



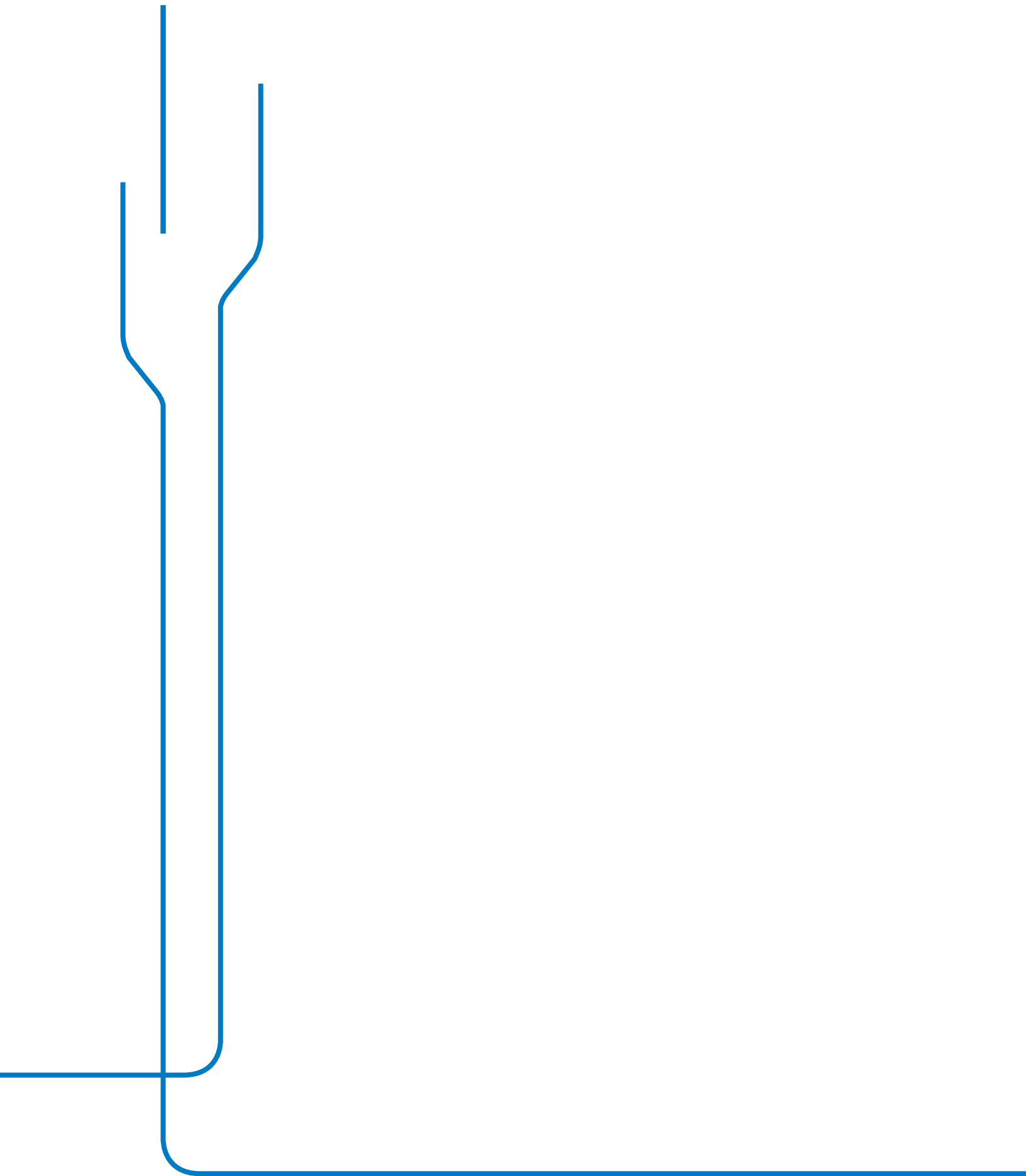
Banner
University Medical Center
Tucson Campus



PLANNED AREA DEVELOPMENT

Banner
University Medical Center
Tucson Campus

August 17, 2016





Banner
University Medical Center
Tucson Campus

PLANNED AREA DEVELOPMENT

Prepared For:

City of Tucson Planning & Development
Services Department
Public Works Building
201 North Stone Avenue
Tucson, Arizona 85701

Project Applicant:

Banner Health
1441 North 12th Street
Phoenix, AZ 85006
T | 602.747.4000

Project Team:

Shepley Bulfinch
2 Seaport Lane
Boston, MA 02210
T | 617.423.1700

Projects International, Inc.
10836 E. Armada Lane
Tucson, AZ 85749
T | 520.850.0917

Shepley Bulfinch
3443 North Central Avenue
Phoenix, Arizona 85012
T | 602.430.3223

Lazarus, Silvyn and Bangs
4733 East Camp Lowell Drive
Tucson, AZ 85712
T | 520.207.4464

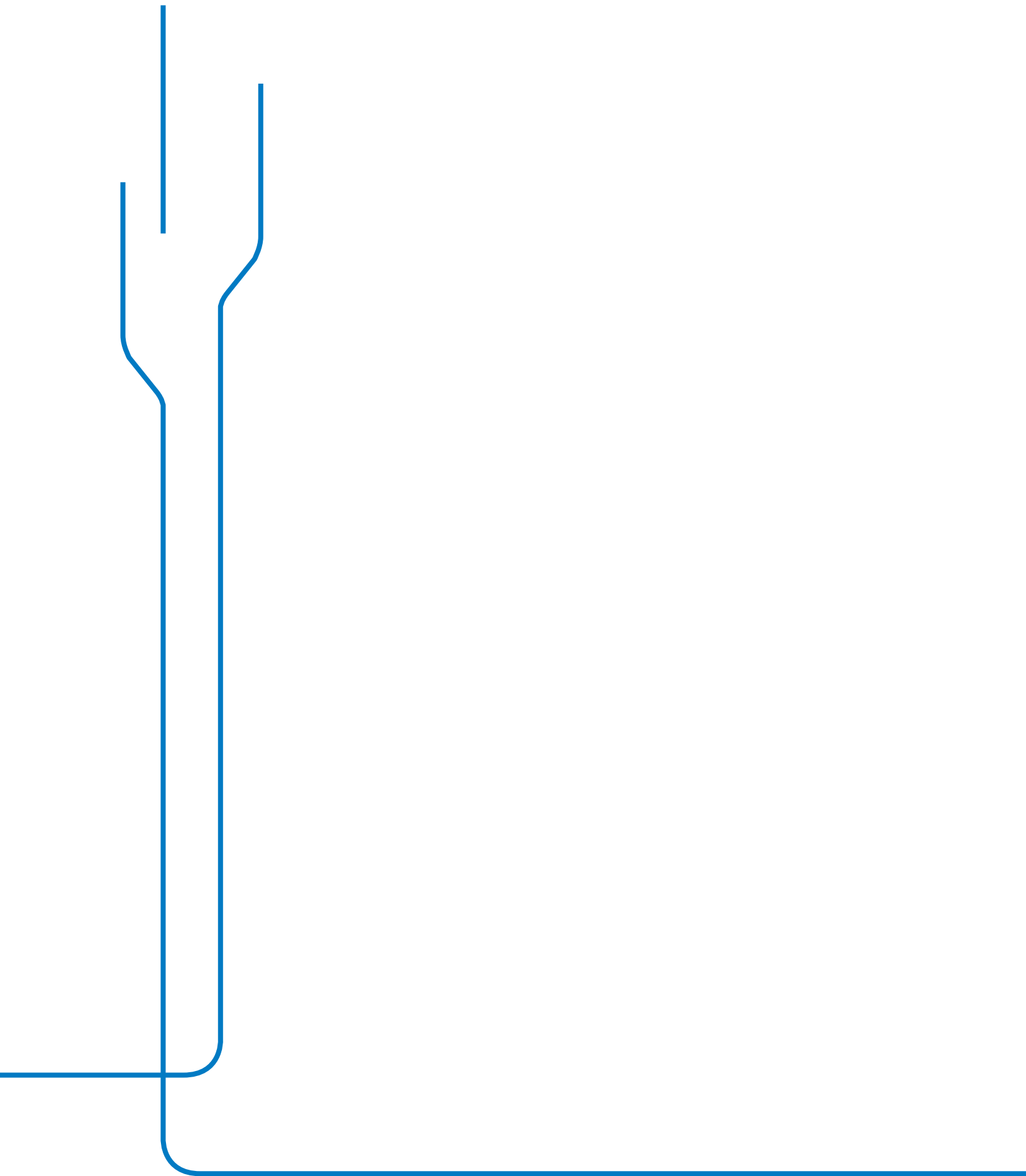
Norris Design
418 North Toole Avenue
Tucson, AZ 85701
T | 520.622.9565

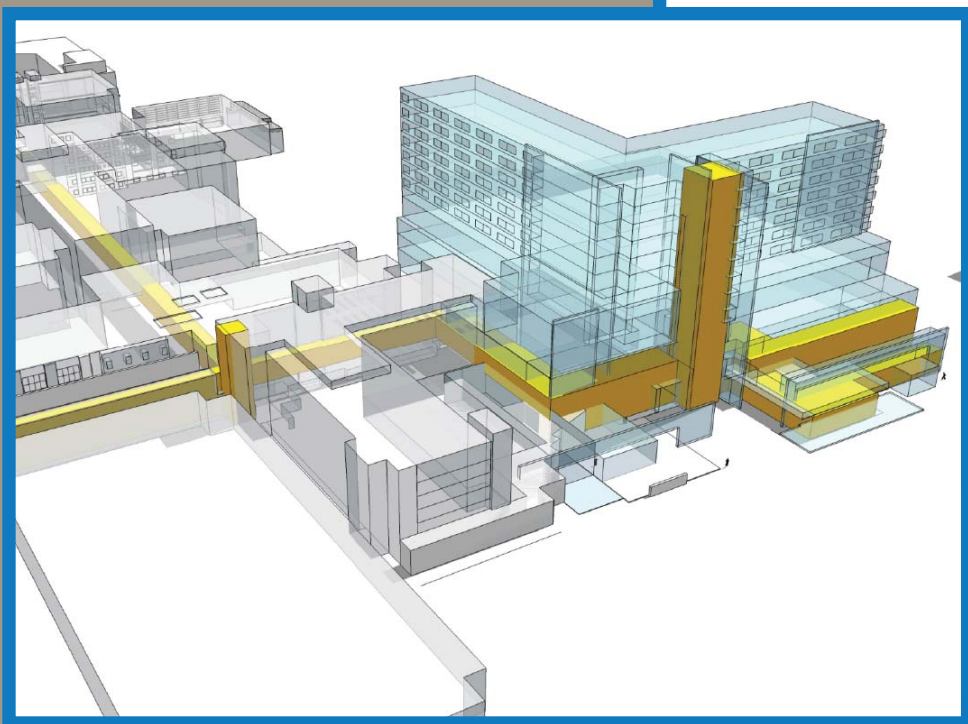
Heliplanners
31110 Avenida Del Reposo
Temecula, CA 92591
T | 951.693.5090

Dibble Engineering
177 North Church Avenue
Suite 315
Tucson, AZ 85701
T | 520.495.4065

Affiliated Engineers, Inc
4742 North 24th Street
Suite # 100
Phoenix, AZ
T|602.429.5800

Kimley Horn
333 East Wetmore Road
Suite 280
Tucson, AZ 85705
T | 520.615.9191





I.	Introduction	1
II.	Site Analysis	19
III.	PAD District Proposal	51
IV.	Bibliography	123
V.	Appendix	127

CONTENTS



TABLE OF CONTENTS

TABLE OF CONTENTS

SECTION ONE: INTRODUCTION & POLICY

I.A - Forward	3
I.A.1 Rational for Using the Planned Area Development (PAD) Zone	4
I.A.2 Physical, Economic & Environmental Sustainability of The PAD	4
I.A.3 General Compatibility of the PAD with Adjoining Land Uses	4
I.B - Introduction & Guiding Principals	5
I.B.1 Project Location	5
I.B.2 Historic Use of the Site	6
I.B.3 Proposed Project By Banner Health	9
I.B.4 Project Goals	9
A. Guiding Objectives	
B. Banner Health Corporate Philosophy & Principles	
C. Specific Goals of the PAD	
I.C - Conformance with General Plan & Area Plans	11
I.C.1 Plan Tucson	11
I.C.2 Jefferson Park Neighborhood Plan	11
I.C.3 University Area Plan	14
I.C.4 UA Comprehensive Campus Plan	16
I.C.5 Applicable Overlay Zones	17
I.D - Community Issues	18
I.D.1 Benefits to the Community	18
I.D.2 Public Participation & Outreach	18

SECTION TWO: SITE ANALYSIS

II.A - Existing Land Use & Zoning	21
II.A.1 Existing Campus Context, Land Use & Zoning	21
II.A.2 Off-Site Land Uses, Existing Zoning & Structures	22
II.A.3 Natural & Built Constraints	23
II.B - Existing Educational, Community, & Cultural Resources	24
II.B.1 Arizona Health Sciences Center	25
II.B.2 UA/UMC Facilities and University of Arizona Main Campus	25
II.B.3 Public Schools & Other Educational Facilities	25
II.B.4 Cultural Resources	25
II.B.5 Jefferson Park Historic District	25
II.C - Existing Open Space, Recreation & Trails	26
II.C.1 On-Site Open Space Areas, Recreation & Pedestrian Ways	26
II.C.2 Off-Site Recreation & Trails	26
II.D - Existing Transportation & Circulation	29
II.D.1 Relevant Public Streets	29
A. Campbell Avenue	
B. Speedway Boulevard	
C. Local Public Streets	
D. North Ring Road	
II.D.2 Major Streets & Routes Considerations	31
II.D.3 Public Transportation Components	33
A. Sun Tran Bus Routes & Cat-Tran Shuttle Service	
B. Sun Link Streetcar Facilities	
C. Existing & Planned Bike Routes	
II.D.4 Existing Parking Facilities & Structures	35
II.E - Existing Utility Infrastructure	36
II.E.1 Existing Utilities	36
A. Public & Private Sewers	
B. Potable Water	
C. Dry Utilities	
II.E.2 Overall Project Serviceability	37
II.F - Environmental Factors	38
II.F.1 Existing Drainage Patterns & Site Hydrology	38
A. Off-Site Characteristics & Downstream Issues	
B. On-Site Characteristics	
C. Conceptual Solutions Contemplated by Prior Planning Efforts	
II.F.2 Landscape Inventory & Pertinent Landscape Regulations	43
II.F.3 Underlying Geology, Soils, & Geotechnical Considerations	45
II.G - Visual Analysis	46
II.G.1 Visibility from Surrounding Properties & Land Uses	46
II.G.2 Viewsheds	46
II.H - Site Analysis Findings & Conclusions	49
II.H.1 Site Opportunities	49

SECTION THREE: PAD DISTRICT PROPOSAL

III. A - Proposed PAD Overview & Phasing	53
III.A.1 Land Uses & Facilities	53
III.A.2 Coordination with Adjoining Neighborhoods	53
III.A.3 Anticipated Phasing	54
A. Medical Facilities	
B. Surface Parking & Parking Structures	
C. North Ring Road and Main Entrance Improvements	
III.A.4 Public Right-of-Way Abandonments & Subdivision Platting	58
III.A.5 Owner Maintenance Responsibilities	58
III.A.6 Financial Assurances	58
III.A.7 City of Tucson Waiver of Claims	58

III.B - Land Use Regulations -----	60
III.B.1 Establishment of UDC Base Zoning Designation for the PAD District -----	60
III.B.2 Proposed Major Medical & Institutional Uses -----	60
A. Descriptions of Proposed Facilities & Functions	
B. List of Permitted Uses per the Designated Base Zone	
C. Supplemental Permitted Uses within the PAD District	
D. Prohibited Uses	
III.B.3 Development Standards-----	61
A. Building Criteria	
1. Building Setbacks	
2. Building Heights	
3. Integration with Existing Medical Facilities	
B. Parking Facilities & Parking Structures	
C. Specialized Vehicle & Bike Parking Requirements	
D. Specialized Loading Zone Requirements	
E. Lighting	
F. Helicopter Path and Helistop Facility & Operations	
G. Emergency Service Vehicle (ESV) Facilities, Routes & Parking	
H. Pedestrian Circulation and Connectivity	
I. Signage	
J. Landscape Requirements	
1. General Landscape Concept	
2. Landscape Framework - Perimeter Landscape Borders, Screening & Landscape Character	
3. General Landscape Elements and Guiding Objectives	
4. Campbell Avenue (Public Street Frontage) - Street Landscape Border	
5. The Lester Street Landscape Border	
6. Internal North Ring Road, Streets and Access Lanes	
7. Internal Campus Landscape Areas	
8. Vehicular Use Areas / Parking Areas / Surface Parking	
9. Jefferson Park Neighborhood North Green	
10. Rainwater Harvesting	
III.C - Transportation Infrastructure -----	85
III.C.1 Traffic Impact Analysis Summary of Impacts -----	86
A. Analysis Process	
B. Trip Generation	
C. Trip Distribution	
D. Route Choice & Traffic Assignment	
E. Capacity Analysis	
III.C.2 Transportation Improvements & Traffic Analysis Recommendations--	91
A. Establishment of New Elm Street Main Entrance	
B. Roadway Segment Modifications	
C. Intersection Improvements	
D. Multi-Modal Components	
III.C.3 Typical Cross-Sections for Public Streets and Private Drives --	96
III.D - Conceptual Drainage Solution & Associated Improvements-----	99
III.D.1 Master Drainage Plan-----	99
III.D.2 Post-Development Outfall Locations from the PAD Property-	101
III.D.3 General Retention/Detention Parameters and Requirements	101
III.D.4 Multi-Use Drainage & North Green Component-----	102
III.E - Proposed Utility Infrastructure-----	103
III.E.1 Public & Private Sewer System Masterplan -----	103
III.E.2 Potable Water System Masterplan -----	104
III.E.3. Dry Utilities Masterplan-----	104
III.E.4 Phasing of Utility Infrastructure Upgrades/Augmentations ----	104
III.E.5 Maintenance Responsibilities for Utility Infrastructure-----	105
III.F - Conservation Measures & Environmental Considerations-----	106
III.F.1 Conservation Standards of Proposed Buildings-----	106
A. Energy Efficiency Provisions & Standards	
B. Potable Water Conservation Standards	
III.F.2 Heat Island Considerations and Mitigation Measures-----	107

III.F.3 Self-Certification of Conservation Measures & Environmental Considerations-----	108
III.G - Architectural Standards & Design Guidelines-----	108
III.G.1 Architectural Design Concept, Massing & Building Elevations ----	108
III.G.2 Building Materials, Colors and Special Features-----	109
III.G.3 Conformance & Consistency with Existing Campus Design Guidelines-----	116
III.G.4 Architectural Review & Self-Certification at Time of Building Permits-----	120
III.H - Interpretation & Modification of PAD District-----	121
III.H.1 General Administration & Interpretation Authority -----	121
III.H.2 Amendments to the PAD District -----	121
A. Criteria for Minor Amendments & Associated Process	
B. Criteria for Major Amendments & Associated Process	

SECTION FOUR: BIBLIOGRAPHY

Bibliography-----	125
-------------------	-----

SECTION FIVE: APPENDIX

Appendix A -----	129
COT Plan Compliance Memorandum	
Appendix B -----	139
Site Traffic Impact Analysis By Kimley Horn	
Appendix C -----	189
Illustrative Site Plan	
Appendix D -----	193
Banner Health - University of Arizona Declaration of Easements & Covenants	
Appendix E -----	289
Banner Health Electric Vehicle Charging Station Standards	
Appendix F-----	295
Banner Health Exterior Lighting Standards and Site Photometrics & Lighting	
Appendix G-----	307
Banner Health Signage Standards	
Appendix H -----	325
Banner Health Building Design and Construction Standards	
Appendix I-----	347
Architectural Renderings	

LIST OF EXHIBITS

SECTION ONE: INTRODUCTION & POLICY

Exhibit 1	5
Regional Location Map	
Exhibit 2	6
Site Location Map and PAD District Boundary	
Exhibit 3	7
Historic Campus Photos - Evolution of the Medical Campus	
Exhibit 4	8
Historic Campus Photos - Pictorial History of the ROTC Stables + Equestrian Facilities	
Exhibit 5	10
Current Banner Health Facilities	
Exhibit 6	12
Plan Tucson Excerpt	
Exhibit 7	13
Jefferson Park Neighborhood Plan (Map Excerpt)	
Exhibit 8	15
University Area Plan - Primary Land Use Plan (Map Excerpt)	
Exhibit 9	17
UA Comprehensive Campus Plan - AHSC Campus, Precinct 2 (2009)	

SECTION TWO: SITE ANALYSIS

Exhibit 10	22
Annotated Site Plan of Existing Site Improvements	
Exhibit 11	23
Birdseye Aerial Photo of PAD District and Surrounding Context	
Exhibit 12	24
Cultural Resources within the PAD Context	
Exhibit 13	27
On-Site Active/Passive Open Space Areas	
Exhibit 14	28
Trails, Pedestrian Ways & Parks	
Exhibit 15	30
PAD District within Context of Pertinent Streets	
Exhibit 16	31
Excerpt from City of Tucson Major Streets & Routes Plan	
Exhibit 17	32
Existing Street Conditions, Intersection/Lane Configurations and Level of Service (LOS)	
Exhibit 18	33
Public Transportation Components	
Exhibit 19	34
Existing Bike Routes	
Exhibit 20	35
Existing Parking Facilities	
Exhibit 21	37
Existing Primary Utility Lines (Public and Private)	
Exhibit 22	39
Regional Watersheds	
Exhibit 23	40
Local Watersheds & Flow Rates	

Exhibit 24	41
Existing Stormwater Surface Flows Exiting the PAD District	
Exhibit 25	42
City of Tucson University Area Plan (UAP) "Greenbelt" Concept	
Exhibit 26	44
Existing Open Space and Native Tree Inventory	
Exhibit 27	45
Dominant Soils	
Exhibit 28	47
Existing Viewsheds and Photo Locations	
Exhibit 29	50
Comprehensive Opportunities & Constraints Map	

SECTION THREE: PAD District PROPOSAL

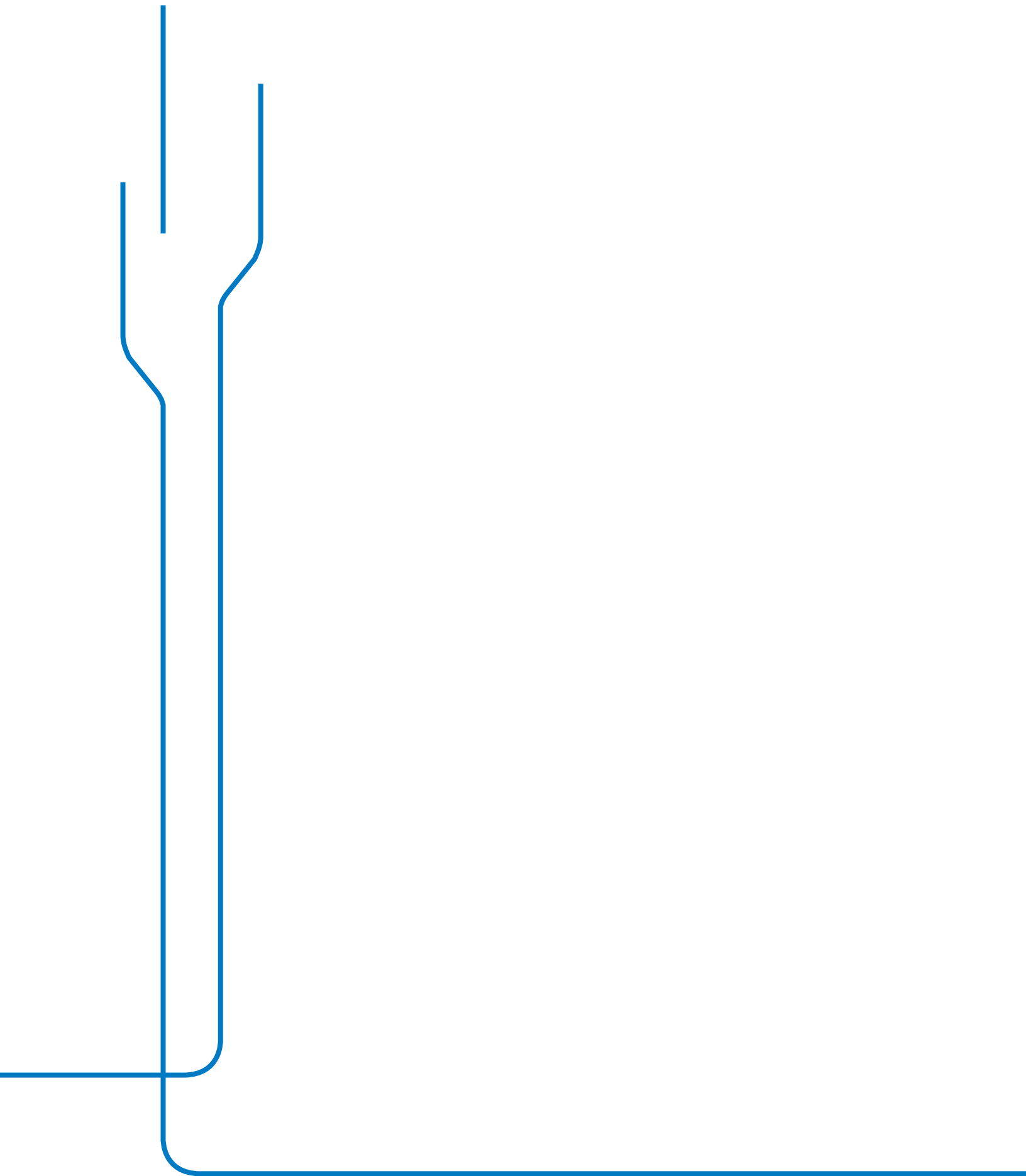
Exhibit 30	55
Detailed Site Plan of Banner-UMC PAD Site	
Exhibit 31	57
Phasing Plan for New Construction	
Exhibit 32	59
Conceptual Depiction of Proposed R.O.W. Abandonments	
Exhibit 33	63
Building Setbacks	
Exhibit 34	64
Reference Site Plan for Specialized Building Setbacks	
Exhibit 35	65
Typical Parking Stall	
Exhibit 36	68
Helistop Use Zone	
Exhibit 37	69
Existing Helicopter Arrival Flight Patterns (Excerpt from MOU)	



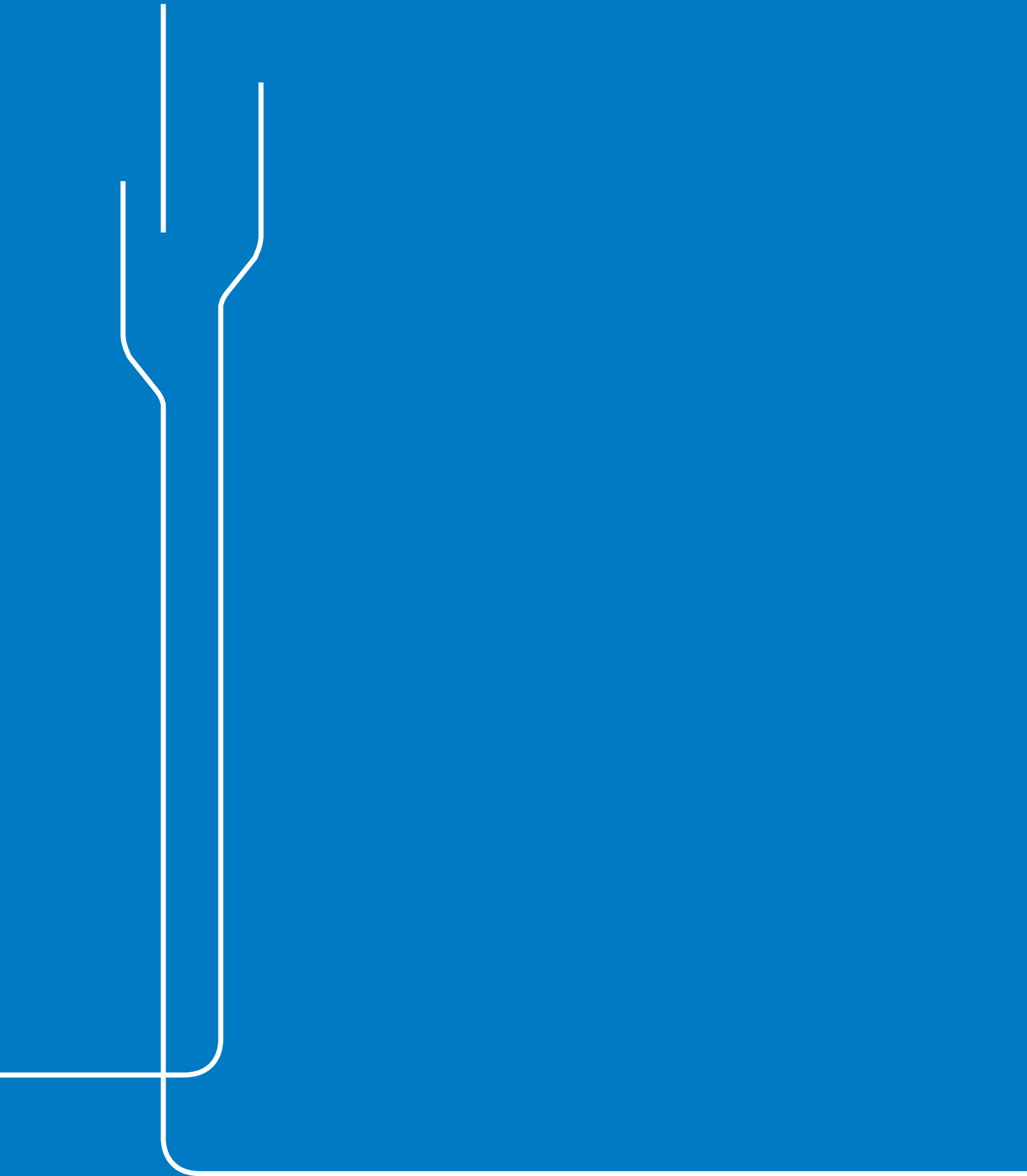
Exhibit 38	69
Existing Helicopter Departure Flight Patterns (Excerpt from MOU)	
Exhibit 39	70
Routing of Emergency Service Vehicles (ESV's), Service Vehicles & Public Patrons	
Exhibit 40	71
Proposed On-Site Pedestrian Circulation	
Exhibit 41	73
Internal Circulation & Connection to AHSC Campus (Birds-Eye View Looking SW)	
Exhibit 42	73
Banner University Medical Center Temporary/Interim Signage Concepts	
Exhibit 43	75
Landscape Framework	
Exhibit 44	78
Illustrative Cross-Sections of Perimeter Borders, Screening Elements & North Green	
Exhibit 45	80
North Green - Conceptual Plan View	
Exhibit 46	82
Landscape - Conceptual Plant Palette	
Exhibit 47	84
Water Harvesting Provisions	
Exhibit 48	89
Phase 1 Recommendations - Lane Configurations	
Exhibit 49	90
Phase 2 Recommendations - Lane Configurations	
Exhibit 50	93
Main Entry Modifications at Campbell Avenue and Elm Street	
Exhibit 51	95
Multi-Modal Components	
Exhibit 52	96
Typical Street Cross-Sections	
Exhibit 53	100
Drainage Masterplan	
Exhibit 54	102
North Green Detention	
Exhibit 55	105
Primary Water, Fire Line, and Sewer Services	
Exhibit 56	107
Energy & Water Conservation Elements	
Exhibit 57	110
Building Materials Palette	
Exhibit 58	111
Visibility Analysis of New Hospital Construction	
Exhibit 59	112
Existing Viewsheds	
Exhibit 60	113
Post-Development Viewsheds (Full Hospital Buildout)	
Exhibit 61	114
Proposed Building Elevations of New Hospital and Bed Towers	

LIST OF TABLES

Table 1	43
Native Plant Inventory	
Table 2	43
Non-Native Plant Inventory	
Table 3	86
Summary of Hospital Units	
Table 4	87
2019 Phase 1: Net Total Trip Generation	
Table 5	88
2035 Phase 2: Net Total Trip Generation	
Table 6	88
Trip Distribution	
Table 7	91
Phase 1 and Phase 2 Recommendations	
Table 8	99
Proposed Detention	
Table 9	116
Conformance & Consistency with Existing Campus Design Guidelines	



INTRODUCTION & POLICY





I.A

FORWARD

Banner - University Medical Center (Tucson Campus)

This Banner-University Medical Center (BUMC) Planned Area Development (PAD) applies to a portion of the Arizona Health Sciences Center (AHSC) and University Medical Center (UMC) campus that is being acquired by Banner Health, a private, non-profit entity (referenced as the “Property” or the “Site” throughout the BUMC PAD). The AHSC/UMC campus has heretofore been exempt from City of Tucson regulatory and zoning authority due to its ownership by the Arizona Board of Regents (ABOR) and operation as a teaching hospital. The Property’s formal acquisition by Banner Health triggers all applicable City regulatory powers. This PAD is the mechanism by which customized zoning regulations will be established and enforced for the Property once it is privately held. The overall development program for the PAD District is consistent with the extensive prior planning efforts that have been completed for the Property by the University of Arizona (UA) as part of its successive Comprehensive Campus Plans, the most recent update of which occurred in 2009.

Banner Health is one of the largest non-profit healthcare systems in the United States, operating more than one hundred facilities (comprised of

various medical centers, clinics and other medical facilities) in seven western states. The healthcare industry is inherently one of the most dynamic and rapidly evolving systems in the world, experiencing not only phenomenal technological growth in both equipment and procedures, but also a fundamental paradigm shift that is rethinking the very purpose and nature of medical and patient care. In this ever-fluid environment, successful healthcare companies must be highly adaptable, possessing the ability to rapidly and nimbly respond to changing market conditions and industry innovations.

Toward this objective, the BUMC PAD District will be redeveloped into a state-of-the-art medical campus that will feature, among other things, the construction of a new hospital facility with phased dual bed towers to replace the majority of the current UMC Hospital. The original hospital dates back to the 1960’s and has simply become obsolete by today’s healthcare standards. In its ultimate build-out, the redeveloped campus will provide more than 1.8 million square feet (1,800,000 SF) of hospital space, comprising more than 800 beds, and will retain all of the Diamond Children’s Medical Center (DCMC) square footage as it exists today, while repurposing as much of the other existing campus facilities as is reasonably practical and cost-effective.

Absolutely paramount to achieving this ambitious program is the establishment and vesting of underlying zoning and development entitlements that ensure both certainty and flexibility over the long term. With this particular Property, that objective is made more challenging by the fact that the current campus has been developed to date under the autonomy of ABOR, and must now be brought under an integrated master-plan and development framework that is not only compliant with City of Tucson zoning authority, but which must also recognize surrounding neighborhood goals and issues. In addition, it must further provide the solid and reliable platform for the Property's continued development toward a build-out horizon that may be fifty years or more in the future. This PAD document intends to meet these multiple and complex objectives.

I.A.1 Rational for Using the Planned Area Development (PAD) Zone

The Planned Area Development (PAD) zone is the only entitlement vehicle appropriate for the Banner Health Property for the following reasons:

- 1) the City of Tucson Unified Development Code (UDC) has no dedicated zoning district to meet the particular needs of hospitals;
- 2) healthcare and hospital campuses comprise a unique land use that, in all practical terms, demands the kind of custom-written framework of development standards, operational parameters, design guidelines, etc. that only the PAD zone can provide; and
- 3) the PAD zone is the only entitlement vehicle by which a flexible moving-forward and phasing plan can be developed that remains viable and effective over the long-term build-out of the proposed BUMC campus.

I.A.2 Physical, Economic & Environmental Sustainability of the PAD

The administration of the BUMC campus under a PAD district is appropriate and wholly suitable for this particular land use and location. The Site has been an active medical campus for more than fifty years. The proposed BUMC campus and PAD is a continuation, and significant enhancement of, this established use. In economic terms, the acquisition of this Property by Banner Health, together with its significant capital investment in new and repurposed facilities, will ensure the long-term economic viability and health of the entire campus. From an environmental perspective, we are dealing here with the redevelopment of a wholly urbanized Site; special care is warranted to ensure the creation of quality exterior environments and public spaces. There are no significant natural or environmental resources of special note.

I.A.3 General Compatibility of the PAD with Adjoining Land Uses

The proposed BUMC campus is generally compatible with the established land use context that adjoins it. To the immediate west are various long-standing UA functions, including physical plant and maintenance facilities, together with several academic buildings. The North University residential neighborhood lies on the west side of the UA uses. To the south are several AHSC facilities and functions, including the respective Colleges of Nursing, Medicine and Pharmacy.

The Jefferson Park Neighborhood (JPN), to the immediate north, is a federally designated historic district, a portion of which actually overlaps the northernmost area of the PAD District. A planned greenway and buffer, which is a key component of both the adopted City of Tucson Jefferson Park Neighborhood Plan and the UA Comprehensive Campus Plan, has long been envisioned for this "overlap" area to buffer the JPN from the medical campus. This PAD will include the first step in implementing this important element; later sections of this PAD describe the historic-district implications raised by this implementation, together with the proposed strategies for properly addressing them.

To the east across Campbell Avenue lie the established neighborhoods of Catalina Vista and Blenman Elm, as well as the historic Arizona Inn hotel. While separated from the PAD Site by the major north-south transportation corridor of Campbell Avenue, issues pertaining to traffic circulation to and from the PAD District are addressed relative to these neighborhoods in later sections of this document.

The above issues all fall into the realm of being identifiable, quantifiable, and capable of being mitigated. With this in mind, together with the specific design solutions and targeted mitigation measures outlined later in this PAD, the compatibility of the proposed BUMC campus with its adjoining uses is comprehensively addressed.



INTRODUCTION & GUIDING PRINCIPLES

I.B

This section provides a general overview of the proposed BUMC PAD District, its planned development program, and the goals and objectives which will guide this PAD.

I.B.1 Project Location

The proposed PAD District is, in general terms, the Site of the current UMC hospital and trauma center, Diamond Children's Medical Center (DCMC), and the related Site improvements for parking, vehicular & pedestrian circulation, helicopter medical transport services, and other related medical functions. The specific BUMC PAD District is comprised of approximately thirty-three (33) acres located on the west side of Campbell Avenue, approximately one-half mile north of Speedway Boulevard. Exhibit 1 regionally illustrates this location, while Exhibit 2 provides a more Site-specific illustration and delineation of the actual PAD boundary and existing Site improvements.

Exhibit 1: Regional Location Map

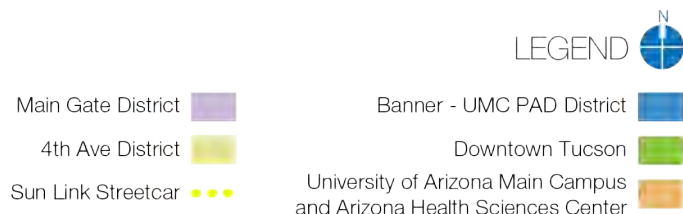
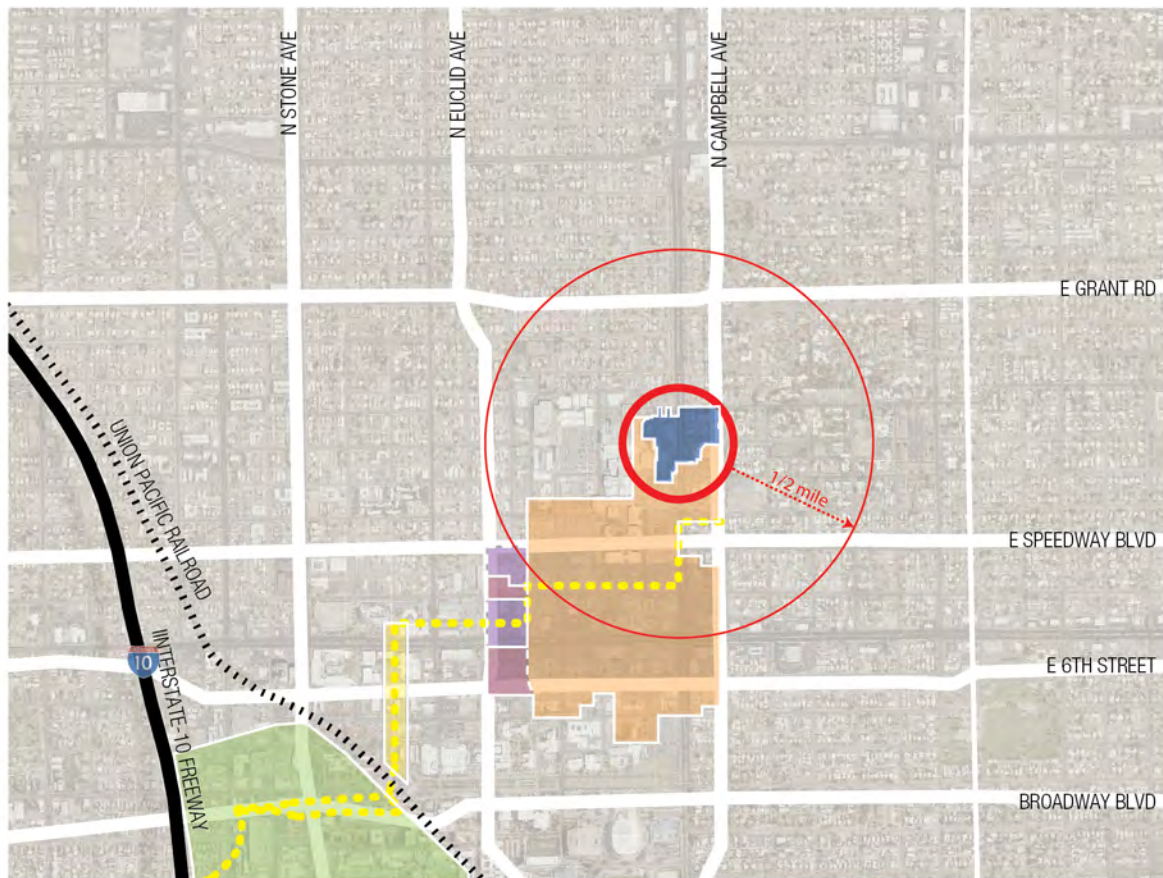
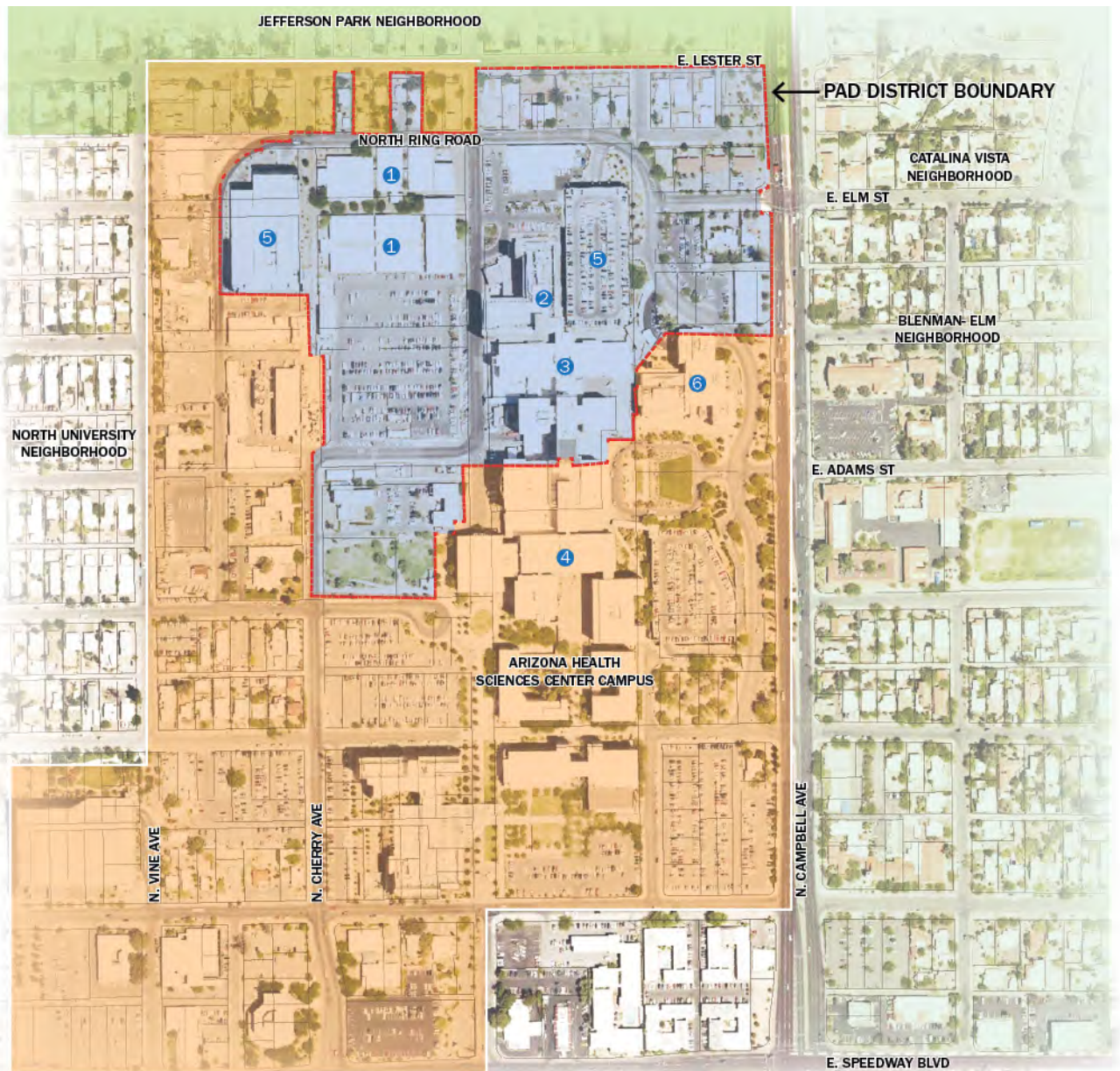


Exhibit 2: Site Location Map and PAD District Boundary



LEGEND 

- 1 MODULAR BUILDINGS HOUSING VARIOUS UA FACILITIES
- 2 DIAMOND CHILDREN'S MEDICAL CENTER
- 3 NORTH EXPANSION PROJECT (NEP) / 201 BUILDING
- 4 UNIVERSITY OF ARIZONA COLLEGE OF MEDICINE
- 5 PARKING GARAGE
- 6 UA CANCER CENTER
-  BUMC PAD DISTRICT

I.B.2 Historic Use of the Site

The BUMC PAD District has a long and rich history that reaches back well before the property was utilized as a medical campus. In the years prior to World War II, the UA operated one of the top cavalry training units in the country, while its polo team was a consistent national competitor. As a result, in 1936, on the same Site that is now occupied by a 2009 six-story tower addition to the UMC hospital, a Reserve Officers' Training Corps (ROTC) stable facility was constructed to replace the former stables located at Third Street and Cherry Avenue. The stables also sat conveniently adjacent to the UA's polo field, then located just west of Warren Avenue. The stable building was designed by well-known local architect Roy Place, who also gave us the original Pima County Courthouse. The stable provided stalls for ninety-two horses, storage facilities for a four-month hay & grain supply, saddle/tack rooms, and supporting administrative offices.

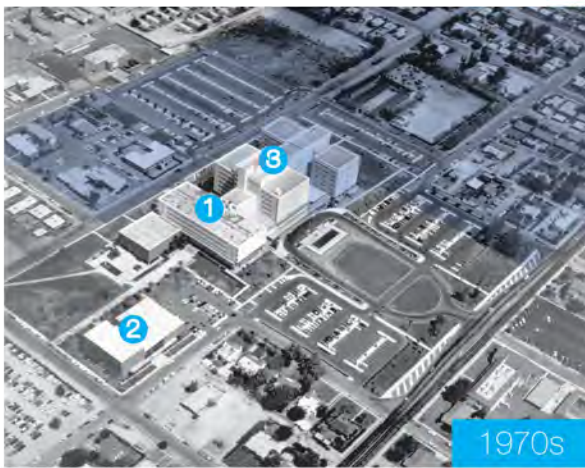
Exhibit 3: Historic Campus Photos - Evolution of the Medical Campus



1950s



1960s



1970s









1980s



1980s

LEGEND

Banner - UMC PAD District		University Medical Center	
College of Medicine and Arizona Health Sciences		UA Cancer Center	
College of Life Sciences		Northern Expansion Project (NEP)	

After World War II, with the diminished need for equestrian cavalry in modern warfare, the ROTC Cavalry Unit was converted to a mechanized one. The horses were sold and the stable facilities were used for a variety of other purposes, most of which pertained to providing storage space for numerous UA departments. In 1946, the nearby polo fields were replaced by temporary housing for returning war veterans, this being comprised of row upon row of metal Quonset huts and eventually becoming popularly known as “Polo Village”.

By 1975, the medical use of the surrounding lands was well-established and the ROTC Stables were being used as a parking garage for the then-named Arizona Medical Center. Much of the red-brick structure had, by then, been stuccoed over. In 1979, the University’s Environmental Services Department occupied the building, sand-blasted the exterior, and restored its original brick facade.

Exhibit 4: Historic Campus Photos - Pictorial History of the ROTC Stables + Equestrian Facilities



LEGEND

- | | | | | | |
|---------------------------------|---|-----------------------------|---|---------|---|
| College of Medicine | ① | Remaining UA Polo Fields | ③ | Stables | ■ |
| Arizona Health Sciences Library | ② | "Polo Village" Quonset Huts | ④ | | |

As the need for expanded medical facilities increased in the coming years, the valuable real estate underlying the ROTC Stables and Polo Village made their days numbered. The Polo Village Quonset huts were removed in 1966 to provide a site for the original UMC hospital. In 2007, the stables were finally demolished to provide the site of the aforementioned 2009 UMC hospital addition. An excellent pictorial exhibit, describing the ROTC Stables/Polo Village history, is installed within the main lobby of UMC and pays homage to this unique part of the Site's history. In addition, several palettes worth of red brick from the stable building were salvaged by the UA and are presently in storage; this perhaps creates an opportunity to incorporate this historical material into an outdoor space or public art element of the proposed BUMC redevelopment.

I.B.3 Proposed Project By Banner Health

Banner Health will ultimately take fee title to approximately thirty-three (33) acres of property presently owned by ABOR and containing components of the AHSC and UMC, as well as the DCMC. The initial phase of the BUMC development program (commencing in late 2015 or early 2016) will see the construction of a new hospital, including a new bed tower and patient support facilities, a series of new surface parking areas, stormwater management infrastructure, and a new campus main entry and exit onto Campbell Avenue and Elm Street. The second, longer-term development phase will include additional hospital patient support facilities and a second bed tower added to the aforementioned new hospital, together with a new multi-level parking structure to support the expanded hospital. A primary objective of all of the above will be to utilize and repurpose as much of the existing campus facilities as is reasonably practical and cost-effective. The ultimate build-out will result in a campus with more than 1.8 million square feet (1,800,000 SF) of hospital space comprising approximately 800 beds, and will retain all of the DCMC square footage as it exists today while repurposing a substantial portion of the current UMC hospital known as the North Expansion Project (NEP) building. The full development program of the BUMC PAD District is described in detail, together with all appurtenant regulatory guidelines and development standards, in Section III (PAD District Proposal) of this document.

I.B.4 Project Goals

This section provides a foundational understanding of the various goals, principles and priorities which guide the project and the BUMC PAD District.

A. Guiding Objectives

The healthcare industry is continually evolving, with new regulations, standards, technologies, procedures, and emerging paradigms of patient care. Innovation and change now define the standard environment within which hospitals and health care-providers must operate. Remaining an effective and responsive healthcare company in such a fluid industry is a challenge under any circumstances. That challenge is compounded when a medical campus must have a fifty-year or more build-out horizon and must operate within a defined framework of regulatory and zoning entitlements.

With this in mind, the primary objective of this PAD District is to effectively balance the following interests:

- 1) The City of Tucson's need to have a reliable regulatory tool that provides clear direction and specificity under a variety of alternative futures.
- 2) Banner Health's need to have certainty going forward that its development objectives are wholly entitled, while also having a PAD District that contemplates and provides the requisite flexibility to ensure responsiveness to future changes in the healthcare landscape.
- 3) The adjacent neighborhood's need to have an understanding of the scope, limits and impacts of the ultimate medical campus development so as to foster a sense of stability for those who desire to live there and reinvest in their property and their neighborhood.

B. Banner Health Corporate Philosophy & Principles

The ever-changing world of health care demands, more than ever, that health systems and healthcare companies be guided by a set of principles and values that provide the clarity of vision and directional compass for ensuring intelligent decisions and leadership. Banner Health addresses this challenge head-on through its core mission: making a difference in people's lives through excellent patient care. This mission places the patient at the epicenter of everything Banner does.

Banner Health has been recognized for creating a rich heritage and enduring legacy of excellent patient care throughout the seven states in which they operate their more than one hundred facilities, including twenty-eight acute care hospitals, behavioral health facilities, physician practices, cancer centers, long-term care centers, and outpatient surgery centers, as well as an array of related services such as home healthcare and hospice (see Exhibit 5). The challenge for Banner, as it is with all health-system companies, is to meet the demands of the healthcare industry in innovative ways that continuously improve patient care and the resultant health of our communities, while doing so in a way that also ensures the company's collective economic and long-term viability, such that continued community health and wellness can be sustained.

Through its core mission, Banner Health pursues its vision to be a national leader that is recognized industry-wide for its clinical excellence and innovation, preferred by its clients because of a highly coordinated and quality patient experience, and is distinguished in its industry by the quality of its people. Banner Health's adopted values are simple and straightforward:

People Above All... by treating those we serve, and each other, with compassion, dignity and respect.

Excellence... by acting with integrity and striving for the highest quality care and service.

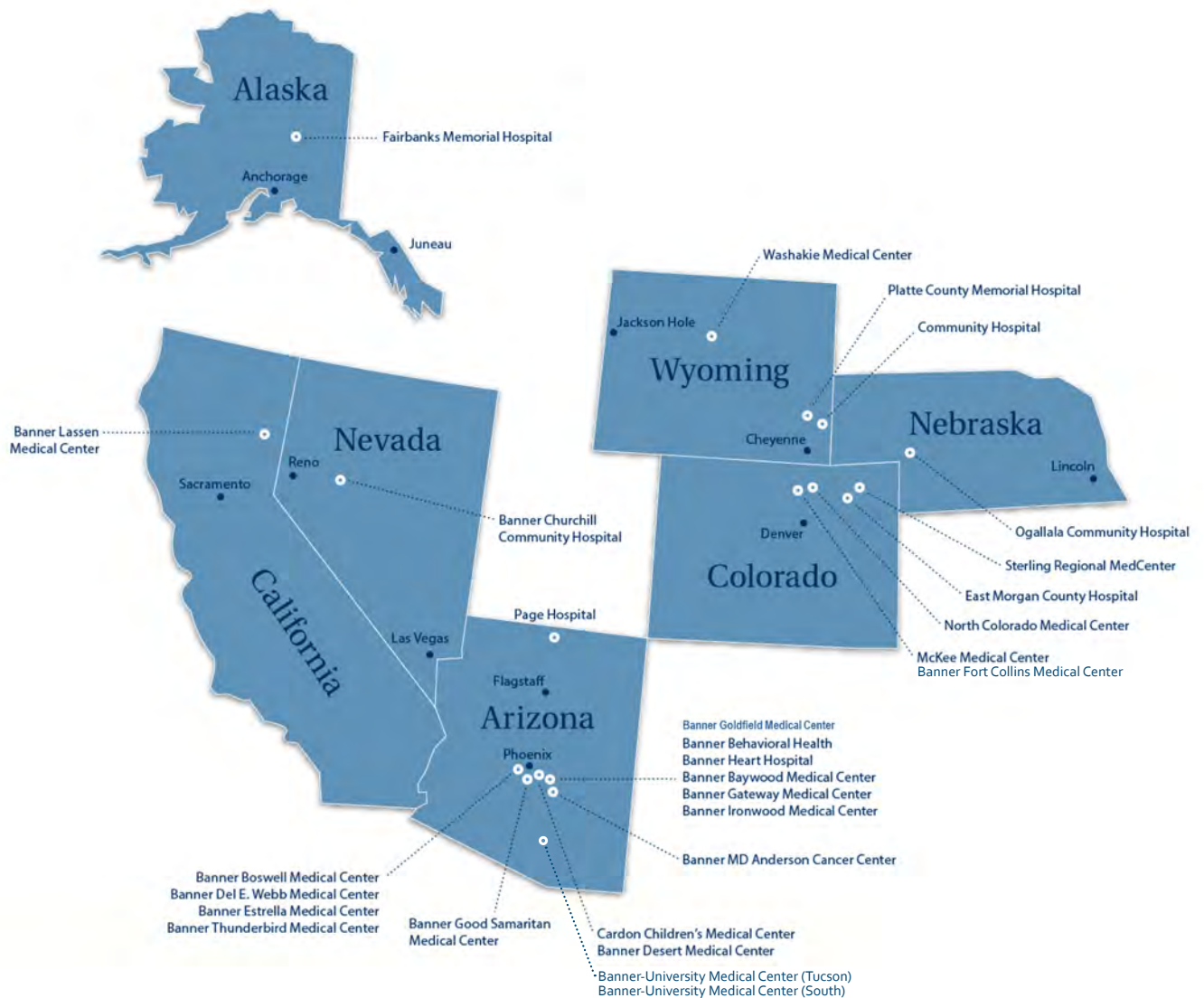
Results... by exceeding the expectations of the people we serve, as well as the expectations we set for ourselves.

C. Specific Goals of the PAD

The specific goals of the BUMC PAD are the following:

- Establish a PAD District that rightly brings all existing facilities and Site improvements currently on the Property into an approved City of Tucson zoning framework,
- Establish a PAD District which provides a near-term and long-term framework of zoning regulation that fully accommodates all proposed near-term and long-term Site improvements and uses as presently envisioned,
- Establish a PAD District which accommodates the unique design requirements, development standards and operational particulars of outpatient care, inpatient acute care, emergency, and trauma-center facilities,
- Establish a PAD District that provides flexibility to Banner Health so as to facilitate their response, in a competitive time frame, to ever-changing industry demands and/or innovations,
- Establish a PAD District that incorporates and reflects on-going dialogue and coordination with the UA regarding their long-term plans for neighboring properties,
- Establish a PAD District that reflects an on-going dialogue and coordination effort with the leadership of the most directly-affected, adjacent residential neighborhoods.
- Establish a PAD District that facilitates a state-of-the art medical campus in its facilities, services, staffing, and related operations,
- Establish a PAD District which facilitates a built environment that serves as a notable example of high-quality architecture and Site development for the larger community.

Exhibit 5: Current Banner Health Facilities





CONFORMANCE WITH GENERAL I.C PLAN & AREA PLANS

City of Tucson staff has previously conducted a comprehensive compliance evaluation of the proposed Banner Health development program on the subject PAD Site (See Appendix A). The primary conclusions of that past evaluation are presented and amplified upon in Sections I.C.1 through I.C.3 below.

I.C.1 Plan Tucson

Plan Tucson (which has replaced the City's former General Plan) identifies the BUMC PAD Property as part of a "Campus Area" on its Future Growth Scenario map (see Exhibit 6). Campus Areas, by definition, include and are in close proximity to established master planned educational, medical, and business facilities. The UA, Pima Community College, Tucson Medical Center, St. Joseph's Hospital, St. Mary's Hospital, and UMC are all examples of established Campus Areas. Based on these similar examples of campus development, Plan Tucson supports the redevelopment of the PAD Site by Banner Health into a state-of-the-art medical campus.

The following Land Use, Transportation & Urban Design policies from Plan Tucson are relevant:

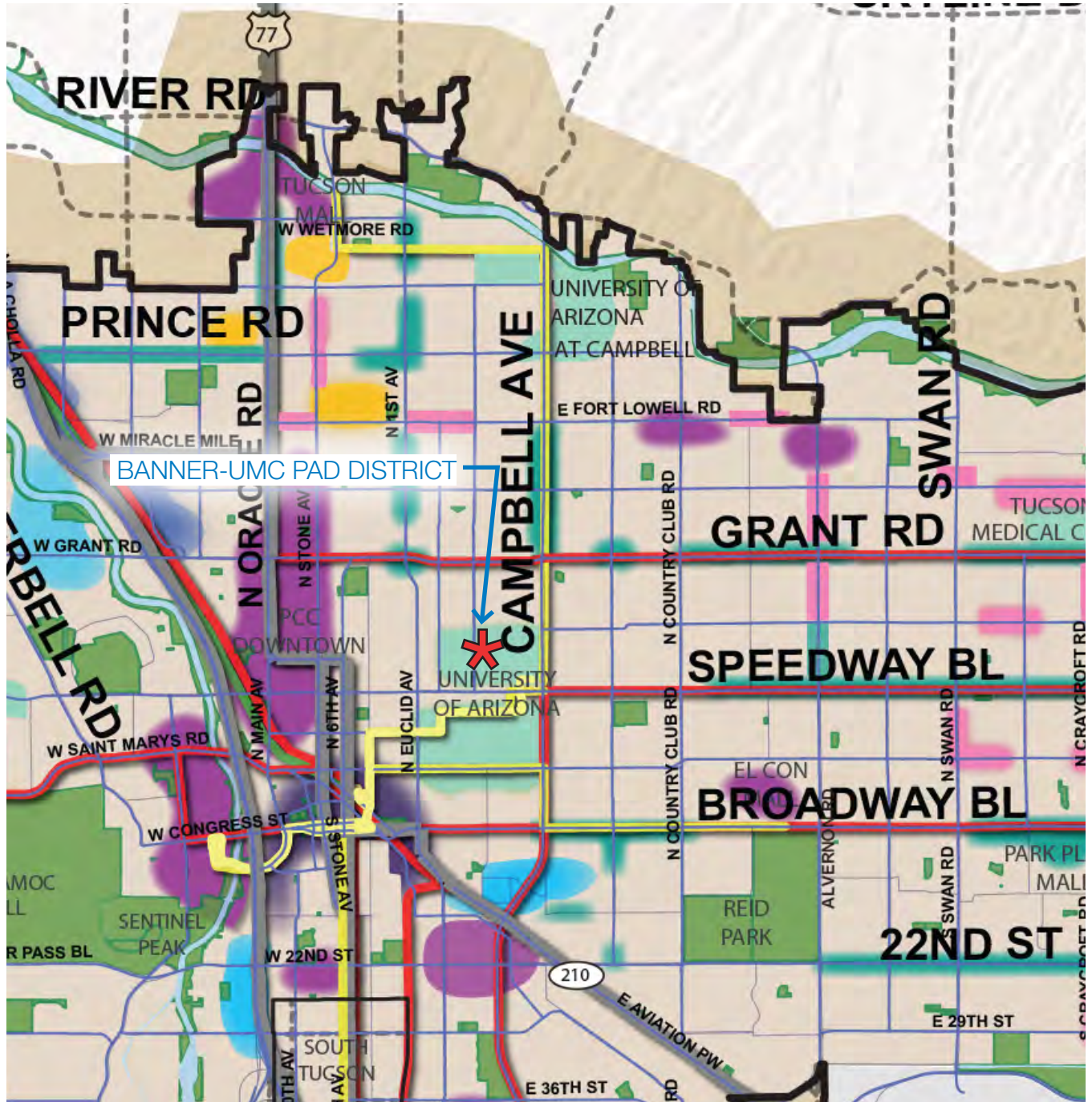
- LT 28.5.7: Support environmental sensitive design that protects the integrity of existing neighborhoods, complements adjacent land uses, and enhances the overall function and visual quality of the street, adjacent properties, and the community.
- LT 28.5.8: Support infill and redevelopment projects that reflect sensitivity to site and neighborhood conditions and adhere to relevant site and architectural design guidelines.
- Protect established residential neighborhoods by supporting compatible development, which may include other residential, mixed-used infill and appropriate non-residential uses.
- Design particulars and features in accordance with the above policies are provided in Section III (PAD District Proposal).

I.C.2 Jefferson Park Neighborhood Plan

The proposed BUMC PAD is in compliance with the Jefferson Park Neighborhood Plan (JPNP); pertinent particulars are provided here (see Exhibit 7 for an excerpt of the JPNP land use plan):

The primary element of the JPNP, as it relates to the subject PAD District, pertains to the Plan's Goal #2 (Neighborhood Landscape & Streetscape). Strategy 2.1.1.k under this Goal stipulates developing and encouraging partnerships that will further the development of the "Green Edge" as proposed in the UA Comprehensive Campus Plan (UACCP). Per same, the "Green Edge" is to serve as a greenway and buffer wherever the JPN southern boundary borders the UMC's northern edge. The proposed BUMC PAD Site Plan presented in Section III.A.1 (PAD District Proposal; Land Uses and Facilities) incorporates and makes provisions for the initial phase of the intended greenway/buffer. Specifically, this PAD names the area the "North Green" and provides further detail (in Section III.D.4; Multi-Use Drainage & North Green) as to its multi-use function as both the intended buffer and as a means of ameliorating downstream drainage impacts within the JPN.

Exhibit 6: Plan Tucson Excerpt



Source: City of Tucson IT-GIS Section. Map as of 07/09/2013.
 Map available on-line at www.tucsonaz.gov/plantucson

Building Blocks

(See Exhibit LT-8 for general descriptions of the building blocks.)

- Existing Neighborhoods
- Neighborhoods with Greater Infill Potential
- Neighborhood Centers
- Downtown
- Business Centers
- Mixed-Use Centers
- Mixed-Use Corridors
- Campus Areas
- Industrial Areas
- Houghton Corridor Area
- Southlands
- Potential Annexation Areas

- Existing Parks/Open Space
- City of Tucson Boundary

From Major Streets and Routes Plan

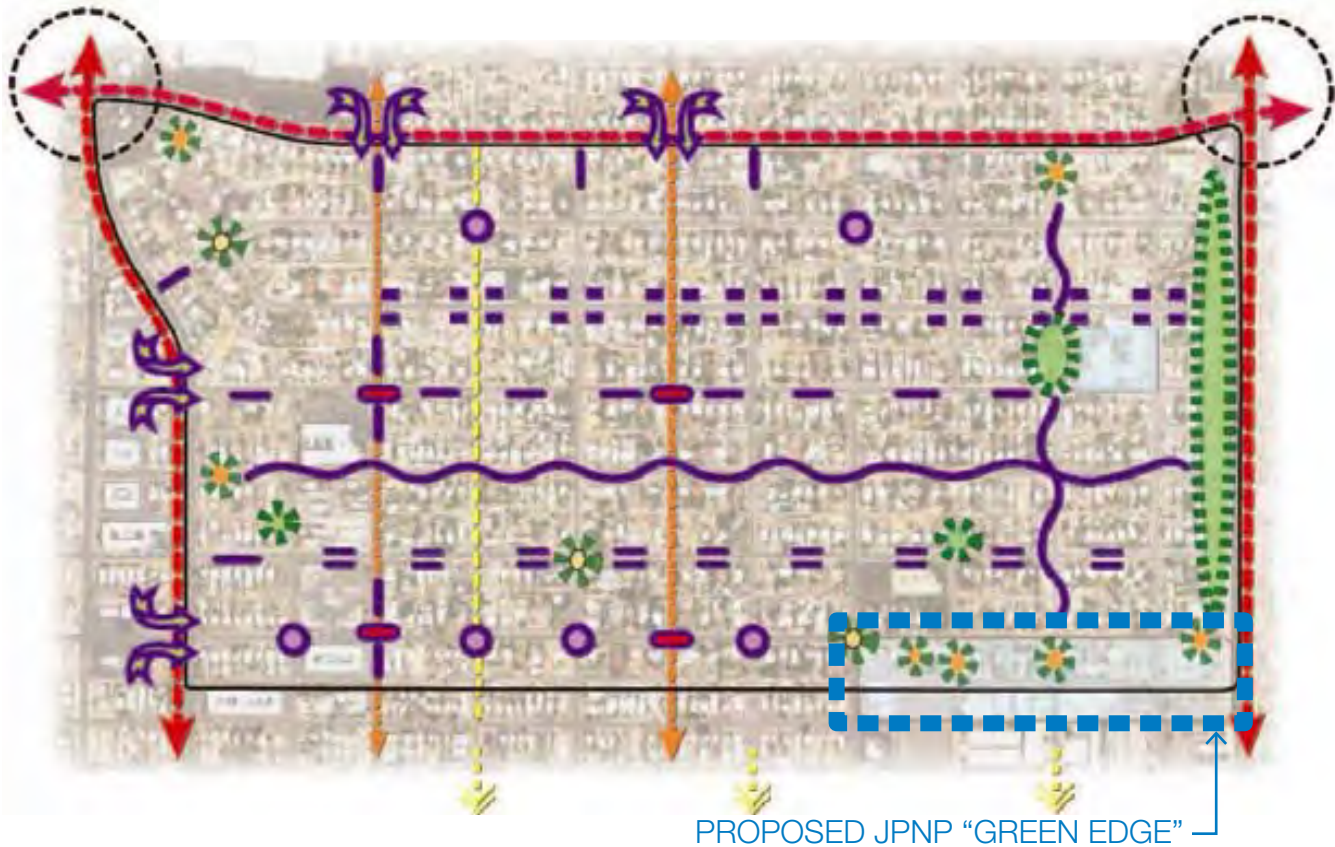
- Future Roads
- County Major Routes
- Major Highways
- Major Roads

From 2040 Regional Transportation Plan

- Planned Bus Routes (BRT, Express and Circulator)
- Planned Streetcar
- Planned Commuter/Intercity Rail

3.144 LAND USE, TRANSPORTATION, & URBAN DESIGN Plan Tucson 2013

Exhibit 7: Jefferson Park Neighborhood Plan (Map Excerpt)



~ BANNER - UMC PAD DISTRICT ~

Edges & Connections



Nodes



Traffic Calming



A second relevant component of the JPNP pertains to its Goal #1 (Neighborhood Preservation). Policy 1.1 under this Goal is concerned with protecting historic architectural styles in the neighborhood. Strategy 1.1.1 under this Policy encourages the maintenance and preservation of existing historic or traditional structures in the neighborhood. The establishment of aforementioned North Green has implications to this strategy, in that construction of this feature will require the removal of several homes that are currently listed as contributing structures on the Jefferson Park Historic District federal filing.

Accomplishing the North Green while respecting Strategy 1.1.1 will, obviously, require significant coordination with the neighborhood leadership and the City of Tucson Historic Preservation Office so as to ensure that the desired buffer can be created while, at the same time, ensuring there is minimal negative impact upon the neighborhood's historic district status. Further particulars as to this two-pronged effort are provided in Section III.D.4 (Multi-Use Drainage & North Green).

I.C.3 University Area Plan

The University Area Plan (UAP) recognizes the importance of the UA Comprehensive Campus Plan (UACCP) and stresses the need to enhance coordination between its policies and those of the UAP in the best interests of UA, the surrounding established neighborhoods, and the community at large (see Exhibit 8 for an excerpt of the UAP Land Use Plan). While currently guided by the UACCP, the BUMC PAD District will fall under the land use policy direction of the UAP once it enters private ownership, making the UAP policies relevant.

UAP Section 3.F (Public/Semi-Public Development) recognizes the important role of public and semi-public uses, and encourages the development of these uses in a manner which is compatible with the character and quality of University Area neighborhoods. Related Policies are:

1. Encourage the maintenance and enhancement of existing public and semi-public uses such as libraries, schools, parks, churches, social and cultural facilities.
2. Support the development of new public and semi-public uses which are compatible with the physical environment and social needs of the University Area neighborhoods.
3. Demonstrate sensitivity in the design and location of new public facilities and open spaces through the guidance of the General Design Guidelines (UAP Section 8) and local neighborhood input.
4. Encourage public development which supports city-wide planning policy and complies with locally adopted ordinances and guidelines.
5. Support the inclusion of neighborhood amenities (e.g., usable open space, recreational facilities, public art) in the development of new public and semi-public facilities. Such amenities should be coordinated with input from local neighborhoods.

Project elements and features addressing the above policies are described in Section III (PAD District Proposal) of this PAD document.

UAP Section 7 (UA) stresses the goal of recognizing the importance of the UA and its immediate environs as a regional activity center, and supporting cooperative efforts in the development of this activity center in a manner which protects and enhances University Area neighborhoods. Related policies:

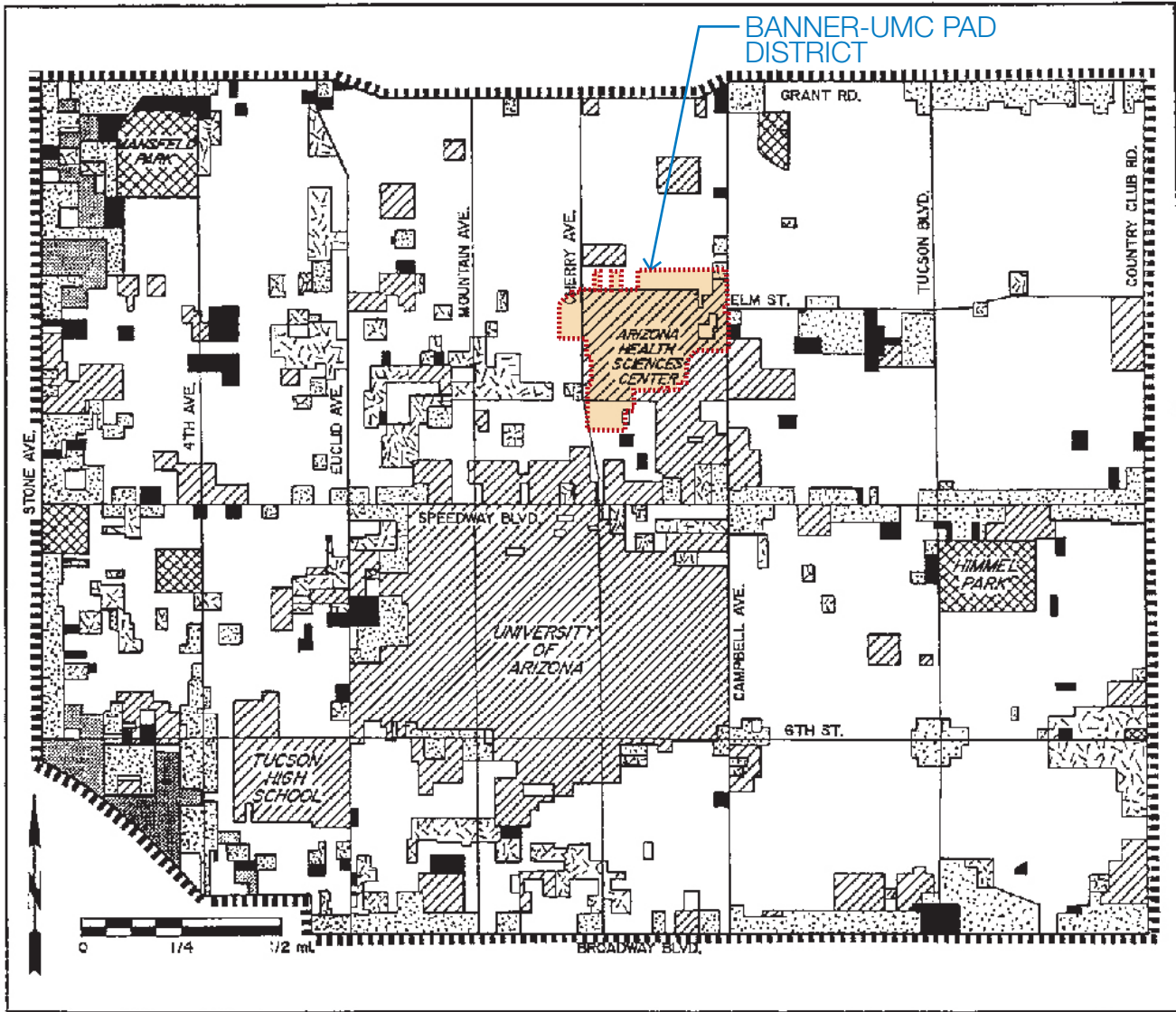
1. Encourage the UA to comply with local plans, guidelines, ordinances, and regulations in the implementation of its projects.
2. Support continued efforts to coordinate adopted City policy with the policies of the UA Comprehensive Campus Plan in the development of streets and other infrastructure serving the campus, and in the development of new land uses at the campus planning area perimeter.
3. Support the implementation of the University's adopted Comprehensive Campus Plan policies to mitigate impacts on adjacent neighborhoods through the development of a transition zone or buffer at the campus perimeter (Map 8).
10. Encourage the University to provide additional open space areas for groundwater recharge, water harvesting, and stormwater detention.
11. Investigate the establishment of a "greenbelt" system (Figure 1) at the UA campus perimeter to serve as a neighborhood buffer and visual amenity while providing new circulation and recreational opportunities (e.g., bicycle routes, seating and play areas, jogging trails).

Section III.A (PAD District Proposal) incorporates and makes provisions for the above policies and the initial phase of the intended greenbelt system; Section III.D.4 (Multi-Use Drainage & North Green) provides further detail as to the proposed North Green's multi-use, water harvesting, and stormwater detention functions in ameliorating downstream drainage impacts to the Jefferson Park Neighborhood.









UAP Section 8 (General Design Guidelines) contains the following policy:

1. Complement surrounding development - Utilize compatible building materials, architectural style and ornamentation, setbacks, step-backs, and variations in building height or mass to complement the scale and character of surrounding development and reduce the appearance of excessive height and bulk.

Exhibit 8: University Area Plan - Primary Land Use Plan (Map Excerpt)



Legend

-  Low/Medium Density Residential
-  Moderate/High Density Residential
-  Public/Institutional
-  Industrial
-  Parks/Open Space
-  Office/Commercial
-  Vacant
-  Banner-UMC PAD District

Note: Land use on University of Arizona Property is guided by the policies of the UA Comprehensive Campus Plan adopted by the Arizona Board of Regents in 1988

Section III.A (PAD District Proposal) and III.B (Land Use Regulations) of this PAD document provide specific detail as to uses and design features of the proposed BUMC campus. Section III.G (Architectural Standards and Design Guidelines) provides a comprehensive depiction of architectural features, massing, height, scale and aesthetics of the proposed campus redevelopment.

With all of the above in mind, the proposed BUMC PAD is in compliance with the objectives and policies of the UAP. The UAP clearly recognizes the existing UMC and AHSC in its Section 3.F (Public/Semi-Public Development) policies enumerated above. It further encourages the development and expansion of these uses in a manner that is compatible with the character and quality of the established University neighborhoods. The BUMC PAD District proposes building massing, heights and setbacks to ensure the proper transitioning from the adjacent residential heights to the taller heights typical of a major medical center. Lastly, the proposed PAD includes the initial phase of the North Green buffer, which has been a long-standing element not only of the UAP, but also the Jefferson Park Neighborhood Plan and the UACCP.

I.C.4 UA Comprehensive Campus Plan

The UACCP features several over-arching elements and themes which guide the entire UA campus plan. The following are particularly relevant to the BUMC PAD Site:

Infill. Many current University programs are challenged by significant space deficiencies while, at the same time, there is severely limited campus acreage available and no viable room for outward campus expansion. Current space deficiencies must primarily be met by building new facilities on underdeveloped real estate throughout the campus proper. The BUMC PAD represents a substantial redevelopment, repurposing, and intensification effort toward this goal.

Connections. The UACCP-designated Warren Avenue Corridor, now replete with the City of Tucson Sun Link streetcar route and Helen-Warren station, represents a primary opportunity to link the proposed BUMC PAD District with the balance of the UA campus, as well as with more distant points from the campus to the City's downtown district.

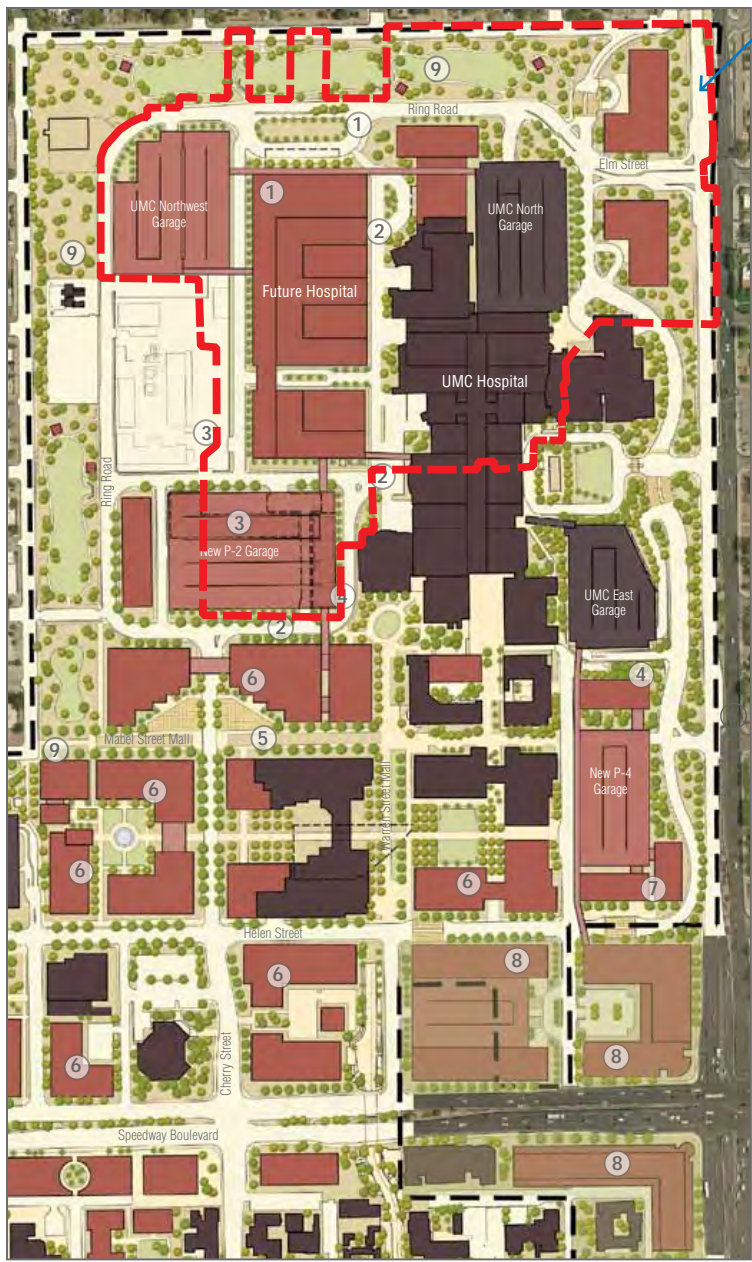
Edges & Gateways. The Campbell Avenue frontage along the current UMC campus (as well as the Colleges of Medicine, Nursing & Pharmacy to the immediate south) is designated as one of the enhanced edge and gateway zones of the UA Campus Plan. For all intents and purposes, this zone is the "front door" of the proposed BUMC PAD District and will, as such, be targeted for significant functional and aesthetic enhancements as part of the overall PAD redevelopment program.

Moving to a more Site-specific focus, the UACCP places the BUMC PAD District within its designated Precinct 2, namely the Arizona Health Sciences Center (AHSC). The original 2003 UACCP took a somewhat conceptual approach to the Precinct 2 area, as the central and core campus areas were then more the focus of detailed development plans. The UACCP 2009 Update, however, cited the Precinct 2 area as having the greatest potential for significant growth in facilities. The Update presents a detailed development plan for the Precinct (see Exhibit 9), which features the following components:

- A planned expansion of the UMC hospital, with a new main entry oriented northward so as to provide a larger and more efficient drop-off area and atrium lobby,
- Designation of separate access drives and routes specifically for ambulance and service so as to keep all patient, visitor, staff, and through traffic on North Ring Road,
- New multi-level parking garages to serve the expanded UMC hospital and support services,
- The reconfiguration of existing interior stormwater detention/retention surface basins and their replacement with less "land intensive" solutions, such as underground cisterns beneath the planned/new parking structures.
- The establishment of the greenway along the UMC campus northern edge, a key land-use component that is also cited in the City of Tucson's Jefferson Park Neighborhood Plan (JPNP) and University Area Plan (UAP).

In practical terms, the BUMC PAD is implementing the development plan components outlined above in the 2009 UACCP Update (details and particulars of the proposed PAD development program are presented in Section III; PAD District Proposal). A close review of same will reveal that, in fact, the overall intensity of the BUMC campus is slightly less than the maximum build-out envisioned by the UACCP 2009 Update. For this reason, the subject PAD proposal is in full accordance with the current UACCP.

It should be noted that the current UACCP 2009 update is more than five years old and that the University of Arizona has already initiated a process to update it. Banner Health and UA are collaborating on their respective planning processes to assure a well-coordinated overall masterplan for the area.



BANNER-UMC
PAD DISTRICT
BOUNDARY

I.C.5 Applicable Overlay Zones

The BUMC PAD District includes several existing residential lots (to be acquired as part of the UA/ABOR acquisition) which fall under the jurisdiction of the Jefferson Park Neighborhood Preservation Zone (JPNPZ). These particular structures have been repurposed by the University and are presently used for various campus office functions. It is the intent of this PAD to incorporate these repurposed properties into the initial portion of the North Green buffer component that has been contemplated by the UACCP, the UAP, and the JPNP. As noted previously, accomplishing this initial North Green segment will also require the acquisition of another private residential property that is designated as a contributing structure to the Jefferson Park Historic District (in addition to falling under the jurisdiction of the JPNPZ). Significant coordination with the JPNA leadership and with the City of Tucson Office of Historic Preservation will be necessary to achieve the North Green implementation in a manner that fully respects the tenets of the JPNPZ while also preserving the federal historic-district status of the Jefferson Park Neighborhood.



I.D

COMMUNITY ISSUES

The BUMC PAD will result in significant community benefits including substantive and meaningful involvement of neighborhood and community leadership in the PAD process.

I.D.1 Benefits to the Community

The BUMC PAD will foster significant community benefits, among them the following:

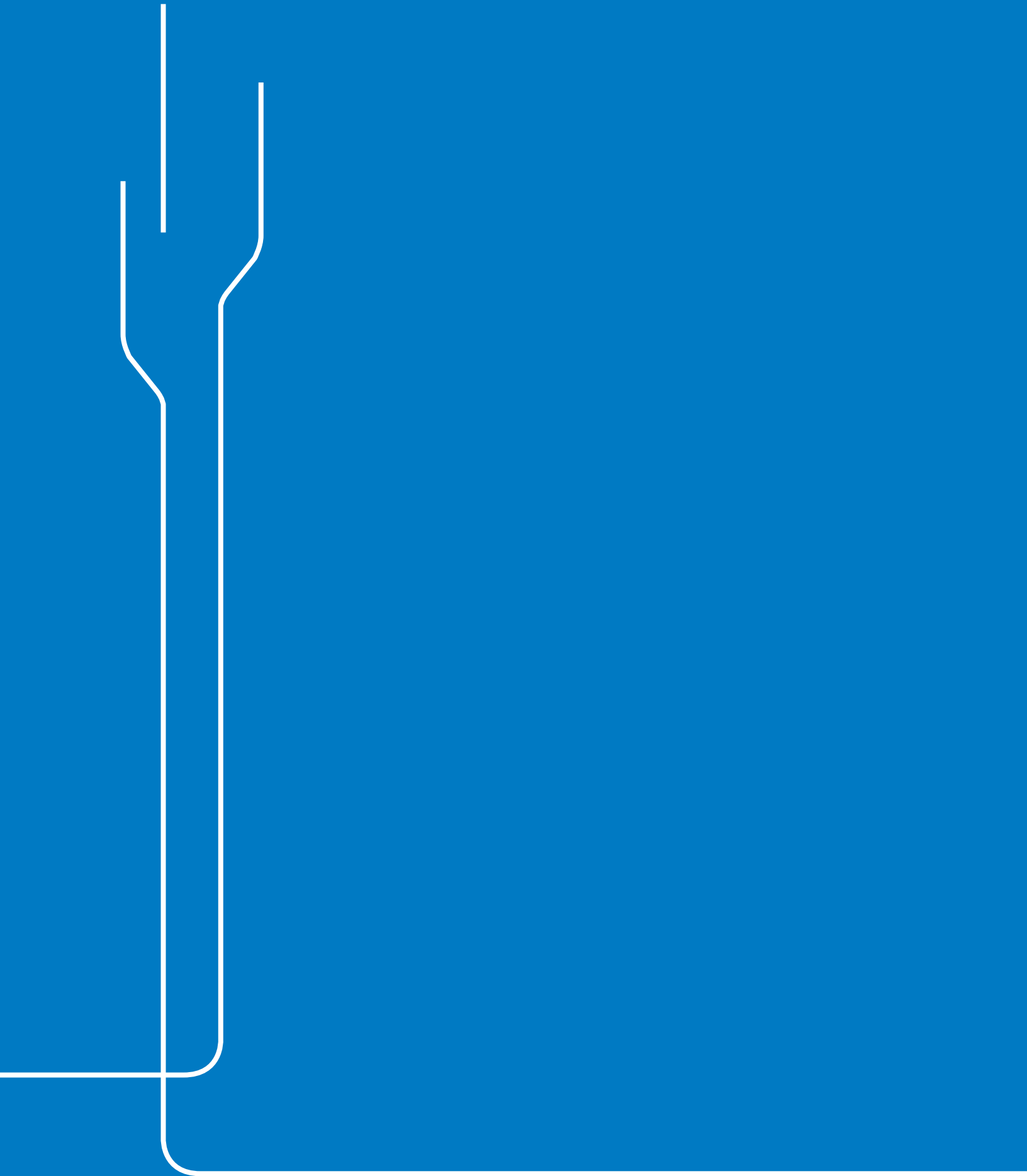
- It will ensure significant state-of-the-art improvements and facility upgrades to the existing UMC campus, insuring its continued role in providing quality medical and healthcare to the entire Tucson metropolitan and Southern Arizona region,
- It will retain and upgrade UMC's Level 1 Trauma Center, the only such facility in Southern Arizona,
- It will include removal of many of the temporary buildings on the current campus (e.g. the existing modulars) and instead implement an overall masterplan of permanent building structures,
- It will insure the long-term financial stability and sustainability of medical care delivery on the campus,
- It will expand significant employment opportunities in skilled and professional positions with salary ranges above the median Tucson income level,
- It will provide certainty to the surrounding residential neighborhoods by establishing defined limits on the ultimate campus build-out; this certainty creates an environment that fosters neighborhood stabilization and vitality by attracting more owner-occupied residents willing to further invest in and improve their properties.
- It will result in significant improvement of the historical downstream stormwater flow issues that have plagued the Jefferson Park Neighborhood and, as part of addressing same, create the first phase of the North Green buffer between the medical campus and the JPN.
- It will insure an ultimate development and campus environment that is a significant community amenity, notable in its architectural quality, operational efficiency, inviting exterior spaces, and overall aesthetics and character.

