FORT HOOD

INSTALLATION DESIGN GUIDE FINAL

THE URBAN COLLABORATIVE, LLC

Report submitted 26 September , 2014
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For:

Fort Hood

Under Contract To:

Fort Worth District
US Army Corps of Engineers

Table of Contents

Part I
Introduction

Introduction

Purpose

The purpose of the Installation Design Guide (IDG) is to provide design guidance for standardizing and improving the quality of the total environment of the installation. This includes not only the visual impact of features on the installation, but also the impact of projects on the total built and natural environment. The improvement of the quality of visual design and development, and the use of sustainable design and development practices has a direct impact on the quality of life for those who live on, work on, or visit the installation.

Audience

The IDG is to be used by all individuals involved in decision-making, design, construction, and maintenance of facilities. The primary users include the following:

- Senior Mission Commander
- Garrison Commander and Staff
- Installation facility planning and design personnel
- Installation facility maintenance personnel
- Installation Management Agency and Region
- U.S. Army Corps of Engineers project managers, design, and construction staff
- Consulting Planners, Architects, Engineers, Interior Designers, and Landscape Architects
- Supporting agencies such as AAFES, DeCA, DoDEA, MEDCOM, tenants, etc.

The ultimate success of the IDG is dependent upon the commitment of the above individuals and organizations working as a team to apply the Army standards.

Organization

This Installation Design Guide is organized to facilitate the preparation and execution of projects to improve the visual image on the installation and to ensure design compliance with Army standards, including sustainability. The core of the IDG consists of the three basic standards dealing with master planning, and and how they are applied USAG-HI:

- Building Envelope Standards including setbacks, building form, building heights, and parking requirements
- Transportation Standards for streets, intersections, service areas, and the pedestrian environment. Includes recommended
- Landscape Design Standards including objectives, guidelines, recommended plant selections, and plant spacing

The appendices are intended to either provide background information to support the primary standards, or provide additional information regarding planning at USAG-HI that is not addressed in other DoD, Army or USAG-HI publications. It is important that the IDG does not duplicate standards and guidelines that are covered by other publications, but includes a list of those references.

Appendix A: Design Reference Matrix
Appendix B: District Plans
Appendix C: Master Plan and Form Based Code Checklist
Appendix D: Design Principles

Introduction

When to Use the Installation Design Guide

This IDG provides installation-specific design data. The general design concepts, recommendations, and standards addressed herein are applicable at Fort Hood. This document will be used as a reference to acquire recommendations and Army standards on the design of all facilities, new roads, road widening, parking, sidewalks and other pedestrian paths, bicycle paths, access control points, utility corridor selection, and utilities. Natural landscaping materials will be cleared and/or planted based on the guidance contained in the IDG.

Maintaining the Installation Design Guide

Keeping the Installation Design Guide up-to-date and accurate will ensure its continued applicability. The Installation Design Guide (IDG) should be revised as mission, budget, standards, and other conditions generate new planning and design requirements. Facility user feedback should also drive revisions. In accordance with AR 210-20, Master Planning for Army Installations, the installation Real Property Planning Board (RPPB) is the adjudicating body for the Installation Design Guide at the installation level. Violations and variances from standards will be reviewed and adjudicated by the RPPB. The Senior Mission Commander will chair an Installation Planning Board (IPB) to review and approve the RPPB's actions.

The IDG will be maintained by the Master Planning Office of the Directorate of Public Works (DPW). Changes to the IDG shall be proposed by RPPD Master Planning, and revision authorized by Director of Public Works. The Garrison Office will request approval from the IMCOM Regional Office to implement change(s). IMCOM Regional Office has the final authorization regarding changes on the IDG.

Using the Design Guide

Use this IDG to determine the general design and construction considerations in the preparation of project plans. The IDG provides design guidelines and Army-wide design standards intended to be used in all projects, regardless of the funding source. The IDG should also be used in developing requirements for programming documents for MCA construction (DD Form 1391), as well as cost estimates and preliminary and final designs (from both in-house and external design sources) involving exterior visual elements on the installation. The following steps illustrate how the design guide is used for the preparation of plans for new construction, renovation, maintenance and repair projects on the installation:

Step 1: Review the design goals, objectives, and principles included in area development plan reports and Appendix C of the IDG.
Step 2: Consult the regulating plan to determine the applicable Building Envelope Standards, Transportation Standards, and Landscape Design Standards.
Step 3: Review the applicable standards in Chapters II-V of the IDG.
Step 4: Site the project and design the building form according to the Regulating Plan, appropriate Building Envelope Standard, and current Anti-Terrorism/Force Protection guidelines. Note the presence of existing utility lines and mature trees.
Step 5: Select structural systems, building materials, and colors Aesthetic Design Guidelines, page 21
Step 6: Select the appropriate landscape materials. The plan should be reviewed by FH's Environmental Department.
Step 7: Assemble all plans documenting conformance to applicable standards and guidelines.

Introduction

Implementing the Installation Design Guide

- IDG Review and Approval: The Commander will chair the RPPB to review and approve projects established using the IDG to meet Army standards. The DPW Staff will conduct Planning and Design Charrettes. (See ACSIM Memorandum, DAIM-ZA, "Planning Charrettes for Military Construction, Army (MCA) Projects" dated 3 Mar 03. See also ACSIM Memorandum, DAIM-FD, "Conducting a Planning Charrette for Military Construction, Army (MCA) Projects" dated 2 Apr 03.)
    - Each tenant organization will participate in the installation RPPB.
    - Each tenant organization will participate in design and planning charrettes.
    - Each tenant organization will provide input into project functional requirements.
    - Each tenant organization will participate in design reviews.
    - Each tenant organization will participate in development of the Prioritization Projects List.

- Agenda Items: Proponents shall submit proposed agenda items related to the IDG for consideration to DPW 15 days prior to the scheduled IPB meeting date. Complete supporting data, recommendations and rationale related to the item must be submitted. DPW will consolidate the proposed agenda items and publish a meeting agenda.

- Compliance: For the IDG to work optimally as a management tool, it is essential that the Master Planner or designated representative establish an understanding of the IDG among the parties concerned with its use. This can best be established at the RPPB level where all installation interests are represented. The DPW staff Master Planner or designated representative shall ensure that the guidelines and requirements of the IDG are readily available to, and understood by, all parties involved in the design of new facilities, design of additions or alterations to existing facilities, or facility maintenance. The Master Planner or designee, acting in support of the RPPB, is the first level reviewer of projects (SRM, MCA, and NAF to include Design Build) and other requests for actions that involve compliance with IDG guidelines and standards. The Garrison Commander, supported and advised by the RPPB, is the final authority in enforcement of the IDG guidelines and standards.

- The Installation Planning Board, chaired by the Senior Mission Commander, will monitor development of the installation planning process and provide guidance to other installation boards and the Garrison Command for areas such as:
    - Strategic Planning
    - Range Planning
    - Real Property Planning
    - Communications Planning

- Project Approval: Project requests, to include a DA Form 4283, shall be submitted to the DPW or equivalent and will include the required Design Team IDG Checklist discussed below.

- Request for Waiver
    - A request for waiver from the Installation Design Guide will be submitted to the Master Planning office for approval by the RPPB.
    - A request for waiver from the Army standards shall be submitted to the Assistant Chief of Staff for Installation Management for approval.

Introduction

Historic Architecture

The visual integrity of historic buildings or districts on the installation will be preserved and protected. The Army's management of historic properties is pursuant to the duties and responsibilities established by Congress under the National Historic Preservation Act (NHPA). The NHPA also created the National Register of Historic Places (NRHP) as the official listing of the nation's historic properties considered worthy of preservation.

When working with historic properties, the Army uses the following three categories:

- Historic Buildings or Structures: These are significant buildings or structures that are listed in or eligible for listing in the NRHP.
- Historic District: A distinct group of buildings, structures or landscapes that possesses significance and is listed in or eligible for listing in the NRHP.
- National Historic Landmarks. Buildings, structures or landscapes listed in the NRHP, but also recognized as nationally significant. National Historic Landmarks can either be listed individually or as a district.

Specific to Fort Hood, consideration must be given to buildings, structures and landscapes when proposing rehabilitation, demolition, new construction, etc. When an undertaking may have an affect on historic properties not covered under any agreement documents, Fort Hood will utilize the 2008 Guidelines for DOD Historic Buildings and Districts (Guidelines for for Historic Buildings and Districts, Heather McDonald and Michelle Michael; Prepared for the Department of Defense Legacy Resource Management Program 2008). Several buildings and locations are designated with historical significance:

- Building 8640, Reynolds House, East Main Cantonment
- Buildings 53, Old Post Chapel, Main Cantonment

Fort Hood contains five buildings types of historical significance including:

- Cold War Era (1946-1989): Unaccompanied Personnel Housing
- World War II and Cold War Era (1939-1989): Army Ammunition Storage Facilities;
- World War II and Cold War Era (1939-1989): Army Ammunition Production Facilities and Plants
- Capehart and Wherry Era Army Family Housing and Associated Structures and Landscape Features
- World War II temporary buildings

In collaboration with the Advisory Council on Preservation, the Army and DoD has implemented Program Comments and Programmatic Agreements for the above building types that fulfill NHPA compliance requirements for these properties.

Fort Hood has seven historic landscapes within the cantonment areas including:

- Capehart-Wherry Family Housing
- Headquarters/Ceremonial
- Hood Army Airfield
- Killeen Base (West Fort Hood)
- Motorpool Corridor
- Railroad and Transportation Corridors
- Unaccompanied Personnel Housing

These historic landscapes are eligible for listing on the National Register IAW with the National Historic Preservation Act (NHPA) of 1966. FHCRM has implemented alternative mitigation measures that clears all but HAAF for current and future Army undertakings. Implementation of alternative mitigation measures at HAAF is currently planed for FY15 which would clear the airfield for all current and future undertakings.

Introduction

Existing Buildings

- When existing buildings are renovated or additions are constructed, the architectural character of the renovation or addition should be compatible with the architectural character of the existing building and the adjacent buildings. This compatibility includes the use of materials, color, shape, size, scale, and massing in the addition or renovation. However, when renovating or adding to historical buildings, one should be able to differentiate between the historic fabric and the new material.
- When additions or major alterations are made, the new work should complement the existing building. Replication of historic buildings is not required, however, it is imperative that modifications and ongoing building maintenance respect and enhance the existing or intended character of each building.
- All additions or alterations will be designed by following the guidelines of the regulating plan and coordinating building envelope standards.

- Detached Storage: Applicable to small and medium-size institutional buildings and to internal-access residential buildings.
  - Storage sheds must be located in an organized fashion near or adjacent to existing structures rather than in open spaces; but as the size of buildings increases, they can be located proportionately farther away.
  - Storage sheds must be located on the private, rather than the public, side of a building.
  - Materials and colors must harmonize with adjacent buildings.
  - The size of storage sheds must be proportionate to the size of adjacent related buildings - between 5% and 10% of floor area of main building.
  - Storage sheds must meet AT/FP standards.

- Attached Storage: Applicable to small residential and institutional buildings.
  - Attached storage must be located at rear or side of building, out of public view, and screened with vegetation where applicable.
  - Materials, colors, and architectural details must match existing building.
  - Attached storage is not appropriate for large buildings.
  - Storage must meet AT/FP standards.

- Windows
  - Maintenance of the original window(s) is the preferred solution for historic buildings and situations where original windows cannot be replicated.
  - Replacement of the original window(s) with identical new window(s) is acceptable.
  - Character of new window must match old. Materials, colors, and architectural details must match existing building. All replacements shall be reviewed by DPW and the State Historic Preservation Office (SHPO).
  - Replacement of the original window(s) with insulated glass window(s) is acceptable.
  - Replaced windows in historic buildings must match character, configuration, arrangement and profiles of the original.
  - Modification
  - Modification of glass area is acceptable when original proportions are maintained.
  - Modify windows in industrial/warehouse buildings only when necessary for thermal efficiency.
  - New fenestration pattern must respect forms and character of windows in existing building.
- Doors
  - Wood or metal doors with glass should generally have between 50 and 75 percent glass area.
  - When building in areas where new buildings match or are similar to existing ones, doors should mimic the aesthetics of their historical prototypes.

Introduction

New Buildings

- New facilities must be built to accommodate emerging requirements and new missions. The goal of the building designer should be to blend the new building with its surroundings and achieve a cohesive appearance on the installation. The building design must respect the context of its surroundings, and ensure compatibility between new and old buildings. New facilities will be designed by following the guidelines of the regulating plan and coordinating building envelope standards.

Building Accessibility

- All structures or facilities, other than the exceptions mentioned below, must meet the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and the Uniform Federal Accessibility Standards (UFAS). The more stringent standards apply in the event of conflicting guidelines. Any building or facility that is specifically restricted by occupancy classification to use only by able-bodied personnel during the expected useful life of the building or facility need not be accessible (military exclusion is provided by UFAS 4.1.4 [2]), but accessibility is recommended since the intended use of the facility may change with time. In particular, the following facilities need not be designed to be accessible:
  - Unaccompanied personnel housing
  - Closed messes
  - Vehicle facilities
  - Aircraft maintenance facilities

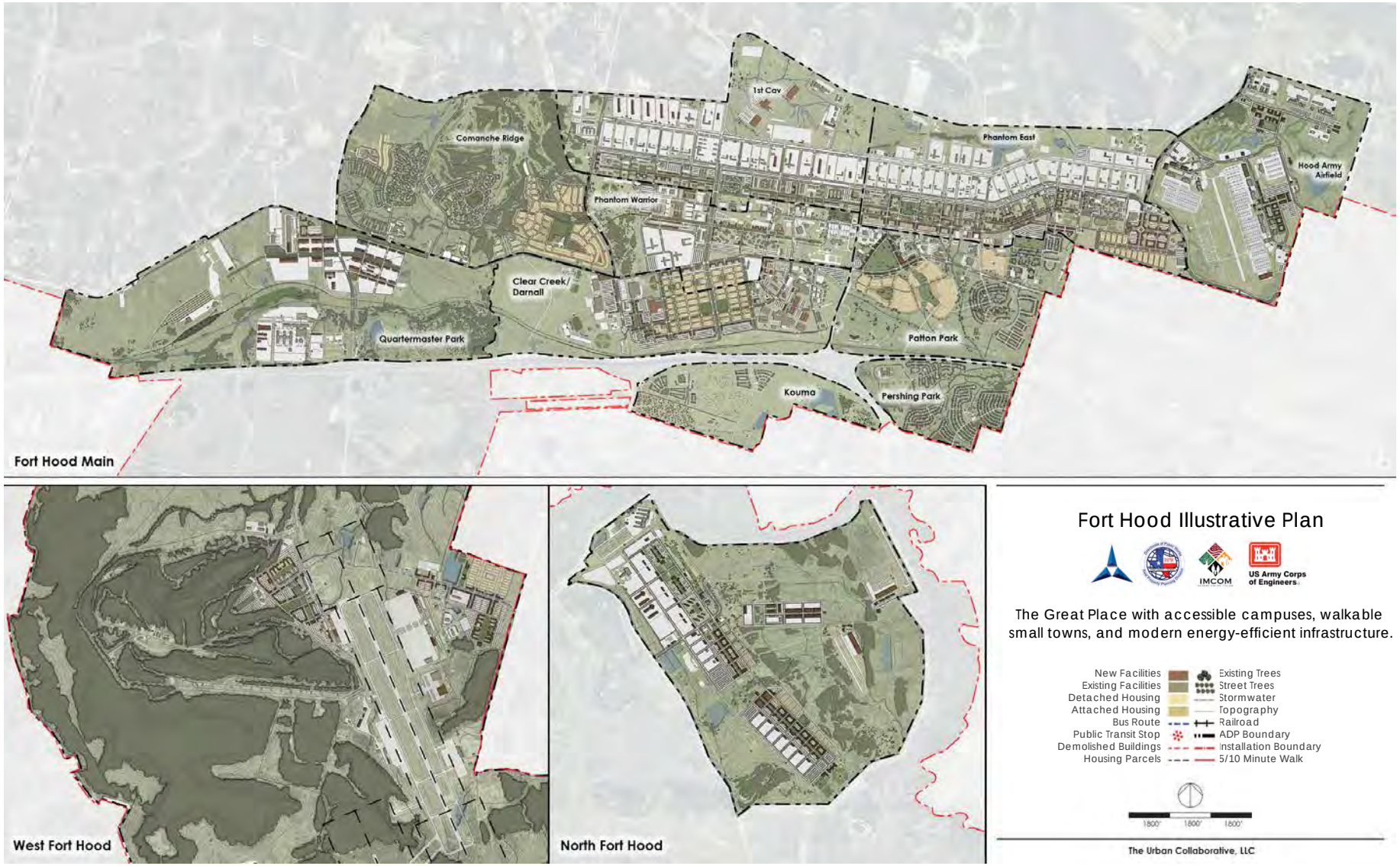
Anti-Terrorism/Force Protection

- Refer to UFC 4-010-01 for current Anti-Terrorism/Force Protection Guidelines.

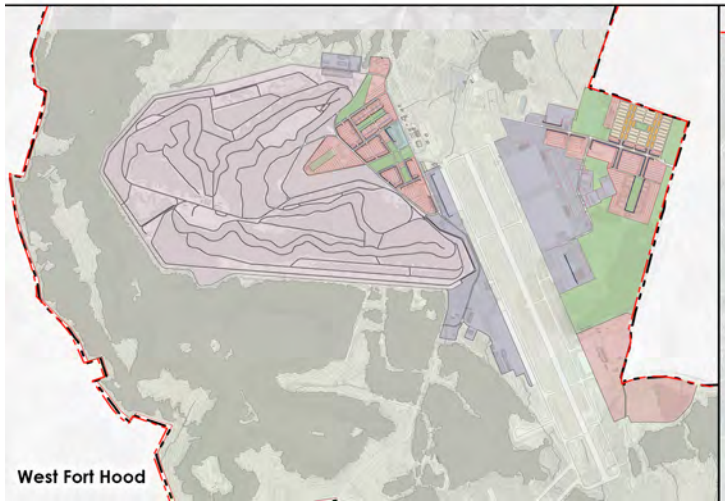
General references:

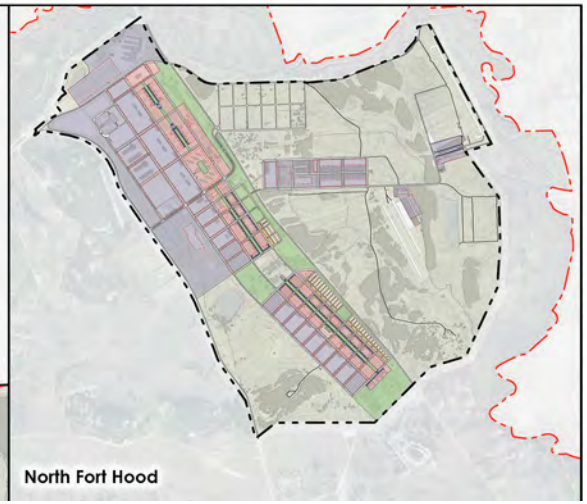
FORT HOOD PLANING AND DESIGN REFERENCES		
Planning/Design Component	**Topics of Interest**	Reference
General	**Accessibility**	Americans with Disabilities Act Accessibility Guidelines (ADAAG)
		Uniform Federal Accessibility Standards (UFAS)
	Anti-terrorism/Force Protection	UFC 4-010-01, DoD Minimum Anti-Terrorism Standards for Buildings

Installation Illustrative Plan



Installation Regulating Plan





Fort Hood Illustrative Plan

US Army Corps of Engineers

The Great Place with accessible campuses, walkable small towns, and modern energy-efficient infrastructure.

- Mixed-Use
- Flex-Use
- Single Family Home
- Townhome
- Industrial/Admin
- Parks and Open Space
- Buildable Area
- Required Build—To Line (BTL)
- Parking Zone
- Required Entry Zone
- Required Entry Location
- 1/3 Minimum/Maximum Building Heights
- ADP Boundary

1800' 1800' 1800'

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Part II
Building Envelope Standards

Building Systems References

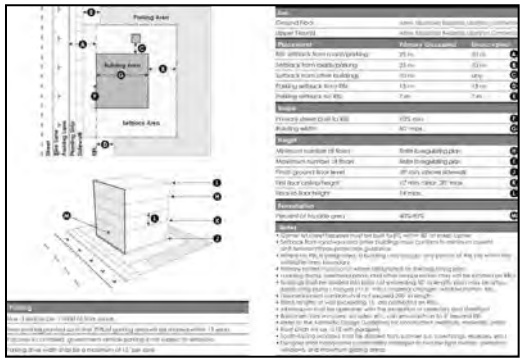
FORT HOOD PLANING AND DESIGN REFERENCES		
Planning/Design Component	**Topics of Interest**	Reference
General	**Accessibility**	Americans with Disabilities Act Accessibility Guidelines (ADAAG)
		Uniform Federal Accessibility Standards (UFAS)
	Anti-terrorism/Force Protection	UFC 4-010-01, DoD Minimum Anti-Terrorism Standards for Buildings
Building Design and Building Systems	**USACE Centers of Standardization**	http://mrsi.usace.army.mil/cos/SitePages/Home.aspx
	Seismic Design	Uniform Facilities Criteria (UFC) 3-300-10, Design: General Structural Requirements
		UFC 3-310-03A, Design: Seismic Design for Buildings
		UFC 3-301-05A, Seismic Evaluation and Rehabilitation for Buildings
	Signage	UFC 3-120-01, Design: Sign Standards
		FH Regulation 420-5 Standard for Signs and Markings, 19 October, 2007
	General	UFC 1-200-01, Design: General Building Requirements
	HVAC	UFC 3-410-01FA, Design: Heating, Ventilating, and Air Conditioning
		UFC 3-410-02, Lonworks Direct Digital Control for HVAC and other Local Building Systems
	Energy Efficiency	UFC 1-200-01, High Performance and Sustainable Building Requirements
	Energy Conservation	UFC 3-400-01, Energy Conservation
	Renewable Energy Systems	UFC 3-440-01, Design: Active Solar Preheat Systems
	Plumbing	UFC 3-420-01, Plumbing Systems
	Electrical	United Facilities Criteria (UFC) 3-520-01, Interior Electrical Systems
	Lighting	UFC 3-530-01 - Design: Interior and Exterior Lighting and Controls
	Fire Protection	UFC 3-600-01, Design: Fire Protection Engineering for Facilities
Interior Design	**Methods, Funding, Requriements**	UFC 3-120-02AN, Design Guide for Interiors *and* ER 1110-345-122, Engineering and Design, Interior Design
	Interior Signage	UFC 3-120-01, Design: Sign Standards
		FH Regulation 420-5 Standard for Signs and Markings, 19 October, 2007
	Interior Planting	USAF Landscape Design Guide, Chapter 20 "Interior Planting"
	Space Planning	AR 405-70, Utilization of Real Property
Communication	**Technical Networks**	NEC Communication Design Guide
	Data Network	
	Premises Distribution Systems	

Building Standard Process

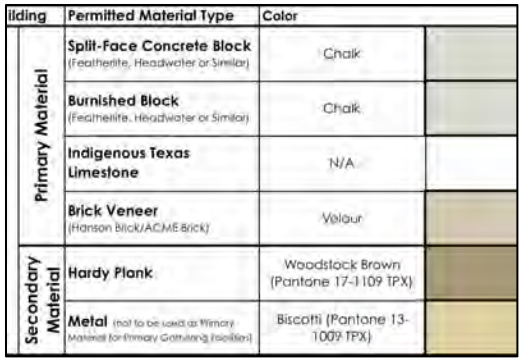
This section includes architectural design standards that regulate the form, setbacks, uses, and support requirements of any given construction project at Fort Hood. Together with the Regulating Plan, these standards create a form-based code that will facilitate mission readiness and walkable development patterns in support of the installation's vision and each district Area Development Plan. The Illustrative Plan and Regulating Plan for each district can be found in Appendix A

How to use the standards:

Step 1: Refer to the Regulating Plan for the appropriate district (see Appendix A) and find the site. Note the Required Building Line (RBL) and the Parking Setback Line. Note the color of the site block – this determines the building envelope standard for all buildings in this area. See the key in the regulating plan.



Step 2: Refer to the appropriate building envelope standard page in this section. This page outlines the basic requirements for building on this site in terms of height, siting, elements and uses.



Step 3: Refer to the Aesthetic Design Guidelines (see page 21)and Interior Building Standards (Section V) for building construction methods, materials, and colors.
NOTE: Aesthetic Design waivers go through the FH RPPB.

Regulating Plan Summary

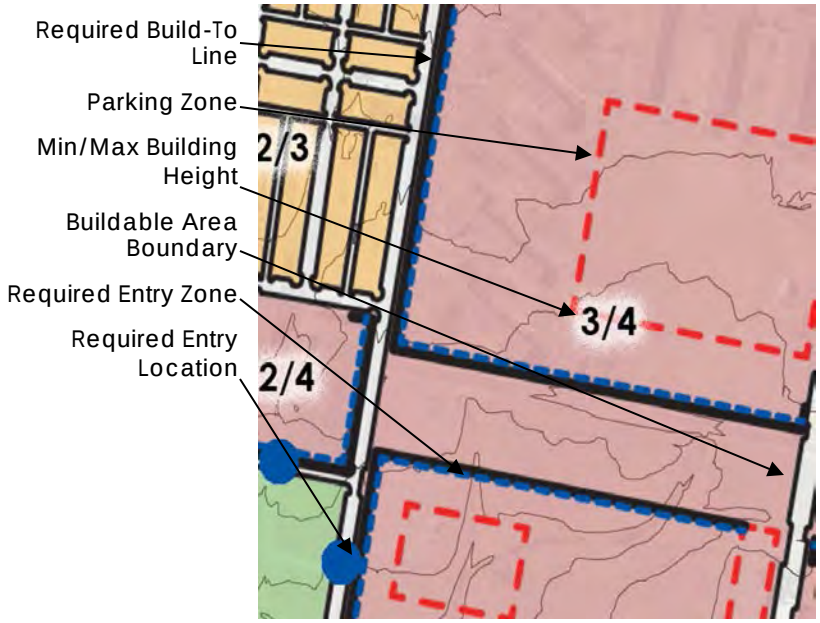
The Regulating Plan is the controlling document and principal tool for implementing the study area form-based code. It identifies the Building Envelope Standard for each building site and any specific characteristics assigned to it.

The definitions below serve as a reference to explain the elements:

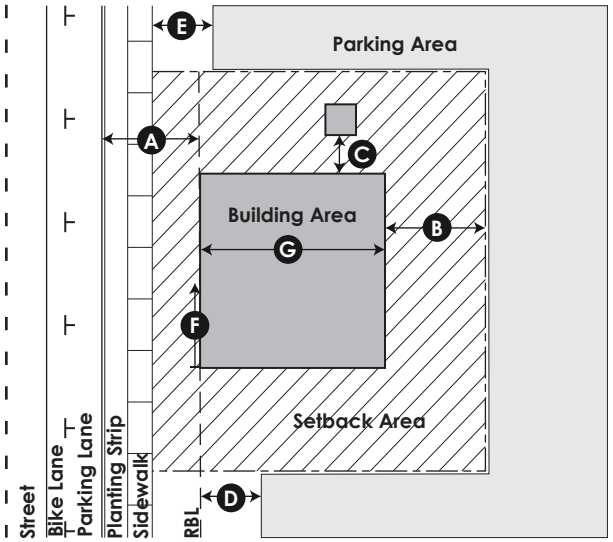
- Required Entry Zone: A blue dashed line indicating a facade that must include a building entry.
- Required Entry Location: A blue circle indicating a location where a building entry is required.
- Required Build-To Line: A thick black line where a percentage of the building façade must be located (see Building Envelope Standards for specific percentages).
- Min/Max Building Height: Two numbers indicating the minimum and maximum number of levels a building may have within the coordinating building area boundary.
- Building Area Boundary: A highlighted area showing the maximum extent of buildable area on a parcel.
- Parking Zone: A red dashed line indicating the maximum allowable area to be used for parking.

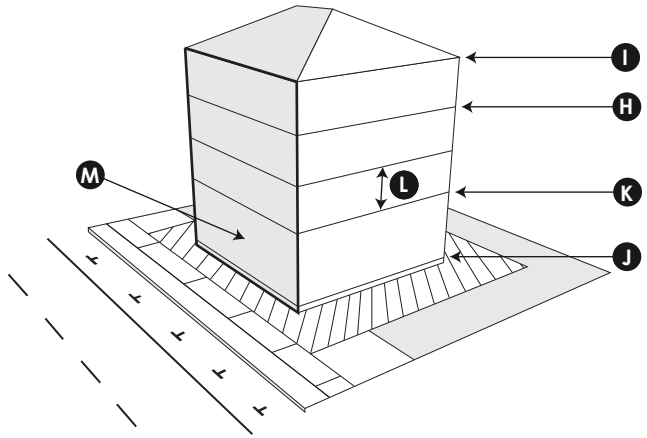
Specific Notes on Regulating Plan

- Unless otherwise noted, all buildings shall maintain a width of 50’ or less to maximize natural light.
- Undeveloped lots shall not be developed into parking areas unless specifically noted as a parking area on the regulating plan. As a rule, all parking, unless otherwise designated on the plan, shall be located to the sides or to the rear of buildings.
- Existing buildings that are not slated for demolition are not required to meet the guidelines of the Regulating Plan. Only buildings constructed on redeveloped lots must meet the requirements. Should a design team wish to deviate from the Regulating and Transportation Plans, they must follow the Variance established by the installation.



Building Standard – Flex-Use





Use		
Ground Floor	Admin, Residential, Laboratory, Commercial	
Upper Floor(s)	Admin, Residential, Laboratory, Commercial	
Placement		
RBL setback from roads/parking	11 m	A
Setback from roads/parking	11 m	B
Setback from other buildings	any	C
Parking setback from RBL	15 m	D
Parking setback no RBL	7 m	E
Shape		
Primary street built to RBL	70% min.	F
Building width	50' max.	G
Height		
Minimum number of floors	Refer to regulating plan	H
Maximum number of floors	Refer to regulating plan	I
Finish ground floor level	18" min. above sidewalk	J
First floor ceiling height	12' min. clear, 20' max.	K
Floor-to-floor height	14' max.	L
Fenestration		
Percent of facade area	40%-90%	M

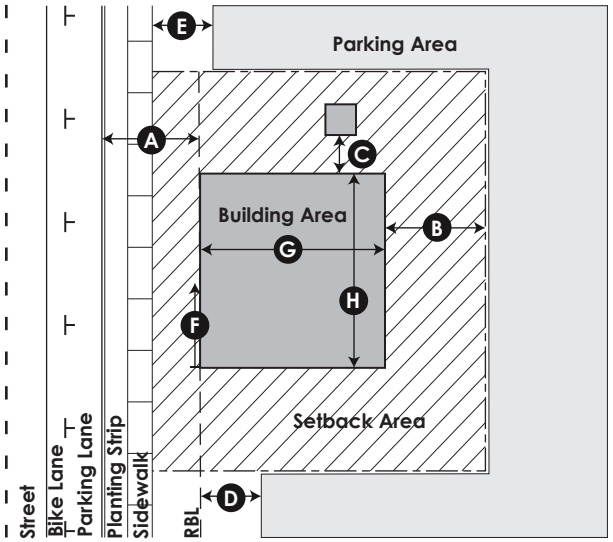
Notes

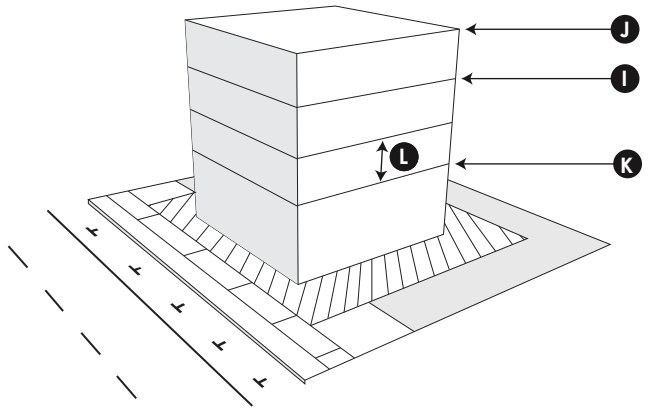
- Corner lot street facades must be built to RBL within 30' of street corner
- Setback from roadways and other buildings must conform to minimum current anti-terrorism/force protection guidance
- Where no RBL is designated, a building may occupy any portion of the site within the buildable area boundary
- Primary entries must occur where designated on the regulating plan
- Loading docks, overhead doors, and other service entries may not be located on RBLs
- Buildings shall be divided into bays not exceeding 50' in length: bays may be articulated using plane changes (+/-6" min.), material changes, window rhythm, etc.
- Double-loaded corridors shall not exceed 200' in length
- Blank lengths of wall exceeding 15' are prohibited on RBLs
- All windows shall be operable, with the exception of clerestory and storefront
- Balconies, bay windows, arcades, etc. can encroach up to 2' beyond RBL
- Roof pitches of 4:12 or less are allowable; 2:12 minimum on maint. bldgs and warehouses
- South-facing windows shall be shaded from summer sun (overhangs, recesses, etc.)
- Designer shall incorporate sustainability strategies to include light shelves, clerestory windows, and maximum glazing areas

Parking
Max. 3 spaces per 1,000sf of floor space
Trees shall be planted such that 70% of parking area will be shaded within 15 years
If access is controlled, government vehicle parking is not subject to setbacks
Parking drive width shall be a maximum of 15' per lane

* RBL- Required Build-to Line

Building Standard – Industrial





Use		
Ground floor	Industrial, Administrative	
Upper floor(s)	Industrial, Administrative	
Placement		
RBL setback from roads/parking	11 m	A
Setback from roads/parking	11 m	B
Setback from other buildings	any	C
Parking setback from RBL	15 m	D
Parking setback no RBL	7 m	E
Shape		
Primary street built to RBL	70% min.	F
Building width	no max.	G
Building length	no max.	H
Height		
Minimum number of floors	Refer to Regulating Plan	I
Maximum number of floors	Refer to Regulating Plan	J
First floor ceiling height	no max.	K
Floor-to-floor height	no max.	L

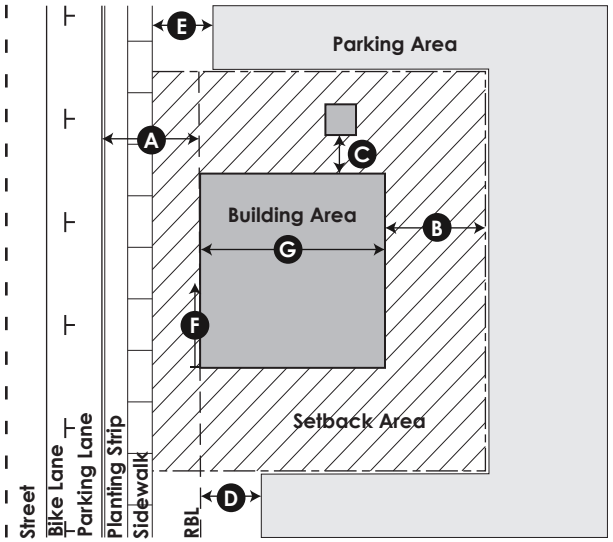
Parking
Shall be based on program occupant load
If access is controlled, government vehicle parking is not subject to setbacks
Parking drive width shall be a maximum of 20' per lane

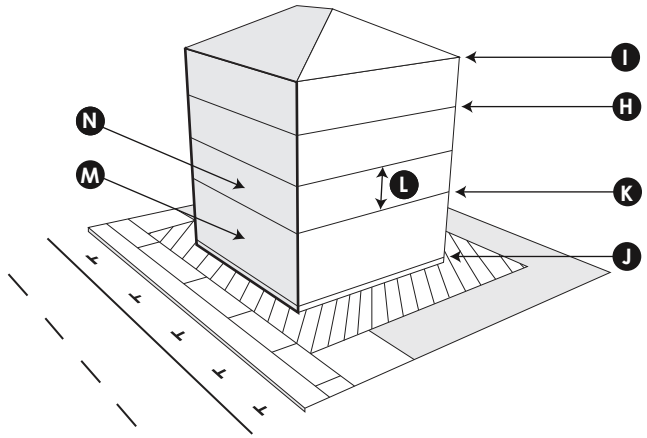
Notes

- Setback from roadways and other buildings must conform to minimum current anti-terrorism/force protection guidance
- 70% of all buildings must be built within the buildable area boundary
- Where no RBL is designated, a building may occupy any portion of the site within the buildable area boundary
- Primary entries must occur where designated on the regulating plan
- Blank lengths of wall exceeding 15' are prohibited on RBLs
- All windows shall be operable, with the exception of clerestory and storefront
- Balconies, bay windows, arcades, etc. can encroach up to 2' beyond RBL
- Roof pitches of 4:12 or less are allowable; 2:12 minimum on maint. bldgs and warehouses
- Roof pitch for SSMR is 2:12 minimum for SSMR: 1/4:12 for Thermoplastic polyolefin (TPO)
- South-facing windows shall be shaded from summer sun (overhangs, recesses, etc.)
- Designer shall incorporate sustainability strategies to include light shelves, clerestory windows, and maximum glazing areas

* RBL- Required Build-to Line

Building Standard – Mixed-Use





Use	
Ground floor	Commercial, Administrative
Upper floor(s)	Residential
Placement	
RBL setback from roads/parking	11 m (A)
Setback from roads/parking	11 m (B)
Setback from other buildings	any (C)
Parking Setback from RBL	15 m (D)
Parking Setback no RBL	7 m (E)
Shape	
Primary Street built to RBL	70% min. (F)
Building width	50' max. (G)
Height	
Minimum number of floors	Refer to regulating plan (H)
Maximum number of floors	Refer to regulating plan (I)
Finish Ground Floor Level	18" min. above sidewalk (J)
First Floor Ceiling Height	12' min. clear, 20' max. (K)
Floor to Floor Height	14' max. (L)
Fenestration	
Percent of Facade Area (Ground Floor)	60%-90% (M)
Percent of Facade Area (Upper Floors)	40%-70% (N)

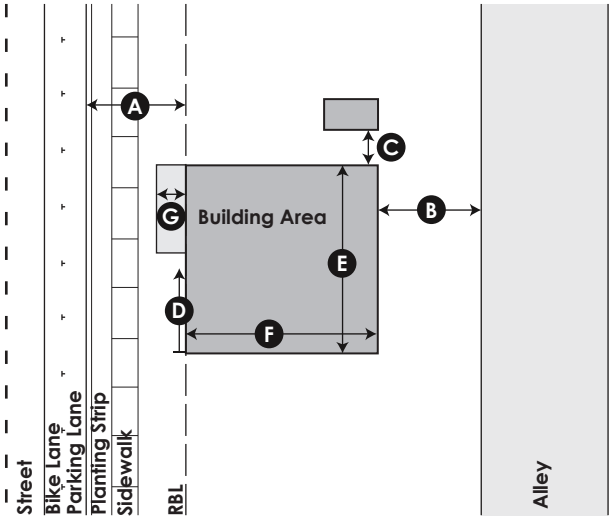
Parking
Max. 3 spaces per 1,000sf of floor space
Trees shall be planted such that 70% of parking area will be shaded within 15 years
If access is controlled, government vehicle parking is not subject to setbacks
Parking drive width shall be a maximum of 15' per lane

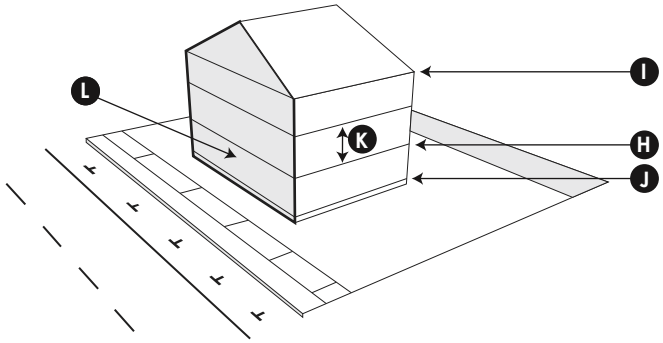
Notes

- Corner lot street facades must be built to RBL within 30' of street corner
- Setback from roadways and other buildings must conform to minimum current anti-terrorism/force protection guidance
- Where no RBL is designated, a building may occupy any portion of the site within the buildable area boundary
- Primary entries must occur where designated on the regulating plan
- Loading docks, overhead doors, and other service entries may not be located on RBLs
- Buildings shall be divided into bays not exceeding 50' in length: bays may be articulated using plane changes (+/-6" min.), material changes, window rhythm, etc.
- Double-loaded corridors shall not exceed 200' in length
- Blank lengths of wall exceeding 15' are prohibited on RBLs
- All windows shall be operable, with the exception of clerestory and storefront
- Balconies, bay windows, arcades, etc. can encroach up to 2' beyond RBL
- Roof pitches of 4:12 or less are allowable; 2:12 minimum on maint. bldgs and warehouses
- South-facing windows shall be shaded from summer sun (overhangs, recesses, etc.)
- Designer shall incorporate sustainability strategies to include light shelves, clerestory windows, and maximum glazing areas

* RBL- Required Build-to Line

Building Standard – Single-Family Home





Use	
Ground floor	Residential, Parking
Upper floor(s)	Residential
Placement	
Setback from roadways	10' (A)
Setback from alley	no min. (B)
Setback from adjacent lots	5' min. (C)
Shape	
Primary street built to RBL	70% min. (D)
Building length	50' max. (E)
Building width	50' max. (F)
Covered porch depth	6' min. (G)
Height	
Minimum number of floors	1 floor (H)
Maximum number of floors	3 floors (I)
Finish ground floor level	24" min. above sidewalk (J)
Floor-to-floor height	14' max. (K)
Fenestration	
Percent of facade area	30%-70% (L)

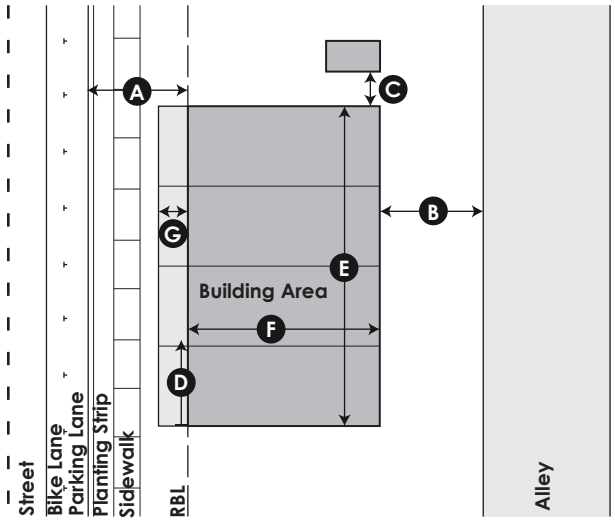
Notes

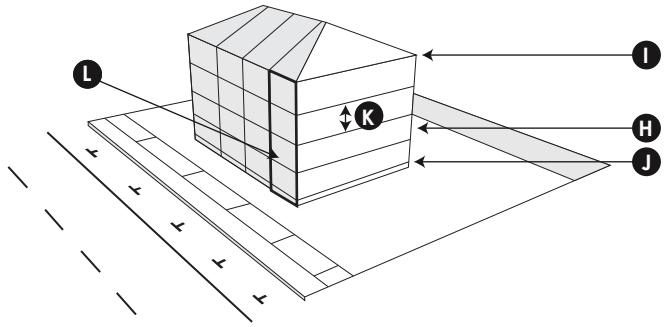
- Setback from roadways and other buildings must conform to minimum current anti-terrorism/force protection guidance, unless minimum is less than 10': in this case, setback shall be 10' from roadway
- Primary entries must occur where designated on the regulating plan
- Main entries must face the street
- Blank lengths of wall exceeding 15' are prohibited on RBLs
- All windows shall be operable
- Balconies, bay windows, arcades, etc. can encroach up to 2' beyond RBL
- Roof pitches of 4:12 or less are allowable; 2:12 minimum on maint. bldgs and warehouses
- South-facing windows shall be shaded from summer sun (overhangs, recesses, etc.)
- Designer shall incorporate sustainability strategies to include light shelves, clerestory windows, and maximum glazing areas

Parking
One covered and one uncovered space required per unit
Parking within the structure or in a detached covered structure is allowable, provided that the entry is to the side or rear of main structure
Designated garage entries and alleys shall be the sole means of vehicular access to a site
Parking drive width shall be a maximum of 15'

* RBL- Required Build-to Line

Building Standard – Townhome





Use	
Ground floor	Residential, Parking
Upper floor(s)	Residential
Placement	
Setback from roadways	10' (A)
Setback from alley	no min. (B)
Setback from other buildings	10' min. (C)
Shape	
Primary street built to RBL	70% min. (D)
Building length	12 units max. (E)
Building width	50' max. (F)
Covered porch/stoop depth	6' min. (G)
Height	
Minimum number of floors	1 floor (H)
Maximum number of floors	4 floors (I)
Finish ground floor level	24" min. above sidewalk (J)
Floor-to-floor height	14' max. (K)
Fenestration	
Percent of facade area	30%-70% (L)

Notes

- Setback from roadways and other buildings must conform to minimum current anti-terrorism/force protection guidance, unless minimum is less than 10: in this case, setback shall be 10' from roadway
- Primary entries must occur where designated on the regulating plan
- Main entries must face the street
- Blank lengths of wall exceeding 15' are prohibited on RBLs
- All windows shall be operable
- Balconies, bay windows, arcades, etc. can encroach up to 2' beyond RBL
- Roof pitches of 4:12 or less are allowable; 2:12 minimum on maint. bldgs and warehouses
- South-facing windows shall be shaded from summer sun (overhangs, recesses, etc.)
- Designer shall incorporate sustainability strategies to include light shelves, clerestory windows, and maximum glazing areas

Parking
One covered and one uncovered space required per unit
Parking within the structure or in a detached covered structure is allowable, provided that the entry is to the side or rear of main structure
Designated garage entries and alleys shall be the sole means of vehicular access to a site
Parking drive width shall be a maximum of 15'

* RBL- Required Build-to Line

Aesthetic Design Guidelines

Building		Permitted Material Type	Color *							
Exterior Walls	Primary Material	**Split-Face Concrete Block** (Featherlite, Headwater or Similar)	Chalk		Navaho		Apache Brown		Charcoal	
		Burnished Block (Featherlite, Headwater or Similar)	Chalk		Navaho		Apache Brown		Charcoal	
		Indigenous Texas Limestone	N/A							
		Brick Veneer (Hanson Brick/ACME Brick)	Velour		Doeskin		Paloma Gray		Ko-Ko Brown	
	Secondary Material	**Hardy Plank**	Woodstock Brown (Pantone 17-1109 TPX)		Timber Bark (Pantone 18-1110 TPX)		Sandstone Beige (Pantone13-0513 TPX)		Autumn Tan (Pantone 15-1217 TPX)	
		Metal (not to be used as Primary Material for Primary Gathering Facilities)	Biscotti (Pantone 13-1009 TPX)							
Roof		**Standing-Seam Metal**	Silver Lining (Pantone14-4501TPX)		Snow White (Pantone 11-0602 TPX)		Galvalume			
		Single-Ply Roofing (TPO)	N/A							
Fenestration		**Storm Doors and Exterior Window Frames**	Clear Anodized Aluminum Frame						Ash Grey	
		Glass	Light Bronze		Light Green (North Fort Hood Only)		Light Blue (Hangars Only)			
		Awnings and Canopies	Clear Anodized Aluminum							
		Insulated Hollow Metal Doors and Frames	Silver Mink (Pantone 17-1312)							
Window Sill/Door Lintel		**Cast Stone**	Tan		Cream		Buff			
		Indigenous Limestone	Tan		Cream		Rust			
Exterior Metal		**Gutters & Downspouts, Fascia, Columns, etc**	Silver Mink (Pantone 17-1312)							
		Louvres, Handrails, Stairs, Bike Racks, Gates, etc	Silver Mink (Pantone 17-1312)							

* Colors in this chart are approximations based on industry standards and the manufacturers listed.

