

DESIGN CRITERIA

1. The Design Criteria is applicable for Division 32 Sections Hot Mix Bituminous Pavement, Concrete Paving, and Concrete Paving Joint Sealants.
2. The following Regulatory Requirements shall be utilized in the design:
 - a. U.S. Department of Transportation, Manual on Uniform Traffic Control Devices (MUTCD).
 - b. Applicable state and local authority standards and design guidelines.
 - c. Comply with ABA Accessibility Standard for Department of Defense Facilities as adopted by the Deputy Secretary of Defense memorandum dated October 31, 2008.
 - d. Department of Defense Antiterrorism Minimum Construction Standards for Buildings, UFC 4-010-01 which includes minimum standoff distances.
 - e. Civil Engineering, UFC 3-201-01.
3. Internal Roads and Parking Lots. The number of parking spaces shall be as required by DeCA Parking Analysis.
4. Parking Space Dimensions:
 - a. 9'-0" wide, nominal.
 - b. 18'-6" depth, nominal.
 - c. 16'-0" depth on perimeter spaces where overhang does not encroach on sidewalk.
5. Parking and Circulation Aisle Geometry:
 - a. 90 degree parking spaces with two-way parking aisles are preferred. Centerline to centerline width for a double loaded parking bay with two-way aisles shall be 63'-0" minimum.
 - b. 60 degree angle parking with one-way parking aisles shall be allowed only where specific site conditions make angle parking preferable. Centerline to centerline width for a double loaded parking bay with one-way aisles shall be 53'-0" minimum. Conditions which may warrant inclusion of angle spaces include:
 1. Existing adjacent parking lots where angle spaces are utilized, especially if the lots are to be connected.
 2. Previous satisfactory experience with angled parking spaces at existing retail facilities on the Installation.
 3. Site specific conditions that would result in better utilization by use of angled parking spaces.
 4. A significant number of older patrons that may have less difficulty maneuvering in and out of angled spaces.
 - c. Add at least 2'-0" to width of end rows adjacent site obstructions such as buildings.
6. Locate customer parking spaces such that a maximum number of spaces lie within a 300-foot radius of the main customer entrance.
7. If possible, provide a separate parking lot for employees, located proximate to the building's Administrative Entrance. Provide a sidewalk connection from the lot to the Administrative Entrance.

8. Provide striping and signage in accordance with applicable criteria. Traffic control signs shall conform to the requirements of the U.S. Department of Transportation, Manual on Uniform Traffic Control Devices and applicable state and local authorities.
9. Control drainage with gentle swales and an underground drainage system.
 - a. Locate water receiving structures no closer than 100'-0" from front of store.
10. The minimum standoff distance provided from the face of building to the installation perimeter shall be 20 ft. Where there is no clear zone outside the installation perimeter, the minimum standoff distance is 50 ft. (UFC 4-010-01 latest edition, Standard 1).
11. Compliance with the standoff distance requirements for parking and roadways in Appendix B and C of UFC 4-010-01 (latest edition) and UFC 4-020-01 shall be required if one of the following is true:
 - a. The facility has an identified Design Basis Threat (DBT) and a level of protection (LOP). The ATFP planning team for the installation and the building being designed/renovated shall determine if the facility has an identified DBT and LOP, and notify the AE of their findings. When a project has an identified DBT and LOP, the building shall be designed to specifically counter the identified DBT(s) and provide the required LOP, as well as the baseline requirements of the current version of UFC 4-010-01, whichever is more stringent. The building is not required to comply with additional requirements in UFC 4-010-01 Appendix B, (latest edition) and UFC 4-020-01 that are unrelated to countering the identified DBT.
 - b. The facility is located outside the Installation Perimeter as defined in UFC 4-010-01. Installation Perimeter is now defined as "any demarcation identifying the limit of DoD property and directly or indirectly indicating that unauthorized access is prohibited".

It will be critical for projects that fall within either of these categories to have a clear assessment and determination established of the DBT and LOP for the facility prior to design start.

12. Sidewalks:

- a. Provide walkways for pedestrian access to and from parking areas and roadways adjacent to the site.
- b. Make street walks minimum 4'-0" wide when not located directly adjacent to a roadway or curb. When placed continuous with curb or roadway, increase the sidewalk width to a minimum of 6'-0". The maximum curb height is 6" where a sidewalk placed along the back-of-curb.
- c. Typical Sidewalk Cross Section: 5" non-reinforced concrete placed on 2" aggregate bedding. Provide a minimum cross slope of 1.0% and a maximum 2.0%.

13. Front Entry Pedestrian Access:

- a. Provide continuous curbless concrete pedestrian transition ramp along the entire pickup/drop-off lane to allow the smooth transition of grocery carts. Slope pedestrian area immediately in front of the store sufficiently for positive drainage and feather to join the parking surface with flush joint.
- b. Provide additional points of curbless access along the entire front of the building in order to accommodate strollers and shopping carts to all parking spaces within the customer parking area, which may include depressing significant lengths of curb. Bollards or some other form of delineation should be provided to restrict vehicles from driving onto the sidewalk where no barrier curb is provided.
- c. Provide appropriately designed, properly spaced precast decorative concrete site bollards 14" diameter by 24" high to provide definition for the front area from traffic full along the transition ramp. Space bollards at 6'-0" o.c. and locate the face of the bollard a minimum of 12" behind the back of

curb. An alternative bollard design can be used if requested by the Installation and approved by DeCA.