I.D.2 Public Participation & Outreach

So as to insure substantive neighborhood input and feedback as part of the rezoning process, this PAD effort has included on-going coordination and discussion with leadership individuals from the most directly impacted surrounding neighborhood associations. This group and Banner Health representatives worked together in mutual good faith to reasonably address specific issues raised by the leaders during their review of the proposed campus Site Plan, its new design and operational features, and the content of this PAD document. This outreach effort and the various issues discussed are described more fully in Section III.A.2 of this PAD document.



SITE ANALYSIS





The larger context of the PAD Site is characterized by the following:

- To the immediate/adjacent north is the Jefferson Park residential neighborhood. This area is characterized by one-story, single-family residences with formal historic-district status.
- To the immediate west are various UA Facilities Management and maintenance buildings and attendant operations. Further west is the North University neighborhood.
- To the immediate/adjacent south is the AHSC campus.
- To the east is the Campbell Avenue arterial corridor, beyond which lie the established Blenman Elm and Catalina Vista neighborhoods, which are comprised largely of one-story, single-family residences.

The aforementioned UMC and DCMC facilities have been a part of the larger AHSC, which is formally designated as Precinct 2 by the UA Comprehensive Campus Plan (UACCP). With the UMC and DCMC components now being part of the BUMC PAD District, the AHSC will retain the respective UA Colleges of Medicine, Nursing, Pharmacy, and Public Health, along with the numerous UA Facilities Management functions that occur within the Precinct. All of these components are located to the immediate south and west of the PAD District. This PAD document has been developed in full coordination with UA and AHSC representatives so as to ensure the continued and coordinated functioning of these adjacent AHSC components.

An essential land use that occurs on the Site, and one worthy of special note, is the helicopter transport of emergency patients to and from the hospital facilities. Two helipads currently exist on the PAD District, both of which are atop the DCMC. With the proposed construction of a new hospital to replace the existing UMC facility, new helistops will be established atop the new bed tower. The existing helipads atop DCMC will be retained for use in emergency situations only. Existing Emergency Service Vehicles (ESV's) currently approach the UMC and DCMC from the south and will continue to do so under the proposed BUMC operations. Details of these proposed components are found in Section III.B.3 (Development Standards) of this PAD document.

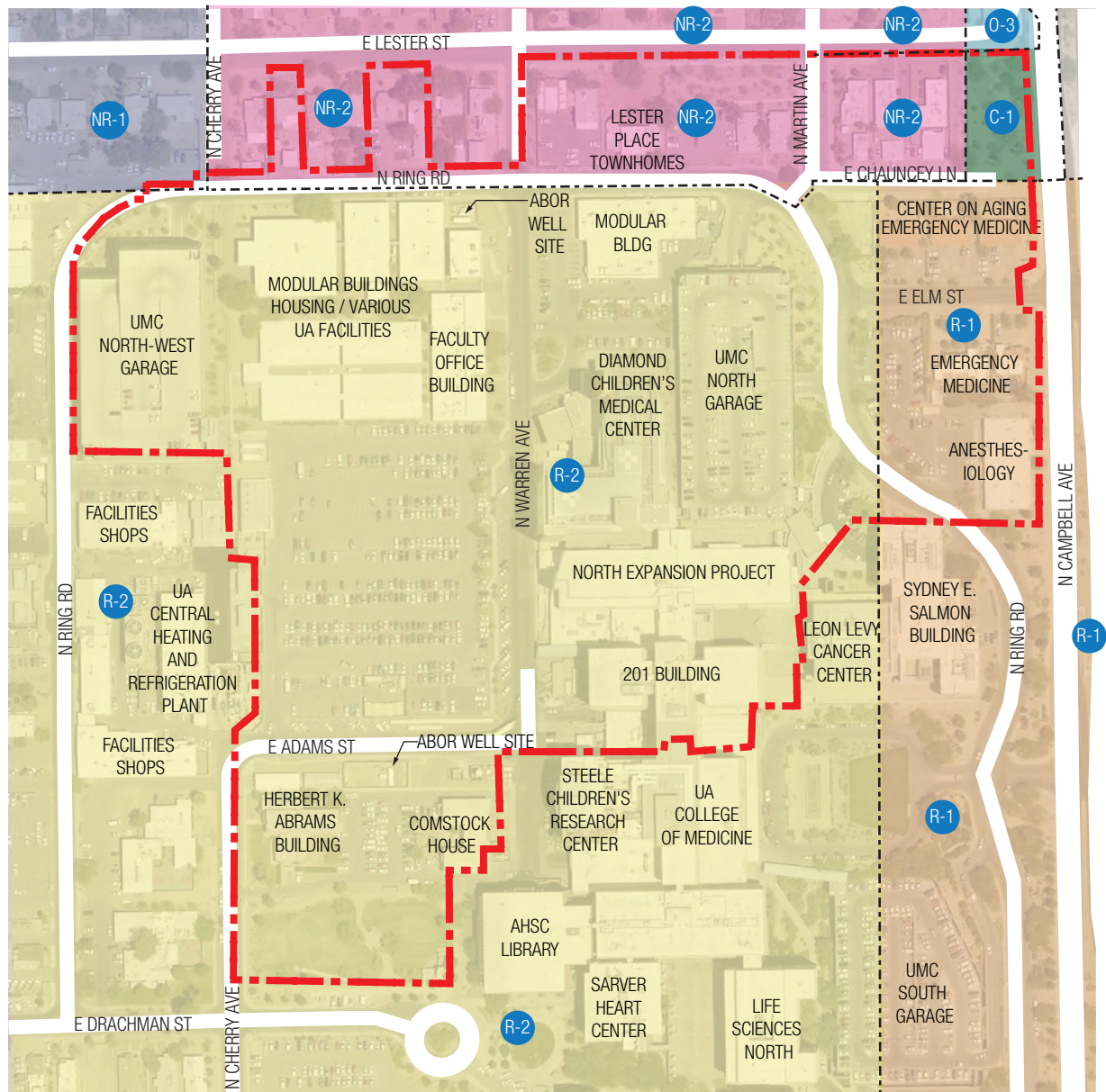
II.A EXISTING LAND USE & ZONING

The BUMC PAD District is essentially comprised of the existing UMC hospital, the DCMC, and all appurtenant Site improvements for parking, vehicular circulation, and exterior/open spaces associated with them.

II.A.1 Existing Campus Context, Land Use & Zoning






Exhibit 10 illustrates the current zoning of the PAD District and its surroundings, as well as the existing on-Site buildings and improvements. In its current state, the existing UMC and DCMC facilities provide approximately 700,000 square feet (SF) of hospital floor space, accompanied by approximately 550 surface parking spaces and nearly 2,000 spaces in multi-story parking structures. The Property is currently a mixture of R-1, R-2, NR-2, and C-1 zoning.

Exhibit 10: Annotated Site Plan of Existing Site Improvements



Scale 1:2400

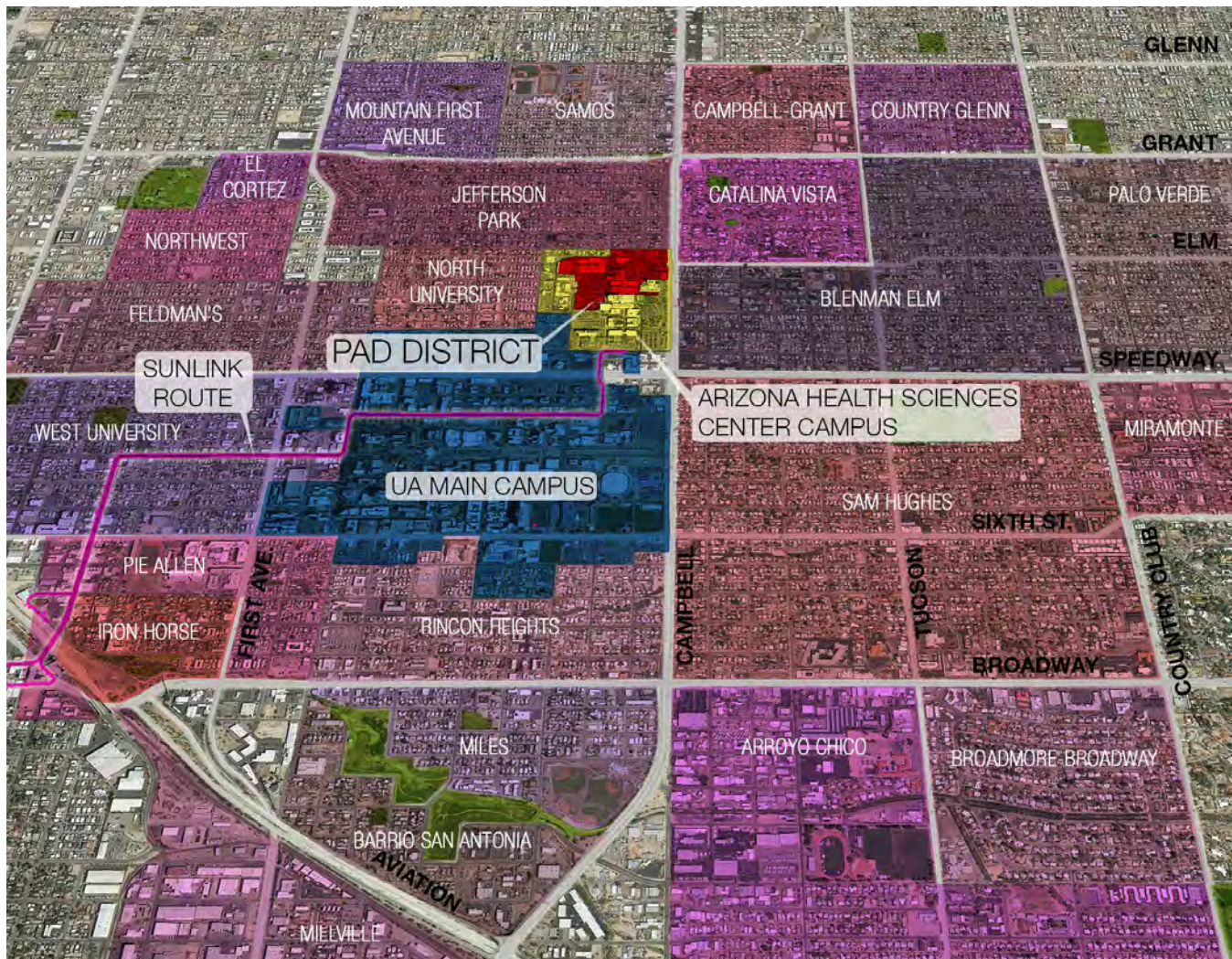
LEGEND 

NR-1 Zoning 	R-1 Zoning 	Banner-UMC PAD District 
NR-2 Zoning 	R-2 Zoning 	Zoning Boundary 
C-1 Zoning 	O-3 Zoning 	Existing Zoning 

II.A.2 Off-Site Land Uses, Existing Zoning & Structures

Exhibit 11 provides an expanded and annotated aerial-photo of the PAD District and its surroundings. The Site is juxtaposed by UA academic, medical and facilities-management functions to the south and west, and by established residential neighborhoods to the north (Jefferson Park) and to the east across Campbell Avenue (Catalina Vista and Blenman Elm). Campbell Avenue serves as a major north-south transportation corridor for the metropolitan area, extending from the Catalina Foothills region to the north and linking the PAD District to points south which include Tucson International Airport and the planned UA Biosciences Park.

Exhibit 11: Birdseye Aerial Photo of PAD District and Surrounding Context



II.A.3 Natural and Built Constraints

Given that the PAD District is already developed as an intense medical campus, there are no natural environmental constraints impacting its redevelopment as planned by this BUMC project. The most important environmental factor that must be addressed is the historical drainage impacts that have occurred downstream, in the Jefferson Park Neighborhood, as a result of surface stormwater flows exiting the PAD District. A major component of this PAD is the implementation of a retention/detention solution, comprised of both underground and surface facilities, together with the first portion of the North Green buffer, all of which will serve to significantly ameliorate the downstream drainage impacts which have heretofore plagued Jefferson Park. Details as to the existing drainage conditions are found in Section II.F (Environmental Factors) of this document, while the particulars of the proposed stormwater retention/detention solution are found in Section III.D (Conceptual Drainage Solution and Associated Improvements).

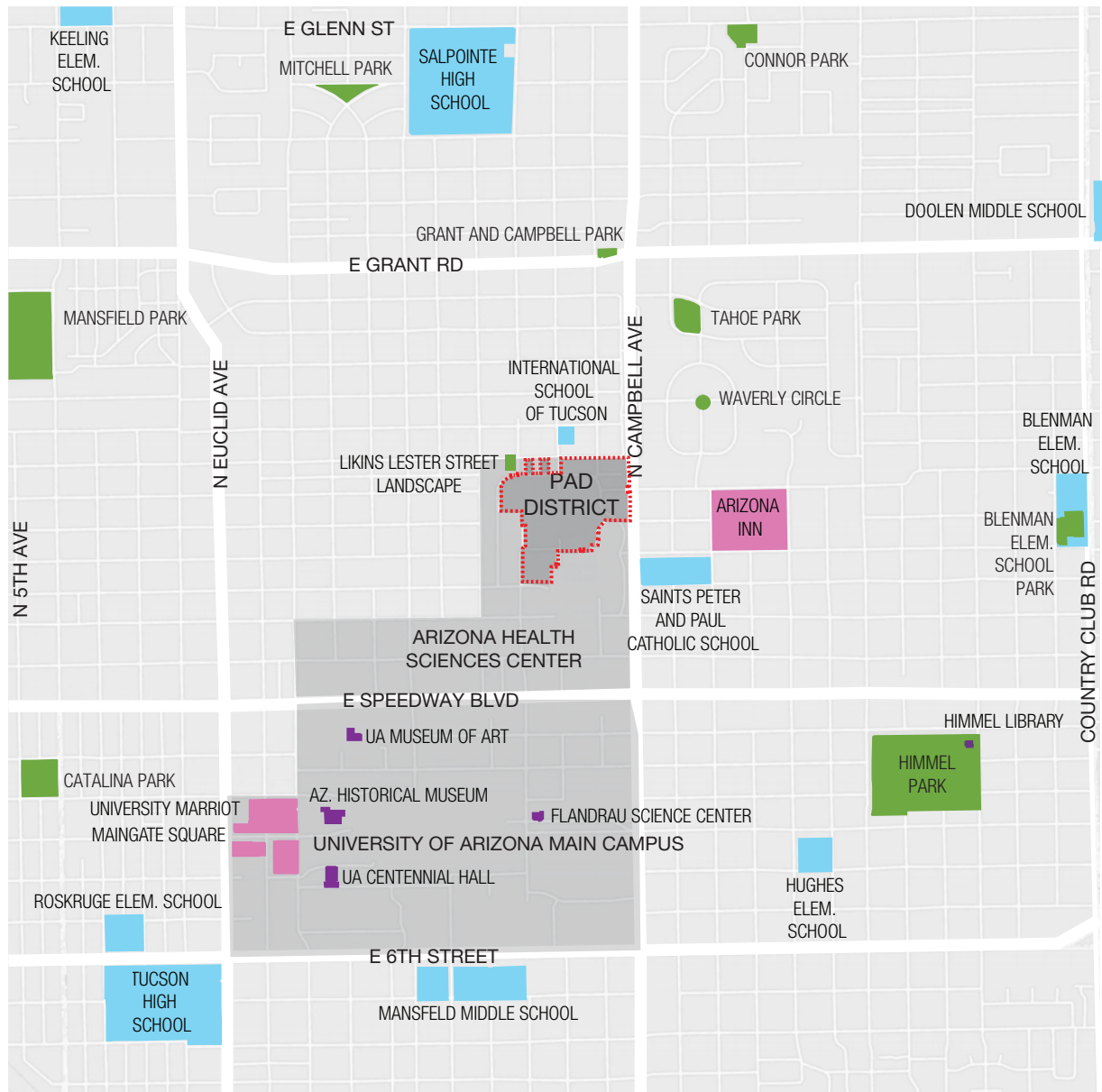
The built constraints impacting the proposed redevelopment of the PAD District come in the form of standard issues that impact any large infill project, with the following being especially challenging in this hospital setting: 1) the construction of major new medical facilities while the existing ones must remain in full operation; 2) the provision of needed utility services and upgrades for the new facilities while, once again, ensuring no interruptions of existing services, and 3) accomplishing all of the above in an environment that places a premium value on peace and quiet and the need to ensure a comfortable healing environment for its patients. While all of these issues place their own particular demands on the developer, none of them is extraordinary. Banner Health is well-versed in successfully managing such endeavors.

II.B

EXISTING EDUCATIONAL, COMMUNITY, & CULTURAL RESOURCES

The PAD District is located within a surrounding area that is rich in important education, community and cultural resources. Exhibit 12 provides an annotated depiction of these resources surrounding the Site.

Exhibit 12: Cultural Resources within the PAD Context



Scale 1:24,000



- Hospitality
- Parks
- Banner-UMC PAD District
- Arts and Science
- Schools

II.B.1 Arizona Health Sciences Center

The AHSC is the designated Precinct 2 of the UA Comprehensive Campus Plan, with the BUMC PAD District being a sub-portion of the larger AHSC campus. Outside of the PAD District, the AHSC facilities will continue to include the respective UA Colleges of Medicine, Nursing, Pharmacy, and Public Health, along with the numerous UA Facilities Management functions.

II.B.2 UA/UMC Facilities and University of Arizona Main Campus

The UA campus proper, lying to the south and west of the AHSC campus, represents the most significant educational, community, and cultural resource in the vicinity of the PAD District. The campus has a total population of more than 40,000 students, offers more than 300 degree programs, and consistently ranks in the top twenty institutions in terms of total research funding, according to annual rankings by the National Science Foundation. In real terms, the University provides national and worldwide notoriety to Tucson.

In addition to the profound academic qualities of the institution, UA also provides significant cultural offerings to the larger community, including the Arizona State Museum, the University Poetry Center, the Campus Arboretum, UA Center for Creative Photography, and Centennial Hall. Exhibit 12 provides a map of the various cultural resources surrounding the PAD District.

II.B.3 Public Schools and Other Educational Facilities

Exhibit 12 illustrates the following public schools and private educational facilities located within the PAD vicinity:

Public Schools

- Keeling Elementary School, located one mile to the northwest
- Doolen Middle School, located one mile to the northeast
- Blenman Elementary School, located one mile to the east
- Hughes Elementary School, located one mile to the southeast
- Mansfield Middle School, located ¾ mile to the south
- Tucson High School, located one mile to the southwest
- Roskrige Elementary School, located one mile to the southwest
- The UA Main Campus, located 1/4 mile to the south/southwest

Private Schools

- Salpointe Catholic High School, located one mile to the north
- St. Peter & Paul Catholic School, located 1/4 mile to the east/southeast (immediately across Campbell Avenue)
- International School of Tucson (former site of Jefferson Park Elementary), located to the immediate north

II.B.4 Cultural Resources

Exhibit 12 shows the location of the historic Arizona Inn hotel, on Elm Street, approximately one-quarter mile east of the PAD District and east of Campbell Avenue. The Inn was built in 1930 by Isabella Greenway, Arizona's first congresswoman. It was added to the National Register of Historic Places in 1988 and remains a highly popular destination for those seeking a quintessentially Tucson and Southwestern lodging and dining experience.

II.B.5 Jefferson Park Historic District

The Jefferson Park Historic District (JPHD) includes the northernmost portion of the PAD District along Lester Street. Several properties in this area are former residential structures that have been repurposed by the University and currently house various administrative and operational functions. Nonetheless, these properties are designated as "contributing structures" to the JPHD on its formal federal filing. These particular properties will be purchased by Banner Health as part of its larger acquisition of the BUMC PAD Property from the Arizona Board of Regents. The JPHD historic designation demands that particular care be exercised when implementing the aforementioned North Green buffer. This feature is discussed in more detail in Section III.D.4 (Multi-Use Drainage & North Green) of this PAD document and will require on-going coordination with Jefferson Park and the City of Tucson Office of Historic Preservation.



Existing UMC Main Entry
View from Plaza



II.C

EXISTING OPEN SPACE, RECREATION & TRAILS

II.C.1 On-Site Open Space Areas, Recreation & Pedestrian Ways

Approximately seven acres of the PAD District is functional or passive open space (see Exhibit 13). The most notable existing open space feature, and the only one specifically intended for outdoor recreation, is the 6,500 square-foot (SF) Children's Garden, which is located on the east side of the UMC North Garage. The remaining open space within the PAD area is either amenity landscaping or is found in various bufferyards.

Pedestrian ways within the PAD District are limited to a somewhat segmented sidewalk system that follows only portions of North Ring Road, together with a north-south sidewalk segment along Warren Avenue. The North Ring Road sidewalk, its segmented nature notwithstanding, is actually a portion of the designated Elm Street Enhanced Corridor and is described in greater detail in the following section. This Corridor is the primary pedestrian route from the neighborhoods lying west of the PAD Site to Campbell Avenue. The Warren Avenue sidewalk extends southward from the Jefferson Park neighborhood and through the PAD District, but its ultimate connectivity to points further south and to the UA main campus is interrupted at Adams Street, where the sidewalk abruptly ends in a parking lot and loading zone area.

South of the PAD District, the AHSC campus is linked to the University main campus by a system of interconnected plazas and pedestrian malls, together with the Warren Avenue underpass beneath Speedway Boulevard. This interconnected pedestrian route begins just south of the PAD District, on the west side of the AHSC Library.

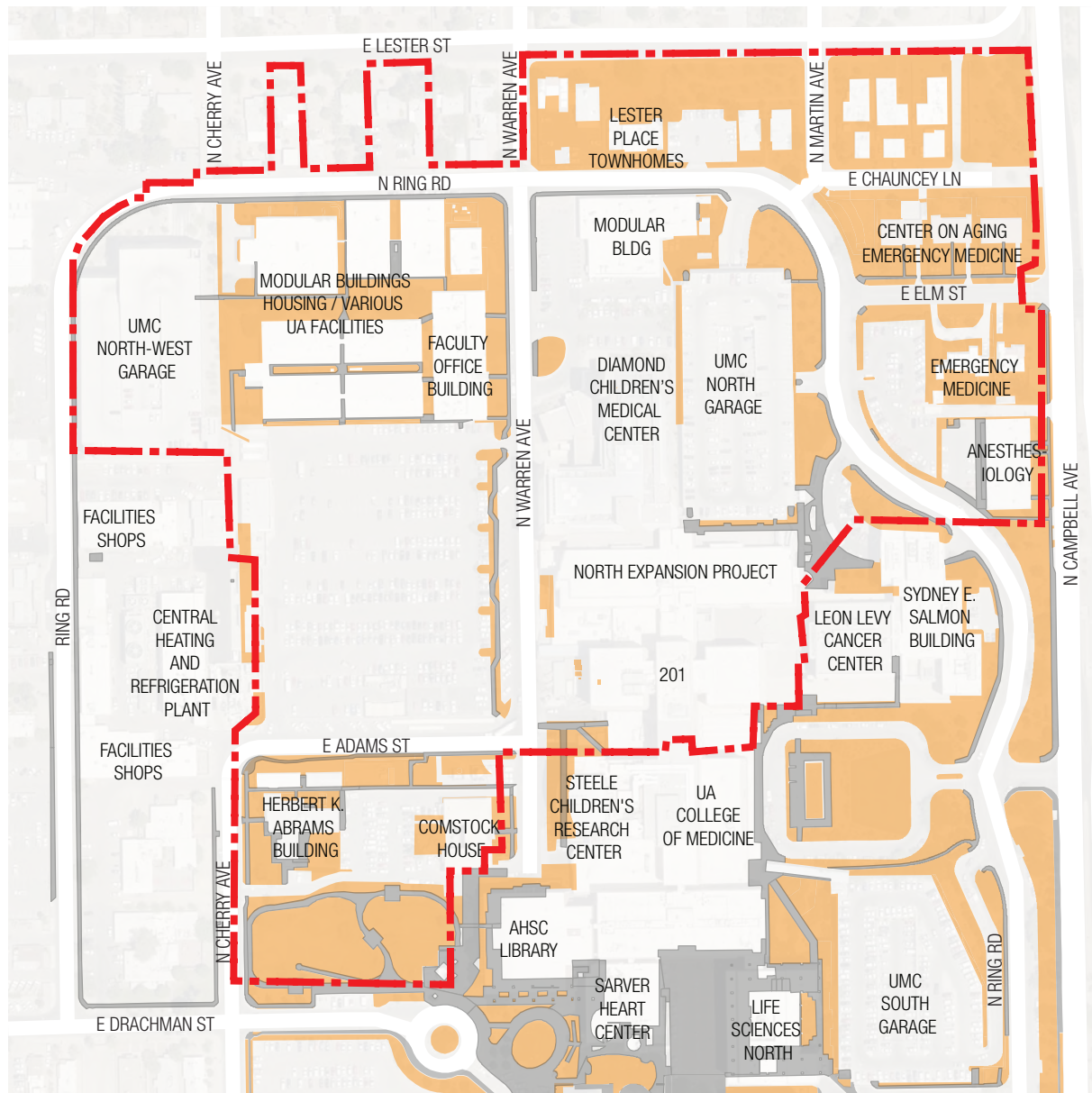
II.C.2 Off-Site Recreation & Trails

There are no public parks located in close proximity to the PAD District or within the one-mile square block defined by Speedway Boulevard, Grant Road, Campbell Avenue, and Euclid Avenue (refer to Exhibit 14 for a map of park facilities in the general PAD vicinity). At one time, an intergovernmental agreement was in place between the City of Tucson Department of Parks & Recreation and the Tucson Unified School District (TUSD), wherein the grounds of the former Jefferson Park Elementary School (immediately north of the PAD District) were designated and maintained as a neighborhood park. That agreement lapsed when the TUSD elected to close the school in 2011.

The Likins Lester Street Landscape is a small, private pocket park presented by Dr. Paula Fan in honor of retired UA former-president Dr. Peter Likins. It is located immediately north of the PAD District between two existing residential lots within Jefferson Park. Beyond that, the closest park to the PAD Site is Tahoe Park, which is a small public neighborhood green located southeast of the Campbell Avenue/Grant Road intersection in the Catalina Vista Neighborhood. Public parks located further away include Himmel Park to the southeast and Mansfield Park to the northwest (refer to Exhibit 14).

In conjunction with a past Campbell Avenue street improvement project undertaken by TDOT, a continuous frontage road and landscape border was constructed along the west side of Campbell Avenue, between Chauncey Lane and Grant Road, together with a small pocket park at the extreme northeast corner of the PAD District. These improvements provide a quality streetscape interface and a significant buffer for Jefferson Park residents.

Exhibit 13: On-Site Active/Passive Open Space Areas



Scale 1:2400



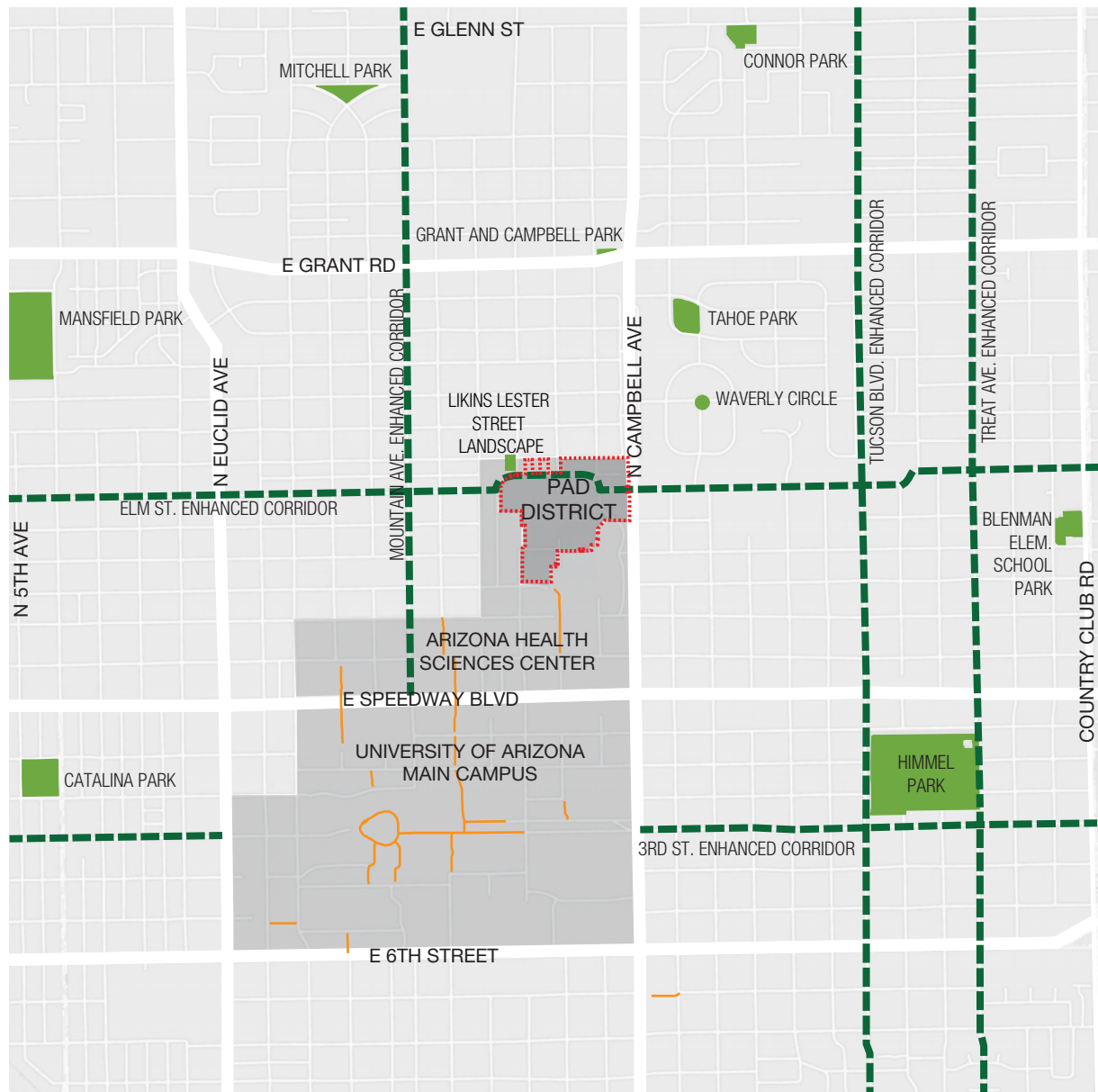
Banner - UMC PAD District

Existing Active/Passive Open Space Areas

With respect to designated trails, Elm Street is formally identified on the Pima County Regional Trails System Master Plan (August, 2010) as an “Enhanced Corridor”. The Master Plan defines enhanced corridors as routes that, “generally follow existing local or collector streets that carry a relatively low volume of automobile traffic”. The Elm Street Enhanced Corridor is nearly eight miles in total length, extending from Fairview Avenue on the west to Wilmot Road on the east. The Corridor enters the PAD District on its east end at the intersection of Campbell Avenue and Elm Street, then follows the alignment of the on-Site North Ring Road, across the northern portion of the district, until North Ring Road re-intersects with Elm Street.





A variety of features have been used to promote pedestrian and bicyclist use of designated Enhanced Corridors, including continuous bicycle lanes and accessible sidewalks, amenity landscaping, Site furniture, connections to other modes of transit, and public art. With respect to the PAD District, the Elm Street Enhanced Corridor can best be implemented by facilitating bicycle/pedestrian connectivity to the north-south Mountain Avenue Corridor, which is off-Site to the west. This north-south corridor ultimately connects to the Rillito Riverpark Path, which is a primary multi-use component of the regional Pima County Loop Trail.

Exhibit 14: Trails, Pedestrian Ways & Parks



NTS

LEGEND 

- Existing Shared Use Path 
- Designated Enhanced Corridor 
- Conceptual Alignment Per Pima County Regional Trail System Masterplan 
- Banner-UMC PAD District 
- Public Parks 

Given the PAD Site's existing improvements, it is not advisable to route the aforementioned Elm Street Corridor directly west through the PAD District due to the hospital and emergency department functions that occur therein, as well as the fact that existing off-Site University maintenance and facilities-management operations to the immediate west effectively preclude any further westward connectivity. The Corridor can be accommodated by allowing pedestrian and cyclist traffic to enter the PAD District at Elm Street, then routing it through the proposed North Green buffer and directing it northward to Lester Street, where it can continue westward directly to the Mountain Avenue Corridor.





II.D EXISTING TRANSPORTATION & CIRCULATION

Within the vicinity of the PAD District, a number of streets provide direct access or facilitate important circulation functions to and from the Property. In addition, multi-modal opportunities exist within the current medical campus, which include bus/transit service, streetcar access, and bicycle and pedestrian facilities.

II.D.1 Relevant Public Streets

Streets that provide for mobility and access to the PAD Site are the following (refer to Exhibit 15):

A. Campbell Avenue

Campbell Avenue is a major north-south arterial roadway that runs directly east of the existing UMC campus. It is a six-lane roadway with raised medians, bike lanes, and sidewalks and has a 35 MPH posted speed limit. The road is constructed to the maximum cross-section supported by the City of Tucson Major Streets and Routes Plan.

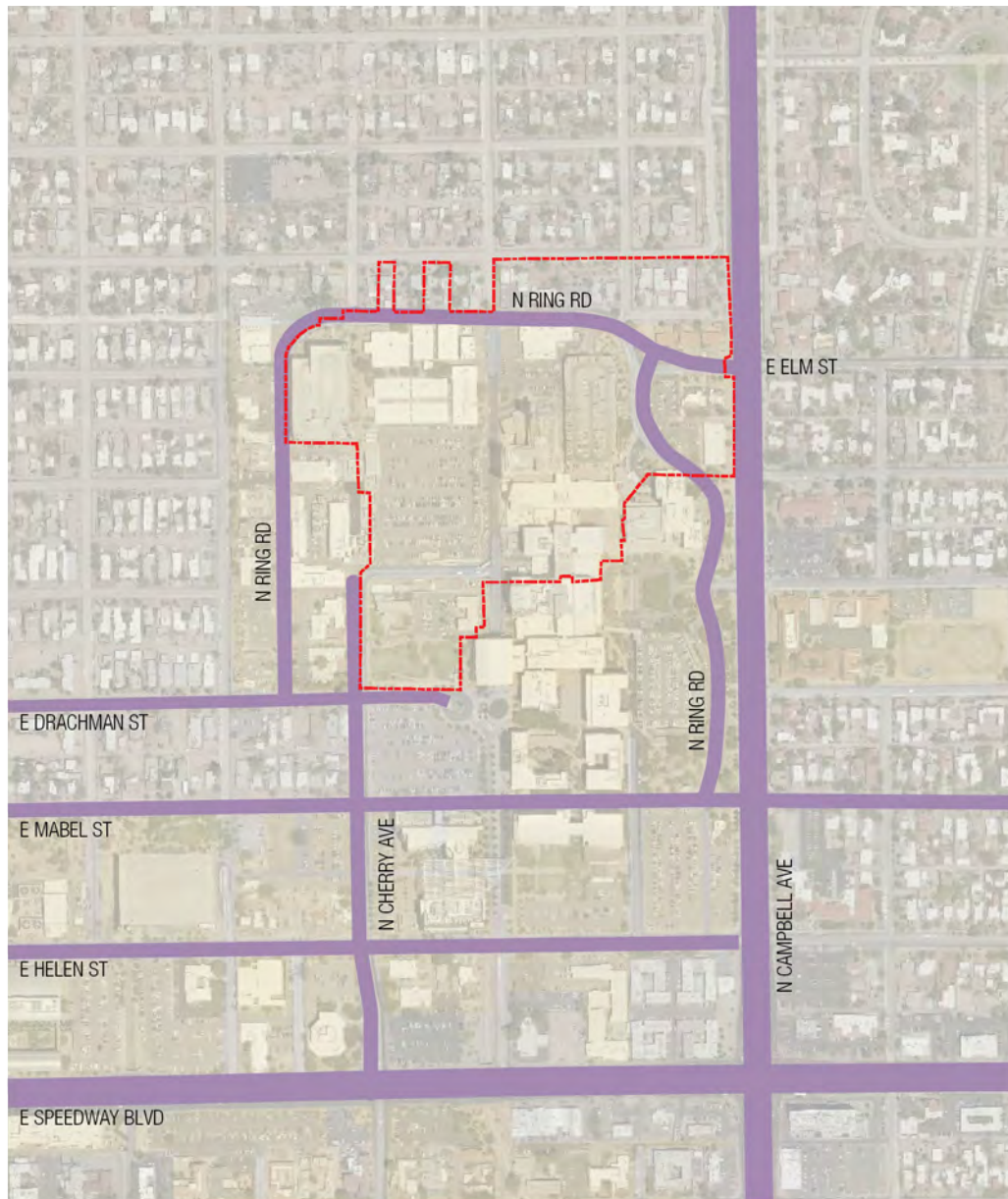
B. Speedway Boulevard

Speedway Boulevard is the major east-west arterial roadway in the vicinity, located approximately ¼ mile south of the PAD District and traversing directly through the northern portion of the UA main campus. Speedway Boulevard is a six-lane arterial roadway with raised medians, bike lanes, and sidewalks and has a 35 MPH posted speed limit. The road is constructed to the maximum cross-section supported by the City of Tucson Major Streets and Routes Plan.

C. Local Public Streets

Helen Street serves as a minor east-west collector street that provides access to many of the existing UA parking facilities and buildings on the north side of Speedway Boulevard. Cherry Avenue serves as a minor north-south collector street providing access to the main UA campus, south of Speedway Boulevard. Cherry Avenue also connects to North Ring Road within the PAD District. The intersection of Cherry Avenue and Speedway Boulevard is signalized.

Exhibit 15: PAD District within Context of Pertinent Streets



LEGEND 

Banner - UMC PAD District 

Relevant Major Streets, Local Streets, or Private Roads 

D. North Ring Road

Internal circulation within the PAD District and adjacent AHSC campus is provided by the 0.8 mile long North Ring Road. North Ring Road is a low speed, two-lane roadway with a speed limit of approximately 20 MPH. It extends from Cherry Avenue, beginning at Drachman Street, north to Elm Street and then south to Mabel Street.

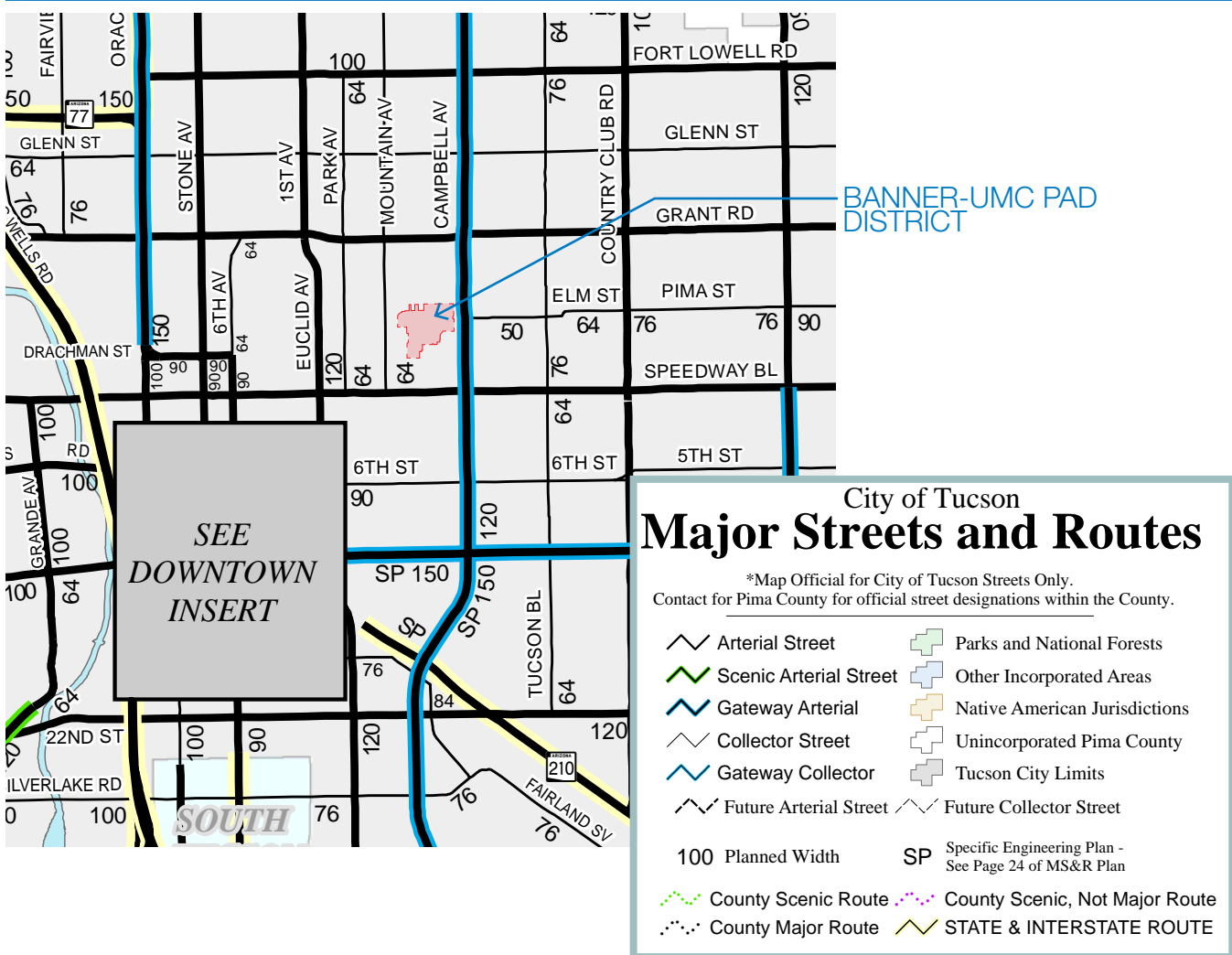
II.D.2 Major Streets & Routes Considerations

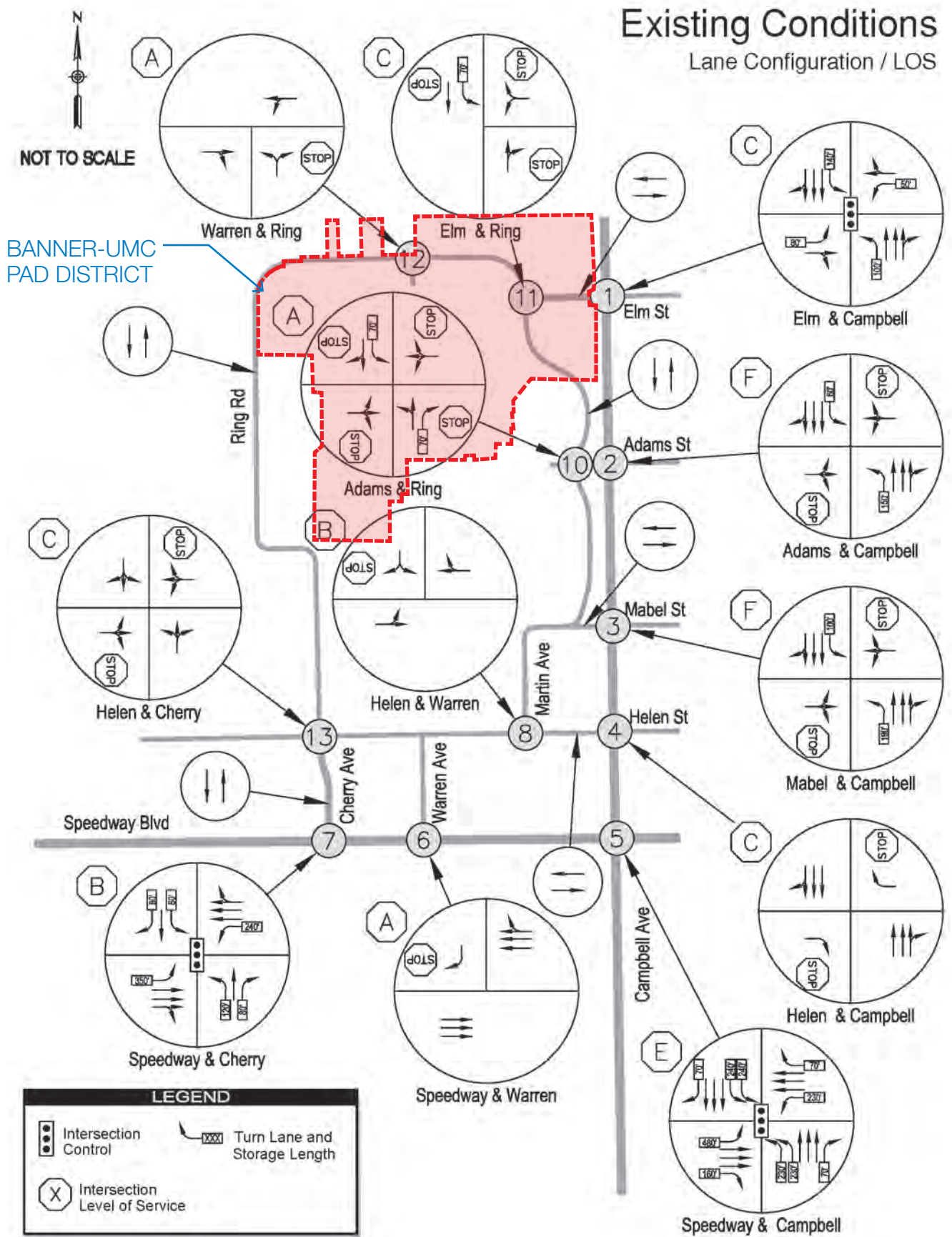
The City of Tucson Major Streets and Routes Plan (MS&R) identifies the general location and size of existing and proposed freeways, arterial and collector streets, future rights-of-way, setback requirements, typical intersections and cross sections, and gateway and scenic routes (see Exhibit 16). The MS&R defines the future right-of-way requirement for both Campbell Avenue and Speedway Boulevard as one hundred twenty feet (120'). The existing Campbell Avenue total right-of-way width along the PAD District frontage is generally one hundred twelve feet (112'), with this dimension being off-center such that the western half right-of-way (i.e. on the PAD side of the centerline) is in excess of the required sixty-foot (60') half right-of-way width mandated by the MS&R.

Campbell Avenue is also designated a Gateway Arterial, which identifies it as an especially important route to and from major employment centers, shopping areas, recreational areas, and transportation centers and which is accordingly used regularly by a large number of residents and visitors. The purpose of this formal designation is to generally improve the appearance of the City's built environment through the use of quality standards for the design and landscaping of the roadway, as well as for adjacent developments.

The existing street conditions, lane configurations, and Level of Service (LOS) ratings for all of the primary intersections in the PAD District vicinity are illustrated in Exhibit 17. These elements are taken from a comprehensive Traffic Analysis prepared by Kimley-Horn in conjunction with this PAD and discussed further below (see Appendix B for the entire Kimley-Horn study).

Exhibit 16: Excerpt from City of Tucson Major Streets & Routes Plan





II.D.3 Public Transportation Components

A. Sun Tran Bus Routes & Cat-Tran Shuttle Service

Sun Tran provides transit service to the PAD District, with bus stops along Campbell Avenue and Speedway Boulevard (see Exhibit 18). A variety of routes, including express routes, serve the existing medical campus. Numbered bus routes along Speedway Boulevard include Nos. 4, 5, 102X, 103X, 105X, and 109X. Numbered bus routes on Campbell Avenue include Nos. 9, 15, 20, and 103X. In addition, the UA Cat Tran system circulates within the current AHSC campus.

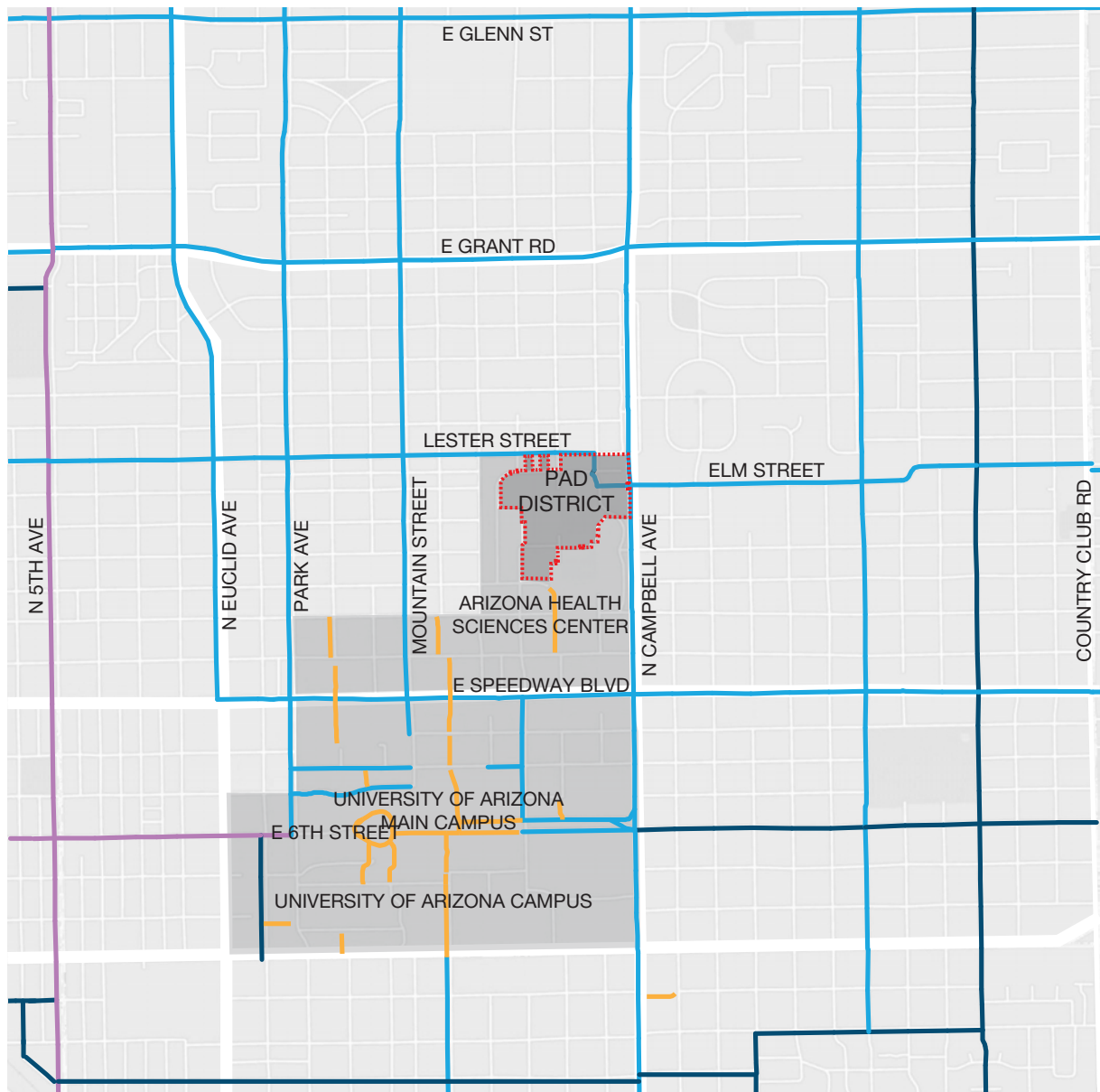
Exhibit 18: Public Transportation Components



B. Sun Link Streetcar Facilities

The recent construction of the 3.9-mile first segment of the modern streetcar system, now known as Sun Link, was completed in the summer of 2014 (refer to Exhibit 18). The streetcar line begins at Warren Avenue and Helen Street, just south of the PAD District, and provides direct access through the UA main campus and ultimately to downtown Tucson, terminating on the west side of Interstate 10. Sun Link's service provides ten to fifteen (10-15) minute headways (i.e. the time interval between vehicles operating in a transit system) during the weekday, with that interval lengthening from twenty to thirty (20-30) minutes during the evenings and on Saturdays. The streetcar operates from 7:00 am to 10:00 pm on Monday through Wednesday, from 7:00 am to 2:00 am on Thursday and Friday, from 8:00 am to 2:00 am on Saturday, and from 8:00 am to 8:00 pm on Sunday.

Exhibit 19: Existing Bike Routes



NTS

LEGEND 

- Designated Bike Route — Route with Shared Lane Markings — Banner-UMC PAD District - - -
- Route with Shared Shoulder — Shared Use Path —

C. Existing & Planned Bike Routes

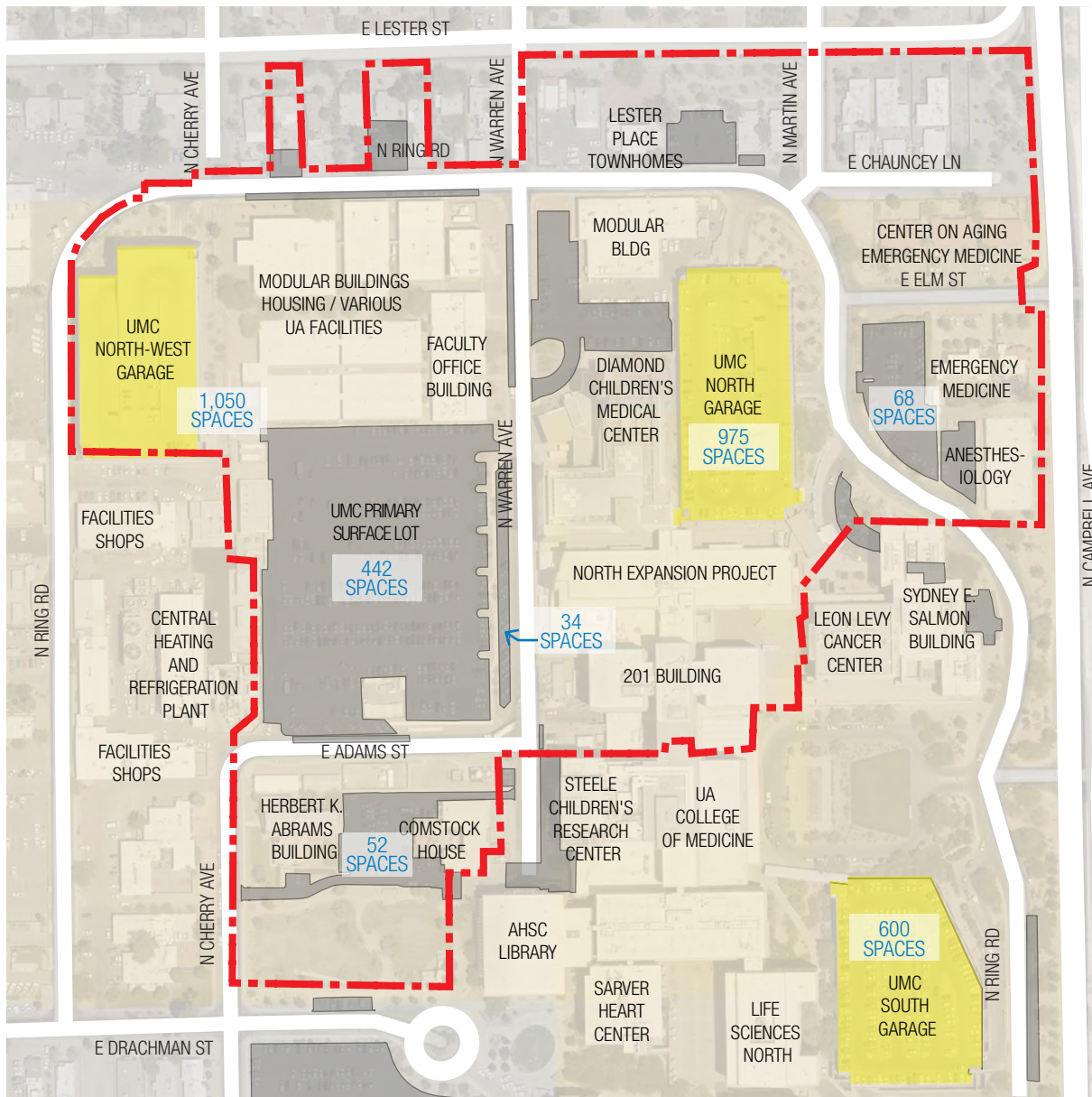
The PAD District is served by a robust network of designated bicycle routes and bike lanes (see Figure 19 above). Both Speedway Boulevard and Campbell Avenue provide a dedicated bike lane or striped shoulder. An east-west low-volume bicycle route traverses through Lester Street, North Ring Road within the PAD District, and ultimately to Elm Street. In addition, an existing shared-use path along the Warren Avenue alignment serves as a north-south route for both cyclists and pedestrians. The Warren Avenue and Highland Avenue underpasses (further south and west of the PAD District) provide grade-separated crossings beneath Speedway Boulevard to facilitate direct access to the UA main Campus. The Warren Avenue underpass is a pedestrian-only connection (bikes must be walked), while the Highland Avenue underpass accommodates both pedestrians and bicyclists, making it the best southward connective route to the main campus.

According to data obtained from the City of Tucson and the UA, there are no current plans for the designation or construction of any new bicycle routes in the PAD vicinity.

II.D.4 Existing Parking Facilities & Structures

Being an existing medical campus, the PAD District already contains extensive parking facilities, including several multi-level parking structures and numerous surface lots. These facilities are illustrated in Exhibit 20.

Exhibit 20: Existing Parking Facilities



Scale 1:2400



- Boundary of PAD District - - -
- Existing Surface Parking Lot
- Existing Parking Garage



- Existing NW Parking Garage 1
- UMC Primary Surface Lot 2



II.E EXISTING UTILITY INFRASTRUCTURE

Exhibit 21 provides a simplified depiction of the major existing utility lines serving the PAD Site. A further description of these utilities, by type, is provided below.

II.E.1 Existing Utilities

A. Public & Private Sewer

Wastewater service for the BUMC PAD Site is currently provided by the Pima County Regional Wastewater Reclamation Department (PCRWRD); the same will be true with the redeveloped Site. An existing private 8" vitrified clay pipe (VCP) line, located along the extended Cherry Avenue alignment, ultimately ties into RWRD public sewer Manhole #8948-08. This system essentially serves those existing buildings on the west portion of the PAD Site. A second existing eight-inch (8") VCP private line, located along the west side of Warren Avenue, ultimately ties into RWRD public sewer at Manhole #8895-01. This system essentially serves those existing buildings adjacent to (and east of) Warren Avenue. Most of the above flows are directed to a twelve-inch (12") RWRD public sanitary sewer line that flows northward from the PAD District, within the Warren Avenue right-of-way, ultimately traversing to a regional interceptor sewer within the Rillito River corridor.

Coordination will be necessary with the RWRD to formally establish and reserve the public sewer system capacity sufficient for the proposed new hospital and bed towers, together with determining whatever system augmentations might be needed to physically ensure same.

A separate consideration is the presence of a RWRD monitoring manhole near the existing main lobby entry of DCMC. Monitoring manholes have special access and protection requirements that must be accommodated with any new Site improvements in the immediate vicinity.

B. Potable Water

The existing PAD Property and adjacent AHSC campus are both served by Tucson Water, with two on-Site wells that are owned and maintained by the UA available as back-up potable water service. The redeveloped PAD District will continue to receive its potable water service from Tucson Water, with the existing UA wells available for back-up under an arrangement between Banner Health and the University.

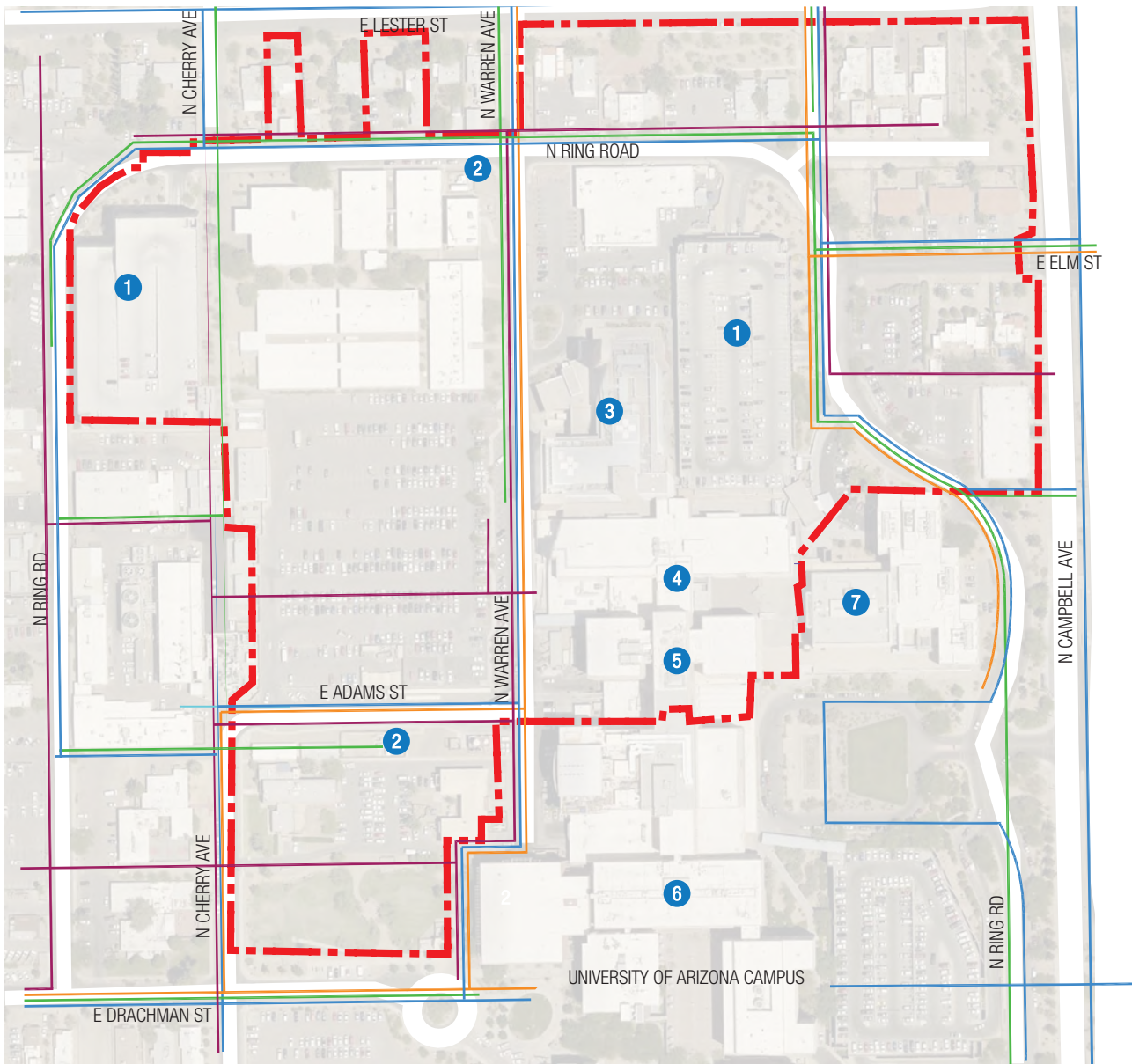
C. Dry Utilities

Existing infrastructure for natural gas (Southwest Gas), electric (Tucson Electric Power), cable television (Cox Communications), and telephone (Century Link) is already in place and well established throughout the PAD District. All necessary contractual arrangements, relocations, augmentations, and easement provisions will be arranged with each of these various servicing companies during final design and engineering of the BUMC redevelopment program.

II.E.2 Overall Project Serviceability

The BUMC PAD is an extensive infill and redevelopment project. The basic framework of utility infrastructure necessary to ultimately serve the project is already in-place or is project-convenient. While relocations, augmentations, and/or various upgrades will ultimately be necessary, to one extent or another, to provide the improved utility services needed for the new hospital and the other BUMC repurposed facilities, and while some of these efforts might be somewhat complicated in nature, all of them fall within the realm of the normal engineering and design challenges that routinely accompany large-scale urban infill redevelopment.

Exhibit 21: Existing Primary Utility Lines (Public and Private)



- | | | | |
|---------------------------|-----------------------|--------------|---------------------------------|
| Existing Parking Garage ① | 201 Building ⑤ | Electric ——— | Banner - UMC PAD District - - - |
| UA Well Site ② | College of Medicine ⑥ | Gas ——— | Water Main ——— |
| DCMC ③ | Cancer Center ⑦ | | Sewer ——— |
| NEP ④ | | | |

LEGEND 



II.F

ENVIRONMENTAL FACTORS

Three primary environmental factors are relevant to the BUMC PAD, namely surface drainage & hydrology, existing native plant resources and landscaping, and soils. Each of these is discussed further below.

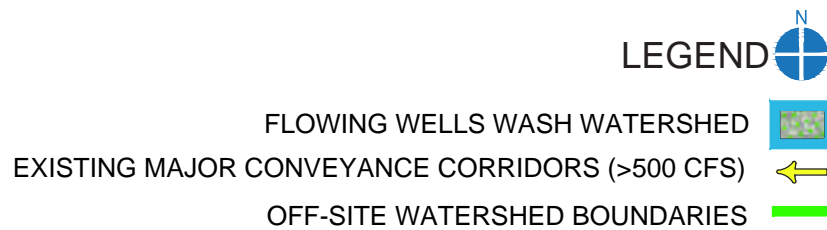
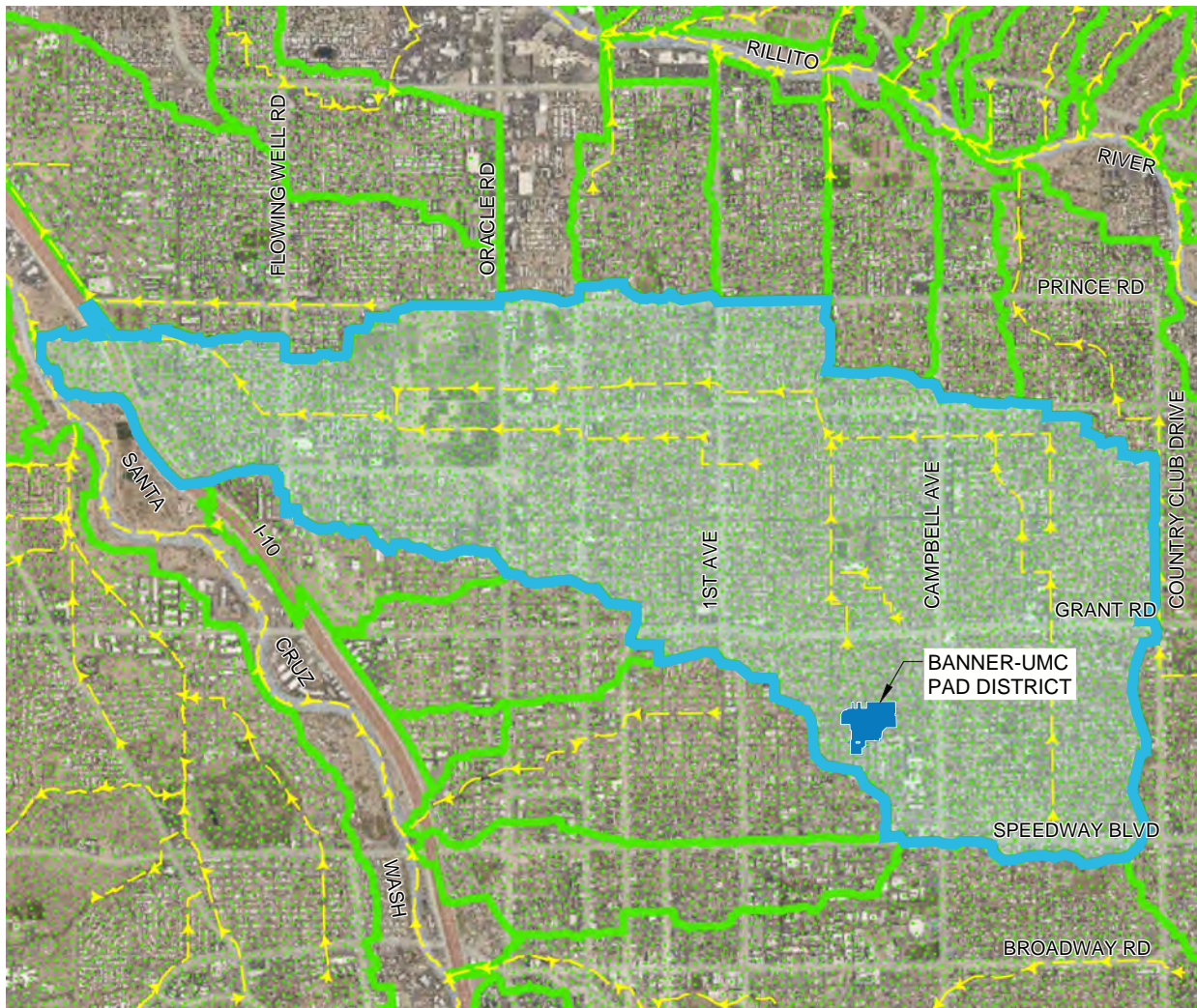
II.F.1 Existing Drainage Patterns & Site Hydrology

The PAD District is a fully developed and urbanized medical campus with numerous buildings, pedestrian walkways and vehicular roadways. As a result, the majority of the existing campus is already impervious surface, generally sloping from southeast to northwest, with much of the current stormwater conveyance occurring within the Site's existing interior roadways. The campus has been developed over a period of many years, but never under the guidance of a comprehensive master drainage plan addressing all on-Site conditions and downstream impacts. Instead, drainage matters have historically been addressed on a case-by-case basis or in piecemeal fashion as development proceeded, leaving significant larger drainage issues insufficiently addressed. The BUMC PAD provides the first opportunity to effectuate a comprehensive drainage solution for the Property, as well as help ameliorate long-standing downstream issues in the Jefferson Park Neighborhood.

A. Off-Site Characteristics & Downstream Issues

The BUMC PAD Site falls within the Flowing Wells Wash regional watershed (See Exhibit 22). Surface runoff from this watershed proceeds in a generally northwesterly direction and ultimately outfalls into the Santa Cruz Wash west of Interstate 10. The PAD Site is near the upstream limits of the watershed and there are no designated regional conveyance corridors through the Site. Some limited public storm-drain infrastructure does exist within the Property.

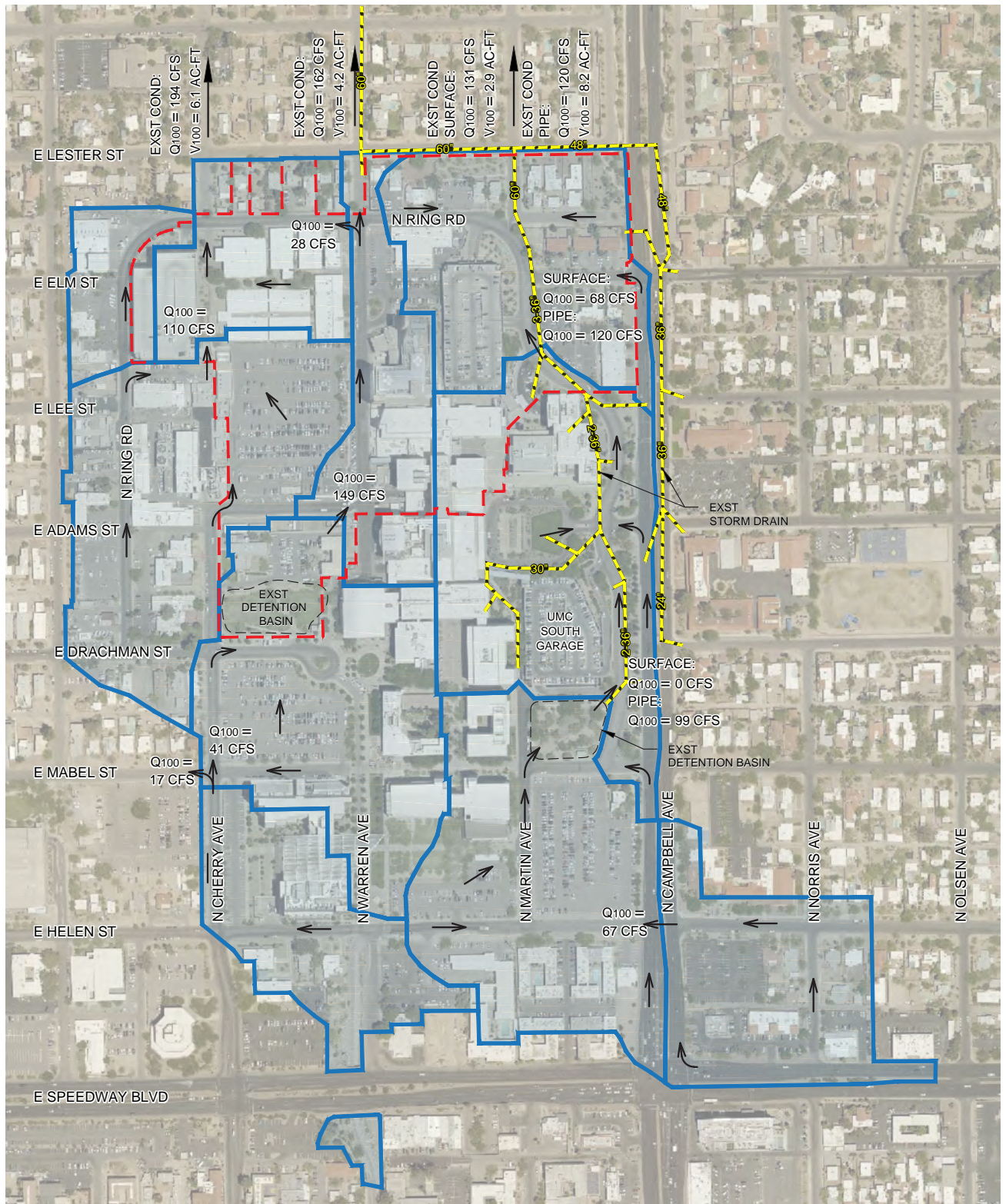
Exhibit 22: Regional Watersheds



Part of the surface run-off from within this watershed flows into and through the PAD Site from the adjacent AHSC campus to the south. With respect to the PAD District, this incoming AHSC run-off represents off-Site flow that must be accepted and addressed in accordance with City of Tucson Floodplain regulations. The combined runoff from the AHSC Property, together with that currently generated on the PAD Property, continues northward and enters the Jefferson Park Neighborhood at three distinct points of concentration (see Exhibit 23 for a depiction of the PAD District, points of concentration, and existing stormdrain infrastructure).


The stormwater flows exiting the PAD District have historically resulted in downstream drainage issues within the JPN, including flooding conditions during certain storm events. In 2004, the City of Tucson proceeded with the design of significant stormwater improvements intended to address these prevailing drainage issues. Two (2) large-diameter public storm drains were envisioned under this effort: 1) a line extending from the Cherry Avenue to the existing Mountain Avenue storm drain, and 2) a second line within Martin Avenue ultimately connecting to the same Mountain Avenue system. Unfortunately, only the Martin Avenue line was ever constructed. This line extends through the PAD District, beneath the on-Site North Ring Road, where it receives run-off from an existing detention basin just south of the UMC South Garage, together with volume received from a separate, private stormdrain that collects run-off from North Ring Road pavement.




Exhibit 23: Local Watersheds & Flow Rates



SITE ANALYSIS

LOCATION OF HISTORICAL SITE OUTFALL FLOW →
 DIRECTION OF HISTORICAL ON-SITE FLOW →

LEGEND 

BOUNDARY OF PAD DISTRICT 
 LOCAL WATERSHED DRAINAGE BOUNDARY 
 EXISTING STORM DRAIN 

B. On-Site Characteristics

Within the PAD Site, existing stormwater management facilities are limited to the aforementioned Martin Avenue/North Ring Road storm drain system and the small detention basin south of the UMC Garage. No fully comprehensive or coordinated system of improvements to capture and direct Site runoff to properly-size retention/detention facilities, or to minimize on-Site ponding, or to reduce or control the concentrated storm flows exiting the PAD Site is presently in place. Site runoff that is not captured and conveyed by the Martin Avenue storm drain system described above is instead surface-drained to the north (within on-Site streets and roadways), exits the PAD Site, and enters the Jefferson Park Neighborhood (JPN) at the three points of concentration mentioned earlier, namely the alignments of Cherry Avenue, Warren Avenue, and Martin Avenue where they leave the PAD Property (shown on both Exhibits 23 and 24).

In conjunction with this BUMC PAD, an initial hydrologic study was performed to quantify peak flows and runoff volumes. This study was completed in conformance with adopted City of Tucson guidelines and policies and utilized 2005 topographic data, 2014 aerial photography, and supplemental field reconnaissance. Peak flow calculations were derived using the City of Tucson Method for Estimating Flood Peaks and Flood Hydrographs (Revised April, 1998). Hydrographs were combined and routed within the HEC-1 Flood Hydrograph Package. The existing on-Site storm drain facilities were factored into the model, which was run for the 2-year, 5-year, 25-year, 50-year, and 100-year storm events using a 1-hour storm duration. Flow paths and the 100-year existing flow rate (Q100) for various points within the watershed, including the exiting points of concentration, are illustrated on Exhibit 23.

The above hydrologic results and analyses completed with this PAD effort are based upon archival Site data and information, and are intended primarily to provide a reliable basis for comprehensive stormwater planning. These results will be further refined in conjunction with a final, engineered Site plan of the proposed Site improvements and shall undergird the full Drainage Report that will accompany the future Development Package and civil construction drawings for the project.

Exhibit 24: Existing Stormwater Surface Flows Exiting the PAD District

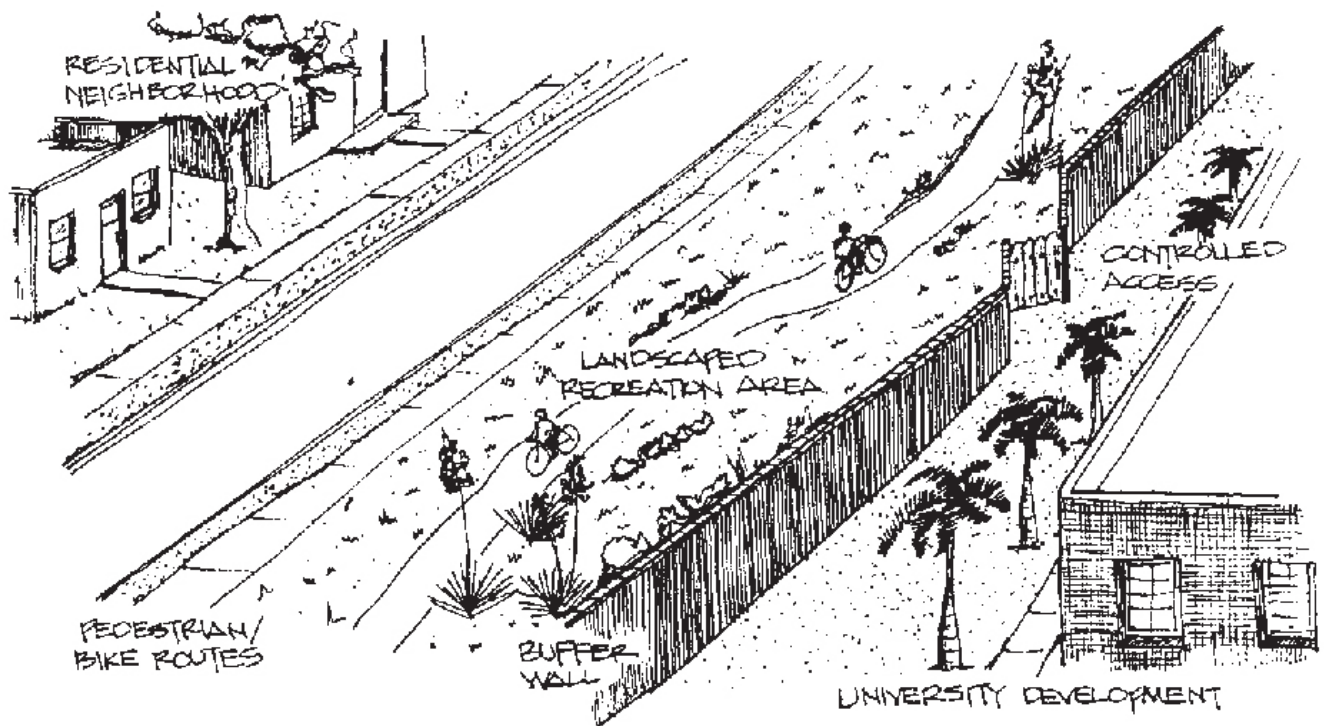


C. Conceptual Solutions Contemplated by Prior Planning Efforts

In February, 2009, the UA prepared the Surface Water Master Implementation Plan (SWMIP), which outlined a series of proposed drainage improvements to the AHSC campus. The BUMC PAD Site was, at that time, a part of the AHSC campus and, as such, was wholly contemplated in the SWMIP Study. The SWMIP was reviewed and compared with the current PAD-related drainage analyses described above. The primary target recommendation of SWMIP was the construction of multiple, strategically placed stormwater catchment systems, throughout the AHSC campus, capable of capturing and containing one hundred percent (100%) of the run-off from the 100-year storm event. The proposed SWMIP catchments were all sized to this level, with the acknowledgement that full capture of the 100-year volume might be impossible in all campus areas. The conceptual catchments identified in the SWMIP are the guiding framework of the proposed storm drain and catchment facilities for the BUMC PAD District. Final sizing of same, together with the design-year storm event that the facilities are intended to capture, will be driven by the practical realities of integrating these major improvements into a redeveloped medical campus, together with appropriate cost-benefit factors of system efficiency versus attendant cost.

In addition to the above SWMIP study, past planning efforts by both the UA and the City of Tucson have recognized the existing drainage realities of the PAD Site (and the larger AHSC campus), as well as the impacts of same on the downstream Jefferson Park neighborhood. As a result, the UA Comprehensive Campus Plan (UACCP), the Jefferson Park Neighborhood Plan (JPNP), and the University Area Plan (UAP) all incorporated a “green edge” component along the north boundary of the PAD District to accomplish the following: 1) provide an effective greenway and visual buffer for the JPN from the current and future medical campus; and 2) provide the opportunity for a multi-use buffer and surface retention/detention facility that would capture a portion of the run-off currently exiting the medical campus and thereby help ameliorate existing downstream drainage impacts experienced by JPN. See Exhibit 25 for an excerpt from the UAP. This multi-use buffer/drainage component envisioned by these prior planning efforts will be initiated by the BUMC PAD as the North Green, which is discussed in more detail in Section III.D.4 (Multi-Use Drainage & North Green) of this PAD document.

Exhibit 25: City of Tucson University Area Plan (UAP) “Greenbelt” Concept



II.F.2 Landscape Inventory & Pertinent Landscape Regulations

In practical terms, it can be said that the existing landscaping and plant materials within the current PAD District are somewhat sparse in nature. This is primarily due to the fact that many of the current campus facilities were/are temporary in nature (e.g. the numerous modular buildings). There was little wisdom in implementing permanent landscape features around such temporary structures, or in locations where major future improvements were envisioned by the adopted UA Comprehensive Campus Plan. With this in mind, a comprehensive inventory of protected/native and non-native plants within the PAD District is provided in Tables 1 and 2.