NOTE: Waivers to these standards must go through the FH RPPB.

Part III
Transportation Standards

Transportation References

FORT HOOD PLANING AND DESIGN REFERENCES		
Planning/Design Component	**Topics of Interest**	Reference
Transportation	**Access Control Points (ACPs)**	USACE ACP Standard Design, May 2013
	Transportation Publications	Army Regulation (AR) 420-72, Transportation Infrastructure and Dams
		TI 804-11, Design for Non-Organizational or Privately Owned Vehicle (POV) Site Circulation and Parking
		TM 5-811-1/Air Force AJMAN 32-1080, Electric Power Supply and Distribution
		Manual of Uniform Traffic Control Devices (MUTED)
		TM 5-822-2, General Provisions and Geometric Design for Roads, Streets, Walks, and Open Storage Areas
		Military Traffic Management Command Transportation Engineering Agency (MTMCTEA)
	Associated Publications	UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings
		Americans with Disabilities Act Accessibility Guidelines (ADAAG)
		Uniform Federal Accessibility Standards (UFAS)
	Street, Building and Wayfinding Signage	UFC 3-120-01, Design: Sign Standards
		FH Regulation 420-5 Standard for Signs and Markings, 19 October, 2007

Introduction

The image and functionality of the installation is greatly determined by the design and location of roadways, walkways, entrances, and parking lots. The primary roadway system and parking lots utilize considerable amounts of land and are a visually dominant element of any installation. The circulation system provides a primary vantage point from which all installations are viewed. Safe and efficient vehicular movement results in better orientation and contributes to the development of a positive environment for installation personnel and visitors. Roadways, pedestrian walkways, and bicycle trails will be designed to provide a hierarchy of circulation design and carrying capacity. Functionally, a hierarchical network can be created that separates incompatible types of traffic. This separation of traffic promotes sustainability because it results in more efficient energy consumption. Visually, the circulation hierarchy can be reinforced through design, planting, signage, and lighting to promote a more attractive visual experience and promote a sense of orientation.

This section consists of:

- Drawing details of the eight street standard types used at Fort Hood
- Drawing details of the intersection standard types used at Fort Hood
- Drawing details of parking standards for Fort Hood
- Charts with the dimensions of each street on Fort Hood, by district
- Pedestrian Standards

How to Use the Standards

Step 1: Determine the name of the street or intersection in question using the district's Illustrative Plan or installation map.
Step 2:, Refer to the appropriate street or intersection standard page in this section. This page provides overall design details for vehicular traffic lane widths, curb radii, sidewalk, bike lane, and tree planting area dimensions, and on-street parking configurations for each street of intersection type illustrated in the plan. This page outlines the dimensions of each component of the transportation network, shows their interactions, and where necessary, their separations.
Step 3: Refer to the appropriate district chart for the street's specific dimensions.

Overall Widths
Regulates the widths of the right-of-way.

Lane & Edges
Regulates the widths of individual street components.

Street Trees
Requires the use of native tree species and recommends street tree spacing.

Typical Lane Width for Desired Street Speed
Lists lane widths to accommodate various speeds.

Typical Parking Width for Desired Street Speed
Lists on-street parking space widths to accommodate various speeds.

Building Setbacks
References current Anti-Terrorism/Force Protection guidelines.

Street Dimensions
Regulates the width of each street and the protrusion of curb bulb-outs.

Crosswalk Dimensions
Regulates the length and width of each crosswalk.

Street Corner Radius
Regulates the radius of the curb.

Planting Strip Dimensions
Regulates the width of planting strips and the spacing of street trees within the planting strip.

Intersection Locations
Lists the locations where the instersection occurs.

Notes
Regulates the treatment of the planting strip and the need for an on-street parking door swing. References Landscape Design Guidelines.

Step 4: Refer to the Landscape Design Standards (see page 70) for trees, shrubs, and ground cover species recommended for use in planting strips and medians.

Street Standards

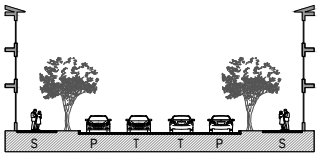
The seven street types described on this page, based on those defined in "Great Streets", by Allan Jacobs, are characterized by the following elements:

S – Sidewalk
P – Parking Lane
B – Bike Lane
T – Traffic Lane
M – Median

Though some elements of the streets, such as number of traffic lanes, can vary based on site specifics, the ideal configurations are defined below.

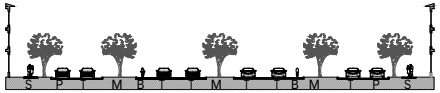
The following pages contain diagrams of each street type, including plans, sections and dimensions.

Main Street
2 traffic lanes, undivided, parking



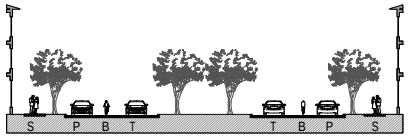
Main streets are the core streets in densely developed areas, with slower traffic that share traffic lanes with bicycles. Sidewalks ideally extend to building edge.

Multiway Boulevard
6 traffic lanes, divided, bike lanes, on-street parking



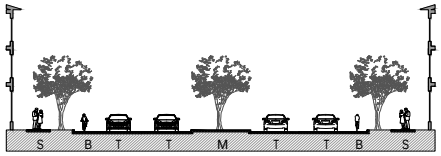
Multiway Boulevards are high-capacity roads that provide for multi-modal transportation. The center lanes are two lanes of divided traffic in each direction, and include bicycle lanes and left-hand turn access. Next is median separating a lane of slower moving traffic and a lane for on-street parking.

Parkstreet
2 or 4 traffic lanes, divided, on-street parking



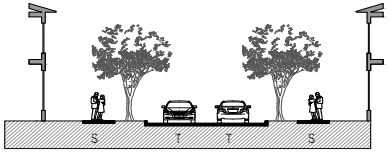
Parkstreets provide two-way traffic that is divided by a large open space, which could be a park block, parking lot or other landscape feature. They can carry two or four lanes of traffic, and may have marked bike lanes and on-street parking.

Boulevard
4 traffic lanes, divided, bike lanes



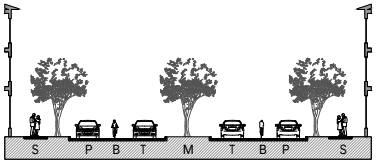
Boulevards are high-capacity roadways that carry two-way traffic on four lanes. A median separates the directional traffic and provides left-hand turn access. Because they are intended for higher speeds, boulevards do not typically have on-street parking, but should have marked bike lanes.

Neighborhood Street
2 traffic lanes, undivided



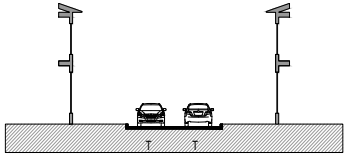
Neighborhood streets are simple two-lane, undivided roadways that carry slower, two-way traffic. They typically do not have marked parking or bicycle lanes, though the street widths allow for on-street parking.

Avenue
2 traffic lanes, divided, bike lanes, on-street Parking



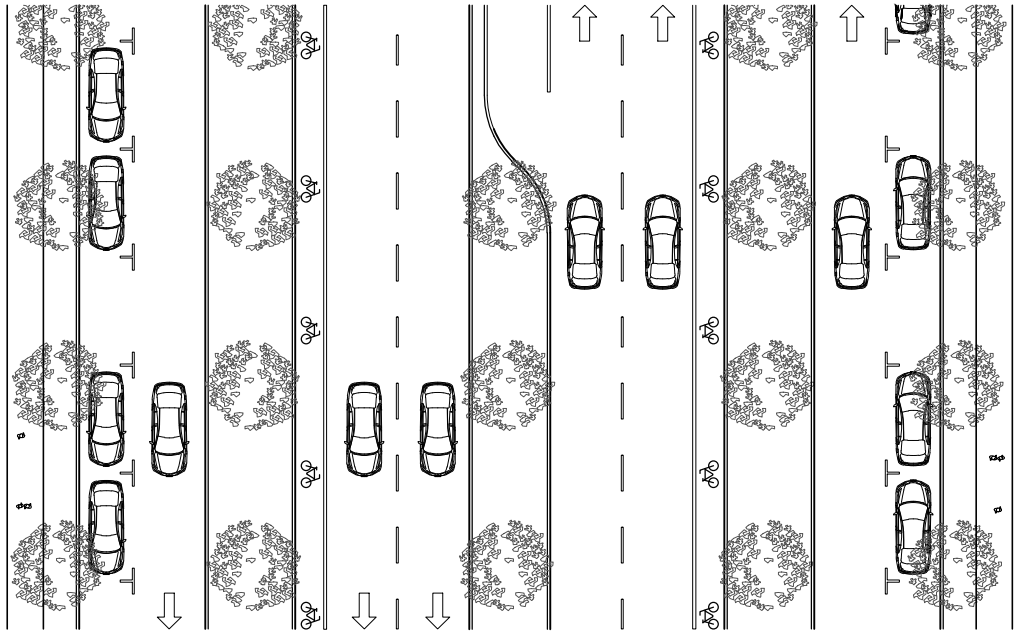
Avenues are two-lane roads that can have a median accommodating a left turn lane. They may have both on-street parking and marked bicycle lanes.

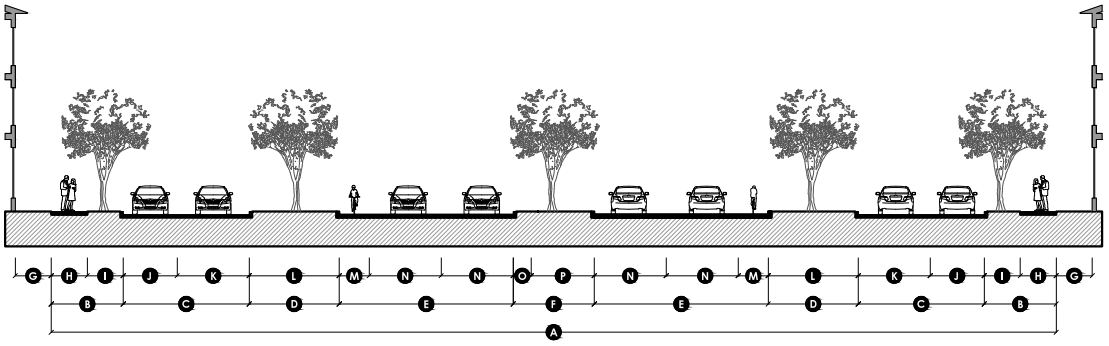
Alley
2 traffic lanes, undivided



Alleys are one-way or two-way roads used primarily in residential developments. While streets in front of homes are used for conveyance and on-street parking, alleys are meant to provide access to the rear of homes and the garages or carports that are often located there. There are typically no sidewalks lining alleys.

Street Standard – Multiway Boulevard





16' 16' 16'

Diagram Reflects Recommended Dimensions

Overall Widths	Min.	Max.	Recommended	
Right-of-Way (ROW) Width	138'	202'	**169'**	A
Verge Width	8'	16'	**12'**	B
Access Curb To Curb - One Way	16'	22'	**21'**	C
Access Median Width	12'	16'	**15'**	D
Curb To Curb Width - One Way	27'	35'	**29'**	E
Median width	12'	20'	**15'**	F
Lane & Edges				
Building Setback Varies with AT/FP	Varies	Varies	**Varies**	G
Sidewalk	4'	8'	**6'**	H
Planting Strip	4'	8'	**6'**	I
Parallel Parking	7'	9'	**9'**	J
Access Lane	9'	13'	**12'**	K
Access Median	12'	16'	**15'**	L
Bike Lane	3'	6'	**5'**	M
Traffic Lane	10'	13'	**12'**	N
Turn Lane Median	1'	8'	**3'**	O
Turn Lane	11'	12'	**12'**	P

Street Trees	
Street Trees	25' - 35' o.c.

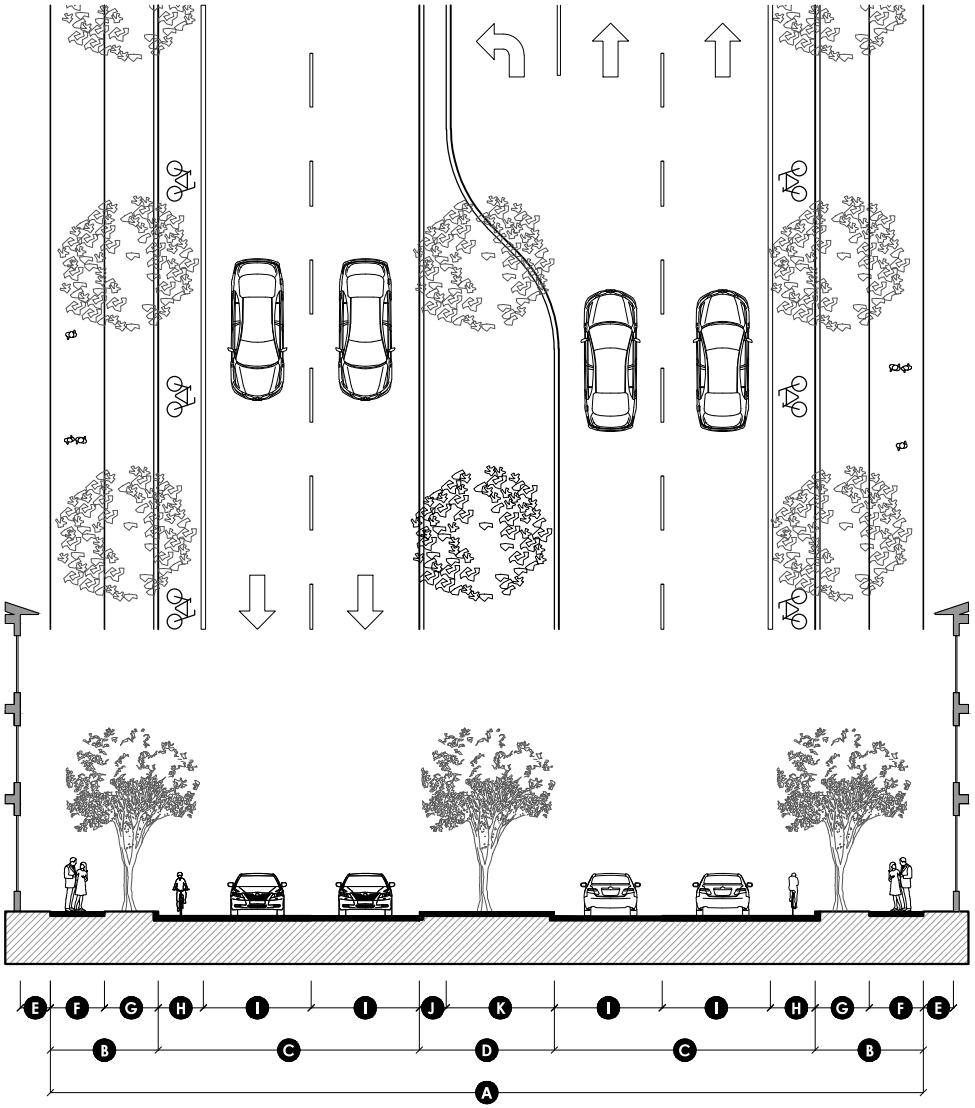
Typical Lane/Parking Width for Desired Street Speeds	
25 Miles or Below	11'/8'
26 - 35 Miles	12'/9'
36 and Above	13'/10'

Building Setbacks

Building Setback shall be minimum allowable
Anti Terrorism Force Protection Standards

NOTE: All roadways shall be designed in accordance with the safe and sound engineering standards of AASHTO, FHA, WSDOT, Unified Facilities Criteria, and Department of Defense Criteria.

Street Standard – Boulevard



12' 12' 12'

Diagram Reflects Recommended Dimensions

Overall Widths	Min.	Max.	Recommended	
Right-of-Way (ROW) Width	73'	113'	**97'**	A
Verge Width	8'	16'	**12'**	B
Curb to Curb Width - One Way	23'	32'	**29'**	C
Median Width	11'	17'	**15'**	D

Lane & Edges	Min.	Max.	Recommended	
Building Setback Varies with AT/FP	Varies	Varies	**Varies**	E
Sidewalk	4'	8'	**6'**	F
Planting Strip	4'	8'	**6'**	G
Bicycle Lane	3'	6'	**5'**	H
Traffic Lane	10'	13'	**12'**	I
Turn Lane Median	1'	4'	**3'**	J
Turn Lane	10'	13'	**12'**	K

Street Trees	
Street Trees	25' - 35' o.c.

Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building setback shall be the minimum allowable AT/FP Standards.

Street Standard – Avenue

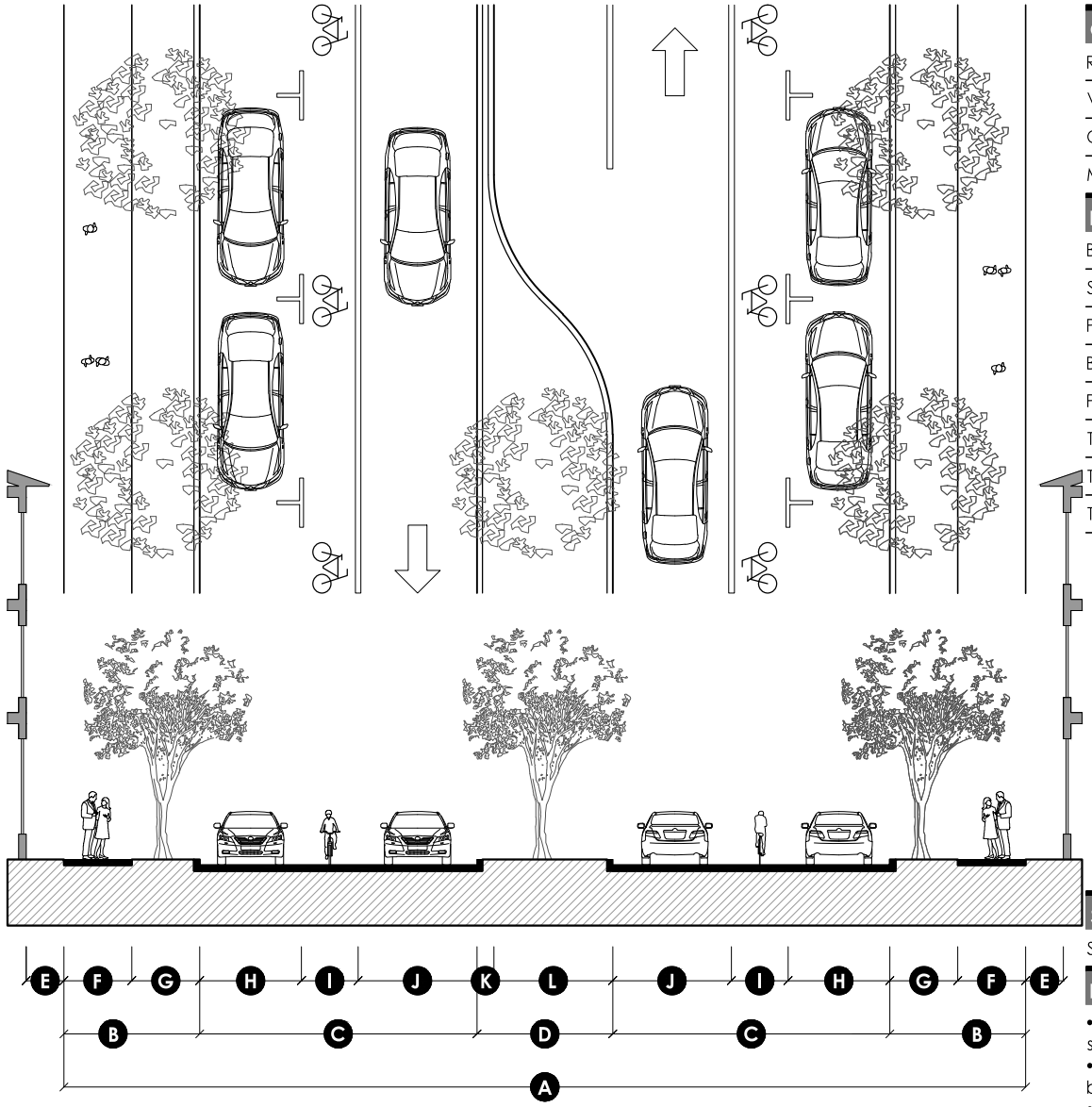


Diagram Reflects Recommended Dimensions

Overall Widths	Min.	Max.	Recommended	
Right-of-Way (ROW) Width	75'	112'	**88'**	A
Verge Width	10'	20'	**12'**	B
Curb to Curb Width - One Way	22'	28'	**26'**	C
Median Width	11'	16'	**12'**	D

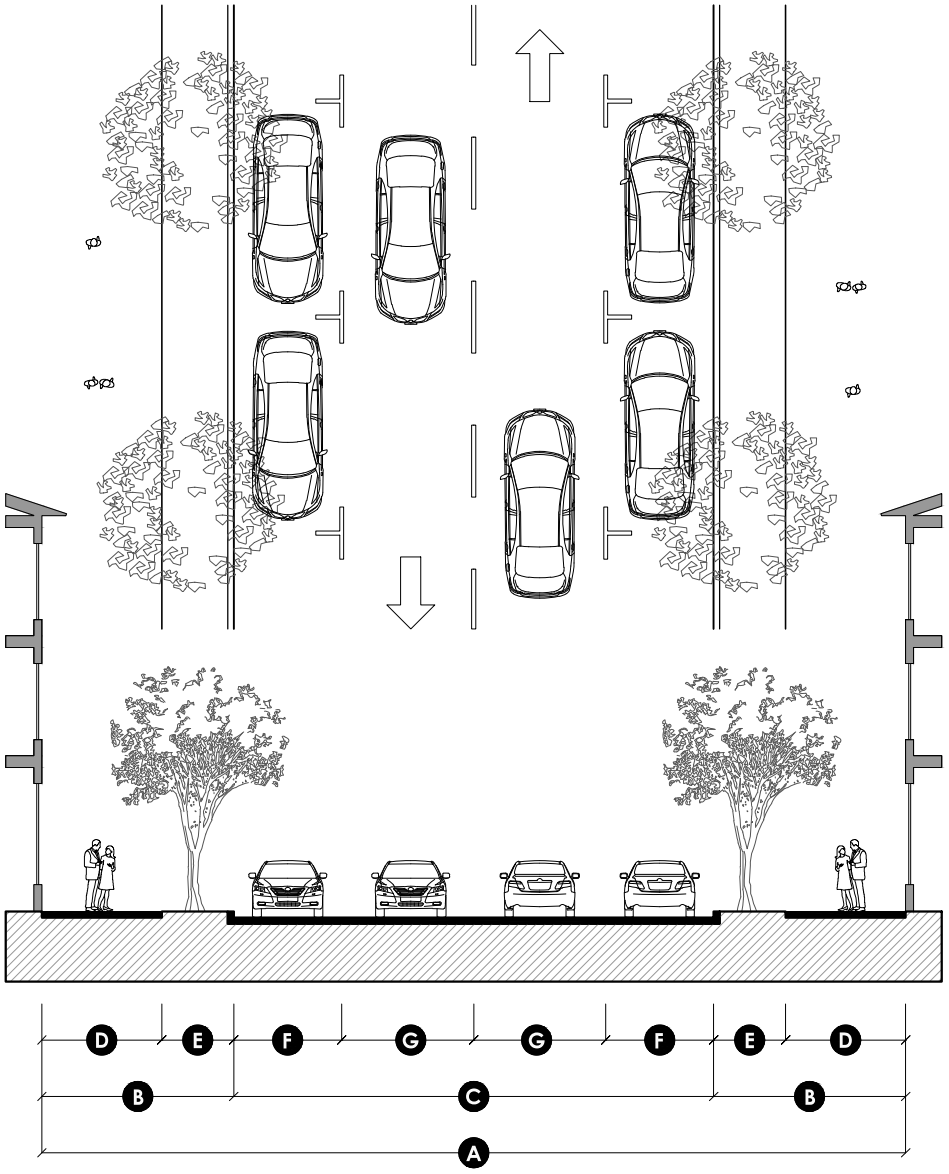
Lane & Edges	Min.	Max.	Recommend	D
Building Setback Varies with AT/FP	Varies	Varies	**Varies**	E
Sidewalk	4'	8'	**6'**	F
Planting Strip	6'	12'	**6'**	G
Bicycle Lane	3'	6'	**5'**	H
Parallel Parking	8'	9'	**9'**	I
Traffic Lane	11'	13'	**12'**	J
Turn Lane Median	1'	3'	**1'6"**	K
Turn Lane	10'	12'	**12'**	L

Street Trees	
Street Trees	25' - 35' o.c.

Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building setback shall be the minimum allowable AT/FP Standards.

Street Standard – Main Street



8' 8' 8'

Diagram Reflects Recommended Dimensions

Overall Widths	Min.	Max.	Recommended	
Right-of-Way (ROW) Width	66'	92'	**72'**	A
Verge Width	14'	24'	**16'**	B
Curb to Curb Width	38'	44'	**40'**	C

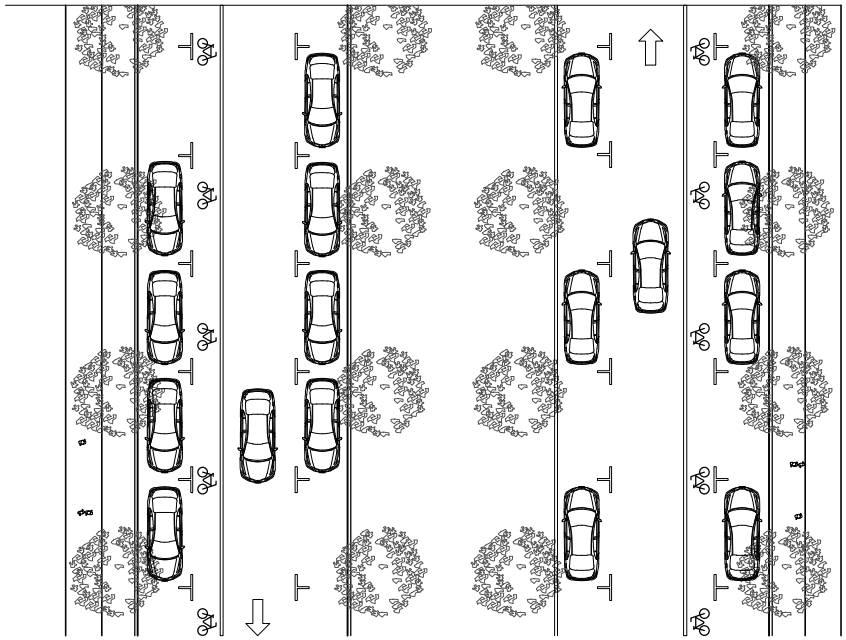
Lane & Edges	Min.	Max.	Recommended	
Sidewalk	8'	Varies	**Varies**	D
Planting Strip	6'	12'	**6'**	E
Parallel Parking	8'	9'	**9'**	F
Traffic Lane	11'	13'	**11'**	G

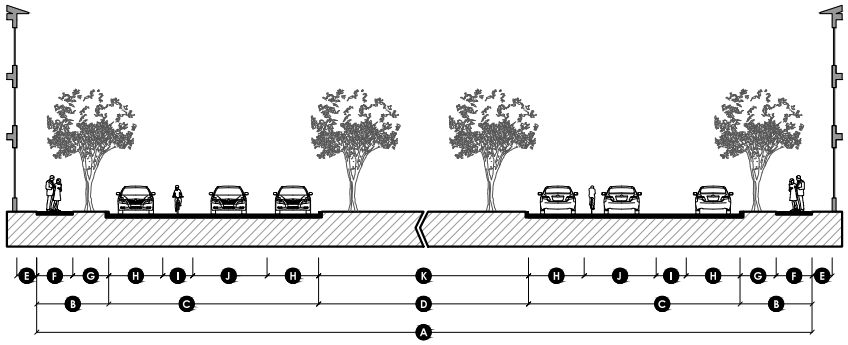
Street Trees	
Street Trees	25' - 35' o.c.

Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building setback shall be the minimum allowable AT/FP Standards.

Street Standard – Park Street





Overall Widths	Min.	Max.	Recommended	
Right-of-Way (ROW) Width	80'	121'	**116'**	A
Verge Width	10'	20'	**12'**	B
Curb to Curb Width - One Way	22'	28'	**26'**	C
Median Width	16'	Varies	**Varies**	D

Lane & Edges	Min.	Max.	Recommended	
Building Setback Varies with AT/FP	Varies	Varies	**Varies**	E
Sidewalk	4'	8'	**6'**	F
Planting Strip	6'	12'	**6'**	G
Parallel Parking	8'	9'	**9'**	H
Bicycle Lane	3'	6'	**5'**	I
Traffic Lane	11'	13'	**12'**	J
Park Block	16'	Varies	**Varies**	K

Street Trees	
Street Trees	25' - 35' o.c.

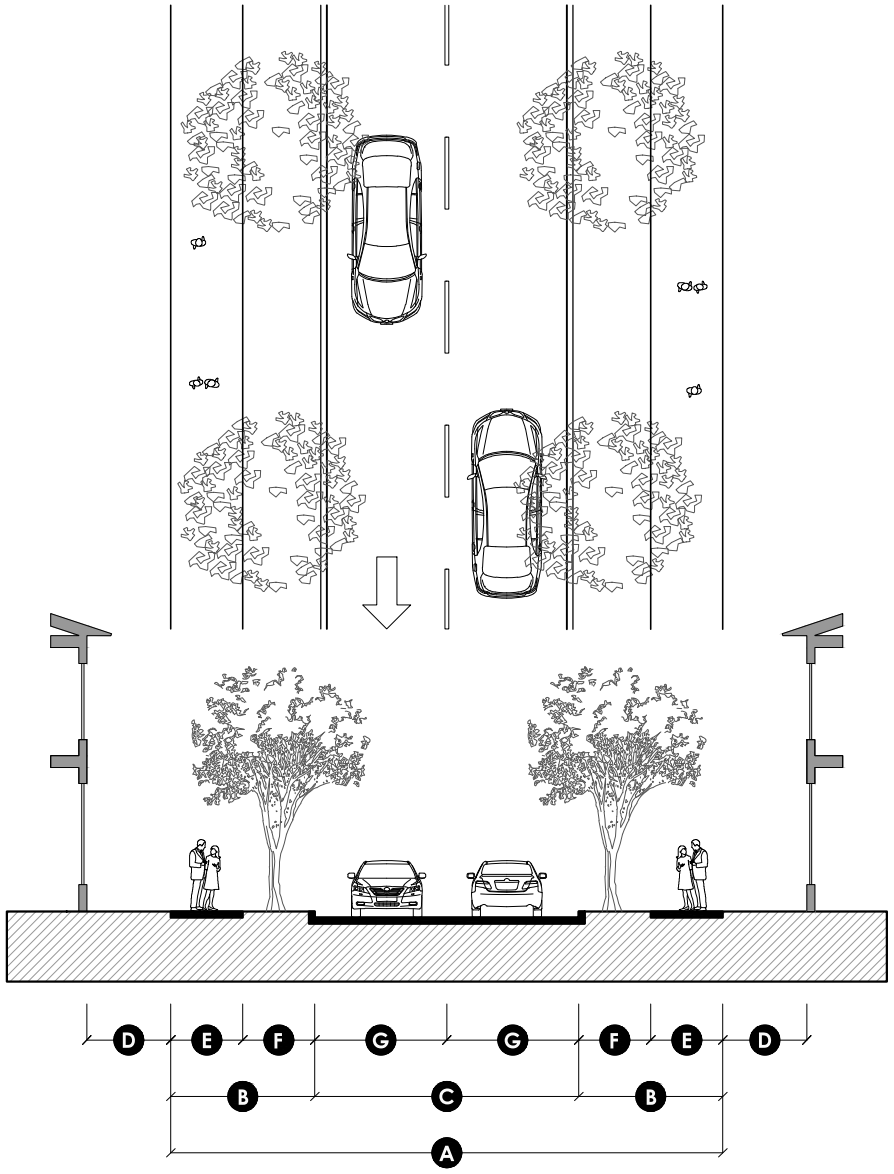
Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building setback shall be the minimum allowable AT/FP Standards.

12' 12' 12'

Diagram Reflects Recommended Dimensions

Street Standard – Neighborhood Street



8' 8' 8'

Diagram Reflects Recommended Dimensions

Overall Widths	Min.	Max.	Recommended	
Right-of-Way (ROW) Width	36'	58'	**48'**	A
Verge Width	8'	16'	**12'**	B
Curb to Curb Width	20'	26'	**24'**	C

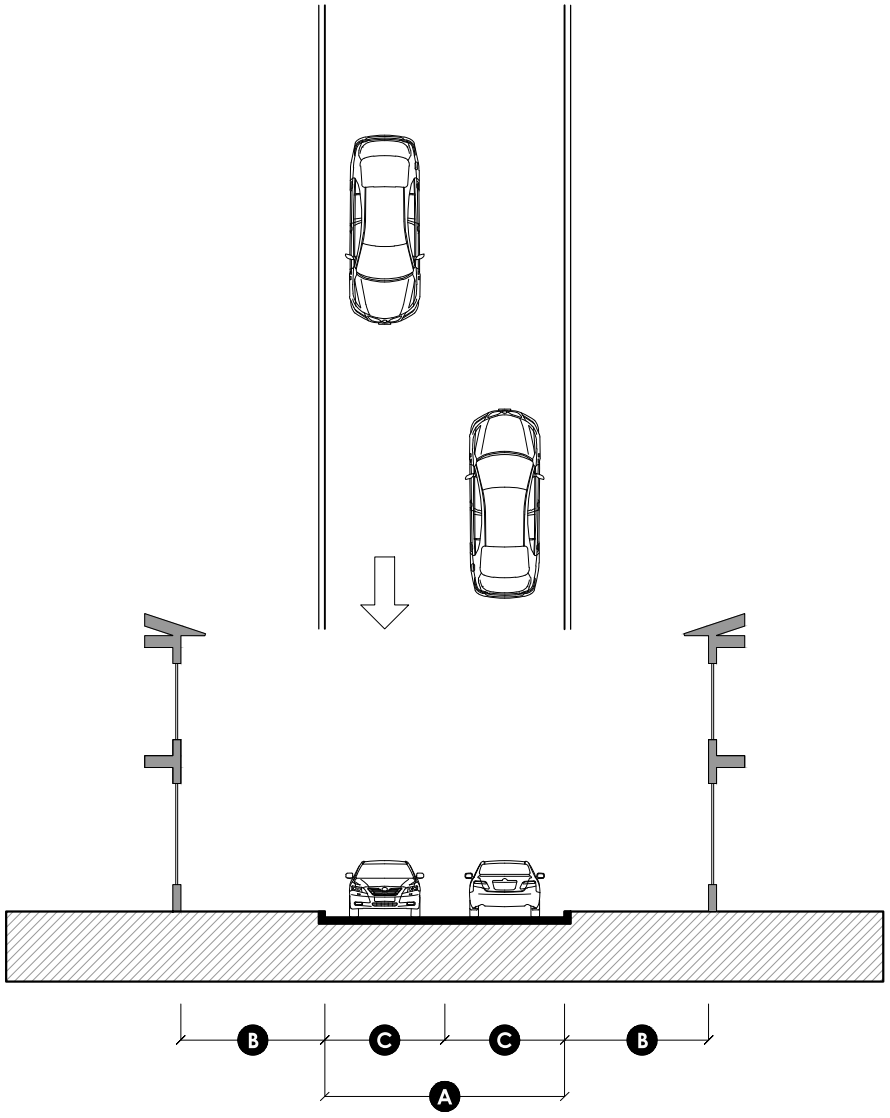
Lane & Edges	Min.	Max.	Recommended	
Building Setback Varies with AT/FP	Varies	Varies	**Varies**	D
Sidewalk	4'	8'	**6'**	E
Planting Strip	4'	8'	**6'**	F
Traffic Lane	10'	13'	**12'**	G

Street Trees	
Street Trees	25' - 35' o.c.

Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building setback shall be the minimum allowable AT/FP Standards.

Street Standard – Alley



Overall Widths	Min.	Max.	Recommended
Right-of-Way (ROW) Width	20'	26'	**22'** A

Lane & Edges	Min.	Max.	Recommended
Building Setback Varies with AT/FP	Varies	Varies	**Varies** B
Traffic Lane	10'	13'	**11'** C

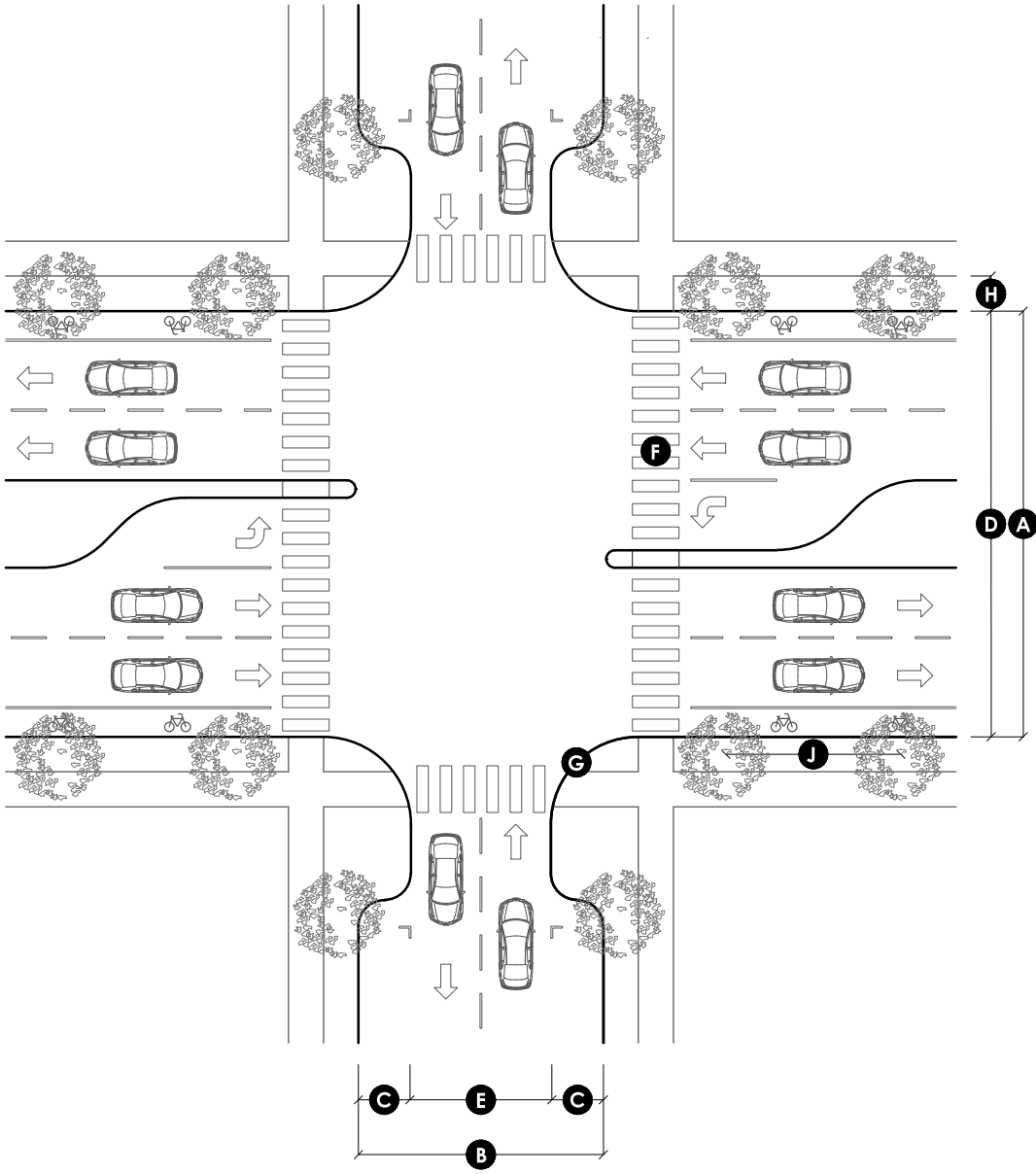
Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building setback shall be the minimum allowable AT/FP Standards.

8' 8' 8'

Diagram Reflects Recommended Dimensions

Intersection Standard – Boulevard/Main Street



16' 16' 16'

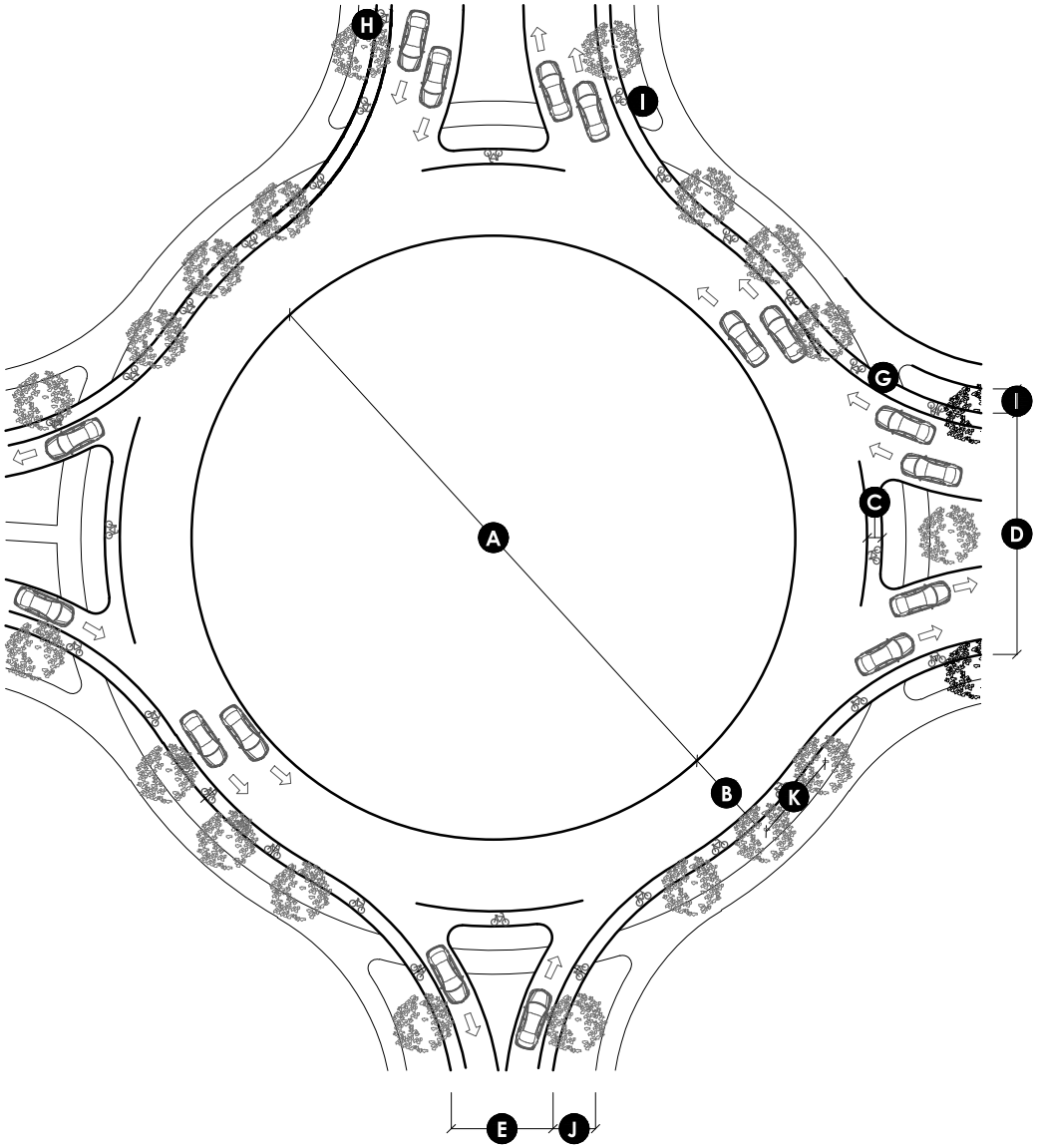
Diagram Reflects Recommended Dimensions

Street Dimensions	Min.	Max.	Recommended	
Primary Street Width	73'	82'	**73'**	A
Cross Street Width	38'	44'	**42'**	B
Bulb Out Protrusion	7'	9'	**9'**	C
Crosswalk Dimensions				
Primary Street Crosswalk Length	56'	80'	**73'**	D
Cross Street Crosswalk Length	20'	26'	**24'**	E
Crosswalk Width	6'	8'	**8'**	F
Street Corner Radius				
Curb Radius	15'	30'	**15'**	G
Planting Strip Dimensions				
Planting Strip Width	4'	8'	**6'**	H
Street Tree Spacing	25'O.C.	35'O.C.	**30'O.C.**	J
Boulevard Intersection Locations				

Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building Setback shall be minimum allowable Anti Terrorism Force Protection tandards.

