PER SPECIFICATIONS.
- PROVIDE CAT-6A STATION CONNECTOR PER SPECIFICATIONS.
- PROVIDE 2-PORT SURFACE MOUNT DATA BOX. MOUNT INSIDE CLOCK HOUSING. COORDINATE FINAL LOCATION IN FIELD.

**GENERAL NOTE:**

THE MOUNTING DETAILS ON THIS PAGE SHOULD NOT BE CONSIDERED FULLY DESIGNED AND ARE ONLY INTENDED TO CONVEY THE GENERAL SCOPE INVOLVED IN MOUNTING EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE FOR FINAL DESIGN AND ALL COSTS TO COMPLETE THE INSTALLATION. CONTRACTOR'S CLOSE OUT SUBMITTALS SHALL INCLUDE SHOP DRAWINGS WITH MOUNTING DETAILS DEPICTING MOUNTINGS, MOUNTING HARDWARE, CONDUIT RUNS, PULL BOXES, ETC.

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR STRUCTURED CABLING SYSTEM DRAWINGS:

THE FOLLOWING SHALL BE PROVIDED, AS DEPICTED IN THE FOLLOWING DIAGRAMMATIC CONNECTIVITY DETAIL.

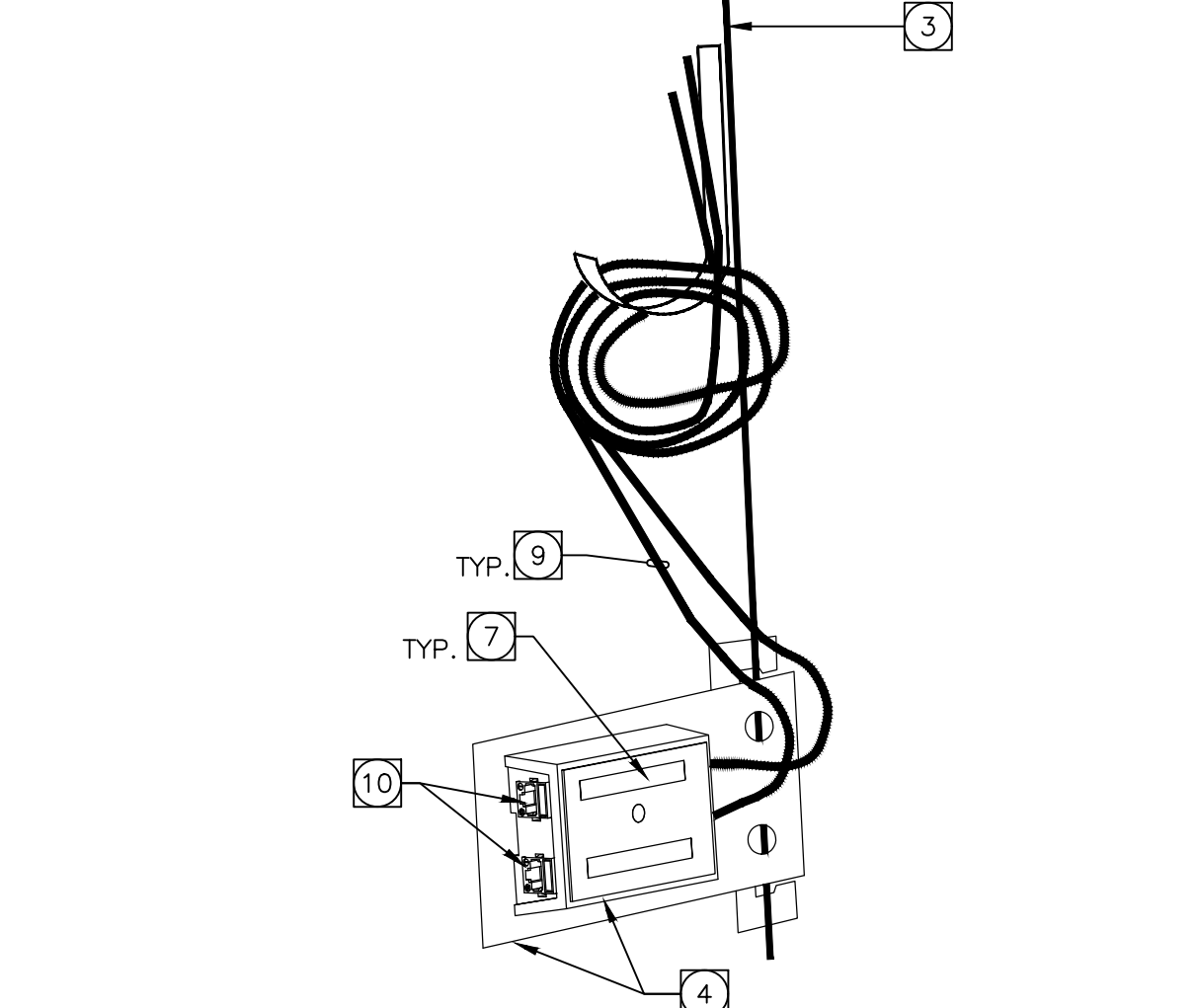


**DUAL DATA DEVICE**

SCALE: N.T.S.