14. Provide clear pedestrian orientation and direction, utilizing variance in pavement texture and/or color, strategic location of planters and bollards, and appropriately designed signage.
15. Accessibility:
 - a. Provide appropriately marked barrier-free access to the building.
 - b. Locate required number of accessible parking spaces on the shortest accessible route of travel from adjacent parking to an accessible entrance.
 - c. Provide post-mounted signs designating accessible parking spaces. Mount signs such that the bottom of the sign is a minimum of 5'-0" above the ground surface.
 - d. Provide a minimum of one van-accessible spaces for every six accessible parking spaces provided.
 - e. Size and Layout: To maximize uniformity within large retail parking lots, it is recommended that all handicap spaces be designed as van accessible. Spaces should be 11'-0" wide with 7'-0" access aisles to maintain dimensional similarity with standard parking. Depending on parking lot configuration, another layout option would be to provide 9'-0" wide van-accessible spaces with a shared 9'-0" wide access aisle between two spaces. Both configurations are permissible in ADA/ABA Guidelines, reference Chapter 5.
 - f. Provide ADA accessible route for pedestrians that does not exceed 2% cross slope or 5% longitudinal slope consistent with ADA/ABA guidelines.
 - g. Do not exceed 2% slope in any direction outside the Commissary vestibule entry and exit locations. Provide a minimum of 1% slope for positive drainage.
 - h. Do not exceed 2% cross slope in any direction within accessible parking or accessible loading areas, or anywhere along the accessible route to the building. Maintain a minimum of 1% slope for positive drainage.
16. Access Roads and Roadways:
 - a. Make the access road between the commissary facility and the customer parking area wide enough to accommodate two-way traffic and allow for a vehicle stopped along the curb. A width of 30'-0" is recommended (24'-0" minimum).
 - b. Lane widths: Thru lanes 12'-0" minimum. Turn lanes 11'-0" minimum.
 - c. Provide perimeter road to allow two-way customer traffic circulation around the perimeter of the parking lot as well as entry/exit and access to the front of the store.
 - d. Service area depth shall be a minimum of 140'-0". If this depth is not possible due to specific site limitations, a lesser dimension may be proposed, subject to DeCA approval, by providing more separation between the dock doors. See Design Standard 111300-01 for additional information.
 - e. Provide continuous concrete curbs and gutters along pavement edges where necessary to integrate with adjacent roads and parking systems. Do not use curbs for internal islands, unless required for proper control and treatment of stormwater. Pavement markings are the preferred method of defining islands within the parking areas.
 - f. Provide a paved access route between the commissary receiving area and the front customer parking lot that will structurally accommodate forklift traffic. Commissary facilities typically have Case Lot Sales in the customer parking area, and forklift vehicles are used to transfer product from the receiving area to the front customer parking lot. It is not desirable or practical to transport this

product through the interior Sales Area. Access should be provided using site circulation drive aisles, not perimeter streets. If a circulation drive is not available, a paved connection will need to be provided that will connect the receiving area with the front customer parking lot. This paved access route is not required to be added to an existing commissary as part of a restoration project.

- g. Provide adequate fire lane access to Commissary as approved by governing Fire Marshal. Obtain information from Fire Marshal regarding the size of equipment used on the Installation. Paint the face of curb along the fire lane red.

17. Pavements:

- a. Base pavement design on soil data and CBR or k value obtained at the proposed site and recommended by the Geotechnical Survey Report.
- b. Design access roads and internal site roads to accommodate minimum 6,000 lb. wheel load.
- c. Design parking area pavements to accommodate minimum 4,000 lb. wheel load.
- d. Rear service area pavement:
 - 1. Distance of 80'-0" back from the building receiving docks: minimum 6" thick, reinforced concrete.
 - 2. Remaining 60'-0" of service area pavement: Heavy Duty Bituminous or concrete.
 - 3. Design service area and access thereto for heavy truck traffic (WB-67 Design Vehicle).
 - 4. When sizing service areas, consider the type, size, and weight of the tractor trailers and trucks used for collecting, transporting, and disposing trash, as well as delivery-type vehicles.
 - 5. Minimum depth of maneuvering area required for trash operation must accommodate outside turning radius of trash trucks and distance required to pull lifting forks clear of container.
 - 6. Provide minimum radius returns of 50'-0" areas for heavy truck traffic movements. Confirm all truck movements can be accommodated (using Auto-Turn or similar software) in service area utilizing a WB-67 Design Vehicle. Encroachment into oncoming traffic lanes shall only be permitted on driveways and in service road areas. No encroachment into oncoming traffic lanes shall be allowed on public streets. Use of three-centered curves should be considered for turning radii serving heavy truck movements, where necessary to avoid encroachment.
 - 7. Determine whether local conditions include deliveries by double semi-trailers and incorporate all criteria necessary to accommodate them, if applicable.
 - 8. Confirm dumpster dimensions and lid operation, if any, used at the Installation during design. Design the trash docks and fencing to properly accommodate the dumpsters used at the specific project. Check slope on the pavement in the area of the dumpster gates to ensure gates do not bind on pavement.

END OF SECTION