Intersection Standard – Traffic Circle



16' 16' 16'

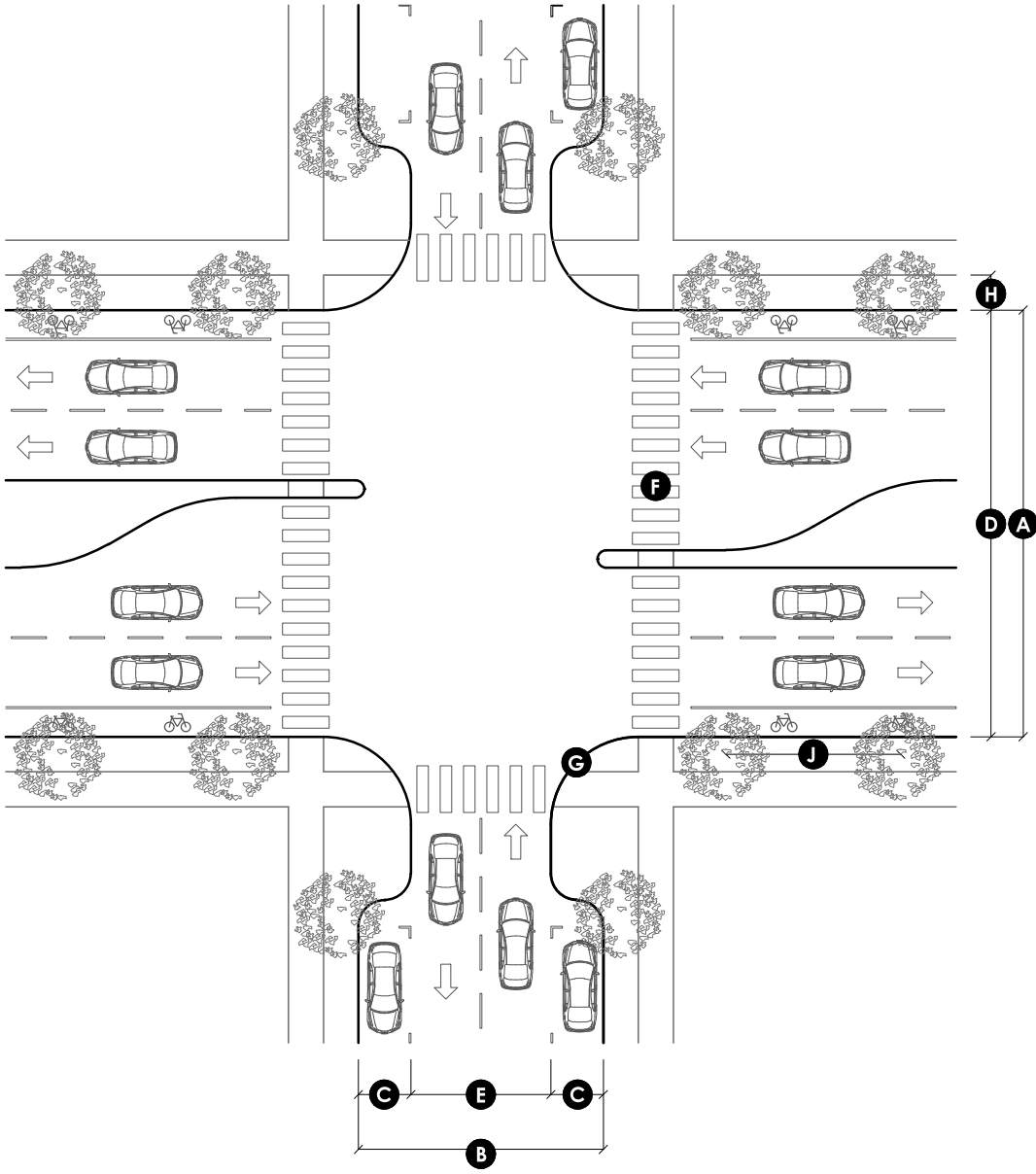
Diagram Reflects Recommended Dimensions

Roundabout Dimensions	Min.	Max.	Recommended	
Center Median Width	100'	140'	**101'**	A
Roundabout Street Width	27'	32'	**29'**	B
Bicycle Lane	3'	6'	**5'**	C
Street Dimensions				
Primary Street Width	56'	84'	**73'**	D
Cross Street Width	27'	38'	**31'**	E
Cross Street width	45'	53'	**45'**	F
Street Corner Radius				
Curb Radius	70'	110'	**90'**	G
Planting Strip Dimensions				
Planting Strip Width	4'	8'	**6'**	H
Planting Strip Width	4'	8'	**8'**	I
Planting Strip Width	4'	14'	**14'**	J
Street Tree Spacing	20'O.C.	30'O.C.	**30'O.C.**	K
One-Way Traffic Circle Locations				

Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building Setback shall be minimum allowable Anti Terrorism Force Protection tandards.

Intersection Standard – Avenue/Main Street



16' 16' 16'

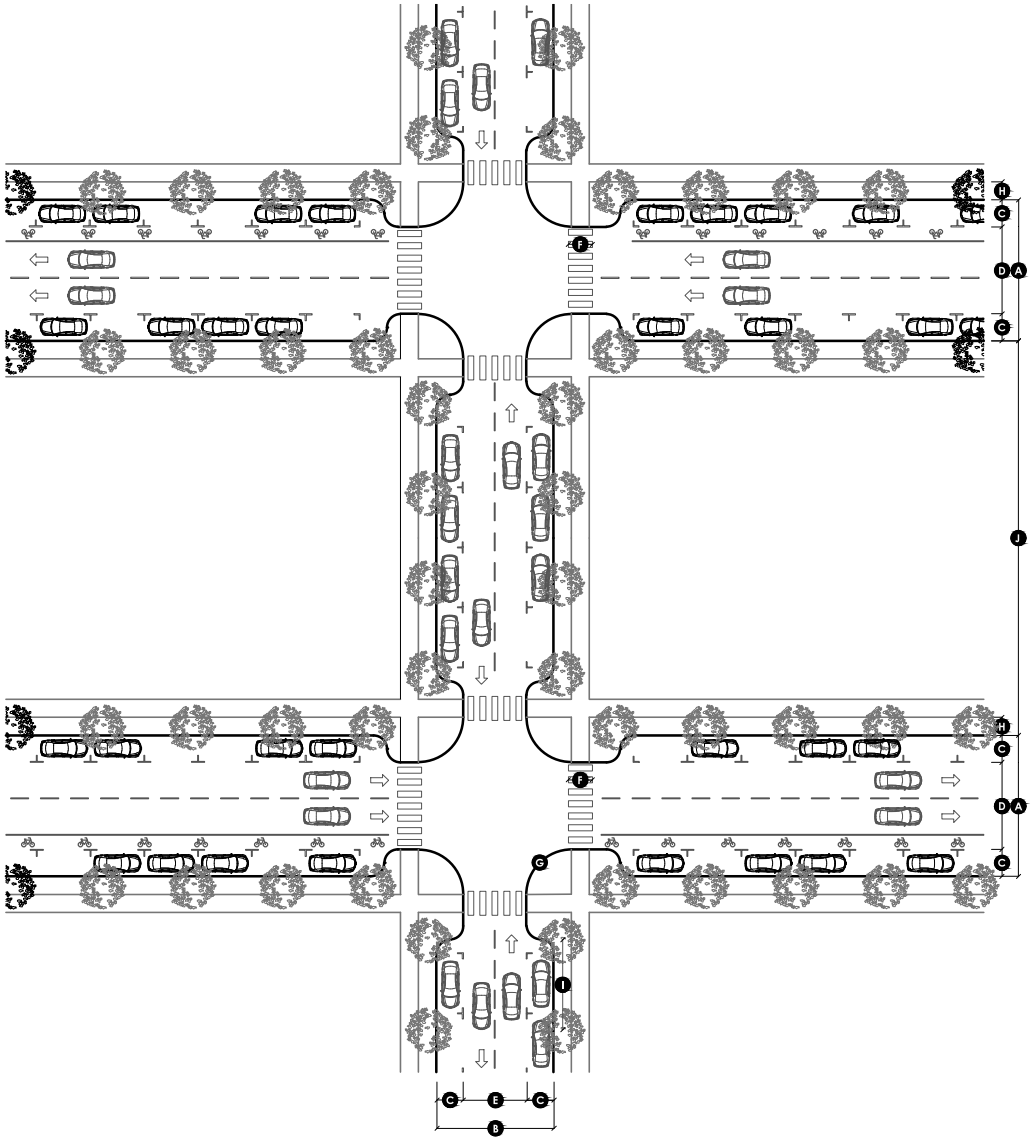
Diagram Reflects Recommended Dimensions

Street Dimensions	Min.	Max.	Recommended	
Primary Street Width	54'	64'	**59'**	A
Cross Street Width	34'	44'	**42'**	B
Bulb Out Protrusion	7'	9'	**9'**	C
Crosswalk Dimensions				
Primary Street Crosswalk Length	54'	64'	**59'**	D
Cross Street Crosswalk Length	20'	26'	**24'**	E
Crosswalk Width	6'	8'	**8'**	F
Street Corner Radius				
Curb Radius	15'	30'	**15'**	G
Planting Strip Dimensions				
Planting Strip Width	4'	8'	**6'**	H
Street Tree Spacing	25'O.C.	35'O.C.	**30'O.C.**	J
Boulevard Intersection Locations				

Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building Setback shall be minimum allowable Anti Terrorism Force Protection tandards.

Intersection Standard – Park Street/Main Street



32' 32' 32'

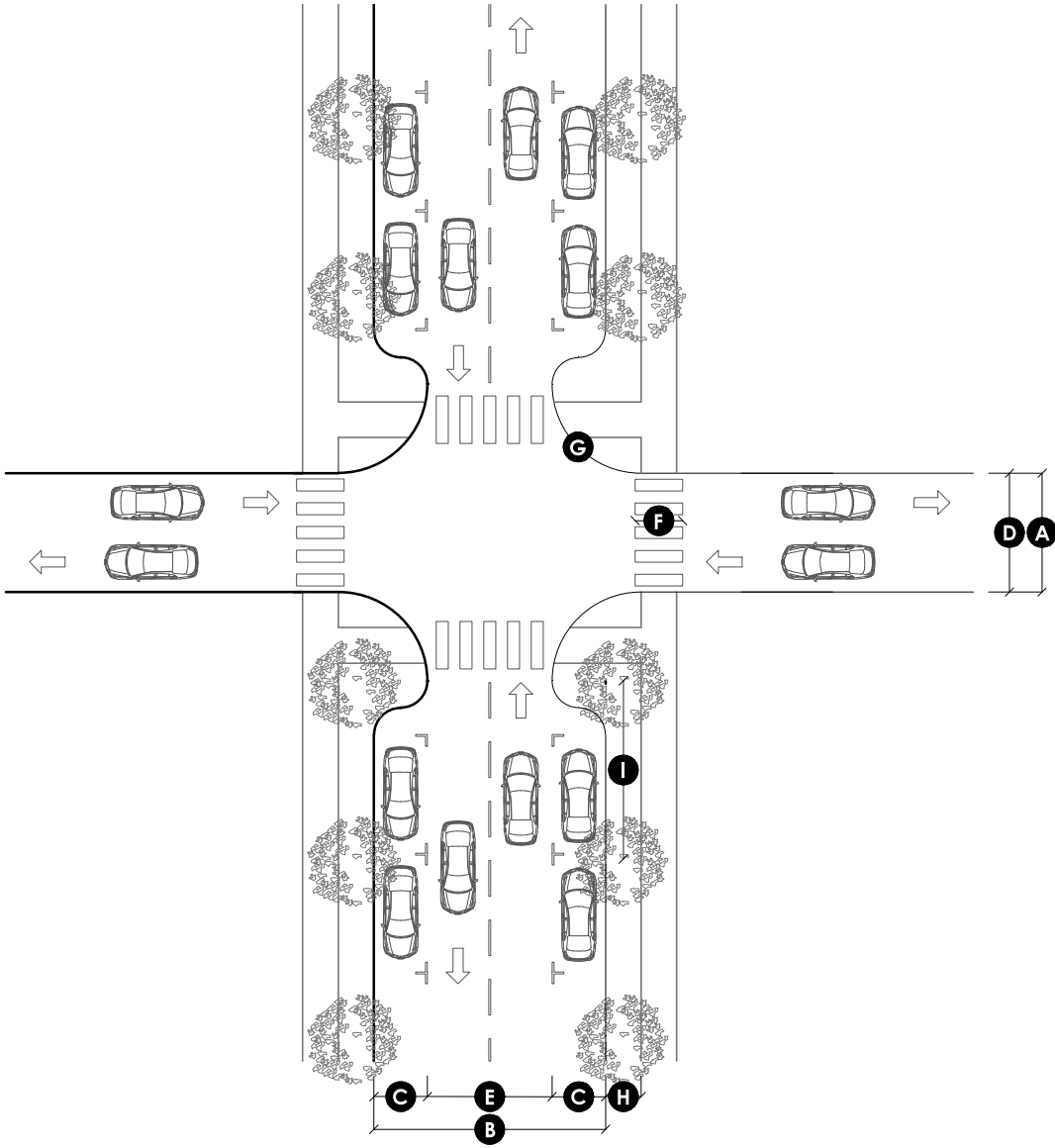
Diagram Reflects Recommended Dimensions

Street Dimensions	Min.	Max.	Recommended	
Primary Street Width	29'	37'	**33'**	A
Cross Street Width	35'	45'	**40'**	B
Bulb Out Protrusion	7'	9'	**9'**	C
Crosswalk Dimensions				
Primary Street Length	13'6"	19'	**15'**	D
Cross Street Length	20'	26'	**21'**	E
Crosswalk Width	6'	8'	**8'**	F
Street Corner Radius				
Curb Radius	15'	30'	**15'**	G
Planting Strip Dimensions				
Planting Strip Width	4'	8'	**6'**	H
Street Tree Spacing	25'O.C.	35'O.C.	**30'O.C.**	I
Park Street Dimensions				
Park Block Width	16'	Varies	**Varies**	J

Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building Setback shall be minimum allowable Anti Terrorism Force Protection tandards.

Intersection Standard – Alley/Main Street



16' 16' 16'

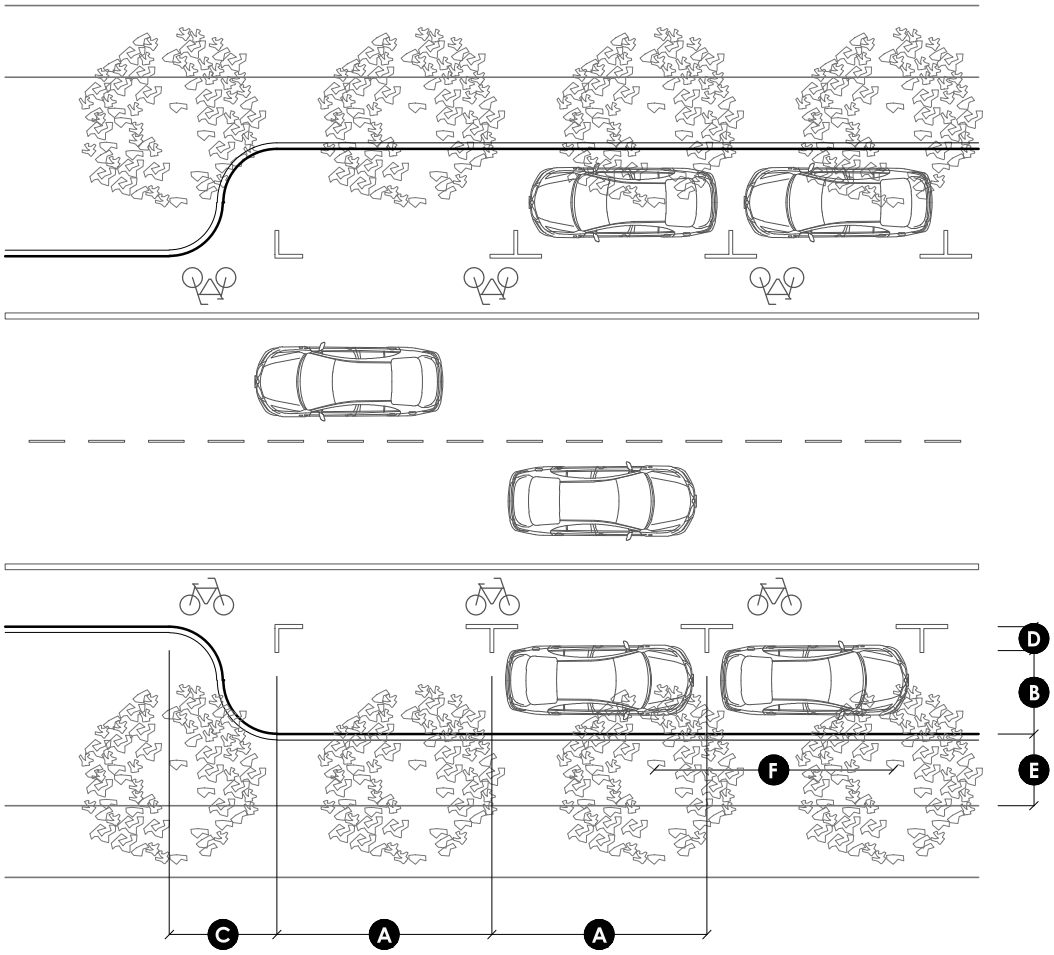
Diagram Reflects Recommended Dimensions

Street Dimensions	Min.	Max.	Recommended	
Primary Street Width	20'	26'	**20'**	A
Cross Street Width	27'	44'	**39'**	B
Bulb Out Protrusion	7'	9'	**9'**	C
Crosswalk Dimensions				
Primary Street Length	20'	26'	**20'**	D
Cross Street Length	20'	26'	**21'**	E
Crosswalk Width	6'	8'	**8'**	F
Street Corner Radius				
Curb Radius	15'	30'	**15'**	G
Planting Strip Dimensions				
Planting Strip Width	4'	8'	**6'**	H
Street Tree Spacing	25'O.C.	35'O.C.	**30'O.C.**	I
Alley Intersection Locations				

Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building Setback shall be minimum allowable Anti Terrorism Force Protection tandards.

Parking Standard – Parallel On-Street



Parking Space Dimensions	Min.	Max.	Recommended	
Space Length	18'	22'	**18'**	A
Space Width	7'	9'	**7'**	B
Parking Space Transition	12'	16'	**12'**	C
Door Swing	2'	3'	**2'**	D
Planting Strip Dimension				
Planting Strip Width	4'	8'	**6'**	E
Street Tree Spacing	15'O.C.	35'O.C.	**20'O.C.**	F

Note: All on-street parking must be parallel, not angled.

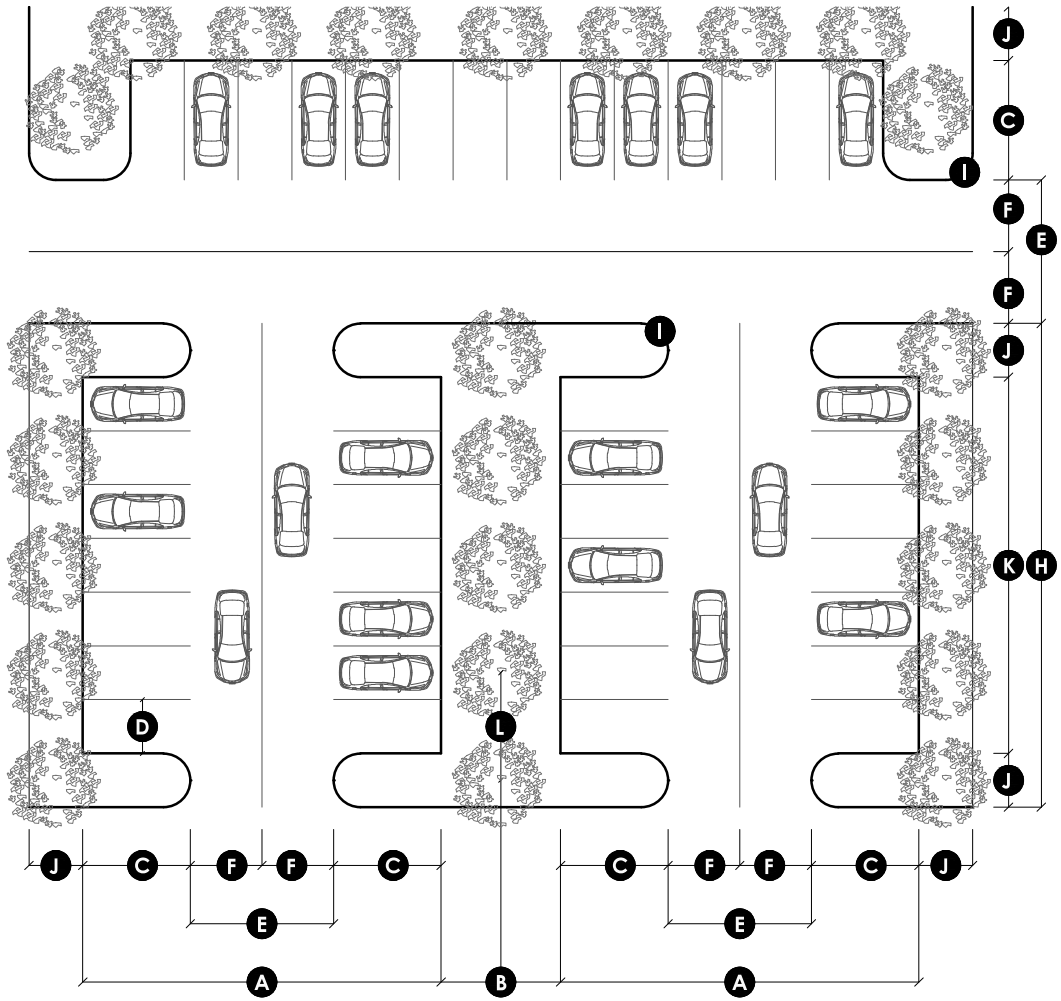
Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building Setback shall be minimum allowable Anti Terrorism Force Protection tandards.

8' 8' 8'

Diagram Reflects Recommended Dimensions

Parking Standard – Car Park



Overall Widths	Min.	Max.	Recommended	
Parking Bay Width	54'	72'	**60'**	A
Center Island Width	12'	36'	**20'**	B
Parking Dimesions				
Stall Length	18'	22'	**18'**	C
Stall Width	8'	11'	**9'**	D
Access Overall Width	18'	24'	**24'**	E
Access Lane Width	12'	13'	**12'**	F
Island Dimensions				
Island Overall Length	27'	198'	**81'**	H
Island Radius	3'	15'	**4'6"**	I
Island Width	8'	24'	**9'**	J
Parking Stalls Length	9'	180'	**63'**	K
Island Dimensions				
Tree Spacing	15'O.C.	35'O.C.	**20'O.C.**	L

Note: All car park parking must be parallel, not angled.

Notes

- Refer to landscape standards for preferred trees and shrubs in planting strips.
- Door swing for on-street parking spaces is optional if there is an adjacent bicycle lane.
- All designated street speeds must be confirmed with a traffic study.
- Building Setback shall be minimum allowable Anti Terrorism Force Protection standards.
- No angled parking.

16' 16' 16'

Diagram Reflects Recommended Dimensions

Parking Standard – Parking Bay

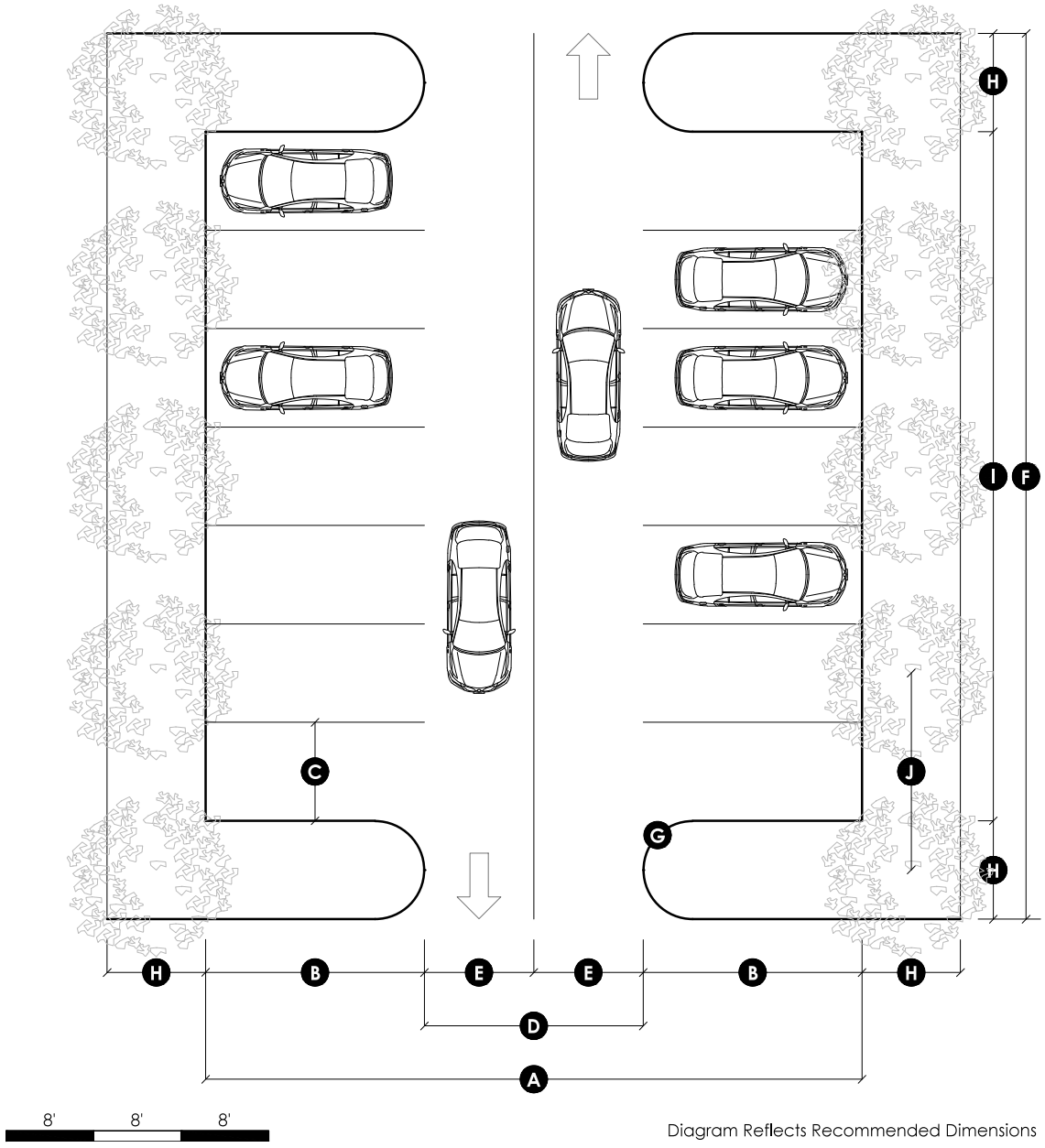


Diagram Reflects Recommended Dimensions

Overall Widths	Min.	Max.	Recommended	
Parking Bay Width	54'	72'	**60'**	A
Parking Stall Dimesions				
Stall Length	18'	22'	**20'**	B
Stall Width	8'	11'	**9'**	C
Driving Dimensions				
Access Overall Width	18'	24'	**20'**	D
Access Lane Width	9'	12'	**10'**	E
Island Dimensions				
Island Overall Length	27'	198'	**81'**	F
Island Radius	3'	15'	**4'6"**	G
Island Width	8'	24'	**9'**	H
Parking Stalls Length	9'	180'	**63'**	I
Island Dimensions				
Tree Spacing	15'O.C.	35'O.C.	**18'O.C.**	J

Note: All car park parking must be parallel, not angled.

Notes

- Trees should be planted such that a minimum of 70% of surface area is covered within 15 years (see building envelope standards for specific percentages).
- Setback from buildings must conform to minimum anti-terrorism/force protection guidelines.
- Refer to landscape standards for preferred trees and shrubs in Islands.

NOTE: All roadways shall be designed in accordance with the safe and sound engineering standards of AASHTO, FHA, WSDOT, Unified Facilities Criteria, and Department of Defense Criteria.

Pedestrian Standards

Walkways provide connections for pedestrians between buildings and ancillary facilities such as parking lots and other areas. Well designed and located pedestrian walkways also provide a desirable alternative to dependence on motor driven vehicles. The goal is to encourage the use of walkways as an alternative means of circulation. Pedestrian walkways should be designed and located to provide a safe, comfortable, enjoyable experience for the user. The use of walkways within the installation promotes development sustainability by conserving energy, reducing air pollution, and decreasing the land requirement for parking. In addition, these walkways provide a means to increase physical fitness. In order to achieve this goal, the following objectives must be met:

- Provide walkways that are designed at a pedestrian scale to be safe, connected and comfortable.
- Provide safe and secure pedestrian facilities that are separate from vehicular traffic.
- Provide amenities for pedestrians.
- Provide accessibility to all users, including physically impaired or challenged persons. All street and driveway crossings shall be ramped, marked, and accessible to persons with disabilities in accordance with requirements of the UFAS. See the following UFAS paragraphs for the respective standards: Curb Ramps, paragraph 4.7; Ramps, paragraph 4.8; Stairs, paragraph 4.9.
- Provide links to major attractions and generators of pedestrian traffic.
- Provide design consistency throughout the walkway.
- Provide proper drainage.

Walkways provide an alternate means of transportation and, if properly encouraged, save energy and reduce the demand for parking facilities. At Fort Hood, the pedestrian sidewalk system is of particular concern because many personnel don't have private vehicles. They are dependent upon the pedestrian sidewalks for access throughout the installations.

Walkway Network Hierarchy

Sidewalks are classified to conform to the hierarchy roadway system - primary walkways, secondary walkways, and tertiary walkways. Non- roadway oriented sidewalks should be sized and placed where people will use them rather than creating worn "shortcut" paths.

- Primary Walkways
  - Primary walkways should be placed along both sides of primary roadways wherever possible within the cantonment areas. These walkways are also used for high volume pedestrian routes to facilities and should be designed along axis lines relating to adjacent building entries, plazas, or streets. They should be paved with concrete, brick, or other pavers. Walkways with a high volume of pedestrian traffic should be covered when possible.
  - Primary walkways should be sized to accommodate anticipated pedestrian use. They should have a minimum width of 6 feet, and a maximum width of 10 – 12 feet in high-use areas. All street and driveway crossings shall be ramped, marked, and accessible to persons with disabilities in accordance with requirements of the ADAAG and the UFAS, with the most stringent standards applied in the event of conflict.
- Secondary Walkways
  - Secondary walkways should be provided along one or both sides of secondary and tertiary streets. They are designed to carry moderate volumes of pedestrians between activity centers and housing areas. They should provide access to building entrances, plaza areas, or streets. They should be paved with concrete, brick, or other pavers.
  - These walkways should be sized to accommodate anticipated pedestrian use, but not less than 4 feet, and a maximum 10 – 12 feet in high use areas. All street and driveway crossings shall be ramped, marked, and accessible to persons with disabilities in accordance with requirements of the ADAAG and the UFAS, with the most stringent standards applied in the event of conflict.
- Tertiary Walkways
  - Tertiary walkways provide pedestrian walkways in recreational and scenic areas for casual walking and hiking. They can be paved with concrete or bituminous asphalt or constructed with woodchips. Paved walkways should have a minimum width of 4 feet. Wood chip trails should have a minimum width of 3 feet. Where paths are designated for use by bicyclists and pedestrians, these widths should be increased an additional three feet for each bike lane.

Support Area Standards

Service Areas

Facilities that require pickup and deliveries should have a service area that allows for easy access to a loading dock exclusively for service vehicles. These areas should be designed to provide direct, easy access for vehicles. They should be screened from public view to reduce negative visual impacts. Service areas shall meet all antiterrorism AT/FP requirements.

Drop-Off Areas

Facilities that include a high percentage of persons arriving by vehicle (such as headquarters, child development centers, schools, dining facilities, and clubs) should include a vehicle drop-off area for users. AT/FP requirements state that the access drive must be clearly defined and marked to prevent parking of vehicles in those areas. Per UFC 4-010-01, drop-off lanes will not be located under any inhabited portion of a building. It is recommended that physical barriers be used to define the area. These barriers may include curbing, planters, or other barriers together with signage to identify and restrict access. The driveway will be configured so that vehicles can be restricted during times of high alert. Access to the driveway shall be located outside the standoff area with the initial approach parallel to the building, or a barrier must be erected to prevent a direct vehicular movement toward the building.

Troop Running Trails

Troop running trails should be provided for use both in and out of formation. The width should approximately be 11.5 -12 feet to provide the width necessary for three Soldiers abreast with a cadence caller. Primary, secondary, and tertiary walkways can be designed to provide this function.

Troop Movement Paths

In locations where troops need to move four abreast; for example, troops marching in formation between classrooms, barracks/dinning hall facilities, a hard surface walkway of adequate width should be provided with a width of 9-11 feet.

Site Amenities at Walkways

Utilize site furnishings to reinforce the walkway system hierarchy. Provide directional and informational signage where appropriate. Provide a physical separation between pedestrian and vehicular routes. Locate site furnishings, such as benches, tables, waste receptacles, drinking fountains, and signage in response to travel distance and traffic volume. Site furnishings should be placed at regular intervals along walkways, parallel to the walk and facing the flow of pedestrian traffic.

Landscaping at Walkways

Use a combination of canopy and ornamental trees along sidewalks to provide shade, define the path, provide visual interest, and discourage the creation of “shortcuts.” Utilize evergreen buffer plantings to screen harsh winds and undesirable views. Discourage the use of flowering/fruit bearing trees and shrubs along walkways because of the threat of insects or other problems.

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Part V
Landscape Design Standards

Introduction

The Landscape Design Standards include the selection, placement, and maintenance of plant material on the installation. The visual image conveyed by a military installation is defined not just by architectural character and site organization, but also by an attractive, organized landscape design. The presence of plant material on the installation greatly enhances the visual character and environmental quality of the installation. Plantings add an element of human scale to open spaces and can be used functionally to screen undesirable views, buffer winds, reinforce the hierarchy of the circulation system, or provide a visual transition between dissimilar land uses.

This section gives overall design guidelines for landscaping at Fort Hood, and provides a list of plants allowable at Fort Hood. More specific information on landscaping requirements can be found in the Fort Hood Tree Ordinance and the Memorandum for Information on Landscaping at Fort Hood, both available from DPW Environmental.

Objectives

The overall objective of the use of plant material within the installation is to improve the physical and psychological well being of the people who live and work on the installation. This is achieved through the following objectives:

- Minimize impact to the natural environment/adopt an ecological systems approach
    - Build an ecologically friendly landscape that supports biodiversity
    - Use a planting design that preserves and enhances the natural character of the landscape, including landforms and existing vegetation
    - Protect and enhance the natural beauty and ecological value of the site
    - Minimize habitat disturbance
    - Control erosion through improved landscaping practices
    - Improve the overall visual quality of the installation through the use of native plant material
- Enhance environmental quality
    - Provide scale and comfort to pedestrian environments
    - Reduce urban heat islands effect
    - Reduce ambient air temperature by incorporating existing trees and other vegetation to shade walkways, parking lots and other open pedestrian areas
    - Value aesthetic decisions, such as the importance of views and the integration of natural and manmade elements
    - Screen unsightly views and elements
- Create a visually and functionally uniform, coherent and orderly environment
    - Remove all unnecessary extraneous landscape treatments and embellishments
    - Adopt a limited palette of landscape materials to be used throughout the installation so a single material serves one specific landscape function
- Extend the whole building or site systems approach into the landscape
    - Use landscape enhancements to reduce climatic (temperature) extremes
    - Ensure that site work and landscaping are integrated with security, safety and sustainability objectives
    - Shade as much hardscape as possible
    - Cover the ground with as much vegetation as possible
- Incorporate low-impact development as much as possible
    - Use vegetative swales, infiltration trenches, dry wells and depressions to increase storage volume, to reduce, control and facilitate infiltration, and to treat surface runoff
    - Reduce water consumption
    - Utilize stormwater management ponds and dry hydrants

Landscape Objectives (continued)

- Use a planting design that preserves and enhances the natural character of the landscape, including landforms and existing vegetation
    - All existing trees to-be-removed are subject to Fort Hood's tree replacement policies found in the Fort Hood Tree Ordinance, which includes a 10:1 replacement (10 trees planted for every 1 removed) and special protection of heritage trees

- Adopt best maintenance practices
    - Minimize costs and resource impacts of ongoing landscape management
    - Minimize pollutant loading of groundwater and surface waters
    - Use a planting design and maintenance methods that reduce fertilizer and pesticide pollution by using integrated pest management techniques and recycling green waste
- Enhance anti-terrorism capabilities through landscape treatments

Design Guidelines

Proposed plantings must be reviewed to ensure that site conditions (soil, topography, adjacent uses, and architecture) and climatic criteria (sun, shade, and moisture requirements) are considered in the desired plant design and selection (i.e. form, texture, color, size). The uses and users of the site must also be considered. Landscape planting plans should be approved by DPW Environmental Natural Resources personnel to provide quality assurance and promote design consistency.

Foundation Planting: Foundation planting provides a green background for additional plantings, adds scale and character to the building, helps to integrate the building with its surroundings, screens HVAC and other utilities and helps create a sense of arrival.

- Focal and seasonal plantings should be located at building entries for pedestrian interest.
- Plant materials should not block windows and views from interior spaces.
- Trees must be set back from the building walls to provide space for mature growth and to prevent root systems from damaging the foundation.
- A symmetrical foundation planting design should be used for a symmetrical building.
- Due to the possibility of insect problems (bee stings, etc.) flowering plants should not be planted near entrances.
- AT/FP measures, per UFC 4-010-01, must be heeded.

Screening

- Windscreens: Use a combination of evergreen and deciduous trees to provide windbreak protection from prevailing winds. Windbreak plantings should be irregular in form, rather than straight and evenly spaced, in order to provide more effective wind control and to visually blend with the natural character of the installation.
- Screening of dumpsters: Landscape planting should be used to supplement permanent wall dumpster enclosures.

Buffer Planting: Use a mixture of evergreen and deciduous trees and shrubs to visually separate land uses and to help separate visual zones.

Open Space Planting

- Enhance open space areas with planting.
- Use a mix of evergreen, deciduous, and flowering trees.
- In massive groupings, plant alternating species to reduce the possibility of all the trees dying at once due to old age or disease.

Design Guidelines (continued)

Image Planting: The image of the installation is formed by the visual impressions that exist within the installation.

- The primary locations of highly visible images are the main gate, along primary circulation systems, and at areas of high concentrations of people.
- Features such as signs, statues, static displays, and other primary visual images can be improved by the use of trees, shrubs, and ground cover.

Street Trees: Street tree plantings should be used to reinforce vehicular hierarchy, orient and direct traffic, upgrade views, and to visually de-emphasize on-street parking. Also, in the design of a street tree planting, separate plant species may be used to identify distinctive details or areas of the installation (e.g. a particular land use relationship, historical district, community area, or other similar entity).

- Use formal street trees in single rows to provide continuous shade to streets, buildings, and walkways and to visually reinforce primary and secondary roads.
- Use informal groupings of street trees along tertiary routes. Utilize medium size deciduous trees to screen on-street parking along roadways. Set trees 1 to 2 meters (3 to 6 feet) from the back of curbs. Spacing should be uniform, except where curb cuts interrupt regular spacing.
- As a general rule, street trees should be deciduous species, resistant to salt and root pressure, and should have a 10 feet to 12 feet high clearance between the street pavement and branch height to allow adequate clearance for pedestrian and vehicle traffic to pass unimpeded by lower branches.
- The street tree layout should be coordinated with the layout of proposed street lighting.
- Appropriate plant heights should be used within sight triangles to ensure safe views from intersections.
- Weeping trees should not be used in locations where they may hang over the roadway or block views.

Parking Lot Planting: Parking lots are often the least attractive elements on a military installation. The use of landscape plant material and earth berm can greatly improve the appearance of these areas as well as help define circulation and reduce heat gain during summer months.

- Use shade tree plantings at parking lots to reduce glare and moderate ambient air temperatures on the lot. Optimum spacing of parking lot shade trees is 4.5 to 9 meters (15 to 30 feet) on center.
- Choose trees and shrubs that require minimum maintenance and will not litter the parking area with leaves, fruit, or nuts.
- Consider sight distances near entrances and exits when selecting and placing plant material.
- Use a mix of evergreen and deciduous plant material to screen parking areas from adjacent uses.
- Environmental Control Planting. When properly placed, plants can provide environmental benefits, as well as address visual concerns.
- Use deciduous trees and shrubs at courtyards, buildings and along streets to provide shade, moderate temperatures and reduce glare during the summer months while allowing solar exposure in the winter.
- Locate deciduous plantings on the southeast and southwest corner of buildings or courtyards to mitigate solar radiation and glare due to heat build-up and lower sun angles in the mid-morning and late afternoon hours.

Design Guidelines (continued)

Entrances to the Installation: Landscaping at the entrances and along the streetscapes of the installation will develop a strong visual image and provide visual interest during all four seasons. The entrance to the installation creates the first visual impression for the visitor.

- The landscape materials and planting areas should be proportional in scale to the hierarchy of the street on which they are located.
- Landscaping must be integrated with AT/FP. Low shrubs, groundcover, annual/perennial plants and canopy trees provide seasonal interest as well as maintain views required to ensure force protection measures. Large evergreen trees are discouraged in these locations because they may obstruct sightlines and impact the need for force protection. Adequate lines of sight must be maintained for guard personnel to observe vehicular and pedestrian traffic.

Xeriscaping: Xeriscape is the conservation of water and energy through creative and adaptive landscape design. Xeriscape landscapes provide attractive solutions that conserve water, limit necessary maintenance, and save money.

Low Impact Development: The use of on-site natural features to control stormwater runoff quantity and quality in lieu of traditional 'end-of-the-pipe' solutions is a land planning and engineering design approach termed Low Impact Development (LID). The possibilities for LID include not only open space and natural features, but also manmade features such as building roofs, streets, and parking surfaces. LID applies equally to new construction and redevelopment, and is best accomplished at the installation level. Additional information on LID is available in UFC 3-210-10.