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR STRUCTURED CABLING SYSTEM DRAWINGS:

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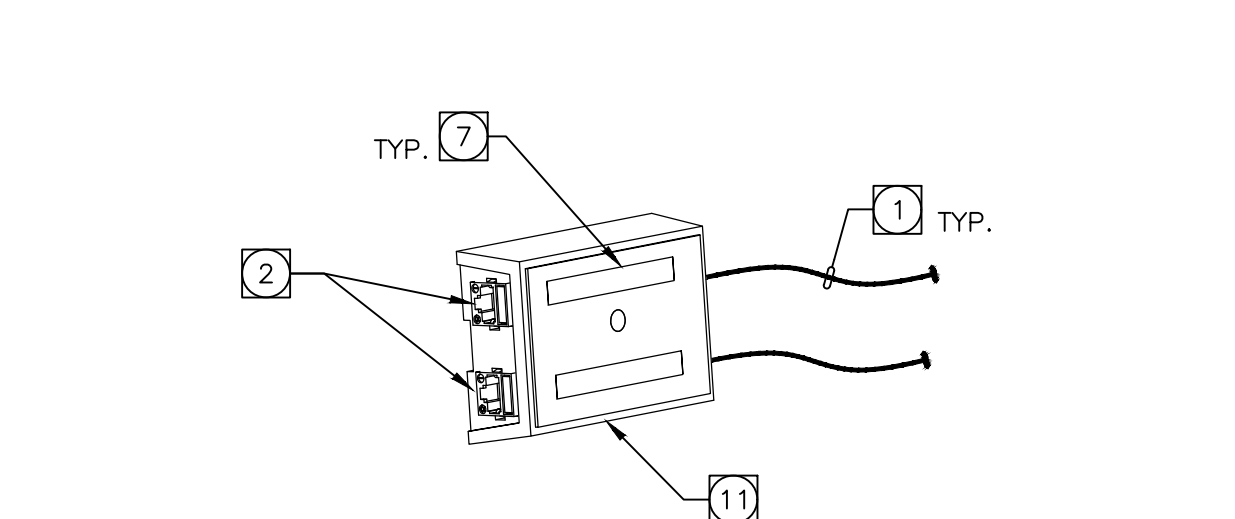


**ABOVE CEILING ACCESS POINT DEVICE**

SCALE: N.T.S.

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR STRUCTURED CABLING SYSTEM DRAWINGS:

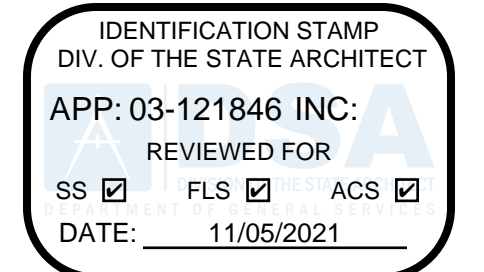
THE FOLLOWING SHALL BE PROVIDED, AS DEPICTED IN THE FOLLOWING DIAGRAMMATIC CONNECTIVITY DETAIL.



**DIGITAL CLOCK DEVICE**

SCALE: N.T.S.

3



ARCHITECT PBK Architects, Inc.  
SOUTHERN CALIFORNIA  
8163 Rochester Avenue, Suite 100  
Rancho Cucamonga  
California 91730-0729  
909-987-9999 P  
**tkisc**  
COLLABORATIVE  
11870 Pierce Street, Suite 160  
Riverside, California 92505  
951-299-4160 www.tkisc.com  
Project Leader - Nikolas Bruno  
tkisc Job #: 2021-0458

Wedge worth ES Portable Relocation

16949 WEDGE WORTH DR.  
HACIENDA HEIGHTS, CA 91745  
CONSTRUCTION DOCUMENTS  
DSA-APPL. NO. 03-121846 DSA FILE NO. 19-38

LA COUNTY REGISTERED PROFESSIONAL ENGINEER  
E15510  
ELECTRICAL  
STATE OF CALIFORNIA

CLIENT HACIENDA LA PUENTE USD  
DATE 10/12/2021 PROJECT NUMBER #####  
DRAWING HISTORY  
No. Description Date  
CONSTRUCTION DOCUMENTS  
DETAILS

E4.02