Table 1: Native Plant Inventory

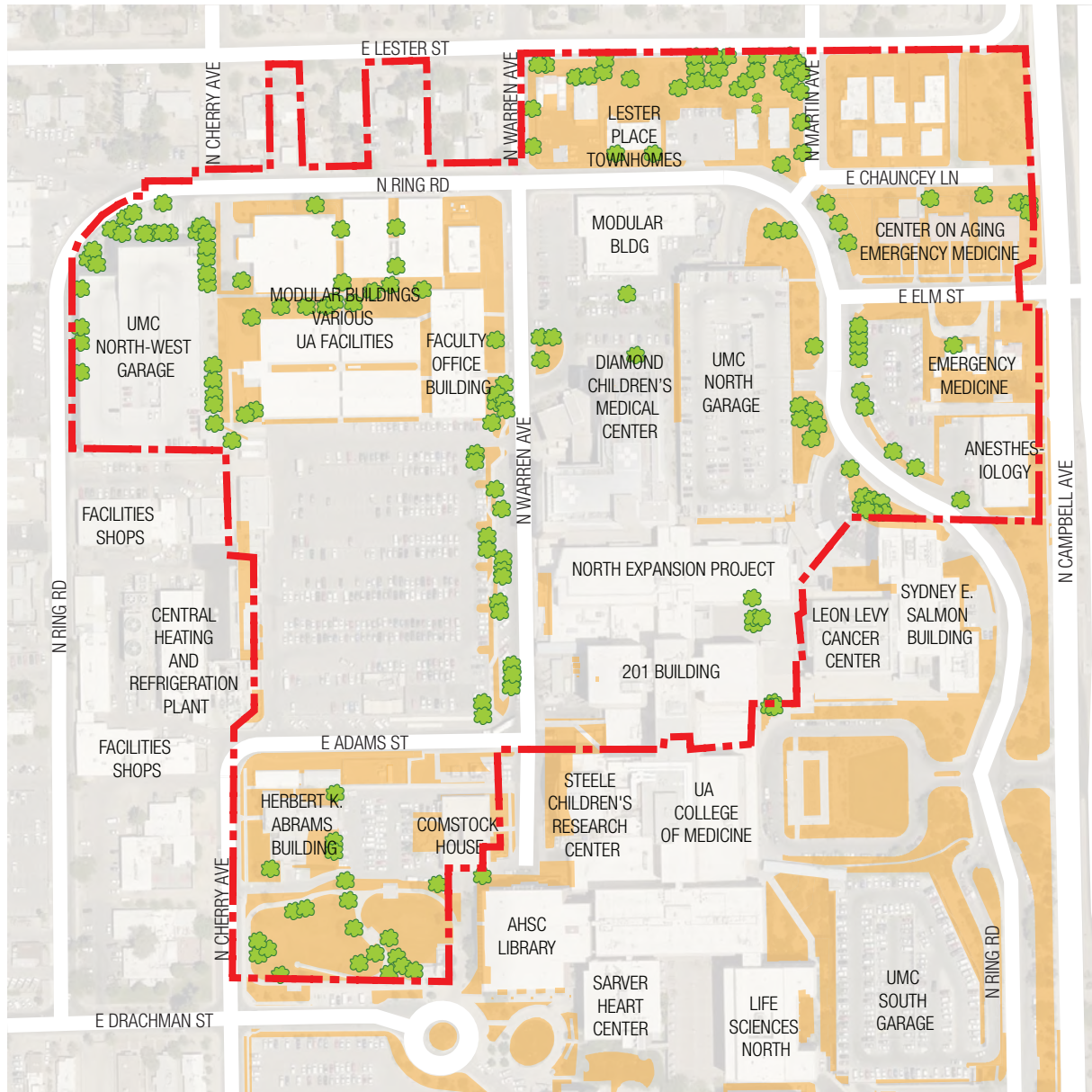
Botanical Name	Common Name	Qty.
<i>Celtis reticulata</i>	Netleaf Hackberry	4
<i>Chilopsis linearis</i>	Desert Willow	48
<i>Fouquieria splendens</i>	Ocotillo	1
<i>Olneya tesota</i>	Ironwood	10
<i>Parkinsonia florida</i>	Blue Palo Verde	7
<i>Prosopis velutina</i>	Velvet Mesquite	46
<i>Washingtonia filifera</i>	California Fan Palm	1

Table 2: Non-Native Plant Inventory

Botanical Name	Common Name	Qty.	Botanical Name	Common Name	Qty.
<i>Bauhinia lunarioides</i>	Chihuahuan Orchid Tree	5	<i>Parkinsonia aculeata</i>	Mexican Palo Verde	2
<i>Bauhinia sp.</i>	Orchid Tree	3	<i>Parkinsonia x</i>	Desert Museum	14
<i>Callistemon viminalis</i>	Weeping Bottlebrush	7	<i>Phoenix canariensis</i>	Canary Island Date Palm	12
<i>Ceratonia siliqua</i>	Carob	1	<i>Phoenix dactylifera</i>	Date Palm	4
<i>Chamaerops humilis</i>	Mediterranean Fan Palm	4	<i>Pinus canariensis</i>	Canary Island Pine	1
<i>Chitalpa tashkentensis</i>	Chitalpa	5	<i>Pinus eldarica</i>	Mondel Pine	5
<i>Citrus aurantium</i>	Sour Orange	11	<i>Pinus halepensis</i>	Aleppo Pine	3
<i>Cocculus laurifolius</i>	Hindu Laurel	1	<i>Platyclusus orientalis</i>	Oriental Arborvitae	5
<i>Cordia boissieri</i>	Texas Olive	6	<i>Podocarpus macrophyllus</i>	Japanese Yew Pine	5
<i>Cupressus sempervirens</i>	Italian Cypress	1	<i>Prosopis glandulosa</i>	Honey Mesquite	10
<i>Cycas revoluta</i>	Sago Palm	5	<i>Prosopis sp.</i>	Unknown Mesquite	10
<i>Dalbergia sissoo</i>	Sissoo Tree	4	<i>Quercus buckleyi</i>	Texas Red Oak	3
<i>Eucalyptus microtheca</i>	Coolibah	5	<i>Quercus sp.</i>	Unknown Oak	1
<i>Eucalyptus papuana</i>	Ghost Gum	4	<i>Rhus lancea</i>	African Sumac	1
<i>Eucalyptus sp.</i>	Unidentified Eucalyptus	2	<i>Syagrus romanzoffiana</i>	Queen Palm	3
<i>Eysenhardtia orthocarpa</i>	Kidneywood	4	<i>Thuja sp.</i>	Arborvitae	3
<i>Fortunella margarita</i>	Kumquat	1	<i>Trachycarpus fortunei</i>	Windmill Palm	5
<i>Jacaranda mimosifolia</i>	Jacaranda	4	<i>Vachellia farnesiana</i>	Sweet Acacia	5
<i>Juniperus chinensis</i>	Chinese Juniper	1	<i>Vauquelinia californica</i>	Arizona Rosewood	2
<i>Ligustrum lucidum</i>	Common Privet	1	<i>Washingtonia filifera</i>	California Fan Palm	1
<i>Myrtus communis</i>	Twisted Myrtle	2	<i>Washingtonia robusta</i>	Mexican Fan Palm	20
<i>Olea europaea</i>	European Olive	5	<i>Yucca gloriosa</i>	Spanish Dagger	1

The landscape of the entire UA main campus is generally managed as an arboretum, with arid and semi-arid plants from climates around the world. Some of the established tree specimens are recognized as being amongst the largest of their kind in Arizona and, in some instances, the very first example of the species planted in the United States. While the main campus incorporates many exotic species into its plant palette, the PAD District will further a landscape concept that will emphasize those plants that are indigenous to the arid desert Southwest. This approach, together with the general expansion and densification of landscape areas on the redeveloped PAD District, will ensure a well-integrated landscape theme throughout the Banner-UMC PAD District and the adjacent AHSC, while still respecting the history and flavor of the UA main campus.

Exhibit 26: Existing Open Space and Native Tree Inventory



Scale 1:2400



- Boundary of PAD District - - -
- Existing Passive/Active Open Space
- Existing Native Tree ●

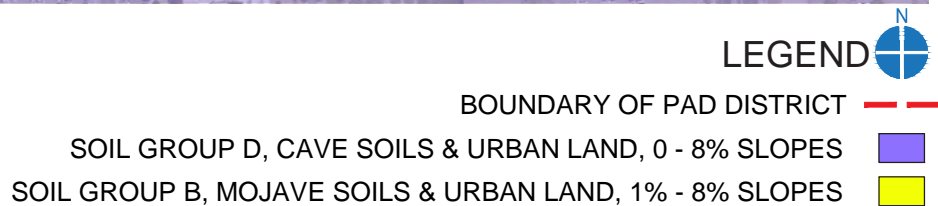
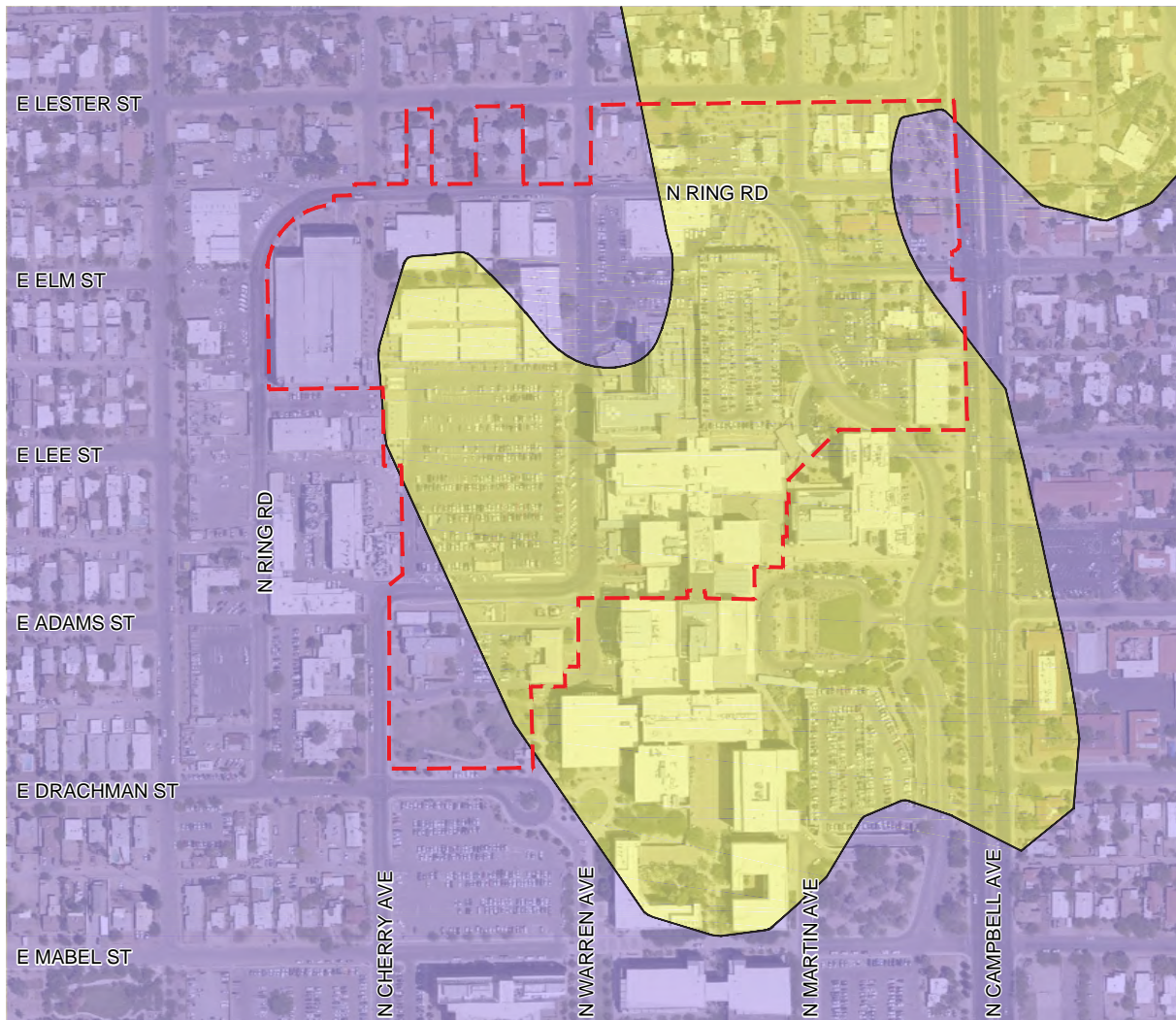
Exhibit 26 provides a graphic depiction of the existing passive and active open space areas within the PAD District, as well as the locations of existing native trees.

As a point of note, Section III.B.3 of this document (Land Use Regulations — Development Standards) proposes certain minor modifications to the standard City of Tucson landscape regulations (per UDC, Article 7, Section 7.6, “Landscaping and Screening”, and the Technical Standards Manual, Section 5, “Landscaping”). The standards used for mitigating transplanted or removed protected native plants on the PAD Property will still be in accordance with UDC Section 7.7 (Native Plant Preservation).

II.F.3 Underlying Geology, Soils, & Geotechnical Considerations

The soil conditions underlying this wholly urbanized and developed Site are unremarkable. All geotechnical preparations necessary to facilitate the redevelopment of the PAD Site can be considered routine. That being said, Exhibit 27 depicts the two dominant soil types characterizing the Site, namely Soil Group HSG Type “D” (Cave Soils & Urban Land) and Soil Group HSG Type “B” (Mojave Soils & Urban Land). Both are common throughout the entire Tucson metropolitan region.

Exhibit 27: Dominant Soils





II.G

VISUAL ANALYSIS

Future development within the PAD District will maintain the existing major view corridor along Campbell Avenue. The new hospital building will not appreciably affect existing views into or across the PAD District. See Exhibit 28 for a preliminary viewshed analysis of the entire PAD Property.

Any supplemental viewshed analysis, required due to Campbell Avenue’s gateway route designation, will be provided as part of future development package submittals to PDSO attendant to any new building construction within the PAD District.

II.G.1 Visibility from Surrounding Properties & Land Uses

The PAD Site is primarily visible from the JPN to the immediate north and from the Campbell Avenue corridor to the immediate east. Existing development to the immediate west and south is almost exclusively campus-related UA functions, many of which are multi-story themselves and which serve to mitigate direct visibility of the PAD District from these locations.

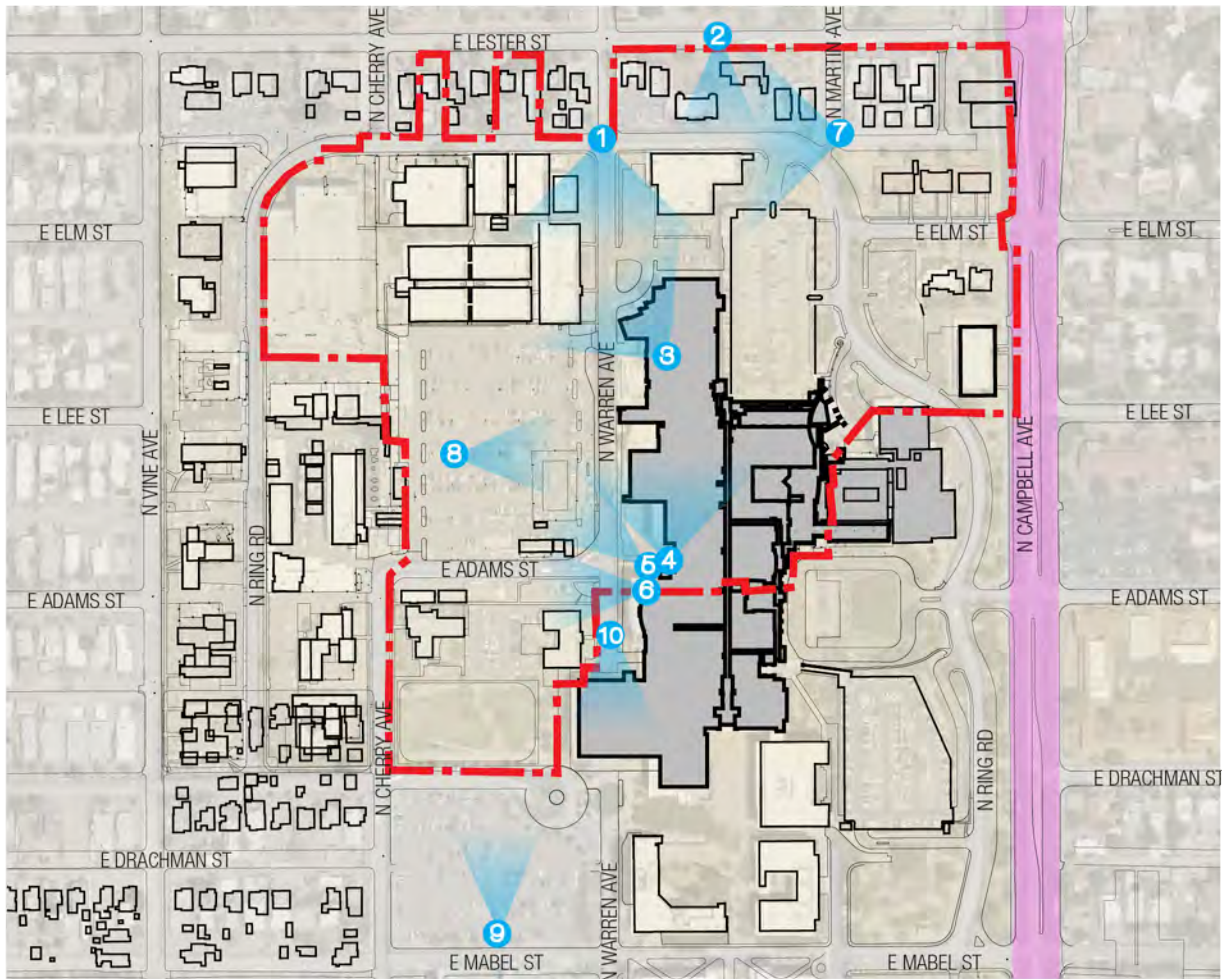
II.G.2 Viewsheds

The primary viewsheds available from the Property are the distant Santa Catalina Mountains view to the north and the distant Rincon Mountains view to the east (refer to Exhibit 28). These views are enjoyed by the JPN residents north of the PAD Site, the Catalina Vista and Blenman-Elm neighborhoods east of the PAD area (across Campbell Avenue), and the northbound motorists within the Campbell Avenue arterial corridor. The proposed new construction on the PAD District lies effectively “behind” these vantage points and, as such, will in no way interfere with the distant Santa Catalina or Rincon Mountain views nor with the individuals who presently enjoy them. Furthermore, views through the PAD Site from the south and west (including those toward the east from the North University Neighborhood) are not of significant material consideration here, in that these views are already screened by numerous UA Facilities Management and/or AHSC functions, most of which are multi-story themselves and which already serve to partially or wholly block the predominant distant views to the north and east.



Diamond Children’s Medical Center
Emergency Department Entry

Exhibit 28: Existing Viewsheds and Photo Locations



LEGEND

Banner - UMC PAD District ---

Campbell Ave. View Corridor

View From N Ring Rd Looking South at DCMC **1**

View From E Lester St Looking South at DCMC **2**

View From 4th Floor of DCMC Looking NW at Existing Modular Buildings and Parking Garage **3**

View from 9th floor of DCMC Looking North at Catalina Mountains, Across Existing Surface Lot and Modulars **4**

View from 9th Floor of DCMC Looking NW at Existing Surface Lot and Parking Garage **5**

View Looking West Down E Adams St **6**

View Looking West Down E Chauncey St with Existing Parking Garage Beyond **7**

View of West Elevation of DCMC and NEP **8**

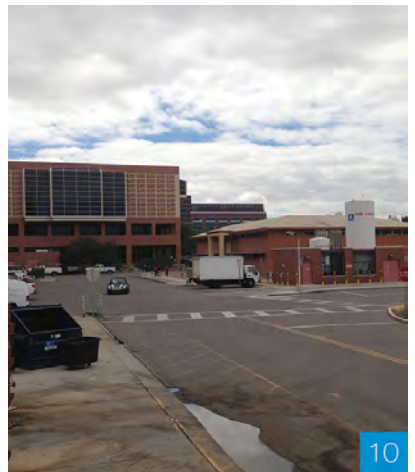
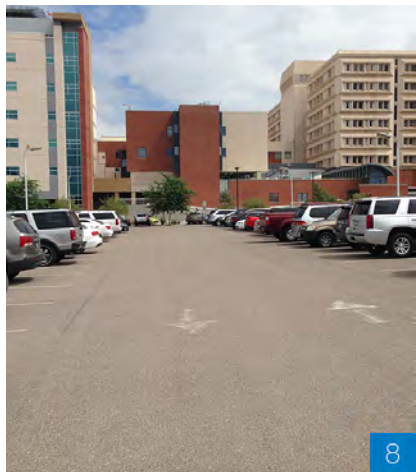
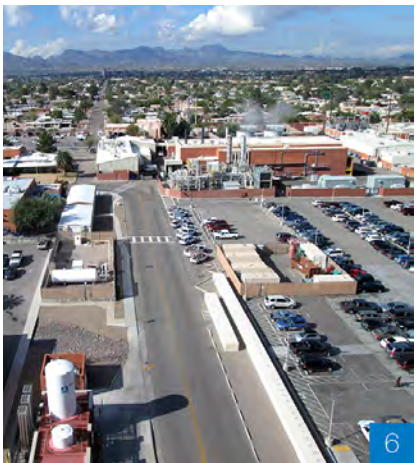
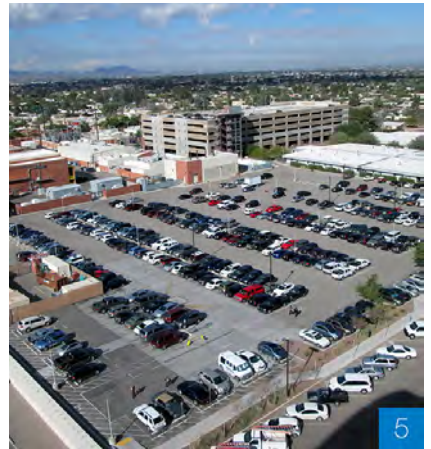
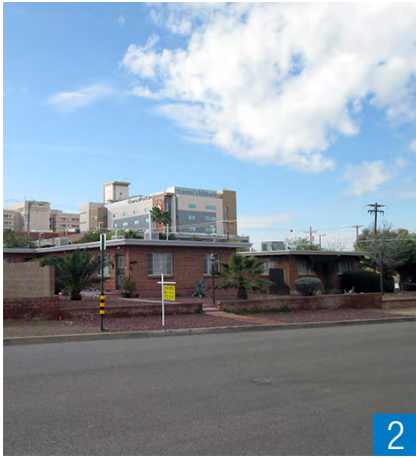
View from Existing Surface Parking Lot Looking North at the Catalina Mountains and DCMC **9**

View Looking South on N Warren Ave at UofA Loading Dock **10**



For Location of all Numbered Photos See Key Above

Exhibit 28: Existing Viewsheds and Photo Locations (Continued)



SITE ANALYSIS



II.H

SITE ANALYSIS FINDINGS & CONCLUSIONS

Exhibit 29 provides an illustrative depiction of the above Site Analysis primary findings, as well as the site’s most salient opportunities and constraints of the property. The items represented thereon are further amplified below.

II.H.1 Site Opportunities

The BUMC PAD offers the following significant opportunities:

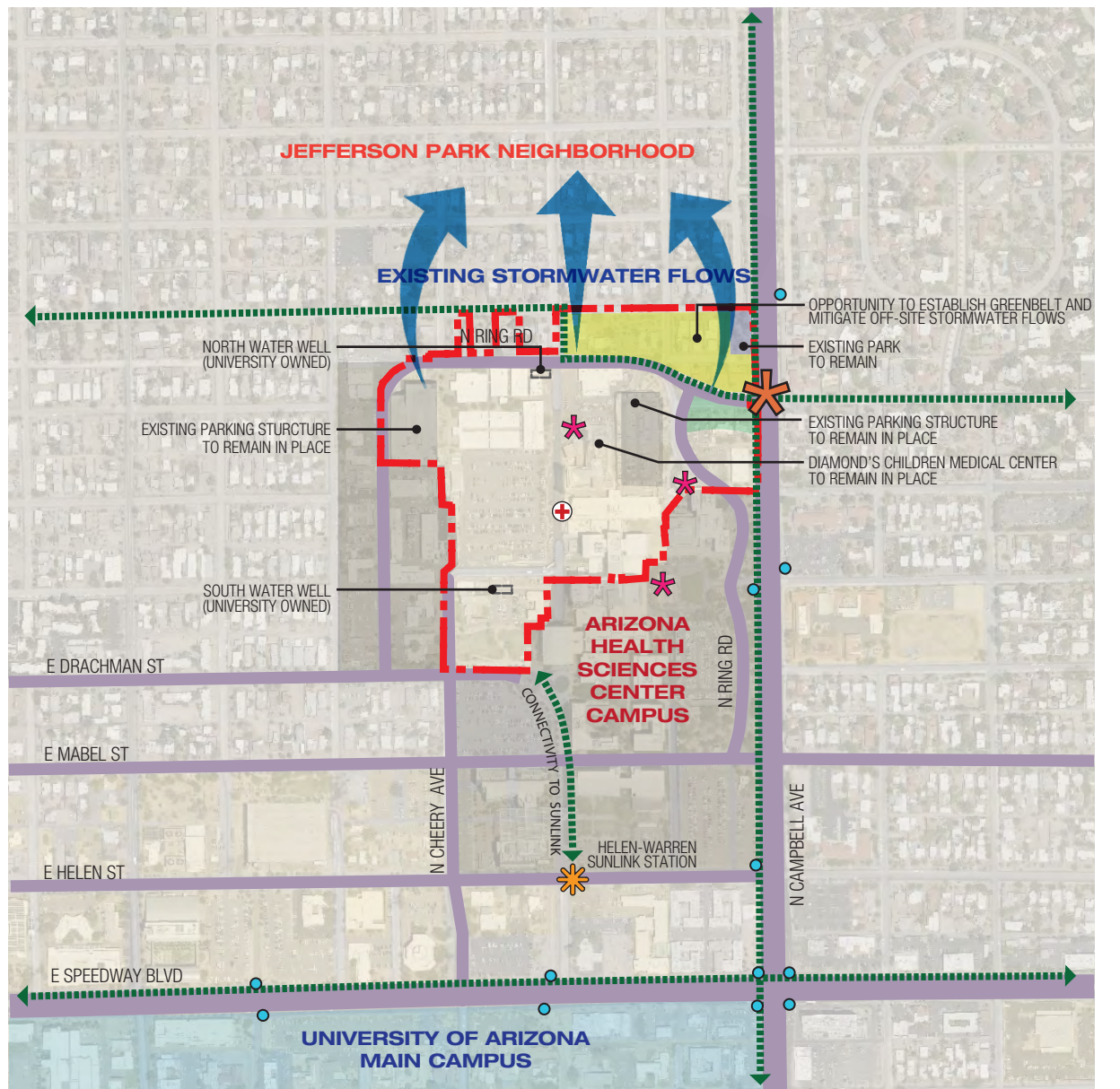
- Its central location near major north-south and east-west transportation corridors, together with its proximity to all multi-modal transportation opportunities, including the new Sun Link streetcar, maximizes the campus’s convenience to patients and staff and fosters the widest possible public access to state-of-the-art hospital and trauma care.
- The proposed project represents a major private investment in public health for the entire Southern Arizona region; this infusion of private investment into the PAD District facilities will ensure the long-term economic viability and availability to the metropolitan patient population.
- The transfer of the PAD Property into private ownership will trigger all applicable City of Tucson regulatory authority, thereby providing better assurances to surrounding Property owners as to the full enforcement and implementation of all commitments and representations made in this PAD document.
- The direct coordination and on-going dialogue between Banner Health and leaders of the most affected nearby neighborhoods has ensured that timely and accurate information was dispensed to the surrounding private property owners and that material input was gained from these affected neighbors and integrated into the property’s redevelopment process.
- The redevelopment of the PAD District by a private entity finally provides the opportunity to materially “knit together” the various regulatory documents that have contemplated, in one degree or another, the ultimate development of the Property, namely the City of Tucson’s University Area Plan (UAP) and Jefferson Park Neighborhood Plan (JPNP), and the UA’s adopted Campus Comprehensive Plan (UACCP). The BUMC PAD Site is proceeding in a fashion that fulfills and demonstrates compliance with all three of the above.

The Site is largely unremarkable in terms of any major built or environmental constraints, but the following matters are worthy of note:










- As described in Section II.A.3 above (Natural & Built Constraints), the primary challenges facing Banner Health, as owner/developer, are in the form of undertaking a major reconstruction and redevelopment effort within an existing healthcare/hospital environment whose present facilities must remain wholly operational during the construction process. Banner Health possesses the breadth of experience necessary to successfully meet this challenge.

- The historical downstream stormwater flow into the Jefferson Park neighborhood is an issue that must, for the first time, be addressed in a comprehensive fashion by this PAD District. The North Green buffer and surface retention/detention facility along the PAD's northern boundary, in conjunction with other supplemental retention infrastructure to be employed on the project, will provide the first coordinated drainage solution ever implemented on the Property and will ensure significant, material improvement in all downstream conditions. This solution is discussed in detail in Section III.D.4 (Multi-Use Drainage & North Green) of this PAD document and will require significant coordination between Banner Health, the University, Jefferson Park, and the City of Tucson Office of Historic Preservation.
- The redevelopment of the PAD District, as well as its on-going operations, are also governed by a wholly separate *Declaration of Easements, Covenants and Restrictions* between Banner Health and the Arizona Board of Regents. This PAD document and its attendant Site Plan and development regulations have been structured to be in full accordance with the requirements of this *Declaration*.

Exhibit 29: Comprehensive Opportunities & Constraints Map

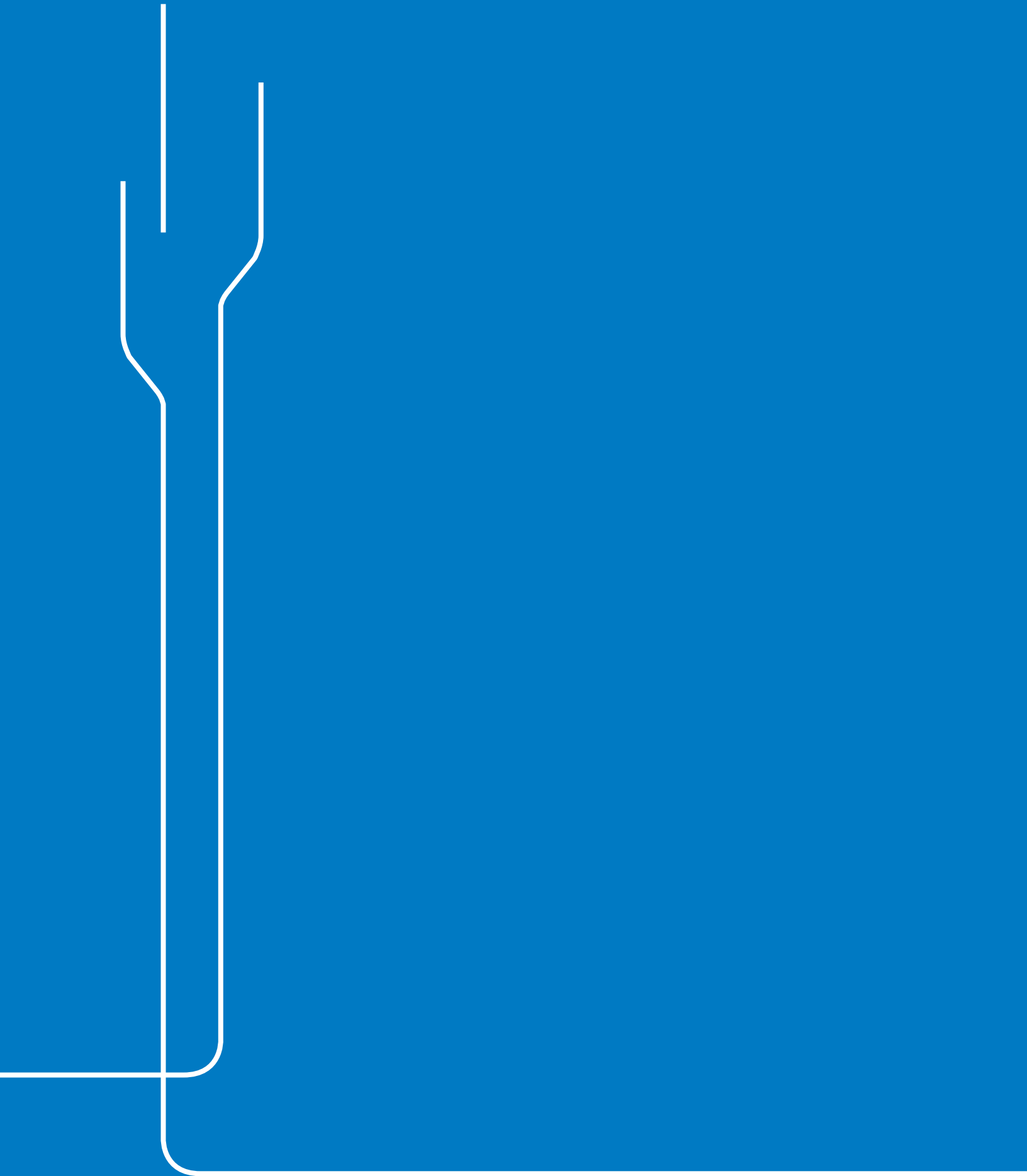


LEGEND 

- | | | | | | |
|---------------------------|---|---|---|--|---|
| Sun Tran Stop |  | Opportunity to Enhance Main Vehicular Entry |  | Banner-UMC PAD District |  |
| Sun Link Stop |  | Patient / Visitor Building Entry |  | Relevant Major Streets, Local Streets, Private Roads |  |
| Existing Stormwater Flows |  | Ambulance Entry |  | Pedestrian & Bike Routes |  |



PAD DISTRICT PROPOSAL





Banner
University Medical Center
Tucson Campus

III.A PROPOSED PAD OVERVIEW & PHASING

III.A.1 Land Uses & Facilities

The BUMC PAD District will be redeveloped into a state-of-the-art medical campus that will feature, among other things, the construction of a new hospital facility, with two new bed towers, to ultimately replace the current UMC Hospital functions (see Exhibit 30 for a the detailed BUMC Site Plan; an illustrative version is provided in Appendix C). In the ultimate build-out condition, the overall campus will provide more than 1.8 million square feet (1,800,000 SF) of hospital space, comprising more than 800 beds, and will retain all of the present DCMC square footage, while repurposing as much of the other existing campus facilities as is reasonably practical and cost-effective.

III.A.2 Coordination with Adjoining Neighborhoods

To assist with the development and preparation of this PAD, Banner Health interacted extensively with a group of leaders from the most affected surrounding neighborhood associations, including representatives of the Jefferson Park, North University, Blenman Elm, Catalina Vista Neighborhood Associations, and those neighborhood associations represented in the University's Campus Community Relations Committee ("CCRC"). These groups and Banner Health representatives worked in mutual good faith to discuss and reasonably address all specific issues raised by the group during their review of the project and the preparation of this PAD document. A comprehensive series of meetings was held over the course of developing and finalizing this PAD prior to its formal submittal and rezoning filing with the City of Tucson. Separate documentation of these meetings is part of the formal PAD rezoning application filing submitted to the City of Tucson.

Specific issues addressed in the meetings included the following:

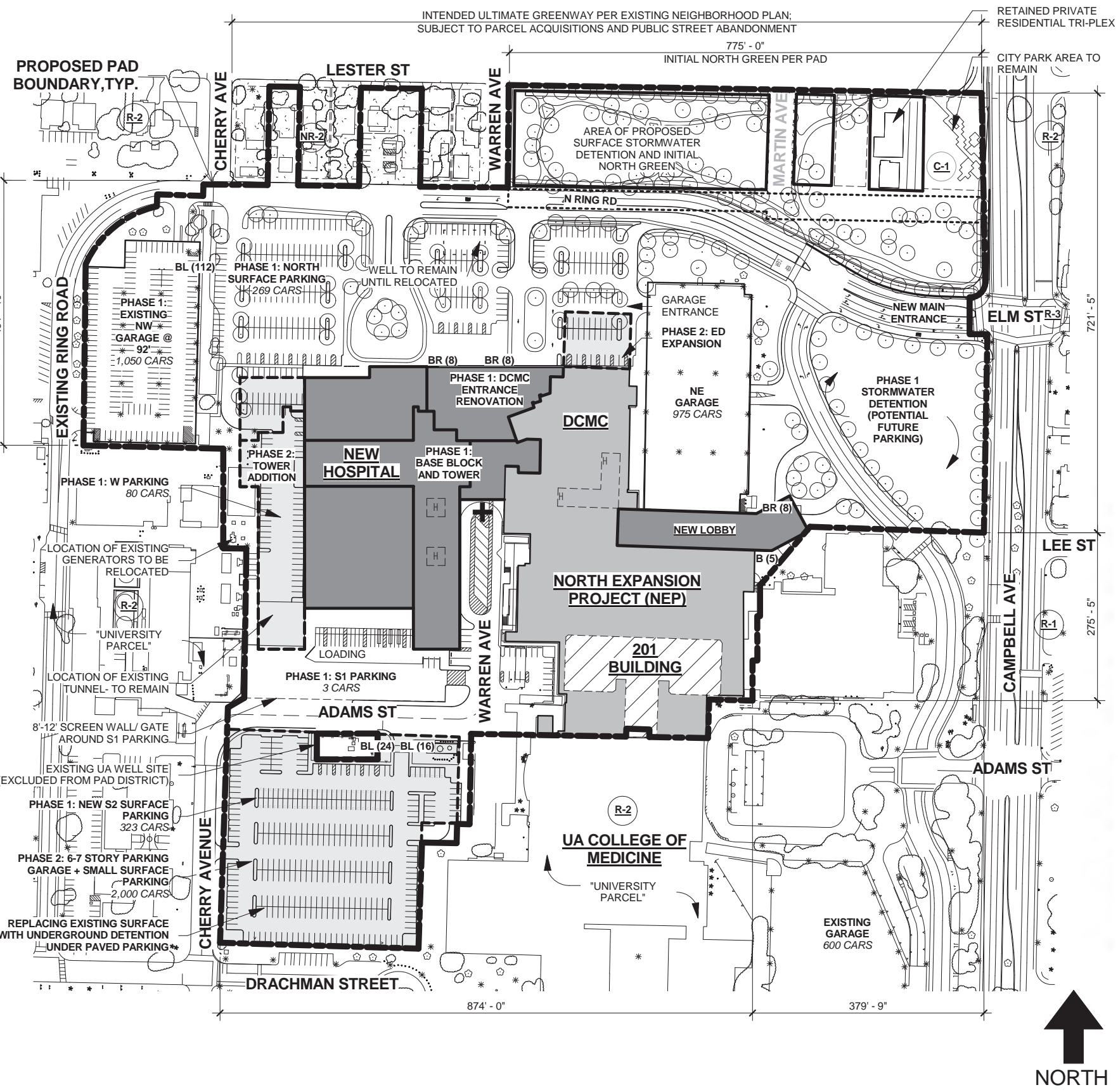
- The particulars of the Site Plan and campus redevelopment plan presented herein,
- The building setbacks and building heights of the new hospital and bed towers,
- The historical downstream drainage issues which have impacted the Jefferson Park Neighborhood and the PAD provisions that have been made to protect the adjacent neighborhoods and improve those downstream conditions,
- The design and particulars of developing a multi-use buffer & stormwater retention/detention facility along the PAD's northern boundary (the North Green),
- Coordination on the specifics of implementing the North Green while still preserving the formal Historic District designation of the Jefferson Park Neighborhood, together with the protocol and procedures necessary to modify the present historic-district boundary
- Concerns with respect to traffic and site lighting,
- The particulars of the construction process and the desire for on-going communication with the neighbors during it,
- General medical campus operations relevant to the neighborhoods, most notably the helicopter flight paths, adherence to the existing *Memorandum of Understanding* governing same, and the proposed routing of emergency-service vehicles to and from the campus.

III.A.3 Anticipated Phasing

In general, Phase 1 of the PAD Site's redevelopment will see the construction of approximately 700,000 square feet (700,000 SF) of the new hospital and bed tower that will replace a portion of the existing UMC Hospital facility. This Phase 1 development will bring the total building area of the medical campus to approximately 1.4 million square feet (1,400,000 SF), with a total of 661 beds (183 of which constitute replacement beds for the existing hospital and 155 of which represent additional new beds). The new hospital main lobby entrance will be oriented northward and will also feature new 200-space visitor surface parking lot convenient to the main lobby and hospital entrance. Phase 2 of the redevelopment includes the addition of a second bed tower (approximately 355,000 SF and an additional 168 beds) to the Phase 1 hospital facility, as well as construction of a new 2,000-space multi-story parking structure south of the new hospital. At completion of the Phase 2 construction, the medical campus is estimated to have more than 1.8 million square feet (1,800,000 SF) of medical facilities and approximately 800 beds. In conjunction with all of the above, some or all of the original UMC Hospital 201 building, built in the 1960's, will be repurposed for various hospital administrative and other office functions.

See Exhibit 31 for a preliminary phasing plan for the project. Further detail as to the major facilities shown thereon (and on the Exhibit 30 Site Plan) is provided below.

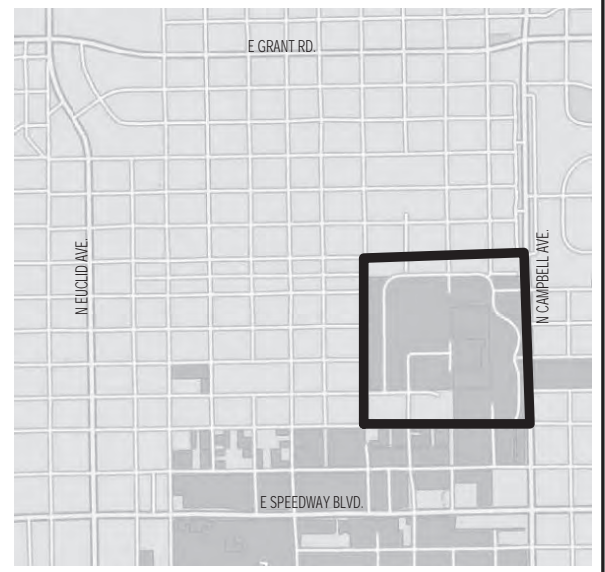
8/12/2015 4:03:30 PM
 C:\2015 Revit Localis\Banner\Proposal_CENTRALFILE_AMyers.rvt



LEGEND

- BOUNDARY OF PROPOSED PAD DISTRICT +/- 33 ACRES
- PRIVATE OWNED PARCEL REQUIRING ACQUISITION. APPROXIMATELY 1.38 ACRES.
- LINE OF RESIDENTIAL STREET ABANDONMENT
- PARCELS BEING ACQUIRED BY BANNER
- EXISTING BUILDINGS TO REMAIN
- PROPOSED PHASE 1 CONSTRUCTION/ OPERATIONS
- PROPOSED PHASE 2 AND FUTURE EXPANSION
- R-1 ADJACENT ZONING
- BL (#) NUMBER OF PROPOSED BICYCLE LOCKERS
- BR (#) NUMBER OF PROPOSED BICYCLE RACKS
- + AMBULANCE DROP OFF
- H NEW HELISTOP ATOP PHASE 1 BED TOWER. EXISTING HELISTOP LOCATIONS ATOP DCMC WILL BE RETAINED FOR FUTURE EMERGENCIES ONLY.

LOCATION MAP



BUILDING & PARKING INFORMATION

BUILDING	EXISTING AREA (SF)	PHASE 1 AREA (SF)	PHASE 2/ FUTURE AREA (SF)	PH1 + PH2 TOTAL BUILD (SF)	TOTAL BED COUNT
UMC 201 BUILDING	265,083	265,083	0	265,083	0
UMC NEP BUILDING	220,549	174,072	19,174	154,898	97
DIAMOND CHILDREN MEDICAL CENTER	209,713	214,213	0	214,213	215
DIAMOND EMERGENCY DEPT.	0	0	10,000	10,000	NA
NEW HOSPITAL/ BED TOWER	0	740,000	355,420	1,095,430	504
CLINICS IN NEP	51,373	46,477	19,174	65,651	
TOTAL	746,718	1,439,845	403,768	1,805,275	816

SPECIAL NOTE: THE UMC 201 BUILDING GROSS FLOOR AREA (265,083 SF) AS SHOWN ABOVE PROVIDES FOR ADMINISTRATIVE AND OFFICE FUNCTIONS IN SUPPORT OF THE HOSPITAL. APPROXIMATELY 138,000 SF OF THIS TOTAL SQUARE FOOTAGE (FLOORS 3 THROUGH 8 OF THE STRUCTURE) MAY, AT SOME FUTURE TIME, BE REPURPOSED FOR OTHER GENERAL AND NON-HOSPITAL RELATED OFFICE USES. IN THIS EVENT, APPROPRIATE PARKING PROVISIONS WILL BE DETAILED AT THE TIME OF A FUTURE DEVELOPMENT PACKAGE (DP) SUBMITTAL TO PSDS.

PARKING REQUIRED / BED & CLINICS: PHASE 1

	MIN AT 3.7 / BED	MAX AT 5.2 / BED
DCMC BEDS	215	796
NEW BEDS	336	1,243
NEP BEDS	110	407
CLINIC 46,477 SF AT 4/1,000 GSF		186
Total Parking Required Parking for Beds and Clinic	661	3,623

PARKING REQUIRED PER BED & CLINICS: PHASE 2

	MIN AT 3.7 / BED	MAX AT 5.2 / BED
DCMC BEDS	215	796
NEW BEDS	336	1,243
NEP BEDS	97	359
PHASE II BEDS	168	622
CLINIC PHASE 1 46,477 SF AT 4/1,000 GSF		186
CLINIC - 19,174 SF AT 4/1,000 GSF		77
Total Parking Required Parking for Beds and Clinic	816	4,251

PARKING PROVIDED

	PHASE I	PHASE 2
NW GARAGE	1,050	1,050
NE GARAGE	975	975
NORTH SURFACE PARKING	269	269
WEST PARKING	80	0
S1 SURFACE PARKING	3	3
S2 SURFACE PARKING	323	0
EAST SURFACE PARKING	0	0
PHASE 2 GARAGE	0	2,000
TOTAL	2,700	4,297

Shepley Bulfinch

Shepley Bulfinch Richardson & Abbott
 Architecture / Planning / Interiors / Est. 1874
 3443 North Central Avenue, Phoenix, AZ 85012
 T:602.430.3223 | F:602.254.1501 | www.ShepleyBulfinch.com

ADDRESS
 1501 N. CAMPBELL AVENUE, TUCSON, ARIZONA 85724

PAD DISTRICT SITE PLAN
 BANNER- UNIVERSITY MEDICAL CENTER, TUCSON CAMPUS

JOB NO.	4072.000
SCALE	1" = 200'-0"
DRAWN	MM
DATE	08/13/15

Exhibit 30: Detailed Site Plan of Banner-UMC PAD Site

Exhibit 31: Phasing Plan for New Construction



A. Medical Facilities

The new replacement hospital with its two bed towers is obviously the most significant element of the BUMC PAD District’s redevelopment program and is required in order to provide the community with the state-of-the-art healthcare system it needs and deserves. The planned new hospital and bed towers, along with the existing emergency department and trauma center, are in line with the 2009 Update of the University Comprehensive Campus Plan based on the planned number of beds and capacity needed for the delivery of medical care on the campus. Modern medical care facilities must be designed to accommodate improved technological facilities in patient rooms, surgery suites, and emergency rooms, all of which accordingly have much larger physical space needs than in years past. These are accommodated in the BUMC PAD while respecting the past planning efforts for expansion of the medical campus.

B. Surface Parking & Parking Structures

In general, the parking demand of hospital facilities is far greater than that of conventional retail, office, or commercial uses. This demand is driven by the required shift overlapping of staff. The proper shift changing of hospital staff requires a certain amount of “overlap” time, wherein the entire staffs of both the exiting and the arriving shifts must simultaneously be on-duty for the patient care transition. This demands that staff parking be available for both shifts to accommodate the overlap period. Beyond this unique dynamic, there is also the need for significant visitor/patient parking, much of which is used by multiple family members visiting the same patient. The specialized parking requirements for the Site are provided in Section III.B.3 (Land Use Regulations — Development Standards) of this PAD document. Over time, there is the reality that several out-patient clinic functions on the current campus will be moved to off-Site locations, thereby reducing the parking count necessary to adequately serve the remaining clinics within the PAD District. This dynamic has been acknowledged in the specialized parking requirements detailed in Section III.B.3.B below.

C. N Ring Road and Main Entrance Improvements

The BUMC PAD redevelopment program will make changes to North Ring Road as it exists on the current UMC campus. Most notably, an expanded and improved main campus entry and exit will be established at the signalized intersection of Elm Street and Campbell Avenue. The present on-Site segment of Elm Street proceeds westward from Campbell Avenue to a t-intersection with the current north-south segment of North Ring Road. This arrangement will be modified so as to allow smooth, uninterrupted east-west movement into the campus via Elm Street, with the north-south segment of North Ring Road intersecting at a new t-intersection (refer to the Exhibit 30 BUMC Site Plan). This uninterrupted east-west movement provides user-friendly, simple and efficient circulation to and from the new hospital facility, emergency department, and the Diamond Children’s Medical Center. The entrance roadway will have a “boulevard” treatment up to the point at which it connects with the current North Ring Road in the western portion of the PAD District. The Elm Street exit at Campbell Avenue will feature a three-lane cross-section comprised of a dedicated left-turn lane, a combined left-turn/through lane, and a dedicated right-turn lane.

III.A.4 Public Right-of-Way Abandonments & Subdivision Platting

The PAD District is presently comprised of multiple property tax parcels, most of which were created by subdivision plats dating back to the early

1900’s. The PAD Property also contains segments of dedicated minor public streets (also granted by the aforementioned plats) that still remain in use today. It is the intent of this PAD to: 1) subsequently process a comprehensive abandonment of all public street rights-of-way within the PAD boundary; and 2) subsequently process a new subdivision plat that eliminates all of the current tax parcels and combines the entire acreage into a single tax parcel. Exhibit 32 illustrates the various right-of-way portions to be abandoned with the Property’s redevelopment.

III.A.5 Owner Maintenance Responsibilities

All healthcare facilities and Site improvements on the PAD Property will be under the private ownership of Banner Health and, as such, will be their sole maintenance responsibility. A privately-owned residential triplex will remain within the PAD District and be maintained by that private owner. A small City-owned park is located within the PAD District at the northeast corner; this will remain in City ownership. Banner Health may pursue a license agreement for maintenance purposes. The entire North Ring Road within the PAD District (including any within City-owned right-of-way) will be maintained by Banner Health. The maintenance of any public utility improvements on the Site, whether overhead or sub-surface, will remain the responsibility of the servicing utility company.

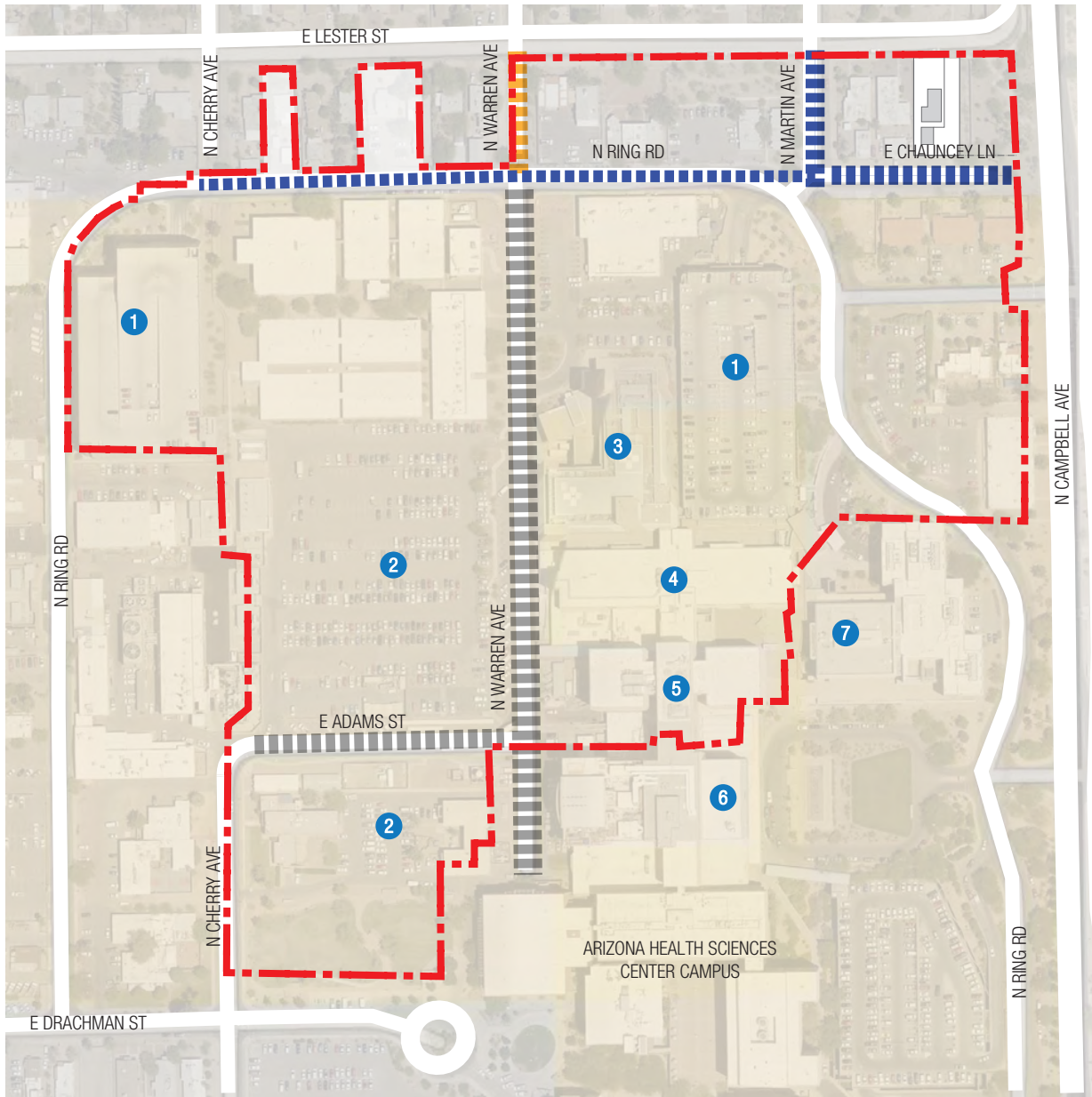
III.A.6 Financial Assurances

Following the adoption of a zoning ordinance approving this PAD, Banner Health shall formally close on its purchase transaction with the Arizona Board of Regents and, as such, acquire fee title to the BUMC PAD District Property. Subsequent to this closing, Banner Health shall submit a form of financial assurances for review and acceptance by the City of Tucson. This form of assurances may be a performance bond or similar financial instrument, or may be a formal Development Agreement, and shall address the on-Site and/or off-Site drainage infrastructure and new street improvements as necessary to insure the proper functioning of the project as depicted on the detailed Site Plan presented above in Exhibit 30.

III.A.7 City of Tucson Waiver of Claims





Banner Health shall execute and record a separate agreement, per adopted City of Tucson format, to waive any claims against the City for zoning amendments in conformance with A.R.S. Sec. 12-1134(I).

Exhibit 32: Conceptual Depiction of Proposed R.O.W. Abandonments

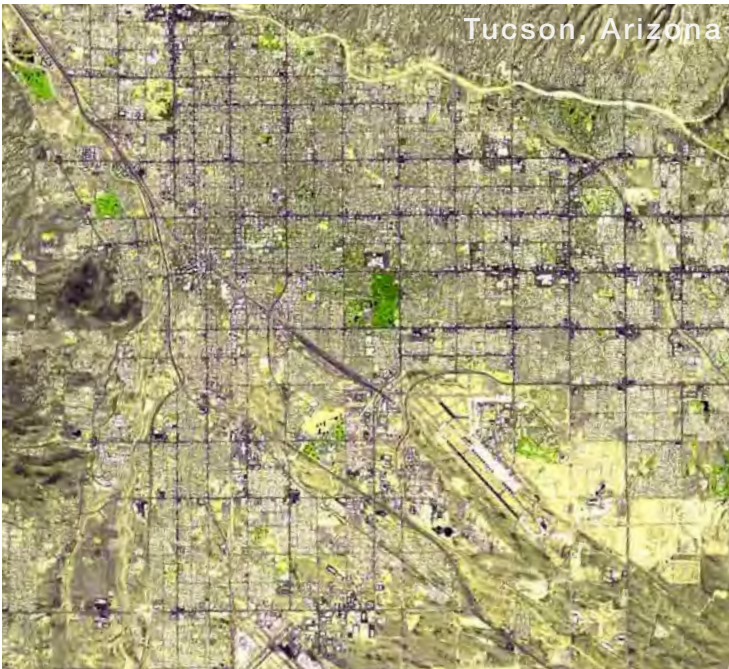


- Existing Parking Garage ①
- Existing Surface Lot ②
- DCMC ③
- UMC NEP ④
- UMC 201 Building ⑤
- College of Medicine ⑥
- Cancer Center ⑦

LEGEND 

- Banner-UMC PAD District 
- Public Rights-of-way to be Abandoned - Phase 1 
- Public Rights-of-way to be Abandoned - Phase 2 
- Previously Abandoned Public Rights-of-way 

PAD DISTRICT PROPOSAL



III.B LAND USE REGULATIONS

By this BUMC PAD, all existing uses, facilities, building heights, setbacks, loading zones, parking facilities, driveways, and streets within the PAD District as they exist as of the effective date of the PAD are considered in accordance with the Property's PAD zoning designation. The Development Standards as outlined in the Section III.B.3 below apply to the new construction and redevelopment of the PAD District in accordance with the presented Site Plan (Exhibit 30) and Phasing Plan (Exhibit 31).

III.B.1 Establishment of UDC Base Zoning Designation for the PAD District

The Unified Development Code (UDC) base zoning for the BUMC PAD Site is OCR-2 (Office, Commercial, Residential) in accordance with UDC Article 4.7.27 and UDC Use Table 4.8.6 (Commercial and Mixed Use Zones). PAD-specific modifications to the permitted uses and development standards contained therein are provided in Section III.B.2 below.

III.B.2 Proposed Major Medical & Institutional Uses

A. Descriptions of Proposed Facilities & Functions

The redevelopment of the PAD Site will occur in two primary phases. The first phase will be the construction of a new hospital facility and bed tower to replace a portion of the existing UMC Hospital (201 Building), together with a series of

new surface parking areas, Site-wide stormwater management infrastructure, and a reconstructed campus main entry and exit onto Campbell Avenue at Elm Street. The second, longer-term phase, will include an additional hospital support expansion and a second bed tower addition to the new hospital, together with a new multi-level parking structure to accommodate the expanded facility. The overall PAD redevelopment program also includes the repurposing of some of the existing campus facilities, for example the original UMC Hospital 201 Building, which will be converted to various medical campus administrative, operational, and other office functions. The Diamond Children's Center square footage, including that for its trauma center and emergency department, will remain as it exists today, with some transfer of beds into the new hospital bed tower(s). The ultimate build-out of both phases will result in more than 1.8M square feet (1,800,000 SF) of hospital space, comprising approximately 800 beds. Refer to the detailed BUMC Site Plan (Exhibit 30) for a tabular breakdown, by phase, of the planned square footages, bed counts, and attendant parking requirements.

B. List of Permitted Uses per the Designated Base Zone

Permitted uses for the PAD District are governed by the following:

- Those Permitted Uses as allowed per UDC Article 4.7.27 (OCR-2 Zone) and accompanying UDC Use Table 4.8.6 (Commercial and Mixed Use Zones), except for those uses expressly prohibited in Section III.B.2.d below, and
- The BUMC PAD property is also subject to a separate Declaration of Easements, Covenants and Restrictions between Banner Health and The University of Arizona (see Appendix D for the full document). Per this Declaration, the PAD Site shall generally be used only for the delivery of health care and/or wellness services including but not limited to (a) inpatient and outpatient care and services, (b) clinics, support goods and services, offices, research, education and training, and administrative services related to the delivery of health care and/or wellness services, and (c) other uses reasonably related to and in support of the delivery of health care and/or wellness services provided on the Property, together with those Site improvements typically associated with first class healthcare centers such as, by way of example and not limitation, food services, retail establishments, community venues and facilities for patient families. There is an acknowledgement that the type, and manner of delivery of, services to advance health and wellness are constantly changing and, accordingly, the above shall be interpreted to permit evolution in the composition of healthcare and wellness services and related uses.

C. Supplemental Permitted Uses within the PAD District

The following uses shall also be formally considered as Permitted Uses within the PAD District in addition to those cited in the above Section II.B.2.B. These uses are included here due to their essential importance to the proper functioning and operation of the BUMC as a major medical use, and to therefore insure that there is no future question or alternative interpretation as to their status and permitted nature on the campus:

Major Medical Use Support Services

- Wireless Service and Communications Tower
- Emergency Services & Transport
- Helicopter Transport Services, including Helistop and Heliport Landing Pads
- Storage and Transport of Hazard Materials as Required for major Medical Use
- Operation of University-owned Water Wells
- Central Utility Plant (CUP)
- Hazardous Materials Above-Ground Storage Tanks (AGST's) including, but not limited to, those for the storage of bulk oxygen, liquid oxygen, nitrogen, nitrous oxide, and carbon dioxide. There shall be no limit on the number of AGST's allowed and, consistent with UDC Use Table 4.8.6 and the attendant UDC Use-Specific Standards per Sec. 4.9.10.B for the Major Medical Service use, there shall be no limit on the storage capacity, height, or diameter of said tanks. All outdoor AGST's shall be located within the Central Utility Plan (CUP) as permitted above and as depicted on Exhibit 30.

Retained Private Residential Use

The PAD District will retain an existing residential triplex located at extreme northeast corner of the PAD Site. This triplex has historically been used for private residential rentals and will continue to be used as such after the adoption of this PAD and the construction of the North Green, which will border the triplex. To insure the continued use of the triplex for private residential rental purposes for the foreseeable future, the following permitted use in accordance with UDC Use Table 4.8.6 is expressly stated here as a permitted use within the BUMC PAD District, with the understanding that the triplex rental may be removed at some time in the future and the land incorporated into the North Green:

- Residential Land Use Group; Family Dwelling; Multifamily Development

D. Prohibited Uses

The following uses from UDC Use Table 4.8.6 are expressly prohibited within the PAD District:

- Correctional Facility (Custodial or Supervision)
- Alcoholic Beverage Service (Large Bar or Microbrewery)
- Animal Service
- Billboards
- Large Retail Establishment
- Swap Meets and Auctions
- General Manufacturing
- Heavy Equipment Manufacturing
- Maintenance & Environmental Services

III.B.3 Development Standards

A. Building Criteria

Building Setbacks

For the purpose of regulating building setback requirements and related development standards that would normally apply to separately owned lots or parcels of land, the exterior PAD District boundary shall serve as the point of measurement for all setbacks, unless otherwise specified below.

Setbacks for Existing Buildings & Structures:

Setbacks for all existing buildings and structures in place within the PAD District as of the Effective Date of this PAD, including temporary or modular buildings, are considered in full compliance with this PAD.

Setbacks for New Buildings & Structures:

All buildings or structures whose construction commences on or after the Effective Date of this PAD shall be set back at least twenty feet (20') from the exterior boundary of the PAD, as well as at least twenty feet (20') from the edge of any public right-of-way or from any private roadway internal to the PAD District, unless otherwise provided below:

- The setback for new occupied buildings and structures shall be a minimum of two hundred fifty feet (250') from the northern boundary of the PAD District adjacent to the Jefferson Park neighborhood (see Exhibit 33). This setback requirement does not pertain to the existing multi-level parking structure in the northwest portion of the District. The current setback of this parking structure is compliant with this PAD.
- In those PAD locations where the external boundary of the PAD District is located at least twenty feet (20') from the edge of an adjacent public right-of-way or from the edge of a private road, new surface parking lots and multi-story parking structures are allowed a setback of zero feet (0') from the external PAD boundary.

- So as to codify certain additional and specialized setback requirements further applicable to the PAD District, Exhibit 34 provides a reference Site plan illustrating the existing buildings, structures, and Site improvements located upon:
 - 1) the property being acquired by Banner Health; and
 - 2) the adjacent property being retained by the UA/Arizona Board of Regents. The following specialized setbacks are required for any new buildings or structures within the PAD District, as measured from those specific UA/ABOR buildings and improvements described below. Compliance with the following specific setbacks will be demonstrated, as applicable, at the time of future Development Package (DP) submittals to the Planning & Development Services Department.
- Setbacks from the Loading Dock area must be a minimum of one hundred feet (100') from the most westerly portion of the western façade of Steele Children's Research Center (Building 201.02 depicted on Exhibit 34) and from the northern façade of the AHS Library (Building 201.01 depicted on Exhibit 34). Setbacks between any new building within the PAD District to any building adjacent to the PAD boundary must be a minimum of forty feet (40') from the façade of any portion of such adjacent building. There are two (2) exceptions to this provision, thereby permitting a new building within the PAD District to be constructed and/or maintained with no required setback in the following instances:
 - 1) the foregoing requirement shall not apply to the planned new public entrance, located within the PAD District for the Diamond Children's Medical Center (DCMC) in proximity to the Arizona Cancer Center as generally shown on Exhibit 34; and
 - 2) the foregoing requirement shall not apply to those portions of the 201 building (depicted on Exhibit 34 with the number "201" beneath its name) that physically abut and straddle the PAD boundary. While these existing portions of the 201 building may be modified in the future, they will continue to abut and straddle the PAD boundary.
- Setbacks from the University Physical Plant Risk Management Building (Building Nos. 205.00 and 229 depicted on Exhibit 34) must be a minimum of forty feet (40'), which shall include a twenty foot (20') minimum clearance, for fire truck access, between any new and existing buildings.
- Setbacks along Campbell Avenue shall provide sufficient right-of-way, as determined by the City of Tucson, for the potential future northward extension of the "Modern Streetcar" from Helen Street along the west side of Campbell Avenue.

Building Heights

The height of the new hospital and associated bed towers will be in accordance with the following requirements:

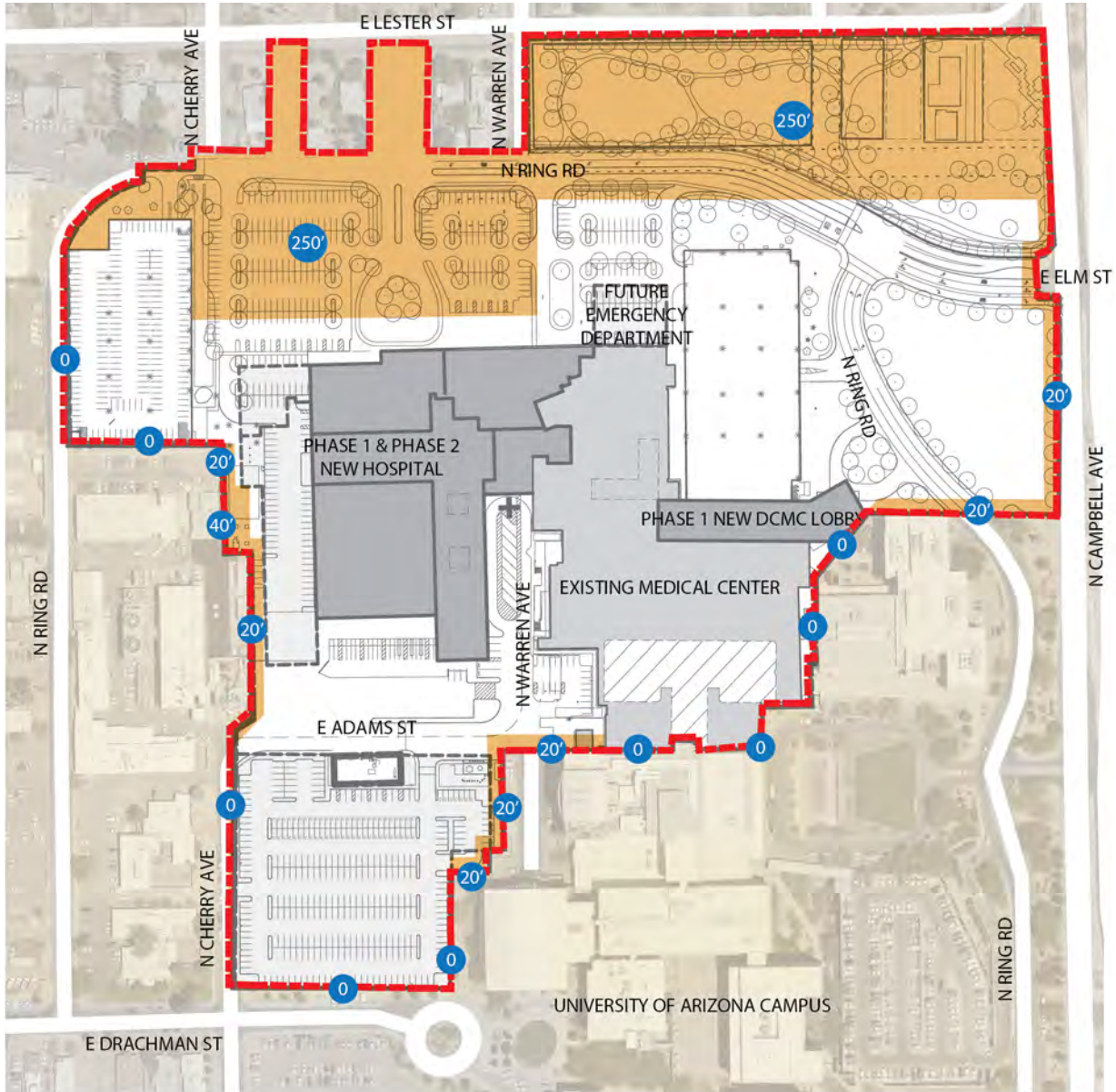
- Maximum building height shall be one hundred eighty-five feet (185').
- Building height shall be measured from the finished floor elevation (FFE) of the ground floor to the top of the finished roof deck.
- Building parapets are allowed to extend above the top of the finished roof deck by a maximum of ten feet (10').
- Roof-top appurtenances are allowed to extend above the top of finished roof deck a maximum of forty-five (45').
- Roof-top appurtenances include, but are not limited to: penthouses, helistop and helipad facilities, elevator over-runs, building design and architectural accent features, antennae, mechanical equipment, and any visual screening structures associated with the above.
- Roof-top appurtenances shall cover no more than fifty percent (50%) of the total roof-top surface area. Helistops and helipads are specifically excluded from the roof-top coverage percentage.

Integration with Existing Medical Facilities

The new hospital and future parking structures will be integrated into the existing campus both aesthetically and functionally, to the extent practical and cost-effective.

The façade of the existing DCMC emergency department entry will be renovated to complement the materials and scale of the new hospital main entry, thus unifying the two buildings at the pedestrian/street level. Please refer to the PAD Section III.G (Architectural Standards and Design Guidelines) for a further description of the aesthetic integration of all new construction with the existing campus through use of materials, colors, and massing.

Exhibit 33: Building Setbacks



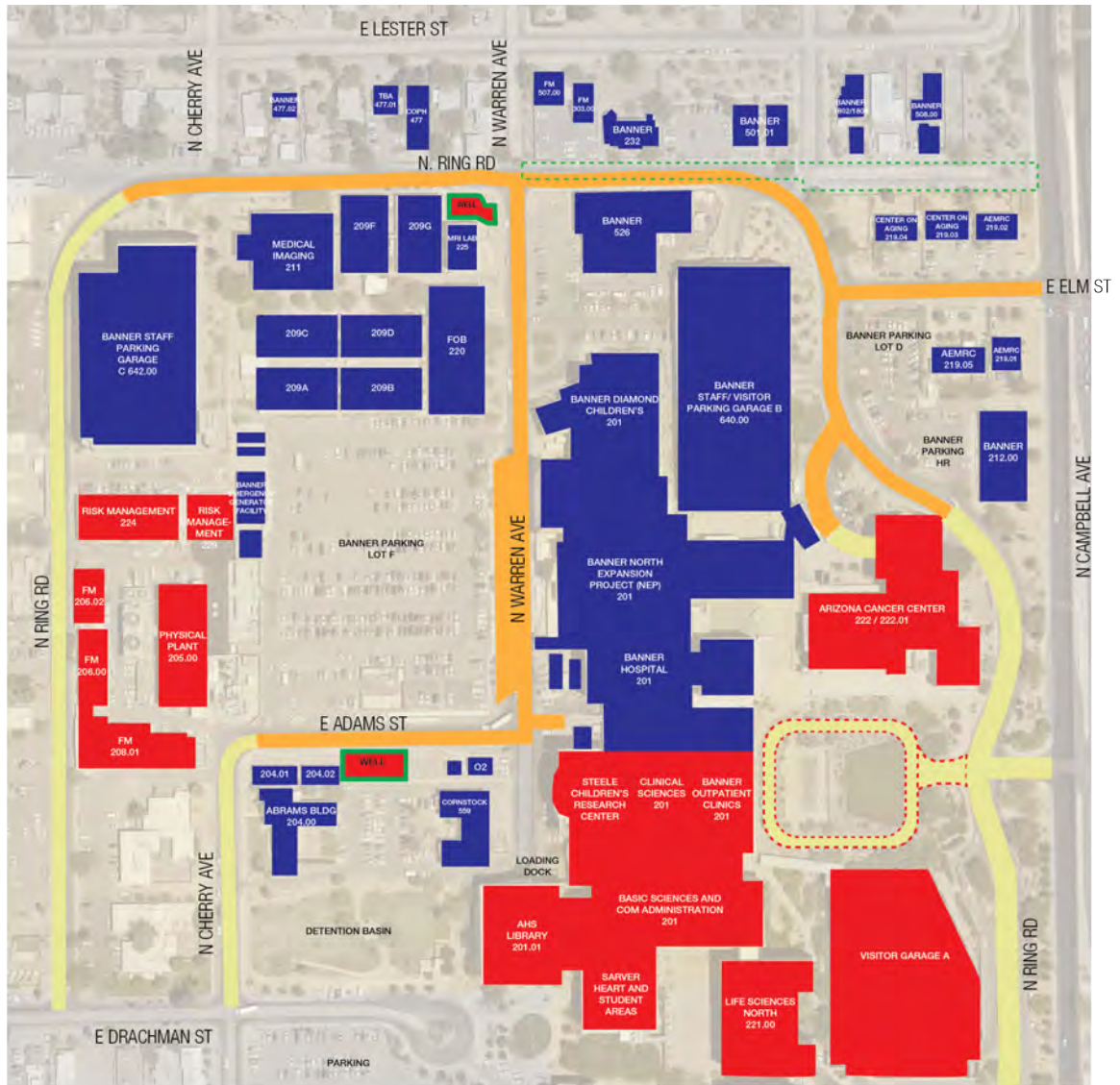
LEGEND 

Regulatory Minimum Building Setback in Feet 

Banner - UMC PAD District 

Minimum Building Setbacks 

Exhibit 34: Reference Site Plan for Specialized Building Setbacks



City Owned Roads	Healthcare Drives	University Owned Improvements
University Owned Wells	Healthcare Private Maintenance Roads	Healthcare Owned Improvements
COT Owned R.O.W	University Private Roads	University Drives



PAD DISTRICT PROPOSAL

B. Parking Facilities & Parking Structures

The two existing multi-level parking structures within the PAD District will be used to provide parking for patients, visitors and staff. The structure located at the extreme northwest corner of the Site presently contains 1,057 parking spaces; it will be used primarily by BUMC staff and for some overflow parking for patients and visitors. The existing structure located in the northeast portion of the Site contains 975 parking spaces and will be utilized for patients and visitors. In addition to these existing parking structures, new surface parking lots will be provided:

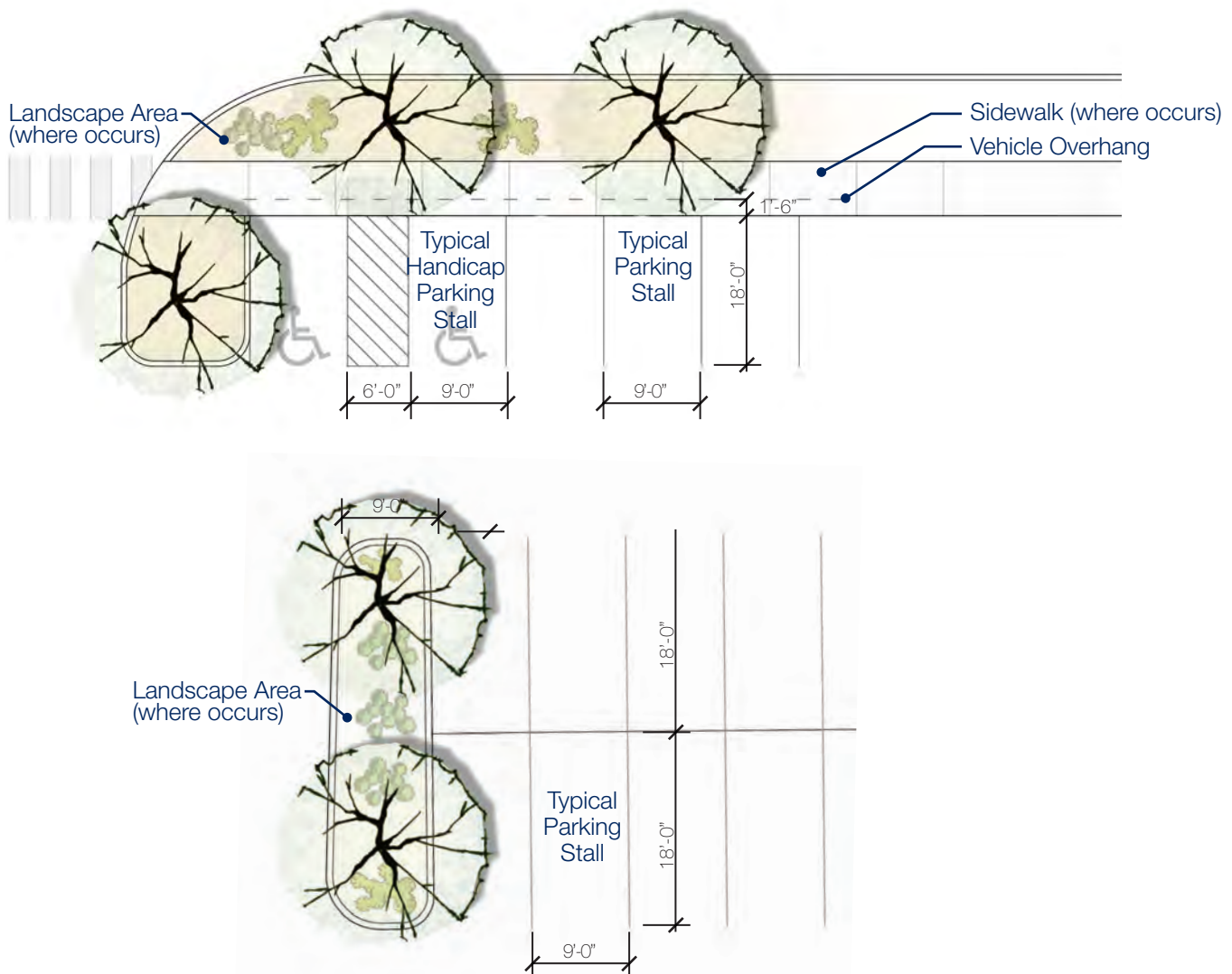
- 1) in front of the new hospital, including a dedicated parking zone for patient and visitors to the emergency department; and
- 2) a new surface parking lot, for staff use, on the south side of the new hospital.

As part of the planned Phase 2 construction (addition of the second bed tower to the hospital), the surface parking lot west of the building will be replaced by the second tower and a new multi-level parking structure will be constructed over the new surface lot built with Phase 1 to the south of the new hospital. This new parking structure will be designed and landscaped so that the parked vehicles are screened from view at street level. The structure will be designed as an architectural element that aesthetically integrates with the character and materials of the established context and of the new hospital building. Refer to Exhibit 30 (Detailed Site Plan) for further detail as to the above parking provisions. Exhibit 35 illustrates typical vehicle and accessible parking stalls.

Exhibit 35: Typical Parking Stall

N.T.S.

Note: When typical parking stall condition is not permitted, 9'-0" x 16'-0" stall with a 2'-0" vehicle overhang is acceptable.



C. Specialized Vehicle & Bike Parking Requirements

The specialized vehicle and bicycle parking requirements detailed below shall apply to the PAD District.

Specialized Vehicle Requirements

Regulatory parking requirements are hereby established for the PAD District to meet the unique operational demands of the medical center, its professional medical staff, administrative staff, patients and visitors. These unique demands were discussed further in Section III.A.3 above.

The following specific parking requirements for the PAD will not apply to existing surface parking lots or parking structures on the Property until such time as the Phase 1 redevelopment of the campus proceeds in accordance with the PAD Detailed Site Plan (Exhibit 30). Calculations for all categories will be provided at the time of future Development Package(s):

- Inpatient Facility: Minimum 3.7 spaces per inpatient bed; maximum 5.2 spaces per bed
- Outpatient Clinic or associated Administrative Functions: 4.0 parking spaces for every one thousand square feet (1,000 SF) of gross floor building area
- Retained Private Residential Triplex: one (1) space for each dwelling unit, plus one (1) visitor space, for a total of four (4) required spaces
- Accessible Parking (see the previous Exhibit 35) will be provided in the quantity and size to meet the prevailing requirements of the Americans with Disabilities Act
- Parking for alternative fuel vehicles will be provided based only upon demonstrated need, with no specific minimum percentage requirement. For reference purposes, Banner Health's corporate standards for electric vehicle charging stations are provided in Appendix E.
- Car pool parking spaces will be provided based upon demonstrated need, with no specific minimum percentage requirement. Car pool spaces will be located in reasonable proximity to primary public and staff entrances.

Specialized Bike Parking Requirements

Very few inpatients or visitors arrive to hospital campuses via bicycle. Therefore, the bulk of the bike parking needed is for staff, it is long-term, and it is best located near staff entries. With this in mind, the following bicycle parking requirements will apply to the PAD Site (calculations for all categories will be provided at the time of future Development Package[s]):

- No (0) new or additional bicycle parking spaces will be required in the existing condition of the current medical campus.
- Attendant to Phase 1 development of the new

hospital facility, ten (10) short-term bicycle parking spaces will be provided in proximity to the hospital's main entry.

- Attendant to Phase 1 development of the new hospital facility, one (1) long-term space will be provided for every 15,000 square feet (15,000 SF) of hospital gross floor area, including new and existing total gross floor area. Long-term spaces will be located in reasonable proximity to staff entrances.
- Attendant to Phase 1 new outpatient clinic uses, one (1) short-term parking space will be provided for every 25,000 square feet (25,000 SF) of outpatient treatment gross floor area.
- Attendant to Phase 1 new outpatient clinic uses, one (1) long-term bicycle parking space will be provided for every 10,000 square feet (10,000 SF) of outpatient clinic uses gross floor area, including new and existing square footage.
- Bicycle storage lockers are not permitted along the public façade of any public building.
- The number of long-term bicycle parking spaces provided may be reduced by a formal Bicycle Share program, subject to review and acceptance by the Director of the Planning and Development Services Department (PDSD) at the time of Development Package review, with input, at the Director's discretion, from the TDOT Bicycle/Pedestrian Coordinator.
- Parking for alternative fuel vehicles will be provided based upon demonstrated need, with no specific minimum percentage requirement.
- Car pool parking spaces will be provided based upon demonstrated need, with no specific minimum percentage requirement. Car pool spaces will be located in reasonable proximity to primary public and staff entrances.

D. Specialized Loading Zone Requirements

All existing loading zones on the Property as of the effective date of the BUMC PAD are deemed sufficient in their existing condition and no new or additional loading zones shall be provided or required other than that as described below:

- In conjunction with Phase 1, a new major loading zone and enclosed service area for the new hospital facility will be provided and be comprised of the following:
 - 1) four (4), 12' x 55' loading spaces suitable for large, semi-tractor trailer vehicles;
 - 2) an associated depressed loading dock; and
 - 3) an additional four (4), 12' x 32' spaces for refuse collection and other operational services.
- The loading and service area will be accessed from Adams Street, allowing for all arriving and departing service and delivery vehicles to completely access the enclosed central plant area and loading dock without impeding traffic on Adams Street.
- The loading zone and service facilities will be adjacent to the hospital complex and support the hospital operational functions.

- The loading and service area will be screened from view by a continuous landscape screen or by decorative walls not less than eight feet (8') tall.
- Vertical clearance above the loading and service will be a minimum of twenty-five feet (25').
- Handling of oxygen and other medical gases within the loading and service area will be allowed in strict accordance with International Building Code (IBC) requirements.

E. Lighting

This PAD District recognizes the applicability of the 2012 City of Tucson/Pima County Outdoor Lighting Code (OLC) and also recognizes that modifications to the OLC cannot be effectuated within a PAD construct. It is simply noted here that federal regulations and guidelines for healthcare facilities, together with Banner Health corporate lighting requirements specifically adopted to comply with these federal standards, may contain provisions which lie outside the strict provisions of the OLC. Any divergence between these guidelines and the OLC is wholly due to the fact that hospitals operate twenty-four hours a day in perpetuity.

Furthermore, around-the-clock video surveillance is required of all major outdoor vehicular circulation, parking, and patient and staff drop-offs & entries. These areas, which comprise the majority of the campus complex, must receive sufficient lighting to ensure full visitor and staff safety, security, visibility and comprehensive video monitoring. In order to meet these objectives, light standards and fixtures at heights of up to twenty-five feet (25') have proven necessary on similar campuses and are anticipated at the BUMC campus. This PAD expressly intends a final lighting plan and photometric design which satisfies these operational requirements and associated federal requirements.

With this in mind, Site lighting will be provided sufficient to satisfy the above, while still respecting dark-sky concerns and meeting the spirit and intent of the OLC. Banner Health representatives and consultants will work in conjunction with the Planning & Development Services Department (PDSD) to address any discrepancies between the proposed design and applicable OLC provisions.

Appendix F contains Banner Health's lighting guidelines, as well as a conceptual lighting plan and photometric layout for the PAD Site. This information is provided for information and guidance only as to the anticipated future lighting design of the project. Refinement of this conceptual design will occur in conjunction with PSDS staff during the architectural and building review process.

F. Helicopter Path and Helistop Facility & Operations

BUMC will continue to comply with Federal Aviation Administration (FAA) recommended design standards for minimum safety and operational design criteria for hospital helicopter transport and helistop facilities. Emergency helicopter services and related uses in the PAD District will be a continuation of those existing services begun in the 1970's for the University Medical Center. UMC is the only Level 1 trauma center in Southern Arizona, and as this service will continue as part of BUMC, this established incoming and outgoing helicopter traffic will remain an on-going reality of the campus operation.

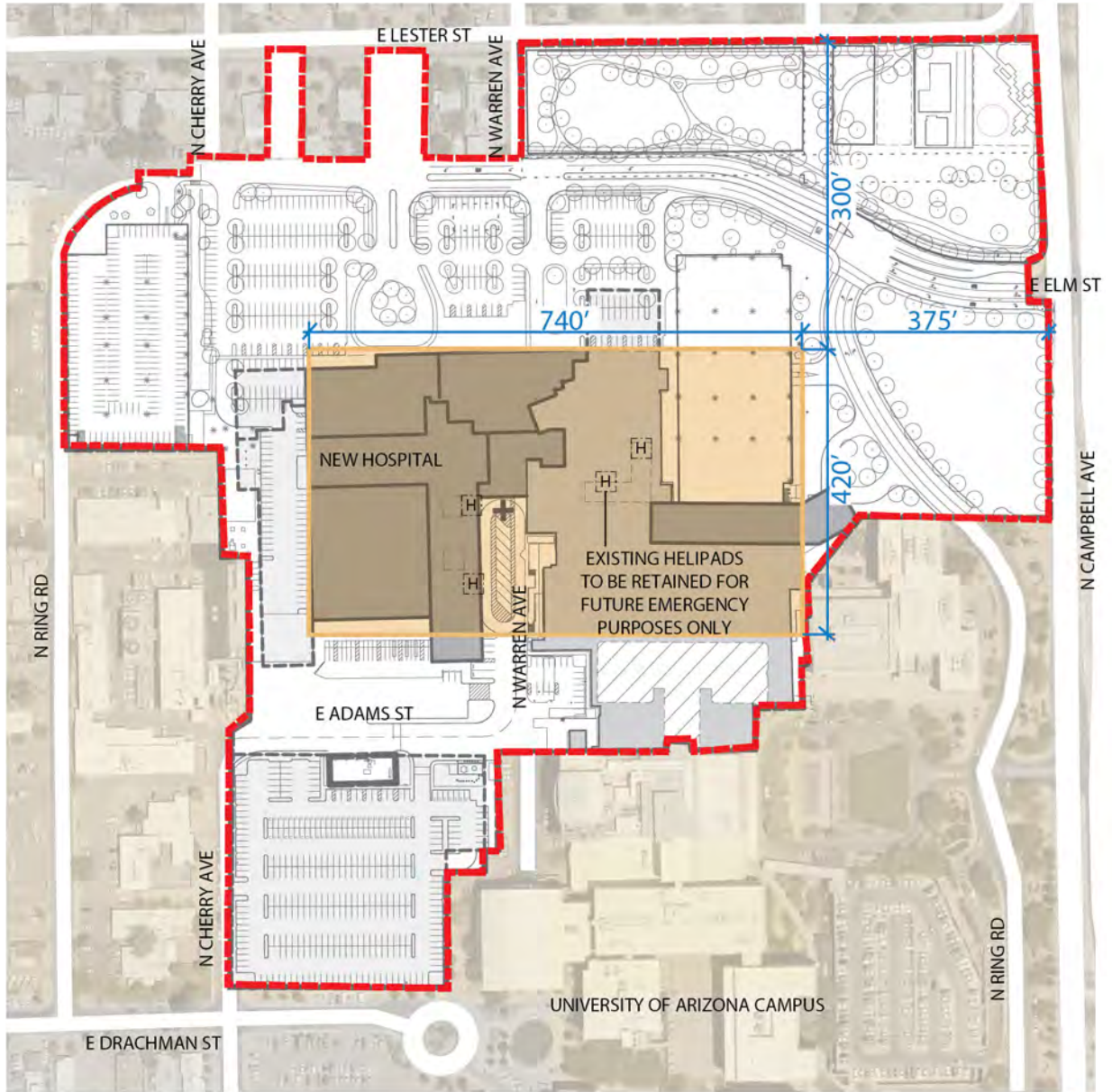
At present, two helipads are located on the DCMC roof-top. With Phase 1 of the PAD's development program, two new helipads will be constructed on the roof-top of the new hospital's Phase 1 bed tower. These new helipads will thenceforth serve as the primary facilities for incoming and outgoing helicopter flights. The existing helipads atop DCMC will remain in place, but these will be used only when emergency or special circumstances preclude the use of the new helipads atop the Phase 1 bed tower. In addition, a specific zone is delineated on Exhibit 36 within which a helistop and/or helipad will remain a permanent right within the PAD District, whether roof-top or surface located, to accommodate the unforeseen need to relocate the facility at some time in the future.