Planning/Design Component	Topics of Interest	Reference
Landscaping	Low Impact Development	UFC 3-210-10, Low Impact Development
		Fort Hood Reg 200-1
		EPA 841-B-09-001
	FH Landscaping Publications	Fort Hood Tree List MOI, 27 June 2012
		Tree Ordinance, 27 June 2012

Plant Material Selection – Large Trees

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Large Trees							
Bald cypress Taxodium distichum	50-75 feet tall	slender and conical when young, then flat-top	soft, ferny, deciduous foliage	wet areas only	sun/part shade	roots not susceptible to suffocation, great for car parks	knees develop in poor drainage
Big-tooth maple Acer grandidentatum	20-50 feet tall	shrub-like, short trunk and round, dense crown	yellow and green flowers are small, in hanging clusters, golden to red fall color	needs very little water	full sun	showy, appropriate as ornamental	wood can provide good fuel
Black walnut Juglans nigra	up to 50 feet tall	round-topped crown with wide-spreading branches	hard-shelled fruit	wet areas only	sun/part shade	shade tree	slow-growing if not in moist, rich, sunny sites
Bur oak Quercus macrocarpa	60-80 feet tall, 50 foot spread	wide, open crown; wider than tall	very large leaves and acorns	needs deep, rich soil	sun/part shade	resistant to car exhaust, recommended for urban environment	fast-growing and long-living; attracts song birds
Cedar elm Ulmus crassifolia	up to 70 feet tall, 40 feet spread	oval-rounded tree	yellow-golden fall color	moist to dry, alkaline soil	sun/part shade	good for narrow spaces	allergenic; withstands drought and infertile soil
Chinkapin oak Quercus Muehlenbergii	up to 50 feet tall	rounded leaf base	yellow to brown fall color	prefers deep soil	sun/part shade	adaptable, good for car parks	acorns are edible after boiling
Escarpment black cherry Prunus serotina var. eximia	up to 25 feet tall	slim trunk and branches	white flower cherry eximia clusters followed by small black cherries	needs moist soil	sun/part shade	showy tree, good ornamental	native only to Central Texas, cherries may be eaten raw
Lacey oak Quercus laceyi (Q. glaucoides)	up to 20 feet tall	multiple trunks with spreading branches	interesting blue-green leaf color	dry, rocky soil	part shade	provides shade and food for wildlife	slow growth rate
Monterrey oak Quercus polymorpha	up to 50 feet tall	deciduous to evergreen	bronze leaf	prefers well-drained soil	sun/part shade	great shade tree	resistant to oak wilt
Pecan Carya illinoenensis	up to 90 feet tall	massive trunk, stout branches	edible nuts	needs deep, rich soil	full sun	great nut and shade tree	can reach up to 160 feet

Plant Material Selection – Large Trees (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Large Trees							
Plateau live oak Quercus fusiformis (Q. virginiana)	up to 30 feet tall	gnarled limbs and branches	non-showy green flowers in spring	accepts lawn conditions	sun/part shade	low water use, recommended ornamental	susceptible to oak wilt
Sandpaper tree (Anacua) Ehretia anacua	up to 30 feet tall	evergreen or partly deciduous	white, fragrant flowers, yellow-orange fruit	needs frequent watering until established	sun/part shade	attractive ornamental with deep shade	often with multiple trunks
Shumard oak Quercus shumardii	up to 50 feet tall	pyramidal	red to yellow fall color	prefers moist, deep soil	sun/part shade	recommended as a shade tree	fast-growing and adaptable
Texas red oak Quercus buckleyi	up to 50 feet tall	slim branches	red to yellow fall foliage	dry soil	sun/part shade	attractive ornamental	drought tolerant; acorns poisonous to humans
Texas white ash Fraxinus texensis	40-50 feet tall	medium tree	yellow to orange fall color	adaptable	sun/part shade	ornamental	fast growing; drought tolerant

Plant Material Selection – Small Trees

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Small Trees							
Anacacho orchid tree Bauhinia lunarioides	6-12 feet tall	single or multi-stemmed trunk	clusters of white, orchid-like flowers	dry, rocky soils	part shade	container plant for small areas	should be planted on south side of buildings to protect from frost
Blanco crabapple Malus ioensis var. texana	up to 12 feet tall	shrub-like	pink flowers in spring	moist soil	full sun	bird attraction, ornamental	special value to bees
Carolina buckthorn Rhamnus caroliniana	up to 15 feet tall	large glossy leaves	flowers not showy, yellow clusters with red fruit	moist soil	sun/shade	bird attraction	small purple fruit
Desert willow Chilopsis linearis	up to 15 feet tall	showy pink flowers	dark pink, aromatic flowers	dry or moist soil; can survive temps as low as 10 degrees F	sun	drought-tolerant ornamental	avoid overwatering
Eve's necklace Styphnolobium affine	up to 20 feet tall	spineless shrub or tree	beautiful pink flower clusters, fruit black bead-like pods	needs well-drained soil	part shade	aromatic accent tree or shrub	becomes spindly in competition with other plants
Little walnut Juglans microcarpa	up to 20 feet tall	smooth branches into a broad, rounded crown	yellow-green foliage	rocky, dry soils	part shade	shade tree	attracts birds and butterflies
Mexican Plum Prunus mexicana	up to 20 feet tall	single-trunked, non-suckering tree	white, fragrant flowers in early spring	dry to moist, well-drained soils	sun/part shade	aromatic accent tree or shrub	flaky bark
Prairie flame-leaf sumac Rhus lanceolata	up to 20 feet tall	thicket-forming deciduous	small white flowers In summer, red berries, brilliant red fall color	rocky, well-drained limestone soils	sun	hardy, fast-growing accent tree	will spread to become several small trees, needs room to expand
Rusty blackhaw viburnum Viburnum rufidulum	10-20 feet tall	tall tree	large white flowers in spring, red fall color	dry, limestone based soils	sun/part shade	understory tree	slow-growing

Plant Material Selection – Small Trees (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Small Trees							
Smoke Tree Cotinus obovatus	12-20 feet tall	upright, small tree or multi-trunked shrub	flowers and fruit look like smoke	rocky, well-drained soils	sun/part shade	attractive ornamental	do not over-water or over-fertilize
Texas persimmon Diospyrus texana	10-15 feet tall	semi-evergreen	urn-shaped, white flowers with edible fruits	well-drained limestone loams	sun/part shade	valued ornamental tree; attracting butterflies and mammals	multi-trunked, interesting peeling bark
Texas redbud Cercis canadensis var. texensis	20-30 feet tall	small tree with flower clusters	pink flowers early spring	adaptable to most soils	sun/part shade	understory or accent tree	drought-tolerant

Plant Material Selection – Large Shrubs

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Large Shrubs							
Bee-brush Aloysia gratissima	up to 10 feet tall	slender with square stems	small white, vanilla-scented flowers in spikes	moist, rocky soil	sun/part shade	showy hedge or screen	can be pruned into hedge
Cenizo Leucophyllum frutescens	2-6 feet tall, 4-6 feet wide	dense shrub	silvery gray shrub with bright pink-lavender flowers	rocky, well-drained soil	sun/part shade	good hedge or screen	several months of flowering
Deciduous holly Ilex decidua	12-20 feet tall	small, twiggy branches	striking red berries on female plants persist into winter	moist sands	sun/part shade	understory tree	berries attract songbirds
Dwarf wax myrtle Myrica pusilla	8-12 feet tall	evergreen	golden yellow flowers; small blue fruits	adaptable	sun/part shade	excellent pruned hedge	may be limbed up for ornament
Evergreen sumac Rhus virens	4-12 feet tall, 6-8 feet wide	thick evergreen foliage	red berries in late fall	rocky, dry soils	full sun	aromatic ornamental	may bronze after a freeze, do not overwater
False indigo Amorpha fruitcosa	up to 12 feet tall	loose, airy shrub with dense thickets	dark purple flowers in spring	moist soil to dry sands	sun/part shade	fast-growing water ornamental	wet areas only
Golden-ball lead tree Leucaena retusa	up to 12 feet tall	slender shrub	yellow puff flowers in spring, summer and fall;	dry, rocky soils	sun/part shade	showy floral ornamental	do not overwater
Mexican buckeye Ungnadia speciosa	12-20 feet tall, 12-20 feet wide	multi-trunked small tree	pink flowers in early spring; yellow fall color	dry, rocky soils	sun/part shade	aromatic accent shrub	rapid-growing and drought-resistant
Prickly ash Zanthoxylum hirsutum	up to 15 feet tall	prickly shrub or tree	fragrant foliage, many sharp spines, small fruit and flower clusters	dry, sandy	sun/part shade	aromatic shortgrass meadow ornamental	do not plant near sidewalks; fruit is edible
Roughleaf dogwood Cornus drummondii	up to 16 feet	clumping shrub	purplish-red fall color	grows best in moist soil	part shade	erosion control, good for pond area	thicket-forming; to maintain as tree, mow or pull shoots

Plant Material Selection – Large Shrubs (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Large Shrubs							
Silktassel Garrya ovata var. lindheimeri	3-12 feet tall	evergreen	silvery-gray leaves	dry or moist soils	part shade	interesting foliage	typically grows in limestone
Texas kidneywood Eysenhardtia texana	3-12 feet tall	multi-branched open shrub	white, fragrant flowers	moist, rocky soils	full sun	showy hedge or screen	after rains, produces vanilla-scented flowers
Texas mock orange Philadelphus texensis	up to 12 feet tall	perennial	white flowers late spring and early summer	dry, limestone-based soil	sun/part shade	aromatic accent shrub	uncommon or rare plant
Texas Mountain laurel Sophora secundiflora	10-20 feet	multi-trunked small tree	fragrant purple flowers	dry, rocky, well-drained soils	sun/part shade	evergreen ornamental	slow growing
Texas pistache Pistacia texana	12-30 feet tall, 15-20 feet wide	evergreen	leaves small and glossy	well-drained alkaline soil	full sun	ornamental	drought-resistant
Wafer-ash (Hop tree) Ptelea trifoliata	3-12 feet tall	rounded crown shrub	interesting fragrant foliage and fruit	moist to dry, well-drained loams	sun/part shade	accent tree	attracts many butterflies
Wax myrtle Myrica cerifera	up to 15 feet tall	evergreen	golden yellow flowers; small blue fruits	slightly acidic, moist, deep sands	sun/part shade	excellent screen	drought and flood tolerant once established
Witch hazel Hamamelis virginiana	up to 30 feet tall	crooked, spreading branches into irregular crown	golden yellow fall color	rich, well-drained soil	part shade/full shade	understory tree	avoid extremely dry situations

Plant Material Selection – Low Shrubs

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Low Shrubs							
Agarita Berberis trifoliata	3-6 feet tall, 3-6 feet wide	evergreen	fragrant yellow flowers early spring, fruit small red berries	rocky, limestone soil	sun/part shade	provides food for the wildlife	spiny leaves (do not plant near sidewalk)
American beautyberry Callicarpa americana	3-5 feet tall, 3-5 feet wide	long arching branches	clusters of purple fruit	needs moist conditions	part shade	can be used as a screen	attracts birds
Black dalea Daleo frutescens	1-3 feet tall, 3-4 feet wide	low growing shrub with varying leaf heights	small delicate leaves; purple flowers in summer and fall	dry	full sun	ornamental	do not overwater or fertilize, requires little maintenance
Butterfly bush Buddleja marrubbiifolia	4-6 feet tall, 4-6 feet wide	semi-evergreen	silvery-gray leaves; orange flowers summer and fall	dry	part shade	ornamental	needs protection from freezes
Buttonbush Cephalanthus occidentalis	6-12 feet tall	multi-branched shrub	spreading multi-occidentalis branched shrub with balls of white flowers resembling pincushions	moist, wet	part shade/shade	ornamental	wet areas only
Chili pequin Capsicum annuum	2-3 feet tall	multi-branched herb	small white flowers in summer and fall, small red berries	moist	sun, part shade, shade	used in gardens	can be pruned to control height or shape
Elbow bush Forestiera pubescens	up to 10 feet tall	open shrub	turns yellow in fall	dry, moist	sun, part shade, shade	good in bushy areas, or along streams	attracts butterflies
Flame acanthus Anisicanthus quadrifidus var. wrightii	3-4 feet tall	low shrub with varying branch heights	flowers are orange or red from summer to fall; attract hummingbirds	dry, moist	sun, part shade	ornamental	attracts hummingbirds
Frangrant mimosa Mimosa borealis	3-7 feet tall	sprawling shrub	many beautiful pink flowers in early spring	dry	sun, part shade	ornamental (showy and aromatic)	has many sharp spines (do not plant near sidewalks)

Plant Material Selection – Low Shrubs (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Low Shrubs							
Greg dalea Dalea greggii	1 foot tall, 2-4 feet wide	low growing herb	flowers summer and fall	dry	sun, part shade	use as ground cover, or in pots	good ground cover
Greg sage Salvia greggii	up to 3 feet tall, up to 3 feet wide	evergreen	flowers range from pink to red to white, spring summer and fall; attracts hummingbirds	dry	full sun	useful as a low hedge	attracts hummingbirds
Mexican oregano Poliomentha longiflora	up to 3 feet tall, up to 3 feet wide	evergreen	pink flowers spring, summer, and fall	dry	full sun	ornamental	attracts hummingbirds
Mountain sage Salvia regla	3-6 feet tall, 3-4 feet wide	dense mounding shrub	red flowers in fall	wet areas only	part shade	attractor for migrating hummingbirds	attract hummingbirds
Shrubby blue sage Salvia ballotiflora	up to 6 feet tall	deciduous dense shrub	flowers spring, summer, and fall, fragrant (minty) leaves	alkaline adaptable	full sun	good for small mammal protection	drought tolerant, not used for food by wildlife
Shrubby boneset Ageratina havanensis	3-5 feet tall, 3-5 feet wide	deciduous perennial shrub	white flowers in late summer and fall	adapts to most well drained soils	part shade	thick greenery along rock garden or borders	drought tolerant, cut back in winter
Skeleton-leaf goldeneye Viguiera stenoloba	2-4 feet tall	dense mounded shrub	prolific, daisy-like, yellow-orange flowers in summer and fall	needs good drainage	sun/part shade	rock gardens, color spot	extremely drought tolerant
Skunkbush Rhus trilobata	up to 3 feet tall, 3-5 feet wide	open branched shrub	red berries in fall, red fall foliage, small yellow flowers	adaptable	sun/part shade	good for bird garden splashes of red fall color	extremely showy crimson leaves in fall
Texas Latana Lantana urticiodes	3-6 feet tall	rounded mound to coarse shrub	red, orange, and yellow flower clusters; poisonous blue-black fruit clusters	adaptable	full sun	Great for butterflies, humming birds and bees	deer resistant, poisonous berries
Turk's cap Malvaviscus arboreus	2-6 feet tall, 3-5 feet wide	coarse shrub	red flowers in summer and fall	adaptable	part shade/shade	Color spot good massing plant wildlife attractor	beautiful contrasting flower and foliage

Plant Material Selection – Low Shrubs (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Low Shrubs							
Yaupon holly Ilex vomitoria	12-20 feet tall, 10-15 feet wide	evergreen	red berries on females	moist or well drained, sandy, loamy, clay, limestone, or gravelly soils	sun/shade	topiary, low to medium tree,	available in dwarf variety growing 2-4 feet tall and 2-4 feet wide
Yellow bells Tecoma stans	3-6 feet tall	irregularly shaped	large, showy, yellow trumpet-shaped flowers from April to November	may die in harsh winters; do not overwater	sun/part shade	Back drop shrub	heat tolerant
Zexmenia Wedelia texana	up to 3 feet tall	herbaceous shrub	showy yellow daisy-like flowers from summer to frost	do not overwater	sun/part shade	Color spot, rock garden areas	Propagates through stems laying down

Plant Material Selection – Vines

Vines							
Carolina jessamine Gelsemium sempervirens	10-20' long	evergreen	yellow trumpet-shaped flowers	prefers moist, rich soil	sun/part shade	climber fences structures	poisonous to livestock
Coral honeysuckle Lonicera sempervirens	3-20' long	evergreen	elongate red flowers in early spring, some in summer; attracts hummingbirds	sandy, sandy loam, medium loam, clay loam, clay, caliche type	full sun	climber fences structures, good for wildlife	not too aggressive
Crossvine Bignonia capreolata	36-72' long	evergreen	large orange flowers in spring	moist, well-drained, acidic or calcareous soils; sandy, sandy loam, medium loam, clay loam, clay	sun/part shade	an evergreen vine with glossy leaves and showy, two-tone, trumpet flowers	hummingbirds are attracted to flowers. An early nectar source for butterflies and hummingbirds
Lindheimer's morning glory Ipomoea lindheimeri	3-6' long	delicate perennial	large pale purple flowers	grows in rocky ground, especially in draws, ravines, and stream bottoms	sun/part shade	rocky garden accent	the vine can low climbing or trailing
Purple leather flower Clematis pitcheri	6-12' long	delicate perennial	purple flowers with leathery petals	moist, well-drained soil, limestone-based, sandy, sandy loam, medium loam, clay loam, clay	sun/part shade	showy, attractive, blooms ornamental, twines on fences & other plants	woodlands edge, thickets, bluff ledges, slopes
Trumpet creeper Campsis radicans	25-35' long	deciduous perennial	showy, trumpet-shaped flowers ranging from orange to red in color, flowers throughout summer	sandy, sandy loam, medium loam, clay loam, clay, caliche type	full sun	climber, trellis, fences, structures, baffle	aggressive vine to keep in check,
Virginia creeper Parthenocissus quinquefolia	12-36' long	deciduous perennial	interesting leaves; bright red fall color	tolerates most soils and climatic conditions	sun/part shade	twines on fences & other plants, Screens, Climbs walls & columns, Arbor, Ground cover	adheres via adhesive discs rather than penetrating rootlets, so it won't damage buildings

Plant Material Selection – Vines (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Vines							
White bush honeysuckle Lonicera albiflora	6-12' long	grows as shrub or vine	small white, honeysuckle fragrant flowers; red berries in summer	rocky or sandy soils. limestone-based, sandy loam medium loam, clay loam, clay	full sun	showy, blooms ornamental, fruits ornamental, easily grown, climbs walls & columns	deer browse the plant and berries attract birds. Nectar-butterflies, nectar-bees, nectar-insects, Fruit-birds

Plant Material Selection – Xerophytes

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Xerophytes							
Texas sotol Dasylirion texanum	3-4 feet wide	tall flower stalks	interesting spiny foliage	dry	full sun	security hedge, or in rock gardens	easy to grow
Devil's shoestring Nolina lindheimeriana	1-3 feet tall	resembles clump of grass	green rosette in late spring	dry	full sun	accent tree or shrub	winter-hardy
Lechuguilla Agave lechuguilla	1-2 feet tall	very tall flower stalks	interesting spiny foliage	dry	full sun	rock gardens	do not plant near sidewalks
Pale-leaf yucca Yucca pallida	1-2 feet tall	small succulent	pale blue-green color	dry	sun, part shade	ornamental	requires good drainage
Red yucca Hesperaloe parviflora	2-3 feet tall	red flowers on tall stalk	showy coral colored flowers, wand like pink stems	dry	full sun	ornamental	attracts hummingbirds
Spanish dagger Yucca treculeana	3-12 feet tall	leaves stiff and spear-like	white flowers in spring	dry	full sun	ornamental	do not plant near sidewalks
Spice lily Manfredo maculosa	1-2 feet tall	fleshy green leaves have irregular maroon spots	white flower cluster on tall stalk	dry	sun/part shade	ornamental	very fragrant, requires good drainage
Texas sacahuista Nolina texana	up to 3 feet wide	resembles clump of grass	white flowers hidden in leaves	dry	part shade	accent tree or shrub	low maintenance, drought tolerant
Twist-leaf yucca Yucca rupicola	up to 2 feet tall	resembles clump of grass	white flower cluster on tall stalk	dry	sun/ part shade	ornamental	leaves become twisted with age

Plant Material Selection – Perennial Flowers

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Perennial Flowers							
Aromatic aster Aster oblongifolius	2-3 feet tall, 2-3 feet wide	open herb	purple flowers in fall	dry, moist	sun/part shade	ornamental	needs pruning
Big red sage Salvia penstemonoides	3-4 feet tall, 1-2 feet wide	semi-evergreen	magenta flowers in summer and fall	moist	sun/part shade	ornamental	attracts hummingbirds
Blackfoot daisy Melampodium leucanthum	up to 1 foot tall, 1-2 feet wide;	low, mounded perennial	white leucanthum flowers during spring, summer, and fall	dry	sun, part shade	ornamental	attracts wildlife, heat and drought tolerant.
Bushy skullcap Scutellaria wrightii	up to 1 foot tall, 1 foot wide	evergreen	small purple flowers in spring, summer and fall	dry, moist	full sun	ornamental	trim in early spring
Butterflyweed Asclepias tuberosa	up to 2 feet tall	large clusters, lance shaped foliage	clusters of yellow-orange flowers	dry, moist	sun/part shade	ornamental	attracts butterflies
Canyon sage Salvia lycoides	up to 3 feet tall	tall herb	blue flowers spring and fall	dry	part shade	ornamental, short grass meadow	attracts hummingbirds
Cedar sage Salvia roemariana	1-2 feet tall, 3 feet wide	evergreen	red flowers in spring	dry	part shade/full shade	ornamental, attracts wildlife	plant in large areas
Chocolate daisy Berlandiera lyrata	1-2 feet tall	rounded, scalloped leaves	yellow daisy-like flowers in spring and fall, smell like chocolate	dry	sun/part shade	ornamental	attracts hummingbirds and butterflies
Crimson-eyed rosemallow Hibiscus moschuetos	3-8 feet tall	sturdy stems from a single crown	white flowers in late summer	wet areas only	sun/part shade	ornamental	attracts hummingbirds
Damianita Chrysactinia mexicana	1-2 feet tall, 1-2 feet wide	evergreen shrub	yellow flowers	dry	full sun	ornamental, ground cover	requires good drainage
Engelmann daisy Engelmannia pinnatifida	up to 2 feet tall	rounded crown	yellow flowers in spring and summer	dry	full sun	good along roadsides	heat and drought tolerant

Plant Material Selection – Perennial Flowers (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Perennial Flowers							
Fall obedient plant Physostegia virginiana	2-4 feet tall, 3 feet wide	long, lanceolate leaves	purple flowers in fall	moist	part sun/shade	ornamental	extremely adaptable, attracts hummingbirds and butterflies
Fluttermill Oenothera missouriensis	up to 1 foot tall	narrow and thick herb	large yellow flowers open early evening in spring and summer	dry	full sun	ornamental, rock garden	plant flowers over a long period of time
Frogfruit Phyla nodiflora	less than 1 foot tall	semi-evergreen	small white flower clusters through spring, summer and fall	dry, moist	sun/part shade	good groundcover	adaptable
Gaura Gaura lindheimeri	2-4 feet tall, 3 feet wide	upright, widely-spreading	showy pink to white flowers spring and summer	variable	sun/part shade	aromatic, good for the back of a perennial bed	flowers in early morning
Gayfeather Liatris mucronata	1-2 feet tall	stiff, upright, branched stems	purple flowers in the fall	do not overwater	full sun	perennial garden	attracts butterflies
Giant blue sage Salvia azurea	3-6 feet tall	tall plant with spike-like cluster	delicate blue flowers in fall	limestone-based	sun/part shade	short grass meadow to perennial garden	flowers early and continues until fall
Goldenrod Solidago canadensis	2-5 feet tall	tall, leafy hair stem	abundant yellow flowers in the fall	dry, moist caliche type	sun/part shade/shade	showy, wildflower meadow	attracts birds
Heath aster Symphyotrichum ericoides	1-2 feet tall	small perennial	numerous small white flowers in the fall	dry to medium, well-drained soil	full sun	good border plant	family includes herbs
Mealy sage Salvia farinacea	1-3 feet tall, 1-2 feet wide	sprawling perennial	purple/blue flowers in spring, summer and fall	moist, limestone soils	full sun	plant in groupings for an attractive mass of color	attracts butterflies and hummingbirds
Missouri violet Viola missouriensis	less than 1 foot tall	perennial herb	purple or lavender flower, appears for 3 weeks early spring	wet areas only	part shade/full shade	attractive for flower bed	colonizes via rhizomes
Pigeonberry Rivina humilis	1-2 feet tall, up to 2 feet wide	perennial herb	white flowers and bright red fruits from summer to fall	wet areas only	part shade/shade	low-growing herb layer plant	choice food for many birds

Plant Material Selection – Perennial Flowers (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Perennial Flowers							
Pink skullcap Scutellaria suffretescens	can spread up to 2 feet wide	round, tidy form	dark pink flowers in spring, summer and fall	loam or sandy soil	shade	low layer plant	drought tolerant
Ponyfoot Dichondra carolinensis	less than 1 foot tall;	plentiful, herbaceous perennial	pony foot shaped leaves	prefers moist soil	sun/part shade/shade	good ground cover	freeze resistant
Prairie larkspur Delphinium carolinianum	1-2 foot tall	slender, upright perennial	white or blue flowers on tall stalks	dry, sandy soils	sun/part shade	wildflower meadow	fatally poisonous to humans and animals
Prostrate lawnflower Calyptocarpus vialis	less than 1 foot tall	groundcover	small yellow flowers in spring, summer and fall	well-drained sand or loam	sun/part shade	good ground cover	can be mowed
Purple cone-flower Echinacea angustifolia	1-2 feet tall	stout stemmed perennial	large purple flowers in the spring and summer	well-drained clay loam	sun/part shade	suitable for prairie garden	medicinal; attracts butterflies
Rain lily Cooperia pedunculata	1-1.5 feet tall	trumpet-shaped flower	white trumpet-shaped blooms in spring, or after a rain event	need moist areas	full sun	short grass meadow	can be mowed
Red columbine Aquilegia canadensis	1-3 feet tall and 1-2 feet wide	erect, branching perennial	interesting leaves, beautiful red flowers	prefers moist areas	part shade/shade	shade-loving perennial with eye-catching blooms	attracts bird, butterflies, hummingbirds
Rock penstemon Penstemon baccharifolius	up to 2 feet tall	densely branched subshrub with herbaceous growth above	large, red, tubular flowers in spring, summer and fall	alkaline	sun/part shade	desirable in rock gardens	higher altitude plant from 2000-7000
Scarlet penstemon Penstemon triflorus	1-2 feet tall, 1-2 feet wide	spikes form a basal whorl	pinkish-red flowers in spring and fall	limestone soils, sandy, sandy loam, medium loam, clay loam, clay, limestone-based	sun	perennial garden, Blooms ornamental, showy, attracts hummingbirds	Texas native

Plant Material Selection – Perennial Flowers (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Perennial Flowers							
Silver ponyfoot Dichondra argentea	up to 4 inches tall	creeping, trailing evergreen vine	silver-gray foliage has metallic appearance in sun	loamy, well drained, pH of 5.5 - 6.2	full sun to partial shade	great groundcover for large, open, sunny sites	no serious insect or disease problems
Snakeherb Dyschoriste linearis	up to 1 foot tall	erect stems clustered	purple and lavender bell-shaped flowers through spring, summer and fall	wet areas only, a variety of sandy, silty, or rocky soils with good drainage	full sun	butterfly garden	will repeat blooming with late summer moisture
Standing cypress Ipomopsis rubra	2-4 foot tall	multiple spikes	biennial, first year of growth fernlike in appearance, less than 1 foot tall, second year becomes a stiff branched stalk with showy, red, tubular flowers in the spring and early summer	Well-drained sand, loam, or limestone.	sun/part shade	back drop plant best used for attracting wildlife	can reach to 6' in ideal conditions
Sword leaf blue-eyed grass Sisyrinchium chilense	less than 1 foot tall	vertical leafs from an tuberous root	grass-like leaves with showy blue-purple flowers at tip of stalks in spring	6.6 to 7.5 (neutral), 7.6 to 7.8 (mildly alkaline)	sun/part shade	mix in perennial gardens rock gardens	plant is attractor for bees butterflies and hummingbird birds
Texas betony Stachys coccinea	1-2 feet tall, 2-3 feet wide	stout, erect, leafy plant, covered with soft hairs, with scarlet bilaterally symmetrical flowers in whorl	leaves gray-green; red flowers in spring, summer and fall	Moist well drained soils	shade	rock garden, crevices stony places,	Aromatic foliage, can become a ground cover for shady places
Texas rock rose Pavonia lasiopetala	1-3 feet tall, up to 2-3 feet wide	woody based shrub	pink flowers during summer and fall	well-drained, limestone soils	sun/part shade	attractive, easily grown, great landscaping plant	heat resistant
Texas star hibiscus Hibiscus coccineus	up to 4 feet tall, up to 4 feet wide	large, showy plant	orange star-like flowers in the summer and fall	wet soils	full sun	effective on the edge of ponds or streams	attracts hummingbirds, butterflies
Tropical sage Salvia coccinea	up to 3 feet tall, 1-2 feet wide	whorled flowers on square stem	red flowers in spring, summer, and fall	dry, moist caliche	sun/shade	easily grown ornamental	grows in the shade

Plant Material Selection – Perennial Flowers (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Perennial Flowers							
White avens Geum canadense	up to 2 feet tall		small white flowers in spring	wet areas only	part shade/shade	good groundcover	
Wild foxglove Pentemon cobaea	1-2 feet tall	large tubular flowers on stems	large white flowers in spring	dry	full sun	ornamental	may go dormant during the summer
Winecup Callirhoe involucrata	less than 1 foot tall, 3 feet wide	evergreen, semi-evergreen	pink, purple or maroon cup-shaped flowers on stalk	dry, moist	sun/part shade	ornamental as a bedding plant	mat-forming
Wood-fern Thylpteris kunthii	2-5 feet tall, 3 feet wide	evergreen, varies in size	deep green leaves	wet areas only	shade	ornamental	will grow in rocky soil
Woolly ironweed Vernonia lindheimeri	1-3 feet tall	terminal clusters	lots of small purple flowers in summer	dry	full sun	ornamental, floral arrangements, perennial gardens	attracts butterflies
Woolly stemodia Stemodia lanota	up to 1 foot tall	semi-evergreen	silvery-gray foliage with lavender or white flowers through spring, summer, and fall	dry	full sun	ornamental	not suitable for cold weather

Plant Material Selection – Ornamental Grasses

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Ornamental Grasses							
Big bluestem Andropogon gerardii	3-5 feet tall	large stature, flowering heads	flowers in fall	needs room to spread	sun/part shade	essential for grassland restoration	can be aggressive
Big muhly Muhlenbergia capillaris	1-3 feet tall	large, airy seed head	stunning pink to lavender display in fall	prefers moist, sandy soil	full sun	functions well as general garden plant	grows easily
Bull muhly Muhlenbergia emersleyi	3-5 feet tall	clumped, grass-like	flowers in the fall have purplish color	dry, moist sandy loam	sun/part shade	great for erosion control	native to hilly slopes and high elevation
Bushy bluestem Andropogon glomeratus	2-5 feet tall	fluffy flower heads resemble cotton candy	blue-green foliage turns coppery brown in fall	prefers moist areas	full sun	attractive bunchgrass with year-round color	provides nesting material for birds
Indian grass Sorghastrum nutans	3-5 feet tall	tall, bunching sod-former	yellow fall color	need room to spread	sun/part shade	clumping accent grass	stays low until early autumn
Inland sea oats Chasmanthium latifolium	2-4 feet tall	clump-forming with large spikelet's	interesting drooping oat-like seed heads	wet areas only	part shade/shade	dense-covering grass for shade	will form colonies
Lindheimer's muhly Muhlenbergia lindheimeri	3-5 feet tall, 3 feet wide	fountain-like form	flowers in fall	well-drained, rocky limestone soils	full sun	use instead of pampas grass; large enough for screening	grows fast
Little bluestem Schizachyrium scoparium	2-5 feet tall	dense mounded bunchgrass	leaves blue-green, turning bronze after first frost	needs room to spread	full sun	accent grass grown en masse	color remains through most of winter
Mexican feathergrass Nassella tenuissima	1-2 feet tall	delicate leaves	leaves thin and bright green, flowers late summer	well-drained, acid or calcareous sands	sun/part-shade	low-growing, graceful accent grass	may rot under heavy mulch
Pine muhly Muhlenbergia dubia	1-2 feet tall	stiff, upright plant	leaves gray-green in color	dry soil	full sun	tidy, formal accent grass	best planted in groups

Plant Material Selection – Ornamental Grasses (cont)

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Ornamental Grasses							
Sideoats grama Bouteloua curtipendula	2-3 feet tall	bunchy, sod-forming grass	purplish shade in fall	does not compete well with other tall grasses	sun/part shade	attractive for prairie restoration	doesn't compete well with tall grasses
Switchgrass Panicum virgatum	3-6 feet tall	clump-forming, lacy grass	bright green turning to bright yellow in fall	dry to moist soils	sun/part shade	pocket prairie accent	yellow-colored clumps last through winter

Plant Material Selection – Turf Grasses

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Turf Grasses							
Buffalograss Buchloe dactyloides	3-12 inches	medium textured dense form, matted grass	blooms yellow in spring and Fall	very little water needed once established, does not respond to fertilizer, spreads by seeds as well as runners; needs to be weeded once established	full sun	wide range of uses and very popular in arid climates	needs little mowing
Bermuda grass Cynodon dactylon	3-15 inches	medium textured dense form, matted grass	blooms 3 months after planting and seeds just 2 weeks after	needs 1 inch of water per week; will invade nearby beds	sun/shade	good for burned areas, good for shard to grow areas	grows short, needs mowing
Zoysia Zoysia matrella	3-6 inches	coarse textured, mounding	green blooms on a raceme	needs 1 inch of water per week, does not tolerate poorly drained soils	sun/part shade	lawns, golf course baseball, soccer fields	forms dense turf, salt tolerant
Native sun turf grass (buffalograss and blue grama) Buchloe dactyloides and Bouteloua gracilis	5-8 inches	dense fine textured	self seeding very minor bloom	does not respond to fertilizer, tolerates from sandy to caliche soils	full sun	a performance grass in arid climates	only available as seed, plant spring to summer, needs little mowing, no fertilizer required
Thunder turf grass mix (buffalograss, blue grama, and curly mesquite) Buchloe dactyloides, Bouteloua gracilis, and Hilaria belangeri	3-8 inches	provides even textured, dense turf	self seeding very minor bloom	over watering and fertilizing increase weeds, tolerates from sandy to caliche soils	full sun	a performance grass in arid climates	only available as seed, plant spring to summer; needs little mowing, very slow growing

Plant Material Selection – Xerophytes

Name	Size	Form	Bloom	Soil/Conditions	Habitat	Recommended Use	Notes
Xerophytes							
Texas sotol Dasylirion texanum	3-4 feet wide	tall flower stalks	interesting spiny foliage	dry	full sun	security hedge, or in rock gardens	easy to grow
Devil's shoestring Nolina lindheimeriana	1-3 feet tall	resembles clump of grass	green rosette in late spring	dry	full sun	accent tree or shrub	winter-hardy
Lechuguilla Agave lechuguilla	1-2 feet tall	very tall flower stalks	interesting spiny foliage	dry	full sun	rock gardens	do not plant near sidewalks
Pale-leaf yucca Yucca pallida	1-2 feet tall	small succulent	pale blue-green color	dry	sun, part shade	ornamental	requires good drainage
Red yucca Hesperaloe parviflora	2-3 feet tall	red flowers on tall stalk	showy coral colored flowers, wand like pink stems	dry	full sun	ornamental	attracts hummingbirds
Spanish dagger Yucca treculeana	3-12 feet tall	leaves stiff and spear-like	white flowers in spring	dry	full sun	ornamental	do not plant near sidewalks
Spice lily Manfredo maculosa	1-2 feet tall	fleshy green leaves have irregular maroon spots	white flower cluster on tall stalk	dry	sun/part shade	ornamental	very fragrant, requires good drainage
Texas sacahuista Nolina texana	up to 3 feet wide	resembles clump of grass	white flowers hidden in leaves	dry	part shade	accent tree or shrub	low maintenance, drought tolerant
Twist-leaf yucca Yucca rupicola	up to 2 feet tall	resembles clump of grass	white flower cluster on tall stalk	dry	sun/ part shade	ornamental	leaves become twisted with age

Appendix A
Installation Design Guide
Reference Matrix

Reference Matrix

FORT HOOD PLANING AND DESIGN REFERENCES		
Planning/Design Component	**Topics of Interest**	Reference
General	**Accessibility**	Americans with Disabilities Act Accessibility Guidelines (ADAAG)
		Uniform Federal Accessibility Standards (UFAS)
	Anti-terrorism/Force Protection	UFC 4-010-01, DoD Minimum Anti-Terrorism Standards for Buildings
Building Design and Building Systems	**USACE Centers of Standardization**	http://mrsi.usace.army.mil/cos/SitePages/Home.aspx
	Seismic Design	Uniform Facilities Criteria (UFC) 3-300-10, Design: General Structural Requirements
		UFC 3-310-03A, Design: Seismic Design for Buildings
		UFC 3-301-05A, Seismic Evaluation and Rehabilitation for Buildings
	Signage	UFC 3-120-01, Design: Sign Standards
		2007
	General	UFC 1-200-01, Design: General Building Requirements
	HVAC	UFC 3-410-01FA, Design: Heating, Ventilating, and Air Conditioning
		UFC 3-410-02, Lonworks Direct Digital Control for HVAC and other Local Building Systems
	Energy Efficiency	UFC 1-200-01, High Performance and Sustainable Building Requirements
	Energy Conservation	UFC 3-400-01, Energy Conservation
	Renewable Energy Systems	UFC 3-440-01, Design: Active Solar Preheat Systems
	Plumbing	UFC 3-420-01, Plumbing Systems
	Electrical	United Facilities Criteria (UFC) 3-520-01, Interior Electrical Systems
	Lighting	UFC 3-530-01 - Design: Interior and Exterior Lighting and Controls
	Fire Protection	UFC 3-600-01, Design: Fire Protection Engineering for Facilities
Interior Design	**Methods, Funding, Requriements**	UFC 3-120-02AN, Design Guide for Interiors *and* ER 1110-345-122, Engineering and Design, Interior Design
	Interior Signage	UFC 3-120-01, Design: Sign Standards
		FH Regulation 420-5 Standard for Signs and Markings, 19 October, 2007
	Interior Planting	USAF Landscape Design Guide, Chapter 20 "Interior Planting"
	Space Planning	AR 405-70, Utilization of Real Property

Reference Matrix, continued

FORT HOOD PLANING AND DESIGN REFERENCES		
Planning/Design Component	**Topics of Interest**	Reference
Communication	**Technical Networks**	NEC Communication Design Guide
	Data Network	
	Premises Distribution Systems	
Transportation	**Access Control Points (ACPs)**	USACE ACP Standard Design, May 2013
	Transportation Publications	Army Regulation (AR) 420-72, Transportation Infrastructure and Dams
		TI 804-11, Design for Non-Organizational or Privately Owned Vehicle (POV) Site Circulation and Parking
		TM 5-811-1/Air Force AJMAN 32-1080, Electric Power Supply and Distribution
		Manual of Uniform Traffic Control Devices (MUTED)
		TM 5-822-2, General Provisions and Geometric Design for Roads, Streets, Walks, and Open Storage Areas
		Military Traffic Management Command Transportation Engineering Agency (MTMCTEA)
	Associated Publications	UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings
		Americans with Disabilities Act Accessibility Guidelines (ADAAG)
		Uniform Federal Accessibility Standards (UFAS)
	Street, Building and Wayfinding Signage	UFC 3-120-01, Design: Sign Standards
		FH Regulation 420-5 Standard for Signs and Markings, 19 October, 2007
Landscaping	**Low Impact Development**	UFC 3-210-10, Low Impact Development
		Fort Hood Reg 200-1
		EPA 841-B-09-001
	FH Landscaping Publications	FH Tree List MOI, 27 June 2012 Tree Ordinance, 27 June 2012

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Appendix B
District Illustrative, Regulating and Transportation Plans

Illustrative Plan

A Flex-Use, Barracks: 5 bldgs @ 29,376sf / flr (3-4 flr)
B Flex-Use, General Admin: 2 bldgs @ 18,400sf / flr (2-4 flr)
C Flex-Use, COF with Barracks/Company Ops: 13,182sf / flr (3-4 flr)
D Flex-Use, Barracks: 4 bldgs @ 15,000sf / flr (3-4 flr)
E Flex-Use, Barracks/General Admin: 2 bldgs @ 15,000sf / flr (3-4 flr)
F Industrial, Medium TEMF w/ Storage: 45,382sf / flr (1-2 flr)
G Industrial, Large TEMF w/ Storage: 5 bldgs @ 60,040sf / flr (1-2 flr)
H Industrial, Storage: 2,000sf / flr (1-2 flr)
I Flex-Use, Company Operations: 15,673sf / flr (1-3 flr)
J Flex-Use, Battalion Headquarters: 8,581sf / flr (2-4 flr)
K Flex-Use, Barracks/Gen Admin/Storage: 11,478sf / flr (3-4 flr)
L Flex-Use, Barracks: 39,643sf / flr (3-4 flr)
M Flex-Use, Copeland Center Expansion: 22,000sf / flr (2-4 flr)

N Industrial, Training Support Center, PN71120: 161,906sf / flr (1-2 flr)
O Industrial, Mission Training Center, PN68826: 131,650sf / flr (1-2 flr)
P Flex-Use, Barracks/General Admin./Storage: 39,295sf / flr (3-4 flr)
Q Industrial, Central Technical Support Facility, PN62789: 130,800sf / flr (1-2 flr)
R Industrial, Small TEMF: 3 bldgs @ 26,920sf / flr (1-3 flr)
S Industrial, Air Force Simulator: 17,500sf / flr (1-2 flr)
T Industrial, DRFF Support Facility: 7,000sf / flr(1-2 flr)
U Industrial, Air Support Operations Group (ASOG) Campus: 20,000sf / flr (3-4 flr)
V Flex-Use, Rod and Gun Club: 8,850sf / flr (1-2 flr)
W Flex-Use, DFAC: 27,810sf / flr (1-2 flr)
X Flex-Use, Battalion Headquarters: 14,169sf / flr (2-4 flr)
Y Flex-Use: 5,339sf / flr (2-4 flr)
Z Industrial, SSA: 3 bldgs @ 20,000sf / flr (1-2 flr)

New Facilities
Existing Facilities
Detached Housing
Attached Housing
Bus Route
Public Transit Stop
Demolished Buildings
Housing Parcels
Existing Trees
Street Trees
Stormwater
Topography
Railroad
ADP Boundary
Installation Boundary
5/10 Minute Walk

1st Cav Regulating Plan

Notes:
1. Refer to the Street Standards for detailed Street Information.
2. Refer to the Building Standards for detailed building information.
3. Recreation area shall be used solely for programmed recreation activities
4. Unregulated areas shall be permanently designated as open space.
5. Numerical Designation in each buildable area refers to minimum and maximum number of floors,
6. Building area boundaries assume construction which allows a 30' setback, based on UFC 4-010-01, 9 Feb 12.

Mixed-Use
Flex-Use
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area
Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

500' 500' 500'

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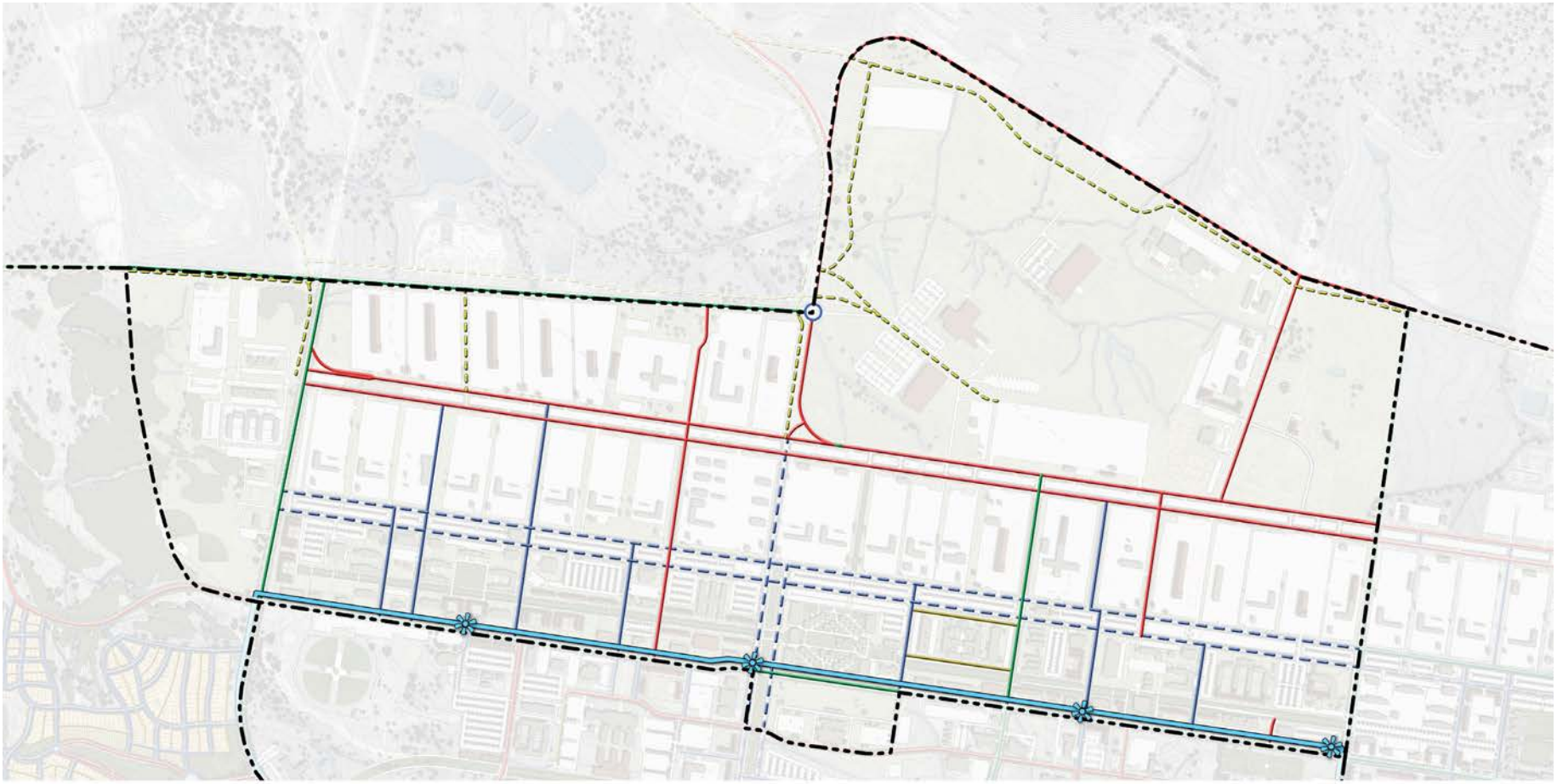
1st Cav Street and Transit Plan



This plan shows the street network system with the different types of roadways on the installation: Multiway Boulevards, Boulevards, Avenues, Main Streets, Park Streets, Neighborhood Streets, Alleys, and unpaved roads; this network is designed to support a more efficient transportation system at Fort Hood. This plan also shows the transit network system with three shuttle routes along main corridors throughout the installation, and transfer stops that allow for rapid changing between these routes from access control points.

