DESIGN CRITERIA

1. Related Sections: Section 26 05 00 applies.
2. Provide cable tray systems:
   A. For overhead power and communications wiring at checkout stands and gondola shelving. Reference Design Standards 26 27 26-02, 26 27 26-03, 27 15 00-03, 27 15 00-09, 27 15 00-10, 27 15 00-11, 27 15 00-12. Select standards that apply.
   B. For flexible overhead interior power and communications wiring, where appropriate and economical, as an alternative to wiring in conduit or under floors. Consider cable trays for wiring to other moveable fixtures in addition to gondola shelving where appropriate and economical.
3. Size and Location:
   A. Select cable tray size in accordance with NEC 392, based on ultimate anticipated conductor fill (e.g., considering future checkout stands) plus 25%. Minimum width of the cable tray must allow for a minimum-bending-radius 180 degree bend in any cable, so that cable slack may be looped back within the tray. Use dimensions for NEC approved multi-conductor power tray cables and data cables. Where divided cable tray is used to provide separate channels for communication and power wiring, determine the required size of each channel for proper placement of the longitudinal tray barrier. Include all tray size information on the construction documents.
   B. Locate cable trays as inconspicuously as possible, no lower than the bottom of lighting luminaires. Cable trays must be accessible for their entire length. If there is no possible cable tray route that maintains accessibility over the entire length, it is permissible to transition to electrical conduit raceways for the inaccessible portion of the run. The raceways in this portion should maintain separation of power and communications cables, and include one spare 2" conduit with pull cord for each class of service. Where cable trays are visible in customer areas or office environments, paint to match surroundings. Mounting height at checkout stands: If a lay-in ceiling is available, locate the cable tray above the ceiling; if the ceiling is an open type, locate the cable tray high as possible while avoiding conflicts with HVAC ductwork.
   C. Locate cable tray perpendicular to checkout counter line-up and above register locations as indicated in Design Standard Plates. Extend cable tray to self-checkout and monitor stations.
4. Drop Take-Off Arrangement:
   A. Since drops are used to connect with relocatable equipment and fixtures, provide take-off points on the cable tray that can be changed or abandoned and sealed without losing the integrity or appearance of the tray.
   B. Drops may consist of tele-power poles, conduits, vertical cable tray sections, or other approved electrical raceways, as appropriate for the use and location, or as directed.
5. Provide cable tray meeting NEMA Standard VE-1, U.L. listed, and approved as a grounding conductor.
   A. Customer areas with exposed structure ceilings: Solid bottom, non-ventilated, steel; with hinged latching cover, ventilated, steel. Divider barriers shall be steel.
   B. Customer and other areas with accessible ceilings, and non-customer areas with exposed structure ceilings: Basket type cable tray.
   C. Fittings: Provide all fittings required for a complete cable tray installation. Provide vertical and horizontal bends, tees, wyes, reducers, end blanks, cabinet connectors, splice plates, hangers, etc., as required. Bend radii shall support the minimum bending radii of cables installed. Provide C-shape cable tray support hangers to facilitate lay-in placement of wiring in the cable trays.
6. Install cable trays in accordance with the NEC, NECA, Cable Tray Institute Installation Guidelines, and manufacturer's instructions. Configure the cable trays to afford accessibility for adding, removing, or replacing cables. Maintain separation of power and communication cables throughout the system, including at take-off points.

END OF SECTION