The current helicopter incoming and outgoing flight paths to the existing helipads are illustrated on Exhibits 37 and 38. These exhibits are taken directly from an existing Memorandum of Understanding (MOU) that is in place between University Medical Center and the Jefferson Park Neighborhood to the immediate north. The operation of the BUMC PAD District campus by Banner Health will honor this existing MOU, with divergence from its designated flight paths occurring only when extraordinary circumstances leave pilots with no other available route for a safe landing or departure.






Existing Helipad

Exhibit 36: Helistop Use Zone



LEGEND 

New Helipad Location Atop New Hospital 	Designated Helistop Use Zone 	Banner - UMC PAD District 
--	--	---

PAD DISTRICT PROPOSAL

Exhibit 37: Existing Helicopter Arrival Flight Patterns (Excerpt from MOU)

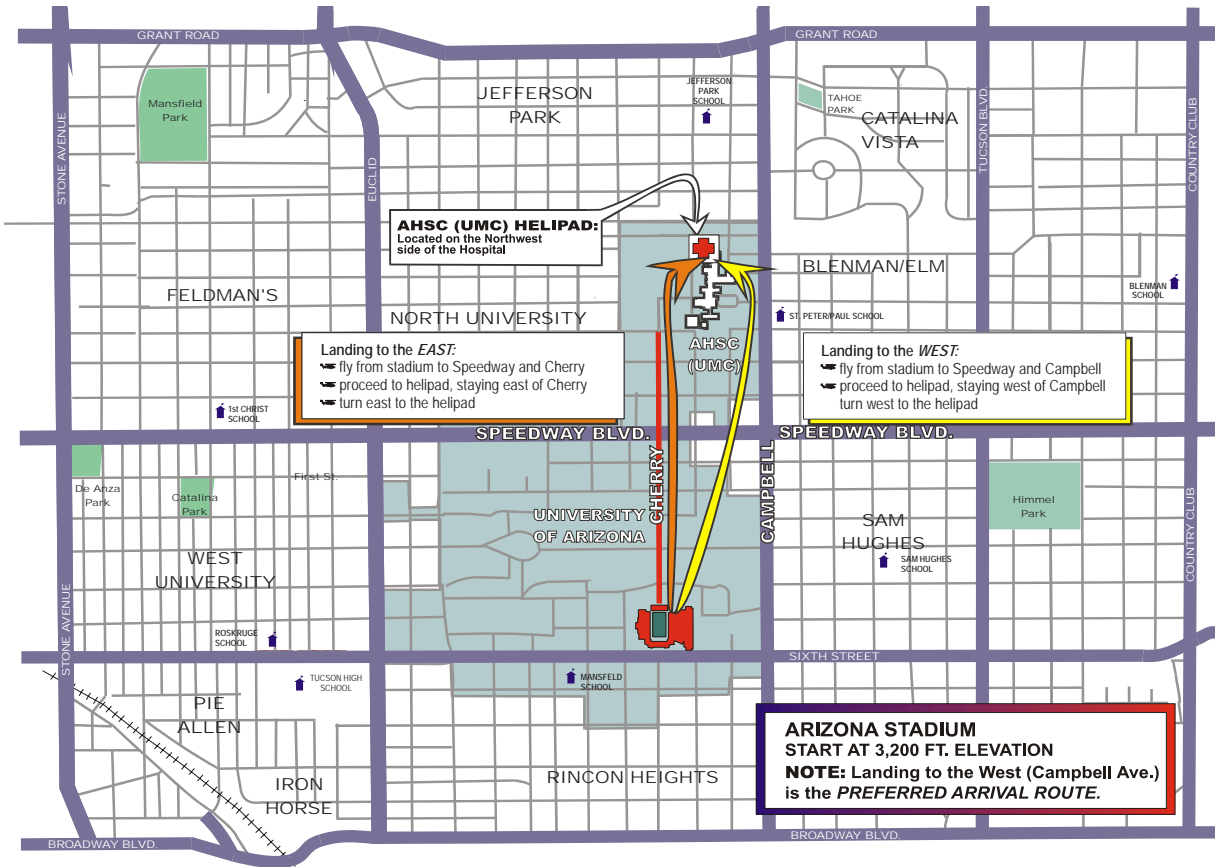
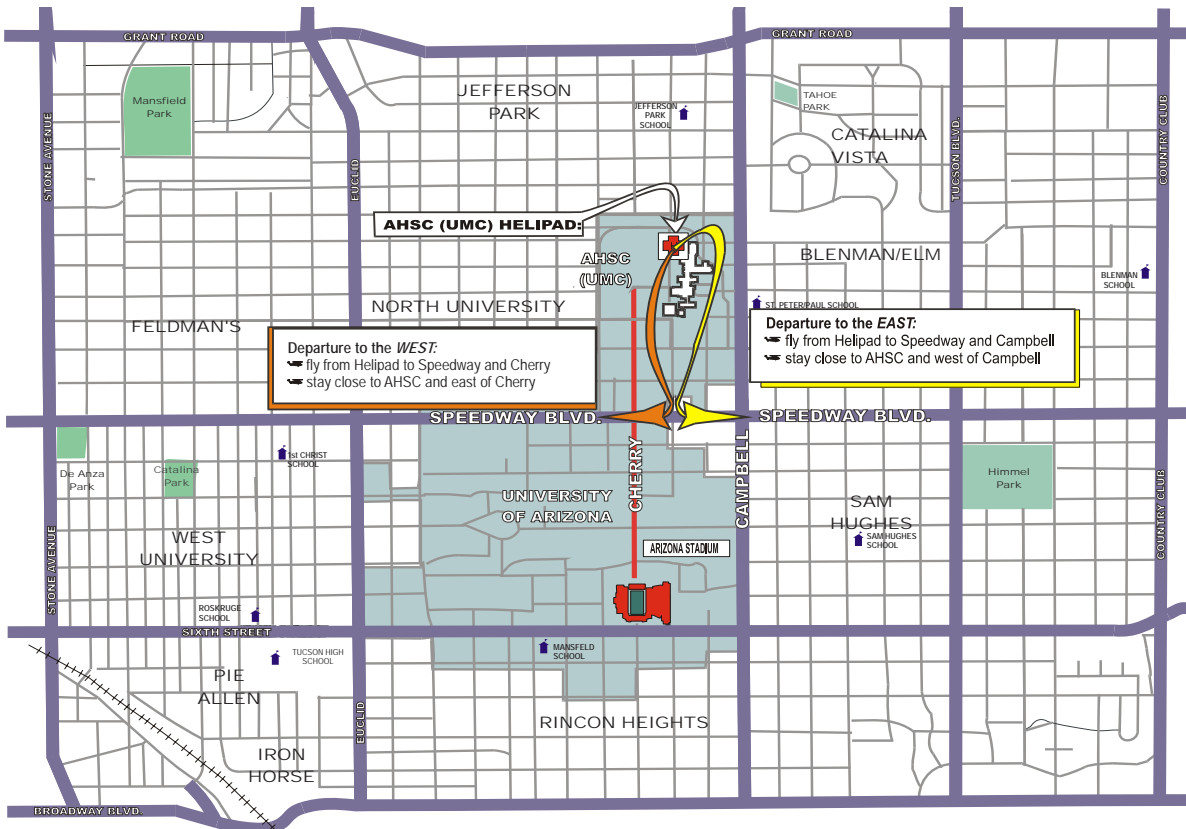


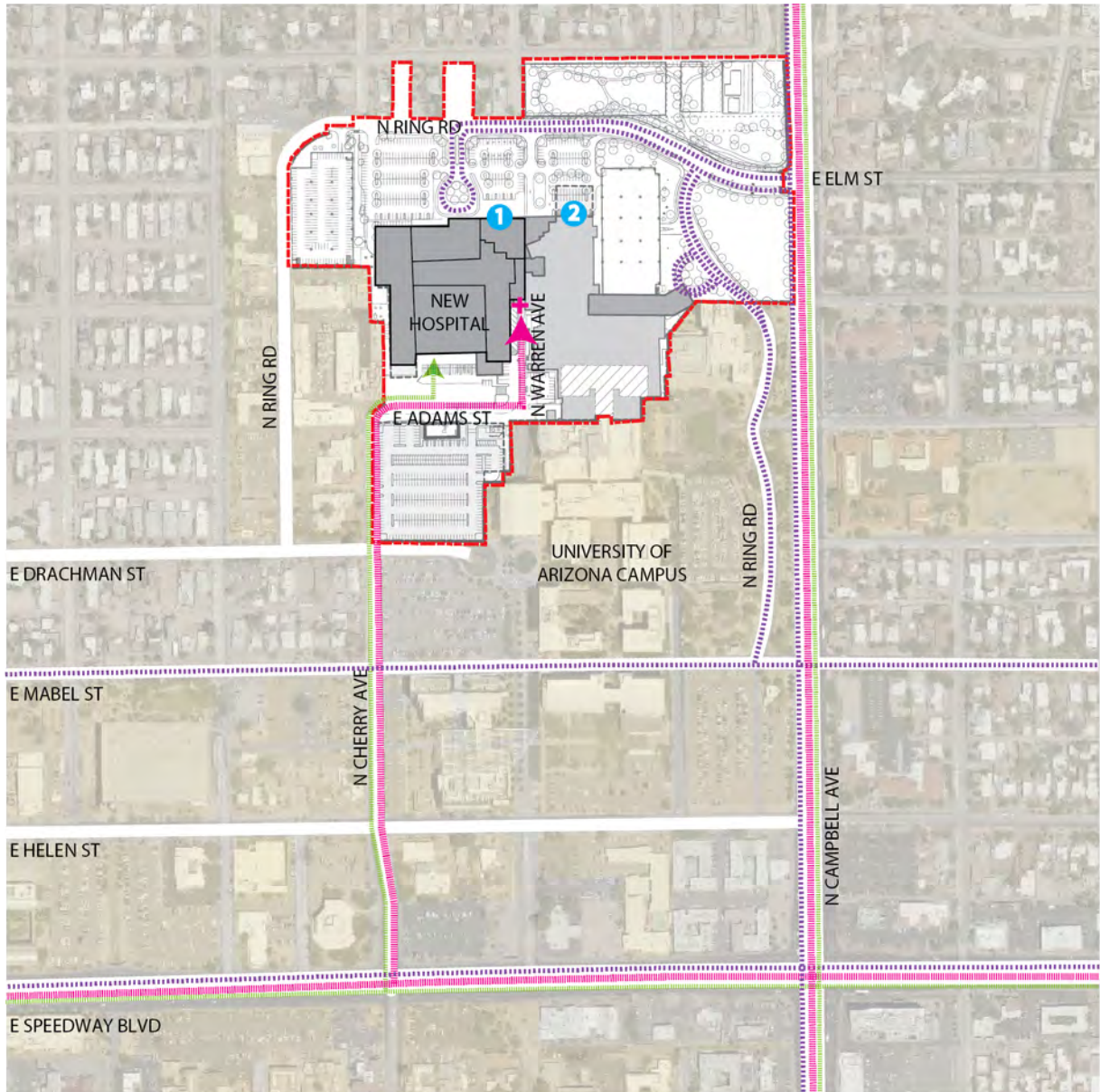
Exhibit 38: Existing Helicopter Deprature Flight Patterns (Excerpt from MOU)



G. Emergency Service Vehicle (ESV) Facilities, Routes & Parking

The routing of emergency-service vehicles (“ESV”) (ambulances, etc.) within the PAD District is depicted on Exhibit 39. This access route utilizes Cherry Avenue, Adams Street, and Warren Avenue to access the emergency facilities at a point located between (and on the south side of) the new hospital facility and the existing DCMC. ESV drivers will be instructed to utilize the above route and to enter BUMC via the Speedway Boulevard-Cherry Avenue intersection. Emergency vehicles will park adjacent to the emergency entrance on the west side of Warren Ave in designated parking spaces. The location of this ESV facility on the south side of the hospital/DCMC building will provide complete mitigation of noise and traffic impacts upon the directly adjacent neighborhoods.

Exhibit 39: Routing of Emergency Service Vehicles (ESV’s), Service Vehicles & Public Patrons



- New Hospital Main Public Entrance 1
- New Emergency Department Entry 2

- Service Vehicles (dotted green line)
- Public Circulation to Main Entries (dotted purple line)

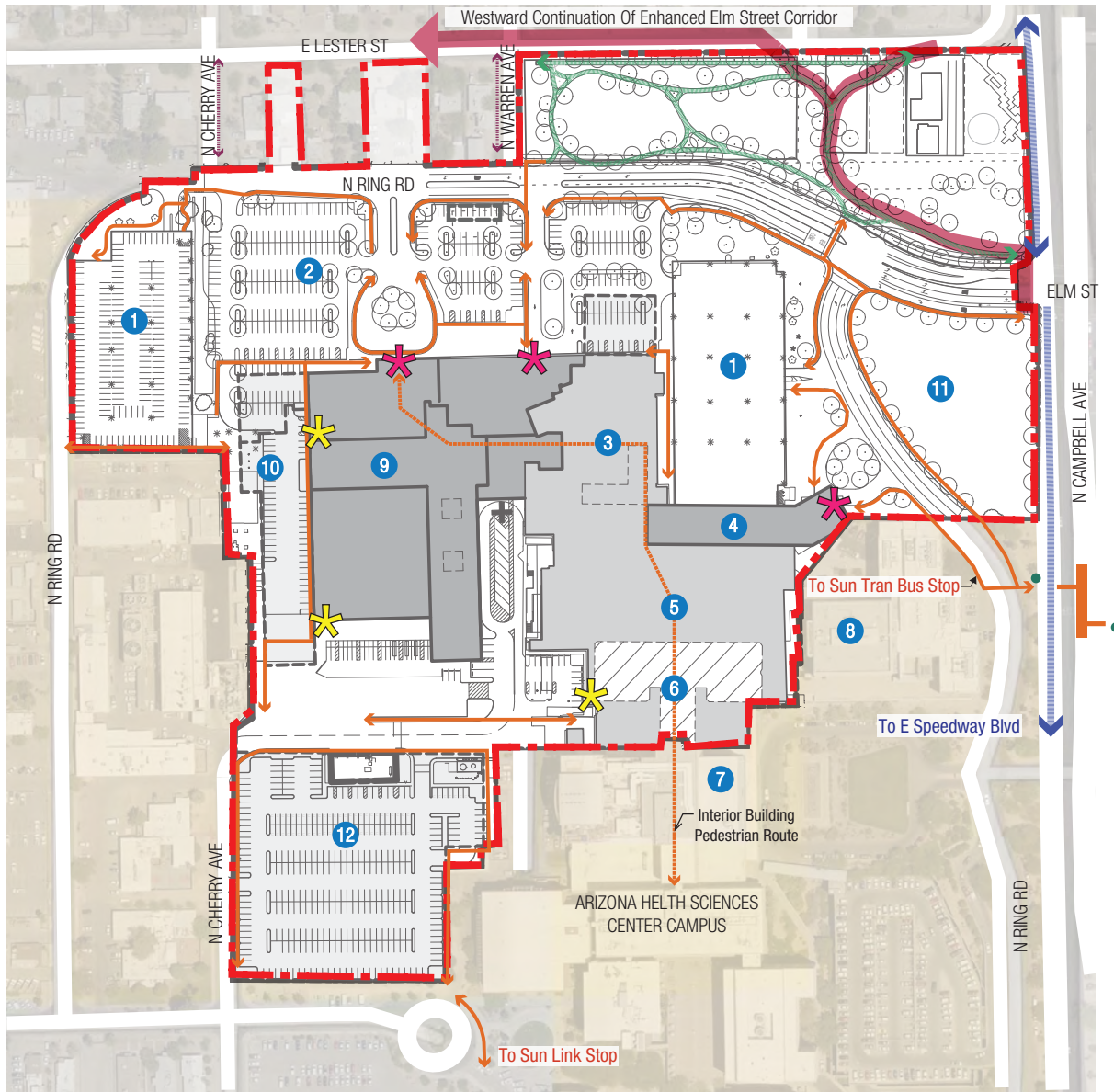
- LEGEND
- Banner - UMC PAD District (red dashed line)
 - Ambulance Traffic (dotted pink line)
 - Ambulance Drop Off and Parking (+)



H. Pedestrian Circulation and Connectivity

The BUMC PAD redevelopment program will improve pedestrian circulation and connectivity through and within the Property. As currently configured, there is a lack of clear, consistent signage, together with discontinuous and segmented routes through the Property that make connectivity and circulation difficult for visitors and employees alike. Refer to Exhibit 40 (below) and the subsequent description of the proposed site pedestrian circulation.

Exhibit 40: Proposed On-Site Pedestrian Circulation



- | | | | |
|---------------------------|---|------------------------------------|--|
| Existing Parking Garage 1 | College of Medicine 7 | Pedestrian Node ● | Banner-UMC PAD District ——— |
| New Surface Lot 2 | Cancer Center 8 | Sun Tran Bus Stop ● | N Campbell Ave Pedestrian Way ——— |
| DCMC 3 | Banner-UMC 9 | Patient / Visitor Building Entry * | Medical Campus Pedestrian Circulation ——— |
| New DCMC Lobby 4 | New Hospital (Phase 1) 9 | Staff / Service Building Entry * | North Green Pedestrian Circulation ——— |
| UMC / NEP 5 | New Bed Tower (Phase 2) 10 | | Enhanced Elm Street Corridor (Shared-Use Path Through The North Green) ——— |
| UMC / 201 Building 6 | Potential Future Surface Parking Lot 11 | | Off-Site Pedestrian Circulation ——— |
| | Phase 2 Parking Structure 12 | | |



The existing north-south pedestrian route through the Site from Jefferson Park to the University main campus (and potentially to the new Sunlink streetcar station) takes users through the same corridor that is used by emergency vehicles accessing the DCMC emergency department. This route also essentially terminates at the loading zone area at the intersection of Adams Street and Warren Avenue. Access into and through the Site from the north will be improved with new pedestrian paths within the North Green, directing users to new/improved sidewalks along North Ring Road, where clear signage and pavement markings will better inform the user and reduce the current conflicts that occur between pedestrians/cyclists and passenger vehicles.

The current east-west circulation pattern through the PAD District is impeded by inadequate bike routes and sidewalks and is lacking any direct westward connection through the Site. Furthermore, existing UA maintenance and operations facilities (off-Site to the west) essentially block any meaningful access further westward. These conditions will be corrected with new bike/pedestrian routes which bring the user west on Elm Street (from the main campus entry at Campbell Avenue), then route them to new paths within the North Green and, ultimately, to the existing east-west bicycle/pedestrian route within Lester Street. This arrangement will best facilitate the Elm Street Enhanced Corridor, as designated in the 2012 Pima Regional Trail System Master Plan Update, by providing pedestrians and cyclists a clear and dedicated route through the PAD District and westward to the existing Mountain Avenue Enhanced Corridor and shared-use pedestrian/bicycle paths.

Site-wide pedestrian circulation will be further improved by creating clear signage, way-finding, and proper identification of all primary public entries.

Bicycle circulation will be significantly improved by not only providing a shared-use path through the North Green, but also by providing new bike routes with striped shoulders along substantial segments of the Ring Road, together with bike-friendly Ring Road segments (i.e. sections without formally striped shoulders, but with wider travel lanes and/or low traffic volumes that provide for safe bike travel). These improvements are discussed in more detail in Section III.C.2.D (Transportation – Multi-Modal Components).

Pedestrian paths and sidewalks identified on Exhibit 40 will be a minimum of 6' wide. Within the North Green, the pedestrian routes will be a minimum of 6' wide. The Elm Street Enhanced Corridor connection through the North Green from Lester Street to Campbell Avenue will be a

minimum of 10' wide to accommodate pedestrians and cyclists. Any supplemental pedestrian improvements, beyond those shown on Exhibit 40, will vary in width with a minimum width of 4'. Path materials can include alternatives to conventional asphalt and concrete, subject to acceptance by the City.

With respect to handicapped and disabled accessibility, it is the intent of the BUMC PAD District to meet all applicable regulations for a privately-funded development, with no requested exceptions or variances from them. This would include the City's Department of Transportation (TDOT) development standards and accessibility requirements for any improvements made within public rights-of-way, as well as the standards for private property as defined in the 2012 IBC, Chapter 11 and 2009 ICC/ANSI 117.1. Satisfaction of these requirements will be detailed on the future Development Package (DP) submitted to the City of Tucson.

Internally, the new hospital and bed-tower facility will physically integrate with the existing campus buildings through three primary points of connection:

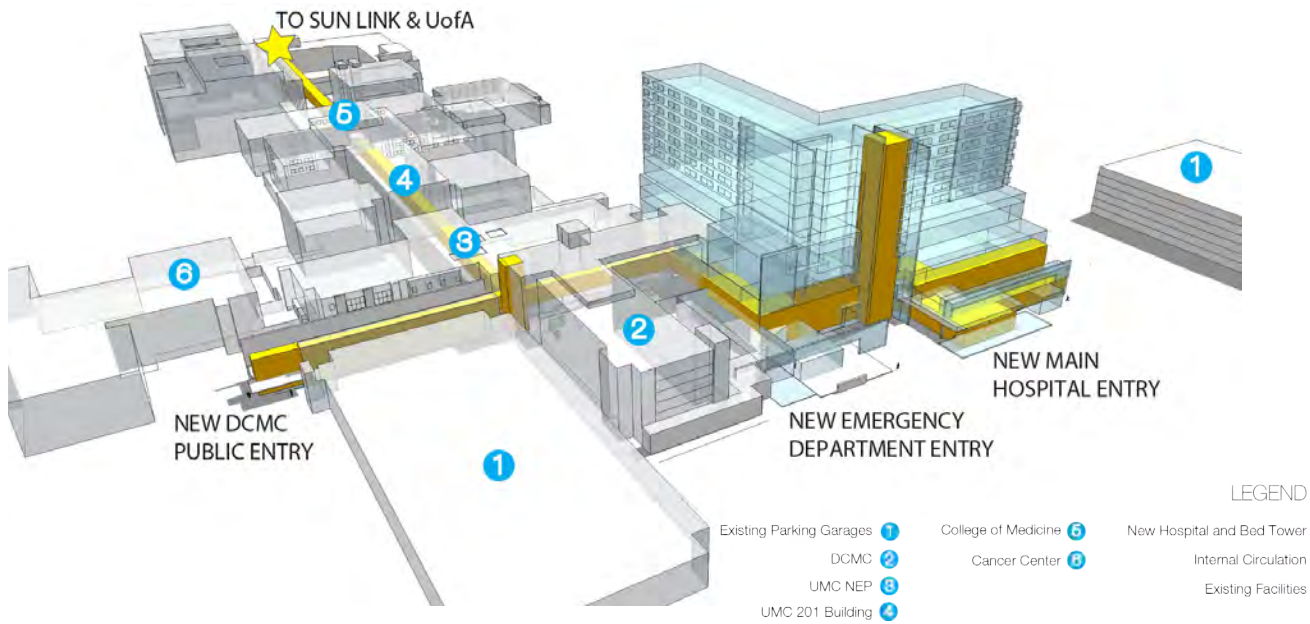
- 1) a street-level connection between the DCMC emergency department and the primary public entry of the new hospital;
- 2) a dual second-story connection that provides separate through-ways for staff & patient traffic, together with a companion public connection between the current medical center and the new hospital; and
- 3) a third-level connection, between the respective obstetrics and surgical floors, for patients and staff only.

These three connections will provide significantly more efficient movement between the patient rooms and all other departments, services, and functions within the hospital. See Exhibit 41 for an illustration of these internal connections.



Typical Bike Route

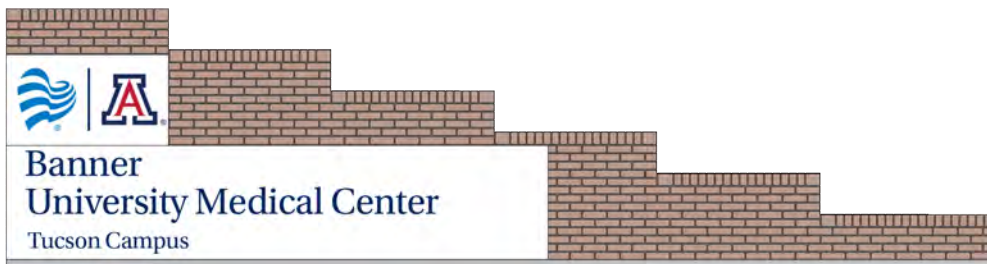
Exhibit 41: Internal Circulation & Connection to AHSC Campus (Birds-Eye View Looking SW)



I. Signage

Signage lies outside of the scope and authority of a PAD document, so it is only appropriate to state here that the signage within the PAD District will be effectuated within the provisions of the City of Tucson Sign Code ("Sign Code"). Exhibit 42 provides some examples of temporary signage elements that will be implemented during that interim time period where ABOR still owns the underlying Property, but Banner Health is operating all of the facilities under a lease arrangement; these signage illustrations are for informational purposes only. The Banner design team will be working separately with City staff to develop a customized package of permanent signage for the entire PAD District and will identify the scope of whatever specific Sign Code variances may be necessary. Banner Health is aware that certain aspects of the existing signage, e.g. the changing colors and copy of the DCMC electronic sign, present particularly challenging components vis-à-vis the current Sign Code and may need to be altered to some extent. It is our intent to ultimately file a comprehensive application/request package for consideration by the City of Tucson Sign Code Advisory and Appeals Board (SCAAB). For informational purposes, see Appendix G (Banner Health Signage Standards).

Exhibit 42: Banner University Medical Center Temporary/Interim Signage Concepts



J. Landscape Requirements

The following landscape and screening requirements for the BUMC PAD District shall supersede Section 7.6 (Landscape and Screening) in the UDC.

General Landscape Concept

The BUMC PAD landscape and screening requirements address the relevant design criteria required by the UDC. The PAD establishes base performance criteria for the PAD District to address requirements enforced by Section 7.6 (Landscape and Screening) in the UDC. The PAD District is expected to meet or exceed the following base performance criteria, with certain modifications of UDC requirements where existing site conditions and specialized design criteria for medical facilities necessitate design flexibility. This flexibility is justified by the fact that the proposed PAD District and site plan increases the overall landscape area by 20% in comparison to the existing campus. In addition, the North Green creates approximately 3.0 acres of functional open space that serves as a landscape buffer between the hospital and Jefferson Park Neighborhood, as well as a significant public open space area on the campus.

The PAD will implement a regionally adapted and native plant palette throughout the entire PAD District that will feature varying textures and colors of plant material so as to create an inviting and comfortable environment for patients and guests. The landscape design will reinforce vehicular and pedestrian circulation routes throughout the Property by highlighting primary circulation routes and key entry points to all PAD District facilities and amenities.

Trees will be placed appropriately to provide shade for pedestrians, while also allowing visibility for way-finding and signage to all campus facilities and functions. Site lighting will be incorporated as an essential landscape element, not only for aesthetic purposes, but also to insure visitor safety, security monitoring, and to visually aid all pedestrian circulation routes.

A low water-use irrigation system will be utilized for all landscape areas. The system will incorporate an automatic controller, flow sensing valves, rain shut-off capability, and will also be metered separately to monitor water usage throughout the PAD District.

All pedestrian pathways will be accessible routes and be designed to facilitate safe and efficient patient, guest, and visitor movement throughout the PAD District. Select pedestrian connections will be made with adjacent community sidewalks and designated trail routes to allow pedestrians to easily access the campus. Project monumentation

signage, at the main Elm Street entry and throughout the campus, will complement the design theme; the material/color palette for the District will be integrated throughout the campus to emphasize key vehicular and pedestrian nodes. Surface drainage and stormflows will be captured within landscape areas whenever practical, particularly within the North Green retention/detention basin and buffer. The North Green will also function as a significant outdoor open space amenity for patients, guests, and the adjacent residential neighborhood.

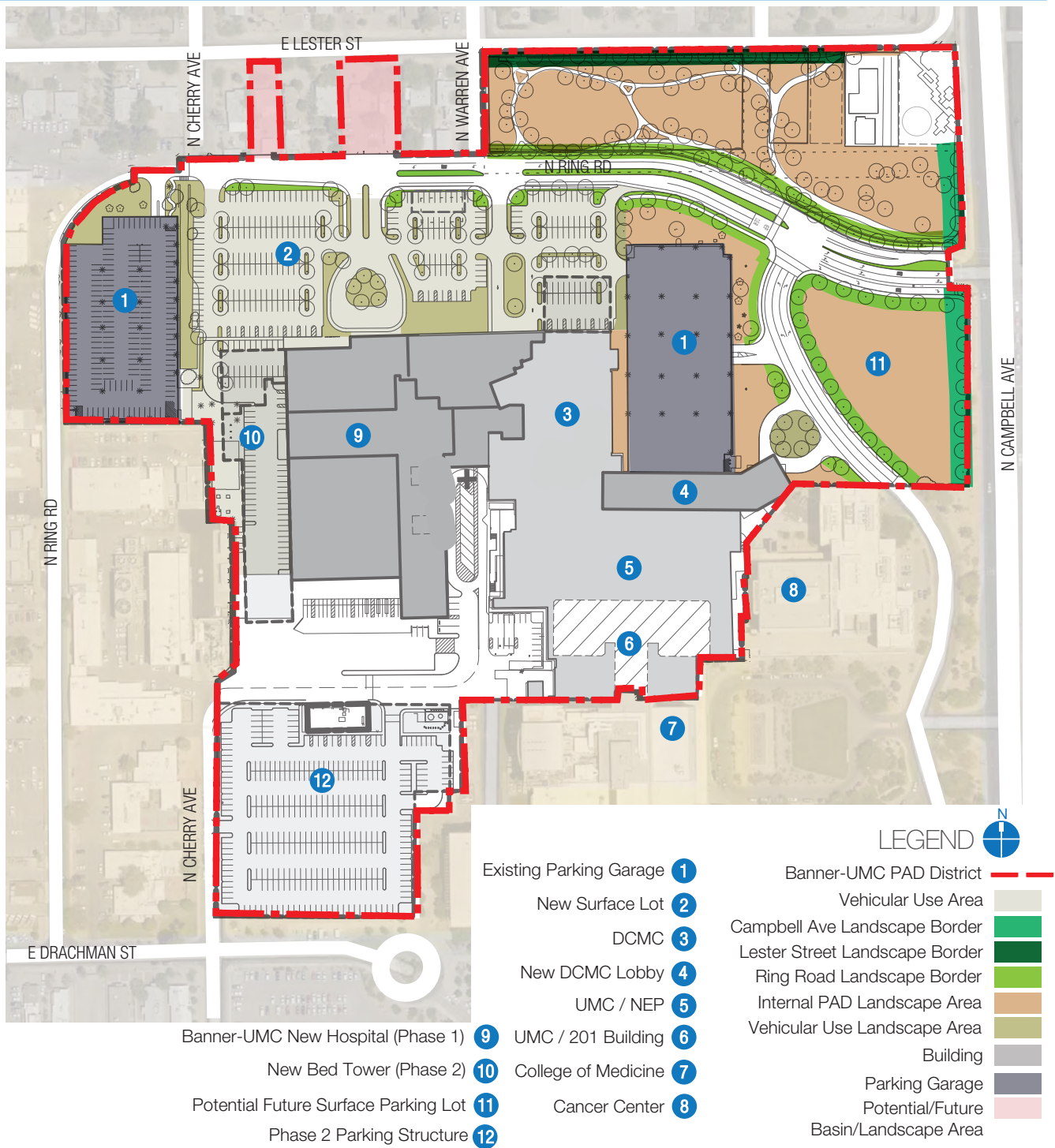
Landscape Framework - Perimeter Landscape Borders, Screening & Landscape Character

The proposed landscape framework for the PAD District emphasizes new landscape borders and screening for the adjoining Jefferson Park residential uses to the north in conjunction, with an eastern street landscape border along Campbell Avenue. Landscape enhancement will be integrated where possible along North Ring Road adjacent to the existing residential properties on its north side (West of Warren Avenue). Existing uses to the west and south of the PAD District are comprised of UA operations and maintenance facilities, together with existing AHSC medical campus facilities. These uses are not only in close physical proximity to the PAD boundary, but are also similar in their land-use type and intensity to the new uses proposed within the BUMC PAD District. For these reasons, no interior landscape borders or perimeter landscape borders will be required by this PAD along the western and southern PAD boundaries. Figure 43 provides a conceptual depiction of the PAD's overall landscape framework.

General Landscape Elements and Guiding Objectives

- Maintain clear, unobstructed views from North Ring Road and vehicular use area to the patient visitor entrance to the new hospital, as well as to the emergency room entrance.
- Integrate clear pedestrian routes and public spaces that encourage use with pedestrian friendly amenities such as benches and shade.
- Maximize shade in the internal landscape areas, including pedestrian routes and gathering areas through the placement of trees to establish an urban canopy and/or building overhangs and shading elements.
- Maximize plant placement and selection to reduce heat island effects of parking areas and other hardscape areas. Canopy trees, planted within and adjacent to vehicular use areas, should be sited in a manner that, upon maturity, they afford the greatest amount of shade to the adjacent paved areas.
- An underground drip irrigation system with a smart ET-based control system shall be used. Spray irrigation is permitted for turf areas only.
- A Native Plant Preservation Plan (NPPP) shall be prepared for each Development Package processed within the PAD District in accordance with the requirements of the City of Tucson Unified Development Code.

Exhibit 43: Landscape Framework



- A decomposed granite ground cover or inorganic ground cover shall be used in all landscape areas not otherwise covered with vegetation.
- “Safe by Design” principles shall be implemented in the design and construction of screen walls or continuous landscape screens to prevent hiding and loitering opportunities near pedestrian and bicycle paths. Example principles to be utilized in this regard include jogs

- and offsets incorporated into the wall or vegetative screen. Openings for pedestrian and bicycle paths will be widened appropriately and cacti and other thorny plants will be utilized to keep undesirables out of hiding areas near such pathways.
- Landscape maintenance practices will consider the need for an Integrated Pest Management plan for the Banner-UMC campus.

PAD DISTRICT PROPOSAL

Campbell Avenue (Public Street Frontage)- Street Landscape Border

The formal street landscape border along Campbell Avenue shall be a minimum of ten feet (10') in width from the edge of right-of-way line or public utility easement (whichever is appropriate); its plantings will ensure all visual clearances are provided within applicable sight visibility triangles at intersection locations. Screening shall be required for all parking areas along Campbell Avenue and will be accomplished with low screen walls. The street landscape border shall require a minimum of one (1) canopy tree for every thirty-three linear feet (33') of landscape border or fraction thereof, excluding vehicular ingress or egress points. The distance between the required trees may vary within the landscape border. Vegetative ground cover shall be provided by integrating shrubs, accents and ground cover at a rate of ten (10) plants per thirty-three linear feet (33') of landscape border.

Campbell Avenue is also designated as a Gateway Corridor Zone. The PAD will follow the established City of Tucson Gateway Corridor Zone Overlay Guidelines. The landscape design will foster an aesthetic corridor, provide visual interest focused on the key Site entries, and will attempt to visually buffer any utilities along the project frontage. Campus, medical center, and way-finding signage will be allowed within the landscape border and within the gateway zone and in accordance with sight visibility requirements.

The Lester Street Landscape Border

This residential landscape border shall be integrated into the North Green and buffer along the north edge of the PAD District, providing a functional landscape area and enhancing the landscape transition to the adjacent existing residences in the Jefferson Park Neighborhood (also refer to the Section below titled, "Jefferson Park Neighborhood North Green"). The landscape border shall be a minimum of ten feet (10') wide and provide a minimum one (1) canopy tree and ten (10) plants for every thirty-three linear feet (33') of landscape border or fraction thereof, excluding vehicular ingress or egress points. The distance between the required trees may vary within the landscape border.

Internal North Ring Road, Streets and Access Lanes

Internal North Ring Road, local streets or private drives and access lanes within the PAD District shall have a flexible landscape program integrating tree, shrubs, accents and ground cover plantings. Landscape will be provided where possible to enhance these corridors, so as to mitigate roadway

pavement Urban Heat Island Effect, and to provide shading for pedestrian routes where space limitations allow. This new landscaping will conform to the overall landscape concept and landscape framework.

Internal Campus Landscape Areas

Landscape areas, open spaces and green space provide peaceful, healing environments from which both visitors and patients can benefit. The BUMC PAD presents many opportunities for such spaces within the PAD District. These spaces will be utilized to foster green spaces of varying sizes throughout the campus and, as such, establish an overall green infrastructure. Landscaping will be integrated into these available spaces and will conform with the overall landscape concept and landscape framework character of the larger PAD District.

Loading and delivery docks, outdoor storage areas, garbage and recycling areas and other similar exterior improvements facing residential neighborhoods, public spaces, or perimeter edges of the PAD District will be screened with a continuous landscape screen or decorative masonry wall a minimum of six feet (6') high and designed to prevent unreasonable light, noise and visual impacts. This requirement does not apply to Site circumstances where a loading dock, etc. is already substantially screened by buildings or other landscaping.

Vehicular Use Areas / Parking Areas / Surface Parking

The BUMC PAD will integrate landscaping into the parking areas to provide shade for motorists and to reduce heat island effects. In all areas, canopy trees and planter islands in parking areas shall be placed so as to not undermine or otherwise diminish the ability to provide effective security lighting, required video monitoring, or the general health and safety of visitors, patients, and staff. With this requirement in mind, parking area plantings and canopy trees are allowed to deviate from the planting ratio and distance from a parking space per the UDC and, as such, the PAD will target the following to maximize the canopy trees in vehicular use areas per Exhibit 43 (these prescriptions supersede 7.6.4.B.1 Canopy Trees):

- Within a vehicular use area: 1) canopy trees will be concentrated around the perimeter of the parking area; 2) canopy trees will be located internally in parking areas within parking islands distributed in the parking area and along access lanes when possible; and 3) parking areas with sub-surface retention will strategically locate canopy trees around the perimeter of the parking area and outside of the underground storage areas.
- An unpaved planting area (e.g. rectangle or diamond-shaped cut-out), which is a minimum of thirty-four square feet (34 SF) in area and four feet (4') in width, must be provided for any canopy tree located internally in a parking area.

- Existing parking areas will not require additional canopy trees until such time as the parking area is redeveloped in a configuration different from the existing condition.

Jefferson Park Neighborhood North Green

The North Green feature is located along the northern boundary of the PAD District and is designed to be a multi-use retention/detention basin as well as a buffer. This buffer area has been a component of several past planning efforts by the UA and the City of Tucson and has been referred to by a variety of names, including “green edge”, “greenbelt”, and “greenway”. In conjunction with this PAD District, the buffer is formally named the North Green and will hereafter be known and referred to as such.

From a landscape perspective, the North Green will be designed to benefit the medical campus as an aesthetic amenity for patients and visitors, as well as a passive urban park for the adjacent neighborhoods. It will feature lighted meandering trails, benches, tables, a shade structure, and regionally native planting. The existing perimeter walls and landscaping (within the City-owned parcels along the Campbell Avenue frontage) will remain along the eastern edge of the North Green. The North Green landscape program will integrate trees, shrubs, and vegetative ground cover to provide passive areas and shade for pedestrian routes and outdoor activities. The North Green will include, at a minimum, the following landscape amenities:

- Pathways
 - Six foot (6’) Pedestrian Path
 - Ten foot (10’) Urban Trail Connection
(Pedestrian/bike path from Campbell Avenue to Lester Street)
- Pedestrian Lighting (low-voltage acceptable)
- Two (2) Benches
- One (1) Shade Structure
- Two (2) Picnic Tables / or similar

Exhibits 44 and 45 respectively provide illustrative cross-sections and a conceptual plan view of the North Green. Exhibit 46 provides an extensive conceptual plant palette for the entire PAD District.



Layering Plant Material
General Landscape Character

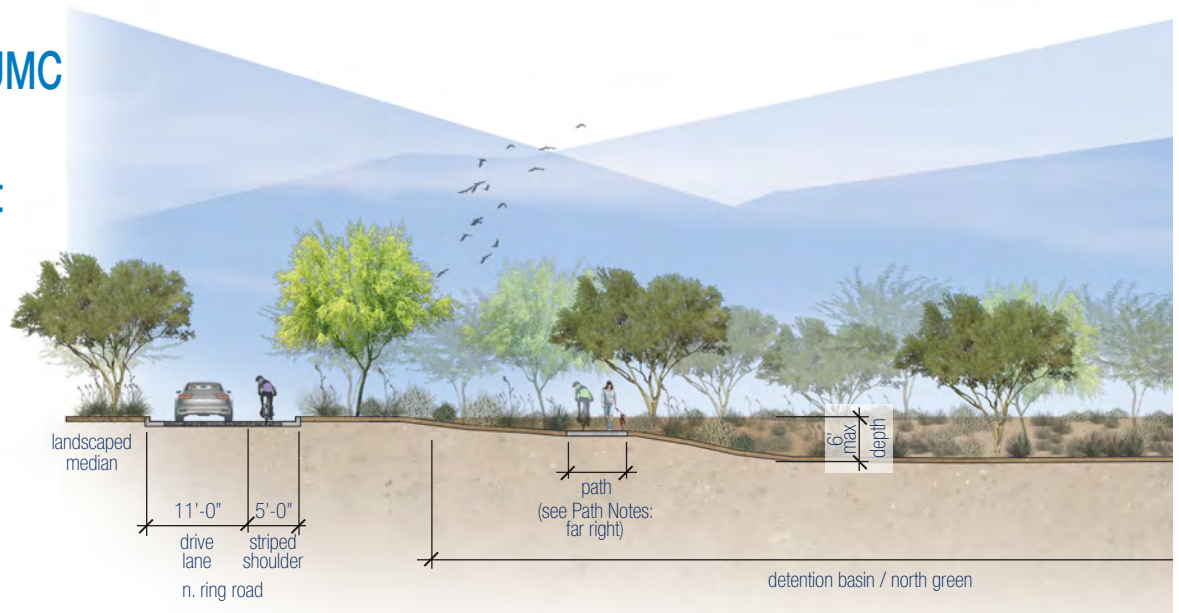


Layering Plant Material
General Landscape Character



Layering Plant Material
General Landscape Character

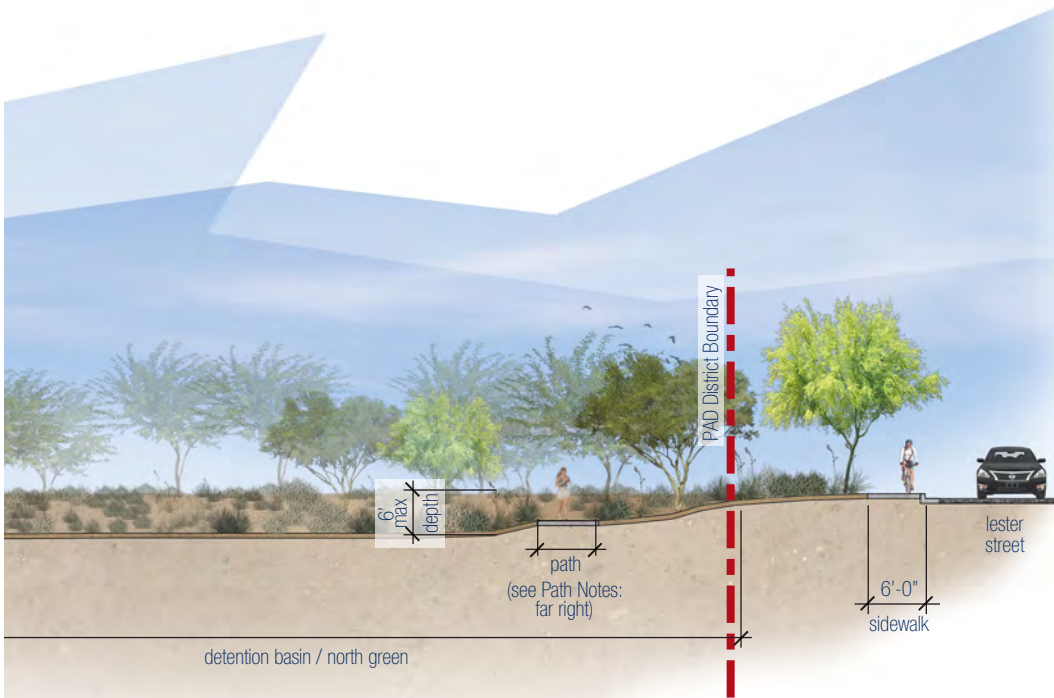
Banner - UMC
PAD
District



1 North Green Section
1"=20'



Jefferson Park Neighborhood



PATH NOTES:

1. Pedestrian-only paths are 6' wide.
2. Shared-use paths (to facilitate the Elm Street Enhanced Corridor) will be 10' wide.
3. See Exhibit 45 for respective path locations.

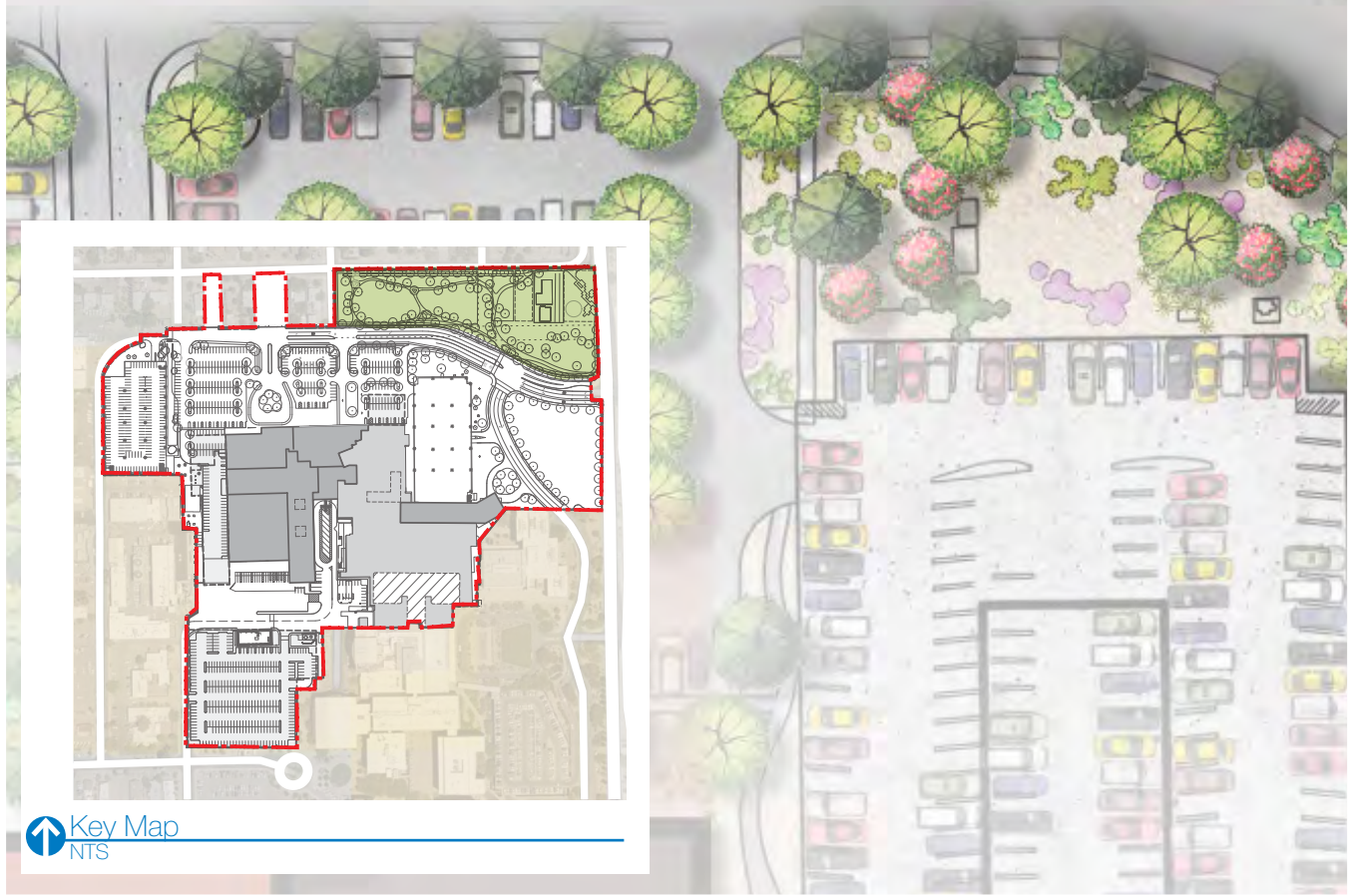


Exhibit 45: North Green - Conceptual Plan View

JEFFERSON PARK
NEIGHBORHOOD

EAST LESTER STREET

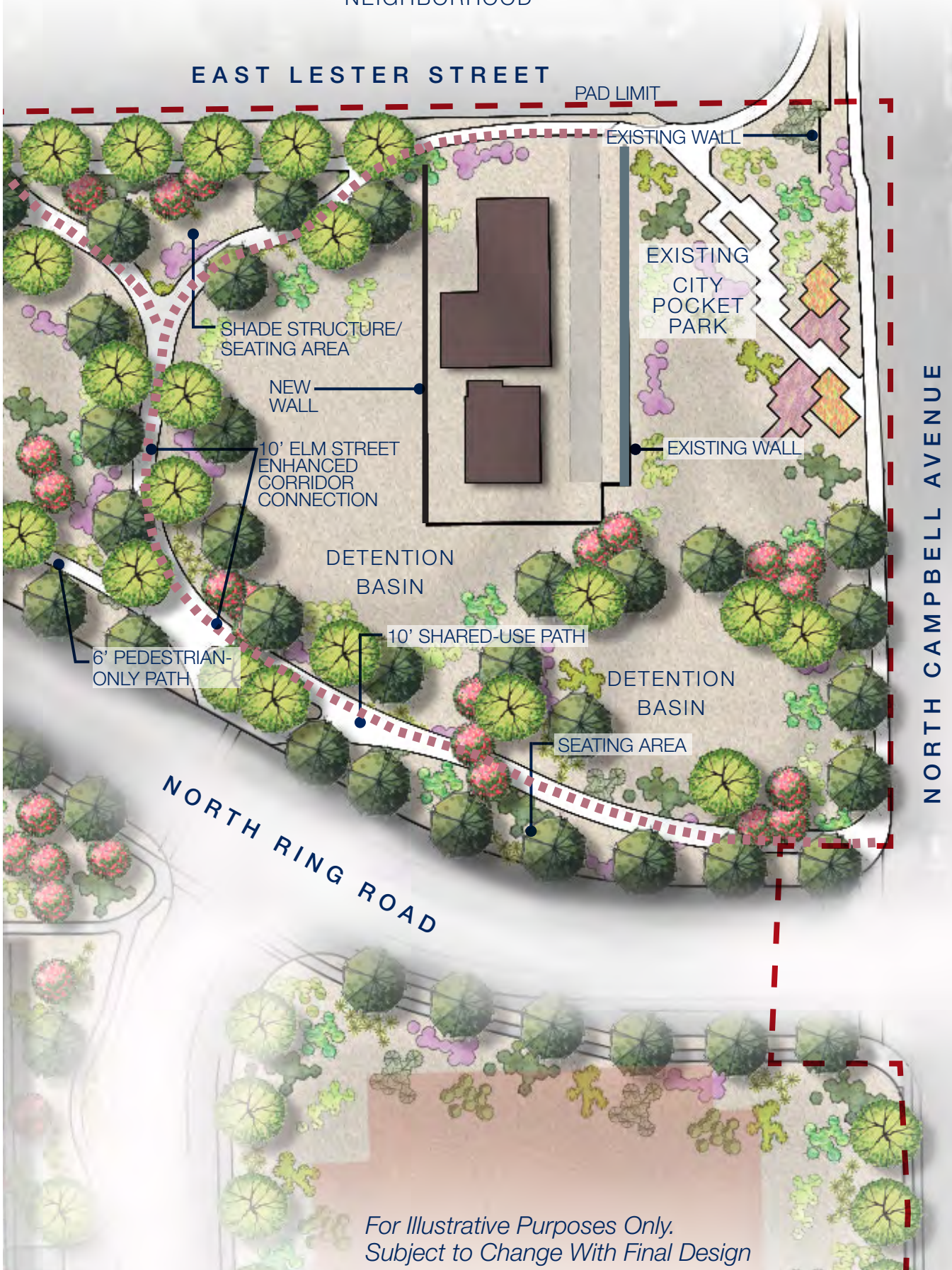
PAD LIMIT



Key Map
NTS

PAD DISTRICT PROPOSAL

JEFFERSON PARK
NEIGHBORHOOD



NORTH CAMPBELL AVENUE

NORTH RING ROAD

EAST LESTER STREET

*For Illustrative Purposes Only.
Subject to Change With Final Design*

Exhibit 46: Landscape - Conceptual Plant Palette



Cercidium praecox
Palo Brea



Chilopsis linearis
Desert Willow



Olneya tesota
Ironwood



Prosopis juliflora grandulosa
Honey Mesquite



Calliandra californica
Baja Fairy Duster



Ericameria laricifolia
Turpentine Bush



Russelia equisetiformis
Firecracker Bush



Salvia clevelandii
Chaparral Sage



Agave desmettiana
Smooth Agave



Agave parryi v. truncata
Artichoke Agave



Agave geminiflora
Twin Flower Agave



Agave macroacantha
Black-spined Agave



Agave ocahui
Ocahui Century Plant



Agave weberi
Weber's Agave



Aloe barbadensis
Aloe Vera



Aloe x 'blue elf'
Blue Elf Aloe



Aloe brevifolia
Short-leaved Aloe



Aloe striata
Coral Aloe



Asclepias subulata
Desert Milkweed



Baileya multiradiata
Desert Marigold

PAD DISTRICT PROPOSAL



Dasyliirion wheeleri
Desert Spoon



Dietes bicolor
African Iris



Euphorbia antispyhilitica
Candellia



Euphorbia rigida
Gopher Plant



Hesperaloe funifera
Giant Hesperaloe



Hesperaloe parviflora
Red Yucca



Yucca baccata
Banana Yucca



Yucca schottii
Mountain Yucca



Malephora lutea
Rocky Point Ice Plant



Tradescantia pallida
Purple Hearts



Muhlenbergia rigens
Deergrass



Nassella tenuissima
Mexican Feather Grass



Carnegiea gigantea
Saguaro



Cylindropuntia bigelovii
Teddy-bear Cholla



Echinocactus grusonii
Golden Barrel Cactus



Echinocereus engelmannii
Strawberry Hedgehog Cactus



Ferocactus wislizeni
Fish-hook Barrel Cactus



Fouquieria splendens
Ocotillo

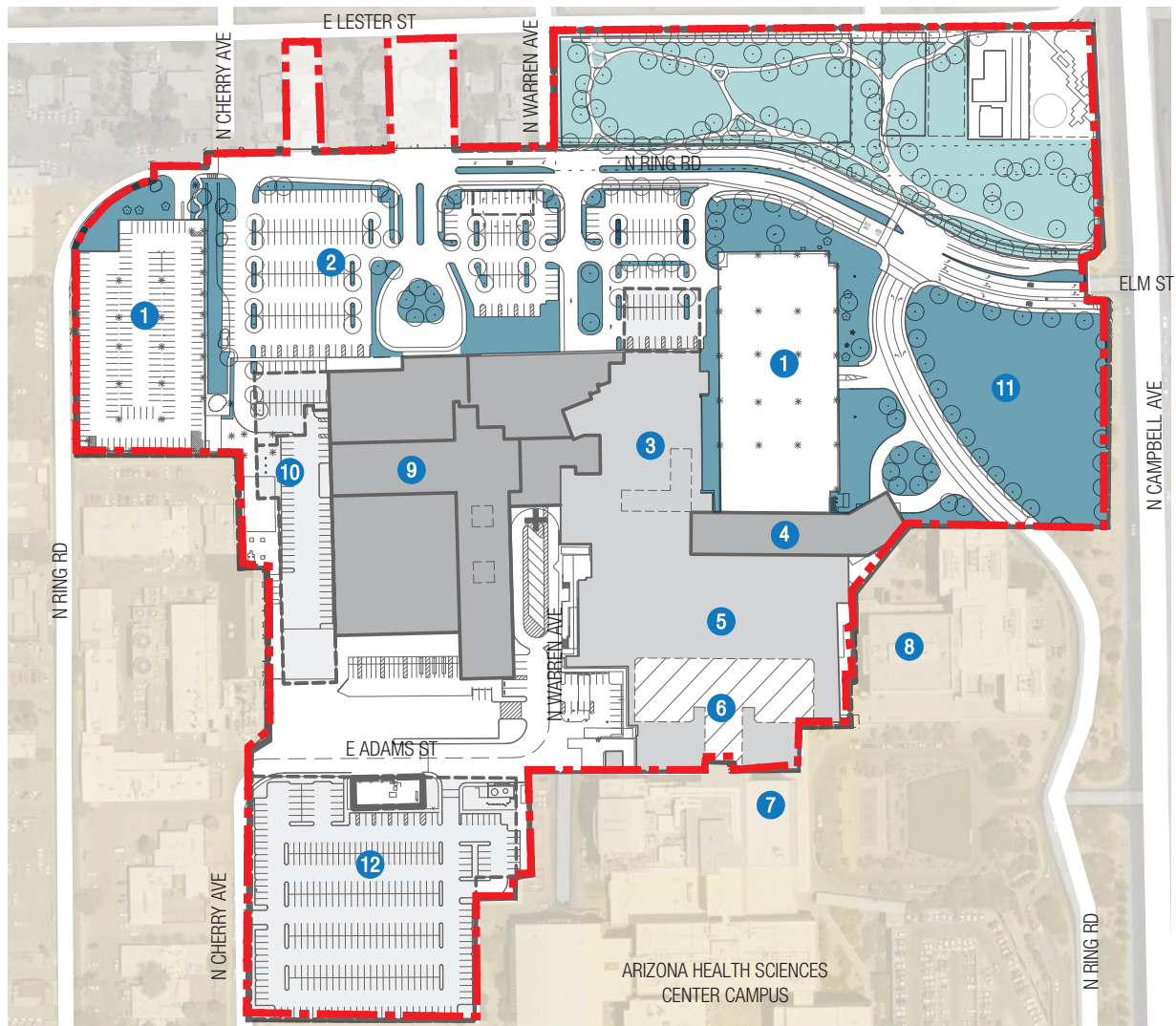


Opuntia santa-rita Tubac
Santa-Rita Prickly Pear






Stenocereus thurberi
Organ Pipe Cactus

Exhibit 47: Water Harvesting Provisions



- | | |
|----------------------------------|---|
| Existing Parking Garage 1 | College of Medicine 7 |
| New Surface Lot 2 | Cancer Center 8 |
| DCMC 3 | Banner-UMC
New Hospital (Phase 1) 9 |
| New DCMC Lobby 4 | New Bed Tower (Phase 2) 10 |
| UMC / NEP 5 | Potential Future
Surface Parking Lot 11 |
| UMC/201 Building 6 | Phase 2 Parking Structure 12 |

LEGEND 

- | |
|--|
| Banner-UMC PAD District  |
| North Green and Detention Area
Passive Water Harvesting Opportunity  |
| Passive Water Harvesting Opportunity  |

Rainwater Harvesting

Section 4-01.0.0 of the City of Tucson Technical Standards Manual sets the standards for meeting the requirements of the Rainwater Harvesting Ordinance. According to this section, the standard applies to all commercial development plans submitted after June 1, 2010. "Commercial Development" is defined in Section 12-01.0.0 as "any new non-residential development that is intended to be used primarily for commercial activities, and is subject to the requirements of the International Building Code." The BUMC PAD District is primarily a redevelopment of an existing campus. Being a redevelopment, the site has certain severe constraints associated with the off-site drainage that flows northbound across it from the south. This drainage is conveyed northward in the existing streets and other site improvements and there is essentially no possibility of now physically modifying or retrofitting these improvements to instead implement water harvesting.

With these conditions in effect and given the project's commitment to address the resultant downstream drainage challenges in the Jefferson Park neighborhood, the PAD District will implement rainwater harvesting when possible in areas with the capability to integrate such features. It is understood that these rainwater harvesting elements may or may not meet the expected percentage of supplemental irrigation per the UDC. Based on the existing conditions, the rainwater harvesting elements will be implemented where existing conditions facilitate passive water harvesting in new landscape areas. These proposed elements may include the following passive features:

- Depressed landscape areas increasing passive water harvesting infiltration areas.
- Micro-basins in landscape areas and parking area landscape cut-outs
- Parking area water harvesting swales
- Curb-less catchments to facilitate sheet flow into landscape areas

Exhibit 47 illustrates the anticipated water-harvesting areas within the PAD District.



III.C

TRANSPORTATION INFRASTRUCTURE

A comprehensive Traffic Analysis has been prepared by Kimley-Horn for this PAD District and is a stand-alone, companion document to this application. This Traffic Analysis is based upon, and appropriately updates, a prior traffic study that was prepared by the same consultant for the entire Arizona Health Sciences Center (AHSC) campus in December, 2012. The present BUMC analysis considers this future/proposed development lying outside of the actual PAD District boundary, as well as the proposed private development of a 20-story mixed-used project near Speedway Boulevard at Campbell Avenue. Incorporating all of this nearby planned development into the analysis constitutes the only way to responsibly address the future traffic and transportation issues in the area in a truly comprehensive fashion.

With the above in mind, the most salient point to stress with respect to the subject PAD District is the following: the ultimate BUMC PAD development represents an actual reduction in the overall scope and intensity of the development build-out that was contemplated and proposed in the UA Comprehensive Campus Plan (UACCP) 2009 Update. The latter was the basis of the aforementioned 2012 Kimley-Horn AHSC traffic analysis. In real terms, then, the Banner-UMC PAD represents a reduction in the overall traffic/transportation impacts forecasted in the prior 2012 analysis.

The BUMC PAD traffic analysis is summarized in the sections that follow and is comprised of the following major tasks:

- Review of the BUMC PAD Site plan (refer to Exhibit 30), its associated new and repurposed facilities as proposed by Banner Health, together with the planned/future development on the AHSC campus and the aforementioned private mixed-use project.
- Development of trip generation rates for all of the above proposed development.
- Evaluation of on-Site roadways and off-Site access points, based upon the trip generation rates, to analyze the full universe of impacts on surrounding transportation infrastructure.
- Documentation of transportation improvements and recommendations for each of the study area's intersections, roadway segments, etc.

III.C.1 Traffic Impact Analysis Summary of Impacts

This Section provides a summarized compilation of the anticipated traffic impacts of the proposed BUMC PAD development, within the larger context of adjacent UA-related planned facilities and the proposed development of the private 20-story mixed used project near Speedway Boulevard and Campbell Avenue. In order to responsibly address the full traffic dynamics of this location, it is necessary to evaluate this full universe of planned/potential development and then promulgate recommendations for the transportation improvements that are necessary to accommodate it. It is the intent of this PAD document to contain a clear definition of the specific transportation improvements that will be the fair-share responsibility of Banner Health attendant to its redevelopment of the BUMC PAD District.

A. Analysis Process

This traffic impact analysis was prepared using a four-step process to forecast the travel demands of the proposed Banner-UMC development. Trip generation is the first step in this process and focuses on estimating the number of trips to be “produced” or “generated” by a particular land use type within a specific traffic analysis zone.

The initial trip-generation step is followed with the next three steps: 1) determining trip distribution, 2) mode choice, and 3) route assignment. Trip distribution is concerned with assigning the trips generated to the directions which people travel to and from the Site. Mode choice is then concerned with the mode of travel, i.e. by vehicle, walking/biking, or bus/transit. Finally, route assignment is concerned with the specific streets and routes by which they travel.

Once this four-step evaluative process is complete, a capacity analysis of the surrounding roadway network of streets and intersections is performed to evaluate their operational performance and make recommendations for any necessary improvements. Each of these steps is described in more detail below.

B. Trip Generation

The following trip-generation scenarios were evaluated attendant to the proposed BUMC development and the neighboring properties contributing to the same transportation system:

- Phase 1 (2019 completion): this scenario considers the trips that will be generated by the construction of an initial 11-story hospital/bed tower by Banner Health, together with an attendant relocation of beds in the current UMC Hospital. Note: Floors 10 & 11 of the Phase 1 bed tower may initially be built as a shell structure only and improved at a later date. Regardless of this reality, a fully-occupied 11-story tower was contemplated in this analysis, as this will represent the highest-impact scenario. This Phase 1 scenario also contemplates and includes planned development by the UA on the adjacent AHSC campus, together with the planned/potential 20-story mixed-use private project at Speedway/Campbell.
- Phase 2 (2035 completion): this scenario presents an analysis of 2035 conditions and contemplates the additional trips that will be generated by the construction of a second 11-story hospital/bed tower on the PAD District by Banner Health. This scenario also incorporates the same off-Site development as contemplated in the Phase 1 scenario.
- The Phase 1 & 2 bed towers described above, together with the associated relocation of beds from the current University Medical Center hospital and from Diamond Children’s Medical Center, results in the net gain of beds summarized in Table 3 below. The full Traffic Analysis has been prepared and published as a stand-alone document and provides a detailed breakdown of both phases, the planned relocation of beds, and the repurposing of various existing facilities.

Table 3: Summary of Hospital Units

Scenario	Land Use	Proposed New Units (Beds)	Relocated Units (Beds)	Net New Units (Beds)
2019 Phase 1	Hospital	336	183	153
2035 Phase 2	Hospital	504	196	308

A further consideration of this traffic analysis is the fact that, based upon the proposed development program by Banner Health, four development components that were originally planned by the UA (on its AHSC campus) are no longer a part of the larger medical campus and have, therefore, been excluded from the final trip-generation figures, specifically:

South Elm Gateway Offices and Clinics	114,000 SF
North Elm Gateway Offices	40,000 SF
ED Expansion	100,000 SF
Bio-Health	187,000 SF
	441,000 SF

With all of the above in mind, the Daily Total Trips generated by all proposed development is summarized for Phase 1 & 2 in the Tables 4 and 5 below.

Table 4: 2019 Phase 1: Net Total Trip Generation

Land Use	Intensity	Units	Daily Total	AM Peak			PM Peak			Zone
				In	Out	Total	In	Out	Total	
Apartment (Private Developer)	400	DU	2,548	40	160	200	155	83	238	1
General Office Building (Private Developer)	200	1,000 SF	2,275	288	39	327	52	251	303	
Shopping Center (Private Developer)	200	1,000 SF	10,656	142	90	232	496	516	1,012	
Pass-By***				0	0	0	169	175	344	
Internal Capture				33	33	66	120	120	240	
Total Less Internal Capture/ Pass By				436	257	693	413	555	969	
Research & Development Center (University of Arizona)	309	1,000 SF	1,504	175	36	211	29	167	196	2
Internal Capture				3	2	6	5	9	17	
Total Less Internal Capture/ Pass-By				171	33	204	24	158	180	
Research & Development Center (University of Arizona)	300	1,000 SF	1,460	170	35	205	29	163	192	3
Internal Capture				3	2	6	5	9	16	
Total Less Internal Capture/ Pass-By				167	33	199	24	154	176	
Medical - Dental Office Building* (Banner Health)	5	1,000 SF	(178)	(9)	(3)	(12)	(5)	(12)	(17)	4
Hospital** (Banner Health)	153	BEDS	3,335	123	66	190	89	133	222	
Internal Capture				2	4	6	16	7	19	5
Total Less Internal Capture/ Pass-By				121	62	184	73	126	203	
Zone 2 to 5 Subtotal	---	---	21,599	459	134	594	142	451	593	2 to 5
Internal Capture (ITE Office to Retail)			---	9	9	18	25	25	50	
TOTAL	---	---	21,599	895	384	1,280	535	993	1,528	

*Pass-By Percentages: Shopping Center 34% PM only

Note: A 40% alternative mode reduction was applied to Zones 2 and 3.

C. Trip Distribution

The directional distribution of the above Daily Total Trips is assumed to be consistent with the aforementioned 2012 AHSC comprehensive traffic analysis. Table 6 below summarizes the percentage distribution of trips onto the project’s nearby public streets.

D. Route Choice & Traffic Assignment

Traffic assignment applies the total number of projected trips, by direction and turning movements, to each of the study area’s various street intersections. Traffic assignments are determined by considering logical routings, available roadway capacities, left turns at critical intersections, and perceived travel times. The locations of existing and proposed parking areas and the location of the main entrance to the new BUMC hospital were also considered.

As the traffic assignment results are somewhat involved and detailed in nature, they will not be replicated here. The reader is referred to the complete Traffic Analysis by Kimley-Horn.

E. Capacity Analysis

The overall intersection capacity results and the required lane configurations necessary to meet a minimum Level of Service (LOS) “D” for each intersection are comprehensively illustrated for both Phase 1 and Phase 2 in Exhibits 48 and 49 below. The alignments and geometric configurations depicted in these Exhibits are conceptual in nature and require further detailed engineering and design.

Exhibits 48 and 49 also reflect the intent to reconfigure the present T-intersection of Elm Street into the on-Site North Ring Road, instead creating a continuous and uninterrupted east-west movement on the entry road. This configuration will provide direct access from Campbell Avenue to the new hospital’s north-facing main entrance and visitor parking.

Table 5: 2035 Phase 2: Net Total Trip Generation

Land Use	Intensity	Units	Daily Total	AM Peak			PM Peak			Zone
				In	Out	Total	In	Out	Total	
Apartment (Private Developer)	400	DU	2,548	40	160	200	155	83	238	1
General Office Building (Private Developer)	200	1,000 SF	2,275	288	39	327	52	251	303	
Medical - Dental Office Building (Private Developer)	50	1,000 SF	1,830	91	24	115	41	112	153	
Shopping Center (Private Developer)	200	1,000 SF	10,656	142	90	232	496	516	1,012	
Pass-By**				0	0	0	169	175	344	
Internal Capture				33	33	66	120	120	240	
Total Less Internal Capture/ Pass By				527	281	808	455	667	1,122	
Research & Development Center (University of Arizona)	660	1,000 SF	3,212	336	69	404	55	311	366	2
Internal Capture				3	2	6	4	8	14	
Total Less Internal Capture/ Pass-By				333	67	399	51	304	352	
Research & Development Center (University of Arizona)	814	1,000 SF	3,961	402	82	484	65	370	435	3
Internal Capture				4	3	7	5	9	17	
Total Less Internal Capture/ Pass-By				398	80	478	60	360	418	
Medical - Dental Office Building (Banner Health)	14	1,000 SF	516	27	7	34	14	37	66	4
Internal Capture				0	0	0	1	1	2	
Total Less Internal Capture/ Pass-By				27	7	34	13	36	64	
Hospital* (Banner Health, Phase 1 and 2 Combined)	308	BEDS	4,471	248	134	382	179	268	447	5
Internal Capture				2	4	5	14	7	17	
Total Less Internal Capture/ Pass-By				246	130	377	165	261	430	
Zone 2 to 5 Subtotal	---	---	29,469	1,013	292	1,305	313	986	1,314	2 - 5
Internal Capture (ITE Office to Retail)			---	9	9	18	25	25	50	
TOTAL	---	---	29,469	1,531	564	2,095	743	1,628	2,386	

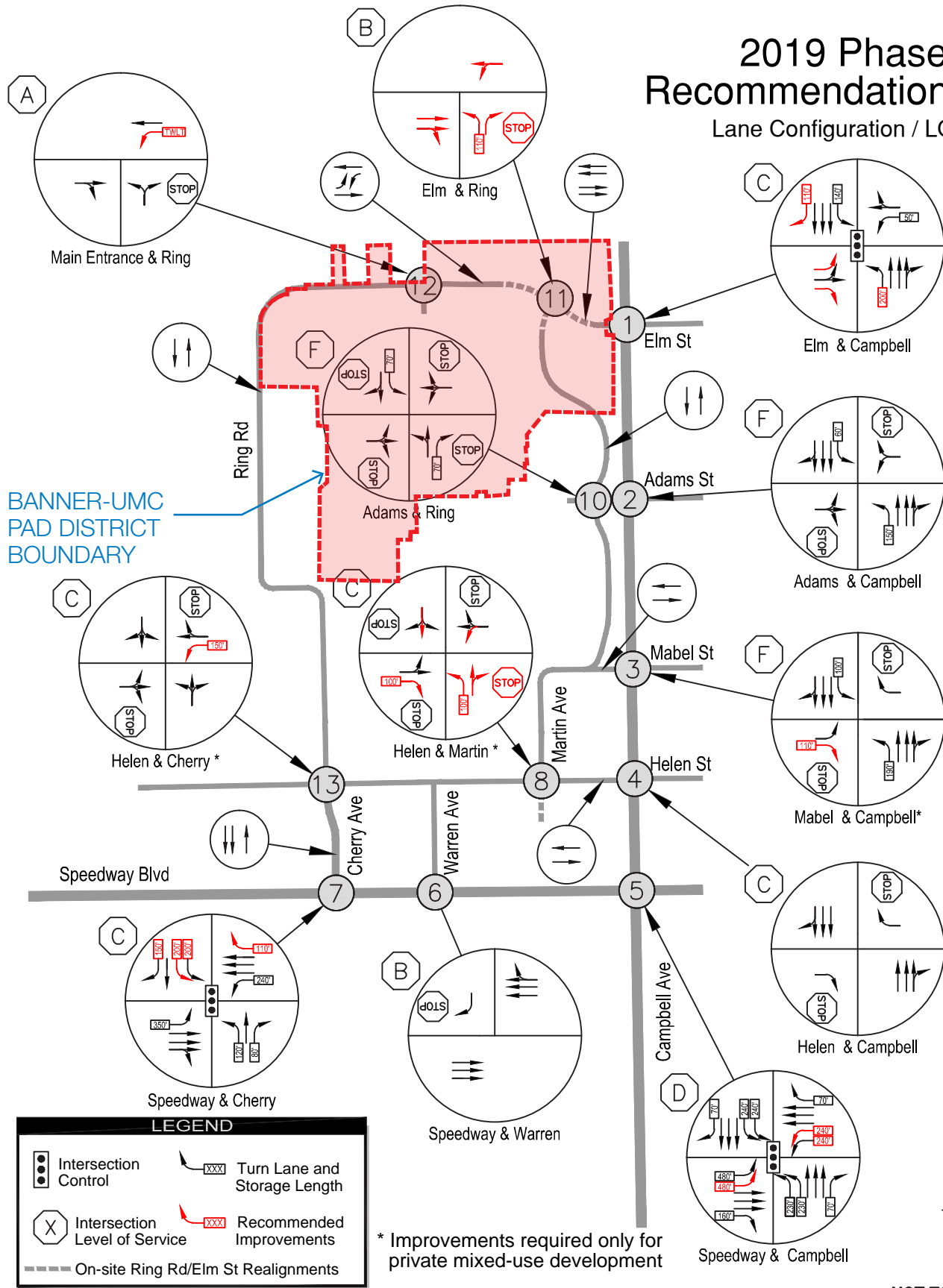
*Pass-By Percentages: Shopping Center 34% PM only
 Note: A 40% alternative mode reduction was applied to Zones 2 and 3.

Table 6: Trip Distribution

Route	2040 Average Daily Traffic (ADT)	Percentage of ADT on Route
Campbell Avenue (from the north)	42,000	23%
Speedway (from the east)	45,000	24%
Campbell Ave (from the south)	48,000	26%
Speedway Blvd (from the west)	45,000	24%
Elm Street (from the east)	5,000	3%
TOTAL	185,000	100%

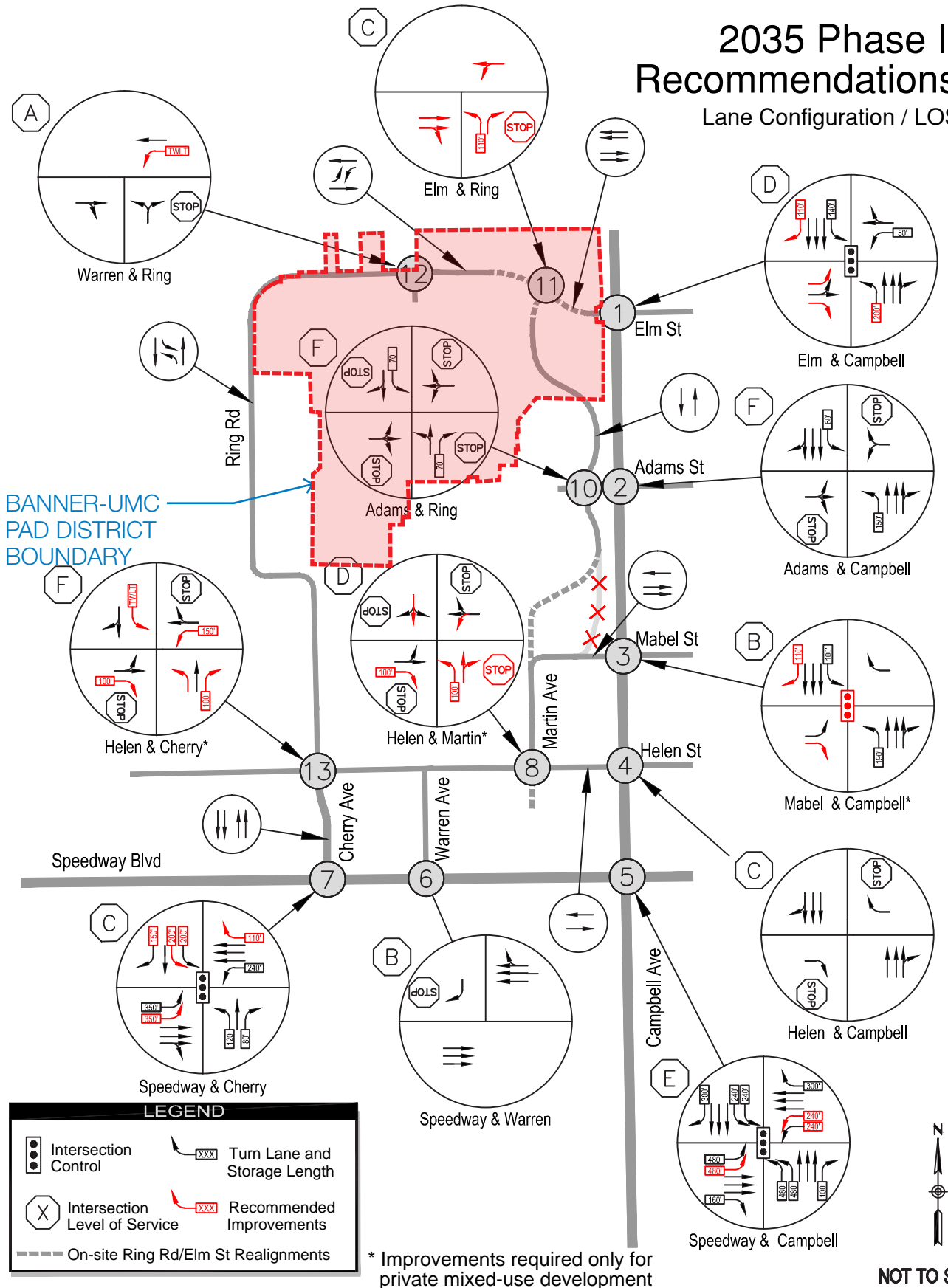
2019 Phase I Recommendations

Lane Configuration / LOS



2035 Phase II Recommendations

Lane Configuration / LOS



PAD DISTRICT PROPOSAL

III.C.2 Transportation Improvements & Traffic Analysis Recommendations

This section summarizes the comprehensive scope of intersection, roadway and related improvement recommendations needed to maintain and achieve adequate traffic performance once the full universe of future development occurs, including the BUMC PAD District, the adjacent AHSC campus, and the planned private mixed-use project at Speedway/Campbell.

The scope of recommendations for each development phase is more particularly defined as follows:

- Phase 1 Recommendations (Projected 2019 Completion Time frame) – Includes those transportation improvements required to meet the combined needs of: 1) the Phase 1 Banner-UMC redevelopment of the PAD District; 2) planned adjacent AHSC development consistent with the UA's 2020 Capital Plan; and 3) the private mixed-use high-rise project near Speedway Boulevard and Campbell Avenue.
- Phase 2 Recommendations (Projected 2035 Completion Time frame) – Includes those transportation improvements required to meet the combined needs of: 1) the Phase 2 Banner-UMC redevelopment of the PAD District (the second bed tower); and 2) the same off-Site AHSC and private development components referenced above.

Table 7 provides a comprehensive summary of the full universe of Phase 1 and 2 transportation improvement recommendations including those that will constitute the fair-share responsibility of Banner Health attendant to its redevelopment of the BUMC PAD District. No attempt will be made with this PAD to define the fair-share contributions or responsibilities for any other adjacent property owner/developer.

Table 7: Phase 1 and Phase 2 Recommendations

ID	Intersection	2019 Phase 1 Recommendations	2035 Phase 2 Recommendations	Comments
1	Campbell Avenue / Elm Street	<ul style="list-style-type: none"> • Improve Elm Street to a five-lane section for that segment between the project entrance at Campbell Avenue and the current Ring Road intersection, near the existing northeast parking garage (two (2) incoming lanes; three (3) outgoing lanes, one of which is a dedicated exiting right-turn lane). Elm Street will then transition to a two-lane roadway with left-turn bays where needed. • Add an additional left turn lane (2 total) on eastbound Elm Street. The 2nd left turn lane is a shared through/left lane. • Extend existing northbound left turn lane on Campbell Avenue to 200'. • Add a 110' dedicated right-turn lane on southbound Campbell Avenue. 	No additional recommendations	Required improvements by Banner Health under this PAD
2	Campbell Avenue / Adams Street	No improvements recommended.	No improvements recommended.	
3	Campbell Avenue / Mabel Street	<ul style="list-style-type: none"> • Add an 80' dedicated right-turn lane on eastbound Mabel St to accommodate vehicles turning onto southbound Campbell Ave. This intersection will be a "High-T Intersection" that will allow left-in and left-out on Campbell Avenue at Mabel; northbound mainline traffic on Campbell will not be required to stop at the intersection. 	<ul style="list-style-type: none"> • Install a new traffic signal at Mabel/Campbell to provide a third signalized access to and from the AHSC campus. • Realign North Ring Road north approach to Mabel St to the west to increase the spacing between the Ring Rd/ Mabel Ave intersection and the Campbell Ave/Mabel St intersection. • Improve eastbound Mabel St between Martin Ave and Campbell Ave to two lanes • Add a 100' dedicated right-turn lane on southbound Campbell Ave. 	Recommended improvements by others.

Table 7: Phase 1 and Phase 2 Recommendations (cont.)

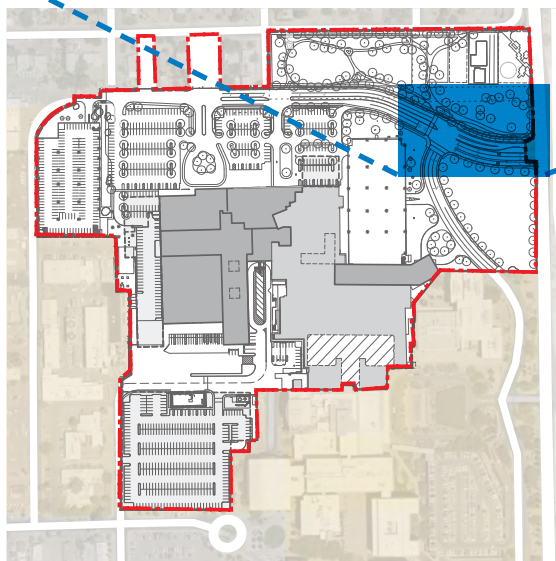
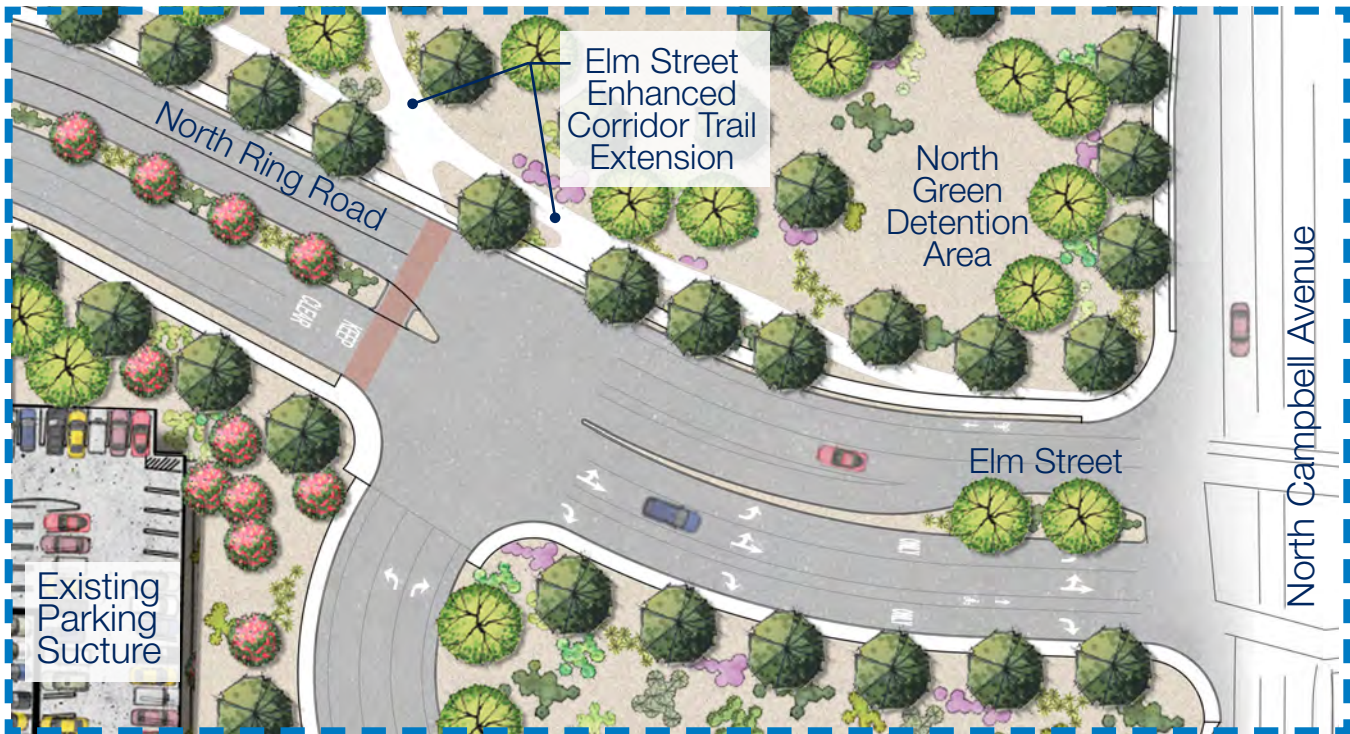
ID	Intersection	2019 Phase 1 Recommendations	2035 Phase 2 Recommendations	Comments
4	Campbell Avenue / Helen Street	No improvements recommended.	No improvements recommended.	
5	Campbell Avenue / Speedway Boulevard	<ul style="list-style-type: none"> Add an additional 480' left-turn lane on eastbound Speedway Blvd (for two total) to accommodate vehicles turning to northbound Campbell Ave. Add an additional 240' left-turn lane on westbound Speedway Blvd (for two total) to accommodate vehicles turning to southbound Campbell Ave. 	No additional recommendations.	This project is recommended as a City of Tucson project.
6	Speedway Boulevard / Warren Avenue	No improvements recommended.	No improvements recommended.	
7	Speedway Boulevard / Cherry Avenue	<ul style="list-style-type: none"> Extend right-turn lane on southbound Cherry Avenue to 120' (existing is 80') Extend left-turn lane on southbound Cherry Avenue to 200' (existing is 80'). Add an additional 200' left-turn lane (for two total) on southbound Cherry Ave to accommodate vehicles turning to eastbound Speedway Blvd. Add a 110' dedicated right-turn lane on westbound Speedway Blvd to accommodate vehicles turning on to Cherry Ave. 	Add an additional 350' left-turn lane on eastbound Speedway Blvd. Add new receiving lane on Cherry Ave.	Responsibility for these improvements to be determined.
8	Helen Street / Martin Avenue	<ul style="list-style-type: none"> Improvements required for mixed-use development only. Reconfigure Helen/Martin to four-way intersection. 	Add a 100' dedicated right-turn lane on Helen St.	Recommended improvements by others.
9	Cherry Avenue / Mabel Street	<ul style="list-style-type: none"> Mabel Street is planned to be converted to a pedestrian mall. No vehicular improvements are recommended. 	No improvements recommended.	
10	North Ring Road / Adam Street	No improvements recommended.	No improvements recommended.	
11	Elm Street / North Ring Road	<ul style="list-style-type: none"> Reconfigure the intersection as shown in Figure 4 - 5, removing the All-Way Stop Control. Add a 110' dedicated left-turn lane on northbound North Ring Road. Add a 100' dedicated left-turn lane on eastbound North Ring Road 	No improvements recommended.	Recommended improvements by Banner Health.
12	Ring Rd / Main Entrance	<ul style="list-style-type: none"> Proposed main entrance access to the future hospital 	No improvements recommended.	Recommended improvements by Banner Health.
13	Helen Street / Cherry Avenue	<ul style="list-style-type: none"> Add a 100' left-turn lane on westbound Helen St. 	<ul style="list-style-type: none"> Restripe Cherry Ave to include a left-turn lane on southbound Cherry Ave. Add a 150' left-turn lane on westbound Helen St. Add a 100' dedicated right-turn lane on northbound Cherry Ave. 	Recommended improvements by others.