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Street Details – 1st Cav

1CD Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
49th Street	Neighborhood Street	6	10				14.5			14.5					
50th Street	Avenue						12		13	12					
53rd Street	Main Street	6	14	9			12.5			12.5			9	6	6
56th Street	Avenue	6	6	9	5		12			12		5	9	6	6
58th Street	Neighborhood Street	6	23.5				13			13				6	6
59th Street	Avenue	6	6	9	5		12			12		5	9	6	6
62nd Street	Boulevard	6	6		5	12	12	15	12	12	12	5		6	6
67th Street	Main Street	6	6				13			13				34.5	6
69th Street	Main Street	6	6				11.5			11.5				6	6
72nd Street - N	Avenue	6	6		5		12			12				6	6
72nd Street - Park Block	Park Street	6	6	9	7	12	12	168		12	12	7	9	6	6
73rd Street	Neighborhood Street	6	6				13			13				6	6
73rd Street - N	Avenue	6	6	9	5		12			12		5	9	6	6
74th Street	Neighborhood Street	6	27				13			13				6	6
75th Street	Neighborhood Street	5	20				13			13				20	5
75th Street - N	Neighborhood Street	6	6				13			13				6	6
76th Street	Neighborhood Street	6	19				13			13				23	5
76th Street - N	Alley						10			10					
77th Street	Neighborhood Street	5	20				13			13				23	6

Street Details – 1st Cav (cont)

1CD Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Battalion Avenue	Boulevard	6	0-20		5	10.5	10.5	13	10.5	10.5	10.5	5		0-17	6
Clear Creek Road	Boulevard	6	18		5	12	12	15	12	12	12	5		18	6
Hell on Wheels Avenue	Park Street	6	9	9				139		10.5		5	9	9	6
Murphy Road	Avenue	6	6			11	11			11	11			6	6
North Avenue	Avenue	6	6			11.5	11.5			11.5	11.5			6	6
Old Iron Sides Avenue	Park Street	6	9	9	5		10.5	139					9	9	6
South Range Road	Avenue						10.5			10.5					
TJ Mills	Boulevard	6	0-10			15.5	15.5	20		12	12			0-17	6
Turkey Run Road	Boulevard	6	6		5	12	12	15	12	12	12	5		6	6
West Range Road	Avenue	6	6			11	11			11	11			6	6

Clear Creek/Darnall Illustrative Plan

A Flex-use, AAFES Dual Food Service: 6,900sf
B Mixed-use: 3 bldgs @ 17,800sf / flr (2-4 flr)
C Mixed-Use: 37,891sf/ flr (2-4 flr), 3 bldgs
D Flex-Use, Administration: 2 bldgs @ 29,100sf / flr (2-4 flr)
E Mixed-Use: 2 bldgs @ 30,800sf / flr (3-4 flr)
F Mixed-Use, Admin/Library: 2 bldgs @ 21,500sf / flr (3-4 flr)
G Mixed-Use, Retail/Admin: 2 bldgs @ 7,700sf / flr (3-4 flr)
H Mixed-Use, Retail/Admin: 2 bldgs @ 21,800sf / flr (3-4 flr)
I Mixed-Use, Commissary/Housing: 216,900sf / flr (3-4 flr)
J Mixed-Use, Retail/Administration: 2 bldgs @ 12,300sf / flr (2-4 flr)
K Mixed-Use: 2 bldgs @ 26,500sf / flr (3-4 flr)
L Mixed-Use, Retail/Theater: 33,444sf / flr (2-4 flr)
M Flex-Use, Admin: 12,930sf / flr (1-2 flr)

N Flex-Use: 2 bldgs @ 14,600sf / flr (1-2 flr)
O Flex-Use: 18,600sf / flr (1-2 flr)
P Flex-Use, 21,800sf / flr (2-3 flr)
Q Flex-Use: 22,900sf / flr (2-3 flr)
R Flex-Use: 13,118sf / flr (2-3 flr)
S Flex-Use: 25,300sf / flr (2-3 flr)
T Flex-Use: 2 bldgs @ 13,000sf / flr (2-3 flr)
U Flex-Use: 25,600sf / flr (2-3 flr)
V Multi-Level Parking Structure: 99,900sf / flr (3 flr)
W Flex-Use, AAFES Express with Gas: 8,701sf / flr (1-2 flr)
X Flex-Use, Fitness Center: 28,760sf / flr
Y Flex-Use, DFAC: 19,950sf / flr (1-2floor)
Z Flex-Use: 2 bldg @ 13,698sf / flr (2-4 floor)

AA Flex-Use: 21,120sf / flr (1-2 flr)
BB Flex-Use, NICOE Facility: 26,248sf / flr (2-4 flr)
CC Flex-use, Medical/Admin: 270,200sf / flr (2-4 flr)
DD Flex-use, Medical/Admin: 48,467f / flr (2-4 flr)
EE Flex-use, Medical/Admin: 21,642sf / flr (2-4 flr)
FF Flex-Use: 19,327sf / flr (2-4 flr)
GG Flex-Use: 19,182sf / flr (2-4 flr)
HH Flex-use, Medical/Admin: 14,805sf / flr (2-4 flr)

New Facilities
Existing Facilities
Detached Housing
Attached Housing
Bus Route
Public Transit Stop
Demolished Buildings
Housing Parcels
Existing Trees
Street Trees
Stormwater
Topography
Railroad
ADP Boundary
Installation Boundary
5/10 Minute Walk
500' 500' 500'

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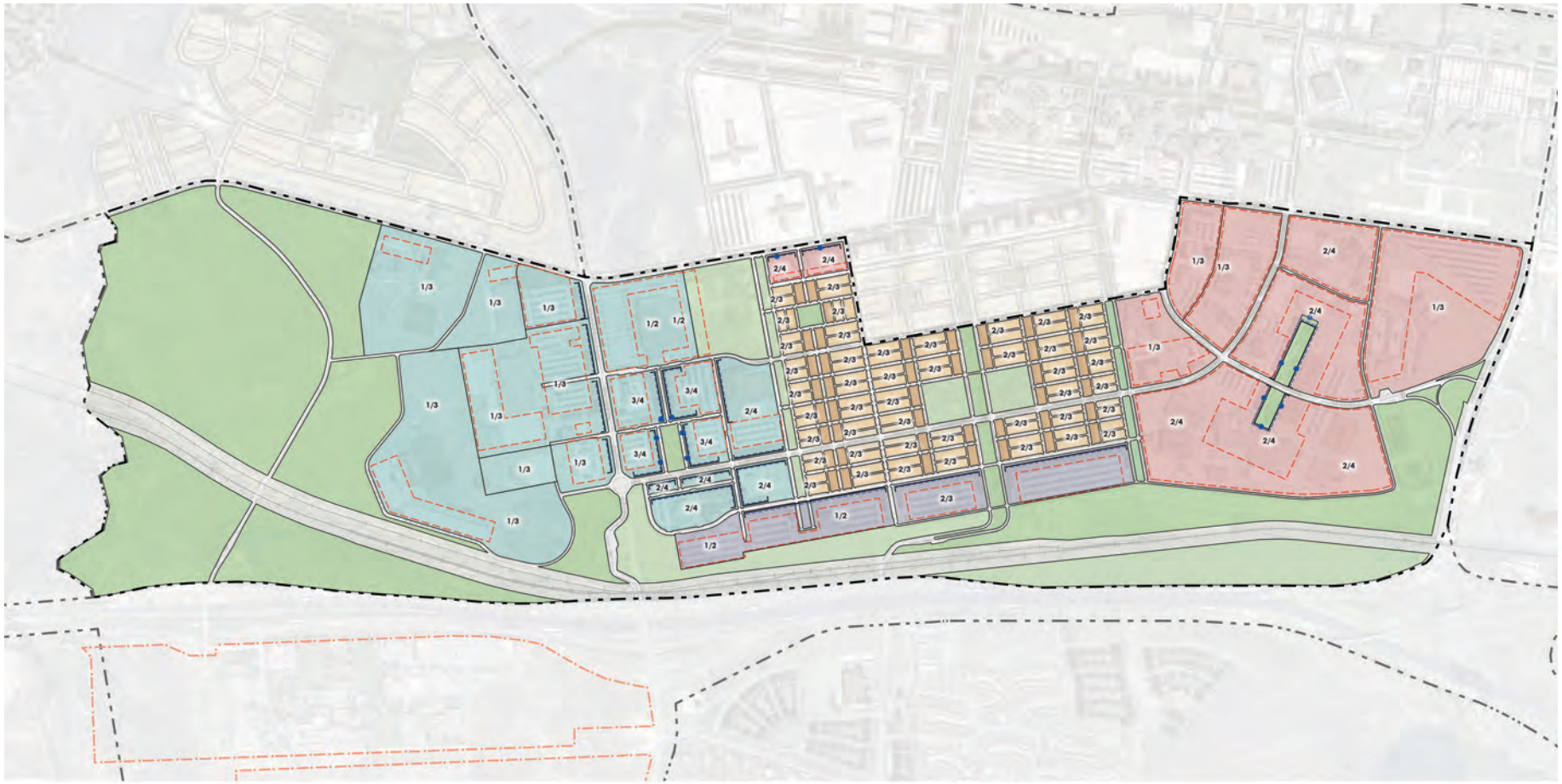
Clear Creek/Darnall Regulating Plan



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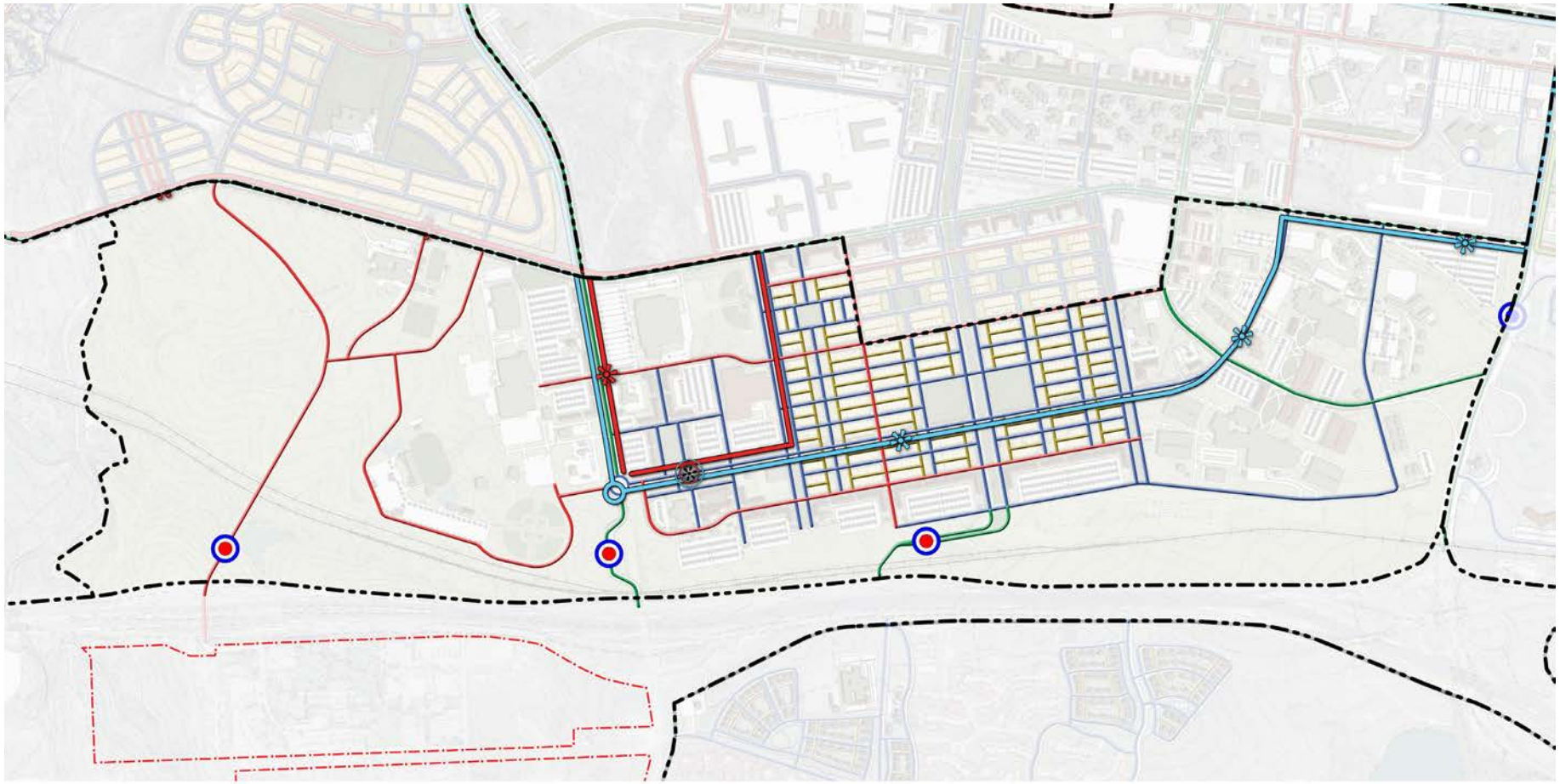
Mixed-Use
Flex-Use
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area

Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

500' 500' 500'

The Urban Collaborative, LLC

Clear Creek/Darnall Street and Transit Plan



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Street Details – Clear Creek/Darnall

CCD Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
58th Street	Park Street	6	6		5		11	40	11	11		5		6	6
Alley Typical	Alley						9			9					
Avenue D	Main Street	6	6	9	5		10.5			10.5		5	9	6	6
Avenue E	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
Avenue F	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
Avenue G	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
Avenue H	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
Avenue I	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
Bell Tower Road	Avenue					12	12			12	12				
Clear Creek Rd	Boulevard	6	18		5	12	12	15	12	12	12	5		18	6
Darnall Loop	Neighborhood Street						11.5			11.5				18	6
Engineer Drive	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
Railhead Drive	Neighborhood Street	6	6				10			10				6	6
S 62nd Street	Boulevard	6	6		5	12	12	15	12	12	12	5		6	6
S 65th Street E	Park Street	6	6	9				70		10.5	10.5	5	9	6	6
S 65th Street W	Park Street	6	6	9	5	10.5	10.5	70					9	6	6
S 68th Street	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
S 70th Street	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
S 72nd Street E	Park Street	20	8	9				94		12	12	5	9	6	6
S 72nd Street W	Park Street	6	6	9	5	12	12	94					9	8	20

Street Details – Clear Creek/Darnall (cont)

CCD Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
S 75nd Street	Park Street	6	6	9			10.5			10.5			9	6	6
S 78th Street	Main Street	6	6	9	5		10.5			10.5		5	9	6	6
S 79th Street	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
S 80th Street	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
S 82nd Street E	Park Street	6	6	9				70		10.5	10.5	5	9	6	6
S 82nd Street W	Park Street	6	6	9	5	10.5	10.5	70					9	6	6
S 83rd Street	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
S 84 1/2th Street	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
S 84th Street	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
S 85th Street	Neighborhood Street	6	6	9			10.5			10.5			9	6	6
Santa Fe Ave	Park Street	6	6		5		11	40	11	11		5		6	6
Terminal Avenue E	Neighborhood Street	6	6				10.5			10.5				6	6
Terminal Avenue W	Neighborhood Street						10			10				6	6
TJ Mills Boukevard	Boulevard				12.5	12.5	12.5	14	10	12.5	12.5	12.5			
Warehouse Drive	Avenue	6	6	9	5		11	12	11	11		5	9	6	6
Wratten Drive	Neighborhood Street						13.5			13.5				6	6

Comanche Ridge Illustrative Plan

Comanche Ridge Regulating Plan

Notes:
1. Refer to the Street Standards for detailed Street information.
2. Refer to the Building Standards for detailed building information.
3. Recreation area shall be used solely for programmed recreation activities
4. Unregulated areas shall be permanently designated as open space.

Fort Hood
Comanche Ridge ADP
Regulating Plan

IMCOM | US Army Corps of Engineers

The Urban Collaborative, LLC

Notes:

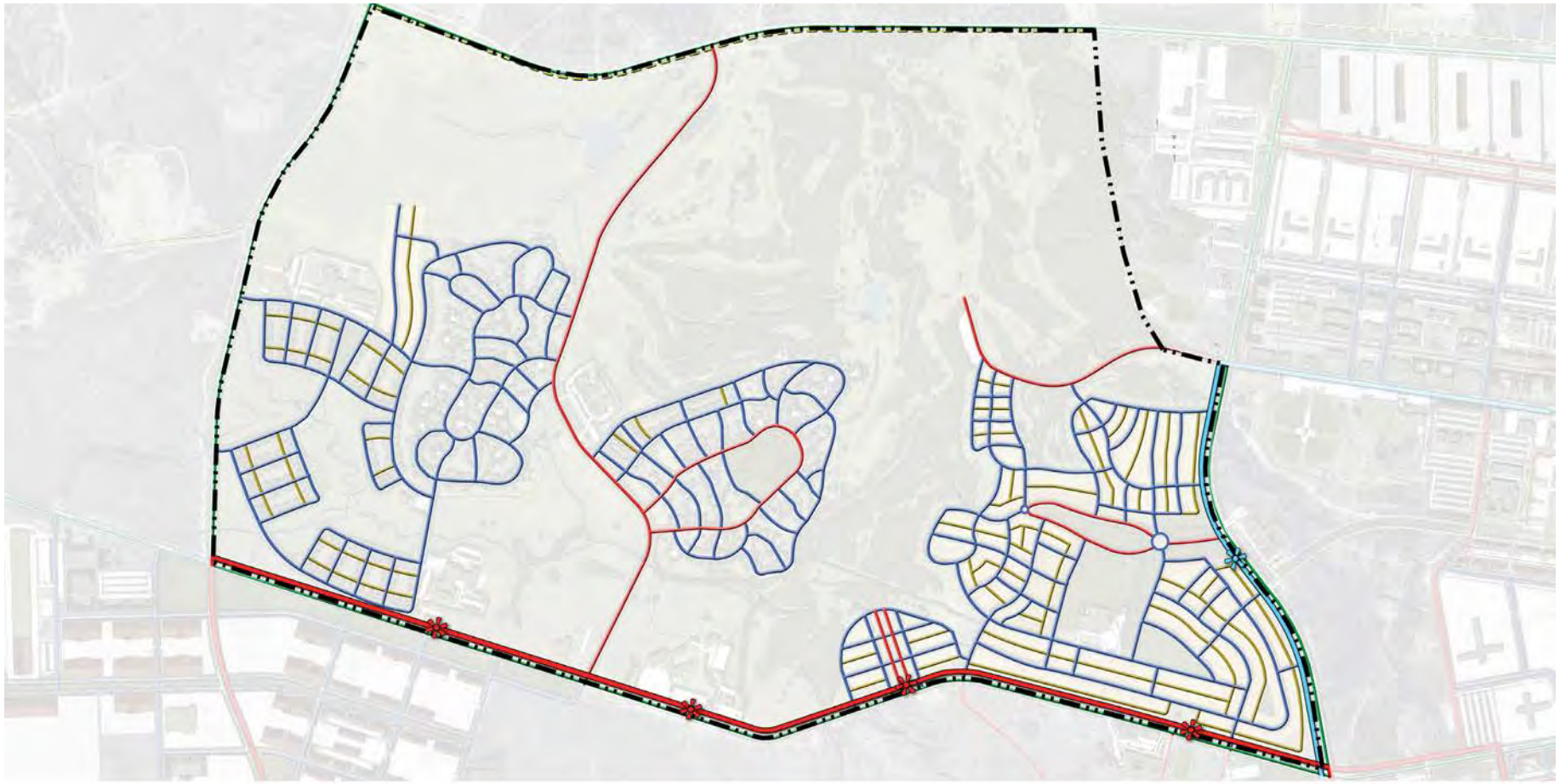
5. Numerical designation in each buildable area refers to minimum and maximum number of floors.
6. Building area boundaries assume construction which allows a 30' setback, based on UFC 4-010-01, 9 Feb 12.
3. Recreation area shall be used solely for programmed recreation activities (ex. tennis courts, basketball courts, softball fields, etc).
4. Unregulated areas shall be permanently designated as open space.
5. Numerical designation in each buildable area refers to minimum and maximum allowable number of floors.
6. Building area boundaries assume construction which allows 16' or 30' setback, based on UFC 4-010-01, 9 Feb 12.

Mixed-Use
Flex-Use
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area

Required Build-To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

500' 500' 500'

Comanche Ridge Street and Transit Plan



This plan shows the street network system with the different types of roadways on the installation: Multiway Boulevards, Boulevards, Avenues, Main Streets, Park Streets, Neighborhood Streets, Alleys, and unpaved roads; this network is designed to support a more efficient transportation system at Fort Hood. This plan also shows the transit network system with three shuttle routes along main corridors throughout the installation, and transfer stops that allow for rapid changing between these routes from access control points.

The Urban Collaborative, LLC

Street Details – Comanche Ridge

CR Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Typ A	Main Street	6	6	9			10.5			10.5			9	6	6
Typ B	Alley						10			10					
Typ C	Main Street	6	6	9			10.5			10.5			9	6	6
Typ D	Neighborhood Street						13			13					4
Typ E	Main Street	6	6	9			10.5			10.5			9	6	6
Typ F	Neighborhood Street	4					13			13					
Typ G	Alley														
Typ H	Neighborhood Street	4	6				13.5			13				6	4
Typ I	Neighborhood Street	4	6				13			13					
Typ J	Main Street	4	6	9.5			9.5			9.5				6	4
Typ K	Main Street	4	6	9.5			11			10.5			9	6	4
Typ L	Neighborhood Street	4	6				13.5			13				6	4
Clarke Road	Boulevard	6	6			12	12	15	12	12	12			6	6
Hopi Street N	Avenue	6	8	9			10.5	15		10.5			9	8	6
Hopi Street S	Avenue	6	8	9			10.5	15		10.5			9	8	6
Isleta Street	Main Street	4	6	9			9			9					
Laguna Drive	Avenue	6	6	9			12	15		12			9	6	6
Laguna Drive	Avenue						12			12					

Street Details – Comanche Ridge (cont)

CR Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
New Street A	Main Street	6	6	9			10.5			10.5			9	6	6
Sandia Drive - N	Main Street	4	6	9			9.5			9.5				6	4
Sandia Drive - S	Main Street	6	6	9			12			12					4
Tank Destroyer Blvd	Boulevard	6	6		5	12	12	15	12	12	12	5		6	6
Turkey Run Road	Boulevard	6	6		5	12	12	15	12	15	12	5		6	6
Yavapai Street	Neighborhood Street	4	6				13.5			13.5				6	4

Hood Army Airfield Illustrative Plan

A Flex-Use, AAFES With Gas: 5,750sf / flr (1-2 flr)
B Flex-Use, Chapel: 28,500sf / flr (2-3 flr)
C Flex-Use, Barracks: 8 bldgs @ 19,200sf / flr (2-4 flr)
D Flex-Use, DFAC: 2 bldgs @ 45,000sf / flr (1-2 flr)
E Flex-Use, Fitness Center: 2 bldgs @ 37,870sf / flr (1-2 flr)
F Industrial, DUST Training Facility: 2 bldgs @ 19,500sf / flr (1-2 flr)
G Flex-Use, Recreation Facility: 2 bldgs @ 20,000sf / flr (1-2 flr)
H Industrial, Supply Support Area: 37,500sf / flr (1-2 flr)
I Industrial, Supply, PN73442: 37,500sf / flr (1-2 flr)
J Industrial, Backshop Facility, PN73441: 46,590sf / flr (1-2 flr)
K Industrial, AGSE: 7,500sf / flr (2-4 flr)
L Industrial, New Hangar: 2 bldgs @ 197,640sf / flr (1 floor)
M Flex-Use, Admin: 5 bldgs @ 7,500sf / flr (2-4 flr)

N Industrial, USAR Complex: 6,750sf / flr (1-2 flr) 3 bldgs
O Flex-Use, TMC Expansion: 10,400sf / flr (2-4 flr)
P Flex-Use, HQ Expansion: 1 bldgs @ 11,600sf / flr (2-4 flr)
Q Flex-Use, Admin: 4 bldgs @ 19,010sf / flr (2-4 flr)
R Industrial: 8,800sf / flr (1-2 flr)
S Industrial, Hangar Renovation: 2 bldgs @ 24,400sf / flr (1 flr)
T Flex-Use, Admin Expansion: 5,000sf / flr (2-4 flr)
U Flex-Use, Services / Amenities: 23,300sf / flr (2-4 flr)
V ACP: 2,850sf / flr (1-2 flr), 3 buildings
W Industrial, Readiness Mod. PN72843: 31,500sf / flr (1 flr)
X Industrial, Flight Control Tower: 450sf / flr (2-4 flr)
Y Industrial, BN Headquarters PN72843: 10,000sf / flr (2-4 flr)
Z Industrial, TEMF PN72843: 14,780sf / flr (1-2 flr)

AA Industrial, Hangar Renovation, PN73440: 2 bldgs @ 50,700sf / flr
BB Industrial, Motor Pool Storage: 4 bldgs @ 6,330sf
CC Flex-Use, UEPH Barracks, PN77912: 2 bldgs, 17,550sf / flr (3 flr)
DD Flex-Use, UEPH Barracks, PN 76495: 4 bldgs, 19,071sf / flr (3 flr)
EE Industrial, Supply Support Area: 1 bldg @ 19,500sf / flr (1-2 flr)
FF Storage: 2 bldgs, 4,500sf / flr

New Facilities
Existing Facilities
Detached Housing
Attached Housing
Bus Route
Public Transit Stop
Demolished Buildings
Housing Parcels
Existing Trees
Street Trees
Stormwater
Topography
Railroad
ADP Boundary
Installation Boundary
5/10 Minute Walk

700' 700' 700'

The Urban Collaborative, LLC

Hood Army Airfield Regulating Plan

Notes:
1. Refer to the Street Standards for detailed Street Information.
2. Refer to the Building Standards for detailed building information.
3. Recreation area shall be used solely for programmed recreation activities
4. Unregulated areas shall be permanently designated as open space.
5. Numerical Designation in each buildable area refers to minimum and maximum number of floors,
6. Building area boundaries assume construction which allows a 30' setback, based on UFC 4-010-01, 9 Feb 12.

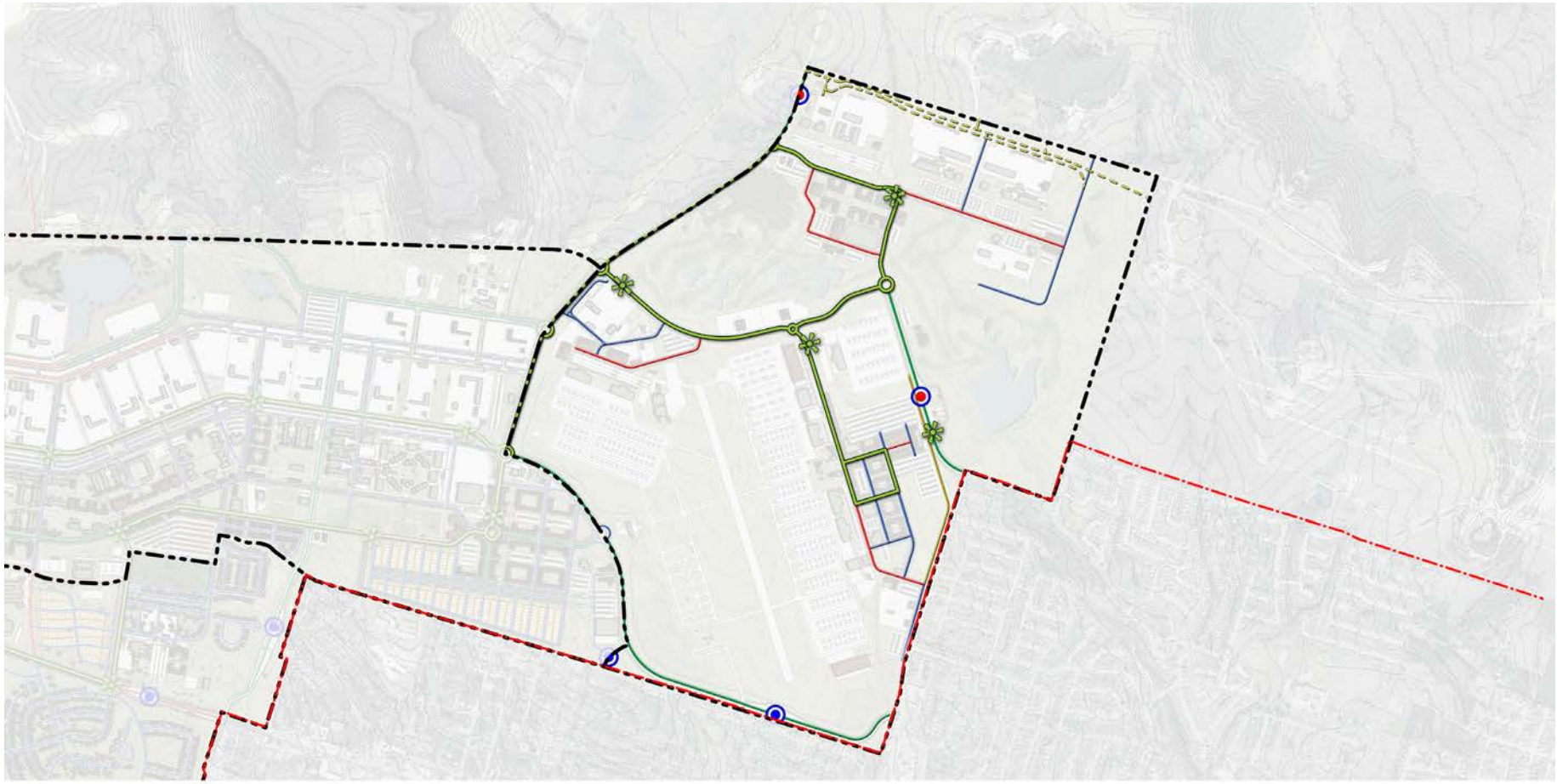
Mixed-Use
Flex-Use
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area

Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

700' 700' 700'

The Urban Collaborative, LLC

Hood Army Airfield Street and Transit Plan



This plan shows the street network system with the different types of roadways on the installation: Multiway Boulevards, Boulevards, Avenues, Main Streets, Park Streets, Neighborhood Streets, Alleys, and unpaved roads; this network is designed to support a more efficient transportation system at Fort Hood. This plan also shows the transit network system with three shuttle routes along main corridors throughout the installation, and transfer stops that allow for rapid changing between these routes from access control points

The Urban Collaborative, LLC

Street Details – Hood Army Airfield

HAAF Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Cobra Loop	Neighborhood Street	6	6				12			12				6	6
East Range Road	Boulevard	6	6		5		12	15	12	12		5		6	6
Huey Lane	Avenue	6	6	9	5		11			11		5	9	6	6
Murphy Boulevard	Boulevard	6	6		5	12	12	15	12	12	12	5		6	6
Murphy Loop	Avenue	6	6		5		11			11		5		6	6
Murphy Road	Avenue	6	6		5		11			11		5		6	6
New Road A	Neighborhood Street	6	6				11			11				6	6
New Road B	Main Street	6	6	9			11			11			9	6	6
New Road C	Avenue	6	6	9			11			11			9	6	6
New Road D	Avenue	6	6	9	5		11			11		5	9	6	6
New Road E	Avenue	6	6	9	5		11			11		5	9	6	6
No Name A	Neighborhood Street	6	6				11			11				6	6
No Name B	Main Street	6	6	9			11			11			9	6	6
N Nolan-Tedesco Way	Alley	6	6				14			14					
Tedesco Way	Avenue	6	6		5		13			13		5		6	6
Warrior Way	Boulevard	8	8		5	12	12	20	12	12	12	5		8	8
Westcliff Boulevard - Gat	Boulevard	6	6		5	12	12	20	12	12TL/12TL	12/Truck	5		6	6

Kouma Illustrative Plan

As new facilities and housing units are required, sites would be found within the fence line of Fort Hood Main. Facilities and housing with remaining years in their usable lifespan would remain in the Kouma district.

Kouma Regulating Plan

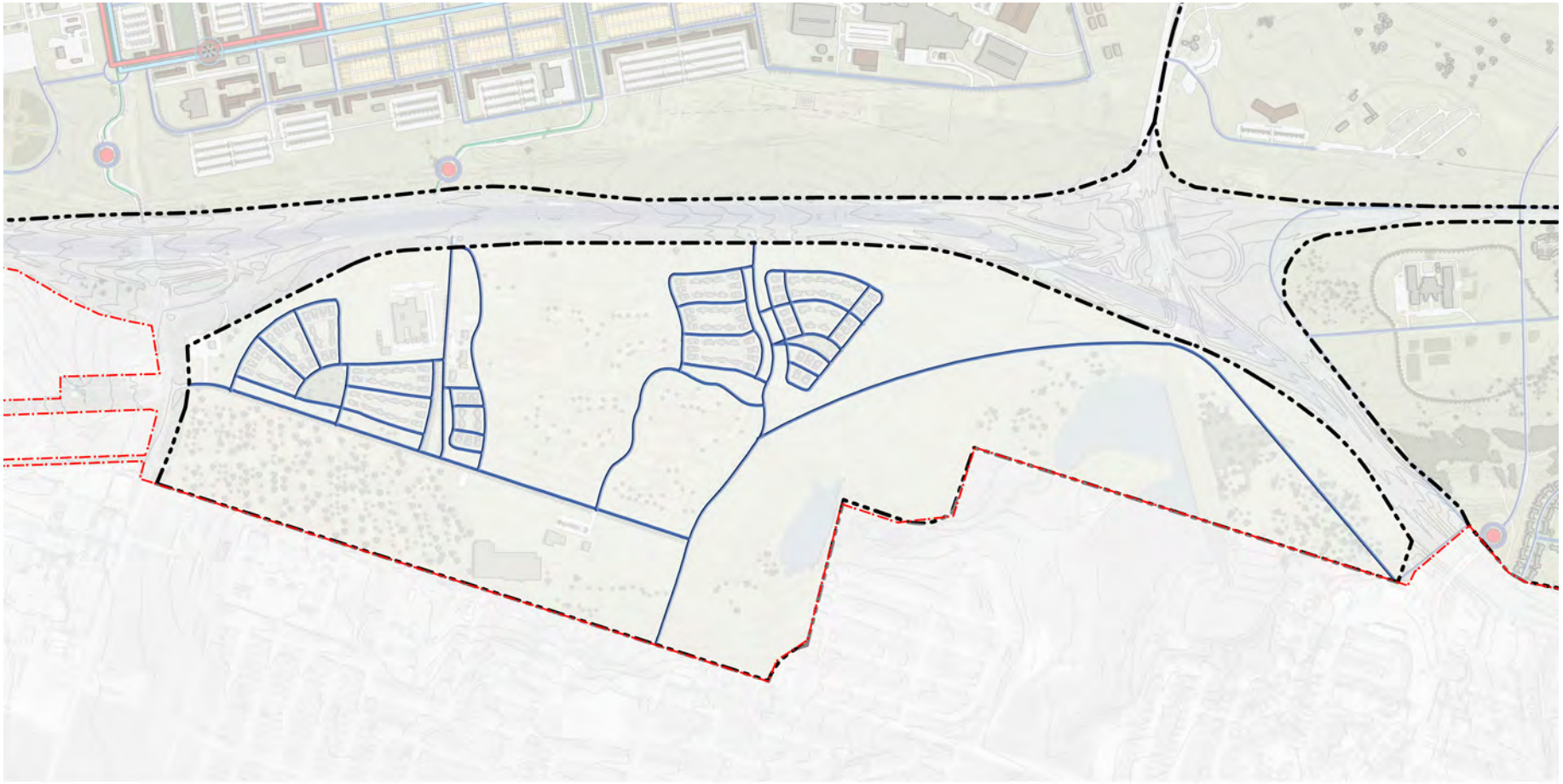
Notes:
1. Refer to the Street Standards for detailed Street Information.
2. Refer to the Building Standards for detailed building information.
3. Recreation area shall be used solely for programmed recreation activities
4. Unregulated areas shall be permanently designated as open space.
5. Numerical Designation in each buildable area refers to minimum and maximum number of floors,
6. Building area boundaries assume construction which allows a 30' setback, based on UFC 4-010-01, 9 Feb 12.

Mixed-Use
Flex-Use
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area

Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

400' 400' 400'

Kouma Street and Transit Plan



This plan shows the street network system with the different types of roadways on the installation: Multiway Boulevards, Boulevards, Avenues, Main Streets, Park Streets, Neighborhood Streets, Alleys, and unpaved roads; this network is designed to support a more efficient transportation system at Fort Hood. This plan also shows the transit network system with three shuttle routes along main corridors throughout the installation, and transfer stops that allow for rapid changing between these routes from access control points

The Urban Collaborative, LLC

Street Details – Kouma

Kouma Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Albanese	Neighborhood Street						10			10			9	5	4
Alley (Typ)	Alley						14								
Craig Drive	Neighborhood Street						10			10				8-12	4
Evans Road	Avenue	5	3-6				11.5			11.5				6	6
Grabiaz Drive	"	4	10				10			10				10	4
Santiago Colon Drive	"	4	10				10			10				10	4
ER Smith Drive	"	4	5-16				10			10				6	6
Ingalis Drive	"	4	6-10				10			10				12	4
Johnson Drive	"	5	26-40				11.5			11.5				6-94	3-6
Perez Drive	"	4	4-14				10			10				3-6	4
Kouma Lane	"						13			13				6	6
Lauffer Lane	"	4	15				10			10					
Port Drive	"						10			10				15	4
Barnes Circle	"						10			10				4-14	4
McDonald Drive	"	4	7-14				10			10				7-14	4
Molnar Drive	"						10			10				5-17	4
Washington Street - N-S	"	4	10-27				11.5			11.5				6-22	6
Washington Street - E-W	"	6	6-15				10			10			9	9	4
Willet Drive	"	4	4-11				10			10				8-11	4
Burr Road	"						10			10				7	4
Roark Drive	"						10			10				7	4

North Fort Hood Illustrative Plan

A Access Control Point: 900sf / flr (1 flr)
B Industrial, DOL Complex: 3 bldgs @ 4,000sf / flr (1-2 flr)
C Industrial, TEMF: 8 bldgs @ 12,000sf / flr (1-2 flr)
D Flex-Use, ORTC Phase I: 250,627sf, (5 bldg total)
E Flex-use/Industrial, ORTC Phase II: 209,573 sf (7 bldg total)
F Flex-Use/Industrial, ORTC Phase III-VI: 899,924 (22 bldg total)
G Industrial, Texas ARNG UAS Hangar, PN85529: 18,400sf / flr (1 flr)
H Industrial, Army Reserve Complex, PN71923: 40,000sf / flr, (1-2 flr)
I Industrial, Army Reserve Complex, PN 71923: 50,000sf / flr (1-2 flr)
J Industrial, Texas ARNG Complex: 90,000sf / flr (1-2 flr)
K Industrial, Line Haul
L Flex-Use, Fitness Center: 28,760sf / flr (1-2 flr)
M Access Control point: 5,000sf / flr (1-2 flr)

N Industrial, Exercise Support Center, PN77994: 22,500sf / flr (1-2 flr)
O Mixed Use: 23,750sf / flr (2-4 flr)
P Flex-use, Brigade Administration: 17 bldgs @ 23,750sf / flr (2-4 flr)
Q Flex-Use, DIV West Barracks: 11,500sf / flr (2-4 flr)
R Flex Use, DIV West Admin: 3 bldgs @11,500sf / flr (2-4 flr)
S Flex-Use, DIV West Admin: 4 bldgs @ 8,225sf / flr (2-4 flr)
T Industrial, DIV West TEMF: 12,000sf / flr (1-2 flr)
U Flex-Use, Administration: 4 bldgs @ 9,475sf / flr (2-4flr)
V Flex-Use, Administration: 2 bldgs @ 28,090sf / flr (2-4 flr)
W Industrial, Warehouse : 64,440sf / flr (1-2 flr)
X Industrial, Warehouse: 3 bldgs @ 35,000sf / flr (1-2 flr)
Y Industrial, Warehouse: 8 bldgs @ 64,440sf / flr (1-2 flr)
Z Flex-Use, Aviation Expansion: 12,124sf / flr (1 flr)

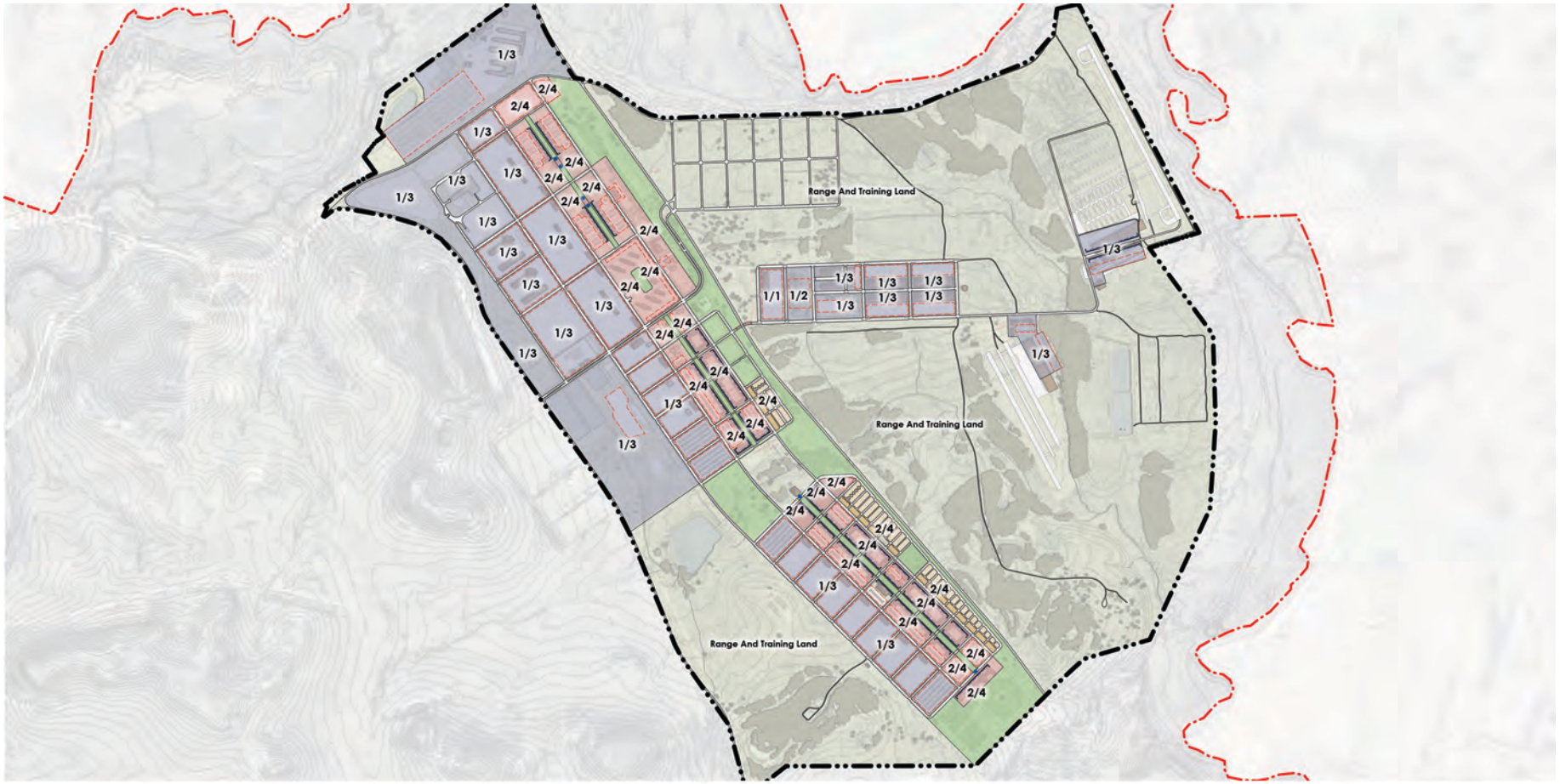
AA Industrial, Hangars: 4 bldgs @ 90,000sf / flr (1 flr)
BB Flex Use, Aviation Expansion: 3 bldgs @ 10,000sf / flr (1 flr)
CC Flex-Use, Aviation Expansion: 22,500sf / flr (1 flr)
DD Flex-Use, Aviation Expansion: 9,623sf / flr (1 flr)
EE Flex-Use, Aviation Expansion: 12,120sf / flr (1 flr)
FF Flex-Use, Aviation Expansion: 7,500sf / flr (1 flr)
GG Flex-Use, Chapel, PN59674: 7,500sf / flr (1 flr)
HH Flex-Use, Exchange: 103,675sf / flr (1-2 flr)
II Flex-Use, Commissary: 103,675sf / flr (1-2 flr)
JJ Flex-Use, Brigade Barracks: 10 bldgs @ 11,500sf / flr (1-2 flr)
KK Flex-Use, Dining Facility: 33,680sf / flr (1-2 flr)
LL Flex-Use, Fitness Center: 28,760sf / flr (1-2 flr)
MM Flex-Use, Elementary School: 46,800sf / flr (2-3 flr)

NN Flex-Use, CDC: 19,050sf / flr (1-2 flr)
OO Flex-Use, Fitness Trail
PP Single Family and Townhomes

Total ORTC Requirements (3 Phases)
Enlisted Barracks: 733,392 sf (8 bldgs)
Officer Barracks: 135,474sf (6 bldgs)
BN and CO HQ: 184,896 sf4sf (6 bldg, can be combined w/ Officer Barracks)
BDE HQ: 10,238 (1 bldg)
DFAC: 225,000sf (3 bldgs)
TEMF: 71,124sf (6 bldgs)

The Urban Collaborative, LLC

North Fort Hood Regulating Plan



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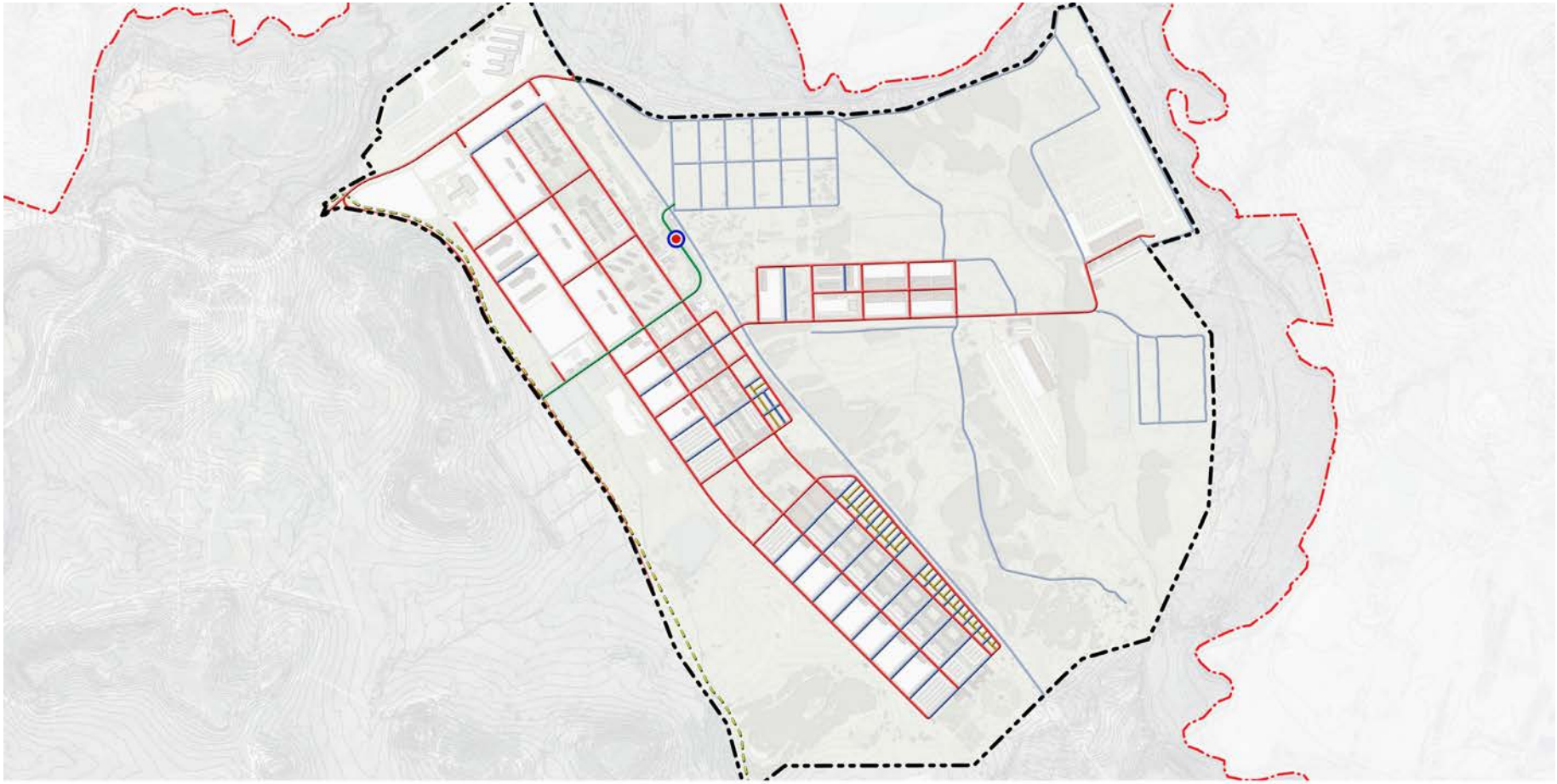
Mixed-Use
Flex-Use
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area
Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

The Urban Collaborative, LLC

North Fort Hood Street and Transit Plan



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The Urban Collaborative, LLC

Street Details – North Fort Hood

NFH Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
12th Street	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
13 1/2 Street	Main Street	6	6	9			10.5			10.5			9	6	6
13th Street	Main Street	6	6	9			10.5			10.5			9	6	6
14th Street	Main Street	6	6	9			10.5			10.5			9	6	6
15th Street	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
16th Street	Main Street	6	6	9			10.5			10.5			9	6	6
16th Street (NE of 36)	Avenue	6	6	9	5		11			11		5	9	6	6
17th Street	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
17th Street (NE of 36)	Avenue	6	6	9	5		11			11		5	9	6	6
18th Street	Boulevard	6	6		5	12	12	15	12	12	12	5		6	6
18th Street (NE36)	Avenue	6	6	9	5		11			11		5	9	6	6
1st Street	Main Street	6	6	9			10.5			10.5			9	6	6
21st Street	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
22nd Street	Main Street	6	6	9			10.5			10.5			9	6	6
24th Street	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
27th Street	Nieghborhood Street	6	6				10			10				6	6
28th Street	Avenue						12			12					
2nd Street	Main Street	6	6	9			10.5			10.5			9	6	6
3rd Street	Main Street	6	6	9			10.5			10.5			9	6	6
4th Street	Main Street	6	6	9			10.5			10.5			9	6	6
5th Street	Main Street	6	6	9			10.5			10.5			9	6	6
6th Street	Main Street	6	6	9			10.5			10.5			9	6	6
7th Street	Main Street	6	6	9			10.5			10.5			9	6	6
8th Street	Main Street	6	6	9			10.5			10.5			9	6	6
9th Street	Main Street	6	6	9			10.5			10.5			9	6	6