With all of the foregoing in mind, the specific items described below are of particular note with respect to the Banner-UMC PAD development:

A. Establishment of New Elm Street Main Entrance

The existing signalized entrance into the current DCMC and UMC hospital complex will continue to function as the main entrance of the PAD Site. Significant improvements will be made to this entrance in conjunction with the existing on-Site North Ring Road so as to provide continuous east-west traffic movement from the entrance to the DCMC and to the new Banner-UMC hospital and bed tower, both of which will have their main entrances oriented to the north. Exhibit 50 illustrates the proposed realignment, travel lanes, and striped bike lanes associated with this modified main entry.

Exhibit 50: Main Entry Modifications at Campbell Avenue and Elm Street



Key Map
NTS

1 Intersection of Campbell Avenue and North Ring Road / Elm Street
NTS

B. Roadway Segment Modifications

Recommendations regarding specific roadway segments associated with the BUMC PAD redevelopment are described below:

- **Elm Street from North Ring Road to Campbell Avenue:**
Elm Street will serve as the primary inbound and outbound connection to the proposed BUMC facilities. This segment is recommended to consist of a five-lane cross section (2 travel lanes in each direction, with the addition of an eastbound dedicated right-turn exit lane at Campbell Avenue). The Elm Street/North Ring Road intersection is recommended to be reconstructed such that the current north-south segment of North Ring Road forms a stop-controlled T-intersection with the realigned Elm Street, allowing continuous east-west traffic flow on Elm Street and direct access to and from the main entries of DCMC and the new hospital. Striped shoulders will be provided for bicyclists.
- **North Ring Road from Elm Street westward to Cherry Avenue:**
North Ring Road on the north side of the proposed BUMC hospital and DCMC is proposed as a 2-lane section (one travel lane in each direction, with left-turn bays within the raised median at specific points of entry to the hospital and DCMC). This roadway should be designed to encourage the type of lower vehicular speeds (e.g. 25 mph) conducive to a medical campus environment. Striped shoulders will be provided for bicyclists.

C. Intersection Improvements

Recommendations regarding specific intersections impacted by the BUMC PAD redevelopment, together with the impact of other planned development in the surrounding area, is described below:

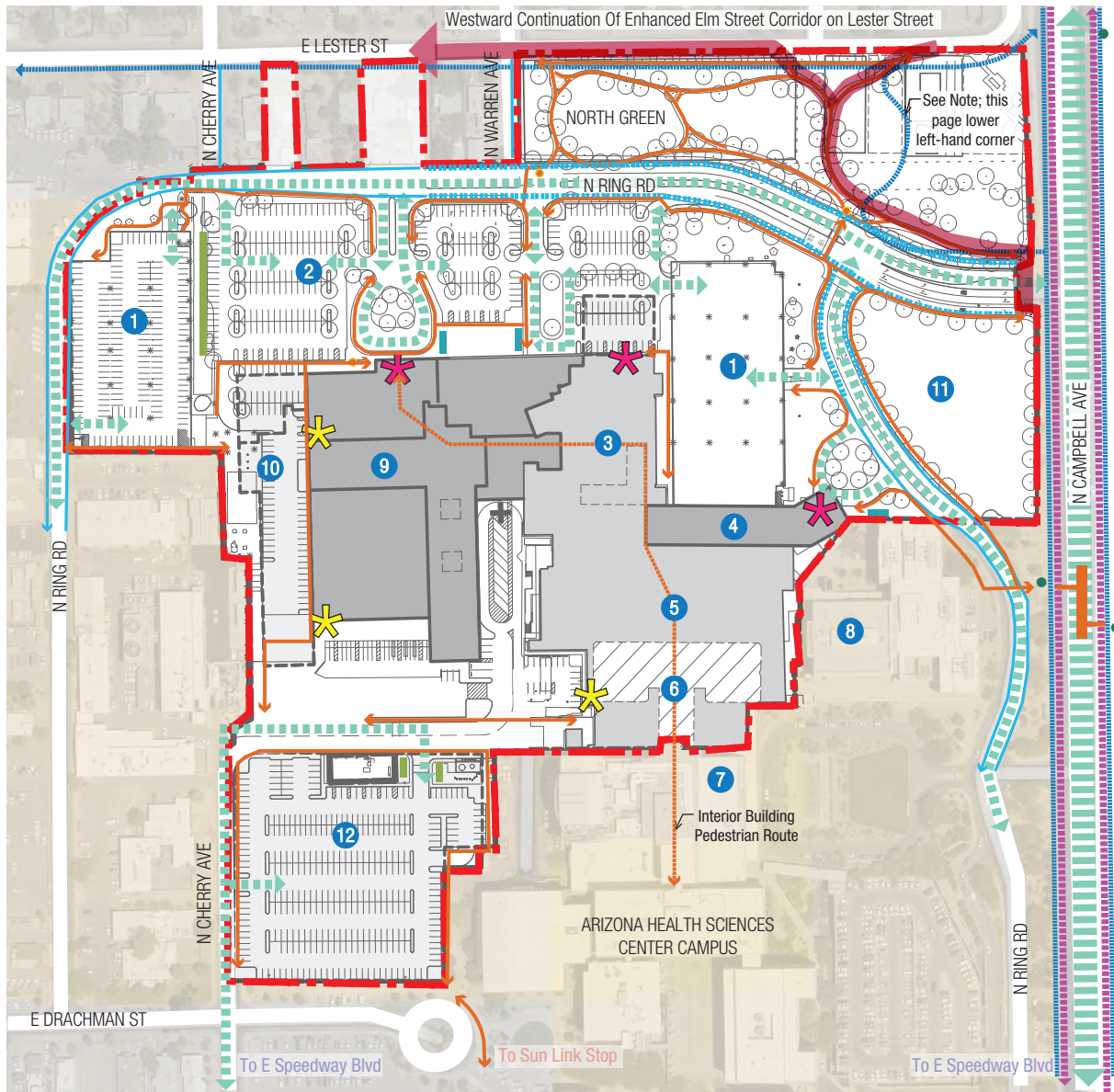
- **Cherry Avenue at Speedway Boulevard:**
An additional left turn lane is recommended at the intersection of Speedway Boulevard and Cherry Avenue. Intersection improvements should also lengthen the existing southbound right turn lane to one hundred twenty feet (120'), and the westbound right turn lane to one hundred ten feet (110'). Cherry Avenue will continue to serve as a primary access route for BUMC employees and emergency service vehicles, as well as the AHSC campus.
- **Elm Street at Campbell Avenue:**
Recommended improvements at this intersection include extension of the Campbell Avenue northbound left turn lane, together with the construction of a Campbell Avenue southbound right turn lane. In addition, the eastbound Elm Street approach (on the west side of Campbell Avenue) will consist of a dedicated left turn lane, a combined left & through lane, and a dedicated right turn lane. Lastly, the existing northbound left-turn lane on Campbell will be extended to a storage length of one hundred ten feet (110'). This is a Banner Health responsibility under this PAD.
- **Elm Street at North Ring Road:**
This intersection will be reconstructed such that North Ring Road forms a stop-controlled T-intersection into Elm Street, with continuous east-west traffic flow occurring on the latter. A westbound left turn lane (on Elm Street) is recommended to facilitate traffic turning south onto North Ring Road so as to access the main entry of Diamond Children's Medical Center. This is a Banner Health responsibility under this PAD.
- **Speedway at Campbell Avenue:**
This intersection will require certain left-turn improvements. A second left-turn lane is required for eastbound Speedway Boulevard. The existing westbound left turn lane on Speedway should be extended and a second westbound left turn lane, of the same length, should be added. Note that these improvements are recommended to be made as part of a future City of Tucson public street-improvement project.

D. Multi-Modal Components

Exhibit 51 depicts the on-Site and off-Site multi-modal components pertinent to the PAD District. Lester Street, located north of the PAD District, is a designated bicycle route that proceeds via Martin Avenue, then southward to the existing North Ring Road and ultimately to Elm Street. The BUMC PAD development will maintain this conceptual linkage via the campus's main entrance at Elm Street, through the new North Green, and ultimately to Lester Street.

This linkage also implements the designated alignment of the Elm Street Enhanced Corridor per the 2012 Pima County Regional Trail System Master Plan Update. For reasons discussed previously in Section II.C.2 of this PAD, the Corridor is best routed through the aforementioned North Green, to the established Lester Street bicycle route.

Exhibit 51: Multi-Modal Components



- | | | | |
|----------------------------------|--|----------------------------------|--|
| Existing Parking Garage 1 | College of Medicine 7 | Patient / Visitor Building Entry | Banner-UMC PAD District |
| New Surface Lot 2 | Cancer Center 8 | Staff / Service Building Entry | Pedestrian Routes |
| DCMC 3 | Banner-UMC 9 | Sun Tran Bus Stop | Sun Tran Bus Route |
| New DCMC Lobby 4 | New Hospital (Phase 1) 10 | Pedestrian Node | Vehicular Routes |
| UMC / NEP 5 | New Bed Tower (Phase 2) 11 | Bike Racks | Existing Bike Routes |
| UMC / 201 Building 6 | Potential Future Surface Parking Lot 12 | Bike Lockers | Bike Route With New 5' Striped Shoulder |
| | | | Bike Route (no striped shoulder) |
| | | | Enhanced Elm Street Corridor Trail Extension (Shared-Use Path) |

NOTE: This segment of existing bike route to be replaced by Elm Street Enhanced Corridor through The North Green

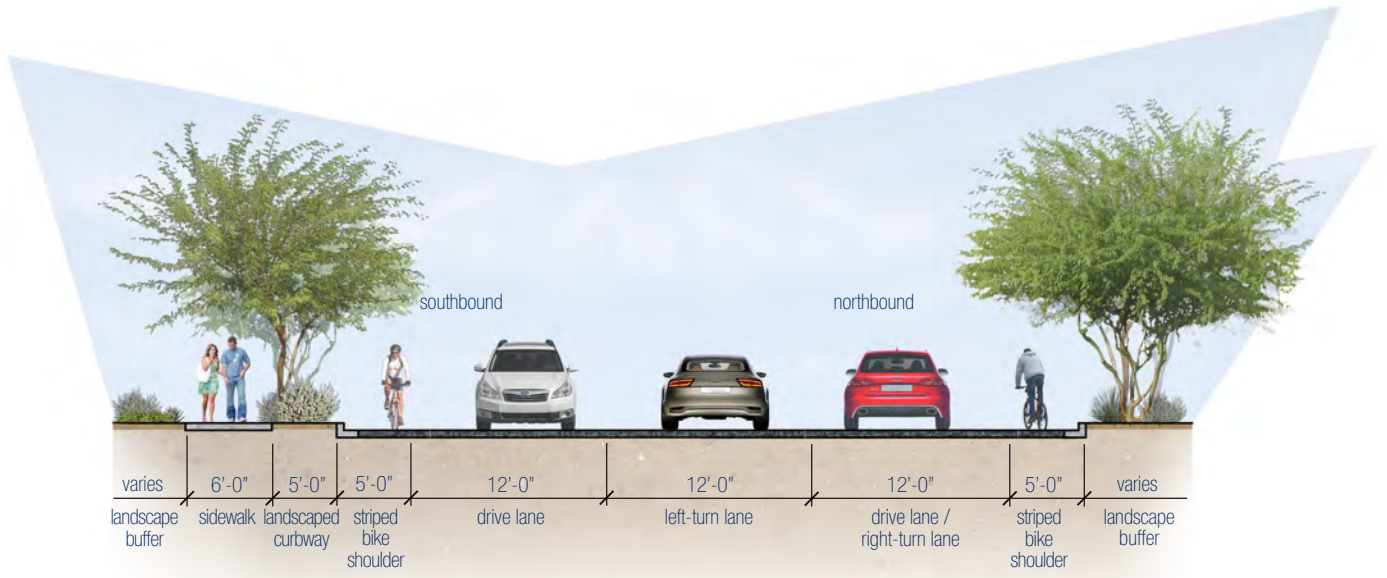
Exhibit 51 also depicts the various transit routes, pedestrian ways, and bike routes through the Site. It further includes a specific pedestrian extension that will link the new main lobby of the DCMC to the existing bus stops (and to their associated signalized cross-walk) on Campbell Avenue.

All of the components described above and illustrated on Exhibit 51 are being implemented toward the goal of creating a true multi-modal campus that effectuates a significant and material improvement over the existing condition.

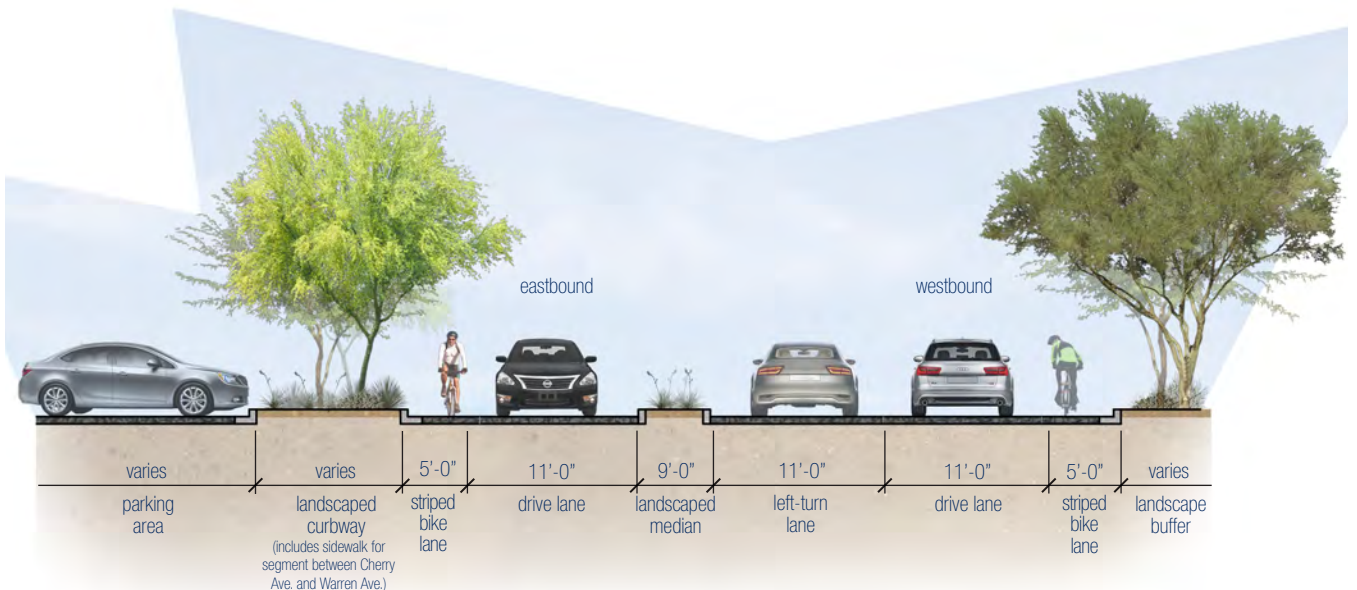
III.C.3 Typical Cross-Sections for Public Streets & Private Drives

Exhibit 52 illustrates the various street cross-sections that will be employed within the BUMC PAD District, together with their associated bike lane, conceptual landscape, and pedestrian elements.

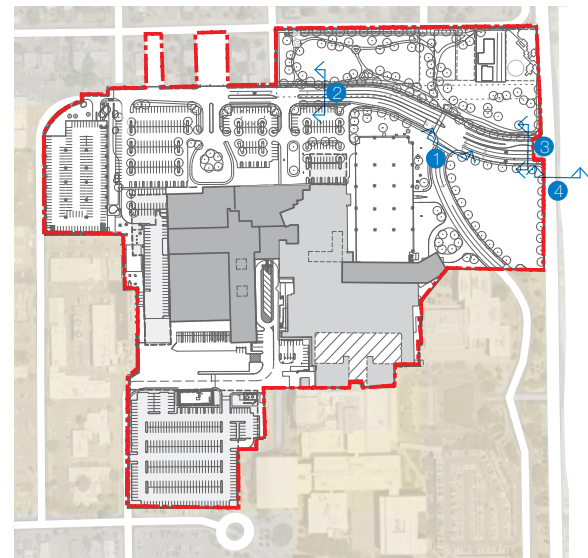
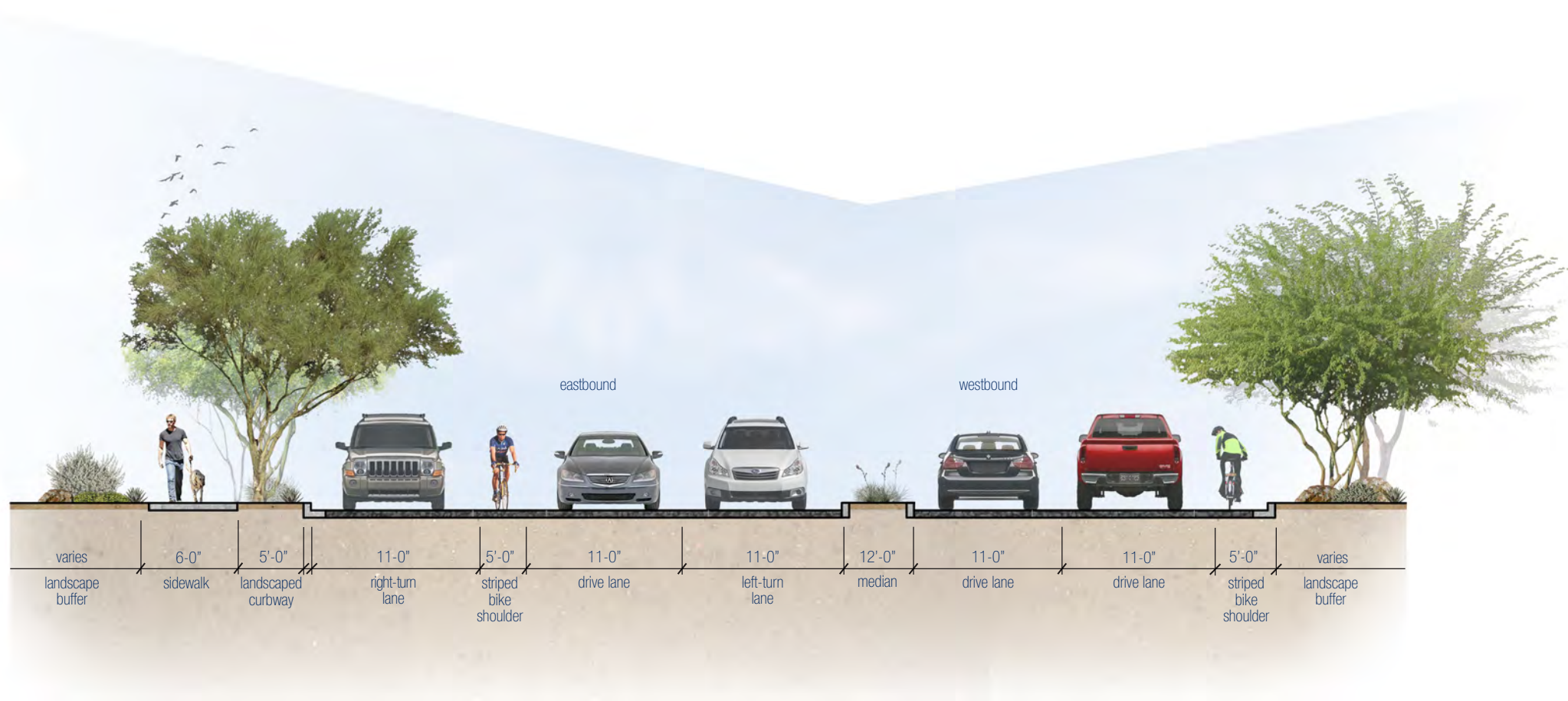
Exhibit 52: Typical Street Cross-Sections



1 North Ring Road East of DCMC (See Key Map-Far Right) NTS

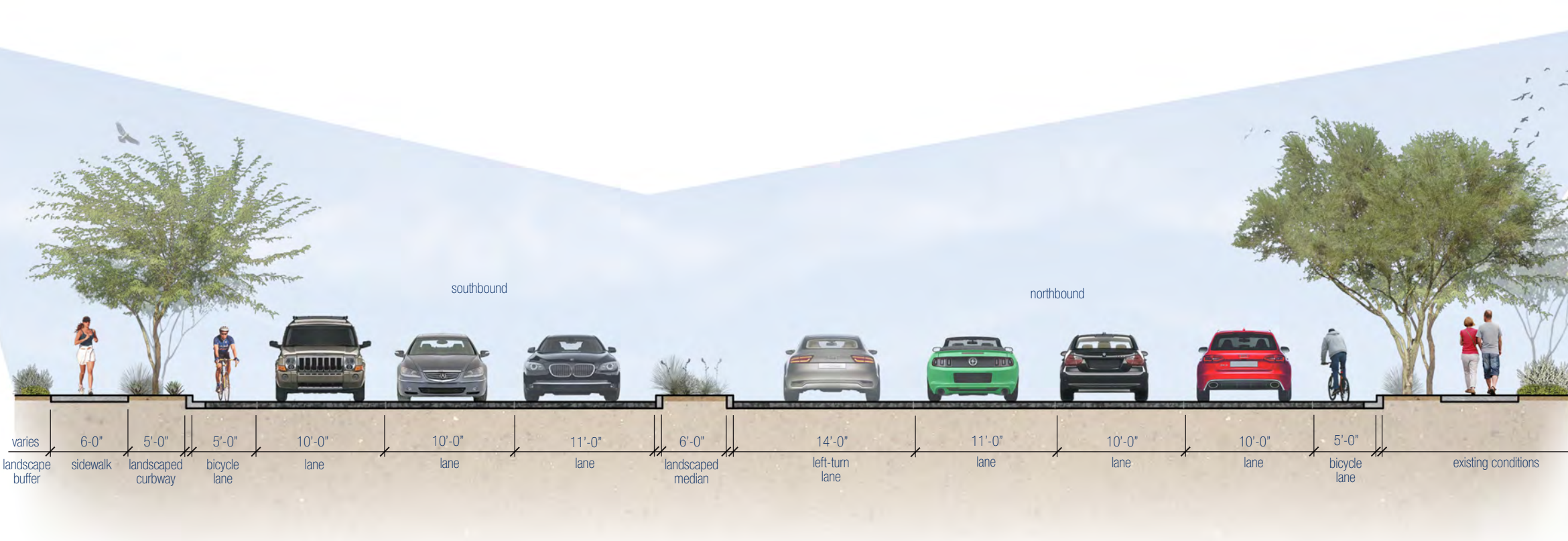


2 North Ring Road North of DCMC (See Key Map-Far Right) NTS



Key Map
NTS

3 Ring Road at Main Hospital Entrance at Elm Street/Campbell Avenue
NTS



4 North Campbell Avenue at Elm Street
NTS



III.D CONCEPTUAL DRAINAGE SOLUTION & ASSOCIATED IMPROVEMENTS

This Section presents a conceptual master drainage plan for the PAD Site. A full hydrology and hydraulic report will be submitted at the time of future Development Package (DP) review and shall detail all drainage infrastructure and the detention/retention basins that are required and provided.

III.D.1 Master Drainage Plan

The master drainage plan for the BUMC PAD Site focuses on two primary objectives:

- 1) to improve and properly accommodate the capture and conveyance of stormwater run-off within the PAD Property; and
- 2) to reduce the concentrated 100-year stormwater flows that exit the PAD Site and discharge into the Jefferson Park Neighborhood.

Meeting these objectives will be accomplished through the following new on-Site facilities:

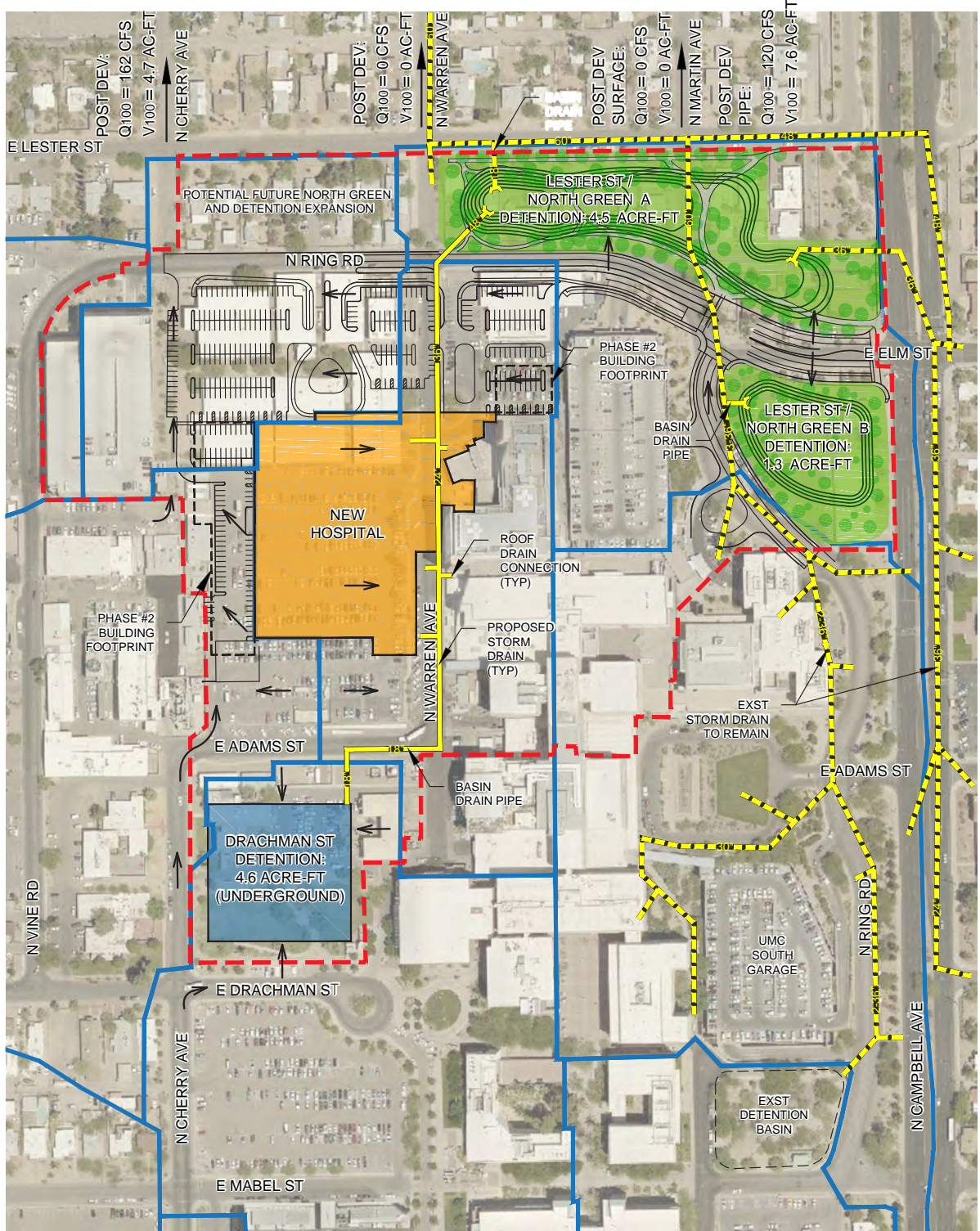
- 1) an underground retention basin beneath the new surface parking lot south of the new hospital & bed tower (the Drachman Street basin in the table below); and
- 2) a surface retention/detention facility integrated into the North Green buffer along the PAD District's shared boundary with Jefferson Park, and
- 3) supplemental new storm-drains as necessary, in conjunction with the existing underground storm-drain system beneath North Ring Road, to bleed off and properly drain the retained and detained volumes to downstream outlets.
- 4) potential small detention basins on two (2) individual lots located north of North Ring Road and west of Warren Avenue. These two lots presently contain repurposed office structures, but may be demolished at sometime in the future. While the overall impact of these two potential basins upon the overall downstream drainage situation would not be major, the present condition is one where every contribution has merit and provides some benefit.

Exhibit 53 provides the PAD's master drainage plan and conceptual illustration of these features. Table 8 indicates the proposed detention volumes and design-storm capacity for the respective underground retention facility (Drachman Street basin location) and the North Green surface basin (Lester Street basin location) described above.

Table 8: Proposed Detention









Basin Location	Proposed Volume (AC-FT)	Design Storm Capacity (Return Period)
Drachmen Street (underground facility)	4.6	100-Year
Lester Street (North Green) A & B	5.8	100-Year

Exhibit 53: Drainage Masterplan



PAD DISTRICT PROPOSAL

LEGEND

- | | | | |
|---|---|-----------------------------------|---|
| UNDERGROUND RETENTION BELOW PAVED PARKING |  | BOUNDARY OF PAD DISTRICT |  |
| SURFACE DETENTION AND NORTHGREEN |  | LOCAL WATERSHED DRAINAGE BOUNDARY |  |
| EXISTING STORM DRAIN |  | POST-DEVELOPMENT OUTFLOW FLOW |  |
| PROPOSED STORM DRAIN |  | DIRECTION OF ON-SITE SURFACE FLOW |  |

The design-year storm being contained in each basin includes not only the run-off being generated within the PAD District, but also the contributing run-off generated upstream (off-Site of the PAD District from AHSC). For example, the Drachman Street basin (underground retention facility) will collect the 100-year storm event for its entire upstream contributing drainage area; this is necessary to benefit and improve the downstream Warren Road drainage condition, as well as accommodate the fact that new BUMC construction for parking and building expansions will effectively eliminate Warren Road as a viable northward surface-drainage conveyance option.

The Lester Street basin (North Green) is the largest of the new retention/detention facilities proposed, and will also serve the multi-use function as an open space amenity and buffer between the redeveloped medical campus and the Jefferson Park neighborhood to the north. This North Green surface basin is intended to collect the surface flow component of the 100-year storm event, thereby significantly benefiting the current downstream drainage conditions in Jefferson Park and making a material difference for the residents in that area, especially in the case of the most frequent and routine storm events that currently impact the neighborhood.

With respect to roof drainage, new sub-surface storm drains will capture and convey rooftop runoff directly to the new detention facilities or storm-drain systems, as appropriate, thereby further reducing surface stormwater flows throughout the PAD District.

As a final point of note, the subsurface soils within the PAD District do not always appear to possess percolation rates sufficient to meet the City of Tucson's drain-down time requirements. Therefore, in those cases where insufficient percolation conditions are found, the basin will provide a direct bleed off system to ensure the timely emptying of the facility. Ancillary surface collection systems (e.g. catch basins and connector pipes) necessary to ensure this proper drain-time are not displayed on Exhibit 53, as the final location and particulars of these improvements will be determined during final civil design.

III.D.2 Post-Development Outfall Locations from the PAD Property

Construction of the new underground retention facility, surface retention/detention basin, and the various ancillary sub-surface storm systems within the PAD District will effectively reduce the 100-year storm flows exiting the Site and entering the Jefferson Park Neighborhood. Exhibit 53 illustrates the post-development Q100 flow volumes at these historic outfall locations. Based upon the figures presented thereon, the surface runoff exiting the PAD Site at both the Warren Avenue and Martin Avenue outfalls is effectively eliminated for all storms up to the 100-year storm event. It is important to note that this does not mean that the downstream condition is now made "high and dry" at all times at these outfall locations. To be clear, the 100-year storm volume will be wholly captured and detained within the North Green surface basin. It will then be subsequently metered out at these same outfalls (via stormdrain and, when necessary in the street) in a manner and at a volume that will keep any surface flows easily within the existing street prisms so as to empty the basin in a slow and controlled fashion.

The runoff exiting the PAD Site at Cherry Avenue outfall is significantly reduced in the 100-year event (by approximately 16%). This represents the best achievable reduction given the constraints of the Property and its on-Site watershed delineations.

All of the above being considered, these reductions represent a clear and material improvement in the downstream drainage conditions within the Jefferson Park Neighborhood.

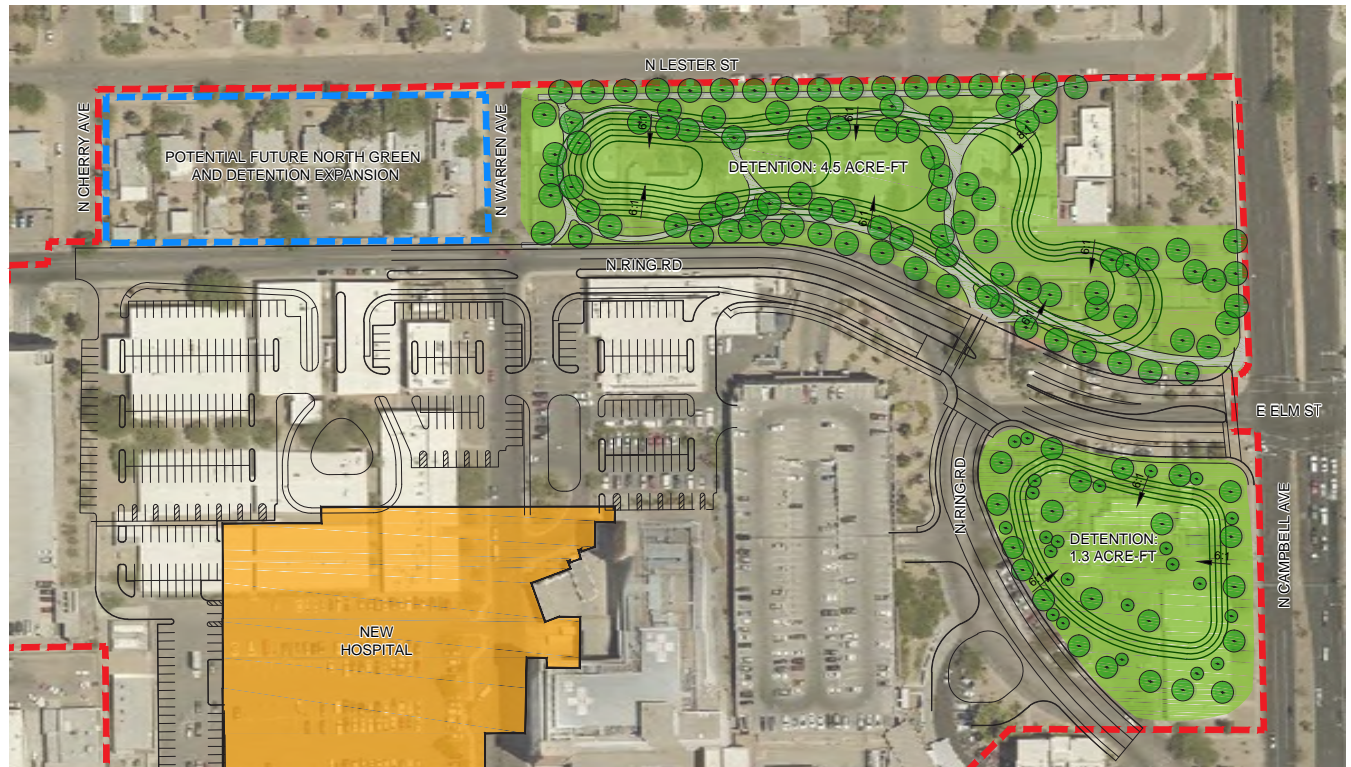
III.D.3 General Retention/Detention Parameters and Requirements

The AHSC campus and University Medical Center have, heretofore, been exempt from all City of Tucson zoning regulations and floodplain management requirements due to the Property's ownership by the Arizona Board of Regents. The portion of the AHSC campus being acquired by Banner Health will, of course, lose the prior regulatory exemption and will now adhere to all applicable City of Tucson floodplain regulations and retention/detention requirements.

City of Tucson requirements for these factors are outlined in the Stormwater Detention/Retention Manual, Pima County Department of Transportation & Flood Control District, City of Tucson. Per same, the BUMC PAD Site is not designated as a balanced or critical basin. It is therefore required to provide catchments or systems that can hold the difference in predevelopment volume and post-development volume produced during a 5-year storm event and show that the 100-year peak runoff leaving the developed site does not exceed the 100-year peak flow for the pre-developed site.

These minimum City threshold requirements notwithstanding, the BUMC PAD has been guided by the intent to exceed these minimum standards toward the goal of materially improving the long-standing downstream drainage problems that have impacted the Jefferson Park neighborhood. In very practical terms, the master drainage plan and flow reductions detailed above comprise an effort that substantially exceeds the minimum City requirements and which, in doing so, results in a significant improvement in the existing downstream drainage conditions for the Jefferson Park residents.

Exhibit 54: North Green Detention



POTENTIAL FUTURE NORTH GREEN AND DETENTION EXPANSION
(SUBJECT TO ACQUISITION OF ALL PROPERTIES WITHIN THE BLOCK)



BOUNDARY OF PAD DISTRICT ———
NORTH GREEN & DETENTION AREA ■

III.D.4 Multi-Use Drainage & North Green Component

The previously described multi-use North Green and retention/detention basin along the northern edge of the PAD boundary will provide approximately 5.8 acre-feet (5.8 AF) of stormwater storage (see Exhibit 54) and will result in a significant reduction in the 100-year flow rate exiting the PAD Site. This achievement is consistent with the UA's Stormwater Master Implementation Plan (SWMIP) discussed in the Site Analysis (Section II.F), as well as with the University's Comprehensive Campus Plan (UACCP) and with the City of Tucson's Jefferson Park Neighborhood Plan (JPNP).

a. Contributing Structures within Proposed North Green

An ancillary component of the proposed multi-use detention basin and North Green pertains to the presence of seven (7) current properties within the area (some of which have been repurposed by the UA for office and administrative uses) that are formally designated as "contributing structures" in the Jefferson Park Historic District's (JPHD's) federal filing. If the retention/detention basin and North Green is to be implemented as described in this PAD, the removal of these structures is necessary.

b. Historic District Modifications to Facilitate North Green

In order to properly deal with the JPHD's above contributing structures, on-going coordination with the Jefferson Park Neighborhood Association (JPNA) and the City of Tucson Historic Preservation Office is

necessary and will be facilitated by BUMC during the final design process. At this time, it is anticipated that the contributing structures in question can be removed, and the boundary of the JPHD adjusted accordingly, so as to insure there is minimal negative impact upon the JPHD historic-district status.

Prior to the Mayor & Council public hearing on this PAD rezoning, the City of Tucson Historic Preservation Office will be provided a copy of the agreement made between Banner Health and JPNA describing any measures to mitigate the demolition of historic contributing properties.

c. Potential / Future North Green Expansion

The area depicted on Exhibit 54 as “Potential Future North Green and Detention Expansion” shall be considered as a material consideration of this PAD. Banner Health will make a good faith effort to acquire the remaining private properties within this potential expansion area. It is understood, of course, that no existing property owner is ever compelled to sell. In the event that all of the remaining properties are ultimately acquired, Banner Health is willing to proceed with converting the area to an expanded North Green landscape and detention area, including removing the structures thereon and pursuing an abandonment of the adjacent segment of Warren Avenue. Any future modification of the PAD boundary as necessary to accommodate an expanded North Green would proceed in accordance with the particulars described in Section III.H.2.B (Interpretation and Modification of PAD District – Major Amendments).



III.E

PROPOSED UTILITY INFRASTRUCTURE

Exhibit 55 illustrates a Master Plan of the primary existing and proposed utility infrastructure that will serve the redeveloped PAD Property. This network of utilities builds upon existing infrastructure that is already in-place or which is project-convenient to the existing medical campus.

III.E.1 Public and Private Sewer System Masterplan

Initial coordination with the Pima County Regional Wastewater Reclamation District (PCRWRD) has confirmed that wastewater service for new development within the PAD District will continue to utilize the existing RWRD 8” public sewers that flow northward within Warren Avenue and Cherry Avenue.

While there is some available capacity remaining in these existing lines, it is anticipated that whatever capacity remains will be used rather quickly in the redevelopment program, thereby necessitating that either:

- 1) the existing Warren Avenue or Cherry Avenue public sewer will require augmentation, or
- 2) a new, parallel eight-inch (8”) sewer within Warren Avenue will be constructed, from North Ring Road to Edison Street, a distance of approximately 2,100 linear feet (2,100’).

Both of the above scenarios would constitute a joint effort with the University and require significant coordination between Banner Health and UA.

Prior to submittal of the future Development Package (DP) to the City of Tucson, the owner/developer will obtain a Type I Capacity Letter from PCRWRD verifying that capacity exists in the downstream public sewer system. The following items shall constitute applicable PCRWRD rezoning conditions:

- 1) The owner/developer shall not construe any action by Pima County as a commitment to provide sewer service to any new development within the rezoning area until Pima County executes an agreement with the owner/developer to that effect.
- 2) The owner/developer shall obtain written documentation from the Pima County Regional Wastewater Reclamation Department (PCRWRD) that treatment and conveyance capacity is available for any new development within the rezoning area, no more than 90 days before submitting any tentative plat, development plan, preliminary sewer layout, sewer improvement plan, or request for building permit for review. Should treatment and/or conveyance capacity not be available at that time, the owner/developer shall enter into a written agreement addressing the option of funding, designing and constructing the necessary improvements to Pima County's public sewerage system at his or her sole expense or cooperatively with other affected parties. All such improvements shall be designed and constructed as directed by the PCRWRD.
- 3) The owner/developer shall time all new development within the rezoning area to coincide with the availability of treatment and conveyance capacity in the downstream public sewerage system.
- 4) The owner/developer shall connect all development within the rezoning area to Pima County's public sewer system at the location and in the manner specified by the PCRWRD in its capacity response letter and as specified by PCRWRD at the time of review of the tentative plat, development plan, preliminary sewer layout, sewer construction plan, or request for building permit.
- 5) The owner/developer shall fund, design and construct all off-site and on-site sewers necessary to serve the rezoning area, in the manner specified at the time of review of the tentative plat, development plan, preliminary sewer layout, sewer construction plan or request for building permit.
- 6) The owner/developer shall complete the construction of all necessary public and/or private sewerage facilities as required by all applicable agreements with Pima County, and all applicable regulations, including the Clean Water Act and those promulgated by ADEQ, before treatment and conveyance capacity in the downstream public sewerage system will be permanently committed for any new development within the rezoning area.

III.E.2 Potable Water System Masterplan

As mentioned in Section II.E.1 of this document, the BUMC PAD District and adjacent AHSC campus are both served by Tucson Water, with back-up volume available from on-Site wells owned and maintained by the Arizona Board of Regents. The redeveloped PAD Site will continue to receive potable water service from Tucson Water, subject to its standard review and approval process, including the submittal of a water system masterplan and the modeling and approval of same by TW.

Hospitals are required to have dual domestic water service per the Uniform Plumbing Code (UPC), while high-rise buildings are required to have dual fire service connections per the National Fire Code (NFC). The required primary and secondary domestic potable water services shall be four-inch (4") diameter lines; the required dual fire services shall be eight-inch (8") lines and shall be respectively looped off of:

- 1) an existing eight-inch (8") water main along Warren Avenue to the east of the proposed new hospital and bed tower; and
- 2) an existing twelve-inch (12") water main along Adams Street south of the hospital.

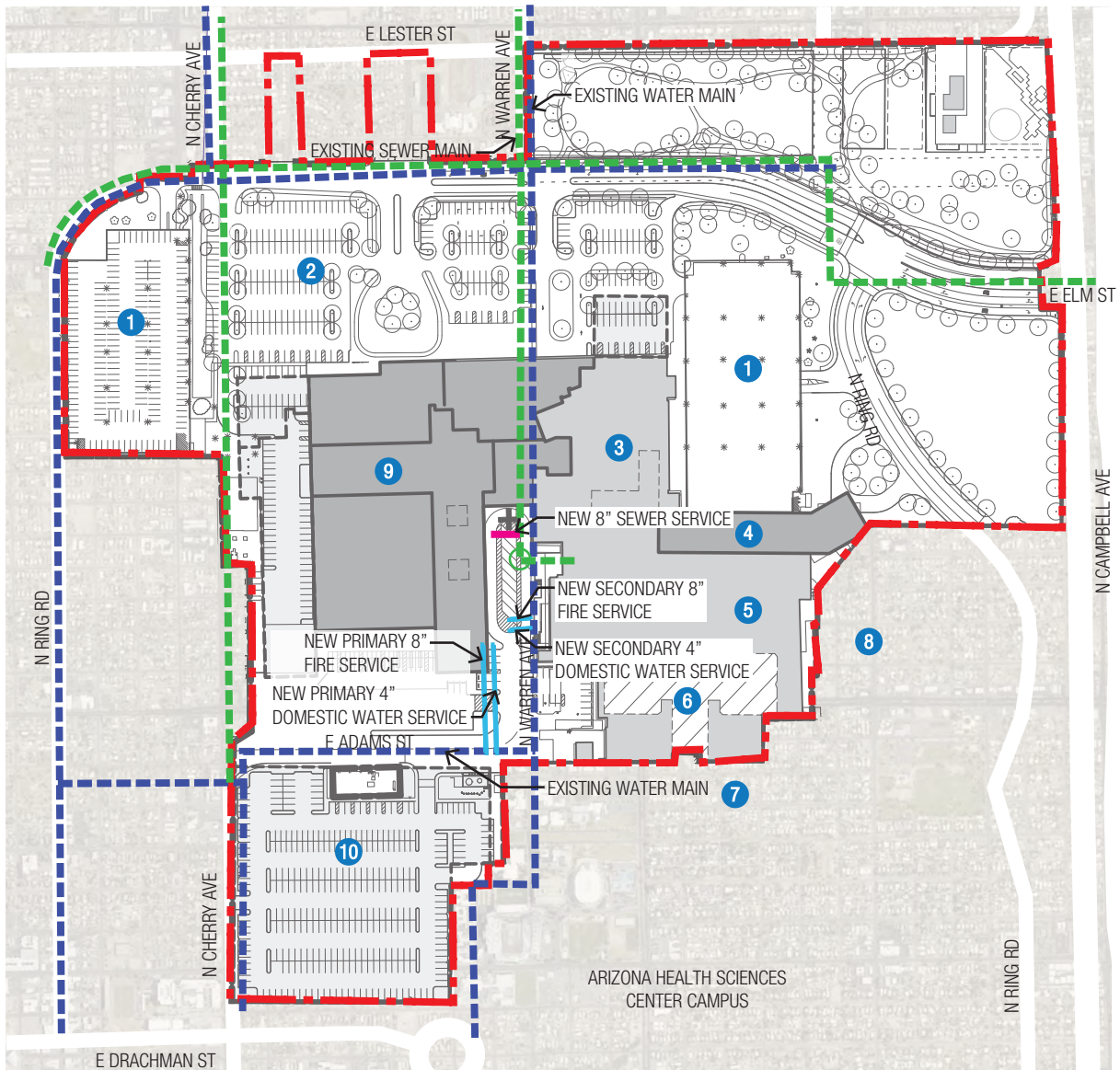
III.E.3. Dry Utilities Masterplan

The PAD area is already well served by all dry utilities (electric, gas, telephone, cable television, internet, etc.). Myriad new dry utilities will be required in conjunction with the redevelopment of the PAD District. The location, sizing, easements and service agreements associated with all of this utility infrastructure will be determined during final engineering design. These matters, while complex and extensive, can be considered a routine component of any large-scale urban redevelopment project.

III.E.4 Phasing of Utility Infrastructure Upgrades/Augmentations

The proposed On-Site utility infrastructure necessary to serve the ultimate redevelopment program for the PAD District, including that necessary to serve the planned second bed tower of the new hospital (planned for the Year 2035), will all be constructed in a single phase. This approach, while constituting a substantial up-front expense, facilitates a minimum of Site disturbance at the time the second bed tower is ultimately constructed.

Exhibit 55: Primary Water, Fire Line, and Sewer Services



LEGEND

- | | | | | |
|------------------|-----------------------|-----------------------------------|---------------------|---------------------------|
| Parking Garage ① | UMC NEP ⑤ | Banner-UMC New Hospital Phase 2 ⑨ | Existing Sewer Main | Banner - UMC PAD District |
| Surface Lot ② | UMC 201 Building ⑥ | Parking Structure ⑩ | New Sewer Service | Existing Water Main |
| DCMC ③ | College of Medicine ⑦ | | | New Water / Fire Service |
| New DCMC Lobby ④ | Cancer Center ⑧ | | | |

III.E.5 Maintenance Responsibilities for Utility Infrastructure

The maintenance of public utility infrastructure within the PAD Site shall remain the responsibility of the servicing public utility company or public agency. All private sewer, water, fire lines, electric services, and irrigation shall be the responsibility of Banner-UMC, except for those lines retained by the University, which shall remain the maintenance responsibility of UA.



III.F CONSERVATION MEASURES & ENVIRONMENTAL CONSIDERATIONS

III.F.1 Conservation Standards of Proposed Buildings

In developing the PAD Site, Banner-University Medical Center will target a variety of sustainability practices, including healing design features, energy and water conservation strategies, and high-efficiency building materials. These are discussed in more detail below.

A. Energy Efficiency Provisions & Standards

In terms of overall project design components and larger community-focused sustainability objectives, the BUMC PAD District Site redevelopment program will:

- Implement passive water harvesting elements throughout the Site wherever practical, as well as provide substantial new surface basins and underground facilities for the collection and control of stormwater flows.
- Support and encourage alternative modes of transportation through an employee bus pass program and the provision of direct and easily navigable connections to adjacent City bus and streetcar stops.
- Utilize LED outdoor lighting of less than or equal to 3600 kelvin.
- Provide quality and functional and passive open space within the PAD District increasing the overall amount of landscape area in comparison to the existing condition (refer to the landscape requirements beginning on page 73).
- Establish and administer a formal recycling program for non-hazardous hospital waste materials.

In addition, the following Banner Health corporate guidelines will be recognized and incorporated into the design and construction processes:

- New design shall, at a minimum, exceed ASHRAE 90.1 2007 requirements by ten percent (10%). In the event that incentives may be offered by local utility companies for exceeding the above threshold, and to the extent such incentives have positive cost-benefit characteristics, the project design team shall submit the application for the incentives.
- The exterior wall assembly of building envelopes shall have a minimum U-factor of 0.089. Roof assemblies shall have a minimum U-factor of 0.027. The building's Glazing Solar Heat Gain Coefficient shall meet or exceed the values listed in Table 5.5 of ASHRAE 90.1 2007 for the appropriate climate zone. All glazing frames shall incorporate thermal breaks to prevent frosting and heat transmission.
- Building depths will be designed, to the greatest extent feasible, to foster greater penetration of natural light into interior spaces. Internal shading shall be incorporated to control excessive sunlight and heat transmission. Manually operated shading shall be used in offices, exam rooms, patient rooms and other individually staffed spaces, while motorized shades shall primarily be confined only to public spaces with larger glass areas.
- Building materials shall be purchased from local manufacturers and suppliers whenever possible and to the extent that they meet or exceed adopted Banner Health standards for quality, durability and cost-competitiveness. Materials which can be cost-effectively re-used shall be harvested where feasible. For further detail, also refer to Appendix H (Banner Health Building Design and Construction Standards).
- Waste materials will be sorted and recycled, when to the extent practical, to reduce the total amount of landfill waste generated by the project. Construction projects shall be required to have and implement a waste management plan for the assessment and practical recycling of construction & demolition debris and waste.
- Materials that release toxic chemicals or by-products during their life cycle, or which contain known carcinogens, will not be used or allowed.
- Materials specifications calling for the following will be stressed wherever possible:
 - 1) products containing high post-consumer content,
 - 2) wood products that are from rapidly renewable sources, and
 - 3) materials that are easily reusable, recyclable or biodegradable.

B. Potable Water Conservation Standards

The following potable water conservation elements will be incorporated in the PAD District's redevelopment:

- Low-flow water closets and urinals will be used in the new hospital and the other existing buildings that are repurposed & remodeled as part of the Site redevelopment program. Waterless urinals will be investigated as an alternative to conventional flow models.
- Plant materials and landscape accents will be limited to regionally-adapted and native species.
- A low water-use irrigation system will be utilized for all landscape areas. The system will incorporate automatic controllers, flow sensing valves, rain-sensor shut-off capability, and will be metered separately to record water usage throughout the Site (see landscape-related standards in Section III.B.3.j for further detail).

III.F.2 Heat Island Considerations and Mitigation Measures

The United States Green Building Council (USGBC), which administers the Leadership in Energy and Environmental Design (LEED) program, identifies methods for reducing heat island effects for roof and non-roof surfaces. The following strategies will be evaluated, when appropriate and cost-effective, to reduce the non-roof impact on heat island effects:

- 1) reducing the amount of impervious surfaces on Site,
- 2) shading constructed surfaces such as parking areas lots, sidewalks, roads and plazas with vegetation or shade structures, and
- 3) using paving materials with Solar Reflectance Indexes (SRI) of 29 or greater.

Energy management systems, water conservation systems and LEED compliant materials will be selectively incorporated into the design and construction of the BUMC campus facilities. The PAD has a well-rounded design program to responsibly develop the Property per the following:

- 1) the Site plan for the campus reduces the overall building & development envelope compared to the existing condition and reduces the amount of impervious surface;
- 2) for the first time on this particular Property, a comprehensive drainage plan will be implemented for the entire Site; and
- 3) a Site-wide water harvesting program will employ passive harvesting elements to supplement the irrigation needs of the new and existing landscape areas, while helping manage runoff from hardscape surfaces.

Specific heat island mitigation measures on the PAD Site will employ a combination of strategies. The BUMC PAD District is primarily a redevelopment of an existing campus. Being a redevelopment, the site has significant constraints associated with the existing surface and sub-surface infrastructure, above-ground structures, site elements and proposed infrastructure improvements. These elements cannot be practically retrofitted and they effectively limit planting locations within landscape areas and the use of alternative paving materials within the PAD District. New trees and other vegetation added to the project in the parking and open space areas will help lower surface and air temperatures by providing shade and facilitating evapotranspiration. These landscape areas may or may not meet the expected percentage of shade in pedestrian and vehicular use areas per the UDC.

Cool roofs, where maintenance requirements will allow for them, and where materials with high solar reflectance (high albedo) can be employed, may be used to reflect sunlight and heat away from major buildings. Green roofs and alternate paving materials will be considered and evaluated where cost-effective during final design, but are not specifically made a requirement of this PAD. Design goals to reduce heat island effects include the following:

- Maximize shade within new landscape areas in parking areas, pedestrian areas and gathering areas.
- Consider Energy Star or cool roof rated surfaces of at least 0.65 reflectivity and at least 85% emissivity.

Exhibit 56: Energy & Water Conservation Elements



III.F.3 Self-Certification of Conservation Measures & Environmental Considerations

Concurrent and included with the submittal of future Development Packages (DP's) to PDS, or with the submittal of architectural plans to PDS for building permits, the owner/ developer (or their appropriate design professional) shall submit a letter detailing the particular measures employed in final design to:

- 1) address and promote the above Conservation Measures and Environmental Considerations; and
- 2) demonstrate that Banner Health is achieving progress towards the various sustainability goals outlined in this PAD.

The self-certification letter(s) accompanying future Development Package (DP) submittals to PDS shall describe the particular measures employed, and the results attained (citing approximate percentages, where applicable), toward furthering the following:

- 1) Rainwater Harvesting provisions as found in Section III.B.3.J (Development Standards -- Landscape Requirements);
- 2) the landscape-related Potable Water Conservation Standards found in Section III.F.1.B; and
- 3) Heat Island Considerations & Mitigation Measures as found in Section III.F.2.

The self-certification letter(s) accompanying future architectural plan submittals to PDS for building permits shall describe the particular measures being employed to further the following:

- 1) Energy Efficiency Provisions and Standards as found in Section III.F.1.A;
- 2) the building-related Potable Water Conservation Standards as found in Section III.F.1.B.

Banner Ironwood
San Tan Valley, Arizona



III.G ARCHITECTURAL STANDARDS & DESIGN GUIDELINES

III.G.1 Architectural Design Concept, Massing & Building Elevations

The BUMC architecture is intended to clearly brand this Banner Health facility and to establish a distinct identity for this Tucson location (see the various building elevation concepts and illustrations included later in this Section, as well as Appendix I, Illustrative Architectural Renderings). The design concepts and aesthetic representations presented here are subject to further refinement; they are provided for illustrative purposes and to inform the reader as to:

- 1) the architectural design and massing of the new hospital; and
- 2) the manner in which the proposed hospital construction will integrate into the existing visual and built context of the PAD District.

A guiding architectural principle of all new development within the PAD District will be its visual unification with the existing campus elements. This existing architecture will serve to guide and inform any future enhancement of facades and structures through the use of consistent building materials, colors, massing and scale. Building materials will be specifically selected to enhance the Banner campus identity while still respecting the established materials palette of the adjacent AHSC campus. Proposed building massing shall be simple and complimentary to the existing, established building framework. Pedestrian-scale entry elements and courtyards will be stressed so as to create a comfortable, inviting environment for patients, visitors and staff.

The design of new buildings within the PAD District will specifically comply with the following:

- Each building form, mass and appearance shall be indicative of the function the building serves, with special attention given to comfortable and inviting outdoor pedestrian spaces and building entrances.
- The experience of the patient, pedestrian and public visitors will be guided by distinct connections from building interior to exterior spaces. Glazing will be utilized as an orienting or way-finding element in the overall building design. Overhangs and canopies will identify points of drop-off for vehicular traffic and highlight primary building entrances. Exterior courtyard and landscape areas will include special elements (such as sculpture or other art) designed by local artists to enhance both the passive-use and healing aspects of the space.
- Building design shall be evocative of, and responsive to, the surrounding natural desert context. Material selection shall be driven by the natural materials and colors found in the desert landscape.
- The design shall integrate, both functionally and aesthetically, into the existing medical campus.
- Building massing and form shall be responsive to both Site context and building function. New building masses shall be significantly set back from the Jefferson Park neighborhood to the immediate north.
- New building structures will visually and, to the extent functionally practical, physically connect to existing structures and campus functions.
- Mechanical equipment for new buildings shall be effectively screened from view. This screening shall be integrated into the building façade and massing design strategy, to the maximum extent possible, while minimizing the use of separate or distinct screening structures.
- Building fenestration shall be minimized or shaded on the south, east and west facades to reduce sun exposure.

III.G.2 Building Materials, Colors and Special Features

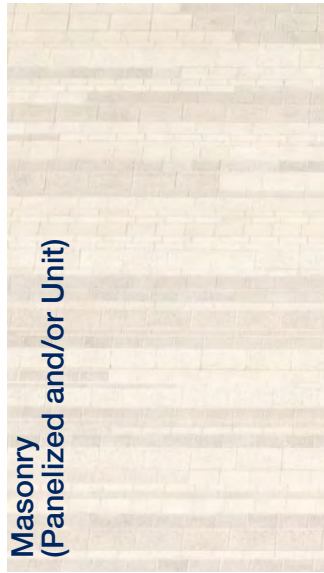
The selection and use of building materials, as alluded to above, shall complement and shall be compatible with the surrounding natural desert context and AHSC campus facilities (see Exhibit 56 for the proposed color & materials palette). Building materials shall enhance the existing medical campus images, with preferred materials being the following:

- Masonry units
- Precast concrete modular units
- Cast in place concrete
- Metal panels
- Low-e glass
- Fritted glass
- Synthetic stucco system with texture

These preferred materials will evidence the following characteristics:

- Materials and detailing shall be durable and easy to maintain and repair. They should expressly prevent against sun fade, but materials that gain a patina over time are considered acceptable
- The prevailing color palette shall be derived from the natural environment of the surrounding Sonoran Desert, together with the developed AHSC campus context. Exterior surfaces should use harmonious and complementary colors that reflect the Banner Health corporate color palette, but which also recognize and further the existing campus color scheme. Toward this end, a mixture of grays and browns, together with green, red, orange and blue hues found in the Sonoran Desert, are deemed appropriate.
- The adjacent UA and AHSC Campuses have established a harmonious nexus between their original red brick buildings and their newer buildings, wherein the latter employ red brick elements somewhat minimally and do so primarily on the base floors of their Campus buildings. This latter approach is consistent with the proposed architecture of the new hospital facility design. It will incorporate accent features, on its lower floors, that utilize alternative materials to red brick of varying sizes and which are presented in harmonious color shadings. The specific hues and textures used will be compatible with the minimal use of red brick that characterizes the adjacent AHSC Campus buildings. The individual unit sizes of the accent materials selected, however, will likely be larger than that of individual bricks, being more comparable to CMU-sized elements or greater. These larger units are more effective in visually establishing the building base associated with a structure of this substantial mass, while still insuring an appropriate human and pedestrian scale at its ground levels.
- In accordance with project conservation guidelines, materials of low embodied energy and that are made with recycled content are encouraged to be used whenever possible.

Exhibit 57: Building Materials Palette



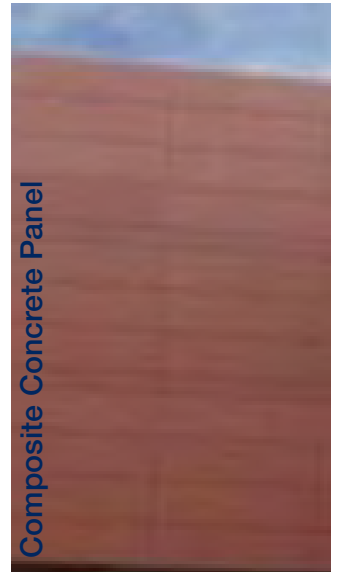
Masonry
(Panelized and/or Unit)



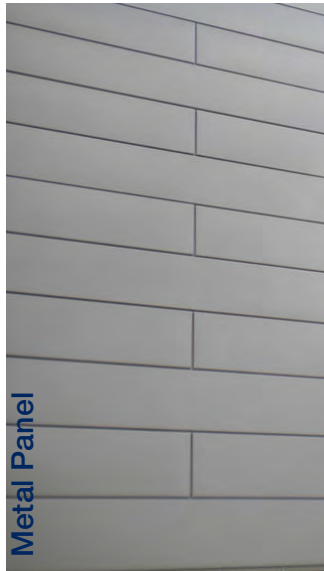
Natural Stone Tile



Ground Face Concrete
Masonry Units



Composite Concrete Panel



Metal Panel



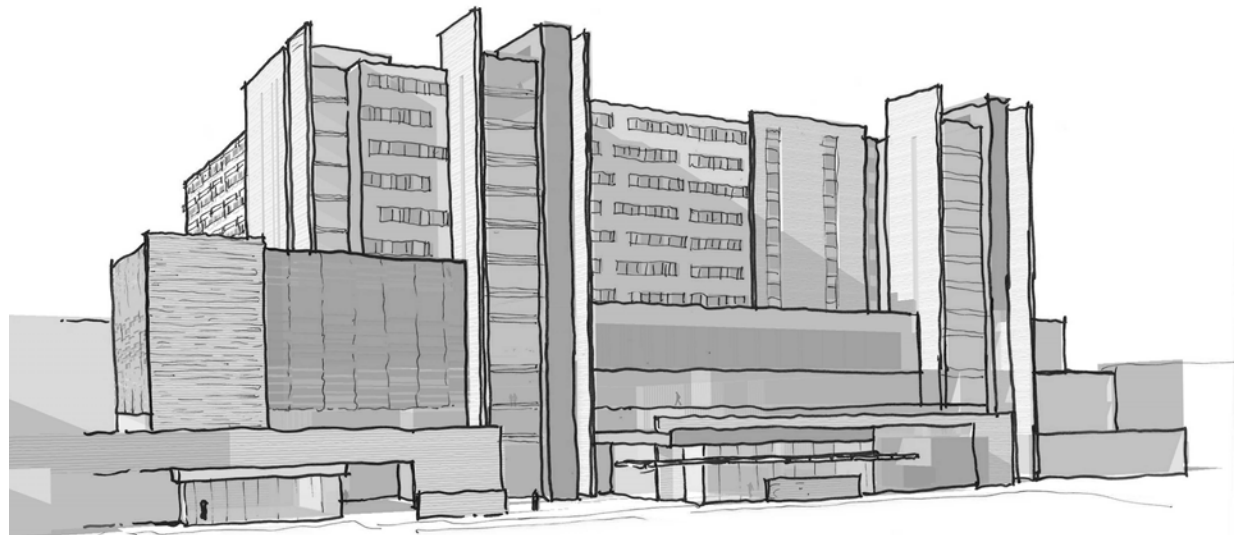
Cast-In-Place Concrete



Synthetic Stucco System
Color Palette

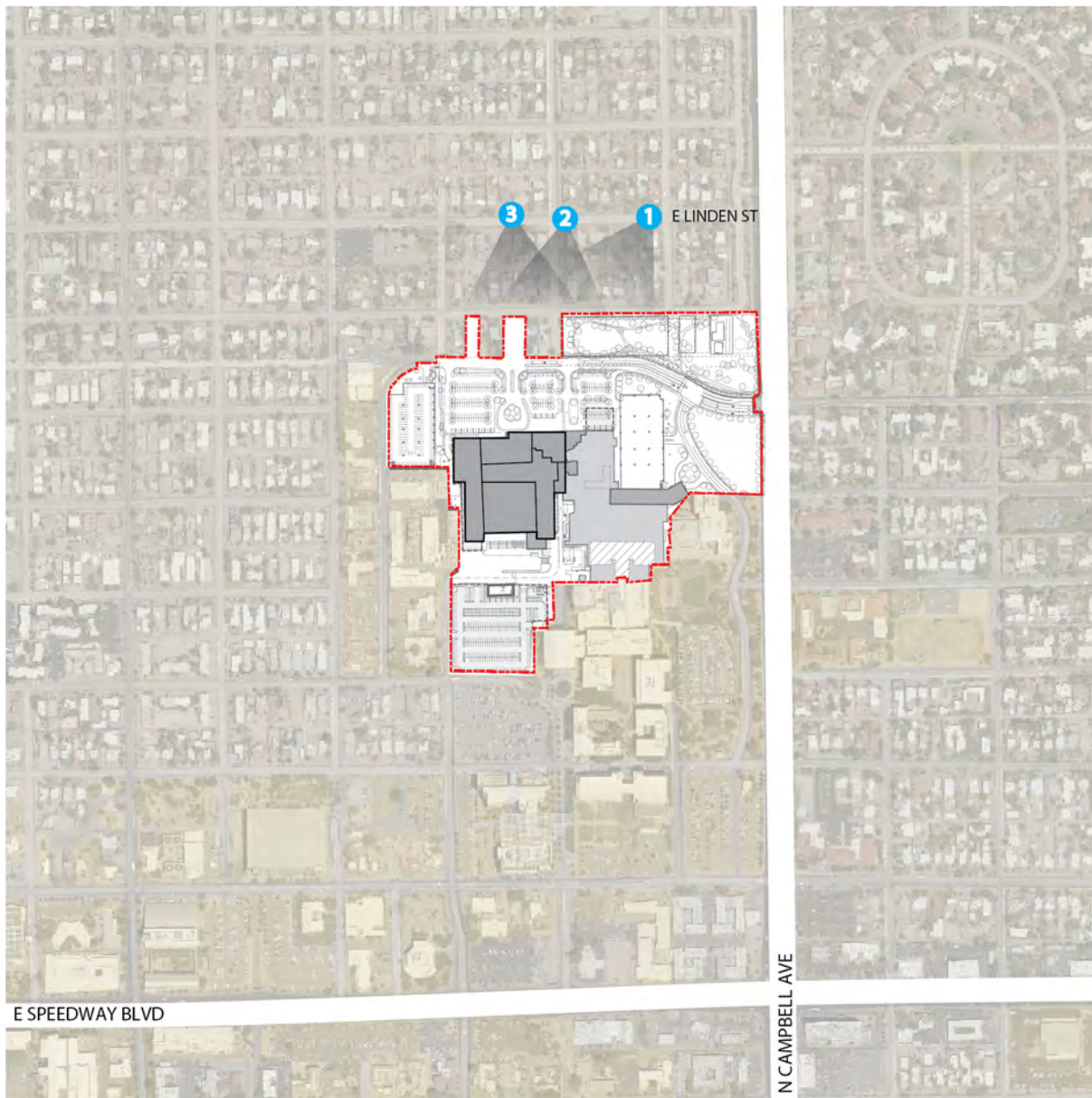


Glazing
(Clear + Obscured)



Preliminary Sketch - New Hospital
Proposed North Elevation






Exhibit 58: Visibility Analysis of New Hospital Construction



Scale 1:12000

LEGEND 

Photo Location Key for:
Photos Taken From E Linden Street
Looking South Toward Site of New
Hospital & Bed Towers

-  Banner - UMC PAD District 
-  New Hospital 
- 



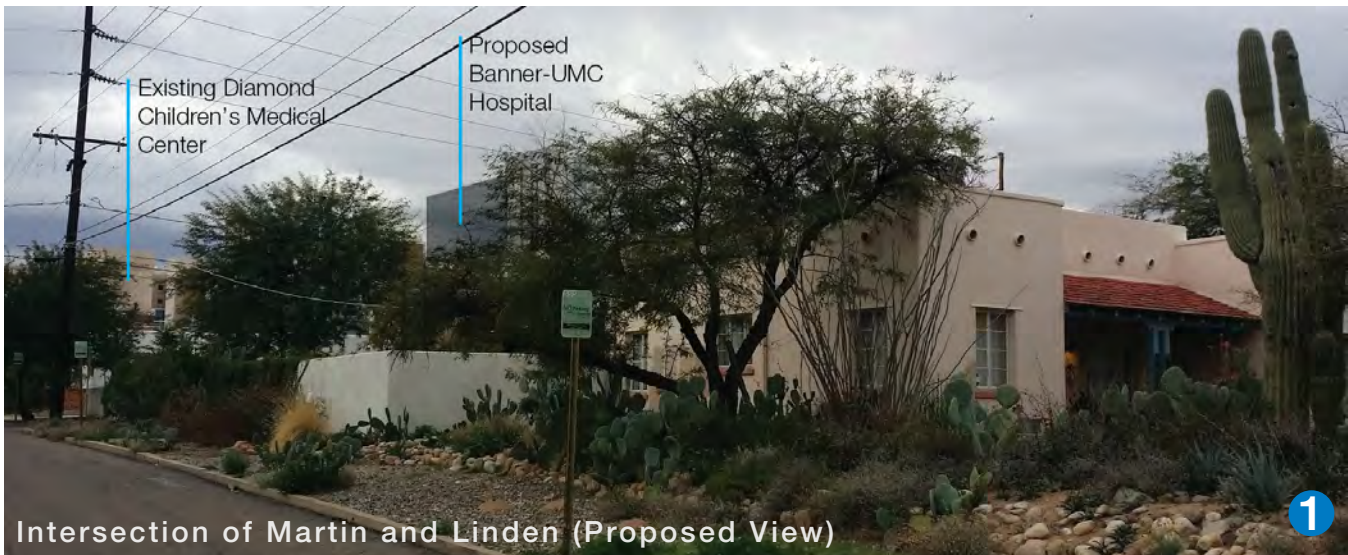
PAD DISTRICT PROPOSAL

Exhibit 59: Existing Viewsheds



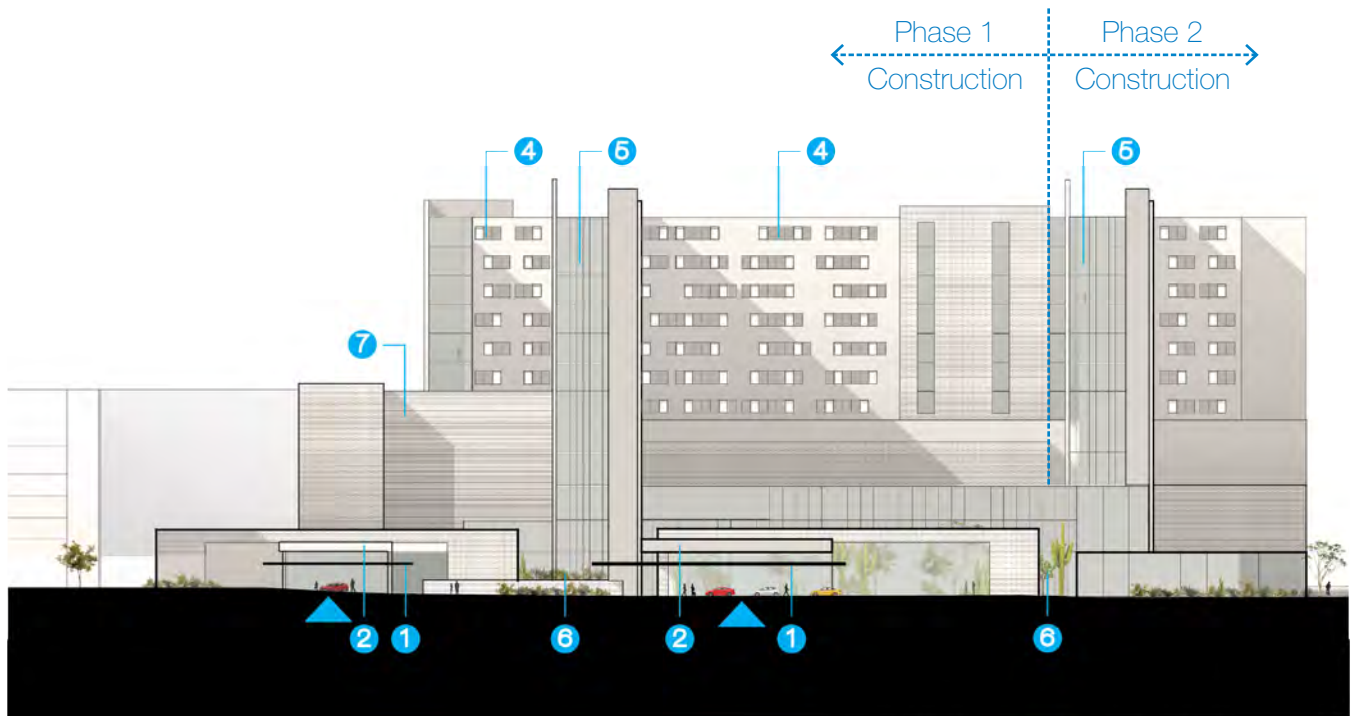
NOTE: Reference Exhibit 58 for Photo Locations

Exhibit 60: Post-Development Viewsheds (Full Hospital Buildout)



NOTE: Reference Exhibit 58 for Photo Locations

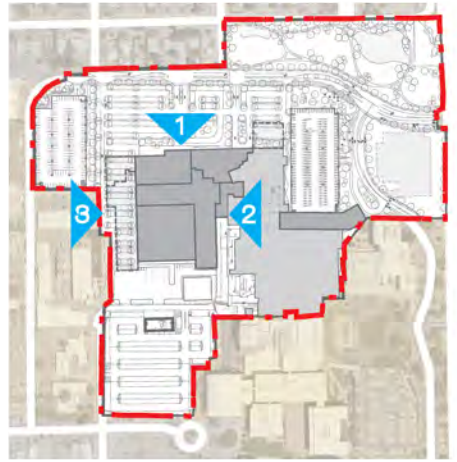
Exhibit 61: Proposed Building Elevations of New Hospital and Bed Towers



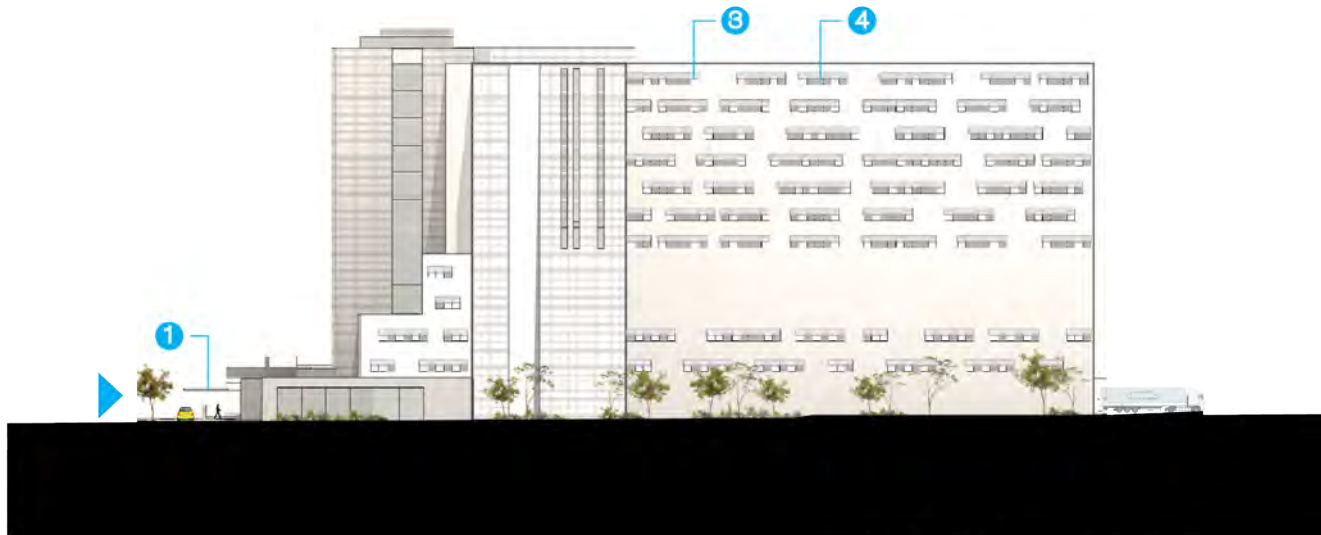
1 North Building Elevation Facing Jefferson Park Neighborhood




2 East Building Elevation Facing Campbell Avenue



Key Map
NTS



3 West Building Elevation

-  Covered Pedestrian Drop Off/Entrance **1**
- Area for Building Mounted Signage **2**
- Solar Control Devices **3**

- Clustered Window Openings with Infill Panels **4**
- Vertical Circulation Beyond Glazing System **5**
- Exterior Courtyard **6**

LEGEND
Design Feature **7**

For Illustrative Purposes. Subject to Change

III.G.3 Conformance & Consistency with Existing Campus Design Guidelines

Architectural design at the Banner University Medical Center Campus shall be compatible with the guidelines established and documented in the UA Comprehensive Campus Plan (UACCP) and the City of Tucson's University Area Plan (UAP). These guidelines generally focus on visual quality of the outdoor environment, including buildings, other structures, open spaces and circulation routes.

The following matrix provides a comprehensive response to these existing guidelines and the manner in which the proposed PAD Site complies with them.

Table 9: Conformance & Consistency with Existing Campus Design Guidelines

Goal	The University of Arizona Manual of Design and Specification Standards based on Comprehensive Campus Plan (2009)	University Area Plan Section 8: General Design Guidelines	Banner-University Medical Center PAD District Response
Campus Aesthetics	Establish a sense of aesthetic continuity campus-wide, by developing and utilizing design vocabularies and guidelines in the preservation and reuse of existing structures and open space areas, as well as in the design of new facilities and open spaces.	Complement surrounding development: Utilize compatible building materials, architectural style and ornamentation, setbacks, stepbacks, and variations in building height or mass to complement the scale and character of surrounding development and reduce the appearance of excessive height and bulk.	The new facility and new lobby for the DCMC will continue the language of simple massing and durable materials. Greater complexity, texture, and smaller scale will be found at the pedestrian level. The new tower will be set back significantly from the Jefferson Park neighborhood to clearly separate it from the residential scale found there.
Reflect Neighborhood Character		New development should be carefully designed to reflect and enhance neighborhood identity, streetscape continuity, historic development patterns, neighborhood landmarks, predominant architectural and landscaping themes, and scenic or historic view.	The new buildings will integrate into the existing medical campus to create a cohesive whole. A significant increase will occur in the amount and quality of exterior open spaces. The adoption of a clear plan of ultimate redevelopment for the PAD site will provide certainty to the surrounding neighborhood property owners, foster an increased willingness to reinvest in and improve their properties and their neighborhood, and enhance overall neighborhood fabric.
Buffer Adjacent Uses		Utilize appropriate screening techniques to mitigate the impacts of new development on adjacent uses. Design and orient drought-tolerant landscaping, masonry walls, earthen berms, outdoor lighting, trash storage areas and other elements to provide an attractive and effective barrier to undesirable access, noise, odor, or views. Limitations on the hours of operation for a commercial use may also be considered.	The PAD will implement the initial portion of the long-awaited northern buffer and greenway between the medical campus and Jefferson Park. This component has been named the "North Green" by this PAD and will represent a significant open space amenity, buffer, multi-use retention/facility, and neighborhood enhancement.
Respect Historic Development		Ensure compatibility between the character and appearance of new development and that of adjacent historic properties. New development should also demonstrate sensitivity to the broader context of a surrounding historic district.	The PAD District will be developed in full recognition and respect of the Jefferson Park Historic District. Banner Health will work closely with JP and the City of Tucson Office of Historic Preservation to insure that the aforementioned North Green is developed with no negative impact on the JP historic-district status.
Preserve Residential Privacy		Orient buildings, windows and balconies so as to protect the privacy of adjacent residents. Outdoor lighting should be directed away from adjacent residential uses to protect residential privacy, and shielded above the horizon to comply with regional light pollution guidelines.	The new hospital bed tower(s) will be set back significantly from the Jefferson Park neighborhood and windows will primarily face east and west, thereby minimizing views into private yards. Lighting must meet all guidelines for security and safety for a 24-hour hospital, but all fixtures will feature cut-offs and minimize glare in accordance with the Outdoor Lighting Code.

Table 9: Conformance & Consistency with Existing Campus Design Guidelines (cont.)

Goal	The University of Arizona Manual of Design and Specification Standards based on Comprehensive Campus Plan (2009)	University Area Plan Section 8: General Design Guidelines	Banner-University Medical Center PAD District Response
Coordinate Pathways and Linkages		Coordinate private pedestrian walkways and bicycle paths with public pedestrian and bicycle facilities.	Enhanced pedestrian and bicycle paths will be provided within the PAD District. Linkages to existing off-site routes and designated trail corridors will be preserved.
Employ Defensible Space Concepts		Create territorial spaces, provide surveillance opportunities, assign open spaces, control access, design landscaping for safety, consider defensive landscaping, provide adequate lighting, post address numbers, coordinate development with Tucson Police Department.	The safety and security of all patients, staff and visitors is a basic and primary requirement of every 24-hour hospital facility. Public points of entry into the buildings will be limited to the main entry of the new hospital, the emergency department at DCMC, the DCMC garage, and the new lobby and main entry on the east side of DCMC. All entries will be lighted and all parking lots and parking structures will have video surveillance.
Encourage Alternate Modes of Transportation		Provide a well-defined pedestrian system linked to the public sidewalk system, convenient access to transit facilities, and secure bicycle parking areas. Where appropriate, integrate convenient, comfortable transit facilities into the design of new development.	The PAD District will feature a robust system of outdoor sidewalks and paths connecting the new and old buildings, parking, campus functions, and new hospital and emergency department public entries. The connection with the existing AHSC campus will be strengthened and link directly to the new hospital such that staff and the public can better access the transit stop on Campbell Avenue and the new Sun Link streetcar station to the south.
Consolidate Adjacent Parcels		Wherever possible, consolidate adjacent development parcels in order to provide integrated circulation and access, reduce the number of curb cuts along the street, and enhance screening and buffering between adjacent, non-compatible uses.	The PAD creates a single, unified campus with controlled vehicular access at a single main entry/exit onto Campbell Avenue.
Coordinate Information with Architecture		Integrate signs and other information systems into the overall design of new development in an architecturally coordinated and sensitive manner. Building addresses should be clearly visible from the public right-of-way.	Hospital signage must be clearly visible night and day, and clear way-finding is absolutely critical for patients and visitors. All directional and way-finding signage will be clear and easily discerned. Banner Health permanent signage will be an integrated element of the overall architecture and campus design and will be reviewed accordingly by the City of Tucson.
Provide Neighborhood Amenities		Whenever possible, incorporate neighborhood amenities such as open space, recreational facilities, and public art in new development and in the redevelopment of existing areas. Such amenities should be developed with input from local neighborhoods.	The new North Green represents a significant and open space amenity along the Jefferson Park neighborhood boundary. Bicycle and pedestrian trails will extend through the North Green and the campus to maintain continuity with the existing public trail network and neighborhood. Jefferson Park leaders will be part of on-going discussions during the entire PAD preparation and rezoning process.

Table 9: Conformance & Consistency with Existing Campus Design Guidelines (cont.)

Goal	The University of Arizona Manual of Design and Specification Standards based on Comprehensive Campus Plan (2009)	University Area Plan Section 8: General Design Guidelines	Banner-University Medical Center PAD District Response
Provide Active and Interesting Development at the Street Level		Provide “fine-grained” design elements and pedestrian-oriented amenities and services at the street level to enhance streetscape vitality and visual interest. Large expanses of unbroken wall surface or reflective glass should not occur at the street level.	The new hospital is setback significantly from the Jefferson Park neighborhood to insure a human-level visual interface from these distant residences. On-site, the lobby entries to the new hospital and the DCMC emergency department are linked by an exterior courtyard to provide a comfortable and welcoming street-level pedestrian environment. Wall façades in the area employ a variety of materials to insure visual interest.
Scale and Massing	New facilities are generally becoming increasingly large and bulky. At the same time, these buildings must be compatible with existing buildings often at a smaller scale, and must be humanly scaled at the pedestrian level(s).		The new hospital will integrate functionally with the adjacent AHSC campus. Public lobby entries are humanly scaled and integrated with exterior courtyards at the pedestrian/street level. Building materials and façades will avoid large and monolithic faces and instead employ a visual variety of materials, colors, and textural treatments.
Building Placement / Orientation	The following considerations should be addressed in building siting and design: views, circulation, open space, on-site parking, future expansion, microclimate, and existing site features.		<p><u>Views:</u> the placement of the new hospital and bed tower is sited to insure the preservation of the quality mountain views to the north and to the east for those who presently enjoy them, as well as to make these same views available to hospital patients.</p> <p><u>Circulation:</u> the overall PAD site plan makes significant improvements in on-site circulation and in creating linkages to adjacent properties, established off-site trails and pedestrian pathways. Vehicular site circulation is also greatly improved.</p> <p><u>Open space:</u> the design significantly increases the amount and passive and active open space on the property, including the long-awaited North Green buffer along the Jefferson Park neighborhood boundary..</p> <p><u>On-site parking:</u> ample parking will be provided on for patients, visitors, and staff. Surface parking areas will be shaded by strategically placed trees to mitigate heat island effects.</p> <p><u>Future expansion:</u> the full and ultimate buildout of the PAD District is detailed in this document. This provides certainty to Banner Health and also for the adjacent residential neighborhood and its property owners. Establishing a defined build-out program is one of the best methods of fostering long-term neighborhood stability and security.</p> <p><u>Microclimate:</u> the significant increase in the amount of non-pervious surface and active & passive open space on the property will provide for a generally improved microclimate.</p> <p><u>Existing site features:</u> the existing site features will provide a framework and vocabulary for the design and integration of the new hospital, its exterior pedestrian spaces, and new open-space amenities.</p>

Table 9: Conformance & Consistency with Existing Design Guidelines (cont.)

Goal	The University of Arizona Manual of Design and Specification Standards based on Comprehensive Campus Plan (2009)	University Area Plan Section 8: General Design Guidelines	Banner-University Medical Center PAD District Response
Indoor/Outdoor Relationships	A more active relationship between interior and exterior space than has occurred in most existing facilities is a goal in the siting and design of new buildings and additions. This relationship is sought not only on the ground plane, but at other building levels as well.		<ul style="list-style-type: none"> • The entry sequence into the new hospital will include a street-level courtyard that is visible from the new hospital's main entry pavilion, as well as from more distant viewpoints, by arriving patients and guests. The interior courtyard helps orient the public quickly to the building entry. • The second level of the new hospital will serve as the main site-wide circulation spine between the new and old hospital facilities; a guiding principle of this feature is fostering the public's way-finding through the use exterior views (from inside the circulation spine) to inform and guide visitors throughout the facility. • Upper level connections will provide separate through-ways and connections for staff, patients and visitors from the patient beds to all other hospital functions and services.
Architectural Style	In predominantly build-up areas already existing on campus, new construction should be architecturally compatible with the existing structures. While contemporary architectural styling is anticipated, appropriate massing, building materials, and detailing should contribute to a sense of visual unity.		The style and massing of the new building will be appropriate to the functional needs of the hospital while respecting the traditional materials used in Southern Arizona and established within the adjacent AHSC campus. Detailing will emphasize ease of maintenance as well as aesthetics. The front of the existing emergency department will be redesigned to provide a consistent, integrated front façade for the ED and the new hospital main lobby entrance.
Building Materials	The selection of exterior building materials for permanent facilities should be based on long-term institutional durability and ease of maintenance; texture and textural variety, color palette, energy conservation considerations, cost and availability, and type and use of structure.		Building materials selected for the new hospital and architectural improvements are time-tested in Tucson and Southern Arizona and include masonry units, precast concrete modular units, cast in place concrete, metal panels, low-e glass, fritted glass, and synthetic stucco system with texture. Ease of maintenance and energy conservation are fundamental considerations material selection.
Artwork and Graphics	Works of art should be integrated into the design of each building, especially in building entrance areas (indoor and outdoor) and other high-use common areas. This may include sculpture, murals, architectural relief, and/or pavement patterning.		Artistic elements and public art will be selectively employed on the campus, most notably at significant pedestrian nodes and primary lobby entries. It is the intent of the PAD to engage local artisans to assist in this effort and to feature elements that recall elements of the site's history.

Goal	The University of Arizona Manual of Design and Specification Standards based on Comprehensive Campus Plan (2009)	University Area Plan Section 8: General Design Guidelines	Banner-University Medical Center PAD District Response
Strategic Buildings: Landmark Buildings	Landmark buildings anchor activity nodes or major open space areas. A landmark building is designed to be easily identifiable or visually significant, especially to pedestrians, because of its clear or unique form or massing; high figure – background contrast due to siting, scale, color, or architectural style; and/or its prominent spatial location. Special attention should be given to building design and massing, landscaping, and lighting. New landmark buildings should be designed to actively structure and enhance the usable open space they anchor.		The new hospital, as well as the entire BUMC campus, is envisioned as a landmark development that will make a strong statement in both its architecture and its overall high-quality of development. In doing so, it will constitute a significant addition to Tucson’s built environment, one that will be visible to the tens of thousands of motorists and pedestrians who travel the Campbell Avenue gateway corridor on a daily basis.
Parking Structures and Decks	The design guidelines for building and facilities set out above generally apply. Because of the massiveness of parking structures, special consideration should be given to building materials, detailing, and landscape. Safety and security should be a primary design consideration, including the location and visibility of vertical circulation, night lighting, and graphics.		New parking structures will be designed such that their façades integrate with the established architectural vocabulary which surrounds them. The standard stark, austere, and purely functional parking structure will not be allowed. Such structures shall provide for safety and security, with their lighting integrated into the structure as a design element rather than simply being an “add-on” feature.

III.G.4 Architectural Review & Self-Certification at Time of Building Permits

Given the extent of architectural design, elevations, and detail presented in this PAD document for the new on-Site hospital facility, no separate or subsequent architectural review process is required for the project. The only applicable requirement in this regard is that the final architectural design of the new hospital, as presented at the time of building permits, is in substantial conformance with the aesthetics, architectural concept, building elevations, colors, and materials presented herein and in Appendix I.

Concurrent with the submittal of the building plans for review by the Planning & Development Services Department (PDSD), the architect of record shall submit a letter, signed and sealed with his or her Arizona registration, certifying that the plans are in general conformance with the PAD prescriptions articulated in Sections III.G.1 and III.G.2 above. PDSD shall review the architect’s certification letter to insure its completeness in addressing the various items articulated in aforementioned Sections III.G.1 and III.G.2.



III.H

INTERPRETATION & MODIFICATION OF PAD DISTRICT

Section III (Land Use Proposal) of this PAD, together with the particular Land Use Regulations presented Section III.B, have been structured to provide for clear interpretation and application by the City of Tucson in regulating a specialized land use and zoning framework for the BUMC PAD District. In the event that supplemental PAD changes or interpretations become necessary in the future, they shall proceed in accordance with the parameters below.

III.H.1 General Administration & Interpretation Authority

The PAD will not result in the modification or change of any existing City of Tucson adopted building codes or other ordinances, except those portions of the City Unified Development Code and Administrative Manual as specifically modified in this PAD document, together with the modification of the applicable City of Tucson Zoning Map.

The PAD shall be generally administered under the authority of the Director of the Planning and Development Services Department (PDSD). Whenever a conflict arises between the BUMC Planned Area Development and the Unified Development Code, the PAD shall control. When the PAD does not specifically address a particular topic, the UDC and Administrative Manual shall control.

III.H.2 Amendments to the PAD District

The Director of the Planning & Development Services Department may administratively approve minor changes, as defined below, to the PAD, provided such changes are not in conflict with the overall intent, goals and objectives of the PAD as presented herein.

A. Criteria for Minor Amendments & Associated Process

The following shall be considered minor changes that fall within the administrative purview of the Director of Planning & Development Services:

- Addition of new information to the PAD, Site Plan, maps, or text that does not change the effect of any regulation, development standard, or guideline.
- Changes to the public or private infrastructure as presented herein as necessary to properly serve the intended Site Plan and which are not primarily intended to increase the development capacity of the presented Site Plan nor alter the guiding goals and objectives of same.
- The addition of permitted uses that may not be specifically listed in Section III.B.2.b of this document, but which are determined to be sufficiently similar in type and nature to those listed as permitted.
- Adjustments to the Development Standards in Section III.B.3 of this document that are not harmful to the interests of the larger community or adjacent neighborhoods, or which are not explicitly stated in the PAD, but which are consistent with the guiding goals and objectives of the project and which do not create any public health or safety issues.
- Adjustments to any aspect of Section III of this PAD that is required in order to comply with changes in local, state or federal safety and/or health codes

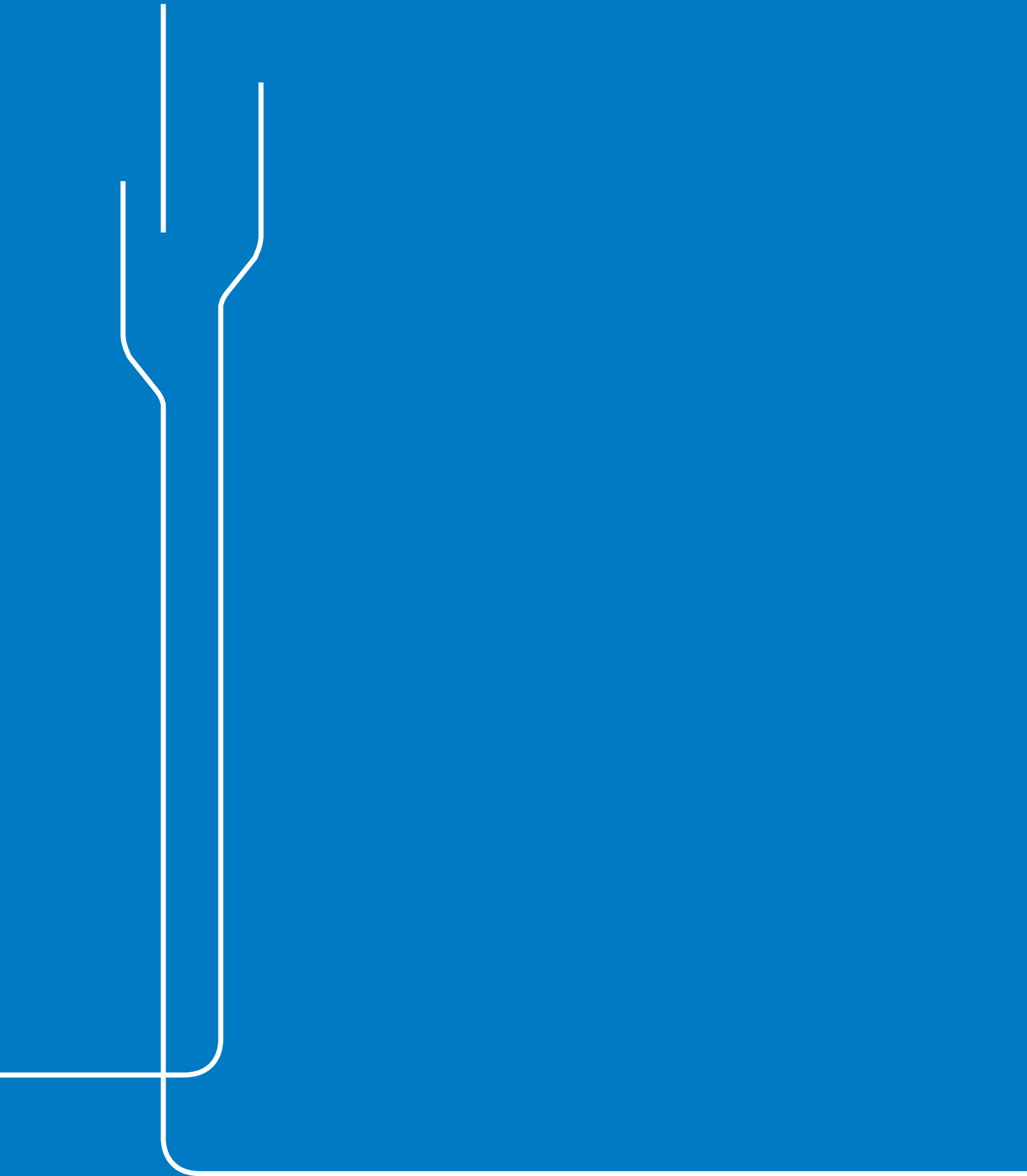
B. Criteria for Major Amendments & Associated Process

Major amendments to the PAD shall be those changes or modifications that materially alter the guiding goals and objectives as presented in the PAD. The PDS Director will determine if a proposed amendment would result in a major change per the criteria established in UDC Section 3.5.5.J.2.c. Major amendments to the PAD shall be processed in accordance with UDC Section 3.5.3, Zoning Examiner Legislative Procedure.

The potential expansion of the North Green as described in Section III.D.4.c of this PAD document (Multi-Use Drainage & North Green Component), and as graphically delineated on Exhibit 54 therein, shall be considered a major amendment as: 1) it necessitates an expansion of the PAD boundary, and 2) it results in a change to the existing zoning of the newly incorporated properties from NR-2 to PAD. However, given the limited acreage identified and the fact that a North Green expansion would provide a material neighborhood benefit, and given further that it is consistent with the goals of the Banner-University Medical Center PAD in terms of both buffering and drainage improvements, any future application to modify the PAD boundary for this expressed purpose will be processed in accordance with the fee structure for a Change of Zoning Fees – Minor Change, Mayor and Council Decision rather than those fees normally applicable to a Major Change to a PAD.

M.

BIBLIOGRAPHY



Jefferson Park Neighborhood Plan. Prepared by the Jefferson Park Neighborhood, in collaboration with the City of Tucson Department of Urban Planning & Design, the University of Arizona College of Architecture and Landscape Architecture, and the Drachman Institute. Adopted by the City of Tucson Mayor & Council December 16, 2008 per Resolution No. 21173.

Major Streets & Routes Plan, City of Tucson Department of Transportation. Originally adopted by the Mayor & Council November 15, 1982. Last Amended July 10, 2007.

Pima County Regional Trail System Masterplan. Prepared by the City of Tucson Department of Parks & Recreation and the Pima County Department of Natural Resources Parks & Recreation, in collaboration with McGann & Associates. August, 2010.

Plan Tucson; City of Tucson General & Sustainability Plan 2013. Adopted by the Mayor & Council, June, 2013. Voter ratified November 5, 2013 by way of Proposition 402.

Stormwater Detention/Retention Manual, Pima County Department of Transportation & Flood Control District and the City of Tucson.

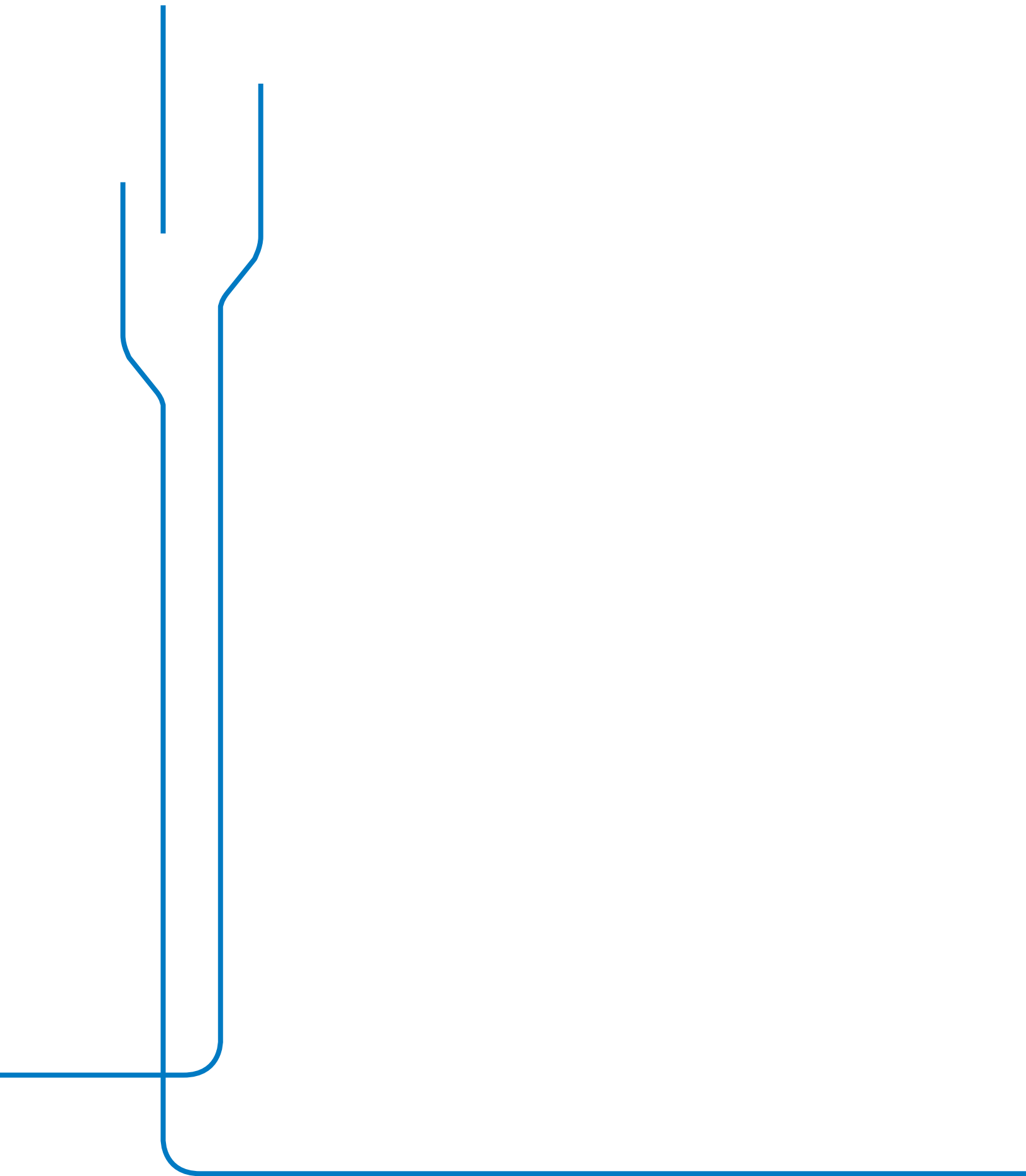
Traffic Analysis (Draft Report), University Medical Center, Tucson, Arizona, Planned Area Development. Kimley-Horn, January 29, 2015

Unified Development Code, City of Tucson. Chapter 23B of the Tucson Code. Adopted October 9, 2012. Subsequently amended and current through September 23, 2014.

University Area Plan. Prepared by the City of Tucson Planning Department, May 8, 1989. Most recently amended November, 2014.

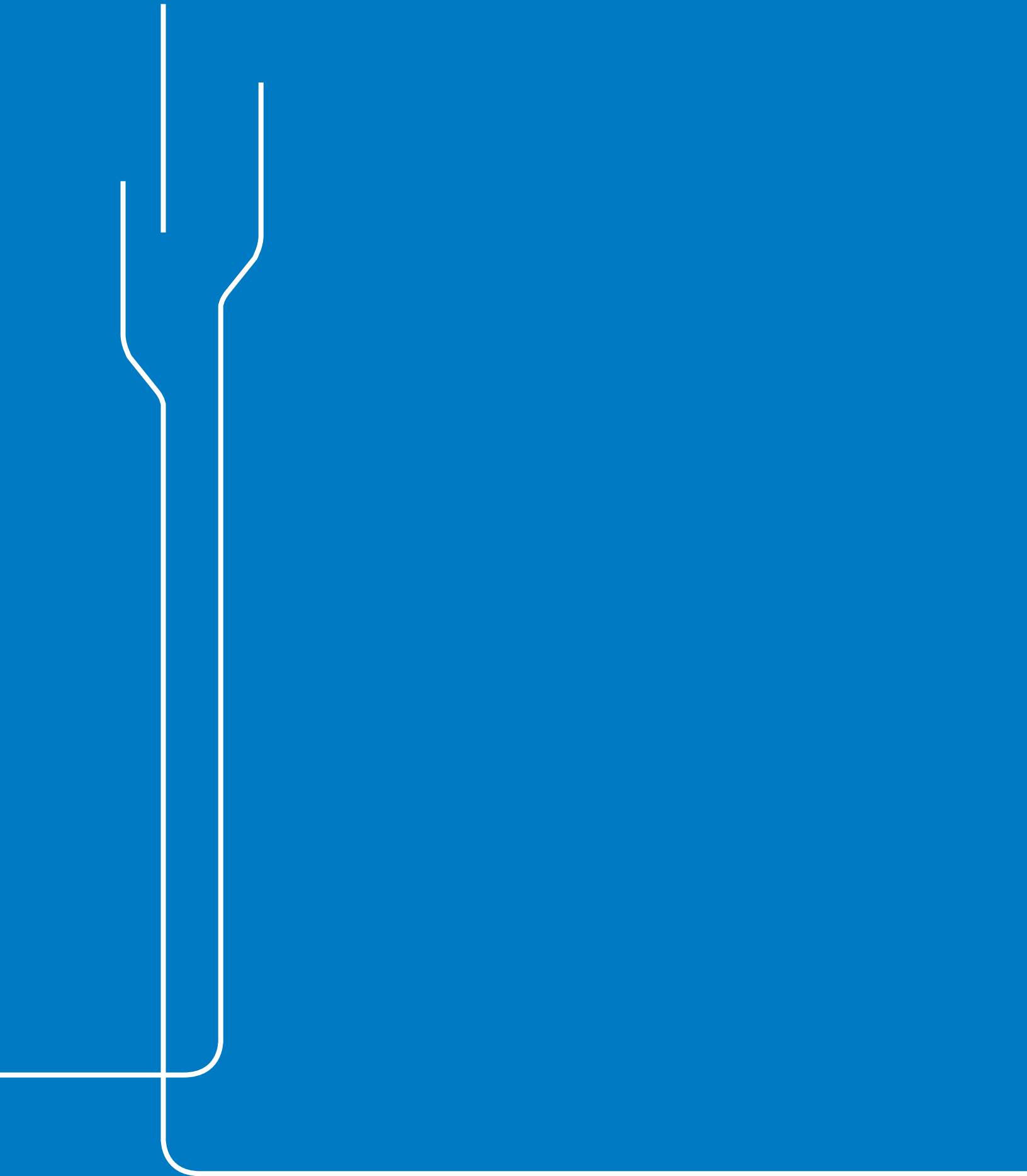
University of Arizona Comprehensive Campus Plan, 2009 Update. Final Draft for the Board of Regents as submitted October 20, 2009; adopted by the Board of Regents December, 2009.

University of Arizona Surface Water Master Implementation Plan, University of Arizona Campus and Facilities Planning. Prepared by M3 Engineering, February 13, 2009.



V₁

APPENDIX





APPENDIX A

COT Plan Compliance Memorandum

APPENDIX A



MEMORANDUM

DATE: March 30, 2015

TO: Mr. Jim Portner

FROM: John Beall
Rezoning Section

SUBJECT: SUBMISSION OF ADEQUATE INFORMATION FOR PLAN COMPLIANCE REVIEW

REZONING CASE NAME: RZ15-001 Banner University Medical Center

The above referenced request has been filed and is within the boundaries of an adopted area/neighborhood plan. Please indicate below the status of this request.

This request lies within the boundaries of the *Plan Tucson and University Area Plan*.

This request contains adequate information to determine plan compliance, and a plan amendment is not required.

This request does not contain adequate information to determine plan compliance. Provide the information requested below.

This proposal does not comply with the land use plans for the reasons noted below. A plan amendment is required before this request can be further processed. Please contact staff to discuss the plan amendment process.

Comments: see attached


Principal Planner

3-30-15 Date

PLANNING & DEVELOPMENT SERVICES

RZ15-001

R-1 and R-2 to PAD

Plan Tucson and University Area Plan

March 27, 2015

Background.

This is a request to rezone from R-1 and R-2 to PAD a 33 acre parcel that applies to that portion of the Arizona Health Sciences Center and University Medical Center campus that is being acquired by Banner Health. The AHSC/UMC campus has been exempt from the City of Tucson regulatory and zoning authority due to its ownership by the Arizona Board of Regents (ABOR) and operation as a teaching hospital. The property's formal acquisition by Banner Health triggers all applicable City powers. The PAD zone is an appropriate zone by which customized zoning regulations can be established and enforced given the proposed redevelopment of the existing UMC site.

Banner Health intends to continue operating the hospital with some future expansion and significant facility replacement. Several of the current hospital buildings will remain, including the Diamond Children's Hospital. These buildings range in height from 59 to 117 feet. There is planned an expansion/replacement of UMC with a new building constructed to replace portions of the obsolete, existing facilities with heights ranging from 75 to 185 feet. There is also a planned landscape / drainage buffer to the north along the Jefferson Park neighborhood. Banner will continue to operate the hospital as a teaching hospital in conjunction with the UA medical school, and provide acute care service for Southern Arizona region.

It should be noted that the applicant is preparing to submit a review of the PAD document (this review process is made up of core staff reviewers and all outside rezoning review agencies) prior to holding the required neighborhood meeting and formal submittal of their rezoning application.

Rezoning Presubmittal Meeting: The informal PAD document review and its completion will serve as the required rezoning presubmittal conference meeting.

Neighborhood Meeting: Prior to submitting the rezoning application, the applicant will hold the required neighborhood meeting and material: mailing notification, copy of labels, notice letter, meeting summary, and sign-in sheet.

Land Use Policies: Adopted plan policy direction for the UA medical campus is provided by *Plan Tucson (PT)*, the *University Area Plan (UAP)*, and *Jefferson Park Neighborhood Plan (JPNP)*.

Plan Tucson

PT is a broad-brush city-wide plan that defers direction to subregional plans and specific area and neighborhood plans. *PT* Future Growth Scenario Map identifies the UA medical campus as a Campus Area. Campus Areas include and surround large master-planned

educational, medical, or business facilities. A fully-realized campus area serves the local workforce and student population and includes a range of housing, a variety of retail opportunities, and convenient transit options. Existing examples include University of Arizona, Pima Community College, Tucson Medical center, St. Joseph's Hospital, St. Mary's Hospital, the Veteran's Affairs Medical Center, and the University of Arizona Medical Center. And as such *PT* supports the redevelopment of the hospital site as a defined "Campus Area", through specific information will have to be provided in any rezoning process addressing the following guidelines:

- LT28.5.7 Support environmentally sensitive design that protects the integrity of existing neighborhoods, complements adjacent land uses, and enhances the overall function and visual quality of the street, adjacent properties, and the community.
 - LT28.5.8 Support infill and redevelopment projects that reflect sensitivity to site and neighborhood conditions and adhere to relevant site and architectural design guidelines.
 - LT28.5.9 Protect established residential neighborhoods by supporting compatible development, which may include other residential, mixed-use infill and appropriate nonresidential uses.
- PH3 Coordinate with nongovernmental health and preventive service providers to make healthcare accessible to the most vulnerable and in-need populations, including finding new ways to provide healthcare at home.

Specific Plans

UAP and *JPNP* provide policy direction for the existing UA Campus Area.

UAP. The *UAP* was adopted in 1989 and has been amended several times (an amendment is currently being processed to address access and building height issues at the NW corner of Campbell Avenue and Speedway Boulevard along with part of the currently designated UA campus area) to specifically address land use projects in and around the UA campus and in the surrounding neighborhoods. Part of the purpose in the adoption of the *UAP* was to clarify in accordance with State law that UA property was not subject to the City of Tucson jurisdiction, if used for government purposes (UA campus development is guided through the policies of its Comprehensive Campus Plan adopted and administered by the UA). The *UAP* recognizes the importance of the UA Comprehensive Campus Plan, and seeks to enhance coordination between the policies of the two plans in the best interests of the University Area neighborhoods and the community of Tucson, and the University of Arizona. While the UA medical campus is govern by the UA Comprehensive Campus Plan, once this area is removed from ABOR ownership then specific land use policy direction will be provided by the *UAP*.

The following policies apply.

SECTION 3.F: PUBLIC/SEMI-PUBLIC DEVELOPMENT

Goal: Recognize the important role of public and semi-public uses, and encourage the development of these uses in a manner which is compatible with the character and quality of University Area neighborhoods.

Policies:

1. Encourage the maintenance and enhancement of existing public and semi-public uses such as libraries, schools, parks, churches, social and cultural facilities.
2. Support the development of new public and semi-public uses which are compatible with the physical environment and social needs of the University Area neighborhoods.
3. Demonstrate sensitivity in the design and location of new public facilities and open spaces through the guidance of the General Design Guidelines (Section 8) and local neighborhood input.
4. Encourage public development which supports city-wide planning policy and complies with locally adopted ordinances and guidelines.
5. Support the inclusion of neighborhood amenities (e.g., useable open space, recreational facilities, public art) in the development of new public and semi-public facilities. Such amenities should be coordinated with input from local neighborhoods.

SECTION 7: UNIVERSITY OF ARIZONA

Goal: Recognize the importance of the University of Arizona and its immediate environs as a regional activity center (CP Section 2, Policy 5), and support cooperative efforts in the development of this activity center in a manner which protects and enhances University Area neighborhoods.

Policies:

1. Encourage the University of Arizona to comply with local plans, guidelines, ordinances, and regulations in the implementation of its projects.
2. Support continued efforts to coordinate adopted City policy with the policies of the University of Arizona Comprehensive Campus Plan in the development of streets and other infrastructure serving the campus, and in the development of new land uses at the campus planning area perimeter.
3. Support the implementation of the University's adopted Comprehensive Campus Plan policies to mitigate impacts on adjacent neighborhoods through the development of a transition zone or buffer at the campus perimeter (Map 8).
10. Encourage the University to provide additional open space areas for groundwater recharge, water harvesting, and stormwater detention.
11. Investigate the establishment of a "greenbelt" system (Figure 1) at the UA campus perimeter to serve as a neighborhood buffer and visual amenity while providing new circulation and recreational opportunities (e.g., bicycle routes, seating and play areas, jogging trails).

SECTION 8: GENERAL DESIGN GUIDELINES

1. Complement surrounding development - Utilize compatible building materials, architectural style and ornamentation, setbacks, stepbacks, and variations in

building height or mass to complement the scale and character of surrounding development and reduce the appearance of excessive height and bulk.

JPNP.

Strategies:

2.1.1.k. “Green” Southern Edge - Develop partnerships to continue the “green edge” proposed in the University of Arizona Campus Comprehensive Plan (Appendix F) along the entire southern edge of the Neighborhood.

In addition, all of the *JPNP* maps reflect the UA Campus Comprehensive Plan maps shown in the *UAP* December 13, 2011, Resolution 21835, revised Map 8 to show new UA campus planning boundary.

Policy 1.1 Protect historic architectural styles in the Neighborhood

Strategies:

1.1.1 Encourage maintenance and preservation of existing historic or traditional structures in the Neighborhood.

Assessment: The *UAP* recognizes and identifies UAMC/Arizona Health Services Center on its maps, and in its polices with Section 3.F: Public/Semi-Public Development. This section recognizes the important role of public and semi-public uses, and encourages the development of these uses in a manner which is compatible with the character and quality of University Area neighborhoods. To establish part of the medical campus as a semi-public use, Banner Health medical campus will not require a plan amendment to *UAP* or *JPNP* based on 1) medical service is an allowed and already establish use (public/semi-public hospital as part of UA mission of maintaining a teaching hospital for future medical students.); 2) the proposed height ranging from 75 to 185 feet is consistent with the current range of heights 59 to 117 feet, and will continue to utilize setbacks and stepbacks with variations in height and massing to complement surround area which is goal of the *UAP*; and 3) the proposed buffer / drainage area is consistent with policy direction in both the *UAP* and *JPNP*.

The Banner proposal for a Planned Area Development to develop a ‘Campus Area’ is consistent with applicable plan policy direction in *Plan Tucson*, the *University Area Plan*, and *Jefferson Park Neighborhood Plan*.

Recommendation

In general, the proposal is consistent with the direction provided by *Plan Tucson*, the *University Area Plan* and the *Jefferson Park Neighborhood Plan* is in keeping with the character of the area. A plan amendment is not required. Staff recommends that the informal PAD document review be distributed for further processing prior to submitting the rezoning application.

TO: Rezoning Division
Re: Acceptance of Information for Plan Compliance (IPC)

March 27, 2015

Banner - University Medical Center – Planned Area Development (PAD)
Rezoning Case Number – RZ15-001

The submitted PAD document provides adequate information to proceed.

Items of importance to be noted at this time:

1. It does not appear that Hazardous Material Storage, i.e. fuel storage for emergency generators, has been addressed. Review Ordinance No. 11235 to ensure adequate fuel storage would be allowed by the Unified Development Code or address this issue in the PAD.

Should you have questions, contact me at 837-4956 please.

Steve Shields, Lead Planner
City of Tucson, Planning and Development Services Department

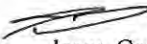
DATE: March 23, 2015
SUBJECT: Banner Health UMC - Engineering Review
LOCATION: 1501 N Campbell Ave; T14S, R14E, SECTION 06
REVIEWERS: Jason Green, CFM
CASE #: RZ15-001

SUBJECT: Engineering Division of Planning & Development Services Department has received and reviewed the rezoning IPC for the PAD submittal for the Banner University Medical Center.

The following information is required for the full PAD and rezoning review submittal.

1. The rezoning parcel is larger than one acre, runoff retention is required.
2. A drainage report shall be required with the development package submittal. Additionally, complete compliance with the Floodplain Ordinance and Detention/Retention Manual is required.
3. Provide manufacture recommendations for maintenance of any proposed underground Stormwater retention/detention system. The drainage report must show that maintenance of the underground Stormwater retention/detention systems meets the recommendations of the manufacture.
4. Provide a geotechnical report that specifically assesses the proposed underground Stormwater retention/detention system beneath the pavement. The geotechnical report shall state whether the chambers are subject to collapsing or whether the pavement structure would be damaged from heavy traffic loads.
5. The geotechnical report needs to address the following:
 - a) Soils report should provide conformance with TSM Sec.4-02.14.2.6 regarding 30-foot boring for basins, and provide discussion of potential for hydro-collapsible soils and any recommendation for setbacks from building to basin.
 - b) The soils report shall provide identification / assessment of any potentially hazardous geotechnical areas, and state any geotechnical recommendations and whether there are special provisions for the soil preparation for this development.
 - c) Provide slope stability recommendations for any proposed constructed slopes.
 - d) Provide percolation rates for this project to meet the maximum drain down time per TSM Sec.4-03.3.5.1.3.

Future comments maybe forth coming upon review of the PAD. No special conditions are offered.


Jason Green, CFM
Senior Engineer Associate
Engineering Division
Planning & Development Services Department



APPENDIX B

Site Traffic Impact Analysis By Kimley Horn



Banner University Medical Center, Tucson Campus Planned Area Development

Traffic Analysis

August 11, 2015

Prepared for:

Banner Health

Banner Corporate Center – Phoenix

1441 N. 12th Street, Phoenix, AZ 85006

Kimley»»Horn

Contents

1. INTRODUCTION	1
Proposed Project	1
Study Purpose	1
2. EXISTING CONDITIONS	5
City of Tucson Major Streets and Routes	5
Existing Conditions Traffic Control Configuration	5
Existing Roadway Network	8
Campbell Avenue	8
Speedway Boulevard	8
Local Public Streets	8
Ring Road	8
Multimodal Connectivity	8
Sun Tran Bus Routes & CatTran Shuttle Service	8
Sun Link Streetcar Facilities	9
Existing Bike Routes	9
3. TRAFFIC ANALYSIS	10
Trip Generation	10
Directional Trip Distribution	17
Route Choice/Traffic Assignment	17
Phase 1 and Phase 2 Capacity Analysis	17
4. RECOMMENDATIONS	21
Roadway Segments	21
Intersections	22
Bicycle and Pedestrian Facilities	22
Summary of Recommendations	23

Figures

Figure 1. Vicinity Map.....	3
Figure 2. Banner University Medical Center, Tucson Campus Site Plan	4
Figure 3. City of Tucson Major Streets and Routes Plan	5
Figure 4. Existing Traffic Configuration and Performance	7
Figure 5. Traffic Analysis Zones	16
Figure 6. Phase 1 Recommendations	19
Figure 7. Phase 2 Recommendations	20
Figure 8. Elm Street/Ring Road Conceptual Reconfiguration.....	24
Figure 9. Bicycle and Pedestrian Facilities	25
Figure 10. 2012 AHSC Traffic Study, Planned Land Uses	30
Figure 11. Existing (2012) Peak-Hour Traffic Volumes.....	32
Figure 12. 2019 Phase 1 Background Traffic Volumes.....	33
Figure 13. 2019 Phase 1 Banner Health Traffic Volumes.....	34
Figure 14. 2019 Phase 1 Total Traffic Volumes	35
Figure 15. 2035 Phase 2 Background Traffic Volumes.....	36
Figure 16. 2035 Phase 2 Banner Health Traffic Volumes.....	37
Figure 17. 2035 Phase 2 Total Traffic Volumes	38

Tables

Table 1. Level of Service Delay Thresholds	6
Table 2. Trip Generation Land Uses, ITE Codes and Rates	11
Table 3. Summary of Hospital Units	12
Table 4. Summary of Clinic/Out-Patient Units	12
Table 5. 2019 Phase 1: Total Trip Generation	14
Table 6. 2035 Phase 2: Total Trip Generation	14
Table 7. 2019 Phase 1: Net Total Trip Generation (with pass-by and multimodal reduction)	15
Table 8. 2035 Phase 2: Net Total Trip Generation (with pass-by and multimodal reduction)	15
Table 9. Trip Distribution	17
Table 10. Phase 1 and Phase 2 Recommendations	26
Table 11. Banner Health’s Proposed Site Development Options (GSF and Beds)	29
Table 12. Existing (2012) Level of Service	40
Table 13. 2019 Phase 1 Level of Service with Existing Intersection Configurations	41
Table 14. 2019 Phase 1 Level of Service with Improvements	42
Table 15. 2035 Phase 2 Level of Service with Existing Intersection Configurations	43
Table 16. 2035 Phase 2 Level of Service with Improvements	44

Appendix

- Appendix A – Supporting Trip Generation Data
- Appendix B – Forecasted Intersection Volumes
- Appendix C – Intersection Level of Services
- Appendix D – Synchro Files (*available upon request*)

1. INTRODUCTION

The Banner-University Medical Center (BUMC) Planned Area Development (PAD) applies to a portion of the Arizona Health Sciences Center (AHSC) and University Medical Center (UMC) campus that is being acquired by Banner Health, a private, non-profit entity (referenced as the “Property” or the “Site” throughout the BUMC PAD). A vicinity map is provided in **Figure 1**.

The original hospital dates back to the 1960’s and has become obsolete by today’s healthcare standards. The BUMC PAD District will be redeveloped into a state-of-the-art medical campus that will feature, among other things, the construction of a new hospital facility with phased dual bed towers to replace the majority of the current UMC Hospital.

Proposed Project

Banner Health will ultimately take fee title to approximately thirty-three acres of Property presently owned by Arizona Board of Regents and containing components of the AHSC and UMC, as well as the DCMC. The initial phase (Phase 1) of the BUMC development program will see the construction of a new hospital, including a new bed tower and patient support facilities, to replace those existing UMC hospital facilities originally developed in the 1960’s, together with a series of new surface parking areas and a new campus main entry and exit onto Campbell Avenue and Elm Street.

The second, longer-term development phase (Phase 2) will include additional hospital patient support facilities and a second bed tower added to the aforementioned new hospital, together with a new multi-level parking structure to support the expanded hospital.

Completion of Phase 2 will result in a campus with more than 1.8 million square feet of hospital space comprising approximately 800 beds, and will retain all of the DCMC square footage as it exists today and will repurpose as much of the other existing campus facilities as is reasonably practical and cost-effective. The full development program of the BUMC PAD District is described in detail in Section III (PAD District Proposal) of the PAD document.

Study Purpose

This traffic analysis is based on and updates the University of Arizona Health Science Center Campus (AHSC) Traffic and Circulation Study completed in December 2012, by Kimley-Horn. This traffic analysis:

- Reviews the BUMC PAD Site plan, its associated new and repurposed facilities as proposed by Banner Health.
- Considers future/proposed development lying outside of the actual PAD District boundary, anticipated development consistent with the University of Arizona 2020

Capital Plan, the University of Arizona Campus Comprehensive Plan, as well as the proposed private development of a 20-story mixed-used project near Speedway Boulevard at Campbell Avenue. Incorporating all of this nearby planned development into the analysis responsibly addresses the future traffic and transportation issues in the area in a comprehensive fashion.

- Develops trip generation rates for all of the above proposed development.
- Evaluates on-Site roadways and off-Site access points, based upon the trip generation rates, to analyze the full universe of impacts on surrounding transportation infrastructure.
- Documents transportation improvements and recommendations for each of the study area's intersections, roadway segments, etc.

The proposed Banner University Medical Center site plan is provided in **Figure 2**.

Figure 1. Vicinity Map

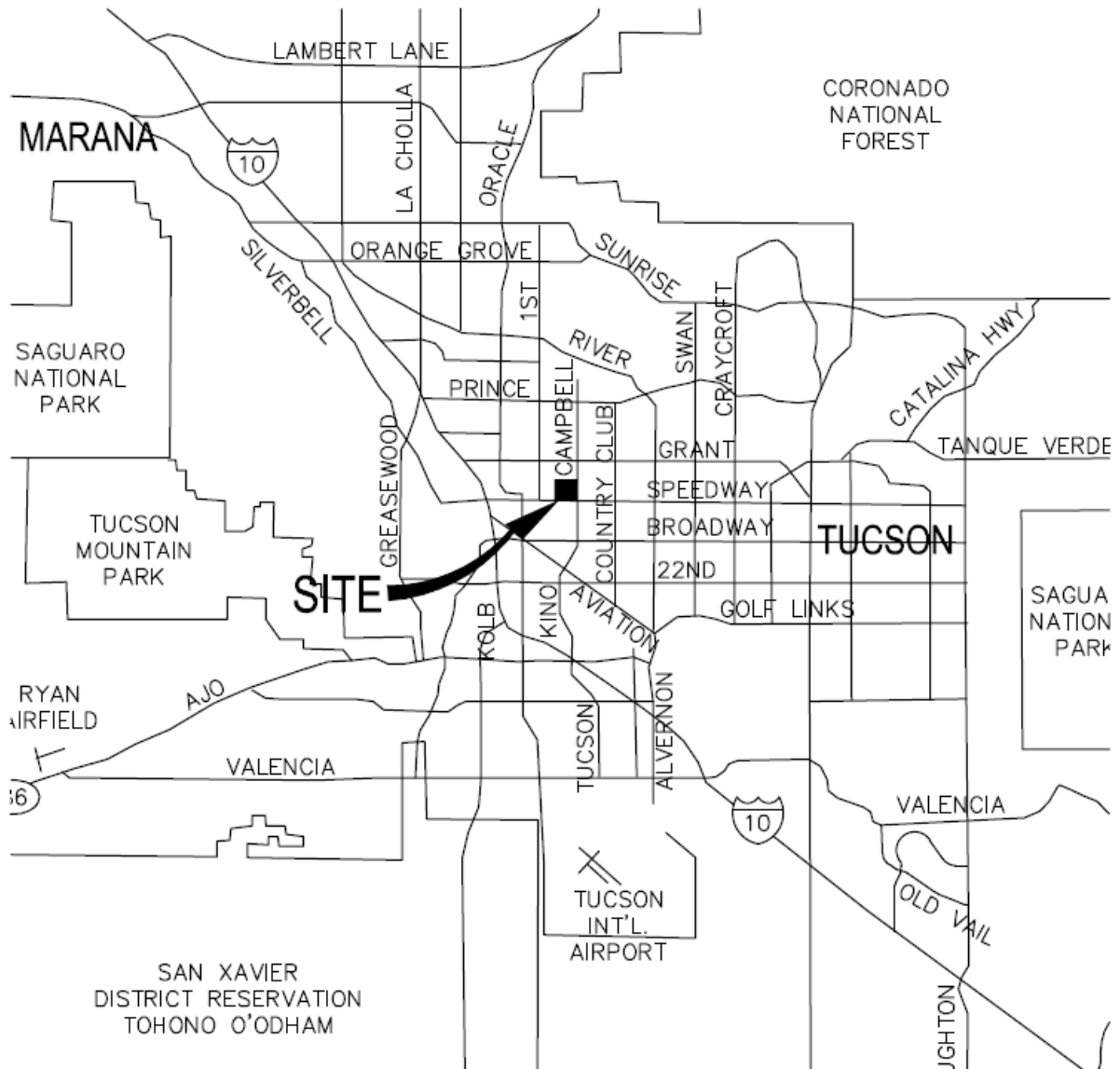
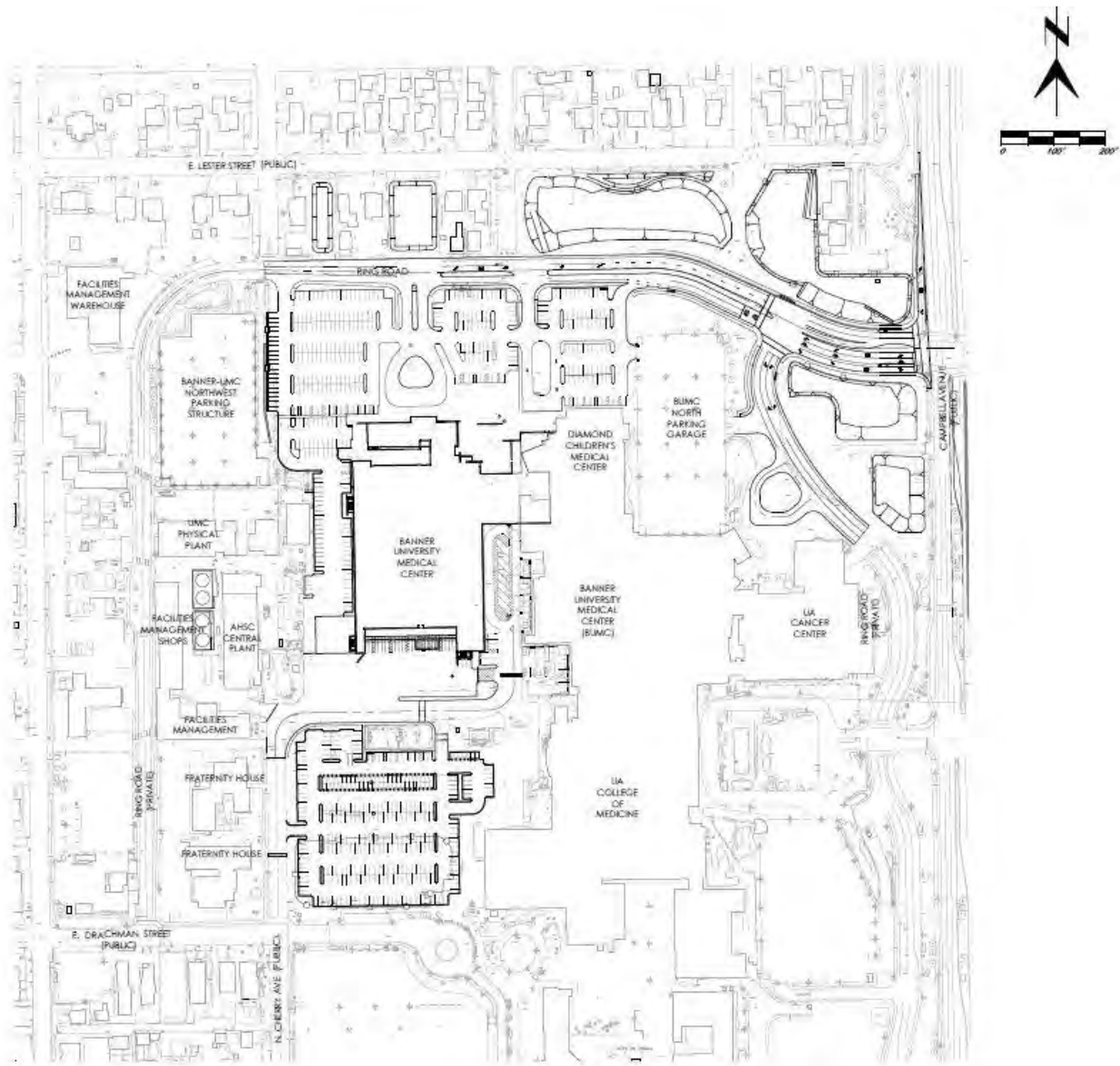


Figure 2. Banner University Medical Center, Tucson Campus Site Plan



2. EXISTING CONDITIONS

City of Tucson Major Streets and Routes

The City of Tucson Major Streets and Routes Plan (MS&RP) identifies the general location and width of existing and proposed freeways, arterial and collector streets. The MS&RP also identifies future rights-of-way, setback requirements, typical intersections and cross sections, and gateway and scenic routes. The MS&RP (**Figure 3**) defines future right of way of Campbell Avenue and Speedway Boulevard to be 120 feet. Campbell Avenue is identified as a Gateway Arterial.

Gateway routes are routes to major employment centers, shopping areas, recreational areas, and transportation centers which are used regularly by large numbers of residents and visitors. The purpose of this designation is to improve the appearance of the built environment through the use of standards for the design and landscaping of the roadway and adjacent developments.

Figure 3. City of Tucson Major Streets and Routes Plan



Existing Conditions Traffic Control Configuration

Existing traffic control configuration at primary intersections within the AHSC campus area are illustrated in **Figure 4**. Signalized intersections are at Campbell Avenue/Elm Street, Campbell Avenue/Speedway Boulevard and Speedway Boulevard /Cherry Avenue.

Traffic volume data was collected in 2012 as part of the AHSC Traffic and Circulation Study. Existing traffic volumes are summarized in **Appendix B (Figure 11)**.

A capacity analysis of existing facilities was conducted. Capacity analysis demonstrates the relationship between traffic operations and roadway/intersection geometry, assesses deficiencies, and identifies alternatives.

Capacity analysis is performed based on methodologies outlined in the Highway Capacity Manual (Transportation Research Board, 2010). The Highway Capacity Manual (HCM) employs methodologies to calculate intersection Level of Service (LOS). LOS is a qualitative assessment of the quantitative effect of factors such as intersection geometry, lane configuration, and traffic volumes. Operating conditions are categorized as “A” through “F,” with “A” representing the most favorable conditions and “F” representing the least favorable. The City of Tucson requires the traffic impact of new development on roadways and intersections to be mitigated to a Level of Service D or better. LOS “D” for signalized intersections is equal to being delayed at the intersection for less than 35-55 seconds per vehicle. **Table 1** shows the delay (wait time thresholds) for each LOS grade.

Table 1. Level of Service Delay Thresholds

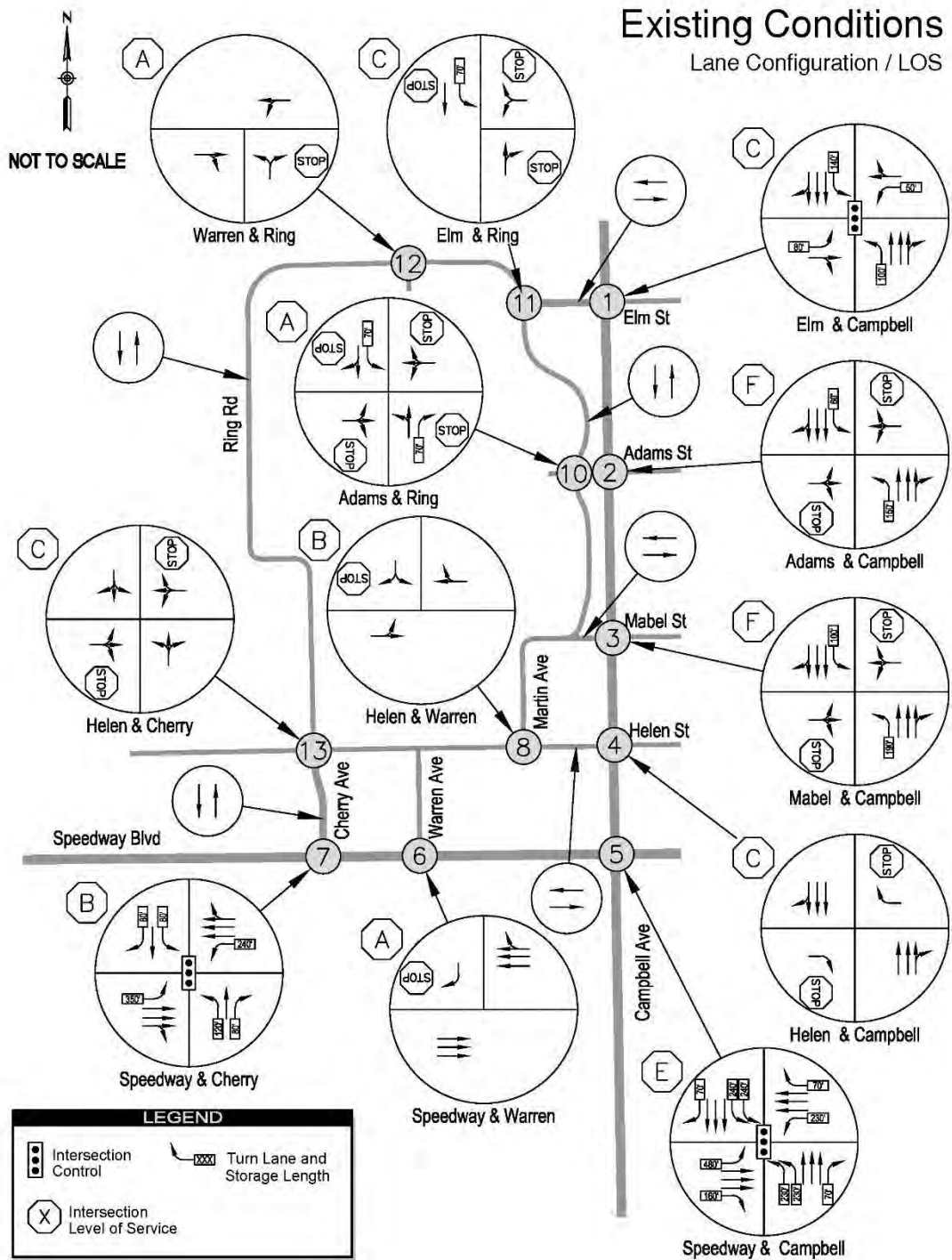
LOS	Signalized Intersection	Unsignalized Intersection
A	≤10 sec	≤10 sec
B	10-20 sec	10-15 sec
C	20-35 sec	15-25 sec
D	35-55 sec	25-35 sec
E	55-80 sec	35-50 sec
F	≥80 sec	≥50 sec

Intersection LOS is computed as a weighted average of vehicle delay. An intersection may have an acceptable overall LOS but may also have individual movements with unacceptable LOS. As a result, all movements are analyzed individually, and recommendations are made to reduce delay and increase capacity on critical movements.

Capacity analysis for existing conditions are found in **Figure 4**. Detailed capacity analysis results are included in the **Appendix C**.

Currently, the signalized intersection of Speedway Boulevard/Campbell Avenue operates at LOS “F”. The stop-controlled intersections of Adams Street/Campbell Avenue, and of Mabel Street/Campbell Avenue operate at LOS “F”. This is due to the delay incurred by vehicles attempting to make a left turn from eastbound Adams Street or Mabel Street to Northbound Campbell Avenue. LOS “F” on a minor street that is stop-controlled at its intersection with a major arterial is a common condition in busy urban environments.

Figure 4. Existing Traffic Configuration and Performance



Existing Roadway Network

Streets that provide direct access to the Banner UMC campus or provide circulation within the campus are described below.

Campbell Avenue

Campbell Avenue is the major north-south arterial roadway that runs directly east of Banner University Medical Center. Campbell Avenue is a six-lane arterial with raised medians and has a 35 MPH speed limit. The road is constructed to the maximum cross-section supported by the City of Tucson Major Streets and Routes Plan.

Speedway Boulevard

Speedway Boulevard is the major east-west arterial roadway that runs approximately ¼ mile south of Banner University Medical Center and directly through the northern portion of the University of Arizona campus. Speedway Boulevard is a six-lane arterial roadway with raised medians and has a 35 MPH speed limit. The road is constructed to the maximum cross-section supported by the City of Tucson Major Streets and Routes Plan.

Local Public Streets

Helen Street serves as a minor east-west collector street that provides access to several University of Arizona parking facilities and buildings on the north side of Speedway Boulevard. Cherry Avenue serves as a minor north-south collector street providing access to the main University of Arizona campus (to the south of Speedway), and to the AHSC campus (north of Speedway). The intersection of Cherry Avenue and Speedway Boulevard is signalized.

Ring Road

Internal circulation within the AHSC campus is provided by the 0.8 mile Ring Road. The Ring Road is a low speed two-lane corridor with a speed limit of approximately 20 MPH. It extends from Cherry Avenue, beginning at Drachman Street, north to Elm Street and then south to Mabel Street.

Multimodal Connectivity

The campus is served by bus, streetcar, and bicycle and pedestrian facilities.

Sun Tran Bus Routes & CatTran Shuttle Service

Sun Tran provides transit service to the AHSC campus with bus stops along Campbell Avenue and Speedway Boulevard. A variety of routes are accessible near the campus, including express service. Bus routes along Speedway Boulevard include 4, 5, 102X, 103X, 105X, and 109X. Bus routes on Campbell Avenue include 9, 15, 20, and 103X. Bus stop locations are noted in Error! Reference source not found.. In addition, the University of Arizona Cat Tran system circulates within the AHSC campus.

Sun Link Streetcar Facilities

The construction of the 3.9-mile modern streetcar system, known as Sun Link, was completed in the summer of 2014. The streetcar line begins at Warren Avenue and Helen Street, south of the Banner University Medical Center, and provides direct access to the University of Arizona campus and to downtown, terminating on the west side of I-10. Sun Link's service provides 10 to 15 minute headways, time between vehicles in a transit system, during the weekday and increases to 20 minutes to 30 minutes during the evenings and on Saturdays. The streetcar operates from 7:00 am to 10:00 pm on Monday to Wednesday, from 7:00 am to 2:00 am on Thursday and Friday, from 8:00 am to 2:00 am on Saturday, and from 8:00 am to 8:00 pm on Sunday.

Existing Bike Routes

The PAD District is served by a robust network of designated bicycle routes and bike lanes. Both Speedway Boulevard and Campbell Avenue provide a dedicated bike lane or striped shoulder.

An east-west low-volume bicycle route traverses through Lester Street, the Ring Road within the PAD District, and ultimately to Elm Street. In addition, an existing shared-use path along the Warren Avenue alignment serves as a north-south bicycle route for both cyclists and pedestrians. The Warren Avenue and Highland Avenue underpasses (further south and west of the PAD District) allows a grade-separated crossings beneath Speedway Boulevard to facilitate direct access to the UA main Campus. The Warren Avenue underpass is a pedestrian-only connection (bikes must be walked), while the Highland Avenue underpass accommodates both pedestrians and bicyclists, making it the best southward connective route to the main campus.

3. TRAFFIC ANALYSIS

This traffic impact analysis was prepared using a four-step process to forecast the travel demands of the proposed Banner-UMC development. Trip generation is the first step in this process and focuses on estimating the number of trips to be “produced” or “generated” by a particular land use type within a specific traffic analysis zone.

The initial trip-generation step is followed with the next three steps: 1) determining trip distribution, 2) mode choice, and 3) route assignment. Trip distribution is concerned with assigning the trips generated to the directions which people travel to and from the Site. Mode choice is then concerned with the mode of travel, i.e. by vehicle, walking/biking, or bus/transit. Finally, route assignment is concerned with the specific streets and routes by which they travel.

Once this four-step evaluative process is complete, a capacity analysis of the surrounding roadway network of streets and intersections is performed to evaluate their operational performance and make recommendations for any necessary improvements. Each of these steps is described in more detail below.

Trip Generation

Trip-generation is derived from qualitative measures associated with the development such as number of employees of a facility, development square footage, or number of dwelling units. Trip generation estimates reflect the number of trips entering or exiting a site or development during a specified time period (e.g., daily, or during the morning peak-period). The Institute of Transportation Engineers (ITE) Trip Generation Manual contains trip-generation rates developed from an aggregation of over 4,000 traffic studies, for dozens of land uses.

The ITE equations and averaged rates used for the proposed Banner Health redevelopments are found in **Table 2**.

Based on guidance provided by the *Trip Generation Handbook*, the weighted average rate was used to forecast the trips generated from the hospital during the AM/PM peak hours when forecasting the trips generated based on the number of beds. Thus, a linear relationship between the independent variable and trip ends are assumed. For the Total Daily Trips, regression based equations were used.

Table 2. Trip Generation Land Uses, ITE Codes and Rates

Hospital (SF)					
ITE 9th Edition:	610				
Daily	$T = 6.91*(1000's \text{ of SF}) + 2923.63$	50%	In	50%	Out
AM Peak Hour	$T = 0.87*(1000's \text{ of SF}) + 132.15$	59%	In	41%	Out
PM Peak Hour	$T = 0.78*(1000's \text{ of SF}) + 186.59$	42%	In	58%	Out
Hospital (Beds)					
ITE 9th Edition:	610				
Daily	$T = 7.33(\text{Number of Beds}) + 2213.85$	50%	In	50%	Out
AM Peak Hour	1.24 Trips Generated per Bed	65%	In	35%	Out
PM Peak Hour	1.45 Trips Generated per Bed	40%	In	60%	Out
Medical-Dental Office Building					
ITE 9th Edition:	720				
Daily	$T = 40.89*(1000's \text{ of SF}) - 214.97$	50%	In	50%	Out
AM Peak Hour	$T = 2.39*(1000's \text{ of SF})$	79%	In	21%	Out
PM Peak Hour	$\ln(T) = 0.90*\ln(1000's \text{ of SF}) + 1.53$	28%	In	72%	Out

Hospital Beds Trip Generation

Appendix A summarizes the buildings and their size (square footage, number of beds) that are proposed as part of Banner University Medical Center.

In Phase 1, floors 10 and 11 may be shelled and designed/bid as an add alternative. An 11-story alternative was included in this analysis as it will represent the highest-impact scenario.

It is important to note that exiting traffic counts (2012) reflect trip generation of the existing hospital. Upon completion of the new Phase 1 bed tower, beds in the existing hospital will be relocated to the new tower, and a portion of the existing hospital will be converted to support functions.

The number of trips that will be generated by Banner University Medical Center was therefore calculated based on the number of *net new beds* (as compared to beds in the existing hospital) for the proposed hospital towers and on square-footage for other uses. Two trip-generation scenarios were evaluated:

- 2019 Phase 1 – Construction of the first 11-story hospital tower.
- 2035 Phase 2 – Construction of the second 11-story hospital tower.

Each scenario also considers other development on the AHSC campus associated with the University of Arizona and private developers as referenced in the 2012 AHSC study.

Appendix A details the number of beds associated with each development phase. **Table 3** summarizes the proposed *net new beds* following completion of the new bed towers. Phase 1

will relocate 18 beds from the Diamond Children’s Medical Center and 165 beds from the University Medical Center’s 201 building. The 201 building is expected to relocate 100% of the beds to the proposed hospital. In Phase 2, 13 beds are planned to be relocated from the NEP building.

Table 3. Summary of Hospital Units

Scenario	Land Use	New Hospital Proposed Units (Beds)	Relocated Units (Beds)	Net New Units (Beds)
2019 Phase 1	Hospital	336	183	153
2035 Phase 2	Hospital	504	196	308

Medical Clinic/Office Trip Generation

Concurrent with the Banner University Medical Center project, Banner is preparing to construct additional clinic/out-patient space at the North Campus, located at Campbell Avenue and Allen Road. Upon completion of North Campus improvements, a significant portion of clinic/out-patient space will be relocated to the Banner UMC North Campus. As such, Clinic/out-patient occupancy at Banner University Medical Center is proposed to decrease upon completion of Phase 1.

According to information provided by Banner, 51,373 square feet of clinic/out-patient space currently exists. The Phase 1 development will include 46,477 square feet of clinic/out-patient space, a decrease of 4,896 square feet. As traffic generated from the existing 51,373 square feet of clinic/out-patient land use is represented in the collected traffic count data, net trips generated from the 4,896 square feet will be discounted from the Banner University Medical Center total trip generation.

Phase 2 development includes a total of 65,651 square feet of clinic/out-patient usage, an increase of 14,278 square feet over the existing 51,373 square feet. Thus, for Phase 2, an increase in the number of trips generated by 14,278 square feet of clinic/out-patient will be applied to the analysis. The Banner Health clinic/out-patient units are summarized in **Table 4**.

Table 4. Summary of Clinic/Out-Patient Units

Scenario	Land Use	Proposed Occupancy (SF)	Existing Occupancy (SF)	Net Occupancy (SF)
2019 Phase 1	Medical-Dental Office Building	46,477	51,373	-4,896
2035 Phase 2	Medical-Dental Office Building	65,651	51,373	14,278

Other Developments

A further consideration of this traffic analysis is the fact that, based upon the proposed development program by Banner Health, four development components that were originally planned by the UA (on its AHSC campus) are no longer a part of the larger medical campus and have, therefore, been excluded from the final trip-generation figures. **Appendix A, Figure 10,**

shows the removed land uses and total square-footage to be subtracted from the trip generation:

• South Elm Gateway Offices and Clinics (Map ID 23)	–	114,000 SF
• North Elm Gateway Offices (Map ID 24)	–	40,000 SF
• ED Expansion (Map ID 29)	–	100,000 SF
• Bio-Health (Map ID 5)	–	<u>187,000 SF</u>
		441,000 SF

A summary of the net trips added by the Banner University Medical Center are depicted in **Appendix B, Figure 13 (Phase 1), and Figure 16 (Phase 2)**.

Total Trip Generation

To facilitate the analysis, the study area was subdivided into five zones (**Figure 5**) based on their geographic locations and general anticipated trip characteristics. This approach is consistent with the 2012 AHSC study. The zones are:

- Zone 1: Private Mixed-Use Development that will include student housing, a shopping center, and a general office building
- Zone 2: Academic and Research Facilities for the University of Arizona (central)
- Zone 3: Academic and Research Facilities for the University of Arizona (west)
- Zone 4: Banner Health Medical Clinics and Offices (east)
- Zone 5: Proposed Banner Health 11-story Hospital Towers (west) for both phases of the development

Total daily trips generated by the AHSC Campus, including the Banner University Medical Center, are summarized in **Table 5** and **Table 6**.

The Phase 1 trips generated from the 4,896 square feet of Medical-Dental Office Building land use, representing the net decrease in clinic/out-patient occupancy, is discounted from the total trip generation. An increase in the number of trips from the 14,278 square feet increase of Medical-Dental Office land use is included for Phase 2.

Table 7 and **Table 8** present projected total daily trips for all proposed developments within the AHSC campus (Zones 1 through 5) after reductions for pass-by and multimodal/alternative mode reduction was applied.

Internal capture (adjusted based on proposed UMC redevelopment) and pass-by trip percentages are consistent with the 2012 AHSC study. Total trips include discounts due to multi-modal opportunities for Zones 1-3. No multimodal adjustment is applied to Zones 4 and 5. These estimates represent total additional daily trips that will be generated by the Banner Health's proposed development and projects to be constructed by others (including University of Arizona and private developers).

These trips will be added to the existing 2012 traffic counts, to analyze future capacity needs and infrastructure improvements in order to maintain acceptable operational performance.

Table 5. 2019 Phase 1: Total Trip Generation

Land Uses	Intensity	Units	Daily Total	AM Peak			PM Peak			Zone
				In	Out	Total	In	Out	Total	
Apartment (Private Developer)	400	DU	2,548	40	160	200	155	83	238	1
General Office Building (Private Developer)	200	1000 SF	2,275	288	39	327	52	251	303	
Shopping Center (Private Developer)	200	1000 SF	10,656	142	90	232	496	516	1,012	
Research and Development Center (University of Arizona)	309	1000 SF	2,506	291	60	351	49	278	327	2
Research and Development Center (University of Arizona)	300	1000 SF	2,433	284	58	342	48	272	320	3
Medical-Dental Office Building* (Banner Health)	5	1000 SF	(178)	(9)	(3)	(12)	(5)	(12)	(17)	4
Hospital** (Banner Health)	153	Beds	3,335	123	66	190	89	133	222	5
Subtotal	---	---	23,575	1,158	471	1,630	883	1,522	2,405	
Pass-By***			23,575	0	0	0	169	175	344	
Internal Capture			---	42	42	84	145	145	290	
Total	---	---	23,575	1,116	429	1,546	570	1,201	1,771	

*Net decrease in occupancy over existing. The number of trips in parentheses is deducted from the trip generation.

**Net increase in occupancy over existing

***Pass-By Percentages: Shopping Center 34% PM only

Table 6. 2035 Phase 2: Total Trip Generation

Land Uses	Intensity	Units	Daily Total	AM Peak			PM Peak			Zone
				In	Out	Total	In	Out	Total	
Apartment (Private Developer)	400	DU	2,548	40	160	200	155	83	238	1
General Office Building (Private Developer)	200	1000 SF	2,275	288	39	327	52	251	303	
Medical-Dental Office Building	50	1000 SF	1,830	91	24	115	41	112	153	
Shopping Center (Private Developer)	200	1000 SF	10,656	142	90	232	496	516	1,012	
Research and Development Center (University of Arizona)	660	1000 SF	5,353	559	115	674	92	519	610	2
Research and Development Center (University of Arizona)	814	1000 SF	6,602	670	137	807	109	616	725	3
Medical-Dental Office Building* (Banner Health)	14	1000 SF	516	27	7	34	14	37	66	4
Hospital* (Banner Health, Phase 1 and 2 Combined)	308	Beds	4,471	248	134	382	179	268	447	5
Subtotal	---	---	34,251	2,064	707	2,771	1,137	2,402	3,554	
Pass-By**			34,251	0	0	0	169	175	344	
Internal Capture			---	42	42	84	145	145	290	
Total	---	---	34,251	2,022	665	2,687	823	2,082	2,920	

* Net increase in occupancy over existing

**Pass-By Percentages: Shopping Center 34% PM only

Table 7. 2019 Phase 1: Net Total Trip Generation (with pass-by and multimodal reduction)

Land Uses	Intensity	Units	Daily Total	AM Peak			PM Peak			Zone
				In	Out	Total	In	Out	Total	
Apartment (Private Developer)	400	DU	2,548	40	160	200	155	83	238	1
General Office Building (Private Developer)	200	1000 SF	2,275	288	39	327	52	251	303	
Shopping Center (Private Developer)	200	1000 SF	10,656	142	90	232	496	516	1,012	
Pass-By***				0	0	0	169	175	344	
Internal Capture				33	33	66	120	120	240	
Total Less Internal Capture/Pass-By				436	257	693	413	555	969	
Research and Development Center (University of Arizona)	309	1000 SF	1,504	175	36	211	29	167	196	2
Internal Capture				3	2	6	5	9	17	
Total Less Internal Capture/Pass-By				171	33	204	24	158	180	
Research and Development Center (University of Arizona)	300	1000 SF	1,460	170	35	205	29	163	192	3
Internal Capture				3	2	6	5	9	16	
Total Less Internal Capture/Pass-By				167	33	199	24	154	176	
Medical-Dental Office Building* (Banner Health)	5	1000 SF	(178)	(9)	(3)	(12)	(5)	(12)	(17)	4
Hospital** (Banner Health)	153	Beds	3,335	123	66	190	89	133	222	5
Internal Capture				2	4	6	16	7	19	
Total Less Internal Capture/Pass-By				121	62	184	73	126	203	
Zone 2 - 5 Subtotal	---	---	21,599	459	134	594	142	451	593	2 to 5
Internal Capture (ITE Office to Retail)			---	9	9	18	25	25	50	
Total	---	---	21,599	895	384	1,280	535	993	1,528	

Note: A 40% alternative mode reduction was applied to Zones 2 and 3.

*Net decrease in occupancy over existing. The number of trips in parentheses are deducted from the trip generation.

**Net increase in occupancy over existing

***Pass-By Percentages: Shopping Center 34% PM only

Table 8. 2035 Phase 2: Net Total Trip Generation (with pass-by and multimodal reduction)

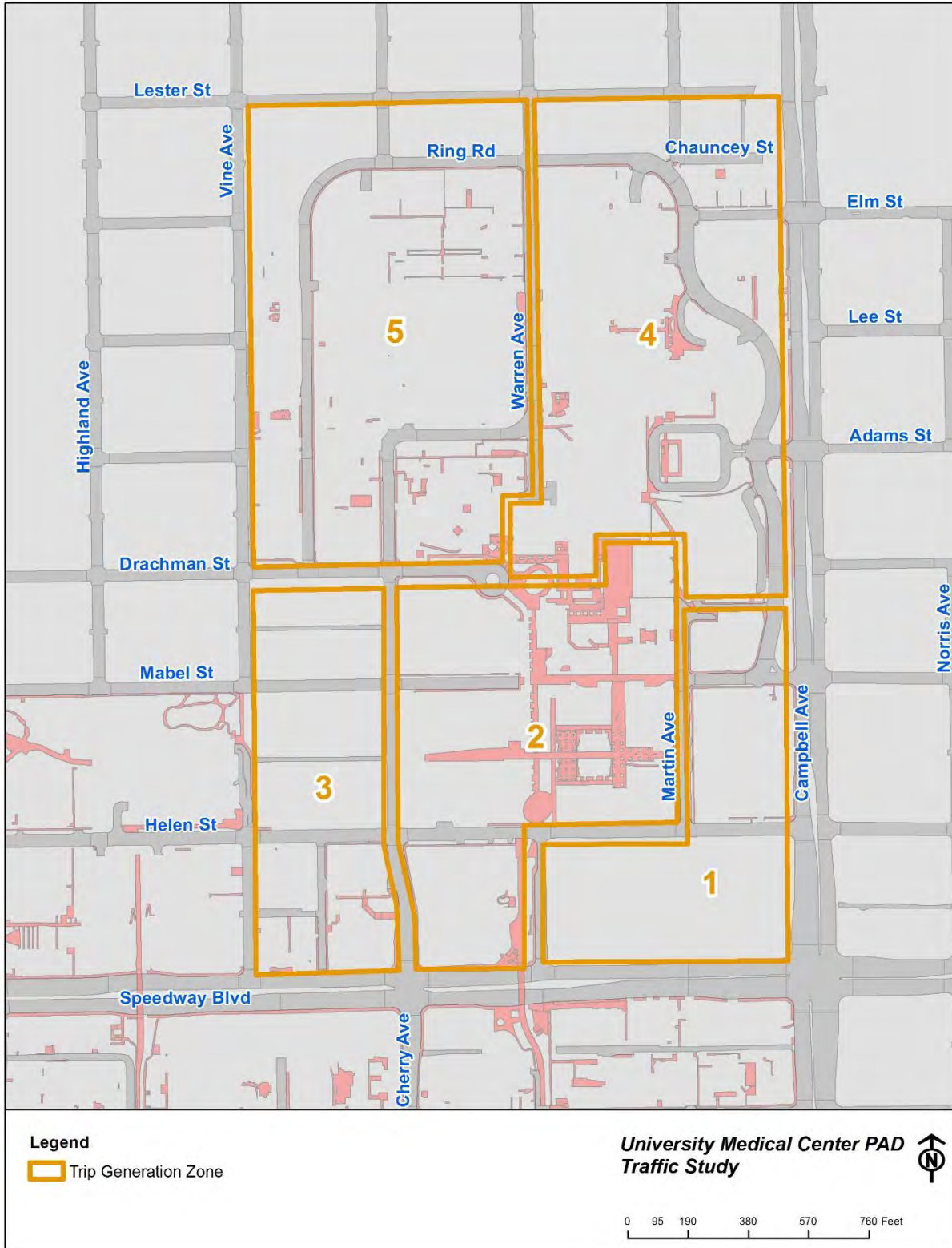
Land Uses	Intensity	Units	Daily Total	AM Peak			PM Peak			Zone
				In	Out	Total	In	Out	Total	
Apartment (Private Developer)	400	DU	2,548	40	160	200	155	83	238	1
General Office Building (Private Developer)	200	1000 SF	2,275	288	39	327	52	251	303	
Medical-Dental Office Building (Private Developer)	50	1000 SF	1,830	91	24	115	41	112	153	
Shopping Center (Private Developer)	200	1000 SF	10,656	142	90	232	496	516	1,012	
Pass-By**				0	0	0	169	175	344	
Internal Capture				33	33	66	120	120	240	
Total Less Internal Capture/Pass-By				527	281	808	455	667	1,122	
Research and Development Center (University of Arizona)	660	1000 SF	3,212	336	69	404	55	311	366	2
Internal Capture				3	2	6	4	8	14	
Total Less Internal Capture/Pass-By				333	67	399	51	303	352	
Research and Development Center (University of Arizona)	814	1000 SF	3,961	402	82	484	65	370	435	3
Internal Capture				4	3	7	5	9	17	
Total Less Internal Capture/Pass-By				398	80	478	60	360	418	
Medical-Dental Office Building* (Banner Health)	14	1000 SF	516	27	7	34	14	37	66	4
Internal Capture				0	0	0	1	1	2	
Total Less Internal Capture/Pass-By				27	7	34	13	36	64	
Hospital* (Banner Health, Phase 1 and 2 Combined)	308	Beds	4,471	248	134	382	179	268	447	5
Internal Capture				2	4	5	14	7	17	
Total Less Internal Capture/Pass-By				246	130	377	165	261	430	
Zone 2 - 5 Subtotal	---	---	29,469	1,013	292	1,305	313	986	1,314	2 to 5
Internal Capture (ITE Office to Retail)			---	9	9	18	25	25	50	
Total	---	---	29,469	1,531	564	2,095	743	1,628	2,386	

Note: A 40% alternative mode reduction was applied to Zones 2 and 3.

* Net increase in occupancy over existing.

**Pass-By Percentages: Shopping Center 34% PM only

Figure 5. Traffic Analysis Zones



Directional Trip Distribution

The next step in the analysis process is to estimate from which direction are trips originating and traveling to the development. The directional distribution is assumed to be consistent with the 2012 AHSC study, and derived from Pima Association of Governments 2040 travel demand model. The distribution assumes that 23 and 26 percent of trips that will access the study area will travel from the north and south on Campbell Avenue, respectively. From east and west, 24 percent of trips will access the study area from both directions on Speedway Boulevard. **Table 9** illustrates the trip distribution.

Table 9. Trip Distribution

Route	2040 Average Daily Traffic (ADT)	Percentage of ADT on Route
Campbell Avenue (from the north)	42,000	23%
Speedway (from the east)	45,000	24%
Campbell Ave (from the south)	48,000	26%
Speedway Blvd (from the west)	45,000	24%
Elm Street (from the east)	5,000	3%
Total	185,000	100%

Route Choice/Traffic Assignment

Traffic assignment is the next step of the traffic forecast procedure and it involves determining the amount of traffic that will use specific routes within the analysis network. The result of traffic assignment is total projected trips, by direction and turning movements, at each of the study intersections.

Traffic assignment is determined by considering logical routings, available roadway capacities, left turns at critical intersections, and perceived travel times. The locations of existing and proposed parking areas and the location of the main entrance of the new hospital were considered. To facilitate the large number of calculations required to complete this step, the Traffix software was utilized.

Appendix B (Figure 12, 13, 14, and 15) illustrates total intersection peak-hour volumes forecasted based on all applicable developments for each project phase.

Phase 1 and Phase 2 Capacity Analysis

The City of Tucson requires the traffic impact of new development on roadways and intersections to be mitigated to a Level of Service D or better (equivalent to being delayed at the intersection for less than 35-55 seconds per vehicle).

Capacity analysis was performed for each of the major study area intersections, both signalized and unsignalized, based on the existing intersection configurations with the forecasted Phase 1 and Phase 2 generated trips. Results are summarized in **Appendix C**.

Improvements needs were identified, and a second capacity analysis was performed that reflect the recommended improvements.

Figure 6 and **Figure 7** illustrate the capacity analysis results and the required lane configurations necessary to meet LOS “D” at each study area intersection.

Figure 6. Phase 1 Recommendations

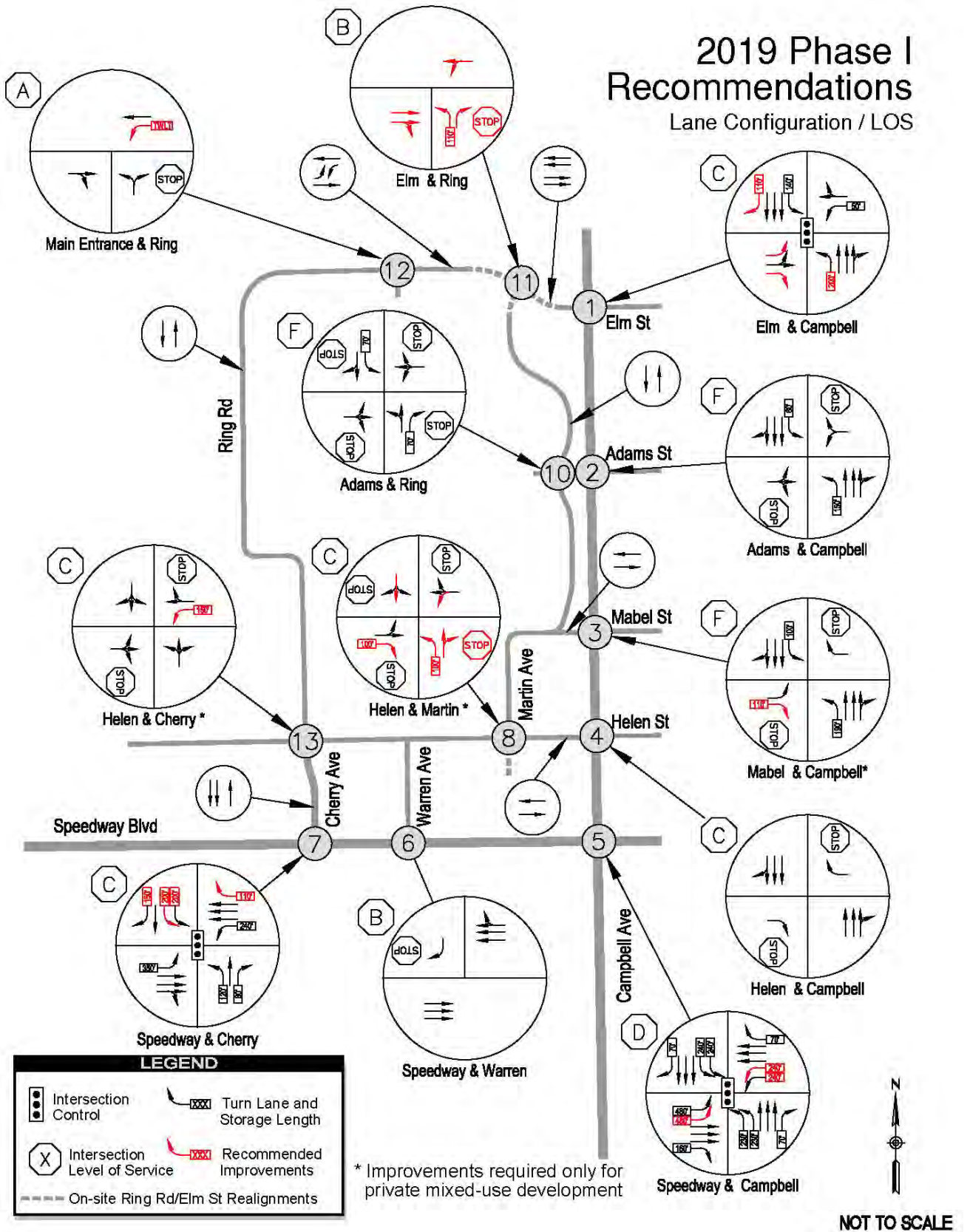
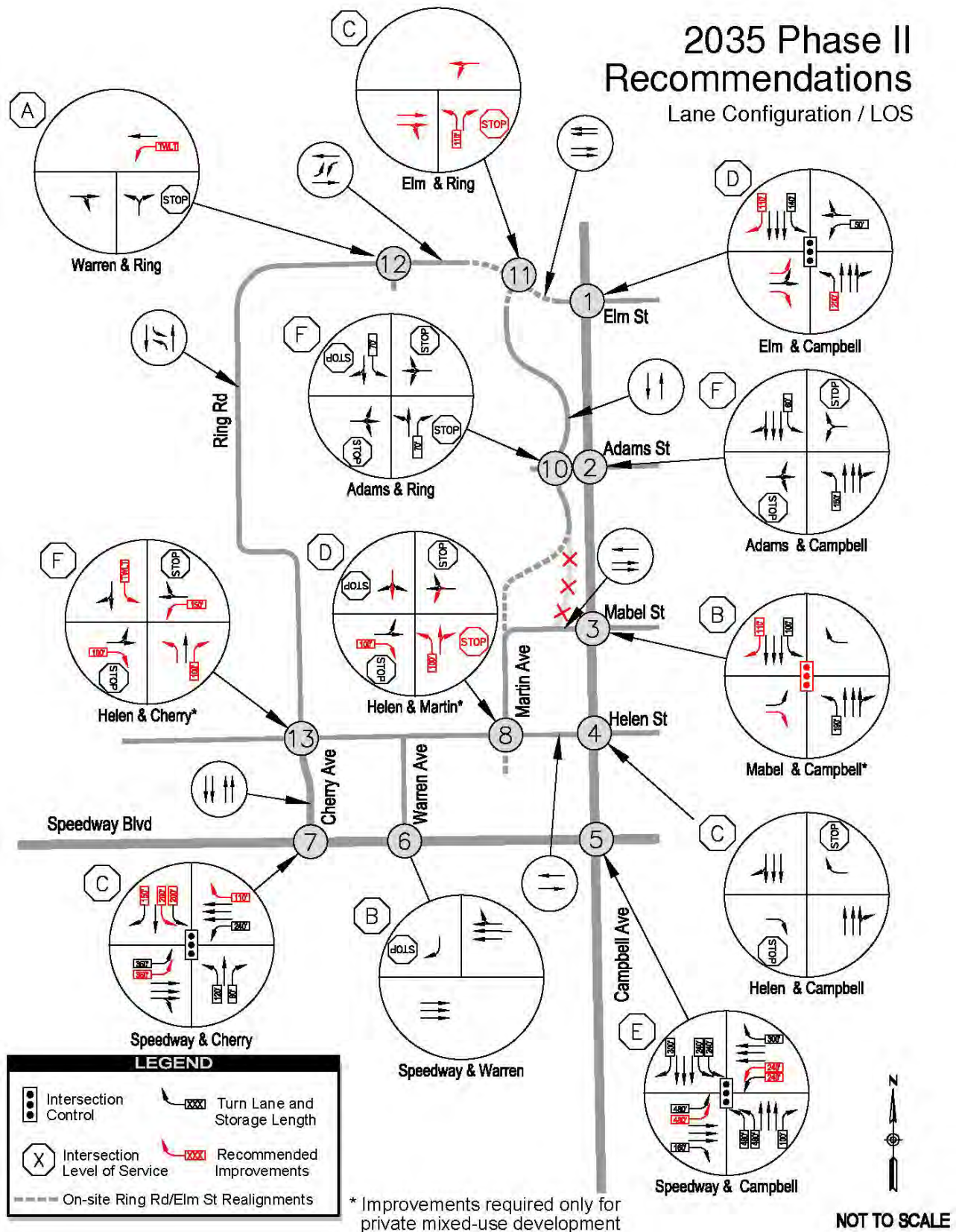


Figure 7. Phase 2 Recommendations



4. RECOMMENDATIONS

This chapter summarizes intersection and roadway improvements recommendations needed to maintain and achieve adequate traffic performance. Recommendations are made for each development phase:

- Phase 1 Recommendations (Projected 2019 Completion Timeframe) – Includes those transportation improvements required to meet the combined needs of: 1) the Phase 1 Banner-UMC redevelopment of the PAD District; 2) planned adjacent AHSC development consistent with the UA's 2020 Capital Plan; and 3) the private mixed-use high-rise project near Speedway Boulevard and Campbell Avenue.
- Phase 2 Recommendations (Projected 2035 Completion Timeframe) – Includes those transportation improvements required to meet the combined needs of: 1) the Phase 2 Banner-UMC redevelopment of the PAD District (the second bed tower); and 2) the same off-Site AHSC and private development components referenced above.

Recommendations below build upon recommendations from the 2012 AHSC Traffic Study, with modifications as appropriate to reflect the Banner Health's proposed site plan.

Roadway Segments

Figure 6 and **Figure 7** recommend roadway cross-section improvements to Ring Road, Elm Street, and Campbell Avenue. **Figure 6** and **Figure 7** also reflect other improvements associated with the AHSC Campus but are outside of Banner Health's redevelopment area.

Recommendations regarding specific roadway segments associated with the Banner Health's proposed redevelopment are described below.

- Elm Street from Ring Road to Campbell Avenue: Elm Street will serve as the primary inbound and outbound connection to proposed Banner Health facilities. This segment is recommended to consist of a 5-lane cross section (3-lanes in the eastbound direction and 2-lanes in the westbound direction).
- The Elm Street/Ring Road intersection is recommended to be reconstructed such that Ring Road forms a stop-controlled T-intersection with Elm Street, with east-west movements on Elm Street uninterrupted continuous traffic flow (refer to **Figure 8**). This configuration will provide direct access to the new hospital's north facing main entrance from Campbell Avenue.
- Ring Road from Elm Street to western edge of development: The Ring Road on the north side of the proposed Banner University Medical Center, from Elm Street to the western edge of the development is proposed to consist of a 3-lane section (1-lane in each direction with a left turn lane) to provide optimal access for left turn movements to and

from the hospital main entrance and parking lots. The roadway should be designed to encourage lower speeds (25 mph) conducive to a campus environment.

Intersections

- **Cherry Avenue at Speedway Boulevard:** An additional left turn lane on southbound Cherry Avenue is recommended at the intersection of Speedway Boulevard and Cherry Avenue. Intersection improvements should also lengthen the existing Cherry Avenue southbound right turn lane to 150 feet, and the Speedway Blvd westbound right turn lane to 110 feet. Cherry Avenue will continue to serve as a primary access point for UMC employees, emergency vehicles, as well as the AHSC campus. In addition, visitors of the proposed medical facilities who are familiar with the area may utilize Cherry Avenue and the Ring Road to access Banner University Medical Center. These improvements are recommended to be implemented as part of a future City of Tucson project, as this intersection is outside of right-of-way controlled by Banner Health.
- **Elm Street at Campbell Avenue:** Recommended improvements at this intersection include extension of the Campbell Avenue northbound left turn lane, and construction of a Campbell Avenue southbound right turn lane. In addition, the eastbound Elm Street approach configuration should include a dedicated left turn lane, a combined left/through lane, and a dedicated right turn lane. This improvement is a Banner Health Responsibility under this PAD.
- **Elm Street at Ring Road:** This intersection is recommended to be reconstructed such that Ring Road forms a stop-controlled T-intersection with Elm Street, with continuous traffic flow on Elm Street (**Figure 8**). A westbound left turn lane is recommended to facilitate traffic turning south onto the Ring Road to access the Diamond Children’s Medical Center. This improvement is a Banner Health Responsibility under this PAD.
- **Speedway at Campbell Avenue:** This intersection will require improvements to left turn lanes. A second left turn lane is required for eastbound Campbell Avenue. On westbound Campbell Avenue, the existing westbound left turn lane should be extended and a second westbound left turn lane should be constructed. These improvements are recommended to be implemented as part of a future City of Tucson project, as this intersection is outside of right-of-way controlled by Banner Health.