Street Details – North Fort Hood (cont)

NFH Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Alley Typ New	Alley						9			9					
Avenue D (NE36)	Avenue	6	6	9	5		11			11		5	9	6	6
Avenue E (NE36)	Main Street	6	6	9			11			11			9	6	6
Avenue F (NE36)	Avenue	6	6	9	5		11			11		5	9	6	6
Avenue G (NE36)	Main Street	6	6	9			11			11			9	6	6
Avenue H (NE36)	Avenue	6	6	9	5		11			11		5	9	6	6
Avenue I (NE36)	Avenue	6	6	9	5		11			11		5	9	6	6
Avenue J (NE36)	Avenue	6	6	9	5		11			11		5	9	6	6
Central Avenue	Avenue	6	6	9	5		11			11		5	9	6	6
Headquarters Avenue	Avenue	6	6	9	5		11			11		5	9	6	6
Longhorn Road (E36)	Avenue	6	6	9	5		11			11		5	9	6	6
New Street A	Main Street	6	6	9			11			11			9	6	6
New Street B	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
Park Avenue	Avenue	6	6	9	5		11			11		5	9	6	6
Perimeter Avenue Typ.	Nieghborhood Street	6	6		5		11			11		5	9	6	6
Residential Street Typ.	Nieghborhood Street	6	6				10.5			10.5			9	6	6

Pershing Park Illustrative Plan

A Recreation Trails
B Dense Vegetation/Noise Barrier
C Demolished Housing
D New Street Connection
E Ballfields

New Facilities
Existing Facilities
Detached Housing
Attached Housing
Bus Route
Public Transit Stop
Demolished Buildings
Housing Parcels
Existing Trees
Street Trees
Stormwater
Topography
Railroad
ADP Boundary
Installation Boundary
5/10 Minute Walk

300' 300' 300'

The Urban Collaborative, LLC

Patton Park/Pershing Park Regulating Plan

Notes:
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2. Refer to the Building Standards for detailed building information.
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Mixed-Use
Flex-Use
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area

Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

400 400' 400'

The Urban Collaborative, LLC

Patton Park/Pershing Park Regulating Plan

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Mixed-Use
Flex-Use
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Industrial/Admin
Parks and Open Space
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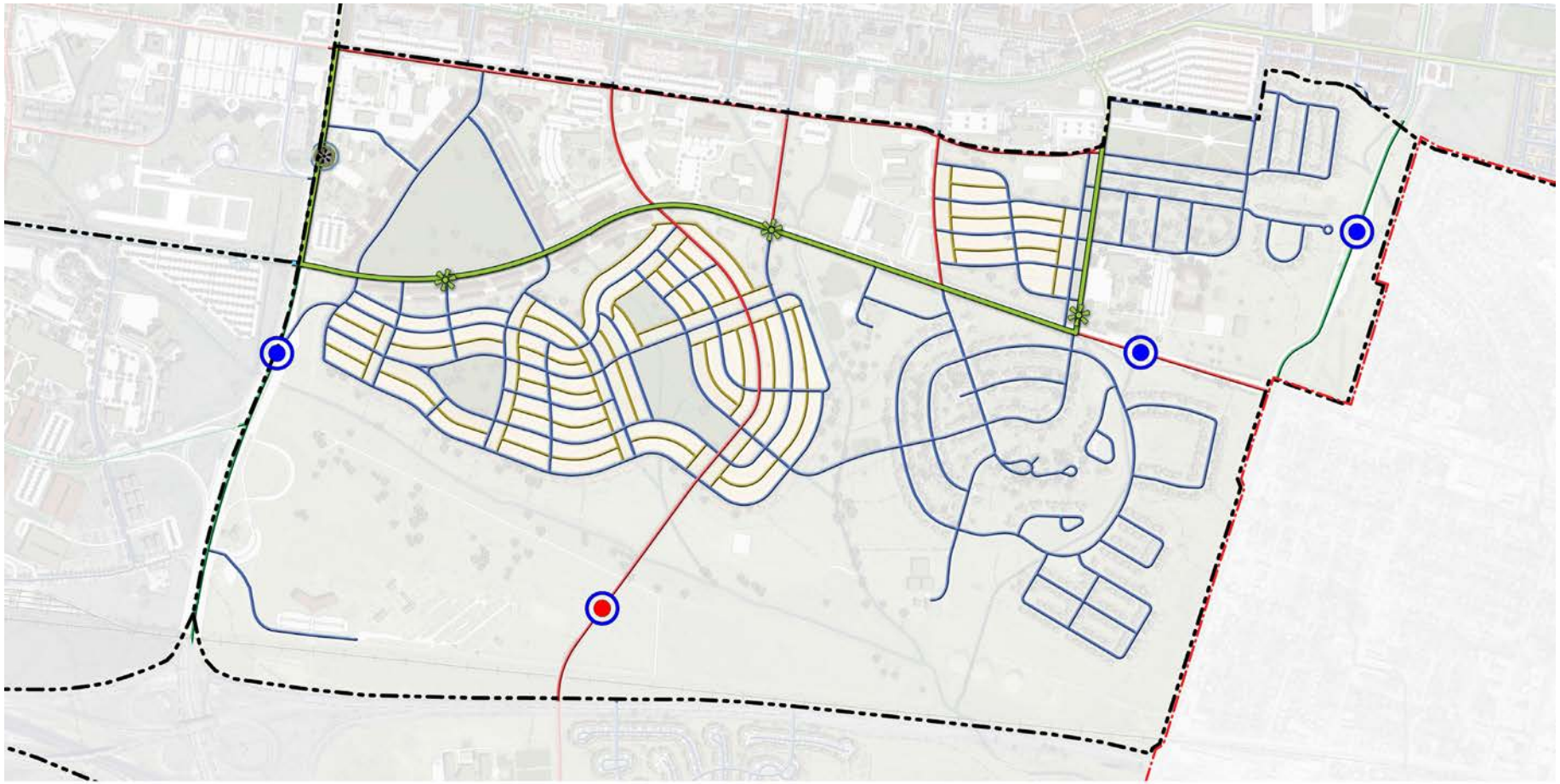
Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

300' 300' 300'

The Urban Collaborative, LLC

Patton Park/Pershing Park Street and Transit Plan



This plan shows the street network system with the different types of roadways on the installation: Multiway Boulevards, Boulevards, Avenues, Main Streets, Park Streets, Neighborhood Streets, Alleys, and unpaved roads; this network is designed to support a more efficient transportation system at Fort Hood. This plan also shows the transit network system with three shuttle routes along main corridors throughout the installation, and transfer stops that allow for rapid changing between these routes from access control points.

The Urban Collaborative, LLC

Patton Park/Pershing Park Street and Transit Plan

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The Urban Collaborative, LLC

Street Details – Patton Park/Pershing Park

PPP Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Pershing Park															
Bixby Street	Neighborhood Street						13.5			13.5					4.5
Boyd Street	Neighborhood Street						13.5			13.5					4.5
Carter Street	Neighborhood Street						13.5			13.5					4.5
Cutler Street	Neighborhood Street						13.5			13.5					4.5
Dillingham Street	Neighborhood Street						13.5			13.5					4.5
Hoover Hill Road	Avenue	4.5			5		10.5			10.5		5			4.5
Hughes Street	Neighborhood Street						13.5			13.5					4.5
Kildea Street	Neighborhood Street						13.5			13.5					4.5
Large Street	Neighborhood Street						13.5			13.5					4.5
Lockeridge Loop	Neighborhood Street						13.5			13.5					4.5
Moore Street	Neighborhood Street						13.5			13.5					4.5
Northup Street	Neighborhood Street						13.5			13.5					4.5
Rowe Street	Neighborhood Street						13.5			13.5					4.5
Wales Street	Neighborhood Street	4.5					13.5			13.5					4.5
Yeakel Street	Neighborhood Street						13.5			13.5					4.5

Street Details – Patton Park/Pershing Park (cont)

PPP Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Pershing Park															
Venable Village															
Churchill	Neighborhood Street						13			13					3
Dulac Loop	Neighborhood Street						13			13					3
Efrid street	Neighborhood Street						13			13					3
Hamner Spur	Neighborhood Street						13			13					3
Hawsey Circle	Neighborhood Street						13			13					3
Lopez Loop	Neighborhood Street						13			13					3
MacMichaels Circle	Neighborhood Street						13			13					3
Madruga Road	Neighborhood Street						13			13					3
Pickering Spur	Neighborhood Street						13			13					3
Venable Road	Neighborhood Street	3					11.5			11.5					3
Wainscott Avenue	Neighborhood Street						13			13					3
Zimmermann Spur	Neighborhood Street						13			13					3

Street Details – Patton Park/Pershing Park (cont)

PPP Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Wainright Heights															
20th street	Main Street	6	6	9			11.5			11.5			9	6	6
24th Street - E	Park Street	6	6	9			10.5								
24th Street - W	Park Street	6	6	9			10.5								
27th Street	Avenue						11			11		5			5
31st Street	Avenue	6			4		10.5			10.5		4		6	6
37th Street	Avenue				4		10.5			10.5		4			4
Bailey Street	Neighborhood Street	4	6				11.5			11.5					
Duffy Spur	Neighborhood Street	6	6				11.5			11.5					4
Dupas Street	Neighborhood Street	4					11.5			11.5					
Fisher Avenue	Neighborhood Street	4					11.5			11.5					
Friedman Street	Main Street	6	6		5		10.5			10.5		5		6	6
Hallbeg Road	Neighborhood Street	6	6				14			14				6	6
Hennessy Loop	Neighborhood Street						12.5			12.5			7	6	6
Kido Street	Neighborhood Street	6	6				14			14				6	6
Leith Court	Neighborhood Street	6	6				12.5			12.5			7	6	6
McCully Street	Neighborhood Street	4					11.5			11.5					
Minue Road	Neighborhood Street	4					13			13					
Newton Spur	Neighborhood Street						11.5			11.5					4

Street Details – Patton Park/Pershing Park (cont)

PPP Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Pieri Spur	Neighborhood Street						11.5			11.5					4
Starz Loop	Neighborhood Street	6	6				14			14				6	6
Wainwright Drive	Street	4					11.5			11.5				6	6
Chaffee Village															
31st Street	Neighborhood Street	4	3.5				10			10				6	6
37th Street	Avenue	6	6		4		10.5			10.5		4		6	6
Anderson Street	Neighborhood Street	6	6				10			10					4
Bacle Spur	Neighborhood Street	4					10			10				6	6
Boatright Spur	Neighborhood Street	4	3.5				10			10				6	6
Casa Blanca Road - N	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
Casa Blanca Road - S	Neighborhood Street	6	6				10			10				6	6
Groff Street	Neighborhood Street	6	6				12			12				6	6
Hilton Spur	Neighborhood Street	4					10			10				6	6
Marcinkiewicz	Neighborhood Street	4	3.5				10			10				6	6
Minue Road	Neighborhood Street	4					10			10				6	6
Patton Spur	Neighborhood Street	4					10			10				6	6
Ruffer Spur	Neighborhood Street	4	3.5				10			10				6	6
Sadowski Road	Neighborhood Street	4					10			10				6	6

Street Details – Patton Park/Pershing Park (cont)

PPP Street Data								Center							
Street Name	Type	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Safi Road	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
Smith Road	Neighborhood Street	4	3.5				10			10				6	6
Storck Road	Neighborhood Street	4	3.5				10			10				6	6
Whitson Spur	Neighborhood Street	4	3.5				10			10				6	6
Patton Park															
Patton Drive	Neighborhood Street	4					11.5			11.5					4
Todd Street	Neighborhood Street	4					11.5			11.5					
24th Street	Neighborhood Street	4					11.5			11.5					
Coleman Road	Neighborhood Street	4					11.5			11.5					
Sicily Drive	Neighborhood Street	6	5				13			13					
Rose Street	Neighborhood Street	4					11.5			11.5					
Marshall Street	Neighborhood Street	4					11.5			11.5					
Normandy Street	Neighborhood Street	6	5				13			13					
Arddennes Loop	Neighborhood Street	6	8				14			14				8	6
Lorraine Loop	Neighborhood Street	6	8				14			14				8	6
Tunsia Loop	Neighborhood Street	6	8				14			14				8	6
Morocco Street	Neighborhood Street	6	8				14			14				8	6

Street Details – Patton Park/Pershing Park (cont)

PPP Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Remagen Street	Neighborhood Street	6	8				14			14				8	6
Bastogne Court	Neighborhood Street	6	8				14			14				8	6
McNair Village															
Casa Blanca	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
Safi	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
761 Tank Battalion Ave	Avenue	6	6	9			11			11			9	6	6

Phantom East Illustrative Plan

A Flex-Use: 3 bldgs @12,600sf / flr (2-5 flr)
B Flex-Use: 14,000sf / flr (2-5 flr)
C Flex-Use, Building Addition: 6 bldgs @5,800sf / flr (2-5 flr)
D Flex-Use: 2 buildings @ 21,700sf / flr (2-5 flr)
E Flex-Use: 5bldgs @ 18,750sf / flr (2-5 flr)
F Flex-Use: 36,300sf / flr (2-5 flr)
G Flex-Use: 4 bldgs @ 8,750sf / flr (2-5 flr)
H Flex-Use: 2 bldgs @ 12,100sf / flr (2-5 flr)
I Flex-Use: 3 bldgs @ 21,200sf / flr (2-5 flr)
J Flex-Use: 5 bldgs @15,000sf / flr (2-5 flr)
K Flex-Use: 5 bldgs @ 9,900sf / flr (2-5 flr)
L Flex-Use: 3 bldgs @ 23,800sf / flr (2-5 flr)
M Mixed-Use: 16 bldgs @ 9,600sf / flr (2-5 flr)

N Flex-Use: 38,100sf / flr (2-5 flr)
O Flex-Use: 2 bldgs @ 17,200sf / flr (2-5 flr)
P Flex-Use: 2 bldgs @ 25,000sf / flr (2-5 flr)
Q Flex-Use: 4 bldgs @ 18,430sf / flr (2-5 flr)
R Flex-Use, AAFES Express w/ gas: 11,700sf / flr (2-5 flr)
S Flex-Use, Fitness Center: 49,876sf / flr (2-3 flr)
T Flex-Use: 17,000sf / flr (2-5 flr)
U Flex-Use: 3 bldgs @ 18,700sf / flr (2-5 flr)
V Flex-Use: 4 bldgs @ 21,100sf / flr (2-5 flr)
W Flex-Use, Brigade Campus: 19,000sf / flr (2-5 flr)
X Flex-Use, Brigade Campus: 8 bldgs @ 26,200sf / flr (2-5 flr)
Y Flex-Use, Brigade Campus: 8 bldgs @ 11,800sf / flr (2-5 flr)
Z AAFES Exchange with Gas: 11,400sf / flr (1 floor)

AA Flex-Use, Building Addition: 9 bldgs @ 4,500sf / flr (2-5 flr)
BB Flex-Use, Building Addition: 14 bldgs @ 5,400sf / flr (2-5 flr)
CC Flex-Use, Building Addition: 15,400sf / flr (2-5 flr)
DD Industrial, Medium TEMF w/ Storage: 3 bldgs @ 60,040sf / flr (1-2 flr)
EE Flex-use, AAFES Dual Food Service: 9,000sf

New Facilities
Existing Facilities
Detached Housing
Attached Housing
Bus Route
Public Transit Stop
Demolished Buildings
Housing Parcels
Existing Trees
Street Trees
Stormwater
Topography
Railroad
ADP Boundary
Installation Boundary
5/10 Minute Walk

450' 450' 450'

The Urban Collaborative, LLC

Phantom East Regulating Plan

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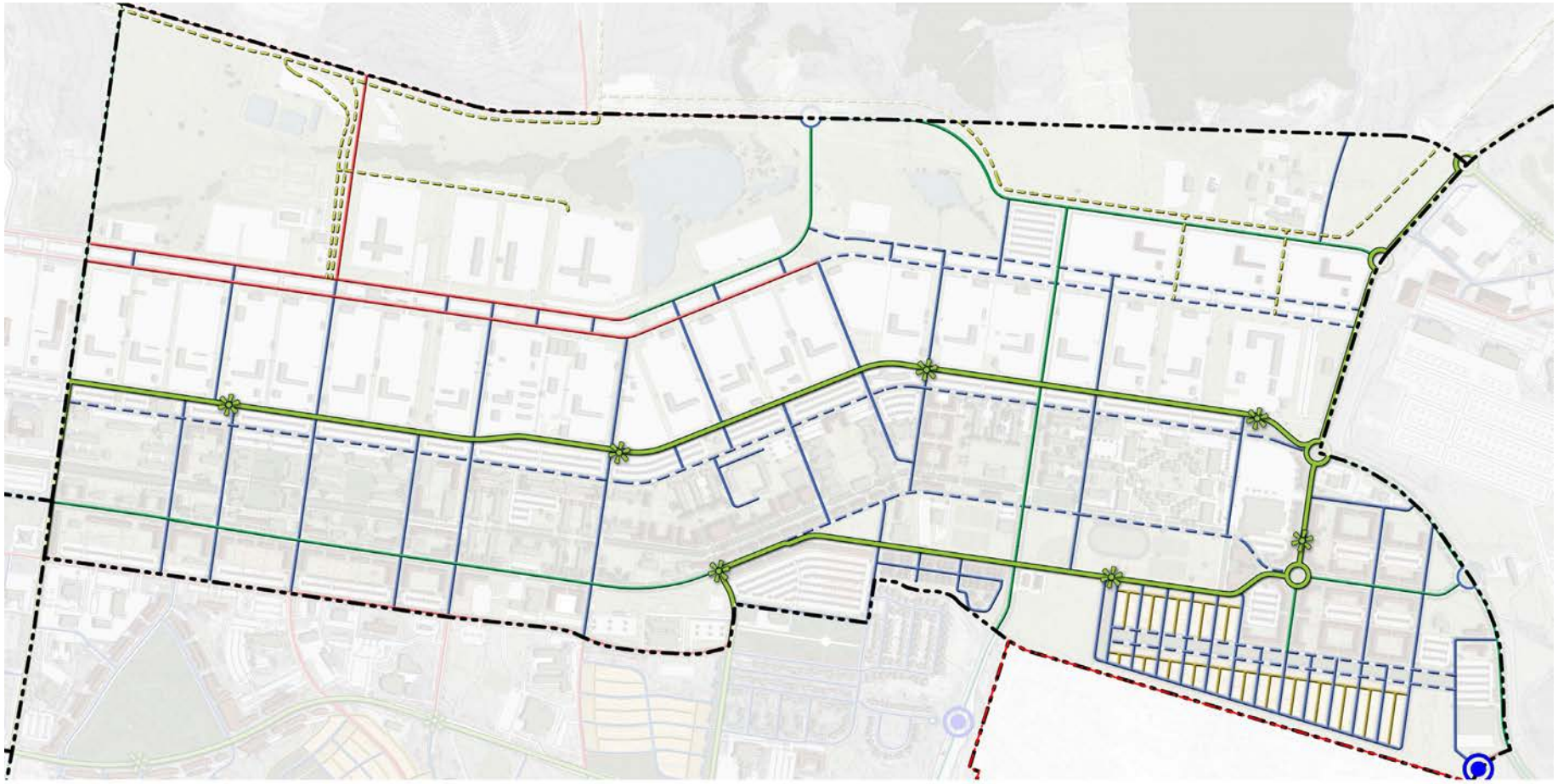
Mixed-Use
Flex-Use
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area

Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

500' 500' 500'

The Urban Collaborative, LLC

Phantom East Street and Transit Plan



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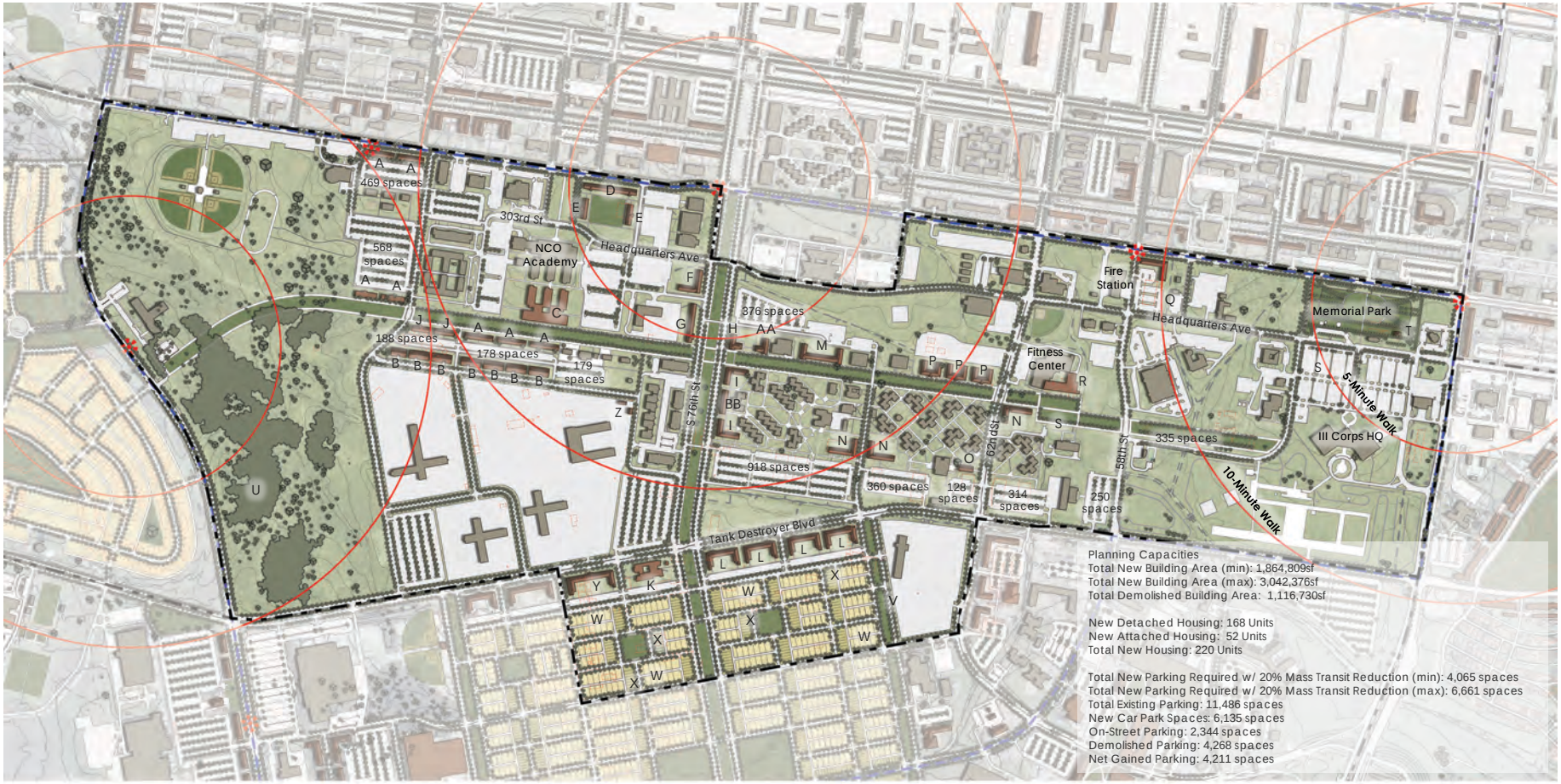
Street Details – Phantom East

PE Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
16th Street	Main Street	6	6	9			10.5			10.5			9	6	6
19th Street	Main Street	6	6	9			10.5			10.5			9	6	6
20th Street	Main Street	6	6-33	9			10.5			10.5			9	6	6
21st Street	Main Street	6	6	9			10.5			10.5			9	6-39	6
24th Street	Avenue	6	6-15	9			12		12	12			9	6	6
25th Street	Neighborhood Street			9			10.5			10.5			9		
27th Street	Main Street	6	6	9			10.5			10.5			9	6	6
30th Street	Alley						10.5			10.5					
31st Street	Neighborhood Street	6	6-15				10.5			10.5				6-15	6
33rd Street	Main Street	6	8-33	9			10.5			10.5			9	23-33	6
37th Street	Main Street	6	6-27	9			10.5			10.5			9	13-25	6
37th Street - N	Alley						10.5			10.5					
40th Street	Main Street	6	6-18	9			10.5			10.5			9	6-30	6
41st Street	Alley						10.5			10.5					
42nd Street	Main Street	6	6-17	9			10.5			10.5			9	6	6
761st Tank Battalion Ave	Avenue	6	6	9			12		12	12			9	6	6
Battalion Avenue	Park Street	6	6					523		10.5	10.5			6	6
Battalion Avenue - E & W	Boulevard	6	6			11	11	15	11	11	11			6	6
Central Drive	Park Street	6	6			10.5	10.5	523						6	6
Fort Hood Boulevard	Boulevard	6	6		5	12	12	20	12	12	12	5		6	6
Hell On Wheels Avenue	Park Street	6	6	9	4.5		10.5	142					9	6	6
Martin Drive	Boulevard	6	6		5	12	12	20	12	12	12	5		6	6
Murphy Boulevard (New)	Boulevard	6	6		5	12	12	15	12	12	12	5		6	6
Murphy Road	Avenue	6	6				12			12					
North Avenue	Avenue					11	11			11	11			6	6

Street Details – Phantom East (cont)

PE Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Old Iron Side Avenue	Park Street	6	6	9				142		10.5		4.5	9	6	6
Redbud Drive	Neighborhood Street	6	6				10.5			10.5					
Reynolds House N (New)	Park Street	6	6	9		10.5	10.5	76					9	6	6
Reynolds House S (New)	Park Street	6	6	9				76		10.5	10.5		9	6	6
S. Range Road - N	Alley						12			12					
S. Range Road	Boulevard	6	6		5	12	12	15	12	12	12	5		6	6
New Typical Alley A	Alley						10			10					
New Typical Street B	Neighborhood Street	6	6	9			10.5			10.5				6	6
New Typical Street C	Main Street	6	6	9			10.5			10.5			9	6	6

Phantom Warrior Illustrative Plan



A Flex-Use: 7 bldgs @ 10,500sf / flr (2-4 flr)
B Flex-Use, Storage Facilities: 6 bldgs @ 12,750sf / flr (1 flr)
C Flex-Use, NCO Academy Addition: 80,685sf / flr (3-5 flr)
D Mixed-Use, Retail/Food Court: 42,460sf / flr (2-4 flr)
E Mixed Use, Retail/Food Court: 2 bldgs @ 9,250sf / flr (2-4 flr)
F Flex-Use: 16,793sf / flr (2-4 flr)
G Flex-Use: 17,812sf / flr (2-4 flr)
H Flex-Use, Warrior Zone PN73001: 9,600sf / flr (1flr)
I Flex-Use: 2 bldgs @14,602sf / flr (2-4 flr)
J Flex-Use: 2 bldgs @9,300sf / flr (2-4 flr)
K Flex-Use, Education Building: 27,819sf / flr (2-4 flr)
L Flex-Use, Administration: 4 bldgs @ 23,472sf / flr (2-4 flr)
M Flex-Use COF/Office/Headquarters: 26,811sf / flr (3-4 flr)

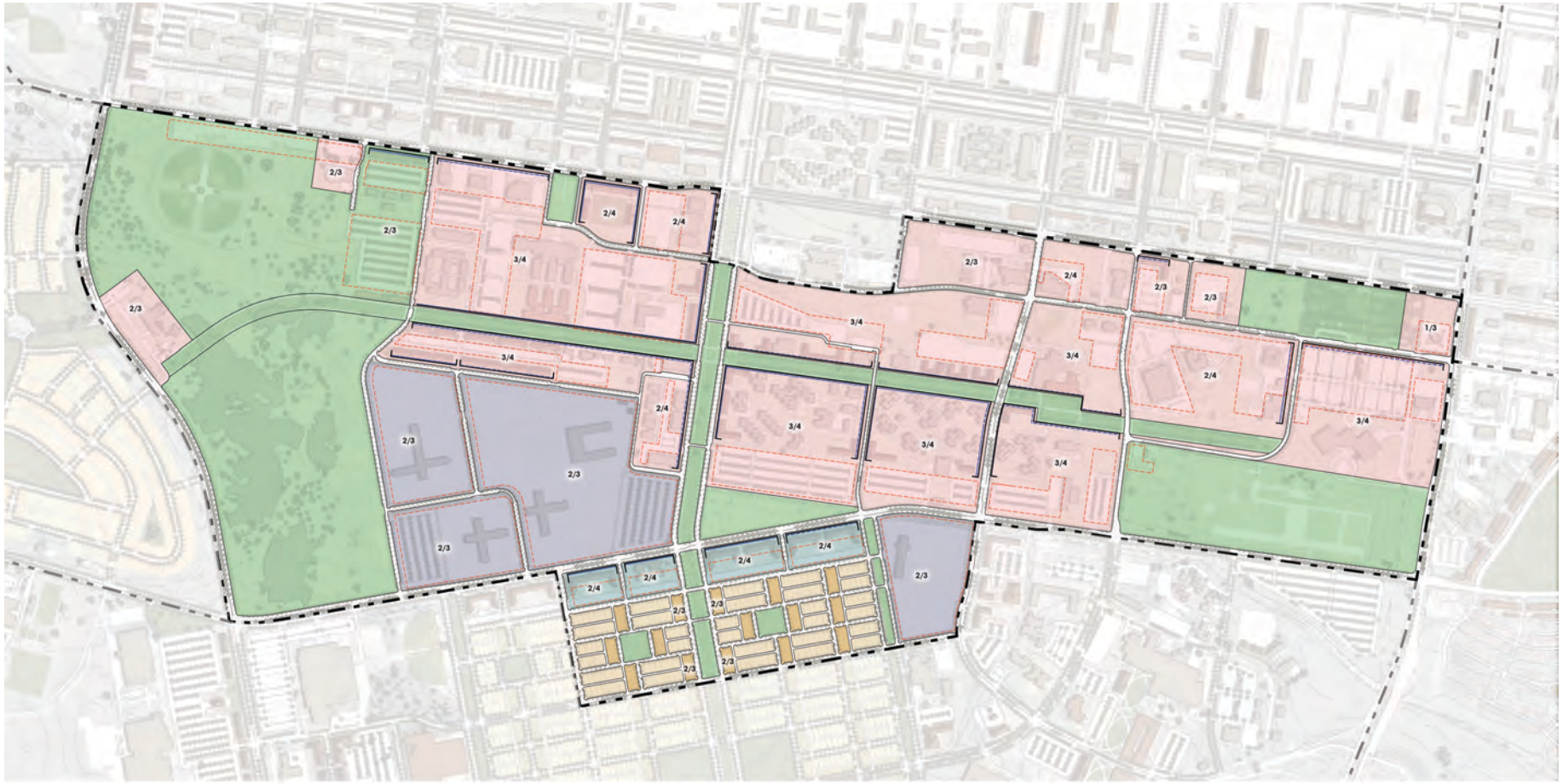
N Flex-Use: 3 bldgs @16,600sf / flr (3-4 flr)
O Flex-Use: 6,250sf / flr (3-4 flr)
P Flex-Use: 3 bldgs @16,550sf / flr (3-4 flr)
Q Flex-Use, Police Headquarters Addition: 11,250sf / flr (2-4 flr)
R Flex-Use, Fitness Center Addition: 30,241sf / flr (3-4 flr)
S Solar Panel Covered Parking: (77 spaces)
T Gazebo: 2,400sf (1flr)
U Recreation/Dog Park
V Vegetated Buffer for Family Housing
W Detached Housing: 168 total dwelling units
X Attached Housing: 52 total dwelling units
Y Flex-Use, Administration: 29,500sf, (2-4 flr)
Z Industrial, Storage: 2 blgs @ 2,000sf (1flr)

AA Flex-Use: 9,600sf / flr (2-4 flr)
BB Flex-Use: 10,330sf / flr (2-4 flr)

New Facilities
Existing Facilities
Detached Housing
Attached Housing
Bus Route
Public Transit Stop
Demolished Buildings
Housing Parcels
Existing Trees
Street Trees
Stormwater
Topography
Railroad
ADP Boundary
Installation Boundary
5/10 Minute Walk

400' 400' 400'

Phantom Warrior Regulating Plan



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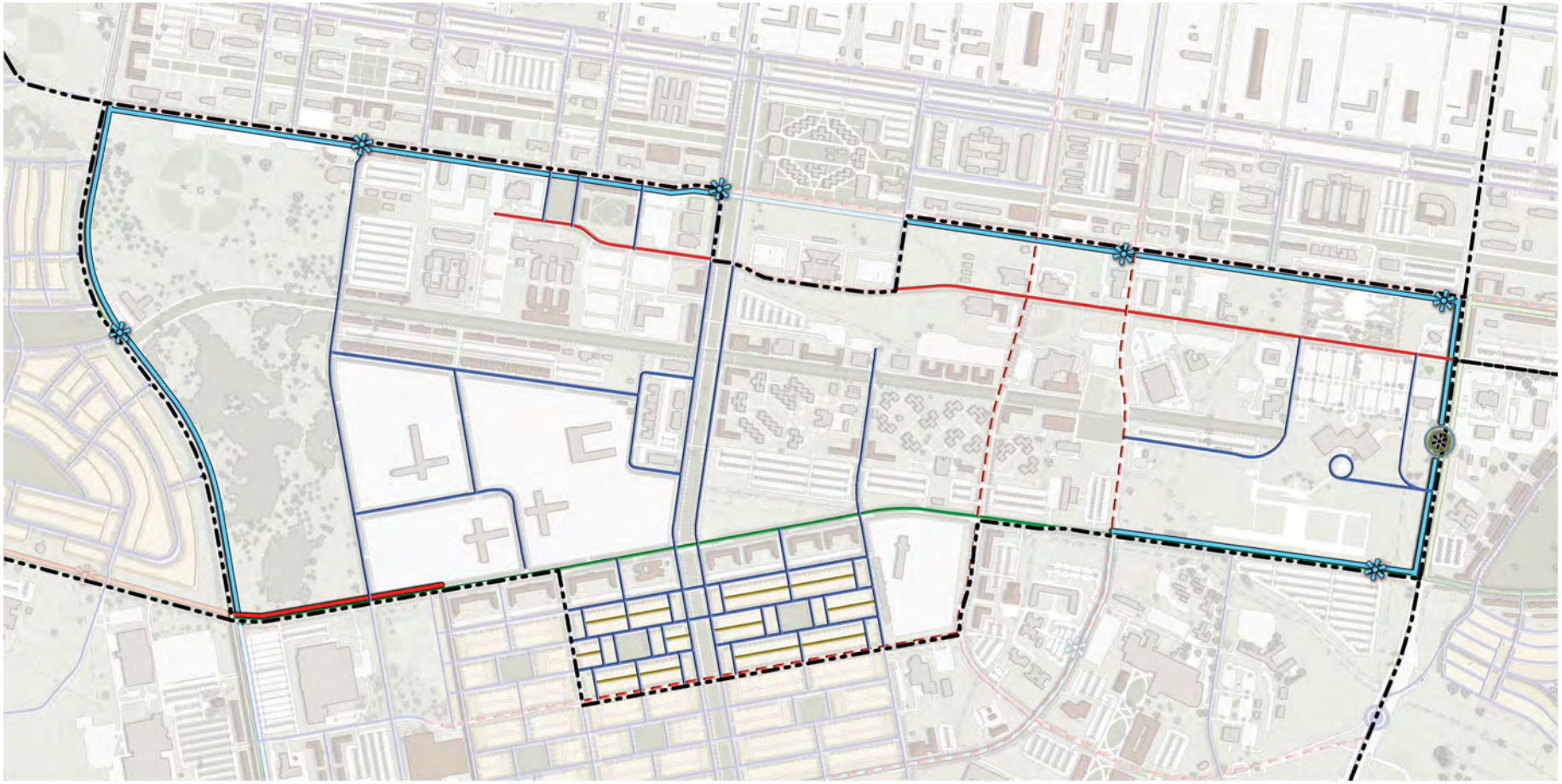
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area

Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

400' 400' 400'

The Urban Collaborative, LLC

Phantom Warrior Street and Transit Plan



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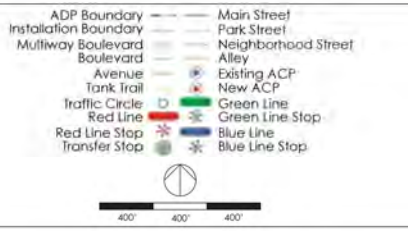


The Urban Collaborative, LLC

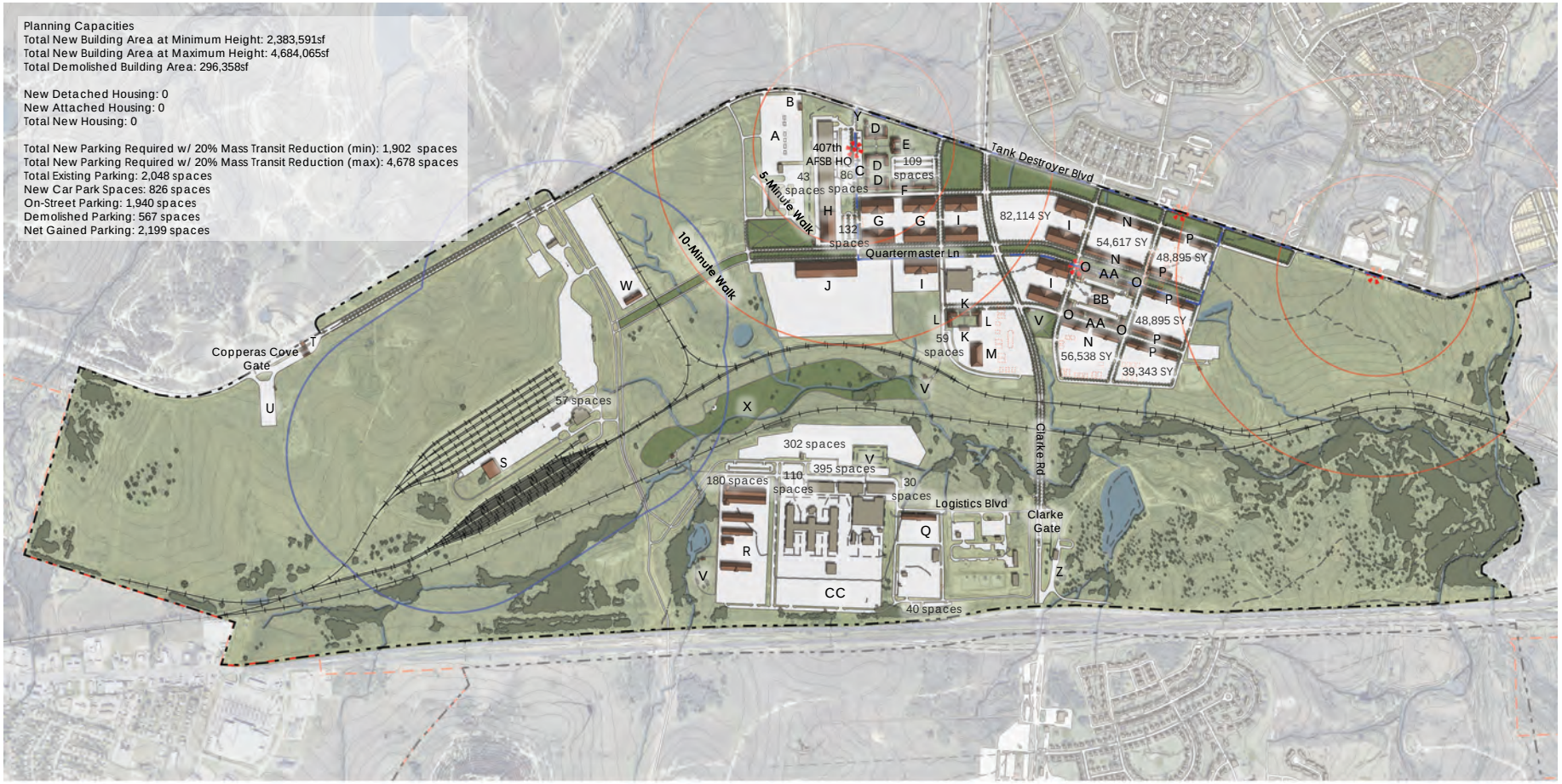
Street Details – Phantom Warrior

PW Street Data								Center							
Street Name	**Type**	walk	Strip	Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Lane	Strip	walk
301st Street	Nieghborhood Street	6	6				13			13				6	6
303st Street	Nieghborhood Street	6	6				13			13				6	6
305th Street	Alley						13			13					
52nd Street	Nieghborhood Street	6	6				11			11				17-25	6
56th Street	Nieghborhood Street	6	6				10			10				6	6
58th Street	Avenue	6	6				14		17	14				6	6
62th Street	Boulevard	6	6		5	12	12	15	12	12	12	5		6	6
65th Street - E	Park Street	6	6				13	60.5		13			9	6	6
65th Street - W	Park Street	6	6	9			13	60.5		13				6	6
67th Street	Main Street	6	6	9			10.5			10.5			9	6	6
68th Street	Main Street	6	6	9			10.5			10.5			9	6	6
ma	Main Street	6	6	9			10.5			10.5			9	6	6
70th Street	Main Street	6	6	9			10.5			10.5			9	6	6
71st Street	Main Street	6	6	9			10.5			10.5			9	6	6
72nd Street E	Parkstreet	20	8	9				93.5		12	12	5	9	6	6
72nd Street W	Parkstreet	6	6	9	5	12	12	93.5				5	9	8	20
761 Tank Battalion Ave	Avenue	6	6	9			11		11	11			9	6	6
74th Street	Main Street	6	6	9			10.5			10.5			9	6	6
75th Street	Main Street	6	6	9			10.5			10.5			9	6	6
76th Street	Main Street	6	6	9			10.5			10.5			9	6	6
76th Street - N	Nieghborhood Street	6	6				11			11					
78th Street	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
Clear Creek Road	Boulevard	6	18		5	12	12	15	12	12	12	5		18	6

Street Details – Phantom Warrior (cont)

PW Street Data								Center							
Street Name	**Type**	walk	Strip	Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Lane	Strip	walk
Headquarters Avenue	Nieghborhood Street						13			13				6	6
Hospital Road	Nieghborhood Street	6	6				13			13				6	6
Motorpool Road	Main Street	6	6	9			12			12			9	6	6
Service Drive	Avenue	6	6	9			11		11	11			9	6	6
Support Avenue - E	Avenue						11		11	11					
Support Avenue - W	Nieghborhood Street	6	6				12			12				6	6
Tank Destroyer Blvd	Boulevard	8	6		5	12	12	15	12	12	12	5		6	8
Terminal Avenue	Main Street	6	6	9			10.5			10.5			9	6	6
TJ Mills Blvd	Boulevard	6	3-26		5	12	12	33	12	12	12	5		3-60	6
Training Road	Nieghborhood Street	8	8				10			10					
New Road A	Main Street	6	6	9			12			12			9	6	6
New Road B	Main Street	6	6	9			12			12			9	6	6
New Road C	Main Street	6	6	9			12			12			9	6	6
New Road D	Main Street	6	6	9			10.5			10.5			9	6	6
New Road E	Main Street	6	6	9			10.5			10.5			9	6	6

Quartermaster Park Illustrative Plan



A Industrial, Line Haul: Ramps and Hardstand
B Industrial, Line Haul: 5,000sf per flr (1 flr)
C Industrial, NEFF Campus: 2 bldgs @ 3,900 / floor (2-4 flr)
D Industrial, NEFF Campus: 3 bldgs @ 25,050sf / floor (2-4 flr)
E Industrial, NEFF Campus: 17,550sf /floor (2-4 flr)
F Industrial, NEFF Campus/Motorpool: 35,400 / flr (2-4 flr)
G Industrial, CECOM, PN73165: 4 bldgs @ 77,050sf / flr (1-2 flr)
H Industrial, Weapons Warehouse Addition: 78,740sf / flr (1-2 flr)
I Industrial: 7 bldgs @ 77,050sf / flr (1-2 flr)
J Industrial, LRC/DLAADS Joint Use Warehouse: 157,450sf /flr (1-2 flr)
K Industrial/Administrative: 2 bldgs @ 6,250sf /flr (2-4 flr)
L Industrial/Administrative: 2 bldgs @ 13,450 /flr (2-4 flr)
M Industrial: 45,000sf /flr (1-2 flr)

N Industrial: 6 bldgs @ 26,700sf / flr (1-2 flr)
O Administrative: 4 bldgs @ 16,075sf / flr (2-4 flr)
P Industrial: 9 bldgs @ 22,960sf / floor (1-2 flr)
Q Industrial, Warehouse Expansion: 34,188sf / floor (1-2 flr)
R Industrial, PM HBCT Complex, PN70337: 342,103sf / flr (1 flr), (6 bldgs)
S Industrial, Blocking & Bracing Warehouse: 35,000sf / flr (1 flr)
T ACP with Truck Entrance: 3 bldgs @ 3,000sf / flr (1 flr)
U Commercial Vehicle Staging Area
V Picnic Area with Gazebo: 1,000sf / flr (1 flr)
W Industrial, Container Repair and Storage: 18,475sf / flr (1 flr)
X Recreation Trails
Y Industrial, NEFF Campus: 2 bldgs @ 2,500 / floor (2-4 flr)
Z Commercial Truck Lane

AA Administrative: 2 Bldgs @ 10,500sf / flr (2-4)
BB Administrative: 2 Bldgs @ 22,500sf / flr (2-4)
CC LRC Hardstand Expansion

New Facilities
Existing Facilities
Detached Housing
Attached Housing
Bus Route
Public Transit Stop
Demolished Buildings
Housing Parcels
Existing Trees
Street Trees
Stormwater
Topography
Railroad
ADP Boundary
Installation Boundary
5/10 Minute Walk

Quartermaster Park Regulating Plan

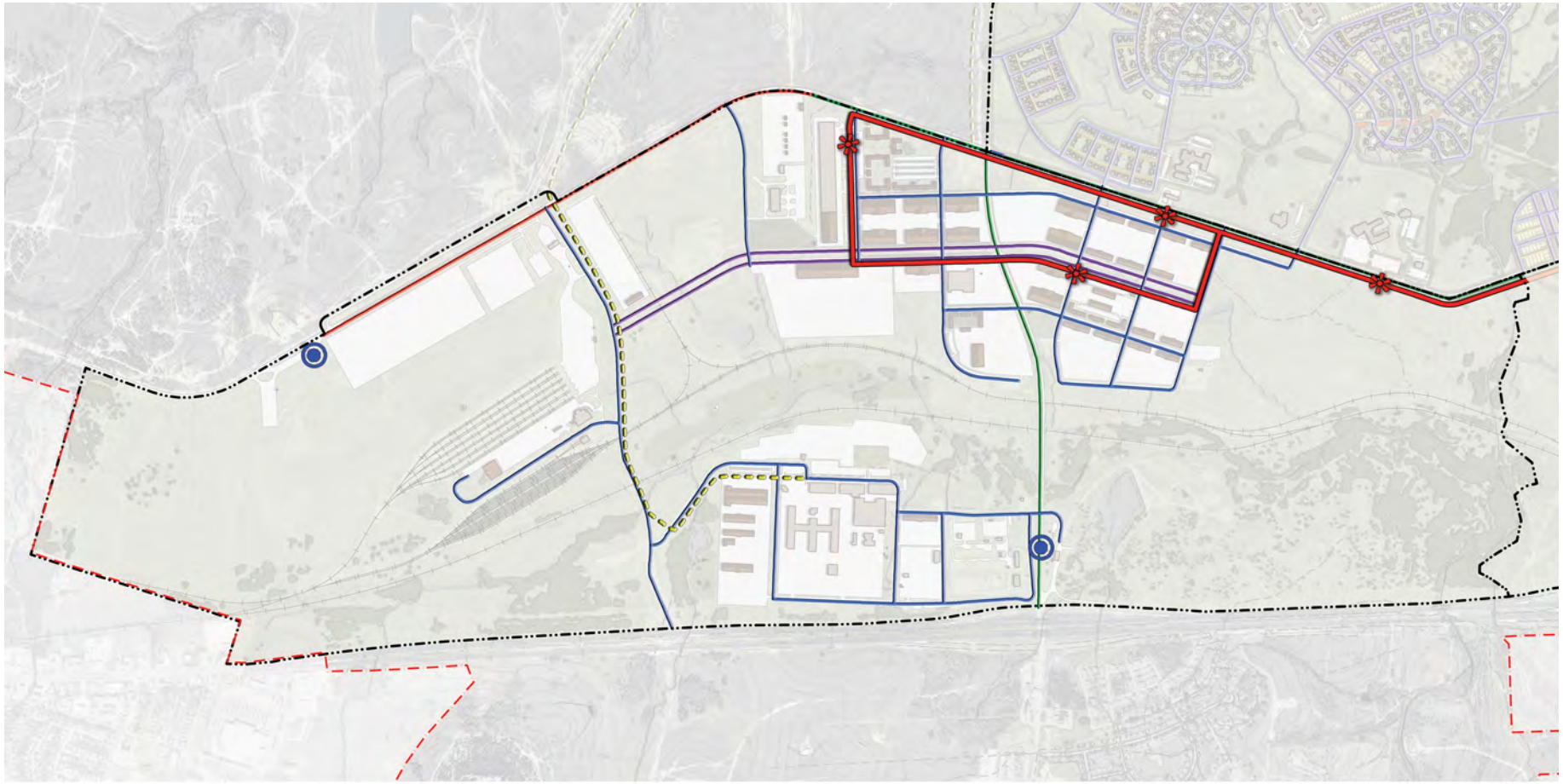
Notes:
1. Refer to the Street Standards for detailed Street Information.
2. Refer to the Building Standards for detailed building information.
3. Recreation area shall be used solely for programmed recreation activities
4. Unregulated areas shall be permanently designated as open space.
5. Numerical Designation in each buildable area refers to minimum and maximum number of floors,
6. Building area boundaries assume construction which allows a 30' setback, based on UFC 4-010-01, 9 Feb 12.