Bicycle and Pedestrian Facilities

Bike lanes and sidewalks will be provided on the Ring Road and Elm Street.

Lester Street, located north of the Banner University Medical Center is a designated bicycle route. The bicycle route extends to Martin Avenue, then south to Ring Road and Elm Street. The Banner University Medical Center development will close the Martin Avenue connection to Lester Street. This area will be converted to landscaped areas and retention basins. However, a shared use path will maintain bicycle and pedestrian connectivity through the drainage basins

between Lester Street and Ring Road bike lanes, through the open space and landscaped area. Striped bicycle routes (bike lanes) will also be provided on Elm Street and Ring Road from Campbell Avenue to the new main entrance of the hospital. Sidewalks will provide pedestrian mobility throughout the campus. A summary of these recommendations is provided in **Figure 9**.

Summary of Recommendations

Table 10 provides a comprehensive summary of the full universe of Phase 1 and Phase 2 transportation-improvement recommendations, including those that will constitute fair-share responsibility of Banner Health attendant to its redevelopment of the BUMC PAD District. No attempt will be made with this analysis or the PAD to define fair-share contributions or responsibilities for any other adjacent property owner/developer.

Figure 8. Elm Street/Ring Road Conceptual Reconfiguration

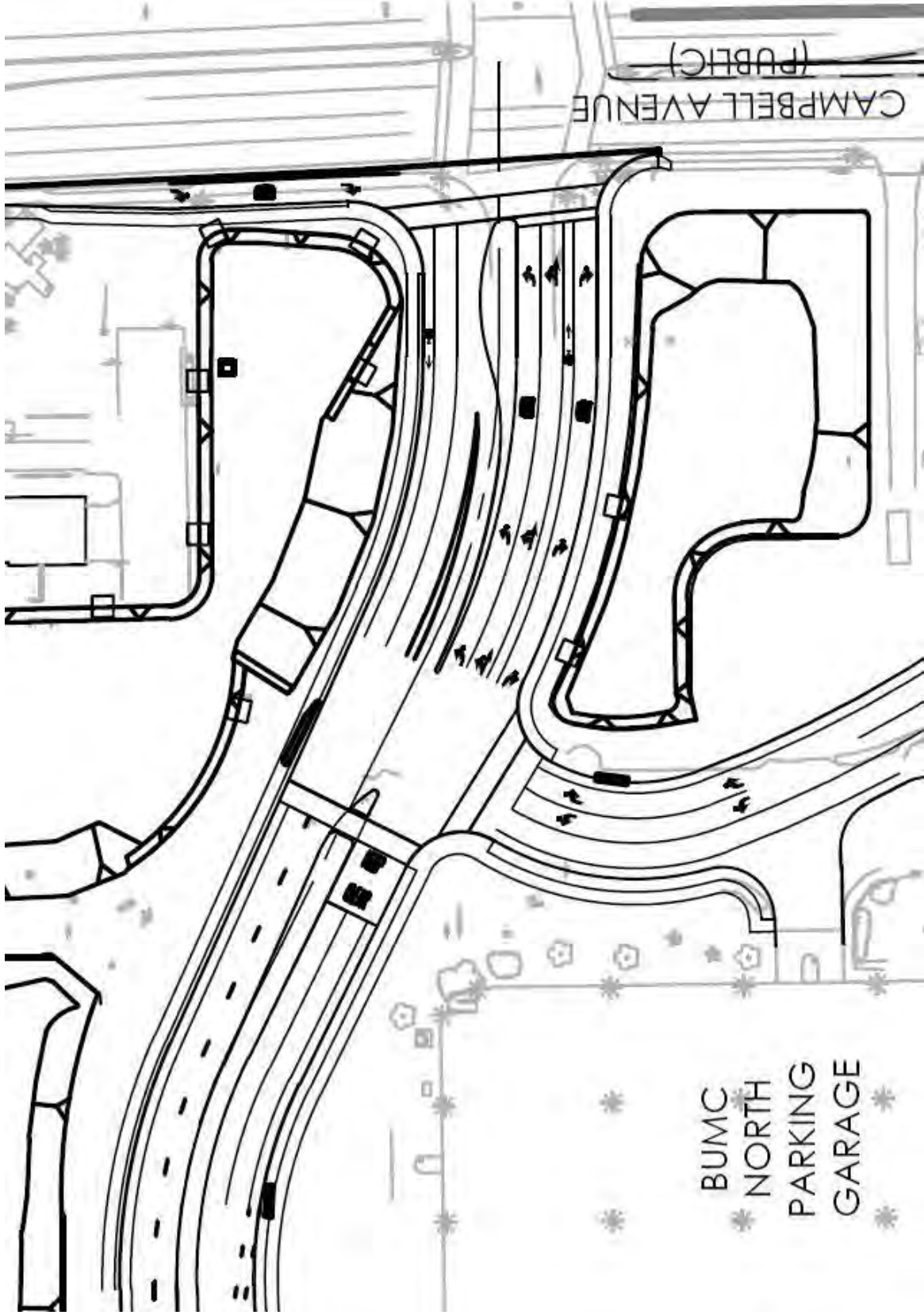


Table 10. Phase 1 and Phase 2 Recommendations

ID	Intersection	2019 Phase 1 Recommendations	2035 Phase 2 Recommendations	Comments
1	Campbell Ave / Elm St	<ul style="list-style-type: none"> Improve Elm Street to a 5-lane roadway (2 inbound lane, and 3 outbound lanes) between Campbell Avenue and Ring Road. One EB lane transitions to a dedicated left-turn lane at Elm Street/Campbell Avenue. West of the NE Parking Garage entrance, Elm Street continues as a 2-lane roadway with a raised median island and left turn lanes. Configure the EB through lane to be a shared through/left movement to provide sufficient capacity for left-turning traffic. Extend existing northbound left turn lane on Campbell Avenue to 200’. Add a dedicated right-turn lane on southbound Campbell Avenue. No improvements recommended. 	<ul style="list-style-type: none"> No additional recommendations 	Required improvements by Banner Health under this PAD.
2	Campbell Ave / Adams St	<ul style="list-style-type: none"> No improvements recommended. 	<ul style="list-style-type: none"> No improvements recommended. 	-
3	Campbell Ave / Mabel St	<ul style="list-style-type: none"> Add a 110’ dedicated right-turn lane on eastbound Mabel St to accommodate vehicles turning onto southbound Campbell Ave. This intersection will be a “High-T Intersection” that will allow left-in and left-out on Campbell Avenue at Mabel; northbound mainline traffic on Campbell will not be required to stop at the intersection. 	<ul style="list-style-type: none"> Install a new traffic signal at Mabel/Campbell to provide a third signalized access to and from the AHSC campus. Realign the Ring Road north approach to Mabel St to the west to increase the spacing between the Ring Rd/Mabel Ave intersection and the Campbell Ave/Mabel St intersection. Improve eastbound Mabel St between Martin Ave and Campbell Ave to two lanes 	Recommended Improvements by others.

ID	Intersection	2019 Phase 1 Recommendations	2035 Phase 2 Recommendations	Comments
4	Campbell Ave / Helen St	<ul style="list-style-type: none"> No improvements recommended. 	<ul style="list-style-type: none"> Add a 110' dedicated right-turn lane on southbound Campbell Ave. No improvements recommended. 	-
5	Campbell Ave / Speedway Blvd	<ul style="list-style-type: none"> Add an additional 480' left-turn lane on eastbound Speedway Blvd (for two total) to accommodate vehicles turning to northbound Campbell Ave. Add an additional 240' left-turn lane on westbound Speedway Blvd (for two total) to accommodate vehicles turning to southbound Campbell Ave. 	<ul style="list-style-type: none"> No additional recommendations. 	<i>Recommended as a City of Tucson project, as it is outside of the Banner UMC right-of-way. It is recommended that impact fees associated with the Banner UMC project be applied toward these improvements.</i>
6	Speedway Blvd / Warren Ave	<ul style="list-style-type: none"> No improvements recommended 	<ul style="list-style-type: none"> No improvements recommended. 	-
7	Speedway Blvd / Cherry Ave	<ul style="list-style-type: none"> Extend right-turn lane on southbound Cherry Avenue to 150' (existing is 80'). Extend left-turn lane on southbound Cherry Avenue to 200' (existing is 80'). Add an additional 200' left-turn lane (for two total) on southbound Cherry Ave to accommodate vehicles turning to eastbound Speedway Blvd. Add a 110' dedicated right-turn lane on westbound Speedway Blvd to accommodate vehicles turning on to Cherry Ave. 	<ul style="list-style-type: none"> Add an additional 350' left-turn lane on eastbound Speedway Blvd. Add new receiving lane on Cherry Ave. 	Responsibility for these improvements to be determined.

ID	Intersection	2019 Phase 1 Recommendations	2035 Phase 2 Recommendations	Comments
8	Helen St / Martin Ave	<ul style="list-style-type: none"> Improvements required for mixed-use development only. Reconfigure Helen/Martin to four-way intersection. 	<ul style="list-style-type: none"> Add a 100' dedicated right-turn lane on Helen St. 	Recommended Improvements by others.
9	Cherry Ave / Mabel St	<ul style="list-style-type: none"> Mabel Street is planned to be converted to a pedestrian mall. No vehicular improvements are recommended. 	-	-
10	Ring Rd / Adam St	<ul style="list-style-type: none"> No improvements recommended 	<ul style="list-style-type: none"> No improvements recommended. 	-
11	Elm St / Ring Rd	<ul style="list-style-type: none"> Reconfigure the intersection, removing the All-Way Stop Control. Narrow Ring Road to 2-lanes within the PAD site; transition to existing width. Add a 110' dedicated left-turn lane on northbound Ring Road. 	<ul style="list-style-type: none"> No improvements recommended. 	Required improvements by Banner Health under this PAD.
12	Ring Rd / Main Entrance	<ul style="list-style-type: none"> Proposed main entrance access to the future hospital 	-	Required improvements by Banner Health under this PAD.
13	Helen & Cherry	<ul style="list-style-type: none"> Add a 150' left-turn lane on westbound Helen St. 	<ul style="list-style-type: none"> Restripe Cherry Ave to include a left-turn lane on southbound Cherry Ave. Add a 100' dedicated right-turn lane on northbound Cherry Ave. 	Recommended Improvements by others.

Appendix A – Supporting Trip Generation Data

Table 11. Banner Health's Proposed Site Development Options (GSF and Beds)

Banner Health.		Summary Of BUMC Proposed Site Development Options					
BUMC- Campus Development	OP Clinic/Adm GSF	Hospital GSF	Total GSF	Beds	Parking Surface	Parking Structured	
2015 Existing Development:							
DCMC		209,713	209,713	233			
NEP – Hospital/Clinics		220,549	220,549	110			
201- Hospital		265,083	265,083	165			
201- Hospital/OP Clinics UA	51,373		51,373				
Other Existing Campus Medical Facilities	161,084		161,084				
Totals	212,457	695,345	907,802	508			
2019 Phase 1 Development:							
DCMC + Lobby Expansion & ED		214,213	214,213	215			
NEP – Hospital/Clinics	46,477	174,072	220,549	110			
201 - Use - Adm Office/Hospital Support		265,083	265,083	0			
New Hospital - Phase 1		740,000	740,000	336			
Totals	46,477	1,393,368	1,439,845	661			
2035 - Full Development:							
DCMC		214,213	214,213	215			
DMCM - Emergency Dept. Expansion		10,000	10,000				
NEP - Hospital/ OP Clinics	65,651	154,898	220,549	97			
201 - Use - Hospital Adm Office/Support		265,083	265,083	0			
New Hospital - Phase 1 (11-Stories)		740,000	740,000	336			
New Hospital - Phase 2 (11-Stories)		355,430	355,430	168			
Totals Full Development 11-Story Configuration	65,651	1,739,624	1,805,275	816			

Figure 10. 2012 AHSC Traffic Study, Planned Land Uses



Appendix B – Existing and Forecasted (Phase 1 and Phase 2) Intersection Traffic Volumes

Figure 11. Existing (2012) Peak-Hour Traffic Volumes

<p>1</p> <table border="1"> <tr> <td> <p>196 / 35 1262 / 1066 69 / 80</p> <p>Campbell Ave</p> </td> <td> <p>38 / 80 89 / 24 92 / 62</p> <p>Elm St</p> </td> </tr> <tr> <td> <p>107 / 330 24 / 121 53 / 139</p> </td> <td> <p>132 / 70 925 / 1434 21 / 60</p> </td> </tr> </table>	<p>196 / 35 1262 / 1066 69 / 80</p> <p>Campbell Ave</p>	<p>38 / 80 89 / 24 92 / 62</p> <p>Elm St</p>	<p>107 / 330 24 / 121 53 / 139</p>	<p>132 / 70 925 / 1434 21 / 60</p>	<p>2</p> <table border="1"> <tr> <td> <p>132 / 33 1391 / 1249 38 / 21</p> <p>Campbell Ave</p> </td> <td> <p>10 / 15 3 / 3</p> <p>Adams St</p> </td> </tr> <tr> <td> <p>14 / 39 3 / 1 80 / 125</p> </td> <td> <p>210 / 90 1116 / 1426 76 / 36</p> </td> </tr> </table>	<p>132 / 33 1391 / 1249 38 / 21</p> <p>Campbell Ave</p>	<p>10 / 15 3 / 3</p> <p>Adams St</p>	<p>14 / 39 3 / 1 80 / 125</p>	<p>210 / 90 1116 / 1426 76 / 36</p>	<p>3</p> <table border="1"> <tr> <td> <p>80 / 14 1445 / 1446 19 / 28</p> <p>Campbell Ave</p> </td> <td> <p>4 / 17 0 / 1</p> <p>Mabel St</p> </td> </tr> <tr> <td> <p>3 / 11 0 / 2 18 / 105</p> </td> <td> <p>126 / 60 1272 / 1683 40 / 10</p> </td> </tr> </table>	<p>80 / 14 1445 / 1446 19 / 28</p> <p>Campbell Ave</p>	<p>4 / 17 0 / 1</p> <p>Mabel St</p>	<p>3 / 11 0 / 2 18 / 105</p>	<p>126 / 60 1272 / 1683 40 / 10</p>	<p>4</p> <table border="1"> <tr> <td> <p>77 / 33 1286 / 1459</p> <p>Campbell Ave</p> </td> <td> <p>11 / 25</p> <p>Helen St</p> </td> </tr> <tr> <td> <p>31 / 122</p> </td> <td> <p>1385 / 1570 29 / 17</p> </td> </tr> </table>	<p>77 / 33 1286 / 1459</p> <p>Campbell Ave</p>	<p>11 / 25</p> <p>Helen St</p>	<p>31 / 122</p>	<p>1385 / 1570 29 / 17</p>
<p>196 / 35 1262 / 1066 69 / 80</p> <p>Campbell Ave</p>	<p>38 / 80 89 / 24 92 / 62</p> <p>Elm St</p>																		
<p>107 / 330 24 / 121 53 / 139</p>	<p>132 / 70 925 / 1434 21 / 60</p>																		
<p>132 / 33 1391 / 1249 38 / 21</p> <p>Campbell Ave</p>	<p>10 / 15 3 / 3</p> <p>Adams St</p>																		
<p>14 / 39 3 / 1 80 / 125</p>	<p>210 / 90 1116 / 1426 76 / 36</p>																		
<p>80 / 14 1445 / 1446 19 / 28</p> <p>Campbell Ave</p>	<p>4 / 17 0 / 1</p> <p>Mabel St</p>																		
<p>3 / 11 0 / 2 18 / 105</p>	<p>126 / 60 1272 / 1683 40 / 10</p>																		
<p>77 / 33 1286 / 1459</p> <p>Campbell Ave</p>	<p>11 / 25</p> <p>Helen St</p>																		
<p>31 / 122</p>	<p>1385 / 1570 29 / 17</p>																		
<p>5</p> <table border="1"> <tr> <td> <p>208 / 190 974 / 990 258 / 450</p> <p>Campbell Ave</p> </td> <td> <p>168 / 158 1419 / 1227 364 / 310</p> <p>Speedway Blvd</p> </td> </tr> <tr> <td> <p>185 / 307 786 / 1448 179 / 239</p> </td> <td> <p>373 / 341 981 / 1035 129 / 251</p> </td> </tr> </table>	<p>208 / 190 974 / 990 258 / 450</p> <p>Campbell Ave</p>	<p>168 / 158 1419 / 1227 364 / 310</p> <p>Speedway Blvd</p>	<p>185 / 307 786 / 1448 179 / 239</p>	<p>373 / 341 981 / 1035 129 / 251</p>	<p>6</p> <table border="1"> <tr> <td> <p>26 / 48</p> <p>Warren Ave</p> </td> <td> <p>66 / 73 1912 / 1673</p> <p>Speedway Blvd</p> </td> </tr> <tr> <td> <p>1289 / 2130</p> </td> <td></td> </tr> </table>	<p>26 / 48</p> <p>Warren Ave</p>	<p>66 / 73 1912 / 1673</p> <p>Speedway Blvd</p>	<p>1289 / 2130</p>		<p>7</p> <table border="1"> <tr> <td> <p>34 / 90 72 / 64 62 / 206</p> <p>Cherry Ave</p> </td> <td> <p>244 / 59 1649 / 1554 72 / 70</p> <p>Speedway Blvd</p> </td> </tr> <tr> <td> <p>68 / 41 1177 / 1674 166 / 111</p> </td> <td> <p>52 / 172 70 / 76 41 / 159</p> </td> </tr> </table>	<p>34 / 90 72 / 64 62 / 206</p> <p>Cherry Ave</p>	<p>244 / 59 1649 / 1554 72 / 70</p> <p>Speedway Blvd</p>	<p>68 / 41 1177 / 1674 166 / 111</p>	<p>52 / 172 70 / 76 41 / 159</p>	<p>8</p> <table border="1"> <tr> <td> <p>34 / 54 10 / 12</p> <p>Martin Ave</p> </td> <td> <p>6 / 5 73 / 32</p> <p>Helen St</p> </td> </tr> <tr> <td> <p>52 / 45 34 / 133</p> </td> <td> <p>10 / 11 60 / 130</p> </td> </tr> </table>	<p>34 / 54 10 / 12</p> <p>Martin Ave</p>	<p>6 / 5 73 / 32</p> <p>Helen St</p>	<p>52 / 45 34 / 133</p>	<p>10 / 11 60 / 130</p>
<p>208 / 190 974 / 990 258 / 450</p> <p>Campbell Ave</p>	<p>168 / 158 1419 / 1227 364 / 310</p> <p>Speedway Blvd</p>																		
<p>185 / 307 786 / 1448 179 / 239</p>	<p>373 / 341 981 / 1035 129 / 251</p>																		
<p>26 / 48</p> <p>Warren Ave</p>	<p>66 / 73 1912 / 1673</p> <p>Speedway Blvd</p>																		
<p>1289 / 2130</p>																			
<p>34 / 90 72 / 64 62 / 206</p> <p>Cherry Ave</p>	<p>244 / 59 1649 / 1554 72 / 70</p> <p>Speedway Blvd</p>																		
<p>68 / 41 1177 / 1674 166 / 111</p>	<p>52 / 172 70 / 76 41 / 159</p>																		
<p>34 / 54 10 / 12</p> <p>Martin Ave</p>	<p>6 / 5 73 / 32</p> <p>Helen St</p>																		
<p>52 / 45 34 / 133</p>	<p>10 / 11 60 / 130</p>																		
<p>9</p> <table border="1"> <tr> <td> <p>2 / 7 146 / 208 3 / 4</p> <p>Cherry Ave</p> </td> <td> <p>0 / 4 0 / 4 5 / 11</p> <p>Mabel St</p> </td> </tr> <tr> <td> <p>9 / 3 15 / 5 62 / 45</p> </td> <td> <p>10 / 51 232 / 150 28 / 14</p> </td> </tr> </table>	<p>2 / 7 146 / 208 3 / 4</p> <p>Cherry Ave</p>	<p>0 / 4 0 / 4 5 / 11</p> <p>Mabel St</p>	<p>9 / 3 15 / 5 62 / 45</p>	<p>10 / 51 232 / 150 28 / 14</p>	<p>10</p> <table border="1"> <tr> <td> <p>11 / 12 20 / 16 13 / 48</p> <p>Ring Rd</p> </td> <td> <p>50 / 26 76 / 39 157 / 44</p> <p>Adams St</p> </td> </tr> <tr> <td> <p>18 / 26 41 / 46 26 / 8</p> </td> <td> <p>3 / 19 41 / 125 48 / 93</p> </td> </tr> </table>	<p>11 / 12 20 / 16 13 / 48</p> <p>Ring Rd</p>	<p>50 / 26 76 / 39 157 / 44</p> <p>Adams St</p>	<p>18 / 26 41 / 46 26 / 8</p>	<p>3 / 19 41 / 125 48 / 93</p>	<p>11</p> <table border="1"> <tr> <td> <p>28 / 35 174 / 400</p> <p>Ring Rd</p> </td> <td> <p>349 / 67 70 / 36</p> <p>Elm St</p> </td> </tr> <tr> <td> <p>40 / 29 56 / 171</p> </td> <td> <p>41 / 137 7 / 8</p> </td> </tr> </table>	<p>28 / 35 174 / 400</p> <p>Ring Rd</p>	<p>349 / 67 70 / 36</p> <p>Elm St</p>	<p>40 / 29 56 / 171</p>	<p>41 / 137 7 / 8</p>	<p>12</p> <table border="1"> <tr> <td> <p>154 / 40 98 / 55</p> <p>Ring Rd</p> </td> <td></td> </tr> <tr> <td> <p>10 / 11 60 / 130</p> </td> <td></td> </tr> </table>	<p>154 / 40 98 / 55</p> <p>Ring Rd</p>		<p>10 / 11 60 / 130</p>	
<p>2 / 7 146 / 208 3 / 4</p> <p>Cherry Ave</p>	<p>0 / 4 0 / 4 5 / 11</p> <p>Mabel St</p>																		
<p>9 / 3 15 / 5 62 / 45</p>	<p>10 / 51 232 / 150 28 / 14</p>																		
<p>11 / 12 20 / 16 13 / 48</p> <p>Ring Rd</p>	<p>50 / 26 76 / 39 157 / 44</p> <p>Adams St</p>																		
<p>18 / 26 41 / 46 26 / 8</p>	<p>3 / 19 41 / 125 48 / 93</p>																		
<p>28 / 35 174 / 400</p> <p>Ring Rd</p>	<p>349 / 67 70 / 36</p> <p>Elm St</p>																		
<p>40 / 29 56 / 171</p>	<p>41 / 137 7 / 8</p>																		
<p>154 / 40 98 / 55</p> <p>Ring Rd</p>																			
<p>10 / 11 60 / 130</p>																			



Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES



Figure 12. 2019 Phase 1 Background Traffic Volumes

<p>1</p> <table border="1"> <tr> <td> 195 / 35 ↻ ↻ ↻ 1430 / 1172 ↻ ↻ ↻ 69 / 60 ↻ ↻ ↻ Campbell Ave </td> <td> 38 / 80 ↻ ↻ ↻ 89 / 24 ↻ ↻ ↻ 115 / 76 ↻ ↻ ↻ Elm St </td> </tr> <tr> <td> 109 / 337 24 / 122 53 / 139 ↻ ↻ ↻ </td> <td> 132 / 70 998 / 1626 30 / 85 ↻ ↻ ↻ </td> </tr> </table>	195 / 35 ↻ ↻ ↻ 1430 / 1172 ↻ ↻ ↻ 69 / 60 ↻ ↻ ↻ Campbell Ave	38 / 80 ↻ ↻ ↻ 89 / 24 ↻ ↻ ↻ 115 / 76 ↻ ↻ ↻ Elm St	109 / 337 24 / 122 53 / 139 ↻ ↻ ↻	132 / 70 998 / 1626 30 / 85 ↻ ↻ ↻	<p>2</p> <table border="1"> <tr> <td> 96 / 25 ↻ ↻ ↻ 1630 / 1554 ↻ ↻ ↻ 19 / 28 ↻ ↻ ↻ Campbell Ave </td> <td> 4 / 17 ↻ ↻ ↻ Adams St </td> </tr> <tr> <td> 77 / 188 32 / 138 ↻ ↻ ↻ </td> <td> 156 / 82 1281 / 1623 40 / 110 ↻ ↻ ↻ </td> </tr> </table>	96 / 25 ↻ ↻ ↻ 1630 / 1554 ↻ ↻ ↻ 19 / 28 ↻ ↻ ↻ Campbell Ave	4 / 17 ↻ ↻ ↻ Adams St	77 / 188 32 / 138 ↻ ↻ ↻	156 / 82 1281 / 1623 40 / 110 ↻ ↻ ↻	<p>3</p> <table border="1"> <tr> <td> 256 / 197 ↻ ↻ ↻ 1047 / 1163 ↻ ↻ ↻ 272 / 484 ↻ ↻ ↻ Campbell Ave </td> <td> 183 / 168 1590 / 1327 364 / 310 ↻ ↻ ↻ Mabel St </td> </tr> <tr> <td> 194 / 347 850 / 1622 190 / 291 ↻ ↻ ↻ </td> <td> 558 / 449 997 / 1046 129 / 251 ↻ ↻ ↻ </td> </tr> </table>	256 / 197 ↻ ↻ ↻ 1047 / 1163 ↻ ↻ ↻ 272 / 484 ↻ ↻ ↻ Campbell Ave	183 / 168 1590 / 1327 364 / 310 ↻ ↻ ↻ Mabel St	194 / 347 850 / 1622 190 / 291 ↻ ↻ ↻	558 / 449 997 / 1046 129 / 251 ↻ ↻ ↻	<p>4</p> <table border="1"> <tr> <td> 71 / 187 ↻ ↻ ↻ 72 / 64 ↻ ↻ ↻ 145 / 473 ↻ ↻ ↻ Campbell Ave </td> <td> 350 / 74 1758 / 1643 72 / 70 ↻ ↻ ↻ Helen St </td> </tr> <tr> <td> 254 / 152 1177 / 1674 166 / 111 ↻ ↻ ↻ </td> <td> 52 / 172 70 / 76 41 / 159 ↻ ↻ ↻ </td> </tr> </table>	71 / 187 ↻ ↻ ↻ 72 / 64 ↻ ↻ ↻ 145 / 473 ↻ ↻ ↻ Campbell Ave	350 / 74 1758 / 1643 72 / 70 ↻ ↻ ↻ Helen St	254 / 152 1177 / 1674 166 / 111 ↻ ↻ ↻	52 / 172 70 / 76 41 / 159 ↻ ↻ ↻
195 / 35 ↻ ↻ ↻ 1430 / 1172 ↻ ↻ ↻ 69 / 60 ↻ ↻ ↻ Campbell Ave	38 / 80 ↻ ↻ ↻ 89 / 24 ↻ ↻ ↻ 115 / 76 ↻ ↻ ↻ Elm St																		
109 / 337 24 / 122 53 / 139 ↻ ↻ ↻	132 / 70 998 / 1626 30 / 85 ↻ ↻ ↻																		
96 / 25 ↻ ↻ ↻ 1630 / 1554 ↻ ↻ ↻ 19 / 28 ↻ ↻ ↻ Campbell Ave	4 / 17 ↻ ↻ ↻ Adams St																		
77 / 188 32 / 138 ↻ ↻ ↻	156 / 82 1281 / 1623 40 / 110 ↻ ↻ ↻																		
256 / 197 ↻ ↻ ↻ 1047 / 1163 ↻ ↻ ↻ 272 / 484 ↻ ↻ ↻ Campbell Ave	183 / 168 1590 / 1327 364 / 310 ↻ ↻ ↻ Mabel St																		
194 / 347 850 / 1622 190 / 291 ↻ ↻ ↻	558 / 449 997 / 1046 129 / 251 ↻ ↻ ↻																		
71 / 187 ↻ ↻ ↻ 72 / 64 ↻ ↻ ↻ 145 / 473 ↻ ↻ ↻ Campbell Ave	350 / 74 1758 / 1643 72 / 70 ↻ ↻ ↻ Helen St																		
254 / 152 1177 / 1674 166 / 111 ↻ ↻ ↻	52 / 172 70 / 76 41 / 159 ↻ ↻ ↻																		
<p>5</p> <table border="1"> <tr> <td> 132 / 33 ↻ ↻ ↻ 1592 / 1969 ↻ ↻ ↻ 38 / 21 ↻ ↻ ↻ Campbell Ave </td> <td> 10 / 15 ↻ ↻ ↻ 3 / 3 ↻ ↻ ↻ Speedway Blvd </td> </tr> <tr> <td> 14 / 39 3 / 1 80 / 125 ↻ ↻ ↻ </td> <td> 210 / 90 1198 / 1643 76 / 36 ↻ ↻ ↻ </td> </tr> </table>	132 / 33 ↻ ↻ ↻ 1592 / 1969 ↻ ↻ ↻ 38 / 21 ↻ ↻ ↻ Campbell Ave	10 / 15 ↻ ↻ ↻ 3 / 3 ↻ ↻ ↻ Speedway Blvd	14 / 39 3 / 1 80 / 125 ↻ ↻ ↻	210 / 90 1198 / 1643 76 / 36 ↻ ↻ ↻	<p>6</p> <table border="1"> <tr> <td> 214 / 135 ↻ ↻ ↻ 1348 / 1500 ↻ ↻ ↻ Warren Ave </td> <td> 11 / 25 ↻ ↻ ↻ Speedway Blvd </td> </tr> <tr> <td> 104 / 295 ↻ ↻ ↻ </td> <td> 1424 / 1632 29 / 17 ↻ ↻ ↻ </td> </tr> </table>	214 / 135 ↻ ↻ ↻ 1348 / 1500 ↻ ↻ ↻ Warren Ave	11 / 25 ↻ ↻ ↻ Speedway Blvd	104 / 295 ↻ ↻ ↻	1424 / 1632 29 / 17 ↻ ↻ ↻	<p>7</p> <table border="1"> <tr> <td> 59 / 126 ↻ ↻ ↻ Cherry Ave </td> <td> 288 / 262 2094 / 1699 ↻ ↻ ↻ Speedway Blvd </td> </tr> <tr> <td> 1372 / 2397 ↻ ↻ ↻ </td> <td> 62 / 93 40 / 162 133 / 126 ↻ ↻ ↻ </td> </tr> </table>	59 / 126 ↻ ↻ ↻ Cherry Ave	288 / 262 2094 / 1699 ↻ ↻ ↻ Speedway Blvd	1372 / 2397 ↻ ↻ ↻	62 / 93 40 / 162 133 / 126 ↻ ↻ ↻	<p>8</p> <table border="1"> <tr> <td> 47 / 56 ↻ ↻ ↻ 33 / 31 ↻ ↻ ↻ 10 / 12 ↻ ↻ ↻ Martin Ave </td> <td> 6 / 5 108 / 37 102 / 97 ↻ ↻ ↻ Helen St </td> </tr> <tr> <td> 80 / 173 79 / 171 67 / 144 ↻ ↻ ↻ </td> <td> 80 / 173 79 / 171 67 / 144 ↻ ↻ ↻ </td> </tr> </table>	47 / 56 ↻ ↻ ↻ 33 / 31 ↻ ↻ ↻ 10 / 12 ↻ ↻ ↻ Martin Ave	6 / 5 108 / 37 102 / 97 ↻ ↻ ↻ Helen St	80 / 173 79 / 171 67 / 144 ↻ ↻ ↻	80 / 173 79 / 171 67 / 144 ↻ ↻ ↻
132 / 33 ↻ ↻ ↻ 1592 / 1969 ↻ ↻ ↻ 38 / 21 ↻ ↻ ↻ Campbell Ave	10 / 15 ↻ ↻ ↻ 3 / 3 ↻ ↻ ↻ Speedway Blvd																		
14 / 39 3 / 1 80 / 125 ↻ ↻ ↻	210 / 90 1198 / 1643 76 / 36 ↻ ↻ ↻																		
214 / 135 ↻ ↻ ↻ 1348 / 1500 ↻ ↻ ↻ Warren Ave	11 / 25 ↻ ↻ ↻ Speedway Blvd																		
104 / 295 ↻ ↻ ↻	1424 / 1632 29 / 17 ↻ ↻ ↻																		
59 / 126 ↻ ↻ ↻ Cherry Ave	288 / 262 2094 / 1699 ↻ ↻ ↻ Speedway Blvd																		
1372 / 2397 ↻ ↻ ↻	62 / 93 40 / 162 133 / 126 ↻ ↻ ↻																		
47 / 56 ↻ ↻ ↻ 33 / 31 ↻ ↻ ↻ 10 / 12 ↻ ↻ ↻ Martin Ave	6 / 5 108 / 37 102 / 97 ↻ ↻ ↻ Helen St																		
80 / 173 79 / 171 67 / 144 ↻ ↻ ↻	80 / 173 79 / 171 67 / 144 ↻ ↻ ↻																		
<p>9</p> <table border="1"> <tr> <td> 146 / 208 ↻ ↻ ↻ Cherry Ave </td> <td> 232 / 150 ↻ ↻ ↻ Helen St </td> </tr> <tr> <td> 3 / 12 23 / 109 ↻ ↻ ↻ </td> <td> 87 / 12 199 / 130 206 / 113 ↻ ↻ ↻ </td> </tr> </table>	146 / 208 ↻ ↻ ↻ Cherry Ave	232 / 150 ↻ ↻ ↻ Helen St	3 / 12 23 / 109 ↻ ↻ ↻	87 / 12 199 / 130 206 / 113 ↻ ↻ ↻	<p>10</p> <table border="1"> <tr> <td> 11 / 12 ↻ ↻ ↻ 20 / 16 ↻ ↻ ↻ 13 / 48 ↻ ↻ ↻ Ring Rd </td> <td> 50 / 26 76 / 39 157 / 44 ↻ ↻ ↻ Adams St </td> </tr> <tr> <td> 18 / 26 41 / 46 26 / 8 ↻ ↻ ↻ </td> <td> 3 / 19 43 / 133 45 / 93 ↻ ↻ ↻ </td> </tr> </table>	11 / 12 ↻ ↻ ↻ 20 / 16 ↻ ↻ ↻ 13 / 48 ↻ ↻ ↻ Ring Rd	50 / 26 76 / 39 157 / 44 ↻ ↻ ↻ Adams St	18 / 26 41 / 46 26 / 8 ↻ ↻ ↻	3 / 19 43 / 133 45 / 93 ↻ ↻ ↻	<p>11</p> <table border="1"> <tr> <td> 349 / 67 70 / 36 ↻ ↻ ↻ Elm St </td> <td> 252 / 95 ↻ ↻ ↻ Ring Rd </td> </tr> <tr> <td> 174 / 400 28 / 35 ↻ ↻ ↻ </td> <td> 48 / 145 ↻ ↻ ↻ </td> </tr> </table>	349 / 67 70 / 36 ↻ ↻ ↻ Elm St	252 / 95 ↻ ↻ ↻ Ring Rd	174 / 400 28 / 35 ↻ ↻ ↻	48 / 145 ↻ ↻ ↻	<p>12</p> <table border="1"> <tr> <td> 48 / 145 ↻ ↻ ↻ </td> <td> 252 / 95 ↻ ↻ ↻ Ring Rd </td> </tr> </table>	48 / 145 ↻ ↻ ↻	252 / 95 ↻ ↻ ↻ Ring Rd		
146 / 208 ↻ ↻ ↻ Cherry Ave	232 / 150 ↻ ↻ ↻ Helen St																		
3 / 12 23 / 109 ↻ ↻ ↻	87 / 12 199 / 130 206 / 113 ↻ ↻ ↻																		
11 / 12 ↻ ↻ ↻ 20 / 16 ↻ ↻ ↻ 13 / 48 ↻ ↻ ↻ Ring Rd	50 / 26 76 / 39 157 / 44 ↻ ↻ ↻ Adams St																		
18 / 26 41 / 46 26 / 8 ↻ ↻ ↻	3 / 19 43 / 133 45 / 93 ↻ ↻ ↻																		
349 / 67 70 / 36 ↻ ↻ ↻ Elm St	252 / 95 ↻ ↻ ↻ Ring Rd																		
174 / 400 28 / 35 ↻ ↻ ↻	48 / 145 ↻ ↻ ↻																		
48 / 145 ↻ ↻ ↻	252 / 95 ↻ ↻ ↻ Ring Rd																		
<p>13</p> <table border="1"> <tr> <td> 146 / 208 ↻ ↻ ↻ Cherry Ave </td> <td> 33 / 20 44 / 13 131 / 309 ↻ ↻ ↻ Helen St </td> </tr> <tr> <td> 3 / 12 23 / 109 ↻ ↻ ↻ </td> <td> 87 / 12 199 / 130 206 / 113 ↻ ↻ ↻ </td> </tr> </table>	146 / 208 ↻ ↻ ↻ Cherry Ave	33 / 20 44 / 13 131 / 309 ↻ ↻ ↻ Helen St	3 / 12 23 / 109 ↻ ↻ ↻	87 / 12 199 / 130 206 / 113 ↻ ↻ ↻															
146 / 208 ↻ ↻ ↻ Cherry Ave	33 / 20 44 / 13 131 / 309 ↻ ↻ ↻ Helen St																		
3 / 12 23 / 109 ↻ ↻ ↻	87 / 12 199 / 130 206 / 113 ↻ ↻ ↻																		



NOT TO SCALE

Legend
 X / Y = AM / PM PEAK HOUR
 TURNING VOLUMES

Figure 13. 2019 Phase 1 Banner Health Traffic Volumes

<p>1</p> <p>26 / 16 ↔</p> <p>Campbell Ave</p> <p>↑ 3 / 2 Elm St</p> <p>14 / 26 2 / 3 21 / 39 ↔</p> <p>38 / 23 ↔</p>	<p>2</p> <p>20 / 38 ↔</p> <p>Campbell Ave</p> <p>38 / 23 ↔</p>	<p>3</p> <p>12 / 24 ↔ 10 / 19 ↔</p> <p>Campbell Ave</p> <p>↑ 18 / 11 8 / 5 Mabel St</p> <p>4 / 9 3 / 6 ↔</p> <p>9 / 6 20 / 12 ↔</p>	<p>4</p> <p>14 / 28 ↔ 7 / 15 ↔</p> <p>Campbell Ave</p> <p>↔ 18 / 11 Helen St</p> <p>28 / 17 ↔</p>
<p>5</p> <p>21 / 39 ↔</p> <p>Campbell Ave</p> <p>Speedway Blvd</p> <p>38 / 23 ↔</p>	<p>6</p> <p>20 / 38 ↔</p> <p>Warren Ave</p> <p>Speedway Blvd</p> <p>2 / 4 ↔</p> <p>38 / 23 ↔</p>	<p>7</p> <p>17 / 10 ↔</p> <p>Speedway Blvd</p> <p>7 / 14 ↔</p>	<p>8</p> <p>Helen St</p> <p>2 / 4 ↔</p>
<p>9</p> <p>23 / 46 ↔</p> <p>Cherry Ave</p> <p>45 / 27 ↔</p>	<p>10</p>	<p>11</p> <p>Ring Rd</p> <p>↑ 69 / 42 Elm St</p> <p>36 / 71 ↔</p>	<p>12</p> <p>↔ 9 / 6 62 / 37 Ring Rd</p> <p>5 / 8 19 / 12 ↔</p> <p>10 / 19 ↔ 32 / 63 ↔</p>
<p>13</p> <p>22 / 43 ↔ 2 / 4 ↔</p> <p>Cherry Ave</p> <p>Helen St</p> <p>45 / 27 ↔</p>			



Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES

Figure 14. 2019 Phase 1 Total Traffic Volumes

<p>1</p> <table border="1"> <tr> <td> 221 / 51 1430 / 1171 69 / 60 </td> <td> Campbell Ave ↖ ↗ ↘ ↙ </td> <td> 38 / 80 92 / 26 115 / 76 </td> <td> Elm St ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 122 / 363 26 / 125 74 / 178 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 170 / 93 998 / 1626 30 / 85 </td> <td> ↖ ↗ ↘ ↙ </td> </tr> </table>	221 / 51 1430 / 1171 69 / 60	Campbell Ave ↖ ↗ ↘ ↙	38 / 80 92 / 26 115 / 76	Elm St ↖ ↗ ↘ ↙	122 / 363 26 / 125 74 / 178	↖ ↗ ↘ ↙	170 / 93 998 / 1626 30 / 85	↖ ↗ ↘ ↙	<p>2</p> <table border="1"> <tr> <td> 96 / 25 1651 / 1592 19 / 28 </td> <td> Campbell Ave ↖ ↗ ↘ ↙ </td> <td> 4 / 17 </td> <td> Adams St ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 77 / 188 32 / 139 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 156 / 82 1318 / 1646 40 / 10 </td> <td> ↖ ↗ ↘ ↙ </td> </tr> </table>	96 / 25 1651 / 1592 19 / 28	Campbell Ave ↖ ↗ ↘ ↙	4 / 17	Adams St ↖ ↗ ↘ ↙	77 / 188 32 / 139	↖ ↗ ↘ ↙	156 / 82 1318 / 1646 40 / 10	↖ ↗ ↘ ↙	<p>3</p> <table border="1"> <tr> <td> 256 / 195 1059 / 1186 282 / 503 </td> <td> Campbell Ave ↖ ↗ ↘ ↙ </td> <td> 201 / 180 1599 / 1332 364 / 310 </td> <td> Mabel St ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 193 / 347 854 / 1630 193 / 297 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 568 / 454 1017 / 1059 129 / 251 </td> <td> ↖ ↗ ↘ ↙ </td> </tr> </table>	256 / 195 1059 / 1186 282 / 503	Campbell Ave ↖ ↗ ↘ ↙	201 / 180 1599 / 1332 364 / 310	Mabel St ↖ ↗ ↘ ↙	193 / 347 854 / 1630 193 / 297	↖ ↗ ↘ ↙	568 / 454 1017 / 1059 129 / 251	↖ ↗ ↘ ↙	<p>4</p> <table border="1"> <tr> <td> 86 / 215 72 / 64 153 / 486 </td> <td> Campbell Ave ↖ ↗ ↘ ↙ </td> <td> 368 / 84 1758 / 1641 72 / 70 </td> <td> Helen St ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 281 / 168 1176 / 1674 166 / 111 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 52 / 172 70 / 76 41 / 159 </td> <td> ↖ ↗ ↘ ↙ </td> </tr> </table>	86 / 215 72 / 64 153 / 486	Campbell Ave ↖ ↗ ↘ ↙	368 / 84 1758 / 1641 72 / 70	Helen St ↖ ↗ ↘ ↙	281 / 168 1176 / 1674 166 / 111	↖ ↗ ↘ ↙	52 / 172 70 / 76 41 / 159	↖ ↗ ↘ ↙
221 / 51 1430 / 1171 69 / 60	Campbell Ave ↖ ↗ ↘ ↙	38 / 80 92 / 26 115 / 76	Elm St ↖ ↗ ↘ ↙																																
122 / 363 26 / 125 74 / 178	↖ ↗ ↘ ↙	170 / 93 998 / 1626 30 / 85	↖ ↗ ↘ ↙																																
96 / 25 1651 / 1592 19 / 28	Campbell Ave ↖ ↗ ↘ ↙	4 / 17	Adams St ↖ ↗ ↘ ↙																																
77 / 188 32 / 139	↖ ↗ ↘ ↙	156 / 82 1318 / 1646 40 / 10	↖ ↗ ↘ ↙																																
256 / 195 1059 / 1186 282 / 503	Campbell Ave ↖ ↗ ↘ ↙	201 / 180 1599 / 1332 364 / 310	Mabel St ↖ ↗ ↘ ↙																																
193 / 347 854 / 1630 193 / 297	↖ ↗ ↘ ↙	568 / 454 1017 / 1059 129 / 251	↖ ↗ ↘ ↙																																
86 / 215 72 / 64 153 / 486	Campbell Ave ↖ ↗ ↘ ↙	368 / 84 1758 / 1641 72 / 70	Helen St ↖ ↗ ↘ ↙																																
281 / 168 1176 / 1674 166 / 111	↖ ↗ ↘ ↙	52 / 172 70 / 76 41 / 159	↖ ↗ ↘ ↙																																
<p>5</p> <table border="1"> <tr> <td> 132 / 33 1613 / 1407 36 / 21 </td> <td> Campbell Ave ↖ ↗ ↘ ↙ </td> <td> 10 / 15 3 / 3 </td> <td> Speedway Blvd ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 14 / 39 3 / 1 80 / 124 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 209 / 90 1237 / 1686 76 / 36 </td> <td> ↖ ↗ ↘ ↙ </td> </tr> </table>	132 / 33 1613 / 1407 36 / 21	Campbell Ave ↖ ↗ ↘ ↙	10 / 15 3 / 3	Speedway Blvd ↖ ↗ ↘ ↙	14 / 39 3 / 1 80 / 124	↖ ↗ ↘ ↙	209 / 90 1237 / 1686 76 / 36	↖ ↗ ↘ ↙	<p>6</p> <table border="1"> <tr> <td> 214 / 134 1368 / 1537 </td> <td> Warren Ave ↖ ↗ ↘ ↙ </td> <td> 11 / 25 </td> <td> Speedway Blvd ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 106 / 298 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 1462 / 1655 29 / 17 </td> <td> ↖ ↗ ↘ ↙ </td> </tr> </table>	214 / 134 1368 / 1537	Warren Ave ↖ ↗ ↘ ↙	11 / 25	Speedway Blvd ↖ ↗ ↘ ↙	106 / 298	↖ ↗ ↘ ↙	1462 / 1655 29 / 17	↖ ↗ ↘ ↙	<p>7</p> <table border="1"> <tr> <td> 59 / 126 </td> <td> Cherry Ave ↖ ↗ ↘ ↙ </td> <td> 288 / 262 2112 / 1707 </td> <td> Speedway Blvd ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 1379 / 2410 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 418 / 109 68 / 35 </td> <td> Elm St ↖ ↗ ↘ ↙ </td> </tr> </table>	59 / 126	Cherry Ave ↖ ↗ ↘ ↙	288 / 262 2112 / 1707	Speedway Blvd ↖ ↗ ↘ ↙	1379 / 2410	↖ ↗ ↘ ↙	418 / 109 68 / 35	Elm St ↖ ↗ ↘ ↙	<p>8</p> <table border="1"> <tr> <td> 47 / 56 33 / 31 10 / 12 </td> <td> Martin Ave ↖ ↗ ↘ ↙ </td> <td> 6 / 5 108 / 37 102 / 97 </td> <td> Helen St ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 62 / 93 42 / 165 133 / 126 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 80 / 173 79 / 171 67 / 144 </td> <td> ↖ ↗ ↘ ↙ </td> </tr> </table>	47 / 56 33 / 31 10 / 12	Martin Ave ↖ ↗ ↘ ↙	6 / 5 108 / 37 102 / 97	Helen St ↖ ↗ ↘ ↙	62 / 93 42 / 165 133 / 126	↖ ↗ ↘ ↙	80 / 173 79 / 171 67 / 144	↖ ↗ ↘ ↙
132 / 33 1613 / 1407 36 / 21	Campbell Ave ↖ ↗ ↘ ↙	10 / 15 3 / 3	Speedway Blvd ↖ ↗ ↘ ↙																																
14 / 39 3 / 1 80 / 124	↖ ↗ ↘ ↙	209 / 90 1237 / 1686 76 / 36	↖ ↗ ↘ ↙																																
214 / 134 1368 / 1537	Warren Ave ↖ ↗ ↘ ↙	11 / 25	Speedway Blvd ↖ ↗ ↘ ↙																																
106 / 298	↖ ↗ ↘ ↙	1462 / 1655 29 / 17	↖ ↗ ↘ ↙																																
59 / 126	Cherry Ave ↖ ↗ ↘ ↙	288 / 262 2112 / 1707	Speedway Blvd ↖ ↗ ↘ ↙																																
1379 / 2410	↖ ↗ ↘ ↙	418 / 109 68 / 35	Elm St ↖ ↗ ↘ ↙																																
47 / 56 33 / 31 10 / 12	Martin Ave ↖ ↗ ↘ ↙	6 / 5 108 / 37 102 / 97	Helen St ↖ ↗ ↘ ↙																																
62 / 93 42 / 165 133 / 126	↖ ↗ ↘ ↙	80 / 173 79 / 171 67 / 144	↖ ↗ ↘ ↙																																
<p>9</p> <table border="1"> <tr> <td> 169 / 254 </td> <td> Cherry Ave ↖ ↗ ↘ ↙ </td> <td> 277 / 177 </td> <td> Helen St ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 18 / 26 41 / 46 26 / 8 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 3 / 19 43 / 133 45 / 93 </td> <td> Adams St ↖ ↗ ↘ ↙ </td> </tr> </table>	169 / 254	Cherry Ave ↖ ↗ ↘ ↙	277 / 177	Helen St ↖ ↗ ↘ ↙	18 / 26 41 / 46 26 / 8	↖ ↗ ↘ ↙	3 / 19 43 / 133 45 / 93	Adams St ↖ ↗ ↘ ↙	<p>10</p> <table border="1"> <tr> <td> 11 / 12 20 / 16 13 / 47 </td> <td> Ring Rd ↖ ↗ ↘ ↙ </td> <td> 49 / 26 76 / 39 157 / 44 </td> <td> Adams St ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 210 / 471 28 / 35 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 40 / 29 59 / 177 </td> <td> Elm St ↖ ↗ ↘ ↙ </td> </tr> </table>	11 / 12 20 / 16 13 / 47	Ring Rd ↖ ↗ ↘ ↙	49 / 26 76 / 39 157 / 44	Adams St ↖ ↗ ↘ ↙	210 / 471 28 / 35	↖ ↗ ↘ ↙	40 / 29 59 / 177	Elm St ↖ ↗ ↘ ↙	<p>11</p> <table border="1"> <tr> <td> 418 / 109 68 / 35 </td> <td> Ring Rd ↖ ↗ ↘ ↙ </td> <td> 261 / 101 62 / 37 </td> <td> Ring Rd ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 53 / 153 19 / 12 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 10 / 19 32 / 63 </td> <td> ↖ ↗ ↘ ↙ </td> </tr> </table>	418 / 109 68 / 35	Ring Rd ↖ ↗ ↘ ↙	261 / 101 62 / 37	Ring Rd ↖ ↗ ↘ ↙	53 / 153 19 / 12	↖ ↗ ↘ ↙	10 / 19 32 / 63	↖ ↗ ↘ ↙	<p>12</p> <table border="1"> <tr> <td> 261 / 101 62 / 37 </td> <td> Ring Rd ↖ ↗ ↘ ↙ </td> <td> 10 / 19 32 / 63 </td> <td> ↖ ↗ ↘ ↙ </td> </tr> </table>	261 / 101 62 / 37	Ring Rd ↖ ↗ ↘ ↙	10 / 19 32 / 63	↖ ↗ ↘ ↙				
169 / 254	Cherry Ave ↖ ↗ ↘ ↙	277 / 177	Helen St ↖ ↗ ↘ ↙																																
18 / 26 41 / 46 26 / 8	↖ ↗ ↘ ↙	3 / 19 43 / 133 45 / 93	Adams St ↖ ↗ ↘ ↙																																
11 / 12 20 / 16 13 / 47	Ring Rd ↖ ↗ ↘ ↙	49 / 26 76 / 39 157 / 44	Adams St ↖ ↗ ↘ ↙																																
210 / 471 28 / 35	↖ ↗ ↘ ↙	40 / 29 59 / 177	Elm St ↖ ↗ ↘ ↙																																
418 / 109 68 / 35	Ring Rd ↖ ↗ ↘ ↙	261 / 101 62 / 37	Ring Rd ↖ ↗ ↘ ↙																																
53 / 153 19 / 12	↖ ↗ ↘ ↙	10 / 19 32 / 63	↖ ↗ ↘ ↙																																
261 / 101 62 / 37	Ring Rd ↖ ↗ ↘ ↙	10 / 19 32 / 63	↖ ↗ ↘ ↙																																
<p>13</p> <table border="1"> <tr> <td> 146 / 208 22 / 43 2 / 4 </td> <td> Cherry Ave ↖ ↗ ↘ ↙ </td> <td> 33 / 20 44 / 13 131 / 308 </td> <td> Helen St ↖ ↗ ↘ ↙ </td> </tr> <tr> <td> 3 / 12 23 / 108 </td> <td> ↖ ↗ ↘ ↙ </td> <td> 87 / 11 244 / 157 206 / 113 </td> <td> ↖ ↗ ↘ ↙ </td> </tr> </table>	146 / 208 22 / 43 2 / 4	Cherry Ave ↖ ↗ ↘ ↙	33 / 20 44 / 13 131 / 308	Helen St ↖ ↗ ↘ ↙	3 / 12 23 / 108	↖ ↗ ↘ ↙	87 / 11 244 / 157 206 / 113	↖ ↗ ↘ ↙																											
146 / 208 22 / 43 2 / 4	Cherry Ave ↖ ↗ ↘ ↙	33 / 20 44 / 13 131 / 308	Helen St ↖ ↗ ↘ ↙																																
3 / 12 23 / 108	↖ ↗ ↘ ↙	87 / 11 244 / 157 206 / 113	↖ ↗ ↘ ↙																																



NOT TO SCALE

Legend
 X / Y = AM / PM PEAK HOUR
 TURNING VOLUMES

Figure 15. 2035 Phase 2 Background Traffic Volumes

<p>1</p> <p>195 / 85 1252 / 1382 69 / 69</p> <p>Campbell Ave</p> <p>88 / 80 88 / 24 92 / 79</p> <p>Elm St</p> <p>107 / 347 24 / 123 53 / 139</p> <p>132 / 70 925 / 1724 21 / 98</p>	<p>2</p> <p>80 / 30 1445 / 1577 19 / 28</p> <p>Campbell Ave</p> <p>4 / 17</p> <p>Adams St</p> <p>3 / 248 18 / 152</p> <p>126 / 85 1272 / 1674 40 / 10</p>	<p>3</p> <p>208 / 207 974 / 1220 258 / 497</p> <p>Campbell Ave</p> <p>168 / 170 1419 / 1350 364 / 310</p> <p>Mabel St</p> <p>185 / 398 786 / 1721 179 / 355</p> <p>373 / 475 981 / 1048 128 / 251</p>	<p>4</p> <p>34 / 230 72 / 64 62 / 685</p> <p>Campbell Ave</p> <p>244 / 93 1649 / 1683 72 / 70</p> <p>Helen St</p> <p>68 / 177 1177 / 1674 166 / 111</p> <p>52 / 172 70 / 76 41 / 159</p>
<p>5</p> <p>132 / 33 1391 / 1396 38 / 21</p> <p>Campbell Ave</p> <p>10 / 15 3 / 3</p> <p>Speedway Blvd</p> <p>14 / 39 3 / 1 80 / 125</p> <p>210 / 90 1116 / 1753 76 / 36</p>	<p>6</p> <p>77 / 147 1286 / 1522</p> <p>Warren Ave</p> <p>11 / 25</p> <p>Speedway Blvd</p> <p>31 / 352</p> <p>1885 / 1686 29 / 17</p>	<p>7</p> <p>26 / 150</p> <p>Cherry Ave</p> <p>66 / 285 1912 / 1735</p> <p>Speedway Blvd</p> <p>1289 / 2609</p>	<p>8</p> <p>34 / 61 0 / 35 10 / 12</p> <p>Martin Ave</p> <p>6 / 5 73 / 40 0 / 106</p> <p>Helen St</p> <p>52 / 142 34 / 190 0 / 139</p> <p>0 / 208 0 / 205 0 / 173</p>
<p>9</p> <p>146 / 208</p> <p>Cherry Ave</p> <p>232 / 150</p>	<p>10</p> <p>11 / 12 20 / 16 13 / 48</p> <p>Ring Rd</p> <p>50 / 26 76 / 39 157 / 44</p> <p>Adams St</p> <p>18 / 26 41 / 46 26 / 8</p> <p>3 / 19 41 / 144 45 / 93</p>	<p>11</p> <p>Ring Rd</p> <p>349 / 67 70 / 36</p> <p>Elm St</p> <p>174 / 400 28 / 35</p> <p>40 / 29 58 / 190</p>	<p>12</p> <p>252 / 95</p> <p>Ring Rd</p> <p>48 / 145</p>
<p>13</p> <p>146 / 208</p> <p>Cherry Ave</p> <p>33 / 20 40 / 14 34 / 419</p> <p>Helen St</p> <p>0 / 28 0 / 254</p> <p>0 / 31 198 / 180 0 / 139</p>			



NOT TO SCALE

Legend

X / Y = AM / PM PEAK HOUR
TURNING VOLUMES

Figure 16. 2035 Phase 2 Banner Health Traffic Volumes

<p>1</p> <p>63 / 41 ↔ Campbell Ave</p> <p>↑ 8 / 5 Elm St</p> <p>32 / 68 4 / 9 50 / 111 ↔</p> <p>101 / 65 ↔</p>	<p>2</p> <p>50 / 113 ↔ Campbell Ave</p> <p>103 / 66 ↔</p>	<p>3</p> <p>1 / 3 ↔ 30 / 65 ↔ 24 / 53 ↔ Campbell Ave</p> <p>↑ 48 / 31 17 / 11 Mabel St</p> <p>2 / 1 9 / 18 6 / 12 ↔</p> <p>19 / 12 52 / 34 ↔</p>	<p>4</p> <p>32 / 69 ↔ 15 / 30 ↔ Campbell Ave</p> <p>↑ 36 / 24 1 / 3 Helen St</p> <p>64 / 42 2 / 1 ↔</p>
<p>5</p> <p>50 / 111 ↔ Campbell Ave</p> <p>1 / 3 ↔</p> <p>2 / 1 101 / 65 ↔</p>	<p>6</p> <p>50 / 113 ↔ Warren Ave</p> <p>4 / 7 ↔</p> <p>103 / 66 ↔</p>	<p>7</p> <p>↑ 36 / 27 Speedway Blvd</p> <p>17 / 31 ↔</p>	<p>8</p> <p>4 / 7 ↔</p> <p>Helen St</p>
<p>9</p> <p>51 / 107 ↔ Cherry Ave</p> <p>99 / 66 ↔</p>	<p>10</p> <p>1 / 3 ↔ Ring Rd</p> <p>2 / 1 ↔ Adams St</p>	<p>11</p> <p>Ring Rd</p> <p>↑ 167 / 109 5 / 2 Elm St</p> <p>84 / 181 ↔</p> <p>1 / 7 ↔</p>	<p>12</p> <p>↑ 19 / 13 143 / 94 Ring Rd</p> <p>10 / 20 46 / 31 ↔</p> <p>34 / 51 73 / 154 ↔</p>
<p>13</p> <p>48 / 99 4 / 7 ↔ Cherry Ave</p> <p>↑ Helen St</p> <p>99 / 66 ↔</p>			



Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES

Figure 17. 2035 Phase 2 Total Traffic Volumes

<p>1</p> <p>258 / 76 1542 / 1362 69 / 69</p> <p>Campbell Ave</p> <p>38 / 80 97 / 29 130 / 79</p> <p>Elm St</p> <p>142 / 415 29 / 132 103 / 250</p> <p>233 / 136 1020 / 1724 33 / 98</p>	<p>2</p> <p>122 / 30 1781 / 1680 19 / 28</p> <p>Campbell Ave</p> <p>4 / 17</p> <p>Adams St</p> <p>90 / 248 35 / 152</p> <p>169 / 85 1395 / 1740 40 / 10</p>	<p>3</p> <p>319 / 209 1089 / 1285 298 / 550</p> <p>Campbell Ave</p> <p>237 / 201 1718 / 1362 364 / 310</p> <p>Mabel St</p> <p>207 / 399 881 / 1739 211 / 367</p> <p>697 / 487 1056 / 1082 129 / 251</p>	<p>4</p> <p>113 / 298 72 / 64 209 / 716</p> <p>Campbell Ave</p> <p>507 / 117 1870 / 1686 72 / 70</p> <p>Helen St</p> <p>434 / 218 1179 / 1675 166 / 111</p> <p>52 / 172 70 / 76 41 / 159</p>
<p>5</p> <p>132 / 33 1768 / 1506 38 / 21</p> <p>Campbell Ave</p> <p>10 / 15 3 / 3</p> <p>Speedway Blvd</p> <p>14 / 39 3 / 1 81 / 128</p> <p>212 / 91 1324 / 1819 76 / 36</p>	<p>6</p> <p>252 / 147 1463 / 1635</p> <p>Warren Ave</p> <p>11 / 25</p> <p>Speedway Blvd</p> <p>120 / 360</p> <p>1551 / 1752 29 / 17</p>	<p>7</p> <p>64 / 150</p> <p>Cherry Ave</p> <p>354 / 285 2358 / 1761</p> <p>Speedway Blvd</p> <p>1438 / 2641</p>	<p>8</p> <p>78 / 61 40 / 35 10 / 12</p> <p>Martin Ave</p> <p>6 / 5 125 / 40 123 / 106</p> <p>Helen St</p> <p>73 / 142 50 / 197 161 / 139</p> <p>88 / 208 87 / 205 73 / 173</p>
<p>9</p> <p>197 / 315</p> <p>Cherry Ave</p> <p>331 / 216</p>	<p>10</p> <p>11 / 12 20 / 16 14 / 51</p> <p>Ring Rd</p> <p>52 / 27 76 / 39 157 / 44</p> <p>Adams St</p> <p>18 / 26 41 / 46 26 / 8</p> <p>3 / 19 45 / 144 45 / 93</p>	<p>11</p> <p>Ring Rd</p> <p>516 / 176 70 / 2</p> <p>Elm St</p> <p>258 / 581 28 / 35</p> <p>40 / 29 63 / 197</p>	<p>12</p> <p>271 / 108 143 / 94</p> <p>Ring Rd</p> <p>58 / 165 46 / 31</p> <p>34 / 51 73 / 154</p>
<p>13</p> <p>146 / 208 48 / 99 4 / 7</p> <p>Cherry Ave</p> <p>33 / 20 50 / 14 156 / 419</p> <p>Helen St</p> <p>6 / 28 56 / 255</p> <p>207 / 31 298 / 196 323 / 199</p>			



Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES

Appendix C – Intersection Level of Service

Table 12. Existing (2012) Level of Service

Local Intersection	EB				WB				NB				SB				Intersection LOS	Intersection Delay (s)	Traffic Control
	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)			
Elm Street / Campbell Avenue																			
AM Peak Hour	D	B		33.8	D	D		39.7	C	B		16.4	B	C		24.0	C	23.0	Signalized
PM Peak Hour	D	C		30.6	C	A		13.9	C	D		35.6	D	C		32.2	C	32.6	
Adams Street / Campbell Avenue*																			
AM Peak Hour		F		447.9		F		116.8	B	A		2.2	B	A		0.3	F	447.9	Unsignalized
PM Peak Hour		F		194.1		E		46.5	B	A		0.6	B	A		0.2	F	194.1	
Mabel Street / Campbell Avenue*																			
AM Peak Hour		E		42.9		A		9.0	C	A		1.7	B	A		0.1	E	42.9	Unsignalized
PM Peak Hour		F		50.5		A		9.2	C	A		0.6	B	A		0.2	F	50.5	
Helen Street / Campbell Avenue*																			
AM Peak Hour	-	-	B	12.6	-	-	A	9.2	A	A		0.0	A	A		0.0	B	12.6	Unsignalized
PM Peak Hour	-	-	C	15.3	-	-	A	9.3	A	A		0.0	A	A		0.0	C	15.3	
Speedway Boulevard / Campbell Avenue																			
AM Peak Hour	C	C	A	24.3	E	D	B	47.3	E	D	B	51.8	D	D	B	43.4	D	43.1	Signalized
PM Peak Hour	E	D	A	48.6	E	D	A	36.7	D	E	C	54.0	F	D	B	67.8	D	51.5	
Warren Avenue / Speedway Boulevard*																			
AM Peak Hour	-	A	-	0.0	-	A	-	0.0	-	-	-	-	-	-	A	9.8	A	9.8	Unsignalized
PM Peak Hour	-	A	-	0.0	-	A	-	0.0	-	-	-	-	-	-	A	9.6	A	9.6	
Cherry Avenue / Speedway Boulevard																			
AM Peak Hour	C	B		13.3	B	B		17.1	D	D	A	34.5	D	D	A	36.5	B	17.3	Signalized
PM Peak Hour	C	C		27.8	C	C		23.4	D	C	B	27.3	D	C	A	30.5	C	26.3	
Cherry Avenue / Helen Street*																			
AM Peak Hour		C		16.7		C		21.9		A		2.6		A		0.4	C	21.9	Unsignalized
PM Peak Hour		A		0.0		B		10.8		A		0.0		A		0.0	B	10.8	
Martin Avenue / Helen Street*																			
AM Peak Hour		A		4.6		A		0.0		-		-		A		9.2	A	9.2	Unsignalized
PM Peak Hour		A		2.1		A		0.0		-		-		A		9.1	A	9.1	
Ring Road / Elm Street*																			
AM Peak Hour	-	-	-	-		B		12.8	A	A		9.1	B	A	-	10.7	B	12.8	Unsignalized
PM Peak Hour	-	-	-	-		A		9.3	A	A		9.0	C	A	-	16.9	C	16.9	

* Intersection LOS and Delay for unsignalized intersections is reported as "Worst-Movement LOS"

Table 13. 2019 Phase 1 Level of Service with Existing Intersection Configurations

Local Intersection	EB				WB				NB				SB				Intersection LOS	Intersection Delay (s)	Traffic Control
	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)			
Elm Street / Campbell Avenue																			
AM Peak Hour	D	B		34.8	D	D		42.5	D	B		17.4	B	C		26.7	C	25.1	Signalized
PM Peak Hour	D	C		37.5	C	A		16.9	D	D		36.9	D	C		33.8	D	35.1	
Adams Street / Campbell Avenue*																			
AM Peak Hour		F		N/A		F		N/A	C	A		2.3	B	A		0.3	F	N/A	Unsignalized
PM Peak Hour		F		N/A		F		N/A	B	A		0.6	C	A		0.2	C	24.8	
Mabel Street / Campbell Avenue*																			
AM Peak Hour		F		N/A		A		9.0	D	A		3.1	B	A		0.1	F	N/A	Unsignalized
PM Peak Hour		F		N/A		A		9.2	C	A		0.9	B	A		0.2	F	N/A	
Helen Street / Campbell Avenue*																			
AM Peak Hour	-	-	C	16.2	-	-	A	9.2	-	A		0.0	-	A		0.0	C	16.2	Unsignalized
PM Peak Hour	-	-	E	36.0	-	-	A	9.3	-	A		0.0	-	A		0.0	D	36.0	
Speedway Boulevard / Campbell Avenue																			
AM Peak Hour	C	C	A	24.9	E	F	B	75.9	F	E	A	115.2	D	E	C	55.4	E	71.6	Signalized
PM Peak Hour	F	F	B	81	E	D	A	40.2	F	E	C	75.9	F	F	B	116.2	E	78.8	
Warren Avenue / Speedway Boulevard*																			
AM Peak Hour	-	A	-	0.0	-	A	-	0.0	-	-	-	-	-	-	B	10.4	B	10.4	Unsignalized
PM Peak Hour	-	A	-	0.0	-	A	-	0.0	-	-	-	-	-	-	B	10.4	B	10.4	
Cherry Avenue / Speedway Boulevard																			
AM Peak Hour	F	B		49.9	B	B		19.2	D	D	A	34.5	E	D	A	43.2	C	33.1	Signalized
PM Peak Hour	F	C		41.0	C	C		24.5	D	C	B	27.3	D	C	B	129.6	D	47.6	
Cherry Avenue / Helen Street*																			
AM Peak Hour		A		9.6		D		31.7		A		1.9		A		0.1	D	31.7	Unsignalized
PM Peak Hour		B		10.2		F		64.4		A		0.4		A		0.2	C	64.4	
Martin Avenue / Helen Street*																			
AM Peak Hour		A		4.7		A		0.0		-		-		A		9.5	A	9.5	Unsignalized
PM Peak Hour		A		3.0		A		0.0		-		-		A		9.4	A	9.4	
Ring Road / Elm Street*																			
AM Peak Hour	-	-	-	-		C		16.1	-	A		9.6	B	A	-	12.3	C	16.1	Unsignalized
PM Peak Hour	-	-	-	-		B		10.1	-	A		9.7	D	A	-	25.9	C	19.4	

* Intersection LOS and Delay for unsignalized intersections is reported as "Worst-Movement LOS"

Table 14. 2019 Phase 1 Level of Service with Improvements

Local Intersection	EB				WB				NB				SB				Intersection LOS	Intersection Delay (s)	Traffic Control
	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)			
Elm Street / Campbell Avenue																			
AM Peak Hour	D	D	A	31.1	D	D	D	43.6	D	B	B	23.4	B	C	A	25.3	C	26.3	Signalized
PM Peak Hour	D	D	A	39.4	D	B	B	27.1	B	C	C	33.1	C	C	A	22.3	C	30.3	
Adams Street / Campbell Avenue*																			
AM Peak Hour		F		N/A		F		N/A	C	A	A	2.3	B	A		0.3	F	N/A	Unsignalized
PM Peak Hour		F		N/A		F		108.2	B	A	A	0.6	C	A		0.2	D	27.3	
Mabel Street / Campbell Avenue*																			
AM Peak Hour	F	-	B	N/A		A		8.9	D	A	A	3.1	B	A		0.1	F	N/A	Unsignalized
PM Peak Hour	F	-	C	N/A		A		9.2	C	A	A	0.9	B	A		0.2	F	N/A	
Helen Street / Campbell Avenue*																			
AM Peak Hour	-	-	C	16.2	-	-	A	9.1	-	A	A	0.0	-	A		0.0	C	16.2	Unsignalized
PM Peak Hour	-	-	E	36.0	-	-	A	9.4	-	A	A	0.0	-	A		0.0	E	36.0	
Speedway Boulevard / Campbell Avenue																			
AM Peak Hour	D	C	A	27.3	C	D	A	37.6	F	C	A	47.8	D	D	B	36.6	D	38.0	Signalized
PM Peak Hour	E	D	A	42.9	E	C	A	37.6	F	D	B	49.4	F	D	B	54.3	D	45.9	
Warren Avenue / Speedway Boulevard*																			
AM Peak Hour	-	A	-	0.0	-	A		0.0	-	-	-	-	-	-	B	10.5	B	10.5	Unsignalized
PM Peak Hour	-	A	-	0.0	-	A		0.0	-	-	-	-	-	-	B	10.4	B	10.4	
Cherry Avenue / Speedway Boulevard																			
AM Peak Hour	D		B	19.6	B	C	A	19.9	C	D	A	26.6	E	D	A	39.0	C	21.4	Signalized
PM Peak Hour	D		C	31	C	D	A	34.5	C	D	B	23.8	D	D	B	35.2	C	32.3	
Cherry Avenue / Helen Street*																			
AM Peak Hour		A		9.3	C	B		15.4		A		1.9		A		0.1	C	15.4	Unsignalized
PM Peak Hour		B		10.0	C	B		20.6		A		0.4		A		0.2	C	20.6	
Martin Avenue / Helen Street*																			
AM Peak Hour	A	A		8.8		B		12.8	A	A		9.5		B		10.2	B	10.3	Unsignalized
PM Peak Hour	C	A		14.1		B		13.3	B	C		15.1		B		11.7	C	15.1	
Ring Road / Elm Street*																			
AM Peak Hour	-	A	A	0	B	-		1.6	B	-	A	11.1	-	-	-	-	B	11.1	Unsignalized
PM Peak Hour	-	A	A	0	A	-		2.7	B	-	B	11.5	-	-	-	-	B	11.5	

* Intersection LOS and Delay for unsignalized intersections is reported as "Worst-Movement LOS"

Table 15. 2035 Phase 2 Level of Service with Existing Intersection Configurations

Local Intersection	EB				WB				NB				SB				Intersection LOS	Intersection Delay (s)	Traffic Control
	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)	L	T	R	Approach Delay (s)			
Elm Street / Campbell Avenue																			
AM Peak Hour	E	B		35.4	D	D		45.8	D	C		27	A	C		28.6	C	29.8	Signalized
PM Peak Hour	E	C		46.5	C	A		18.7	D	D		42.4	D	D		38	D	40.6	
Adams Street / Campbell Avenue*																			
AM Peak Hour		F		N/A		F		N/A	C	A		2.5	B	A		0.3	F	N/A	Unsignalized
PM Peak Hour		F		N/A		F		N/A	B	A		0.5	C	A		0.3	F	N/A	
Mabel Street / Campbell Avenue*																			
AM Peak Hour		F		N/A		A		9.0	E	A		4.6	B	A		0.1	F	N/A	Unsignalized
PM Peak Hour		F		N/A		A		9.3	C	A		1	B	A		0.2	F	N/A	
Helen Street / Campbell Avenue*																			
AM Peak Hour	-	-	C	18.2	-	-	A	9.3	A	A		0.0	A	A		0.0	C	18.2	Unsignalized
PM Peak Hour	-	-	F	73.6	-	-	A	9.4	A	A		0.0	A	A		0.0	F	73.6	
Speedway Boulevard / Campbell Avenue																			
AM Peak Hour	C	C	A	25.4	E	F	B	100.5	F	E	A	180.1	D	E	C	61.2	F	98.4	Signalized
PM Peak Hour	E	E	B	65.7	F	E	B	79.4	F	E	C	79.4	F	F	C	91.0	E	77.5	
Warren Avenue / Speedway Boulevard*																			
AM Peak Hour	-	A	-	0.0	-	A		0.0	-	-	-	-	-	-	B	11.0	B	11.0	Unsignalized
PM Peak Hour	-	A	-	0.0	-	A		0.0	-	-	-	-	-	-	B	11.2	B	11.2	
Cherry Avenue / Speedway Boulevard																			
AM Peak Hour	F		C	261.2	C	D		45.3	C	C	A	24.2	D	C	A	29.9	F	123.6	Signalized
PM Peak Hour	F		C	59.7	B	B		16.8	D	C	B	27.3	F	C	C	310.7	F	92.7	
Cherry Avenue / Helen Street*																			
AM Peak Hour		B		12.2		F		N/A		A		3.7		A		0.2	F	N/A	Unsignalized
PM Peak Hour		B		13.5		F		N/A		A		0.9		A		0.2	F	N/A	
Martin Avenue / Helen Street*																			
AM Peak Hour		A		4.7		A		0.0		-		-		A		9.7	A	4.7	Unsignalized
PM Peak Hour		A		3.7		A		0		-		-		A		9.7	A	4.3	
Ring Road / Elm Street*																			
AM Peak Hour	-	-	-	-		C		19.0	-	A		10.0	C	A	-	14.7	C	16.6	Unsignalized
PM Peak Hour	-	-	-	-		B		11.0	-	B		10.5	F	A	-	56.2	F	56.2	

* Intersection LOS and Delay for unsignalized intersections is reported as "Worst-Movement LOS"

Table 16. 2035 Phase 2 Level of Service with Improvements

Local Intersection	EB			WB			NB			SB			Intersection Delay (s)	Traffic Control	
	L	T	R	L	T	R	L	T	R	L	T	R			Approach Delay (s)
Elm Street / Campbell Avenue															
AM Peak Hour	D	D	A	D	D	D	D	C	C	C	D	A	38.1	C	33.5
PM Peak Hour	D	D	B	D	C	C	D	C	C	D	D	A	35.4	C	34.0
Adams Street / Campbell Avenue*															
AM Peak Hour	F	F	N/A	F	F	F	C	A	A	A	B	A	0.2	F	N/A
PM Peak Hour	F	F	N/A	F	F	F	B	A	A	A	C	A	0.3	F	N/A
Mabel Street / Campbell Avenue															
AM Peak Hour	D	-	A	-	A	A	C	A	A	A	B	A	17.7	B	15.2
PM Peak Hour	D	-	B	-	A	A	C	C	C	C	D	A	43.0	C	32.8
Helen Street / Campbell Avenue*															
AM Peak Hour	-	-	B	-	-	A	A	A	A	A	A	A	0.0	B	10.5
PM Peak Hour	-	-	B	-	-	A	A	A	A	A	A	A	0.0	B	14.3
Speedway Boulevard / Campbell Avenue															
AM Peak Hour	E	D	A	D	D	A	F	D	A	A	E	C	57.7	D	49.0
PM Peak Hour	D	D	B	F	D	A	F	D	B	B	E	C	75.1	E	55.1
Warren Avenue / Speedway Boulevard*															
AM Peak Hour	-	A	-	-	A	A	-	-	-	-	-	B	12.1	B	12.1
PM Peak Hour	-	A	-	-	A	A	-	-	-	-	-	B	11.2	B	11.2
Cherry Avenue / Speedway Boulevard															
AM Peak Hour	D	B	A	B	C	A	D	D	A	A	D	A	33.6	B	19.9
PM Peak Hour	D	C	A	C	C	A	C	D	A	A	D	C	44.1	C	29.8
Cherry Avenue / Helen Street*															
AM Peak Hour	B	B	A	D	C	A	A	A	A	A	A	A	0.2	D	25.6
PM Peak Hour	B	B	A	F	B	A	A	A	A	A	A	A	0.2	F	109.3
Martin Avenue / Helen Street*															
AM Peak Hour	B	A	A	C	C	A	B	B	B	B	B	B	11.5	C	15.2
PM Peak Hour	D	B	A	C	C	A	C	D	D	D	B	B	13.2	D	23.7
Ring Road / Elm Street*															
AM Peak Hour	-	A	A	A	A	-	A	B	-	A	-	-	-	B	10.7
PM Peak Hour	-	A	A	A	A	-	A	B	-	B	-	-	-	B	13.1

* Intersection LOS and Delay for unsignalized intersections is reported as "Worst-Movement LOS"

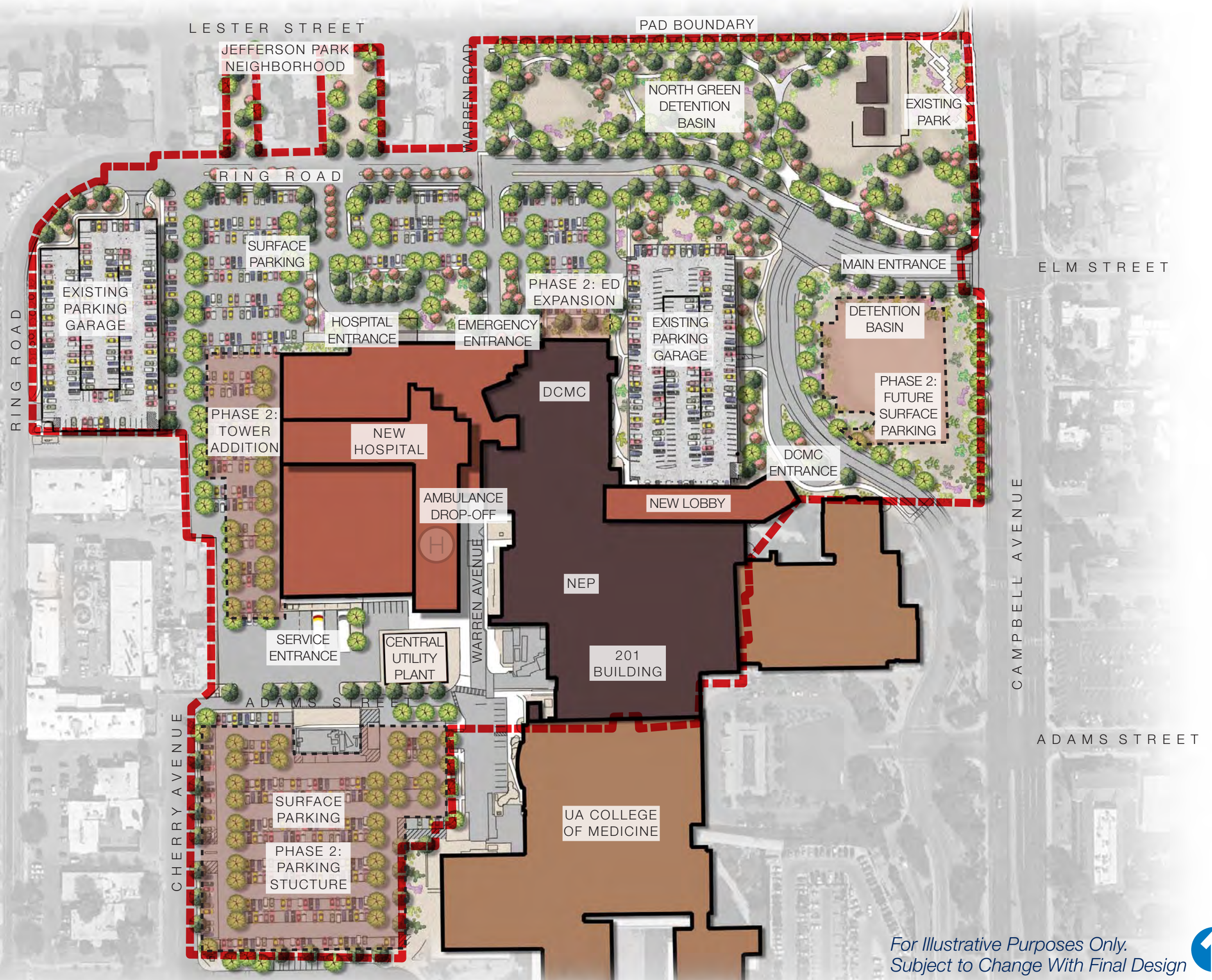
Appendix D – Synchro Files

Available upon request.



APPENDIX C

Illustrative Site Plan






APPENDIX D

Banner Health - University of Arizona
Declaration of Easements and Covenants

* E RECORDING * Page 1 of 92
SEQUENCE: 20150580870
No. Pages: 92
2/27/2015 3:20 PM
F. ANN RODRIGUEZ, RECORDER
Recorded By: JCC (e-recording)



Title Security Agency

Order # 60012559

WHEN RECORDED, return to:

The University of Arizona
Administration Building, Room 103
1401 E. University Boulevard
P.O. Box 210066
Tucson, AZ 85721-0066
Attention: General Counsel

DECLARATION OF EASEMENTS, COVENANTS AND RESTRICTIONS

THIS DECLARATION OF EASEMENTS, COVENANTS AND RESTRICTIONS (this “**Declaration**”) is made as of February 27, 2015 (the “**Effective Date**”) by **THE ARIZONA BOARD OF REGENTS**, a body corporate under the laws of the State of Arizona, for and on behalf of **THE UNIVERSITY OF ARIZONA** (“**Declarant**”). As used herein, “**University**” means The Arizona Board of Regents, a body corporate under the laws of the State of Arizona, for and on behalf of the University of Arizona, independent of and separate from, but not exclusive of, its capacity as Declarant and University Parcel Owner hereunder, and “**Banner**” means Banner Health, an Arizona nonprofit corporation, independent of and separate from, but not exclusive of, its capacity as Healthcare Parcel Owner effective upon completion of the Transaction described herein.

RECITALS

A. Declarant is the owner of fee simple title to several parcels of land in the City of Tucson, Arizona (the “**City**”) generally bounded (i) on the north, by the southern line of the portion of the northern Ring Road that is a public right-of-way, (ii) on the east, by Campbell Avenue, (iii) on the south, between Campbell Avenue on the east and the eastern line of Cherry Avenue on the west, by the northern line of Mabel Street, (iv) on the south, between the eastern line of Cherry Avenue on the east and the western line of the western Ring Road on the west, the northern line of Drachman Street, (v) on the west, between the northern line of Mabel Street on the south and the northern line of Drachman Street on the north, by the eastern line of Cherry Avenue, and (vi) on the west, between the northern line of Drachman Street on the south and the southern line of the portion of the northern Ring Road that is a public right-of-way on the north, by the western line of the western Ring Road. Said parcels are collectively referred to herein as the “**Land**”; and the Land is

5237611.8
78198302.7

comprised of the Healthcare Parcel (defined in Recital B below) and the University Parcel (defined in Recital C below).

B. A portion of the Land is comprised of several parcels of real estate constituting the main campus of The University of Arizona Medical Center located at 1501 N. Campbell Ave., Tucson, Arizona, which parcels are improved with a hospital facility and several other buildings, parking garages, surface parking lots, access roads, and other structures and improvements. Such parcels are legally described on Exhibit A attached hereto and are collectively referred to herein as the “**Healthcare Parcel**” and the improvements from time to time located thereon (but expressly excluding the University Retained Improvements (as defined herein) are referred to herein as the “**Healthcare Parcel Improvements.**”

C. The remainder of the Land not included in the Healthcare Parcel constitutes a substantial portion of the campus of The University of Arizona College of Medicine in Tucson, which parcels are improved with a medical school facility and several other buildings, parking garages, surface parking lots, access roads, and other structures and improvements. Such parcels are described in Exhibit B attached hereto and are collectively referred to herein as the “**University Parcel**” and the improvements from time to time located thereon are referred to as the “**University Parcel Improvements.**”

D. The Healthcare Parcel and the University Parcel are sometimes referred to herein individually as a “**Parcel**” and collectively as “**Parcels,**” and the Healthcare Parcel Improvements and the University Parcel Improvements are sometimes referred to herein collectively as “**Parcel Improvements.**” Attached hereto as Exhibit C is a site area plan depicting the Parcels and the Parcel Improvements existing as of the Effective Date (the “**Site Area Plan**”). The owner of the Healthcare Parcel, together with its successors and assigns, is referred to herein as “**Healthcare Parcel Owner,**” provided, however, that Healthcare Parcel Owner shall mean Banner and its successors and assigns as Tenant under the Ground Lease and Purchase Option for so long as the Ground Lease and Purchase Option Agreement (defined in Recital E below) remains in effect. The owner of the University Parcel, together with its successors and assigns, is referred to herein as “**University Parcel Owner.**” Healthcare Parcel Owner and University Parcel Owner are each referred to herein as a “**Parcel Owner**” and collectively as the “**Parcel Owners.**”

E. The University, Banner Health, an Arizona nonprofit corporation, and The University of Arizona Health Network, Inc., an Arizona nonprofit corporation are parties to a certain Agreement dated as of January 30, 2015 (the “**Definitive Agreement**”) providing for certain transactions (collectively, the “**Transaction**”) designed to facilitate the goals of the University and Banner to serve their respective missions, including the realization of the mutual benefits of their adjacent facilities and operations. Pursuant to the Transaction, Banner shall succeed to ownership of the existing Healthcare Parcel Improvements and will obtain a long-term leasehold interest in, and an option to purchase, the Healthcare Parcel, pursuant to a Ground Lease and Purchase Option Agreement (the “**Ground Lease and Purchase Option Agreement**”).

F. The Healthcare Parcel and the University Parcel are each served by certain private roads and pedestrian sidewalks and plazas located on the Land and by the northern Ring Road, a

5237611_8
78198302.7

portion of which is privately owned by the University and the remaining portion of which is a public right-of-way owned by the City that is subject to an easement in favor of the University pursuant to that certain Easement dated as of April 22, 1992 and recorded on May 29, 1992 as Sequence No. 92076344 in the public land records of Pima County, Arizona (the “**Ring Road Easement**”). In addition, the Healthcare Parcel contains underground utility tunnels containing pipes for steam, chilled water, domestic water on a stand-by basis, electrical distribution lines and related utility infrastructure that will continue to be owned by University Parcel Owner following conveyance to Banner of the leasehold interest in the Healthcare Parcel and transfer to Banner of ownership of the Healthcare Parcel Improvements. Attached hereto as Exhibit D is a utility systems schedule with utility area plan (the “**Utility Chart/Plan**”) listing and depicting the utility infrastructure items ownership of which will be retained by University Parcel Owner (“**University Retained Improvements**”) and the utility infrastructure items ownership of which will be transferred to Healthcare Parcel Owner.

G. Portions of the University Parcel include two (2) parcels on which are located water wells owned and operated by University Parcel Owner and that are surrounded by the Healthcare Parcel. One such parcel is located at the southwest corner of northern Ring Road and Warren Avenue (the “**North Well Site**”). A legal description of, and a survey depicting, the North Well Site are attached hereto as Exhibit E. The other such parcel is located adjacent to and south of Adams Street between Warren Avenue on the east and Cherry Avenue on the west (the “**South Well Site**”). A legal description of, and a survey depicting, the South Well Site are attached hereto as Exhibit F. In addition, the Healthcare Parcel contains a detention basin and other storm water drainage facilities for storm water detention and drainage from both the Healthcare Parcel and the University Parcel. The location of the detention basin on the Healthcare Parcel (the “**Detention Basin**”) is depicted on the Site Area Plan.