Mixed-Use
Flex-Use
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area
Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

500' 500' 500'

The Urban Collaborative, LLC

Quartermaster Park Street and Transit Plan



This plan shows the street network system with the different types of roadways on the installation: Multiway Boulevards, Boulevards, Avenues, Main Streets, Park Streets, Neighborhood Streets, Alleys, and unpaved roads; this network is designed to support a more efficient transportation system at Fort Hood. This plan also shows the transit network system with three shuttle routes along main corridors throughout the installation, and transfer stops that allow for rapid changing between these routes from access control points.

The Urban Collaborative, LLC

Street Details – Quartermaster Park

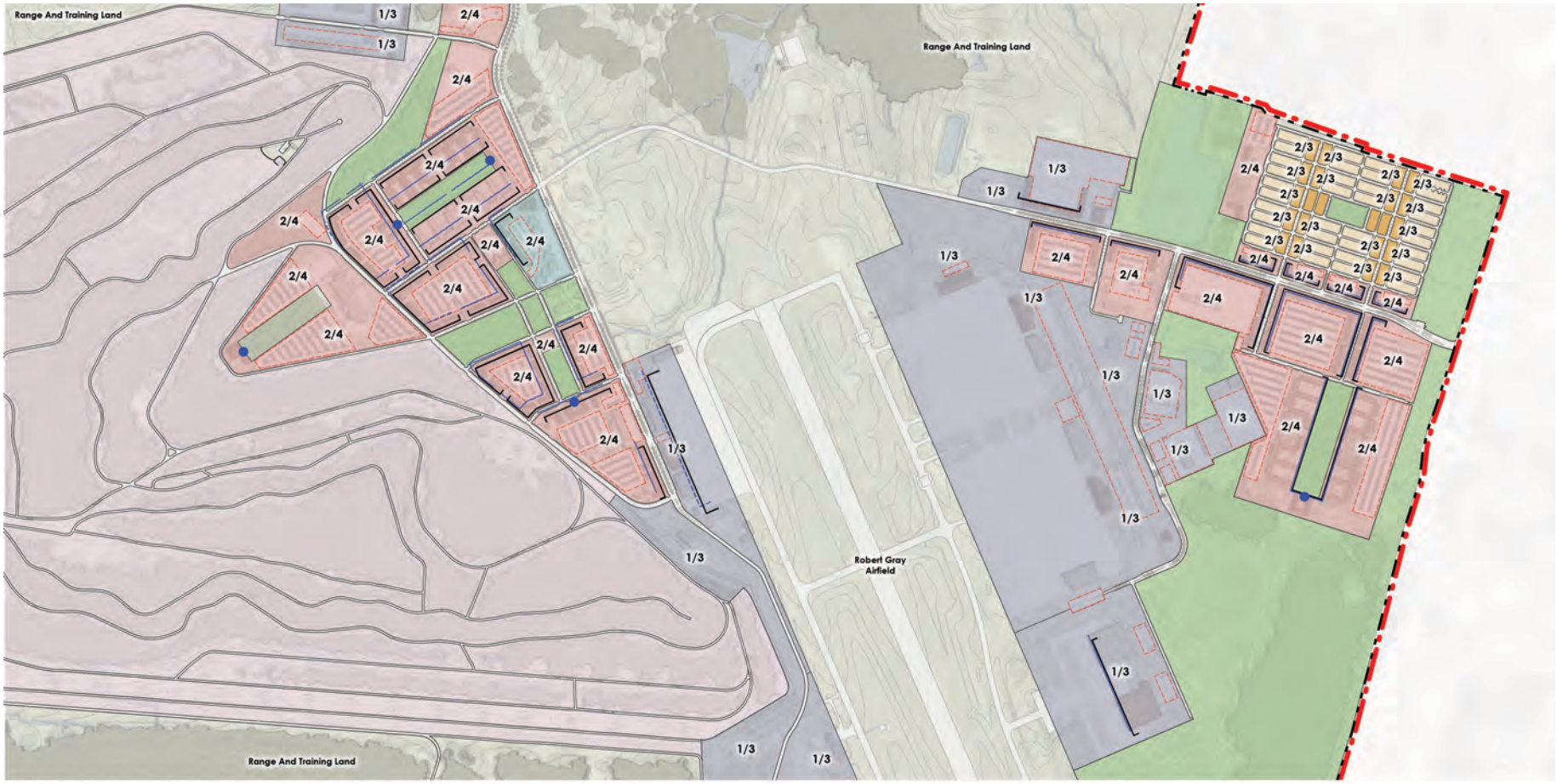
QP Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Ammo Road Alternative Route	Avenue						12			12					
New Road A	Avenue						14			14					
New Road B	Main Street	6	6	9			14			14			9	6	6
New Road C	Main Street	6	6	9			14			14			9	6	6
New Road D - W	Main Street	6	6	9			14			14			9	6	6
New Road D - E	Main Street			9			14			14			9		
New Road E	Main Street			9			14			14			9		
New Road F	Main Street			9			14			14			9		
New Road G	Main Street			9			14			14			9		
New Road H - W	Main Street	6	6	9			14			14			9	6	6
New Road H - E	Main Street			9			14			14			9		
New Road I	Main Street			9			14			14			9		
New Road J	Nieghborhood street			9			14			14			9		
New Road K	Nieghborhood street						14			14					
New Road L	Nieghborhood street						14			14					
New Road M	Nieghborhood street						14			14					
Clark Road	Boulevard	6	6		5	12	12	15		12	12	5		6	6
Fielding Lane	Alley						10			10					
Fielding Lane - W	Main Street			9			13			13			9		
Logistics Boulevard	Avenue						12			12					
Quartermaster Lane N	Park Street	6	6	9	5		15	50						6	6
Quartermaster Lane S	Park Street	6	6					50		15		5	9	6	6
Tank Destroyer Blvd	Boulevard	6	6		5	12	12	15		12	12	5		6	6

Robert Gray Army Airfield Detail Illustrative

A Industrial, OTC Motorpool Expansion: 2 bldgs @ 10,000sf / flr (1-2 flr)
B Flex-Use, MWR Warrior Zone, PN 73003 10,000sf / flr (2 flr)
C Flex-Use, Barracks: 6 bldgs @ 171 units / flr (2-4 flr)
D Flex-Use, Admin Complex: 90,421sf / flr (2-3 flr), 9 Bldgs
E Flex-Use: 20,625sf / flr (1 flr)
F Flex-Use, Admin Complex: 80,435sf / flr (2-3 flr), 7 Bldgs
G Mixed-Use, Complex: 39,000sf / flr (2-3 flr), 3 Bldgs
H Flex-Use, E-MIB 504th BfSB, PN70549: 41,149sf / flr (2-3 flr), 3 Bldgs
I New Hangars: 4 bldgs @ 52,076sf / flr (1 flr)
J Flex-Use, OTC Expansion: 103,726sf / flr (1 flr), 7 Bldgs
K Flex-Use, Admin Complex: 49,393sf / flr (2-3 flr), 3 Bldgs
L Industrial: 2 bldgs @ 27,500 sf / flr (1-2 flr)
M Flex-Use, Admin: 6 bldgs @ 27,500sf / flr (2-4 flr)
N Flex-Use: 4 bldgs @ 15,000/ flr (2-4 flr)
O Flex-Use Fire Station: 18,000sf / flr (2-3 flr)
P Flex-Use, CDC: 22,100sf / flr (2-3 flr)
Q Flex-Use, School: 31,600sf / flr (2-3 flr)
R Detached Housing: 478 units
S Industrial, UAS Hangar, PN69828: 125,128sf / flr (1 floor)
T Flex-Use: 19,500sf / flr (2-3 flr)
U Flex-Use: 5 bldgs @ 5,000sf / flr, (2-4 flr)
V ECP: 10,068sf (1 floor)
W Flex-Use: 2 bldgs @ 17,500sf / flr (2-4 flr)
X Flex-Use: 2 bldgs @ 17,500sf / flr (2-4 flr)
Y Flex-Use: 4 bldgs @ 13,500sf / flr (2-4 flr)
Z Flex-Use: 26,000sf / flr (2-4 flr)

New Facilities
Existing Facilities
Detached Housing
Attached Housing
Bus Route
Public Transit Stop
Demolished Buildings
Housing Parcels

West Fort Hood Regulating Plan



Notes:
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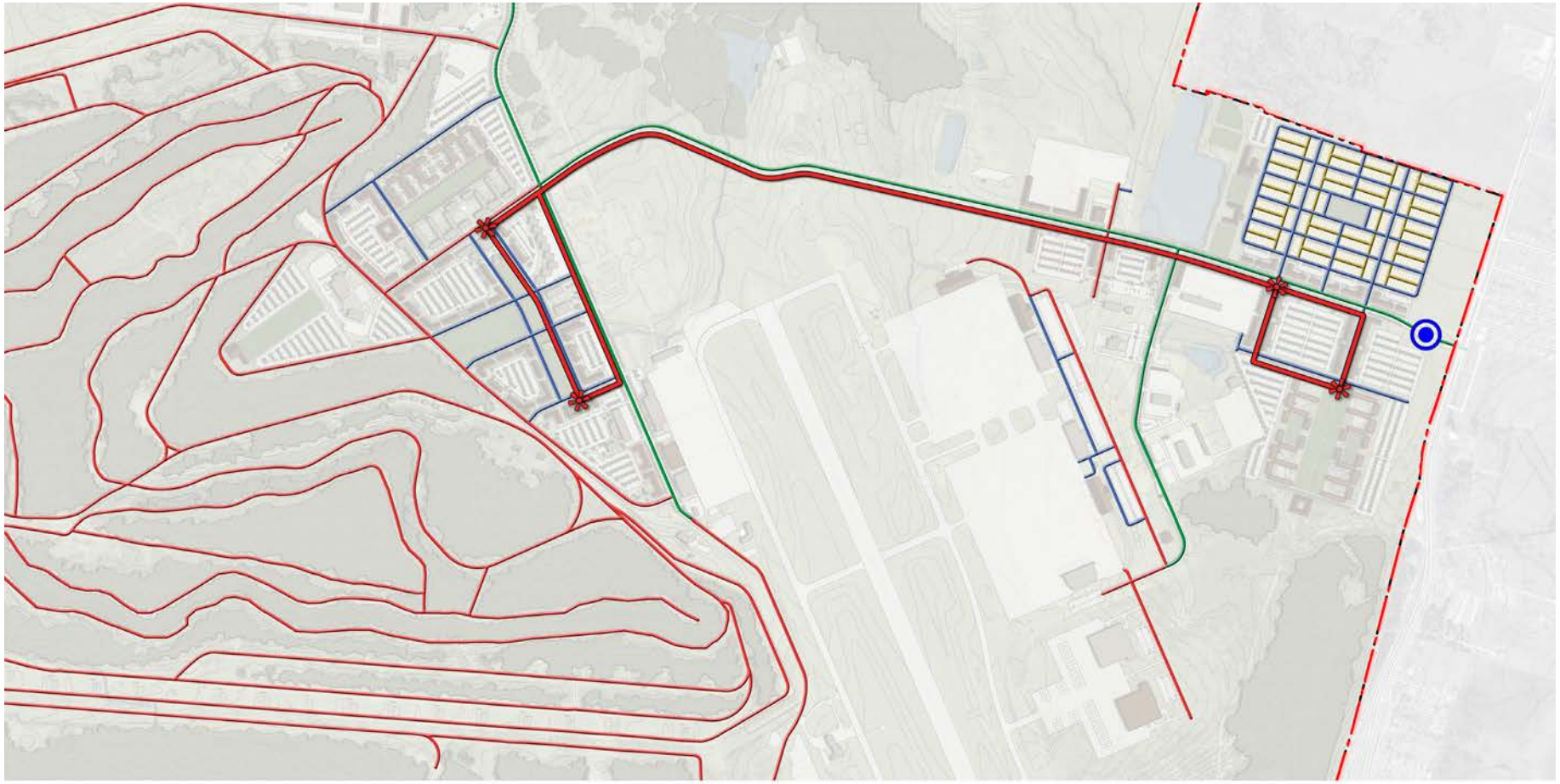
6. Building area boundaries assume construction which allows a 30' setback, based on UFC 4-010-01, 9 Feb 12.

Mixed-Use
Flex-Use
Single Family Home
Townhome
Industrial/Admin
Parks and Open Space
Buildable Area
Required Build—To Line (BTL)
Parking Zone
Required Entry Zone
Required Entry Location
1/3 Minimum/Maximum Building Heights
ADP Boundary

450' 450' 450'

The Urban Collaborative, LLC

West Fort Hood Street and Transit Plan



This plan shows the street network system with the different types of roadways on the installation: Multiway Boulevards, Boulevards, Avenues, Main Streets, Park Streets, Neighborhood Streets, Alleys, and unpaved roads; this network is designed to support a more efficient transportation system at Fort Hood. This plan also shows the transit network system with three shuttle routes along main corridors throughout the installation, and transfer stops that allow for rapid changing between these routes from access control points.

The Urban Collaborative, LLC

Street Details – West Fort Hood

WFH Street Data								Center							
Street Name	**Type**	Side-walk	Plant. Strip	Park. Lane	Bike	Traffic	Traffic	Median	Turn	Traffic	Traffic	Bike	Park. Lane	Plant. Strip	Side-walk
Access Road (90149)	Alley						11			11					
Beacon Hill Road	Alley						8			8					
Clarke Road	Boulevard	6	6	9	5	11	11	15	11	11	11	5	9	6	6
Cobra Drive	Main Street	6	6	9			10.5			10.5			9	6	6
Cobra Drive (by Hangers)	Avenue						12			12				6	6
Gray Eagle Road	Boulevard	6	6			11	11	15	11	11	11			6	6
Headquarters Avenue	Main Street	6	6	9			10.5			10.5			9	6	6
Loop Road (North, changes to Station Ave)	Avenue				5		10.5			10.5		5		6	6
Mohawk Drive	Boulevard	8	8		5	11	11	15	11	11	11	5		8	8
Motorcycle Training Rd	Alley						10			10					
New Alley C (Typ)	Alley						9			9			9	6	6
New Road A (Typ)	Main Street	6	6	9			10			10.5			9	6	6
New Road B (Typ)	Nieghborhood Street	6	6				11			11			9	6	6
Outer Fence Road	Main Street	6	6	9			11			11			9	6	6
Robert Gray Drive (Clarke Road)	Avenue						17.5			17.5					
Station Avenue	Avenue	6	6	9	5		10.5			10.5		5	9	6	6
Warehouse Avenue	Main Street	6	6	9			10.5			10.5			9	6	6

Appendix C
Building Construction Checklist

Master Plan and Form Based Code Checklist

FH New Project Design Guide Checklist

Installation Master Plan & Form-Based Code Compliance Verification

Regulating Plan Compliance		COMPLIANT 1 point	WAIVER ACQUIRED 1 point	NOT COMPLIANT 0 points	SCORE
1	Building footprints fall within the Buildable Area Boundaries				
2	Building use is compatible with the allowable parcel uses				
3	Façades are built to RBL where designated				
4	Sites parking is within the allowable parking area				
5	Building entries comply with the Required Entries and Required Entry Zones				
6	Building heights are within the allowable range				
				Subtotal	

Building Envelope Standard Compliance		COMPLIANT 1 point	WAIVER ACQUIRED 1 point	NOT COMPLIANT 0 points	SCORE
1	Parking requirements and setbacks are met				
2	Current Anti-Terrorism/Force Protection setbacks are met				
3	Building width, floor-to-floor heights, façade fenestration, and roof pitch comply with the Architecture Standards				
4	Loading areas and overhead doors are not located on RBLs				
5	Façade bays are articulated as/if specified; blank lengths of walls are no longer than 15ft				
6	Double-loaded corridors are no longer than 200ft				
7	Windows are operable, excluding clerestory and storefront windows; all south-facing windows are shaded				
8	Balconies, bay windows, arcades, etc. encroach no more than 2ft beyond the RBL				
9	Construction methods, material, and colors comply with the Aesthetic Design Guidelines				
10	Roof construction employs cool-roof or eco-roof strategies				
				Subtotal	

Landscape Design Standard Compliance		COMPLIANT 1 point	WAIVER ACQUIRED 1 point	NOT COMPLIANT 0 points	SCORE
1	Preference is given to native plant species and xeriscaping				
2	Mature trees within buildable area parcels are preserved				
3	Landscaping is used to provide scale and comfort to the pedestrian environment				
4	Landscaping reinforces the hierarchy of the circulation system				
5	Landscaping is used to screen unsightly views or elements, or used to buffer incompatible land uses				
6	Parking areas use vegetated swales between parking bays wherever possible				
				Subtotal	

	TOTAL SCORE	

Appendix D
Design Principles

Planning Vision and Goals

Participants at the Visioning Workshop in January 2011 worked with design professionals to establish guidance for the development of Fort Hood. Through this effort, Fort Hood was divided into districts which were prioritized for master planning purposes.

The master plan vision for Fort Hood is:

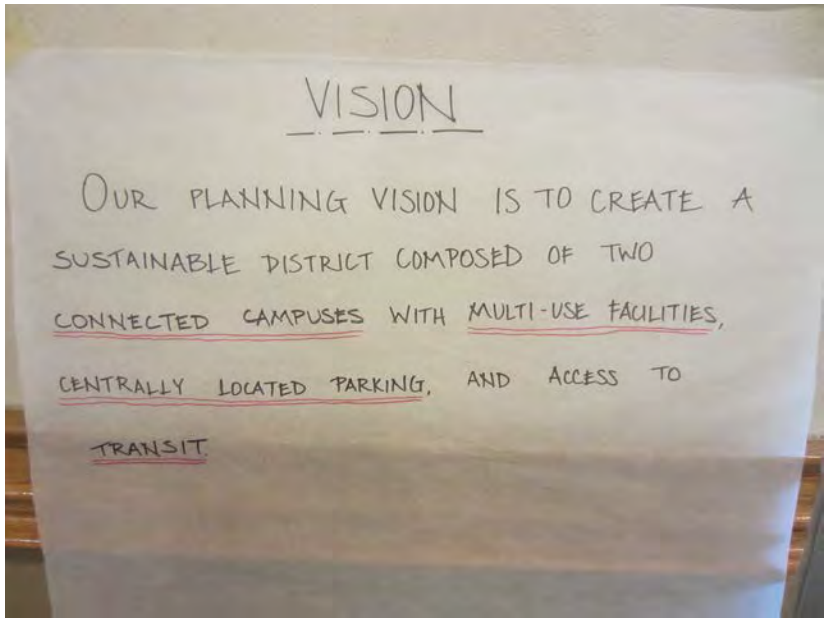
- The Great Place with accessible campuses, walkable small towns, and modern, energy-efficient infrastructure.

The goals identified in the vision are:

- Accessible Campuses
    - Create connected neighborhoods that are self-sustaining with a mix of uses and flexible facilities.
- Walkable Small Towns
    - Provide safe, convenient and comfortable walks within identifiable districts that reflect historic Texas.
- Modern Infrastructure
    - Create utilities and road networks that support state of the art technologies, communications, and vehicles.

The vision for Hood Army Airfield is:

- A sustainable district composed of three connected campus with consolidated, multi-use facilities, centrally located parking, and access to transit.



Design Principles

The list of principles (or design objectives) below are the beginning of a common design language that is used to guide area development planning at Fort Hood. The idea is based in part on work by Christopher Alexander, as published in *A Pattern Language.* Alexander argues that we need a common language for design if we are to avoid the sterile and disjointed environments that are so prevalent today.

The design principles listed were collaboratively developed during the Visioning Workshop, based in part on lessons learned during the workshop. Each principle is explained by an image that graphically portrays the intent of the principle as well as a narrative that details the justification for the principle and the recommendations that make up the principle. It is important to note that these principles work best in concert. This should be considered a beginning language for design and can be added to and modified over time.

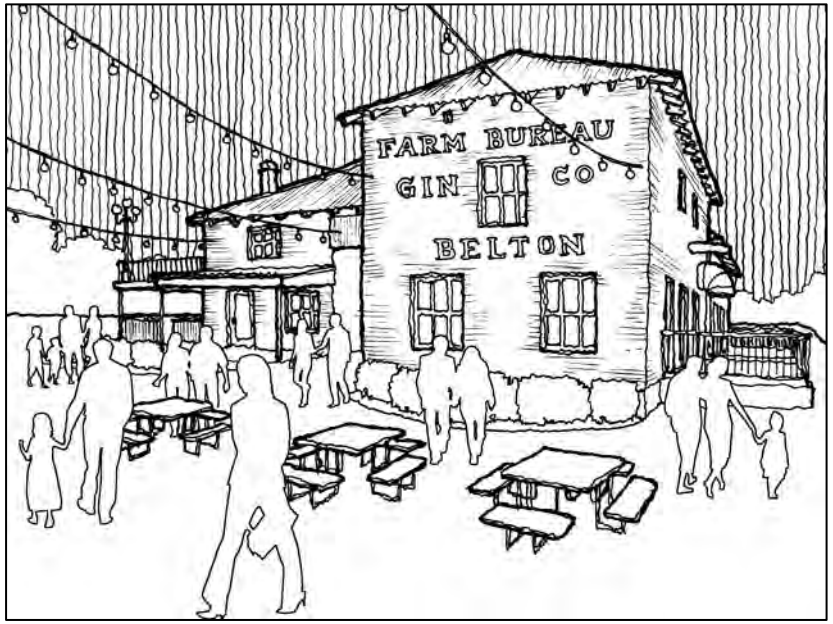
District
- Transit-Oriented Development
- 10-Minute Walk
- Streetfront Buildings
- Compact Development
- Places to Gather
- Horizontal Mixed-Use
- Campus Quads
- Pedestrian Access
- Small Blocks
- Downtown Square

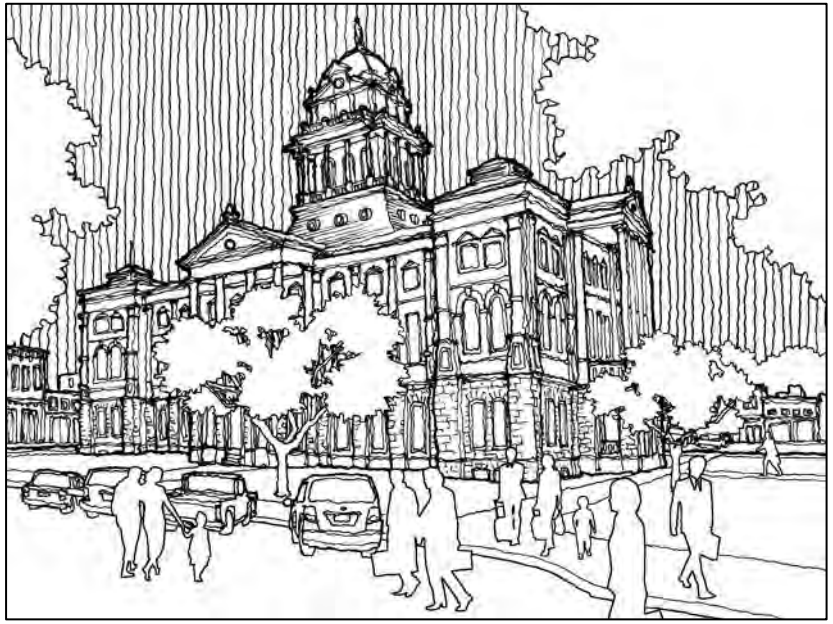
Buildings
- Narrow Wings
- Vertical Mixed Use
- Multi-Story Buildings
- Community Facilities
- Multi-Use Spaces
- Spaces for Collaboration
- Appropriate Standoff
- Adaptable Buildings
- Infill Buildings
- Livable Apartments
- Compatible Development
- Operable Windows
- Front Porches/Stoops/Balconies
- Regional Architecture
- Layers of Privacy

Streets
- Street Grids
- Multiway Boulevards
- Parkways
- Main Streets
- Neighborhood Streets
- Connected Sidewalks
- Medians
- Planting Strips
- Street Trees
- Bike Lanes
- Traffic Calming
- Eyes on the Street
- One-Way Park Streets
- Multi-Modal Complete Street
- On-Street Parking

Parking
- Car Parks
- Hidden Parking
- Perimeter Parking

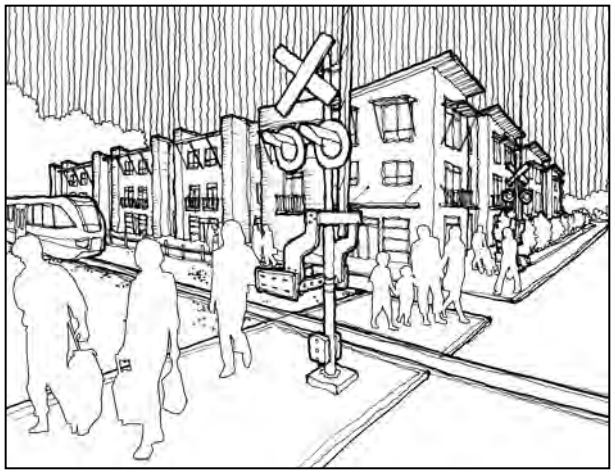
Open Space
- Axes and Focal Points
- Community Parks
- Nearby Recreation
- Common Spaces Inside and Out
- Framing Public Space



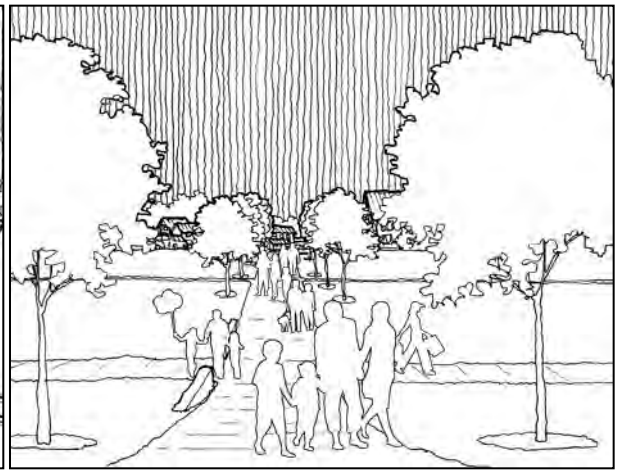


District

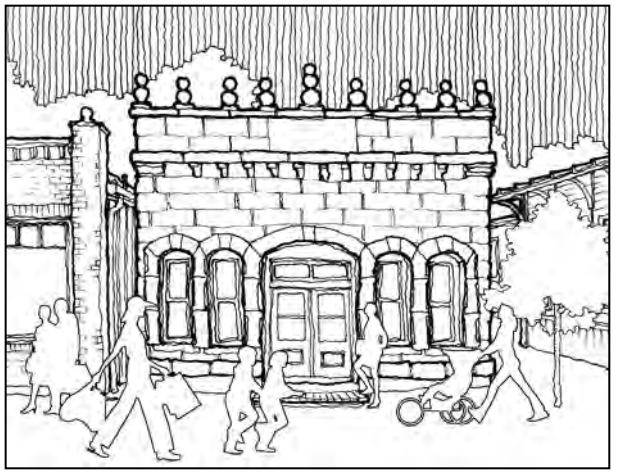
Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.



Saltillo Lofts, Austin, TX



Mueller, Austin, TX



Main Street, Salado, TX

Transit-Oriented Development

Development centered around public transportation reduces dependency on the automobile. The carbon footprint reduction potential is enormous, and monetary savings to the residents is available by reduction in driving. The incorporation of transit requires specific locations for transit stops, which then concentrate development activity in that area. Examples are bus stops, metro stops, or light rail stops. Corresponding development in the area includes vertical and horizontal mixed-use development, residential development, and car parks. These development opportunities concentrate desirable activities within a 10-minute walk from transit stops. Incorporating intermodal transportation is also effective in tying bicycles into the mass transit system. Bike lanes also tie back to connected sidewalks, providing safety in transportation as an alternative to the automobile.

Supports Goal(s):
1: Accessible Campuses
3: Modern, Energy-Efficient, Energy-Efficient infrastructure

10-Minute Walk

In general, people are willing to walk ten minutes (1/2 mile) to go to school and work or to access retail and services. Workplaces, schools, homes, and shopping located in horizontal mixed-use areas within a 10-minute radius support a pedestrian-focused environment. In addition, more functions can be accessed by foot when installations build vertical mixed-use. People are less dependent on cars, which positively impacts the environment and creates opportunities for increased neighborhood cohesion. When planning, it is essential to determine the 10-minute walk radius and ensure that schools, workplaces, shopping and other conveniences are located within this arc. However, if this walk is across parking lots, along disconnected sidewalks, or unprotected from the hot sun, people will not walk, even for five minutes. To be attractive to pedestrians, the walk must be shaded by street trees, along connected sidewalks.

Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns

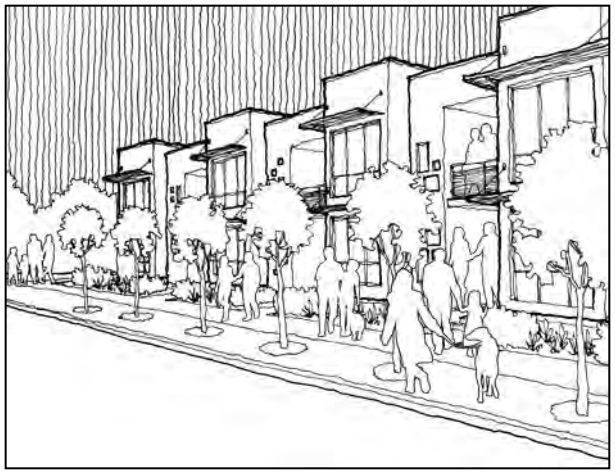
Streetfront Buildings

Too often, buildings turn a blank wall to the street. This discourages pedestrian access and limits interest on the street. Local police have adopted Crime Prevention Through Environmental Design strategies since the 1960s. The key principle they use (and that the military should adopt) is natural surveillance or "eyes on the street." Installations simply do not have enough security staff to watch over the entire installation. When storefront glazing faces the street, people inside buildings can watch the public realm and report unusual activity. The military's response, contrary to empirical evidence, is to eliminate windows since they pose a safety hazard if they are shattered in an explosion. However, the likelihood of just such an event is reduced when people can naturally watch the streets, and the impact of shattered glass can be minimized by the use of laminated glazing. Storefronts can also become places where people gather.

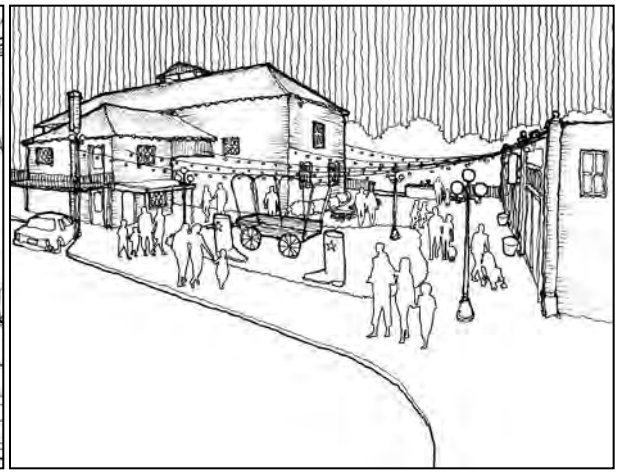
Supports Goal(s):
2: Walkable Small Towns

District

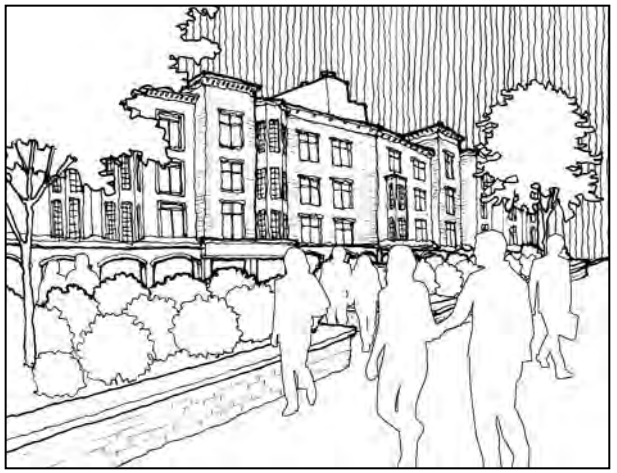
Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.



Mueller, Austin, TX



Historic plaza at The Gin, Belton, TX



Mueller, Austin, TX

Compact Development

Compact development combines stores, homes, and working places with public facilities and amenities within a 10-minute walk of each other. It contributes to active community environments where people can live, work, shop and play. The key to compact development is a close proximity of living, working, shopping, schooling, and socializing elements in a compact environment. The benefits of compact development include reducing infrastructure costs, reducing vehicular traffic, preserving open space, supporting economic vitality, and cultivating clear wayfinding.

Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns

Places to Gather

Places to gather create opportunities for people to meet for a conversation, share ideas, and create community bonds. Gathering spaces can provide a space to host public gatherings, or for private conversations to occur. Places to gather should be located in the town center and throughout a development. They should be located in close proximity to retail or service-oriented areas in a place with high volumes of day-to-day traffic, and have benches or tables where people can stop and sit. Gathering spaces can also accommodate special events. Commander's calls, unit picnics, and outdoor concerts can all find a home in this space.

Supports Goal(s):
2: Walkable Small Towns

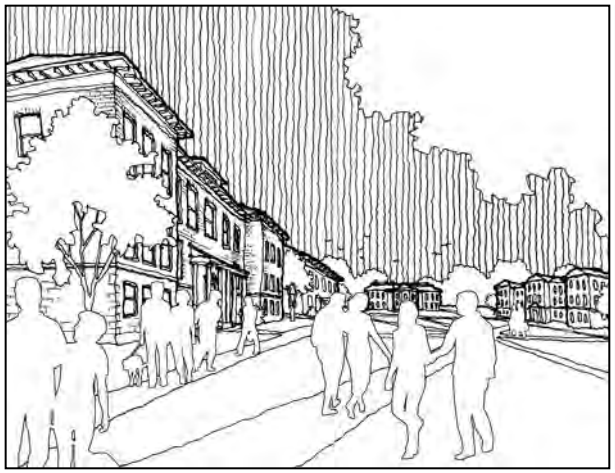
Horizontal Mixed-Use

Horizontal Mixed-Use development is comprised of a group of attractive vertical mixed-use buildings that may include places to shop, dine, live, worship, work, and play. A mixed-use development promotes town centers and town squares that provide convenient, easy access to amenities for residents living nearby. In addition to being a retail and service-oriented area, it will become a true destination with high volumes of day-to-day traffic to participate in the variety of available activities. Living and amenities will be easily accessed through a network of connected sidewalks, making it a safe, comfortable, pedestrian-friendly destination with clear wayfinding throughout.

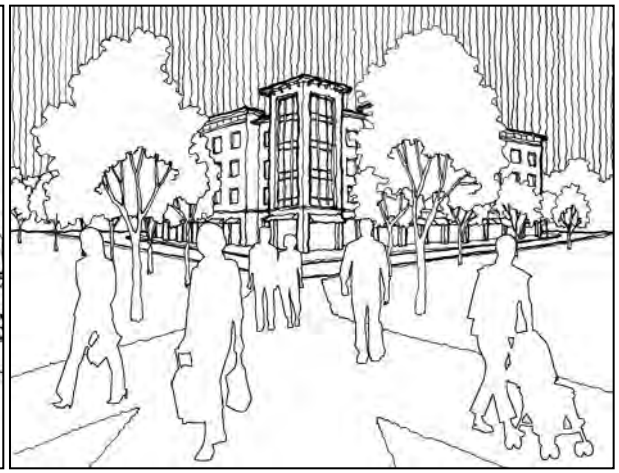
Supports Goal(s):
2: Walkable Small Towns
3: Modern, Energy-Efficient Infrastructure

District

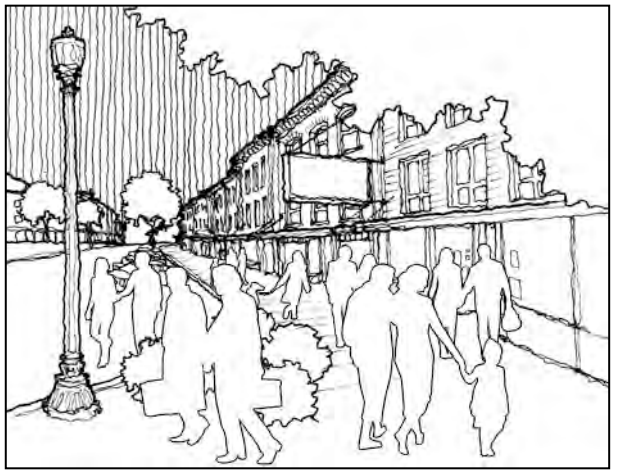
Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.



University of Mary Hardin-Baylor, Belton, TX



Retail, Mueller, Austin, TX



Downtown, Belton, TX

Campus Quads

Despite the impressive architecture of the beautiful buildings that surround them, the most notable and memorable areas of most university campuses are their quads. These common spaces inside and out inherently create places to gather for the areas they define. The elements of a campus quad include an outdoor open space, with places to sit and room to run, framed by appropriately scaled buildings and crossed with connected sidewalks. The connected sidewalk network that directly connects all the buildings on the quad and extends through various openings to connect to the surrounding pedestrian and vehicular networks is a critical element. This design allows clear wayfinding from building to building and from the quad to the surrounding areas, bringing more movement and life into the area. The quad provides a link to the views to nature, and serves as an invitation for people to gather, contributing to a sense of community.

Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns

Pedestrian Access

Pedestrian access should be a safe and comfortable means to move throughout the installation on foot. Buildings with visible entries and exit points, access between buildings, and street trees to cover connected sidewalks are just some elements that support safe and comfortable pedestrian access. The entry and exit control points for the installation must be safe, secure and attractive. The campus quad concept gives adequate space for emergency services vehicles to approach the facilities and perform their mission. Lighted walking paths, connected sidewalks, storefronts, and views to nature increase wayfinding through an installation. Although we must take every effort to protect our installations and especially our personnel we need to design with appropriate standoff AT/FP measures in mind. Over-designing standoff wastes land, limits room for growth, and can be detrimental to a social community.

Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns
3: Modern, Energy-Efficient Infrastructure

Small Blocks

A street grid provides many planning benefits for both vehicles and pedestrians, but often on our military installations we lose sight of scale with street systems. Small blocks are critical in neighborhood planning when we want to encourage walking. People are usually willing to walk up to 10 minutes to a destination if the walk is safe and comfortable. Small blocks contribute to safety because the increased number of intersections are a traffic calming device, and slower traffic contributes to pedestrian safety. Smaller blocks contribute to a more comfortable walk, creating an environment at a more human scale. When walking along a very large block with enormous buildings, the pedestrian senses the distance as being much longer. In downtown Portland, Oregon, an ideal walkable city, the city blocks are 200' x 200,' which maximizes the number of valuable corners and gives people many options for accessing various parts of the city.

Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns
3: Modern, Energy-Efficient Infrastructure

District

Planning Vision:
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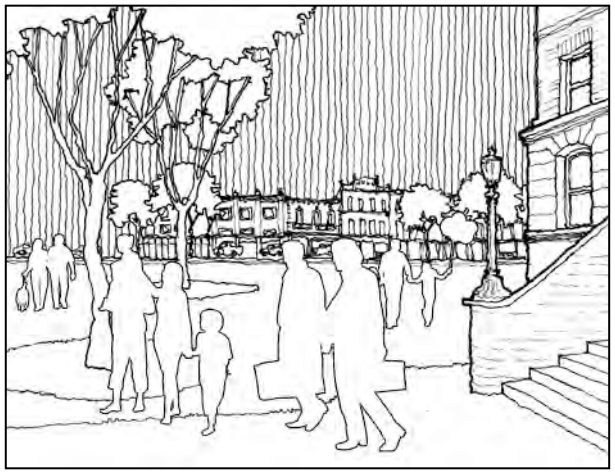


Williamson County Courthouse, Georgetown, TX

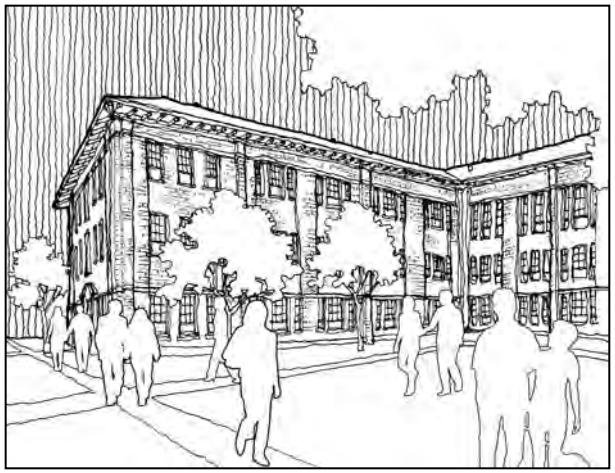
Downtown Square

A downtown square is an open space within the downtown that is enclosed by mixed-use buildings that may include places to shop, dine (think of sidewalk cafes), live, worship, work, and play. Downtown squares should be framed by buildings on four sides to create a sense of place - making it feel like an outdoor room. Town squares should also have several distinguishing characteristics – paths that cross, a fountain or similar feature near the center, landscaping, or other focal point, benches and spots for people to gather. Downtown squares should be no more than one block wide. The length of the town square is much more flexible, and should be designed to complement the area in which it is sited. Downtown squares serve as a primary outdoor gathering space on the installation and can accommodate special events—commander's calls, unit picnics, and outdoor concerts—where community bonds can form.

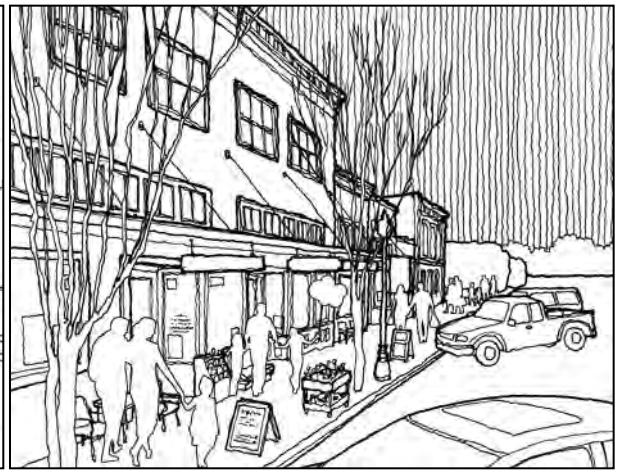
Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns

Buildings

Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.



Wells Nursing & Science Hall, University of Mary Hardin-Baylor, Belton, TX



7th Street, Georgetown, TX

Tamiro Plaza, Georgetown, TX

Narrow Wings

Before air conditioning and electric lighting, planners and architects knew that narrow buildings with operable windows facilitated natural ventilation and light, and allowed more opportunities for building occupants to have views of nature. Wide buildings create unpleasant work environments, are difficult to navigate, and expensive to maintain. Rooms with light on one side have greater glare, poor ventilation, and inadequate light distribution. A primary way to enhance the spaciousness of an office setting and to improve the quality of life for installation personnel is to bring in as much light to the facility as possible. Thin multi-story buildings allow natural light on both sides, promoting environmental sustainability. Buildings with narrow wings (a maximum of 50' wide) also help define exterior spaces and allow "eyes on the street" for AT/FP measures.

Supports Goal(s):
3: Modern, Energy-Efficient Infrastructure

Vertical Mixed-Use

In response to funding streams, user wishes, or other outside drivers, installations often build single-use buildings that contribute to sprawl. These buildings come with their own AT/FP buffers, utility laterals, and parking lots. Vertical mixed-use buildings that place compatible uses in one building can reduce sprawl by combining complementary functions which minimizes the need for multiple AT/FP buffers and extra utility lines. In addition, horizontal mixed-use areas contribute to a vibrant and safe retail core by bringing more "eyes on the street" from residences or offices on upper floors. When siting facilities, care should be given to analyze complementary functions and combine uses whenever possible. Compatible functions should be collocated in vertical mixed-use facilities that are economically and environmentally sustainable, use land more efficiently, and support multi-story buildings.

Supports Goal(s):
2: Walkable Small Towns
3: Modern, Energy-Efficient Infrastructure

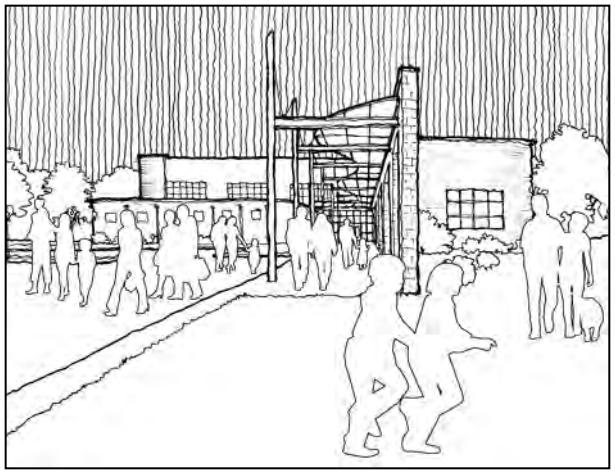
Multi-Story Buildings

Filling the landscape with single story buildings is not a sustainable practice. The resulting low-density environment forces excessive automobile use and consumes valuable land, which can limit future development opportunities. From a construction point-of-view, three one-story buildings require three times the foundation and roof area as one similarly sized three-story building. The also require three times the AT/FP standoff and up to three times more length of utility laterals to service each building. Vertical mixed-use development should build multi-story buildings which use land more efficiently, help define campus quads, and provide views to nature.

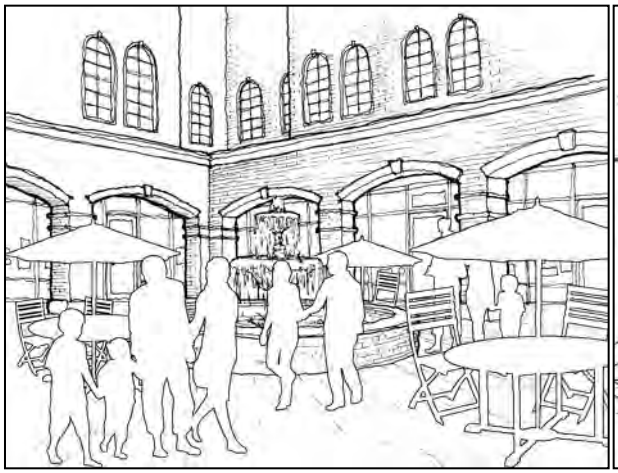
Supports Goal(s):
2: Walkable Small Towns
3: Modern Energy-Efficient Infrastructure

Buildings

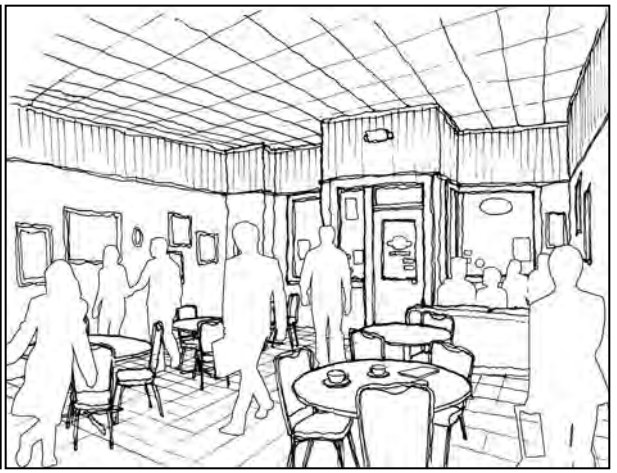
Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.



Gus Garcia Recreation Center, Austin, TX



Mueller, Austin, TX



Café, Georgetown, TX

Community Facilities

Community facilities are one element of the social infrastructure that can play a key role in contributing to a sustainable community. They provide settings for places to gather. They serve as axes and focal points that can promote a sense of place. Community facilities should provide residents of all ages and backgrounds a choice of opportunities to meet their needs.

Supports Goal(s):
3: Modern, Energy-Efficient Infrastructure

Multi-Use Spaces

Spaces designed for a single, fixed purpose are limited in their use. Mission changes, technology upgrades, and fluctuation in the number of personnel in a unit all affect how a space can be used or configured, and rigid, inflexible floor plans limit the capacity of an installation to adjust to these changes. Spaces should be designed for a multitude of uses to accommodate growing and changing mission needs. Adaptable buildings and open floor plans lend themselves to multi-use spaces.

Supports Goal(s):
1: Accessible Campuses
3: Modern, Energy-Efficient Infrastructure

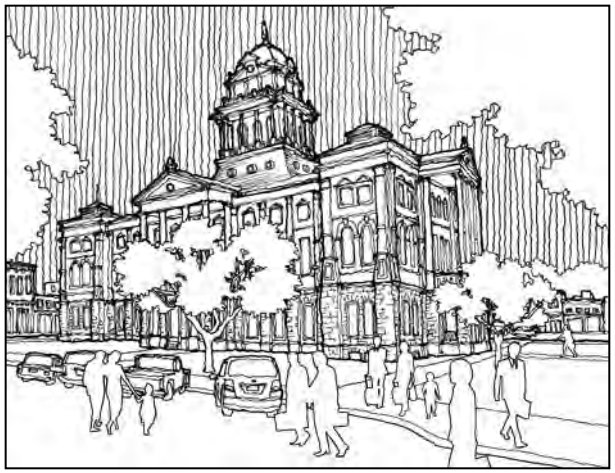
Spaces for Collaboration

In order to increase the sense of community on installations we must consider spaces for collaboration when planning and designing buildings. Spaces for collaboration are places to gather that facilitate productivity and discussion. Spaces for collaboration can take many forms – conference rooms, lobbies, staff break areas, alcoves, etc. Spaces for collaboration should be provided whenever possible, and be common spaces inside and out.

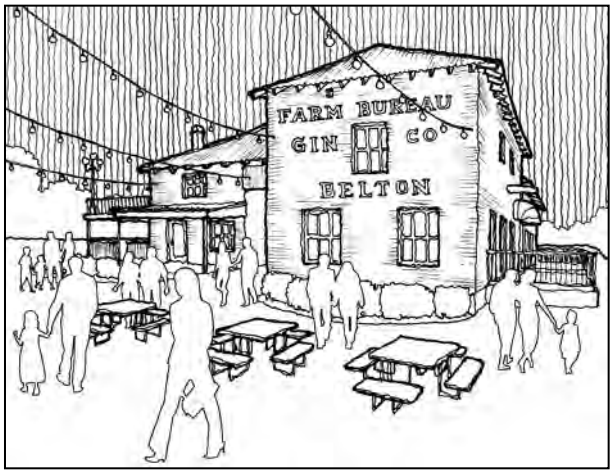
Supports Goal(s):
3: Modern, Energy-Efficient Infrastructure

Buildings

Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.



Williamson County Courthouse, Georgetown, TX



The Gin at Nolan Creek, Belton, TX

Historic city pharmacy building, Georgetown, TX

Appropriate Standoff

Anti-terrorism/force protection measures must be considered as integral components of design and siting. The current rules state that primary-occupied facilities (buildings with 50 or more occupants) must be located a minimum of 25 meters away from roads and parking. It is a common mistake, however, to site facilities in ways that increase standoff distances and contribute to sprawl, instead of optimizing appropriate standoff. Multi-story and vertical mixed-use buildings help minimize the ripple effect of large standoff distances.

Supports Goal(s):
2: Walkable Small Towns
3: Modern, Energy-Efficient Infrastructure

Adaptable Buildings

Overly customized buildings designed for specific uses and specific equipment limit future adaptability, which leads to unused space and undesirable configurations. We know that missions change and buildings need to adapt to different uses. To accommodate this requirement, designers must create adaptable buildings. These buildings have narrow wings that can work for administrative, mission-oriented, commercial or even housing uses. They are also multi-story, which allows for more square footage to accommodate a wider range of users. Hierarchical differentiation of spaces is minimized so that a wider range of personnel can use one floor plan arrangement. Columns and load-bearing walls are minimized, and open floor plans with flexible furniture should be standard.

Supports Goal(s):
3: Modern, Energy-Efficient Infrastructure

Infill Buildings

As new development progresses, old development will deteriorate and eventually be in need of update or replacement. Reusing areas that have already been developed is a key element in reducing urban sprawl and promoting sustainability. This also helps to reduce the amount of greenfield development and has the potential to turn a neglected urban site into a positive place to gather. Infill buildings should be vertical mixed-use buildings, multi-story buildings, and should respond to the nature of the surrounding horizontal mixed-use development.

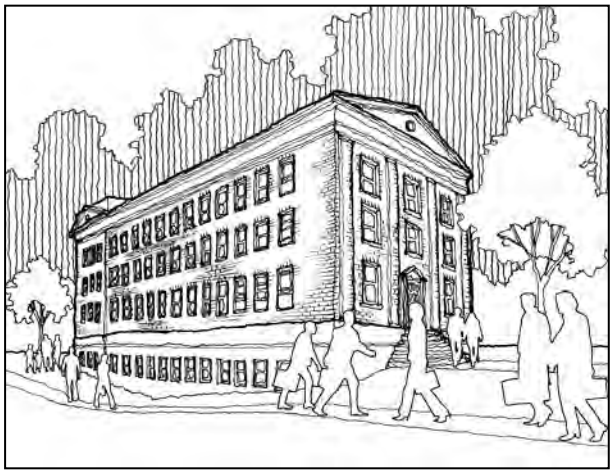
Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns
3: Modern, Energy-Efficient Infrastructure

Buildings

Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.

Mueller, Austin, TX

Historic downtown, Georgetown, TX



Hughes Recital Hall, University of Mary Hardin-Baylor, Belton, TX

Livable Apartments

The Air Force Dorms-4-Airmen standard is the chosen model for military dormitories. This standard provides some flexibility in programming the spaces to maximize the living experience for the airmen and sailors. Within this concept, the key elements that contribute to the satisfaction of the resident are adequate sizing of the bedroom, private bath, and shared spaces for the kitchen and living room. The primary concern of the resident is having a large enough private space to be able to live comfortably without feeling cramped by the room furnishings. The private spaces of the module provide the sanctuary that residents seek. Exterior room entry from balconies means that the window of the room faces the balcony and therefore increases the resident's privacy. Finally the shared kitchen and living space provide places for social interaction for the resident.

Supports Goal(s):
1: Accessible Campuses

Compatible Development

Humanity's impact on the earth is dramatic. The United States Military is committed to minimizing our impact. The built environment must incorporate infill development standards all the way from planning to construction to daily use of facilities and open spaces. From a planning perspective, areas should be designed to minimize sprawl, greenfield development and stormwater run-off. Infill, compact development and transit oriented development should be maximized. In addition, the base should be aware of and respectful to off-base development. We want to be a good neighbor and our development patterns can help this effort.

Supports Goal(s):
1: Accessible Campuses
3: Modern, Energy-Efficient Infrastructure

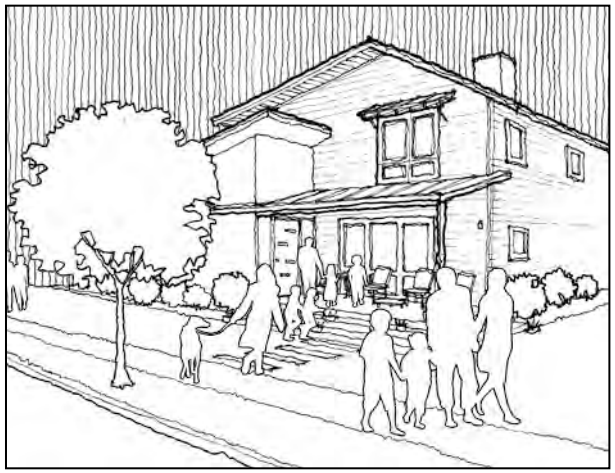
Operable Windows

Military facilities often provide limited natural light from windows that are too small, inoperable, and/or placed too high on the wall. Operable windows that open wide create a large, direct opening to the outdoors. Windows grow office and workspace by opening the area to ventilation and dramatically increasing natural light. The additional ventilation leads to passive cooling of the spaces and decreased cooling costs. Natural light allows work and lab spaces to feel more open, spacious, and pleasant. In addition, the influx of natural light also decreases the need for artificial lighting, reducing lighting costs as well as decreasing the residual heat given off by artificial lighting, thereby reducing the need for cooling. "A room with a window" is often the number one request in terms of what makes a great lab or office space.

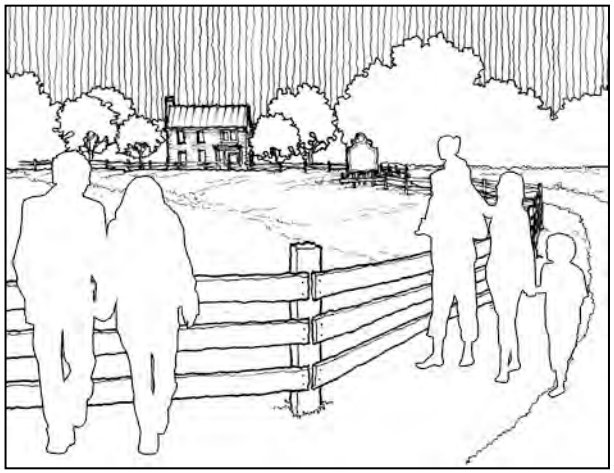
Supports Goal(s):
3: Modern, Energy-Efficient Infrastructure

Buildings

Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.



Mueller, Austin, TX



Historic homestead, Salado, TX

Front Porches/Stoops/Balconies

It is extremely important for people within any building to feel connected to the outdoors and the social network located outside their four walls. In the absence of stoops or balconies, residents do not have a place to access fresh air, to interact with their neighbors, or to watch what is going on outside. Stoops and balconies enhance a dwelling unit and create a more livable community by providing a place for residents to interact. These outdoor spaces promote the formation of a sense of community and unit cohesion, and can contribute to increased vigilance with the addition of "eyes on the street" to oversee the public realm. In order to accomplish these goals, these outdoor areas must be usable. At minimum, they must be six feet deep to provide enough room for a table and chairs that allow people to gather outside and face each other in conversation.

Supports Goal(s):
2: Walkable Small Towns
3: Modern, Energy-Efficient Infrastructure

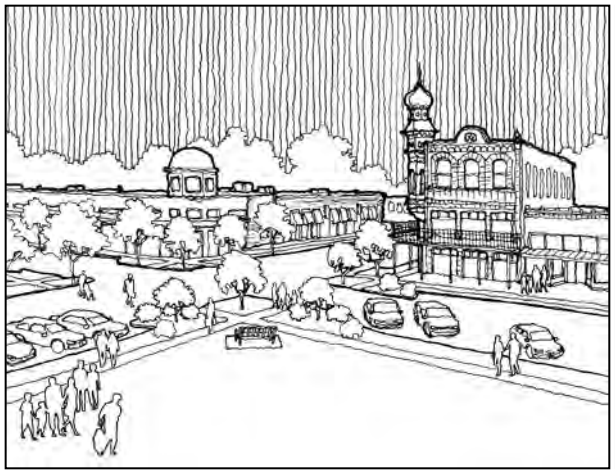
Regional Architecture

There are many things that distinguish a military installation from the surrounding community – the perimeter fence and controlled gates, the types and sizes of facilities, the building density. That does not mean, however, that we should strive to make our military communities stand out in every way. Every installation should have its own set of design standards that can incorporate regional architectural features while following military standards. In every area of the country or world, there are regional styles that can influence our facilities. In the southwest, for example, red tile pitch roofs and stucco can influence materials, or at least the color, of our own buildings. Many areas use a distinct color of masonry that we can follow. In some areas, the regional design is functional as much as visual – why build a closed box when the breezes of an area call for narrow wings and operable windows that can cool our buildings?

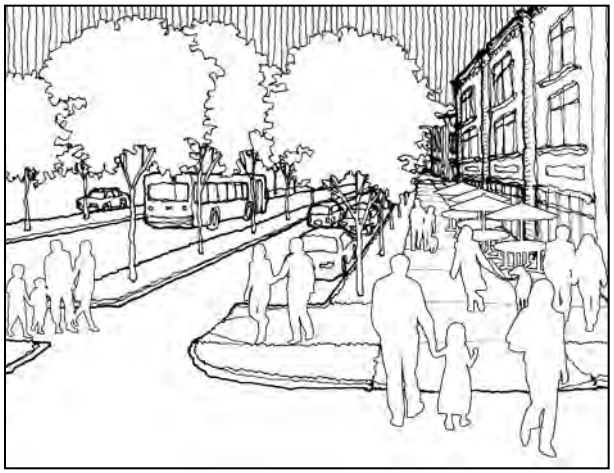
Supports Goal(s):
2: Walkable Small Towns

Streets

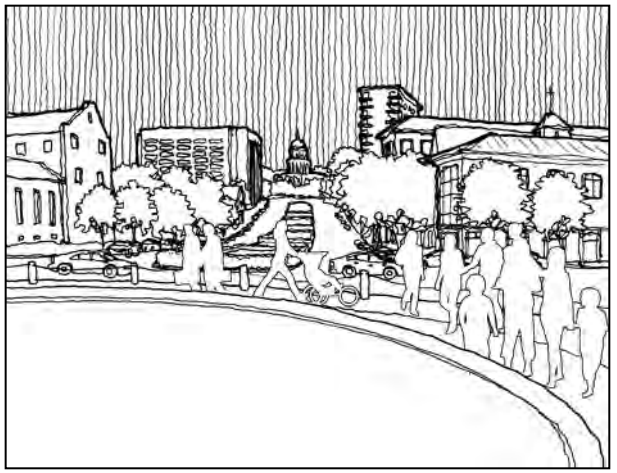
Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.



Historic downtown, Georgetown, TX



Fort Lewis, Washington



N Congress Ave, Austin, TX

Street Grids

The traditional approach of designing local streets, collectors, and arterials funnels traffic from the former into the later and contributes to congestion. Drivers rarely have options and are thus all forced onto the arterials. This applies to pedestrians as well - but because many people typically do not like walking along congested arterials, they simply do not walk. A well planned street grid can make all of the difference in the world between a pleasant driving and walking experience and a frustrating one. Street grids enable clear wayfinding. Some of the greatest cities in the world are laid out on a street grid – San Francisco and Kyoto for example. In downtown Portland, Oregon, the grid is 200' x 200,' which maximizes the number of valuable corners and gives people many options for accessing various parts of the city.

Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns

Multiway Boulevards

This image is an example of a multiway boulevard design for Fort Lewis. This type of street has been used successfully across the globe to accommodate through traffic, local traffic, bicyclists, and pedestrian access. In many areas, in order to cross the street, pedestrians must cross parking lots, medians, and through lanes. A multiway boulevard can safely accommodate similar amounts of on-street parking but in a way that is more attractive and efficient. Multiway boulevards are under design for arterials at Fort Lewis and Camp Pendleton. The key attributes of a multiway boulevard include dedicated through lanes with median-protected left/right turn lanes, median-isolated local access lanes with parallel on-street parking on one or both sides, continuous bike lanes within the access lanes, continuous street trees, wide connected sidewalks at each edge, and, perhaps, dedicated transit lanes.

Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns
3: Modern, Energy-Efficient Infrastructure

Parkways

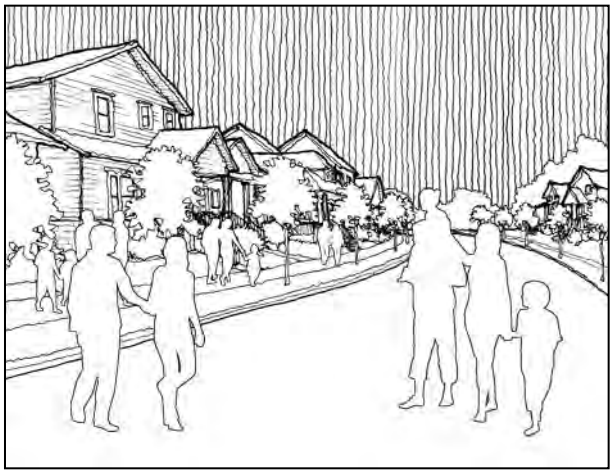
Parkways are a great street in and of themselves – the definition of a parkway refers to a street with a broad landscaped median that also functions as a protected turning lane. Parkways should have a median at least 20 feet wide, with street trees planted 25-35 feet on center. The street trees provide shade, street definition, a safety buffer and create a pleasant driving environment. Parkways are typically located closely with perimeter parking of districts and act as arterials. They can carry significant traffic volumes on one or two through lanes in each direction. They may or may not have on-street parking at the edges. They function as edges in the landscape and can buffer incompatible land uses. On one side may be an industrial area and on another may be a residential area. The more disparate the uses, the wider the median should be to screen the uses. The medians can also double as stormwater and retention areas.

Supports Goal(s):
2: Walkable Small Towns

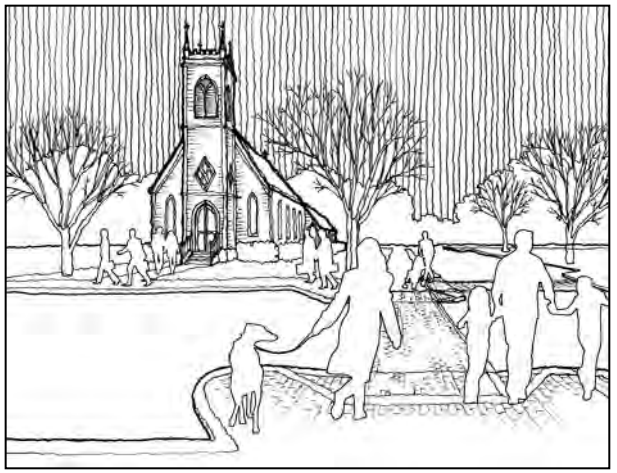
Streets

Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.

7th Street, Georgetown, TX



Mueller, Austin, TX



Grace Heritage Center, Georgetown, TX

Main Streets

Great cities and towns are often defined by main streets. When driving through a small town, the main street is clear – it is the street along which all of the essential retail and community support facilities are located. Even in large cities, however, main streets are defined – 5th Avenue in New York City, Commonwealth Avenue in Boston, and Market Street in San Francisco are good examples. Oftentimes, the main street is perpendicular to the flow of through traffic. The main street can also bisect the main arterial. This pattern keeps the heaviest traffic off of the main street but also keeps the main street visible from the heaviest traffic. Main streets can also be split around a town square. Installations should create at least one main street – a central thoroughfare that provides an axis and focal points on the street grid.

Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns

Neighborhood Streets

Great streets extend beyond main streets, parkways, and multiway boulevards into residential communities with neighborhood streets. These streets have five to six foot planting strips on both sides, street trees 25-35 feet on center, connected sidewalks, two-way traffic, and on-street parking on one or both sides. Neighborhood streets should be aligned to a street grid. Cul-de-sacs, which have only one entry and egress point and create a dead-end, should be avoided. When properly designed, neighborhood streets provide appropriate traffic calming by creating a visually narrower street that causes vehicles to slow as they drive through a residential area. Using the Portland "skinny street" model, street widths for two-way neighborhood streets with parking on one side can be as wide as 20' and, with parking on both sides, 26.'

Supports Goal(s):
2: Walkable Small Towns

Connected Sidewalks

Residents want pedestrian access – a walk that is safe, pleasant, directionally clear, and shopping-accessible. Connected sidewalks are crucial to creating a pedestrian-friendly installation. Sidewalks should be a minimum of five feet wide, shaded by street trees, and separated from the road with a planting strip at least four feet wide. Sidewalks should be connected in order to provide clear wayfinding, and provide a sense of direction and purpose to a destination. A pedestrian-friendly community reduces environmental impacts, increases a sense of neighborhood cohesion, and provides positive health benefits. The more the built environment can support walking, the better connected neighbors can be.

Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns

Streets

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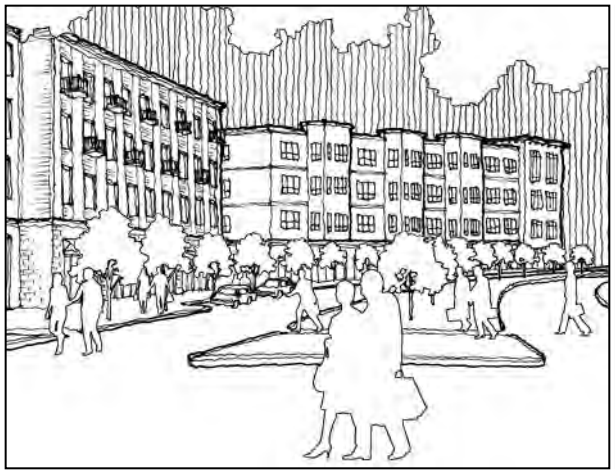
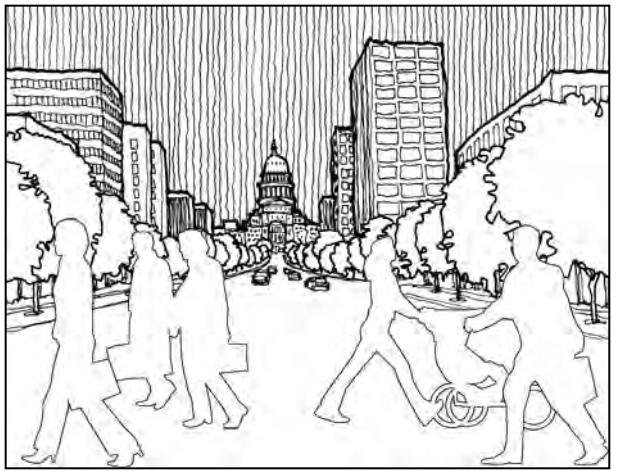


Mueller Boulevard, Austin, TX

Mueller, Austin, TX



Congress Ave, Austin, TX

Medians

A broad landscaped median that also functions as a protected turning lane is a key element in the development of a great street. Streets with the appropriate volumes should have a median at least 20 feet wide, with street trees planted 25-35 feet on center. The trees provide shade, street definition, a safety buffer and create a pleasant driving environment. Median-divided roads are typically located at the perimeter of districts and act as arterials. Medians can also buffer incompatible land uses. On one side may be an industrial area and on another may be a residential area. The more disparate the uses, the wider the median should be to screen the uses.

Supports Goal(s):
2: Walkable Small Towns

Planting Strips

To save a little bit of money, developers have eliminated the traditional planting strip in many newer subdivisions. They have built "curbwalks" where the sidewalk is attached to the curb. The miniscule savings cannot make up for the costs. Planting strips not only add to the aesthetic value of a great street, but also create a safety buffer for pedestrian access. After all, if a child trips on a sidewalk, it is much better to fall into a planting strip than onto the road. Planting strips are the perfect place to put street trees. And when used in conjunction with alleys, the planting strips can be continuous down residential blocks, which makes for a better environment for street trees. Planting strips should be located along every major street. They should be at least four feet wide and placed between the road and the sidewalk.

Supports Goal(s):
2: Walkable Small Towns
3: Modern, Energy-Efficient Infrastructure

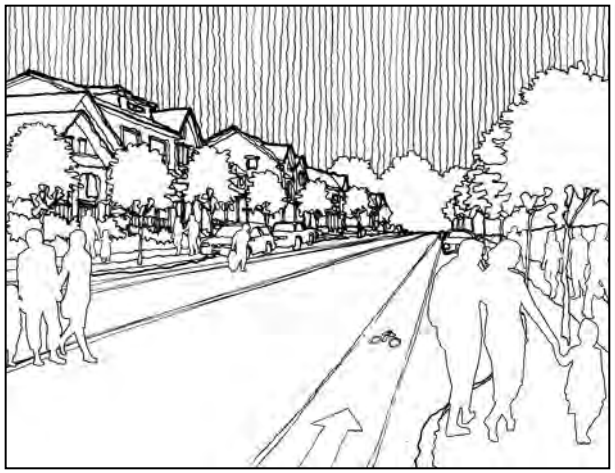
Street Trees

Streets without trees are less attractive, less safe, and not the most comfortable places to walk along. When people think of great streets, trees are always an attribute. Trees create pleasant axes and focal points, provide shade, and lend shape to a street network. Street trees should be planted at regular intervals, 25-35' on center, along as many streets on the installation as possible. They should be placed in a planting strip between curbs and sidewalks. This location is best because the canopies can help shade both the street and sidewalk and the rhythm of trunks slows traffic and can protect pedestrian access. After all, a car off course may hit a tree rather than a pedestrian. It is important to select low-maintenance trees which will mature and flourish in the local area. For a cost of $250 to $600 (includes planting and three years of maintenance), one street tree can provide over $90,000 of direct benefits during its lifetime.

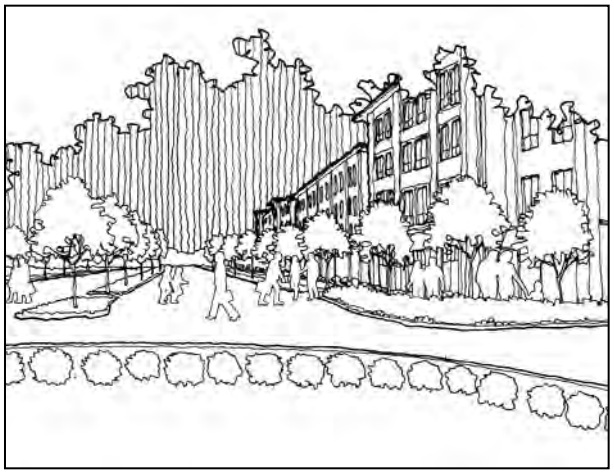
Supports Goal(s):
1: Walkable Small Towns

Streets

Planning Vision:
The Great Place with accessible campuses, walkable small towns and modern, energy-efficient infrastructure.



Mueller, Austin, TX



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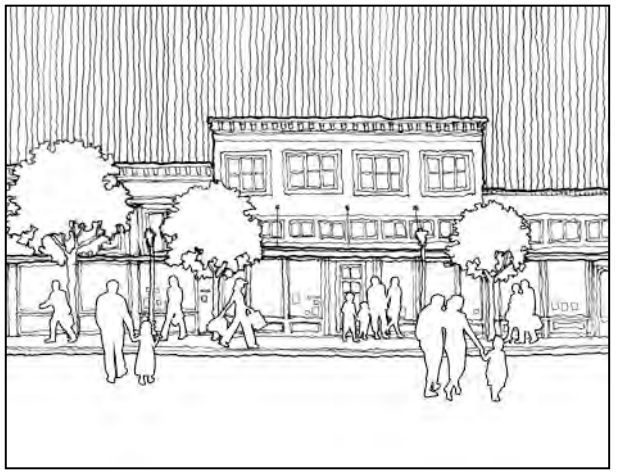

Georgetown, TX

Bike Lanes

Biking has proven health benefits and helps to reduce the community's carbon footprint. However, bicyclists share the roads with vehicles which increases the potential for fatal accidents. When designing for bicycles, well-marked bike paths should be included. Bike racks at appropriate intervals on streets in horizontal mixed-use areas should also be incorporated. Bike lanes should be incorporated in multi-way boulevards, parkways, main streets and neighborhood streets.

Supports Goal(s):
1: Accessible Campuses
2: Walkable Small Towns
3: Modern, Energy-Efficient Infrastructure

Traffic Calming

There are many techniques that are considered traffic calming techniques. The intention of this concept is to provide design elements that naturally cause a driver to slow. Intersections, traffic circles, on-street parking, street trees, connected sidewalks, bike lanes, and storefronts are just a few examples of these techniques. The through lane width is another major contributor to traffic calming. The through lanes in areas that should have slow traffic must be narrower than those of free-flow streets. Typically 8 or 9 feet with on-street parking on both sides is ideal. With this through lane width, when two cars approach each other, they feel like they must go slow or risk the possibility of a collision. Traffic calming techniques support safe pedestrian access and vehicular access on the installation.

Supports Goal(s):
2: Walkable Small Towns
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Eyes on the Street

Outdoor areas and streets are apt to be safer when people are provided an easy and readily accessible means of watching these spaces from inside of buildings. Buildings that face the street with ample window and door fenestrations provide people the means of watching activities outside. Their observations act to casually monitor any activity that appears suspicious or threatening. Exterior spaces are also safer when more people occupy them. Purposely providing amenities, such as porches, continuous sidewalks, lighting, and seating, will attract pedestrians that naturally provide oversight of public areas, and deter crime.

Supports Goal(s):
2: Walkable Small Towns

Streets

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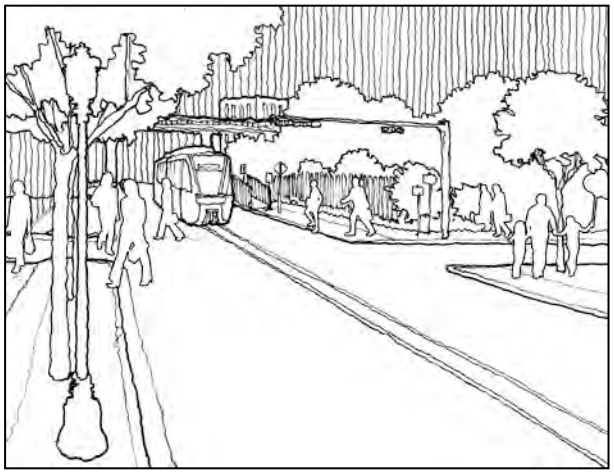
Texas State Capital Building, Austin, TX



Metrorail, Austin, TX

Mueller, Austin, TX

One-Way Park Streets

When park blocks are included in a neighborhood design, one-way park streets are an ideal form of street design. They provide efficient traffic movement and definition of the park block. A one-way park street should be wide enough for one lane of traffic, a dedicated bike lane and on-street parking. There should be connected sidewalks on both sides of the street. Street trees should be planted in six-foot planting strips to provide traffic calming, a safety buffer for pedestrians, street definition and shade. Park streets can also provide a buffer between incompatible land uses—on one side may be a residential area and the other side an industrial area.

Supports Goal(s):
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Multi-Modal Complete Street

A multi-modal complete street provides safe, efficient passage for all forms of transportation, including through traffic, local traffic, bicyclists and pedestrians. A multi-modal street ensures that there is on-street parking to access the buildings on the street. It should incorporate street trees to provide traffic calming, a safety buffer for pedestrians, street definition and shade. A multi-modal complete street should include the possibility of dedicated transit lanes in the middle or at the edges. One type of multi-modal street is a Multiway Boulevard, which has been used successfully across the globe. This type of complete street includes dedicated through lanes with median-protected left/right turn lanes, median-isolated local lanes with parallel on street parking on one or both sides, continuous bike lanes within the access lanes and wide connected sidewalks.

Supports Goal(s):
2: Walkable Small Towns
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On Street Parking

One way to reduce the area devoted to parking lots that destroy the natural environment is to maximize the availability of on-street parking. Because cars parked on the street use the street for maneuvering, one parking space on the street uses about 180 square feet. That same space in a parking lot uses over 350 square feet. Similarly, when we separate parking lots from streets we also add to the required force protection buffer - every street and parking lot has up to a 25 meter buffer within which we cannot build primary occupied facilities. When we combine parking and streets, we combine the buffer as well. In addition to saving land, on-street parking provides easy, convenient access to retail and services, and contributes to traffic calming.

Supports Goal(s):
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Parking

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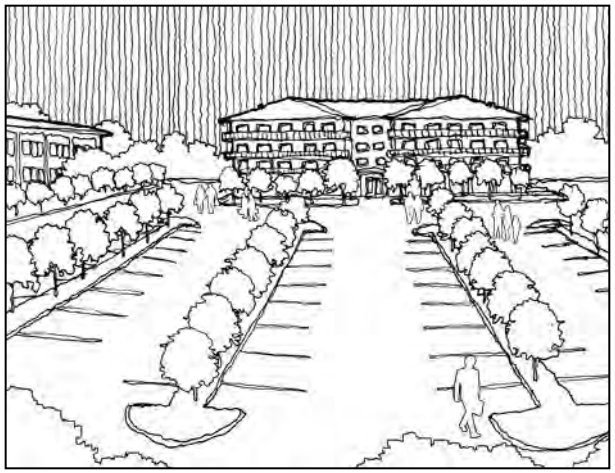

Hotel, Austin, TX

Mueller, Austin, TX

Mueller, Austin, TX

Car Parks

Parking areas are public spaces and should be designed as such. As habitable spaces, parking benefits from trees planted closely enough that their branches will provide a canopy and create a car park. On-site runoff can be treated more effectively in the islands within the car park. Twenty foot wide medians replace the storm-water retention facilities usually present in parking lots and do not change the overall area required. With cars consolidated into car parks, safe pedestrian access is enhanced and the concept of walkable neighborhoods is reinforced. Shared car parks can be accessed off a secondary street, back alley or access lane. When parking is accessed to the rear or to the side, there is no need for curb cuts in the front of buildings, allowing for a safer pedestrian network (as pedestrians do not have to compete with cars) and allowing for more safe, convenient, and inexpensive on-street parking.

Supports Goal(s):
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Hidden Parking

Parking should be hidden whenever possible, located to the rear or side of homes and buildings. Military family housing areas should not be garage-scapes that celebrate the automobile, but rather, should create an aesthetic that celebrates the human scale. With cars to the side or rear of homes, the fronts can be devoted to front porches. Garages or carports can be accessed off a back alley or sideyard access lane. When parking is accessed off of an alley, there is no need for curb cuts in the front of homes, which makes the connected sidewalk system safer (pedestrians do not have to compete with cars) and it allows for more on-street parking.

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Perimeter Parking

Often, the difference between parking standing out as a blight or seamlessly blending into the surrounding area is a matter of siting choice. In order to create a walkable setting with a campus quad, parking should be located at the perimeter of an installation. When parking is moved to the perimeter, the heart of the installation is dedicated to the installation's occupants, personnel, and facilities rather than an unsightly sea of parking asphalt. Buildings can share a car park at the rear of the facility to allow for clear, well-defined, well-landscaped entries that are inviting and provide safe pedestrian access.

Supports Goal(s):
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2: Walkable Small Towns

Open Space

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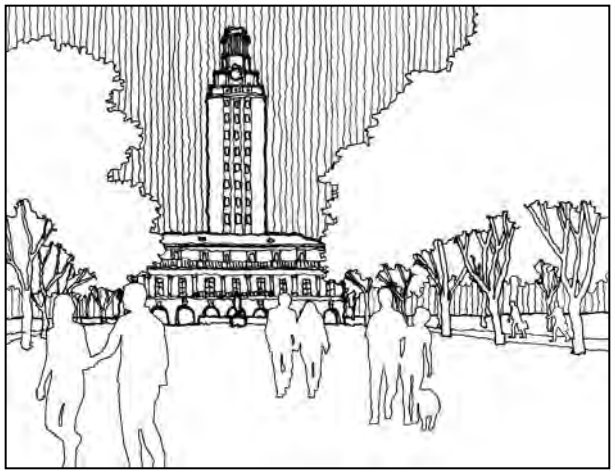
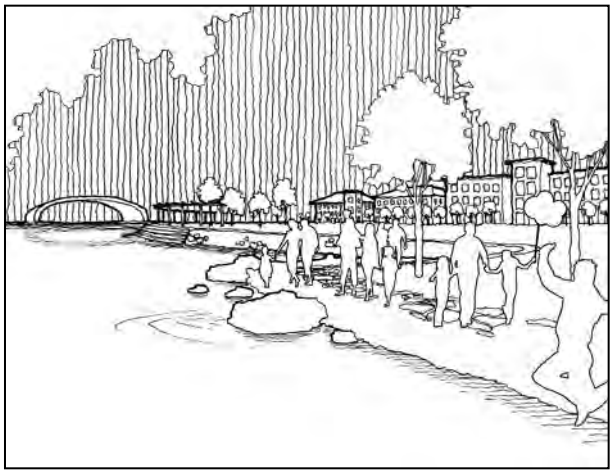
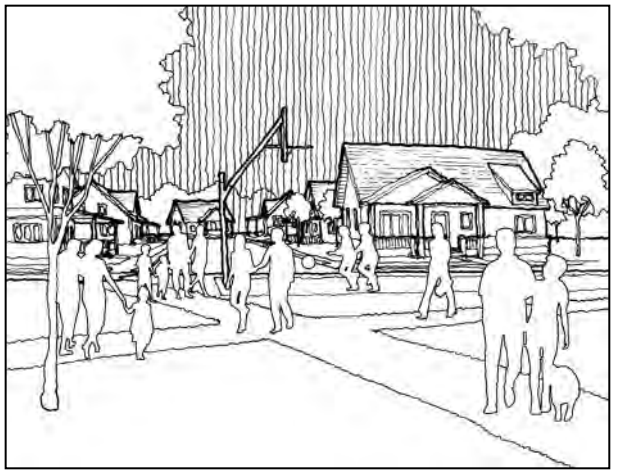


University of Texas, Austin, TX



Lake Park, Mueller, Austin, TX



Mueller, Austin, TX

Axes and Focal Points

In order to focus on a destination, the eye must be able to observe a clear focal point. Placing a headquarters building, church, park or fountain, for example, at the termination of a street creates a clear focal point. Driving and walking is much more enjoyable when built and natural sights are located on a clear axis and provide definition to the outdoor spaces. Think of a great college campus with buildings defining campus quads that terminate in a bell tower or impressive library. To some, this is also called a "military aesthetic" since historic building on military bases used this technique to bring order to the built environment. On a smaller scale, aligned visible entries on buildings and connected sidewalks function like focal points along an axis. Taken together, axes and focal points significantly contribute to clear wayfinding - or simply put, finding one's way in an unfamiliar environment.

Supports Goal(s):
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Community Parks

Accessible parks are essential to a good neighborhood – people want places to gather, for children to play, and adults to interact. One common mistake, however, is creating too many in an area, so that none are fully used, or in creating parks too specific to one age group. Parks should have space and equipment appropriate for a range of ages – a smaller, fenced area for toddlers; age-appropriate equipment for school-aged children from elementary through middle school; and a grassy open area for free play for older children and adults. These parks should also be located to embrace borrowed landscapes and provide views to nature.

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Supports Goal(s):
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Nearby Recreation

Available recreation and services drastically improves quality of life for installation personnel. Opportunities to improve pedestrian access to recreation and services should be taken when considering facility planning and design. Providing walking trails, access to natural features with views to nature are some great methods of embracing nearby recreation. Planning for a gym or recreation area can extend recreation areas into seasons when outdoor recreation becomes unrealistic. A plan can provide increased access to fitness and health opportunities. Oftentimes these opportunities are provided through celebrating the natural environment's borrowed landscapes.

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Open Space

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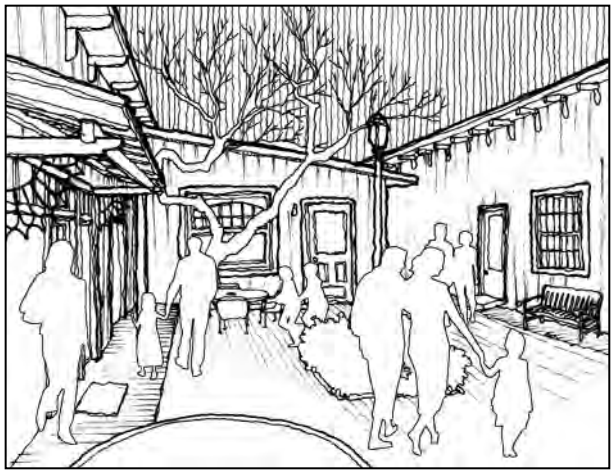
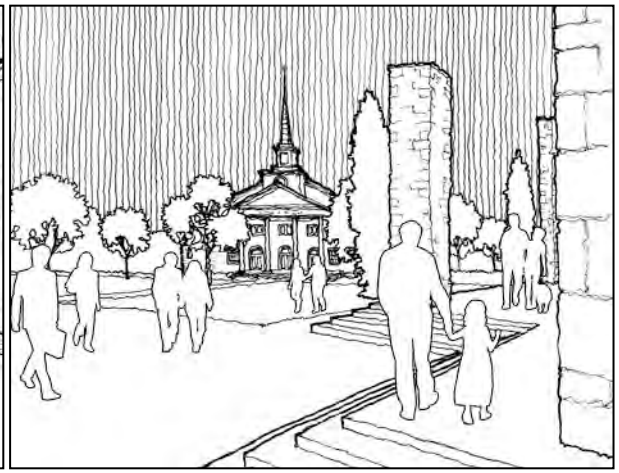


Shopping plaza, Salado, TX



University of Mary Hardin-Baylor, Belton, TX

Common Spaces Inside and Out

Common spaces located both inside and outside become places to gather where installation personnel can interact and collaborate. In every facility, care should be taken to design and plan conference rooms and larger, open work stations where groups of people can gather. Outdoor common spaces can be created with a campus quad design, where connected sidewalks link buildings and provide opportunities for installation personnel to encounter one another as they move from building to building. Benches should be located in outdoor common spaces to provide convenient places for people to sit and talk.

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Framing Public Space

Public spaces are essential to a good neighborhood – people want places to gather for community events, for children to play, and adults to interact. An essential element in designing public spaces, whether parks or town squares, is defining the edges of the public space. Spaces that are wide open and undefined do not have a sense of place, and lead to disuse. A public space can be framed in many ways: buildings, tree-lined roads, landscape features or a combination of all. Public spaces that feel like outdoor rooms will be vibrant public spaces.

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