H. The existing Healthcare Parcel Improvements and the existing University Parcel Improvements each contain portions of a single, integrated building commonly known, and referred to herein, as the “**201 Building**,” which is depicted on the Site Area Plan. The portion of the 201 Building located on the Healthcare Parcel (referred to herein as the “**Healthcare 201 Building**”) and the portion of the 201 Building located on the University Parcel (referred to herein as the “**University 201 Building**”), as depicted on the Site Area Plan, depend upon each other to some extent for structural support, enclosure, ingress and egress and utility services.

I. With respect to the 201 Building, (i) a portion of the basement of the Healthcare 201 Building contains utility equipment, lines and other related infrastructure that is necessary for the operation and use of the University 201 Building, (ii) a portion of the 9th floor located in the Healthcare 201 Building contains utility equipment, lines and other related infrastructure that is necessary for the operation and use of the University 201 Building, (iii) a portion of the 9th floor located in the University 201 Building contains utility equipment, lines and other related infrastructure that is necessary for the operation and use of the Healthcare 201 Building, and (iv) a utility equipment building located on the roof of the University 201 Building (the “**Rooftop Utility Building**”) contains utility equipment, lines and other related infrastructure that are necessary for the operation and use of the Healthcare 201 Building.

J. The Healthcare 201 Building is also connected at the basement level and at the 1st and 2nd floors, and provides access, to the Arizona Cancer Center building (Building 222/222.01

as depicted on the Site Area Plan) located on the University Parcel (the “**ACC Building**”), and certain telecommunication and data transmission systems serving the ACC Building are connected to the 201 Building through portions of the Healthcare 201 Building. The Healthcare 201 Building and the ACC Building also may be mutually dependent on each other to some extent for structural support.

K. It is contemplated that Healthcare Parcel Owner may elect to construct a new healthcare services facility (the “**New Healthcare Building**”) in the area generally bounded on the north by the northern Ring Road, on the south by Adams Street, on the west by Cherry Avenue as extended north to the northern Ring Road, and on the east generally by Warren Avenue but also in part extending east of Warren Avenue; provided that the foregoing description is intended only as a general description of the possible location of the New Healthcare Building and is not intended to determine or limit such location. Following construction of the New Healthcare Building, it is contemplated that Healthcare Parcel Owner may elect to demolish the southern portion of the Healthcare 201 Building above the second (2nd) floor level, as depicted on the Site Area Plan (said demolition is referred to herein as the “**Partial 201 Building Demolition**”).

L. In anticipation of the conveyance to Banner of the leasehold of the Healthcare Parcel pursuant to the Ground Lease and Purchase Option Agreement and the resulting division of the Land into the Healthcare Parcel and the University Parcel under ownership by separate Parcel Owners, Declarant desires to declare and establish certain easements, covenants, rights, responsibilities and restrictions with respect to the Healthcare Parcel and the University Parcel and between Healthcare Parcel Owner and University Parcel Owner.

NOW, THEREFORE, Declarant hereby declares that the Land, and each of the Healthcare Parcel and the University Parcel, shall be held, conveyed, encumbered, leased, used, occupied and improved subject to the following easements, covenants and restrictions, which shall be binding upon Healthcare Parcel Owner and University Parcel Owner and any party acquiring any interest in any of the Healthcare Parcel or the University Parcel.

ARTICLE 1

EASEMENTS IN FAVOR OF THE UNIVERSITY PARCEL

1.1 Vehicular and Pedestrian Access. Declarant hereby declares and grants the following easements to University Parcel Owner, as rights and easements appurtenant to the University Parcel, in respect of use of private roads and pedestrian sidewalks and plazas located on the Healthcare Parcel:

1.1.1 Private Roads. A perpetual, non-exclusive easement over, upon, across and through those certain private roads owned by Declarant located on the Healthcare Parcel described in Exhibit H attached hereto and depicted on the plan attached hereto as part of Exhibit H and on the Site Area Plan (the “**Healthcare Private Roads**”) for ingress, egress and access for motor vehicles (including service vehicles) and pedestrian traffic to and from the University Parcel. The easement granted herein shall be for the benefit of University Parcel Owner, its successors and assigns, and their respective employees, agents, contractors, guests

5237611_8
78198302.7

and invitees (the “**University Benefited Parties**”). The exercise of the easement rights granted under this Section 1.1.1 by the University Benefitted Parties shall be subject to the restrictions set forth in Section 1.1.5 below.

1.1.2 Pedestrian Access. A perpetual, non-exclusive easement over, upon, across and through pedestrian sidewalks, exterior pedestrian plazas and other exterior areas located on the Healthcare Parcel intended for use for pedestrian traffic (the “**Healthcare Pedestrian Areas**”) for ingress, egress and access for pedestrian traffic to and from the University Parcel for the benefit of the University Benefited Parties.

1.1.3 Access to Well Sites. A perpetual, non-exclusive easement over, upon, across and through the Healthcare Private Roads, and the paved and other open surface areas located adjacent to North Well Site as depicted in Exhibit E, for pedestrian and vehicular ingress, egress and access to the North Well Site, including access by service vehicles; and a perpetual, non-exclusive easement over, upon, across and through the Healthcare Private Roads, and the paved and other open surface areas located adjacent to South Well Site as depicted in Exhibit F, for pedestrian and vehicular ingress, egress and access to the South Well Site, including access by service vehicles. The easement granted herein in respect of the South Well Site shall include (i) the right of service vehicles to have access to the 18 foot wide truck entry gate located on the south side of the South Well Site (in the location generally indicated on Exhibit F) through the surface parking lot located as of the Effective Date adjacent to and south of the South Well Site and the drive way providing access to such parking lot from Cherry Avenue, and (ii) the right of service personnel to have access through the personnel entry gate located on the east side of the South Well Site and for service vehicles to drive over the sidewalk along Adams Street and to park in the area that is 10 feet from the eastern boundary of the South Well Site (as indicated on Exhibit F) during periods when maintenance, repair and replacement of infrastructure and equipment on the South Well Site is being performed. The easement granted herein in respect of the North Well Site shall terminate upon the first to occur of (x) abandonment of the well located on the North Well Site by University Parcel Owner and conveyance of the North Well Site to Healthcare Parcel Owner as provided in Section 3.6.3 or (y) January 1, 2018. The easement granted herein in respect of the South Well Site is subject to modification in connection with the construction of a parking garage adjacent to and south of the South Well Site as provided in Section 3.5.4; provided, however, that the easement granted herein in respect of vehicular access from Cherry Avenue through the drive way and parking lot located south of the South Well Site shall not terminate or be modified or limited until Healthcare Parcel Owner has completed its obligations under Section 3.5.4, and following completion of such obligations under Section 3.5.4, an easement for pedestrian and vehicular access, including access by service vehicles, shall be provided from Cherry Street to and across Adams Street to the South Well Site.

1.1.4 Modification of Access Areas. The easements granted to University Parcel Owner in respect of the Healthcare Private Roads and the Healthcare Pedestrian Areas are subject to the right of Healthcare Parcel Owner from time to time to relocate, alter, and improve the Healthcare Private Roads and the Healthcare Pedestrian Areas, provided that (i) Healthcare Parcel Owner shall always provide University Parcel Owner direct access for service vehicles to the Loading Dock and to the truck entry gates serving the North Well Site and the South Well Site, and (ii) access to and from all or any portion of the University Parcel and the University Parcel Improvements is not obstructed, impaired or otherwise adversely affected thereby in any

5237611 8
78198302 7

material respect. Not less than ninety (90) days prior to commencement of any such alteration of the Healthcare Private Roads or the Healthcare Pedestrian Areas, or other paved and open surface areas providing access to the North Well Site or the South Well Site, Healthcare Parcel Owner shall provide to University Parcel Owner preliminary plans and designs for such work and consult with University Parcel Owner concerning such work, plans and designs.

1.1.5 Restrictions for Service and Other Vehicles. In respect of the easement granted under Section 1.1.1 over the Healthcare Private Roads, University Parcel Owner shall use reasonable efforts to cause its vendors and service vehicles traveling to and from the Loading Dock, the Hazardous Waste Management Facility (defined in Section 3.5.2) or other facilities of the University located on or adjacent to the University Parcel to limit their use of the Healthcare Private Roads to the portion of Adams Street included in the Healthcare Private Roads and not to use Warren Avenue (prior to its expected demolition in connection with the construction of the New Healthcare Building) or the future planned main entrance for the New Healthcare Building at Elm Street and Campbell Avenue.

1.2 Utility Lines, Connections and Systems. Declarant hereby declares and grants the following easements to University Parcel Owner, as rights and easements appurtenant to the University Parcel, in respect of (i) underground utility tunnels, chilled water pipes, domestic water pipes, private sanitary sewer lines and related infrastructure improvements owned by University Parcel Owner and located on the Healthcare Parcel; (ii) cables, conduit, vaults, pull boxes and related infrastructure comprising the electrical distribution system owned by University Parcel Owner and utilized as a conduit to pass electricity purchased through third party electrical service providers; and (iii) cables, conduit, vaults, pull boxes and related infrastructure providing and servicing University Parcel Owner's telecommunications and data transmission system and services (including, without limitation, the University's "blue light" emergency phone system).

1.2.1 Underground Utility Tunnels. A (i) perpetual, exclusive easement through the subsurface area in which are located underground utility tunnels owned by University Parcel Owner in the areas depicted on the Utility Chart/Plan (the "**Utility Tunnels**"), and (ii) a perpetual, non-exclusive easement over, upon, across and under portions of the Healthcare Parcel in which such Utility Tunnels are located, in each case for the construction, installation, maintenance, repair and replacement of such Utility Tunnels and the piping, conduit and other utility infrastructure located therein and all other infrastructure related thereto. The non-exclusive easement granted herein shall (a) include an easement for lateral support of each such Utility Tunnel, (b) extend a distance of four (4) feet from the outside edge on each side of such Utility Tunnels and (c) include the areas legally described and depicted in Exhibit G to be used as pipe slide pull zones at manholes serving such Utility Tunnels to allow replacement of piping and other infrastructure. As further provided in Section 3.5.10, the Parcel Owners shall execute and record a supplement to this Declaration to provide legal descriptions for the easements granted herein in respect of the Utility Tunnels.

1.2.2 Pipes for Chilled Water, Sanitary Sewer and Domestic Water. A (i) perpetual, exclusive easement through the subsurface area in which are located underground pipes for chilled water, domestic water and sanitary sewer service owned by University Parcel Owner in the locations identified in and depicted on the Utility Chart/Plan, and (ii) a non-

5237611_8
78198302.7

exclusive easement over, upon, across and under portions of the Healthcare Parcel in which such pipes and related infrastructure are located, in each case for the construction, installation, maintenance, repair and replacement of such pipes and related infrastructure. The non-exclusive easement granted herein shall extend a distance of six (6) feet on either side of a line running horizontally through the center of each such pipe.

1.2.3 Electrical Distribution. A (i) perpetual, exclusive easement through the subsurface area in which are located cables, conduit, vaults, pull boxes and related infrastructure comprising the electrical distribution system owned by University Parcel Owner in the locations identified in and depicted on the Utility Chart/Plan, and (ii) a non-exclusive easement over, upon, across and under portions of the Healthcare Parcel in which such cables, conduit, vaults, pull boxes and related infrastructure are located, in each case for the construction, installation, maintenance, repair and replacement of such cables, conduit, vaults, pull boxes and related infrastructure. The non-exclusive easement granted herein shall extend a distance of four (4) feet on either side of (a) a line running horizontally through the center of each such underground cable or conduit or from each side of any such vault, pull box or related infrastructure, and (b) from each side of each such item of infrastructure located on the surface of the Healthcare Parcel.

1.2.4 Telecommunications and Data Transmission. A (i) perpetual, exclusive easement through the subsurface area in which are located cables, conduit, vaults, pull boxes and other infrastructure, and over, upon and across any surface area on which any such infrastructure is located at or above grade as of the Effective Date (including, without limitation, “blue light” emergency phones), providing or servicing telecommunications and data transmissions systems owned by University Parcel Owner in the locations identified in and depicted on the Utility Chart/Plan, and (ii) a non-exclusive easement over, upon, across and under portions of the Healthcare Parcel in which such cables, conduit, vaults, pull boxes and other infrastructure are located, in each case for the construction, installation, maintenance, repair and replacement of such cables, conduit, vaults, pull boxes and other infrastructure (including, without limitation “blue light” emergency phones). The non-exclusive easement granted herein shall extend a distance of four (4) feet on either side of (a) a line running horizontally through the center of each such underground cable or conduit or from each side of any such vault, pull box or related infrastructure, and (b) from each side of each such item of infrastructure located at or above grade on the surface of the Healthcare Parcel.

1.2.5 Existing, Unlocated Utility Infrastructure. A (i) perpetual, exclusive easement through the subsurface area in which are located cables, conduit, vaults, pull boxes and other infrastructure owned by University Parcel Owner existing and in place as of the Effective Date but not identified in or depicted on the Utility Chart/Plan as of the Effective Date, and a perpetual, exclusive easement over, upon and across any surface area on which any such infrastructure is located at or above grade and is existing and in place as of the Effective Date but is not identified in or depicted on the Utility Chart/Plan, and (ii) a non-exclusive easement over, upon, across and under portions of the Healthcare Parcel in which such unlocated pipes, cables, conduit, vaults, pull boxes and other infrastructure are located as of the Effective Date, in each case for the construction, installation, maintenance, repair and replacement of such pipes, cables, conduit, vaults, pull boxes and other infrastructure. The non-exclusive easement granted herein shall extend a distance of four (4) feet on either side of (a) a line running horizontally through the

center of any such underground pipe, cable or conduit or from each side of any such vault, pull box or related infrastructure, (b) from each side of each such item of infrastructure located at or above grade on the surface of the Healthcare Parcel.

1.2.6 Relocation of University Utility Improvements. The easements granted to University Parcel Owner in respect of utility infrastructure improvements under Sections 1.2.2, 1.2.3, 1.2.4 and 1.2.5 are subject to the right of Healthcare Parcel Owner to relocate any pipes, cables, conduit, vaults, pull boxes and related infrastructure owned by University Parcel Owner (collectively, “**University Utility Improvements**”), but expressly excluding the Utility Tunnels under Section 1.2.1 and the cables, conduit, vaults, pull boxes and related infrastructure contained therein, as reasonably necessary for construction of future improvements on all or any portion of the Healthcare Parcel, including without limitation construction of the New Healthcare Building. The right of Healthcare Parcel Owner to relocate any University Utility Improvements is subject to and conditioned upon the following: (i) not less than ninety (90) days prior to commencement of the proposed relocation of any University Utility Improvements, Healthcare Parcel Owner shall provide to University Parcel Owner plans and specifications for such work and consult with University Parcel Owner concerning the relocation of such University Utility Improvements, (ii) the final plans and specifications for the relocation of any University Utility Improvements shall be subject to the prior written approval of University Parcel Owner, which approval shall not be unreasonably withheld, conditioned or delayed provided that the relocation of such University Utility Improvements includes installation of replacement utility equipment and systems with new equipment and systems that maintain at least the same level of functionality existing prior to such relocation and does not impair or reduce the functionality of any portion of the utility infrastructure systems serving all or any portion of the University Parcel, (iii) the final construction schedule as it affects the disconnection and reconnection of any of the University Utility Improvements shall be subject to the prior written approval of University Parcel Owner, which approval shall not be unreasonably withheld, conditioned or delayed provided that Healthcare Parcel Owner has made reasonable efforts in such schedule to minimize periods of disconnection of any University Utility Improvements and to reduce the impact on continuing utility service during such relocation, and (iv) Healthcare Parcel Owner shall be responsible for paying all costs and expenses for the relocation of any University Utility Improvements.

1.3 Detention Basin and Drainage.

1.3.1 Declarant hereby declares and grants to University Parcel Owner perpetual non-exclusive easements (a) over, upon and across, the Detention Basin in the location depicted on the Site Area Plan and any drainage swales and storm water drainage or discharge pipes connected thereto for the purpose of receiving, detaining and discharging storm water received from the University Parcel in such Detention Basin, and (b) over, upon and across the Healthcare Parcel for drainage.

1.3.2 The easements granted to University Parcel Owner under Section 1.3.1 in respect of the Detention Basin is subject to the right of Healthcare Parcel Owner from time to time to relocate, alter, and improve the Detention Basin, provided that (i) the detention capacity provided in any altered Detention Basin or in any newly constructed detention basin or basins that replace the Detention Basin depicted on the Site Area Plan is not, in the aggregate, less than

5237611 8
78198302 7

the capacity of the Detention Basin as of the Effective Date, (ii) the rate of discharge from any such altered or replacement detention basin or basins do not exceed the rate of discharge from the Detention Basin as of the Existing Date, (iii) discharge and drainage from the University Parcel over, upon and across the Healthcare Parcel is not obstructed, impaired or otherwise adversely affected thereby in any material respect, and (iv) any such relocation, alteration or improvement shall comply with the requirements set forth in Sections 3.4.4 and 3.5.1. Not less than ninety (90) days prior to commencement of any alteration of the Detention Basin or construction of a new detention basin or basins to replace the then Detention Basin (or any detention basin or basins then existing that replace the Detention Basin), Healthcare Parcel Owner shall provide to University Parcel Owner plans and specifications for such work and consult with University Parcel Owner concerning such work, plans and specifications. The final plans and specifications for any alteration or construction of the Detention Basin or any replacement detention basin or basins from time to time shall be delivered to University Parcel Owner a reasonable period of time prior to the commencement of any such alteration or construction so that University Parcel Owner may review and provide comments with respect to such plans and specifications.

1.4 Healthcare 201 Building. Declarant hereby declares and grants the following easements to University Parcel Owner as rights and easements appurtenant to the University Parcel, in respect of the portions of the Healthcare 201 Building necessary for access to and structural support of the University 201 Building and the ACC Building and for the continued maintenance and operation of utility equipment located in the basement and 9th floor of the Healthcare 201 Building and of utility lines located in the Healthcare 201 Building that provide utility service to the University 201 Building and the ACC Building:

1.4.1 Access to University 201 Building. A perpetual, non-exclusive easement over, upon, across and through, lobbies, corridors, elevators, elevator lobbies and stairwells located on each floor of the Healthcare 201 Building (i) for ingress, egress and access for pedestrian traffic to and from the University 201 Building for the benefit of the University Benefited Parties, and (ii) for access to the utilities infrastructure and mechanical systems to exercise the rights granted under Section 1.4.7 and Section 1.4.8 respectively. Notwithstanding the foregoing, the easement herein granted shall be terminated or modified as necessary with respect to any floors in the Healthcare 201 Building that are demolished in connection with the Partial 201 Building Demolition or the Additional 201 Building Demolition (defined in Section 3.5.8), which termination or modification shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

1.4.2 Access to ACC Building. A perpetual, non-exclusive easement over, upon, across and through walkways on the 1st floor of the Healthcare 201 Building for pedestrian access to the ACC Building and for movement of supplies and equipment (including live animal subjects) between the Loading Dock (defined in Section 2.13) and the ACC Building. The easement granted herein shall be relocated from the 1st floor to the basement level of the Healthcare 201 Building following the opening of the New Healthcare Building or such earlier date as mutually agreed to by the Parcel Owners in writing. In addition, the easement herein granted shall be modified in connection with the demolition of the basement floor or 1st floor, as applicable, of the Healthcare 201 Building as part of the Additional 201 Building Demolition.

Any relocation or modification of the easement herein granted shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

1.4.3 Support for the University 201 Building. A perpetual, non-exclusive easement in and to all columns, beams, other structural members and any other supporting components of the University 201 Building located in or constituting a part of Healthcare 201 Building for the support of the University 201 Building. Notwithstanding the foregoing, the easement herein granted shall be terminated or modified as necessary with respect to any floors in the Healthcare 201 Building that are demolished in connection with the Partial 201 Building Demolition or the Additional 201 Building Demolition, which termination or modification shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

1.4.4 Support for the ACC Building. A perpetual, non-exclusive easement in and to all columns, beams, other structural members and any other supporting components of the ACC Building located in or constituting a part of Healthcare 201 Building for the support of the ACC Building. Notwithstanding the foregoing, the easement herein granted shall be terminated or modified as necessary with respect to any floors in the Healthcare 201 Building that are demolished in connection with the Additional 201 Building Demolition, which termination or modification shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

1.4.5 Encroachment by Elevator Shafts. A perpetual, non-exclusive easement for the maintenance of any existing encroachments over, upon, across, in, and through the Healthcare 201 Building for elevator shafts located mainly in the University 201 Building that encroach on a portion of the Healthcare 201 Building. Notwithstanding the foregoing, the easement herein granted shall be terminated or modified as necessary with respect to any floors in the Healthcare 201 Building that are demolished in connection with the Partial 201 Building Demolition or the Additional 201 Building Demolition, which termination or modification shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

1.4.6 Encroachments Due to Reconstruction. A perpetual, exclusive easement for the maintenance of any future encroachments over, upon, across, in, through or above the Healthcare Parcel by the University 201 Building for any walls, columns, supports, beams, protrusions, conduits, pipes, lines, elevator shafts, equipment or other facilities constituting a part of the University 201 Building and located on or within the Healthcare Parcel or within the air rights above the Healthcare Parcel that result from reconstruction of the north side of the University 201 Building performed in connection with the Partial 201 Building Demolition or the Additional 201 Building Demolition.

1.4.7 Utility, Telecommunication and Data Transmissions Lines and Systems. A perpetual, non-exclusive easement in and to all pipes, cables, conduit, vaults, pull boxes and related infrastructure and all telecommunications lines and data transmission systems located in or constituting a part of Healthcare 201 Building, including without limitation the fiber optic cable located in the basement of the Healthcare 201 Building that runs to the ACC Building, that provide utility services to the University 201 Building and telecommunications and data transmission services to the University 201 Building and the ACC Building for the operation, maintenance, repair and replacement of such utility infrastructure and such telecommunications

5237611_8
78198302.7

and data transmission system and services. University Parcel Owner agrees that replacement from time to time of any such utility infrastructure or telecommunications and data transmission system that changes the location or routing, or increases the size, of such infrastructure or system in any material respect or that increases the structural load on the affected portion of the Healthcare 201 Building shall be subject to the prior written approval of Healthcare Parcel Owner, which approval shall not be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing, the easement herein granted shall be terminated or modified as necessary with respect to any floors in the Healthcare 201 Building that are demolished in connection with the Partial 201 Building Demolition or the Additional 201 Building Demolition, which termination or modification shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

1.4.8 Utilities Infrastructure and Mechanical Systems Located in Basement and 9th Floor. A perpetual, non-exclusive easement in and to those portions of the basement and the 9th Floor of the Healthcare 201 Building in which are located utilities infrastructure and mechanical systems that provide utility services and telecommunications and data transmission system and services to the University 201 Building or the ACC Building for the operation, maintenance, repair and replacement of such utilities infrastructure and mechanical systems and such telecommunications and data transmission system and services. All utility improvements described, and for which easements are granted, in Section 1.4.7 and this Section 1.4.8 are referred to herein as the “**201 Building University Utility Improvements**.” Notwithstanding the foregoing, the easement herein granted shall be terminated or modified as necessary with respect to any floors in the Healthcare 201 Building that are demolished in connection with the Partial 201 Building Demolition or the Additional 201 Building Demolition, which termination or modification shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

1.4.9 Duvall Auditorium. A perpetual, non-exclusive easement over, upon, across and through the portion of Duvall Auditorium located on the 2nd floor of the Healthcare 201 Building for use of Duvall Auditorium in common with Healthcare Parcel Owner. Scheduling of the use of Duvall Auditorium by each of the Parcel Owners and with respect to other services related to such use shall be subject to the mutual written agreement of the Parcel Owners. Notwithstanding the foregoing, the easement herein granted shall be relocated in connection with the demolition of Duvall Auditorium performed as part of the Additional 201 Building Demolition, which relocation shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

1.4.10 Biomedical Communications Facility. A non-exclusive easement over, upon, across and through the University’s Biomedical Communications Facility located adjacent to Duvall Auditorium on the 2nd floor of the Healthcare 201 Building for use of the Biomedical Communications Facility. The Biomedical Communications Facility is identified as Rooms 2603B, 2603C, 2603D, 2603E, 2603F, 2603G, 2603H, 2603J, 2610, 2610A, 2614, 2614A, 2614B, 2614D on floor plans in the possession of the Parcel Owners on the Effective Date. It is acknowledged that University Parcel Owner shall have possession and use of the Biomedical Communications Facility as necessary for its operations, and that Healthcare Parcel Owner has access to and through the easement for maintenance of utility and similar lines. The easement herein granted shall expire and be of no further effect on and after the seventh (7th) anniversary

5237611_8
78198302_7

of the Effective Date. In addition, the easement herein granted shall be relocated in connection with the relocation of the Biomedical Communications Facility performed as part of the Additional 201 Building Demolition, which relocation shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

1.5 Emergency. Declarant hereby declares and grants to University Parcel Owner as rights and easements appurtenant to the University Parcel, a perpetual, non-exclusive easement over, upon, across, in, under and through the Healthcare Parcel in the event and to the extent required in any Emergency Situation in respect of the University Parcel. As used in this Declaration, the term “**Emergency Situation**” shall mean (a) in respect of the University Parcel University Parcel Owner’s rights under this Section 1.5, any situation (i) impairing or imminently likely to impair structural support of all or a portion of the University Parcel or University Parcel Improvements, including the University 201 Building; (ii) causing or imminently likely to cause bodily injury to persons or substantial physical damage to all or any portion of the University Parcel Improvements or any property on or about the University Parcel Improvements; or (iii) causing or imminently likely to cause substantial economic loss to University Parcel Owner, and (b) in respect of the Healthcare Parcel and Healthcare Parcel Owner’s rights under Section 2.3, (i) impairing or imminently likely to impair structural support of all or a portion of the Healthcare Parcel or Healthcare Parcel Improvements, including the Healthcare 201 Building; (ii) causing or imminently likely to cause bodily injury to persons or substantial physical damage to all or any portion of the Healthcare Parcel Improvements or any property on or about the Healthcare Parcel Improvements; or (iii) causing or imminently likely to cause substantial economic loss to Healthcare Parcel Owner.

ARTICLE 2

EASEMENTS IN FAVOR OF HEALTHCARE PARCEL

2.1 Vehicular and Pedestrian Access. Declarant hereby declares and grants the following easements to Healthcare Parcel Owner, as rights and easements appurtenant to the Healthcare Parcel, in respect of use of private roads and pedestrian sidewalks and plazas located on the University Parcel:

2.1.1 Private Roads. A perpetual, non-exclusive easement over, upon, across and through those certain private roads owned by Declarant located on the University Parcel described in Exhibit H attached hereto and depicted on the plan attached as part of Exhibit H and on the Site Area Plan (the “**University Private Roads**”) for ingress, egress and access for motor vehicles (including service vehicles) and pedestrian traffic to and from the Healthcare Parcel. The easement granted herein shall be for the benefit of Healthcare Parcel Owner, its successors and assigns, and their respective employees, agents, contractors, guests and invitees (the “**Healthcare Benefited Parties**”). The exercise of the easement rights granted under this Section 2.1.1 by the Healthcare Benefitted Parties shall be subject to the restrictions set forth in Section 2.1.5 below.

2.1.2 Pedestrian Access. A perpetual, non-exclusive easement over, upon, across and through pedestrian sidewalks, exterior pedestrian plazas and other exterior areas located on the University Parcel intended for use for pedestrian traffic (the “**University**”

5237611_8
78198302 7

Pedestrian Areas”) for ingress, egress and access for pedestrian traffic to and from the Healthcare Parcel for the benefit of the Healthcare Benefited Parties.

2.1.3 Loading Dock. During the period ending with the opening of the New Healthcare Building, a non-exclusive easement over, upon, across and through (a) the loading dock in the University 201 Building depicted on the Site Area Plan (the “**Loading Dock**”), (b) the open area of the University Parcel west of the University 201 Building and north of the AHS Library Building (Building 201.01 as depicted on the Site Area Plan) used by University Parcel Owner for access to the Loading Dock, and (c) corridors located on the 1st floor of the University 201 Building from the Loading Dock to the Healthcare 201 Building for the purpose of delivery of goods, supplies and equipment to the Healthcare 201 Building.

2.1.4 Modification of Access Areas. The easements granted to Healthcare Parcel Owner in respect of the University Private Roads and the University Pedestrian Areas are subject to the right of University Parcel Owner from time to time to relocate, alter, and improve the University Private Roads and the University Healthcare Pedestrian Areas, provided that (i) access to and from all or any portion of the Healthcare Parcel and the Healthcare Parcel Improvements is not obstructed, impaired or otherwise adversely affected thereby in any material respect, and (ii) University Parcel Owner shall always provide Healthcare Parcel Owner direct access to the public right of way portion of Cherry Avenue. Not less than ninety (90) days prior to commencement of any such alteration of the University Private Roads or the University Pedestrian Areas, University Parcel Owner shall provide to Healthcare Parcel Owner preliminary plans and designs for such work and consult with Healthcare Parcel Owner concerning such work, plans and designs.

2.1.5 Restrictions for Ambulances and Service Vehicles. Notwithstanding the easement granted under Section 2.1.1 in respect to University Private Road, Healthcare Parcel Owner shall use reasonable efforts to cause all emergency traffic by ambulances and all service vehicles to limit their access to and use of the University Private Roads to Cherry Avenue to its intersection with Adams Street. The foregoing restriction is subject to alteration by the mutual agreement of Healthcare Parcel Owner and University Parcel Owner in connection with a change in location of the emergency room located on the Healthcare Parcel or changes in the location and direction of the University Private Roads and Healthcare Private Roads used by such vehicles.

2.2 University 201 Building. Declarant hereby declares and grants the following easements to Healthcare Parcel Owner as rights and easements appurtenant to the Healthcare Parcel, in respect of the portions of the University 201 Building necessary for access to and structural support of the Healthcare 201 Building:

2.2.1 Access. A perpetual, non-exclusive easement over, upon, across and through, lobbies, corridors, elevators, elevator lobbies and stairwells located on each floor of the University 201 Building (i) for ingress, egress and access for pedestrian traffic to and from the Healthcare 201 Building for the benefit of the Healthcare Benefited Parties, and (ii) for access to the utilities infrastructure and mechanical systems to exercise the rights granted under Section 2.2.3 and Section 2.2.4 respectively. Notwithstanding the foregoing, the easement herein granted shall be terminated as necessary with respect to any floors in the Healthcare 201 Building that

are demolished in connection with the Partial 201 Building Demolition or the Additional 201 Building Demolition, which termination or modification shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

2.2.2 Support. A perpetual, non-exclusive easement in and to all columns, beams, other structural members and any other supporting components of the Healthcare 201 Building located in or constituting a part of University 201 Building for the support of the Healthcare 201 Building. Notwithstanding the foregoing, the easement herein granted shall be terminated or modified as necessary with respect to any floors in the Healthcare 201 Building that are demolished in connection with the Partial 201 Building Demolition or the Additional 201 Building Demolition, which termination or modification shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

2.2.3 Utility, Telecommunication and Data Transmissions Lines and Systems. A perpetual, non-exclusive easement in and to all pipes, cables, conduit, vaults, pull boxes and related infrastructure and all telecommunications and data transmission systems located in or constituting a part of University 201 Building that provide utility services and telecommunications and data transmission services to the Healthcare 201 Building for the operation, maintenance, repair and replacement of such utility infrastructure and such telecommunications and data transmission system and services. Notwithstanding the foregoing, the easement herein granted shall be terminated or modified as necessary with respect to any floors in the Healthcare 201 Building that are demolished in connection with the Partial 201 Building Demolition or the Additional 201 Building Demolition, which termination or modification shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

2.2.4 Utilities Infrastructure and Mechanical Systems Located in the 9th Floor and Rooftop Utility Building. A perpetual, non-exclusive easement in and to those portions of the 9th Floor of the University 201 Building and the Rooftop Utility Building in which are located utilities infrastructure and mechanical systems that provide utility services and telecommunications and data transmission system and services to the Healthcare 201 Building for the operation, maintenance, repair and replacement of such utilities infrastructure and mechanical systems and such telecommunications and data transmission system and services. Notwithstanding the foregoing, the easement herein granted shall be terminated or modified as necessary with respect to any floors in the Healthcare 201 Building that are demolished in connection with the Partial 201 Building Demolition or the Additional 201 Building Demolition, which termination or modification shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

2.2.5 Duvall Auditorium. A perpetual, non-exclusive easement over, upon, across and through the portion of Duvall Auditorium located on the 2nd floor of the University 201 Building for use of Duvall Auditorium in common with University Parcel Owner, which use shall be subject to agreement of the Parcel Owners regarding scheduling and other services as provided under Section 1.4.9. Notwithstanding the foregoing, the easement herein granted shall be terminated if Duvall Auditorium is demolished as part of the Additional 201 Building Demolition, which termination shall be confirmed in a written supplement to this Declaration as provided under Section 8.13.

5237611.8
78198302.7

2.3 Emergency. Declarant hereby declares and grants to Healthcare Parcel Owner as rights and easements appurtenant to the Healthcare Parcel, a perpetual, non-exclusive easement over, upon, across, in, under and through the University Parcel in the event and to the extent required in any Emergency Situation in respect of the Healthcare Parcel.

ARTICLE 3

PERMITTED USE OF THE HEALTHCARE PARCEL; PARCEL DEVELOPMENT PARAMETERS; COVENANTS OF THE PARCEL OWNERS

3.1 Permitted Use of the Healthcare Parcel. From the Effective Date until the date (the “**Cessation Date**”) that the University or any other association, corporation, limited liability company, individual, partnership, limited liability partnership, trust or any other entity or organization, including a governmental entity, whether public or private, nonprofit or for profit, has ceased to have possession of and to operate at least a substantial portion of the University Parcel as an institution of higher education for a period of at least two (2) continuous years (plus such period of cessation of operations due to damage to or destruction of the buildings, remodeling or repurposing of the buildings, or any Force Majeure Event), the Healthcare Parcel and the Healthcare Parcel Improvements shall be used only for the delivery of health care and/or wellness services including but not limited to (a) inpatient and outpatient care and services, (b) clinics, support goods and services, offices, research, education and training, and administrative services related to the delivery of health care and/or wellness services, and (c) other uses reasonably related to and in support of the delivery of health care and/or wellness services provided on the Healthcare Parcel and the Healthcare Parcel Improvements and typically associated with first class health care centers such as, by way of example and not limitation, food services, retail establishments, community venues and facilities for patient families (collectively, the “**Initial Permitted Use**”). The Parcel Owners acknowledge that the type, and manner of delivery of, services to advance health and wellness are constantly changing and, accordingly, the Initial Permitted Use shall be interpreted to permit evolution in the composition of health care and wellness services and related uses. From and after the Cessation Date, the Healthcare Parcel and the Healthcare Parcel Improvements shall be used for any lawful use. Notwithstanding the foregoing, the Initial Permitted Use is not intended to, and shall not, prohibit the use and enjoyment by University Parcel Owner and the University Benefitted Parties of the easements granted under Article 1. As used in this Section 3.1, “**Force Majeure Events**” means acts of God (including, without limitation, severe weather conditions, hurricane, tornado, earthquake, flood or natural catastrophe), strike, shortage of materials or labor, lockout, explosion, act of sabotage, riot, civil commotion, act of war or terrorism, fire, delays caused by the failure of any utility to act in a timely manner, governmental delays, changes in law or applicable building regulations, or any other cause that is beyond the reasonable control of Healthcare Parcel Owner.

3.2 Healthcare Parcel Development Parameters. The development and construction of any new buildings or structures on the Healthcare Parcel shall be subject to the limitations and requirements set forth below in this Section 3.2 (the “**Healthcare Parcel Development Parameters**”), and Healthcare Parcel Owner covenants and agrees that any new buildings or structures on the Healthcare Parcel shall comply with the Healthcare Development Parameters.

5237611_8
78198302.7

3.2.1 Height. No building or structure shall exceed twelve (12) stories; and no building or other structure shall exceed two hundred thirty (230) feet.

3.2.2 Density. The buildings or structures shall not contain, in the aggregate, more than two million five hundred thousand (2,500,000) gross square feet, excluding parking garages.

3.2.3 Setbacks. All buildings or structures constructed from and after the Effective Date shall comply with the following setbacks (in each case, with the most restrictive setback to be applicable if more than one setback is applicable):

(a) No setbacks may be less than required under any Planned Area Development zoning for the Healthcare Parcel, as adopted by the City Council of the City of Tucson, Arizona (the “**Healthcare Parcel PAD**”).

(b) Setbacks must be a minimum of twenty (20) feet from any adjacent public right of way or private road, including without limitation the northern Ring Road, except for parking lots and decks which may have a zero (0) foot setback from the property line in locations where the property line is located at least twenty (20) feet from the adjacent public right of way or private road.

(c) Setbacks from the Loading Dock area must be a minimum of one hundred (100) feet from the most westerly portion of the western façade of Steele Children’s Research Center (Building 201.02 depicted on the Site Area Plan) and from the northern façade of the AHS Library (Building 201.01 depicted on the Site Area Plan).

(d) Setbacks from any University Parcel Improvements must be a minimum of forty (40) feet from the façade of any portion of such University Parcel Improvement; provided, however, that the foregoing requirement shall not apply to the new entrance planned for the Diamond Children’s Medical Center located on the Healthcare Parcel in the proximity of the Arizona Cancer Center located on the University Parcel, in which case, Healthcare Parcel Owner shall be able to build up to the property line, as generally indicated in the site plan attached as Exhibit I.

(e) Clearances from the University Physical Plant Risk Management Buildings located on the University Parcel (Buildings 205.00 and 229 depicted on the Site Area Plan) must be a minimum of forty (40) feet, which shall include a minimum twenty (20) foot minimum clear access for fire truck access between new and existing buildings.

(f) Setbacks along Campbell Avenue, to provide right of way for potential future “Modern Streetcar” extension to the north from Helen Street along the west side of Campbell Avenue, shall be as defined by the City in the Healthcare Parcel PAD.

(g) In any case, setbacks must be minimum of twenty (20) feet from the boundaries of the Healthcare Parcel, except as provided with respect to the new entrance planned for the Diamond Children's Medical Center located on the Healthcare Parcel as provided in Section 3.2.3(d).

Notwithstanding the foregoing to the contrary, the Parcel Owners agree that the Healthcare Parcel Development Parameters shall not apply to the Healthcare Parcel Improvements existing as of the Effective Date, including any restoration, reconstruction or rebuilding of any such Healthcare Parcel Improvements, provided that no such restoration, reconstruction or rebuilding shall expand upon or exceed any variance from the Healthcare Parcel Development Parameters existing as of the Effective Date.

3.3 University Parcel Development Parameters. The development and construction of any new buildings or structures on the University Parcel shall be subject to the limitations and requirements set forth below in this Section 3.3 (the "**University Parcel Development Parameters**"), and University Parcel Owner covenants and agrees that any new buildings or structures on the University Parcel shall comply with the University Parcel Development Parameters.

3.3.1 Height. As of the Effective Date, a helicopter pad is located and is in operation on the roof of the Diamond Children's Center on the Healthcare Parcel. Healthcare Parcel Owner expects to relocate the existing helicopter pad to the roof of the New Healthcare Building. University covenants and agrees that, provided Healthcare Parcel Owner is in compliance with Section 3.5.12 below, the height of all new buildings on the University Parcel shall not interfere with (i) the flight corridors existing as of the Effective Date (generally following a flight path to and from Speedway Avenue, either along and just west of Campbell Avenue, or along and just east of Cherry Avenue) or (ii) an 8:1 glide path for the helicopter flight paths over the University Parcel originating or terminating to the north at the helicopter pad or pads on the roof of the Diamond Children's Center on the Healthcare Parcel or the New Healthcare Building, as applicable.

3.3.2 Setbacks. All buildings constructed from and after the Effective Date shall comply with the following setbacks (in each case, with the most restrictive setback to be applicable if more than one setback is applicable):

(a) Setbacks must be a minimum of twenty (20) feet from any adjacent public right of way or private road, except for parking lots and decks which may have a zero (0) foot setback from the property line in locations where the property line is located at least twenty (20) feet from the adjacent public right of way or private road.

(b) Setbacks from any Healthcare Parcel Improvements must be a minimum of forty (40) feet from the façade of any portion of such Healthcare Parcel Improvement.

(c) In any case, setbacks must be a minimum of twenty (20) feet from the boundaries of the Healthcare Parcel, except as noted in Section 3.3.2(a).

Notwithstanding the foregoing to the contrary, the Parcel Owners agree that the University Parcel Development Parameters shall not apply to the University Parcel Improvements existing as of the Effective Date, including any restoration, reconstruction or rebuilding of any such University Parcel Improvements, provided that no such restoration, reconstruction or rebuilding shall expand upon or exceed any variance from the University Parcel Development Parameters existing as of the Effective Date.

3.4 General Covenants.

3.4.1 Maintenance of Easement Areas and Easement Improvements. Except as otherwise provided herein, each Parcel Owner shall be responsible for, and shall bear all costs and expenses of, all maintenance, repair and replacement of its respective Parcel and Parcel Improvements thereon, including, without limitation, such portions of its Parcel as are made subject to the easements granted in Article 1 and Article 2 hereof (said portions of both Parcels are herein collectively referred to as the “**Easement Areas**”) and all improvements located on or forming a part of or serving the Easement Areas on such Parcel Owner’s Parcel (such improvements in respect of all Easement Areas are herein collectively referred to as the “**Easement Improvements**”).

3.4.2 Damage Caused by Benefitted Parties. Notwithstanding the provisions of Section 3.4.1, each Parcel Owner shall be responsible for, and shall pay all costs and expenses of, any repair and/or replacement of the other Parcel Owner’s Parcel and Parcel Improvements thereon that is not covered or required by the terms hereof to be covered, by insurance and which may become necessary as a consequence of any damage, destruction or disturbance caused by the negligent or willful act of such Parcel Owner or of the Healthcare Benefitted Parties or University Benefitted Parties, as the case may be, claiming by, through or under, respectively, Healthcare Parcel Owner or University Parcel Owner.

3.4.3 No Liens or Encumbrances. Neither Parcel Owner shall cause, suffer or permit any lien, claim or encumbrance to attach to the other Parcel Owner’s Parcel or the Easement Areas benefiting the other Parcel, as a result of any action or inaction by such Parcel Owner; provided, however, that each Owner shall have the right to grant mortgages and other liens on its Parcel (including the Easement Areas located on its Parcel) to secure financing for its Parcel and Parcel Improvements so long as any such mortgage or other financing lien shall be subject and subordinate to this Declaration. Each Parcel Owner shall, promptly upon learning of any such lien, claim or encumbrance (other than any such permitted mortgage or other financing lien), either remove such lien, claim or encumbrance or cause a title insurance company reasonably acceptable to the other Parcel Owner to insure over such lien, claim or encumbrance or provide other security reasonably acceptable to the other Parcel Owner and such Parcel Owner’s Mortgage Lender.

3.4.4 Rate of Storm Water Flow. Each Parcel Owner covenants and agrees not to increase the rate of flow of storm water from such Parcel Owner’s Parcel to the other Parcel

5237611_8
78198302.7

Owner's Parcel or to the adjacent neighborhoods over and above the rate of flow of storm water from such Parcel Owner's Parcel determined as of the Effective Date in connection with the construction, alteration, or replacement of any structures or improvements, including without limitation construction, alteration or expansion of any paved surface areas or construction of the New Healthcare Building.

3.4.5 Traffic. The importance of traffic flows and service levels of intersections in the vicinity of the Land, including with reference to service vehicles and ambulances, is acknowledged. Accordingly, at the request of either Parcel Owner from time to time, the Parcel Owners shall discuss with each other the potential traffic impacts of future development of the Parcels and potential planning and mitigation considerations and shall share with each other any traffic studies or reports obtained by a Parcel Owner with respect to traffic corridors affecting the Parcels. Each Parcel Owner shall endeavor to maintain to the greatest extent possible the confidentiality of any traffic studies or reports delivered by the other Parcel Owner.

3.5 Covenants of Healthcare Parcel Owner

3.5.1 Storm Water Drainage. Healthcare Parcel Owner shall not do, cause or knowingly permit any act which would obstruct or otherwise adversely affect the flow of storm water drainage from all or any portion of the University Parcel. Healthcare Parcel Owner covenants and agrees to provide adequate detention on the Healthcare Parcel to serve the drainage and detention needs of the Healthcare Parcel.

3.5.2 Variances for Hazardous Waste Management Facility. Healthcare Parcel Owner shall be responsible for obtaining any variances necessary for operating a healthcare facility in the vicinity of the University of Arizona Hazardous Waste Management Facility (Buildings 224 and 229 as depicted on the Site Area Plan and referred to herein as the "**Hazardous Waste Management Facility**") based on the current mode of operation of the Hazardous Waste Management Facility.

3.5.3 Fire Separation Walls. Healthcare Parcel Owner covenants and agrees, at its cost, to construct, maintain, repair and replace a fire-rated separation wall(s) as may be required in accordance with applicable building code (a) between the Emergency Generator Facility located on the Healthcare Parcel and Building 229 (as depicted on the Site Area Plan) of the Hazardous Waste Management Facility located on the University Parcel, and (b) between the Healthcare 201 Building and the University 201 Building.

3.5.4 Relocation of South Well Site Well Heads and Distribution Lines. Healthcare Parcel Owner covenants and agrees that in the event Healthcare Parcel Owner elects to construct a parking garage in the area of the surface parking lot located adjacent to and south of the South Well Site in the area between the Abrams Building and the Comstock Building (Buildings 204 and 559 as depicted on the Site Area Plan), which as of the Effective Date provides vehicular access to the truck entry gate on the south side of the South Well Site, Healthcare Parcel Owner, at its cost, shall (i) relocate the well heads and related water distribution lines on the South Well Site (which distribution lines are located as of the Effective Date on the north side of the South Well Site and block access to the South Well Site from Adams Street) to such location on the South Well Site as University Parcel Owner shall

determine (which may include burying such water distribution lines) for the purpose of providing access for service vehicles and personnel from Adams Street on the north side of the South Well Site, and (ii) construct a new 18 foot wide truck entry gate (which shall include construction of an entrance ramp for service vehicles from Adams Street to the new gate) and a personnel entry gate through the fence and retaining wall on the north side of the South Well Site. Not less than ninety (90) days prior to commencement of work for the construction of such parking garage, Healthcare Parcel Owner shall provide to University Parcel Owner plans and specifications for the relocation of the wells heads on the South Well Site, which plans and specifications shall be subject to the prior written approval of University Parcel Owner, which approval shall not be unreasonably withheld, conditioned or delayed.

3.5.5 Structural Support for University 201 Building. Healthcare Parcel Owner shall not do, cause or permit any act which would adversely affect the structural support, safety or integrity of the Healthcare 201 Building necessary for the structural support, safety or integrity of the University 201 Building.

3.5.6 Fire and Building Code Requirements for University 201 Building. Healthcare Parcel Owner covenants and agrees that if, as result of Healthcare Parcel Owner's ownership of the Healthcare 201 Building, the University 201 Building becomes subject to the requirements of the fire code or building code of the City, Healthcare Parcel Owner shall, at the election of University Parcel Owner, either construct at Healthcare Parcel Owner's cost or reimburse University Parcel Owner for the cost of constructing, any infrastructure improvements required by the City to be installed in the University 201 Building as a consequence of becoming subject to such fire or building code, including without limitation construction of fire-rated separation wall(s) and installation of fire sprinklers or other fire safety systems, as may be required in accordance with applicable fire code or building code.

3.5.7 Partial 201 Building Demolition. In the event that Healthcare Parcel Owner elects to perform the Partial 201 Building Demolition of the 201 Building, such Partial 201 Building Demolition shall be subject to the requirements set forth below in this Section 3.5.7, and Healthcare Parcel Owner covenants and agrees that the Partial 201 Building Demolition shall comply with the following requirements:

- (a) The Partial 201 Building Demolition shall include all work necessary to (i) restore any portions of the University 201 Building that are damaged as a result of such work, to provide structural support for the University 201 Building, and to construct an exterior wall enclosing the north side of the University 201 Building above the 2nd floor level through and including the 9th floor level to the existing roof line of the University 201 Building and (ii) to relocate the 201 Building University Utility Improvements affected by the Partial 201 Building Demolition. Construction of the exterior wall, including the exterior façade, shall match as closely as possible the design, construction and appearance (including use of materials and placement of windows) of the existing exterior walls of the north side of the University 201 Building. The relocation of the 201 Building University Utility Improvements shall include installation of replacement utility equipment and systems with

determine (which may include burying such water distribution lines) for the purpose of providing access for service vehicles and personnel from Adams Street on the north side of the South Well Site, and (ii) construct a new 18 foot wide truck entry gate (which shall include construction of an entrance ramp for service vehicles from Adams Street to the new gate) and a personnel entry gate through the fence and retaining wall on the north side of the South Well Site. Not less than ninety (90) days prior to commencement of work for the construction of such parking garage, Healthcare Parcel Owner shall provide to University Parcel Owner plans and specifications for the relocation of the wells heads on the South Well Site, which plans and specifications shall be subject to the prior written approval of University Parcel Owner, which approval shall not be unreasonably withheld, conditioned or delayed.

3.5.5 Structural Support for University 201 Building. Healthcare Parcel Owner shall not do, cause or permit any act which would adversely affect the structural support, safety or integrity of the Healthcare 201 Building necessary for the structural support, safety or integrity of the University 201 Building.

3.5.6 Fire and Building Code Requirements for University 201 Building. Healthcare Parcel Owner covenants and agrees that if, as result of Healthcare Parcel Owner's ownership of the Healthcare 201 Building, the University 201 Building becomes subject to the requirements of the fire code or building code of the City, Healthcare Parcel Owner shall, at the election of University Parcel Owner, either construct at Healthcare Parcel Owner's cost or reimburse University Parcel Owner for the cost of constructing, any infrastructure improvements required by the City to be installed in the University 201 Building as a consequence of becoming subject to such fire or building code, including without limitation construction of fire-rated separation wall(s) and installation of fire sprinklers or other fire safety systems, as may be required in accordance with applicable fire code or building code.

3.5.7 Partial 201 Building Demolition. In the event that Healthcare Parcel Owner elects to perform the Partial 201 Building Demolition of the 201 Building, such Partial 201 Building Demolition shall be subject to the requirements set forth below in this Section 3.5.7, and Healthcare Parcel Owner covenants and agrees that the Partial 201 Building Demolition shall comply with the following requirements:

- (a) The Partial 201 Building Demolition shall include all work necessary to (i) restore any portions of the University 201 Building that are damaged as a result of such work, to provide structural support for the University 201 Building, and to construct an exterior wall enclosing the north side of the University 201 Building above the 2nd floor level through and including the 9th floor level to the existing roof line of the University 201 Building and (ii) to relocate the 201 Building University Utility Improvements affected by the Partial 201 Building Demolition. Construction of the exterior wall, including the exterior façade, shall match as closely as possible the design, construction and appearance (including use of materials and placement of windows) of the existing exterior walls of the north side of the University 201 Building. The relocation of the 201 Building University Utility Improvements shall include installation of replacement utility equipment and systems with

new equipment and systems that maintain at least the same level of functionality existing prior to such relocation and do not impair or reduce the functionality of any portion of the utility infrastructure systems serving all or any portion of the University 201 Building.

(b) Not less than one (1) year prior to commencement of the Partial 201 Building Demolition, Healthcare Parcel Owner shall provide to University Parcel Owner preliminary plans and specifications for such work and shall thereafter advise and consult with University Parcel Owner with respect to such plans and specifications and scheduling of such work on a regular basis during the design and planning phase of such work through development of final construction documents for the Partial 201 Building Demolition.

(c) The final plans and specifications for the Partial 201 Building Demolition in so far as they affect the (i) relocation of the 201 Building University Utility Improvements, (ii) restoration of the portions of the University 201 Building that would be damaged by the Partial 201 Building Demolition and (iii) construction of the exterior wall on the north side of the University 201 Building, shall be subject to the prior written approval of University Parcel Owner, which approval in each case shall not be unreasonably withheld, conditioned or delayed.

(d) The final demolition and construction schedule (including phasing of demolition and construction work) for the Partial 201 Building shall be subject to the prior written approval of University Parcel Owner, which approval shall not be unreasonably withheld, conditioned or delayed provided that Healthcare Parcel Owner has made reasonable efforts in such schedule to minimize the impact of the Partial 201 Building Demolition on the continued use and occupancy of the University 201 Building for its regular business operations during the Partial 201 Building Demolition.

(e) Healthcare Parcel Owner shall be responsible for paying all costs and expenses in connection with the Partial 201 Building Demolition, including in respect of (i) restoration of the University 201 Building and construction of a façade on the north side of the University 201 Building, and (ii) separating and, as necessary, replacing the 201 Building University Utility Improvements serving the University 201 Building as needed in connection with the Partial 201 Building Demolition; provided however that the incremental cost to upgrade any such 201 Building University Utility Improvements beyond the standard of the existing 201 Building University Utility Improvements to be relocated under this Section 3.5.7 shall be paid by University Parcel Owner.

(f) Healthcare Parcel Owner shall require that University Parcel Owner be included (i) as an indemnified party under the applicable

contractor's indemnification of Healthcare Parcel Owner as the "Owner" under such the demolition and construction contract with the contractors performing all or any portion of the Partial 201 Building Demolition, and (ii) as an additional insured under the applicable contractor's liability insurance and shall be entitled to receive certificates of insurance and additional insured endorsements evidencing its additional insured status to the same extent as Healthcare Parcel Owner.

3.5.8 Additional 201 Building Demolition. In the event that Healthcare Parcel Owner elects to demolish all or any portion of the basement, 1st floor or 2nd floor of the Healthcare 201 Building (such demolition is referred to herein as the "**Additional 201 Building Demolition**"), such Additional 201 Building Demolition shall be subject to all of the requirements applicable to the Partial 201 Building Demolition set forth in Section 3.5.7 and shall also be subject to the additional requirements set forth in this Section 3.5.8, and Healthcare Parcel Owner covenants and agrees that such Additional 201 Building Demolition shall comply with the requirements of Section 3.5.7 and with the following requirements:

(a) The Additional 201 Building Demolition shall include all work necessary (i) to restore any portions of the ACC Building that are damaged as a result of such work and to provide structural support for the ACC Building, (ii) to construct alternative pedestrian access to and from the Loading Dock for the movement of equipment and supplies to and from the ACC Building, such alternative access to be at a floor level and in a location and configuration approved by University Parcel Owner, which approval shall not be unreasonably withheld, conditioned or delayed; provided that it shall not be unreasonable for University Parcel Owner to require that such alternative access be enclosed if such access corridor is then used to transport live animal subjects to or from the ACC Building, and (iii) to relocate the 201 Building University Utility Improvements affected by the Additional 201 Building Demolition. The relocation of such 201 Building University Utility Improvements shall include relocation of existing utility equipment and systems, if feasible, or replacement of utility equipment and systems with installation of new equipment and systems that maintain at least the same level of functionality existing prior to such relocation and does not impair or reduce the functionality of any portion of the utility infrastructure systems serving all or any portion of the University 201 Building and the ACC Building; provided, however, that the incremental cost to upgrade any such 201 Building University Utility Improvements beyond the foregoing standard set forth in this sentence shall be paid by University Parcel Owner.

(b) In the event that the Additional 201 Building Demolition shall include demolition of Duvall Auditorium and/or (if the easement granted in Section 1.4.10 has not expired) the Biomedical Communications Facility, such Additional 201 Building Demolition shall also include all work necessary to provide an alternative facility substantially similar to

Duvall Auditorium and (if the easement granted in Section 1.4.10 has not expired) the Biomedical Communications Facility, as the case may be, and generally comparable in size and with respect to finishes and fixtures (including affixed furniture) and equipment located in Duvall Auditorium and (if the easement granted in Section 1.4.10 has not expired) the Biomedical Communications Facility existing prior to such Additional 201 Building Demolition, and in a location on the Healthcare Parcel that provides reasonably convenient access to the University 201 Building.

3.5.9 Northern Ring Road. Healthcare Parcel Owner at its cost shall perform the obligations of the University to maintain and repair the northern Ring Road in compliance with the terms and conditions of the Ring Road Easement. The Parcel Owners acknowledge that the easement granted to the University in respect of the northern Ring Road under the Ring Road Easement is subject to a right-of-entry by the City pursuant to that certain Right of Entry Agreement dated as of April 22, 1992 between the University and the City. The Parcel Owners shall endeavor, promptly following the Effective Date, to obtain the written consent of the City to an assignment of the Ring Road Easement to Healthcare Parcel Owner, which assignment shall be in form and substance mutually acceptable to the Parcel Owners and which shall, in any event, provide that (i) the University is released from the obligation to maintain the northern Ring Road and from any liability under the Ring Road Easement in connection with the performance or lack of performance of such maintenance and (ii) the agreement of Healthcare Parcel Owner that upon any future vacation of the portion of the northern Ring Road that is a public right-of-way and transfer of ownership to Healthcare Parcel Owner, such portion of the northern Ring Road shall be added to the Healthcare Parcel and designated as a Healthcare Private Road by an amendment to this Declaration as provided under Section 8.12. Notwithstanding the foregoing, University Parcel Owner agrees that use of the northern Ring Road by University Parcel Owner and the University Benefitted Parties is subject to the obligations of University Parcel Owner under Section 1.1.5.

3.5.10 Replacement Well; North Well Site. Healthcare Parcel Owner shall reimburse University Parcel Owner for its costs and expenses reasonably incurred to drill a new well (the “**Replacement Well**”) to replace the well located on the North Well Site, which obligation shall include reimbursement by Healthcare Parcel Owner of all costs and expenses reasonably incurred by University Parcel Owner to install pipes and related equipment and infrastructure connected to or serving the Replacement Well and to abandon the existing well on the North Well Site under Section 3.6.3. Following conveyance of the North Well Site by University Parcel Owner under Section 3.6.3, Healthcare Parcel Owner covenants and agrees that it shall not place the abandoned well on the North Well Site back in service or remove any cap thereon, and that no water may be used or withdrawn from such abandoned well or from the North Well Site, unless approved in writing both by University Parcel Owner and the Arizona Department of Water Resources.

3.5.11 Legal Description for Utility Tunnels. Healthcare Parcel Owner covenants and agrees that prior to the commencement of construction of the New Healthcare Building, it shall at its cost cause to be prepared and delivered to University Parcel Owner a survey of the location and configuration of the Utility Tunnels, which shall depict and provide legal descriptions of the easements granted with respect to the Utility Tunnels under Section 1.2.1.

5237611_8
78198302 7

3.5.12 Location of Helicopter Pad. Healthcare Parcel Owner covenants and agrees that no portion of any helicopter pad located from time to time on the Healthcare Parcel, including without limitation on the New Healthcare Building, shall be located (i) south of a line determined by the northern edge of the northern Utility Tunnel in the location existing as of the Effective Date (which Utility Tunnel runs in an east/west direction west of the northern line of the North Expansion Project (NEP) building on the Healthcare Parcel) or (ii) below the height of the helicopter pad on Diamond Children's Center on the Healthcare Parcel existing as of the Effective Date.

3.6 Covenants of University Parcel Owner.

3.6.1 Structural Support. University Parcel Owner shall not do, cause or permit any act which would adversely affect the structural support, safety or integrity of the University 201 Building necessary for the structural support, safety or integrity of the Healthcare 201 Building.

3.6.2 Operation of Hazardous Waste Management Facility. Following Healthcare Parcel Owner's application to the City of Tucson for the variances required with respect to the Hazardous Waste Management Facility under Section 3.5.2, University Parcel Owner shall not modify the operations of the Hazardous Waste Management Facility in any manner that would violate the requirements of such variances or that would otherwise adversely affect the operations of the New Healthcare Building.

3.6.3 Relocation of North Well Site. Upon the first to occur of (i) the Replacement Well being placed in service, or (ii) January 1, 2018, University Parcel Owner shall terminate its use of the well located on the North Well Site and abandon such well, and promptly following such termination and abandonment of the well, convey ownership of the North Well Site to Healthcare Parcel Owner by delivery of a quit claim deed for the North Well Site, duly executed and acknowledged by University Parcel Owner, which deed shall be recorded in the public land records of Pima County, Arizona. Such deed shall include and be subject to a reservation of water rights by University Parcel Owner and a restriction that neither Healthcare Parcel Owner nor any future owner of the North Well Site shall place such abandoned well on the North Well Site back in service, or remove any cap located thereon, and that no water may be used or withdrawn from such abandoned well or from the North Well Site, unless approved in writing both by University Parcel Owner and the Arizona Department of Water Resources. Upon the conveyance of ownership of the North Well Site to Healthcare Parcel Owner, the North Well Site shall be removed from the University Parcel and added to the Healthcare Parcel by an amendment to this Declaration as provided under Section 8.12. University Parcel Owner shall provide at least one hundred twenty (120) days prior written notice to Healthcare Parcel Owner prior to abandonment of such well and shall permit Healthcare Parcel Owner to obtain a survey of the North Well Site and to perform reasonable and customary environmental due diligence thereon prior to taking ownership thereof; provided, however, that (a) the scope of any environmental inspection or assessment (other than a customary Phase I environmental assessment) shall be subject to University Parcel Owner's prior written approval, which shall not be unreasonably withheld, conditioned or delayed (but may expressly be conditioned upon a customary right of entry agreement), (b) no invasive testing shall be performed unless approved by University Parcel Owner in advance in writing, which approval shall not be unreasonably

5237611_8
78198302.7

withheld, conditioned or delayed (but may expressly be conditioned upon a customary right of entry agreement), (c) Healthcare Parcel Owner shall provide an indemnity with respect to such work in favor of University Parcel Owner and University's Group comparable to the indemnity provided by Section 7.1.1 with respect to Healthcare Parcel Owner's Acts, and (d) the obligations and requirements applicable to a Contractor under Section 7.2 shall apply to any contractors of Healthcare Parcel Owner performing due diligence activities on the North Well Site, and Healthcare Parcel Owner shall comply with the obligations and requirements of the Contracting Party thereunder with respect to such contractor and its services. Any due diligence reports obtained by Healthcare Parcel Owner shall be delivered to University Parcel Owner. Each Parcel Owner shall endeavor to maintain to the greatest extent possible the confidentiality of any such reports delivered by Healthcare Parcel Owner.

3.6.4 Abandonment of South Well Site. In the event University Parcel Owner elects to terminate its use of the well located on the South Well Site (and it is expressly understood that University Parcel Owner is under no obligation to do so) and to abandon such well, then and in such event promptly following such termination and abandonment of the well, University Parcel Owner shall convey ownership of the South Well Site to Healthcare Parcel Owner by delivery of a quit claim deed for the South Well Site, duly executed and acknowledged by University Parcel Owner, which deed shall be recorded in the public land records of Pima County, Arizona. Such deed shall include and be subject to a reservation of water rights by University Parcel Owner and a restriction that neither Healthcare Parcel Owner nor any future owner of the South Well Site shall place such abandoned well on the South Well Site back in service, or remove any cap located thereon, and that no water may be used or withdrawn from such abandoned well or from the South Well Site, unless approved in writing both by University Parcel Owner and the Arizona Department of Water Resources. Upon the conveyance of ownership of the South Well Site to Healthcare Parcel Owner, the South Well Site shall be removed from the University Parcel and added to the Healthcare Parcel by an amendment to this Declaration as provided under Section 8.12. University Parcel Owner shall provide at least one hundred twenty (120) days prior written notice to Healthcare Parcel Owner prior to abandonment of such well and shall permit Healthcare Parcel Owner to obtain a survey of the South Well Site and to perform reasonable and customary environmental due diligence thereon prior to taking ownership thereof; provided, however, that (a) the scope of any environmental inspection or assessment (other than a customary Phase I environmental assessment) shall be subject to University Parcel Owner's prior written approval, which shall not be unreasonably withheld, conditioned or delayed (but may expressly be conditioned upon a customary right of entry agreement), (b) no invasive testing shall be performed unless approved by University Parcel Owner in advance in writing, which approval shall not be unreasonably withheld, conditioned or delayed (but may be expressly conditioned upon a customary right of entry agreement), (c) Healthcare Parcel Owner shall provide an indemnity with respect to such work in favor of University Parcel Owner and University's Group comparable to the indemnity provided by Section 7.1.1 with respect to Healthcare Parcel Owner's Acts, and (d) the obligations and requirements applicable to a Contractor under Section 7.2 shall apply to any contractors of Healthcare Parcel Owner performing due diligence activities on the South Well Site, and Healthcare Parcel Owner shall comply with the obligations and requirements of the Contracting Party thereunder with respect to such contractor and its services. Any due diligence reports obtained by Healthcare Parcel Owner shall be delivered to University Parcel Owner. Each

5237611.8
78198302.7

Parcel Owner shall endeavor to maintain to the greatest extent possible the confidentiality of any such reports delivered by Healthcare Parcel Owner.

3.6.5 Operations in Healthcare 201 Building. University Parcel Owner covenants and agrees that any maintenance, repair, replacement or other work performed in and University Parcel Owner's use and occupancy of areas within the Healthcare 201 Building by or at the direction of University Parcel Owner in its exercise of the easements granted under Section 1.4 shall comply with any applicable policies of Healthcare Parcel Owner in respect of control of infection, permits, fire safety, life safety and similar matters.

3.6.6 Future Easements for Utilities Over University Parcel. University Parcel Owner covenants and agrees to consider any request by Healthcare Parcel Owner for new easements over the University Parcel to install utility lines and infrastructure in connection with any future construction on the Healthcare Parcel, including construction of the New Healthcare Building, provided that Healthcare Parcel Owner can reasonably demonstrate to University Parcel Owner that there is no portion of the Healthcare Parcel on which it is feasible to locate such utility line or infrastructure and further provided that granting any such easement shall not interfere with any existing University Parcel Improvements or any planned or contemplated construction on or development of the University Parcel.

3.7 Water Rights.

3.7.1 Notwithstanding anything to the contrary contained herein, Declarant hereby reserves to the University all water wells, pumps, casings and appurtenant equipment located on the Land, and related to the North Well Site and the South Well Site, including all pipes, tanks, pressure systems and electrical and distribution systems relating thereto, and further reserves unto the University the full measure of any water rights or privileges held or enjoyed by the University, including all rights in service areas, grandfathered and other rights or claims to water, including all rights and claims in the consolidated adjudication of the Gila River and its tributaries. Without limitation upon the foregoing, no water wells, water conveyance systems, or water rights of any nature are to be transferred or conveyed to Healthcare Parcel Owner in connection with the Transaction or this Declaration. Healthcare Parcel Owner has the sole responsibility to obtain from the City of Tucson all necessary water service agreements for the service of water for the Healthcare Parcel and the Healthcare Parcel Improvements, and shall be solely responsible to provide such assurances or security as the City of Tucson may require as a condition of service to Healthcare Parcel Owner. Neither the University nor University Parcel Owner shall be required to meet or comply with any requirement for service by the City of Tucson to Healthcare Parcel Owner, nor shall the University or University Parcel Owner be required to deliver or serve water to Healthcare Parcel Owner or to the Healthcare Parcel or the Healthcare Parcel Improvements. Except as may be otherwise agreed to by the Parties, Healthcare Parcel Owner agrees to obtain water service from the City of Tucson, and Healthcare Parcel Owner further agrees that no water well may be drilled on the Healthcare Parcel, or operated on the Healthcare Parcel, without the express written consent of the University, which consent may be denied in its sole and absolute discretion, whether or not the proposed well is shown to interfere with any water well owned or operated by the University, or to be owned or operated by the University in the future.

3.7.2 Healthcare Parcel Owner agrees that it shall make or file no objection to any application by the University to drill, operate, maintain and use new water wells or replacement water wells on any property owned or controlled by the University, or upon which the University may otherwise possess rights of entry or use, regardless of proximity to the Healthcare Parcel. Healthcare Parcel Owner acknowledges that the University serves water as a provider pursuant to its Service Area Right 56-000268, and the existence of such right shall in no way require or obligate the University to provide water to Healthcare Parcel Owner. The water well located on the South Well Site shall be abandoned only by the University when the University has a replacement water well drilled, constructed and fully operational at a location acceptable to the University in its sole discretion. Healthcare Parcel Owner covenants in perpetuity that once any water well on the North Well Site or South Well Site is abandoned, no water may be used or withdrawn therefrom, unless approved in writing both by the University and the Arizona Department of Water Resources.

3.7.3 Notwithstanding the foregoing, the provisions of this Section 3.7 are not intended to, and shall not, limit the rights and obligations of Healthcare Parcel Owner and the University under any separate utilities service contract that may be entered into by them for the supply of water to the Healthcare Parcel.

3.8 Condemnation. In the event of any taking of any portion of an Easement Area or any Easement Improvement by any government authority pursuant to the exercise of the power of eminent domain (herein a “**Taking**”) then: (i) the Parcel Owner on whose Parcel such Easement Area is located or who is otherwise the owner of the Easement Improvement shall be entitled to retain the entire award with respect to such Taking and shall have responsibility for restoration in respect of such Taking and shall undertake such work; and (ii) if it is commercially practicable to repair and restore the Easement Area and the Easement Improvement affected by the Taking, then such Parcel Owner, as the case may be, shall use all reasonable efforts to promptly and diligently repair and restore such Easement Area and Easement Improvement as nearly as practicable to the same value, condition and character as existed prior to such Taking.

ARTICLE 4

INSURANCE

4.1 Liability Insurance. Each Parcel Owner shall maintain or cause to be maintained commercially reasonable amounts and forms of the following liability insurance:

4.1.1 Commercial general liability insurance on an occurrence basis against claims for bodily injury, death and property damage with respect to the use and operation of the Easement Areas and Easement Improvements on such Parcel Owner’s Parcel, with limits of not less than \$10,000,000 per occurrence and \$20,000,000 annual aggregate, insuring itself and naming any other Parcel Owner and such Parcel Owner’s Mortgage Lender as an additional insured and expressly covering such Parcel Owner’s indemnity obligations hereunder and other contractual indemnity obligations, if any.

4.1.2 Automobile liability insurance on an occurrence basis covering liability for such Parcel Owner's vehicles used in conjunction with such Parcel Owner’s Parcel, whether

5237611 8
78198302 7

owned, non-owned or hired, with liability limits of not less than \$1,000,000 combined single limit.

4.2 Property Insurance. Each Parcel Owner shall maintain or cause to be maintained with respect to the Easement Areas and the Easement Improvements located on its Parcel property insurance covering all risks customarily designated as special form causes of loss (and in any event providing not less than substantially the same types of coverage as maintained by such Parcel Owner with respect to improvements on its Parcel generally) on a full replacement cost basis, and providing for a waiver of all rights of subrogation against the other Parcel Owner.

4.3 General Insurance Requirements. The insurance coverages and policies required to be maintained by the Parcel Owners hereunder shall: (i) be issued by responsible insurance companies licensed by the State of Arizona, who shall be rated at least as highly as the required rating of insurers under any mortgage or deed of trust made in good faith and for value in favor of an unaffiliated institutional lender which encumbers the respective Parcel at the time in question (any such mortgage or deed of trust being herein referred to as a “**Lender Mortgage**” and the holder of any such mortgage being herein referred to as a “**Mortgage Lender**”); (ii) shall be in amounts and provide coverages no less than the amounts and coverages specified above or the amounts and coverages required pursuant to any Lender Mortgage, provided that the premium cost attributable to insurance amounts required by any Lender Mortgage in excess of the minimum amounts specified in Section 4.1 shall be paid by the Parcel Owner subject to such Lender Mortgage; (iii) include an endorsement that the insurer shall not cancel such policy without endeavoring to give at least ten (10) days prior written notice to each Parcel Owner and each Mortgage Lender.

4.4 Certificates of Insurance. Each Parcel Owner shall, from time to time upon request by any other Parcel Owner, deliver to the other Parcel Owner satisfactory certificates of insurance evidencing the insurance coverage required by this Article 4. If any Parcel Owner fails to obtain or maintain the insurance required hereunder (or fails to provide copies of certificates thereof), then the other Parcel Owner may, but shall not be obligated to (after notice to the failing Parcel Owner), obtain such insurance at the cost and expense of the failing Parcel Owner.

4.5 Blanket Policies. The insurance required under Section 4.1 and Section 4.2 may be effected by blanket and/or umbrella policies issued to a Parcel Owner covering such Parcel Owner’s Parcel and other properties owned or leased by such Parcel Owner, provided that the policies otherwise comply with the provisions of this Declaration and allocate to such Parcel Owner’s Parcel the specified coverage, without possibility of reduction or coinsurance by reason of, or damage to, any other premises covered therein.

4.6 Deductibles. All insurance required under Section 4.1 may contain reasonably loss deductible clauses or self-insured retentions, taking into account commercial practice in the market of the Land and the industry practice of persons in the business of such Parcel Owner.

4.7 Self-Insured Retention.

4.7.1 So long as a Parcel Owner maintains an investment grade credit rating as issued by Moody's Investor's Services or Standard & Poor's or such other nationally recognized agency from time to time issuing credit ratings, such Parcel Owner may satisfy its obligation to procure insurance under this Article 4 by self-insurance, re-insurance, excess insurance or any combination of the foregoing, upon the express understanding and agreement that amounts subject to any self-insurance shall be deemed by the Parcel Owners to be insurance, and not indemnity. A Parcel Owner's self-insurance shall be deemed primary insurance, and shall be non-contributory with any other insurance or self-insurance maintained by the other Parcel Owner.

4.7.2 Notwithstanding anything to the contrary contained in this Article 4, it is acknowledged that the University is a participant in the State of Arizona Department of Administration's insurance programs under Arizona Revised Statutes Section 41-621 and agrees that coverage under said program shall be sufficient and acceptable to fulfill University Parcel Owner's insurance obligations under this Lease.

4.8 Waiver of Liability. Each Parcel Owner, for itself and its successors and assigns and any Mortgage Lender from time to time, hereby releases the other Parcel Owner and its respective trustees, directors, officers, beneficiaries, partners, members, employees, and agents of each such other Parcel Owner at any time and from time to time, from any liability arising from any event of casualty covered or required to be covered by the insurance required to be maintained pursuant to this Article 4. The release and waiver contained in this Section for the benefit of University Parcel Owner shall include and extend to the State of Arizona.

ARTICLE 5

REMEDIES AND ENFORCEMENT

5.1 Default Notice and Cure Period. In the event any Parcel Owner defaults in the payment of sums due and payable by such Parcel Owner to the other Parcel Owner under this Declaration pursuant to Section 8.8 such defaulting Parcel Owner shall have the right to cure such monetary default during the ten (10) day period following receipt of written notice of such default by the non-defaulting Parcel Owner. In the event any Parcel Owner defaults in the performance of any of its other obligations under this Declaration, such defaulting Parcel Owner shall have the right to cure such non-monetary default during the thirty (30) day period following receipt of written notice of such default by any non-defaulting party, provided if such default is curable but is not reasonably subject to cure within said thirty (30) day period, and provided the defaulting Parcel Owner shall have commenced such cure within said thirty (30) day period and shall continue diligently to pursue such cure, then such thirty (30) day cure period shall be extended to such period, not longer than one hundred eighty (180) days from the delivery of such written notice of default, as is reasonably required to effect such cure; provided further that the foregoing extended cure period of one hundred eighty (180) days shall not apply to either party's obligations to maintain insurance under Section 4.1 or Section 4.2.

5.2 Legal and Equitable Relief. Provided that the notice and opportunity to cure provisions of Section 5.1 above have been first complied with, and, if applicable, subject to the provisions of Section 5.5, each Parcel Owner shall have the right to prosecute any proceedings at

5237611_8
78198302.7

law or in equity against any other Parcel Owner hereto, or any other person, violating or attempting to violate or defaulting upon any of the provisions of this Declaration and to recover damages for any such violation or default. The remedies available under this Section 5.2 shall include, by way of illustration but not limitation, suits for damages, ex parte injunctions enjoining any such violation or attempted violation or default, and actions for specific performance of this Declaration. The Parcel Owners expressly acknowledge and agree that there may not be an adequate remedy at law for the breach of each Parcel Owner's respective undertakings hereunder, and accordingly it shall be presumed that injunctive relief shall be appropriate and available for any breach or default by any Parcel Owner, but not as the exclusive remedy therefor.

5.3 Monetary Claims and Lien Rights.

5.3.1 If at any time a defaulting Parcel Owner fails to pay when due as provided in Section 8.8 any sum of money due to another Parcel Owner and such failure is not cured within the 10-day period referred to in Section 5.1 above, then such sum due and owing shall bear interest from the date due until paid at an annual rate of interest equal to the lesser of (i) five percent (5%) per annum plus the prime rate of interest from time to time published in The Wall Street Journal (or a reasonably equivalent rate, if The Wall Street Journal ceases to publish the "prime rate") or (ii) the maximum legal rate then enforceable in the State of Arizona (the "**Default Rate**").

5.3.2 In addition to any other rights and remedies available hereunder or at law or in equity (and without limitation by Section 5.5), with respect to any such monetary claim, if the defaulting Parcel Owner fails to pay such amount (including all interest due thereon) within thirty (30) days after written notice and demand referencing this Section 5.3, the Parcel Owner making such monetary claim shall have the right to place a lien upon the defaulting Parcel Owner's Parcel in the amount due (plus interest to accumulate) from the defaulting Parcel Owner. Any such lien shall arise immediately upon the recording of such notice by the non-defaulting Parcel Owner with the Pima County Recorder's Office (and shall not be deemed to relate back to the date of recording of this Declaration or any memorandum hereof) and may be enforced in any proceeding for foreclosure of liens on real property as permitted under Arizona law; provided that any such foreclosure proceeding shall not be commenced or pursued during the pendency of any arbitration proceeding or request for such proceeding pursuant to Section 5.5 with respect to the matter giving rise to such lien. Notwithstanding the foregoing or any other provision of this Declaration, no claim of lien resulting from any default in or failure to comply with this Declaration nor the exercise of any remedy provided in this Declaration shall be superior to or defeat, diminish or impair the lien (or the priority thereof) of any Lender Mortgage, but the rights, easements, covenants and agreements herein contained shall be binding upon and effective against any Mortgage Lender and any subsequent owner who acquires title to the Parcel by foreclosure, trustee's sale, or deed in lieu of foreclosure.

5.4 Right to Cure. Without limitation on the provisions of Section 5.2 and Section 5.3, in the event (and during the continuance) of a default by either Parcel Owner in the performance of any of the covenants and agreements contained in Section 3.4.1, Section 3.4.2, Section 4.1 and Section 4.2, the other Parcel Owner shall have the right, but not the obligation, subject to compliance with the notice and cure provisions of Section 5.1, to cure (or cause to be

cured) such default for the account of and at the expense of the defaulting Parcel Owner. In addition to the provisions of the preceding sentence, in the event any default hereunder by a Parcel Owner results in an Emergency Situation, the other Parcel Owner, acting in good faith, shall have the right to enter upon the Parcel of the defaulting Parcel Owner and cure (or cause to be cured) such default upon such advance notice as is reasonably possible under the circumstances or, if necessary, without advance notice, so long as notice is given as soon as possible thereafter. Any notice hereunder shall specify with particularity the nature of the actions which the non-defaulting Parcel Owner proposes to take in order to cure the claimed default. In order to effectuate any such cure, the non-defaulting Parcel Owner shall have the right and easement to enter upon the Parcel of the defaulting Parcel Owner to perform any necessary work or services. All costs and expenses reasonably incurred by the non-defaulting Parcel Owner to cure such default shall be payable by the defaulting Parcel Owner within thirty (30) days after delivery of a written statement thereof in reasonable detail by the non-defaulting Parcel Owner and, without limitation, shall be subject to the lien rights under Section 5.3. Further, any action taken by the non-defaulting Parcel Owner to cure or cause to be cured any default of the defaulting Parcel Owner shall not relieve the defaulting Parcel Owner of its liability for damages caused thereby.

5.5 Arbitration. Notwithstanding the provisions of Section 5.2, each Parcel Owner agrees that in the event a dispute arises regarding the interpretation, application or enforcement of Article 1 and Article 2 of this Declaration, such dispute shall, at the written request of either Parcel Owner, be settled by expedited arbitration administered by the American Arbitration Association. Following delivery of such request for arbitration, the Parcel Owners shall endeavor to agree on a single arbitrator, but in the absence of such agreement within ten (10) business days after delivery of such written request for arbitration, an arbitrator shall be appointed by the commercial panel of the American Arbitration Association. In conducting the arbitration, the arbitrator shall be bound to adhere to the Laws of the State of Arizona, as well as the precedents established by decisions of the state courts of Arizona. The rules of arbitration shall be the Commercial Arbitration Rules of the American Arbitration Association, as modified by any other instructions that the Parcel Owners may agree upon at the time, except that each Parcel Owner shall have the right to conduct discovery in any manner and to the extent authorized by the Federal Rules of Civil Procedure as interpreted by the United States District Court for the District of Arizona. The arbitrator shall not modify the terms of this Declaration. The award rendered by the arbitrator shall be final and binding upon the Parcel Owners hereto, and judgment upon the award may be entered in any court of competent jurisdiction in the United States. The decision of the arbitrator shall include an allocation of the costs of arbitration among the parties, as determined to be fair and reasonable by the arbitrator in light of the relative merits of the positions maintained by the parties. The Parcel Owners shall have the right to seek declaratory, injunctive or other equitable relief to enforce, or to restrain or enjoin a violation of, the provisions of this Section 5.5. Notwithstanding the foregoing, each Parcel Owner shall have the right (without submitting such controversy to arbitration) to pursue specific performance or other equitable relief against the other Parcel Owner for such Parcel Owner's failure to perform as required under this Declaration (i) in an Emergency Situation or (ii) in the event that the non-defaulting Parcel Owner's practical use and enjoyment of the easements provided hereby is substantially impaired by the grossly negligent or willful act of the defaulting Parcel Owner.

5237611_8
78198302_7

5.6 Statutory Arbitration Requirement. In the event a claim by any Parcel Owner is filed in the Arizona Superior Court, each Parcel Owner shall comply with applicable requirements regarding arbitration under the Arizona Revised Statutes.

ARTICLE 6

ENVIRONMENTAL MATTERS

6.1 Environmental Definitions.

6.1.1 “**Environmental Laws**” means any federal, state or local statute, law, code, rule, regulation, guideline, ordinance, order, standard, permit, license or requirement (including consent decrees, judicial decisions, judicial interpretations and administrative orders) now existing or hereinafter enacted together with all related amendments, implementing regulations and reauthorizations, pertaining to the protection, preservation, conservation or regulation of the environment, including, but not limited to: the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §9601 et seq. (“**CERCLA**”); the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq. (“**RCRA**”); the Toxic Substances Control Act, 15 U.S.C. §2601 et seq.; the Clean Air Act, 42 U.S.C. §7401 et seq.; and the Clean Water Act, 33 U.S.C. §1251 et seq.

6.1.2 “**Hazardous Material**” means (i) “hazardous substances” as defined by CERCLA; (ii) “hazardous wastes”, as defined by RCRA; (iii) any pollutant or contaminant, or hazardous, dangerous or toxic chemical, material, waste or other substance (“pollutant”) within the meaning of any Environmental Laws, which Environmental Laws prohibit, limit, otherwise regulate, relate to or impose obligations, liability or standards concerning the use, exposure, release, generation, manufacture, sale, transport, handling, storage, treatment, reuse, presence, disposal or recycling of such pollutant; (iv) petroleum or crude oil; (v) any radioactive material, including any source, special nuclear or by-product material as defined at 42 U.S.C. §2011 et seq., and amendments thereto and reauthorizations thereof; (vi) asbestos-containing materials in any form or condition; (vii) polychlorinated biphenyls; and (viii) natural gas, natural gas liquids, liquified natural gas or synthetic gas useable for fuel.

6.1.3 “**Release**” includes, with respect to any Hazardous Materials, but is not limited to any release, deposit, discharge, emission, leaking, leaching, spillage, seeping, migrating, ejecting, pumping, pouring, emptying, escaping dumping, disposing or other movement of Hazardous Materials.

6.2 Environmental Matters Indemnification.

6.2.1 Except to the extent arising from the negligence or intentional misconduct of University Parcel Owner, Healthcare Parcel Owner hereby agrees to indemnify, defend and hold harmless University Parcel Owner and its regents, trustees, directors, officers, members, employees, and agents at any time and from time to time, and the State of Arizona (herein collectively “**University’s Group**”) from and against any and all liabilities, claims, suits, fines, penalties, damages, losses, charges, expenses, fees and costs (including reasonable attorneys’ and costs of litigation) (collectively “**Claims**”) arising or alleged to occur, and that

result, or are alleged to result, from (i) any actual or threatened Release of Hazardous Materials or (ii) any actual or threatened violation of any Environmental Laws, to the extent that any of the foregoing arise or result from the acts or omissions of Healthcare Parcel Owner, its employees or agents from and after the Effective Date.

6.2.2 Except to the extent arising from the negligence or intentional misconduct of Healthcare Parcel Owner, University Parcel Owner hereby agrees to indemnify, defend and hold harmless Healthcare Parcel Owner and its directors, officers, members, employees and agents (herein collectively, “**Healthcare’s Group**”) from and against any and all Claims arising or alleged to occur, and that result, or are alleged to result, from (i) any actual or threatened Release of Hazardous Materials or (ii) any actual or threatened violation of any Environmental Laws, to the extent that any of the foregoing arise or result from the acts or omissions of University Parcel Owner, its employees or agents from and after the Effective Date.

ARTICLE 7

INDEMNIFICATION AND CONTRACTOR REQUIREMENTS

7.1 Indemnification.

7.1.1 Healthcare Parcel Owner agrees to indemnify, defend and hold harmless University Parcel Owner and other members of University’s Group from and against any and all Claims arising out of bodily injury of any person (including death) or property damage, but only to the extent that such Claims arise from and are caused by the act, omission, negligence, misconduct, or other fault of Healthcare Parcel Owner or other members of Healthcare’s Group (collectively, “**Healthcare Parcel Owner’s Acts**”) including any Claims derived from Healthcare Parcel Owner’s Acts and imputed to University’s Group based solely on University Parcel Owner’s status as University Parcel Owner. This Section 7.1.1 shall not limit or be limited by the indemnification provided by Section 6.2.1 above.

7.1.2 University Parcel Owner agrees to indemnify, defend and hold harmless Healthcare Parcel Owner and other members of Healthcare’s Group from and against any and all Claims arising out of bodily injury of any person (including death) or property, but only to the extent that such Claims arise from and are caused by the act, omission, negligence, misconduct, or other fault of any of University Parcel Owner or other members of University’s Group (collectively, “**University’s Parcel Owner’s Acts**”) including without limitation any Claims derived from University’s Parcel Owners Acts and imputed to Healthcare’s Group based solely on Healthcare Parcel Owner’s status as Healthcare Parcel Owner. This Section 7.1.2 shall not limit or be limited by the indemnification provided by Section 6.2.2 above.

7.2 Contractor Requirements.

7.2.1 University Parcel Owner and Healthcare Parcel Owner (in such case, the “**Contracting Party**”) shall cause its contractor(s) and/or vendors hired to provide work and/or services the contract cost of which equals or exceeds \$10,000 (individually, a “**Contractor**” and collectively the “**Contractors**”) upon the Easement Areas or with respect to the Easement Improvements (each hereinafter referred to as a “**Contractor Indemnitor**”) to indemnify, defend, save and hold harmless the University’s Group and the Healthcare’s Group (hereinafter referred

5237611_8
78198302.7

to as “**Contractor Indemnitees**”) from and against any and all Claims for bodily injury or personal injury (including death), or loss or damage to tangible or intangible property caused, or alleged to be caused, in whole or in part, by the negligent or willful acts or omissions of such Contractor or any of the directors, officers, agents, or employees or subcontractors of such Contractor. This indemnity includes any claim or amount arising out of or recovered under the Workers’ Compensation Law or arising out of the failure of such Contractor to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. It is specifically intended that the applicable Contractor Indemnitee shall, in all instances, except for Claims arising solely from the negligent or willful acts or omissions of such Contractor Indemnitee, be indemnified by such Contractor from and against any and all claims. It is agreed that such Contractor will be responsible for primary loss investigation, defense and judgment costs where this indemnification is applicable. Notwithstanding the foregoing, the Contracting Party shall be relieved of its obligations to cause a Contractor to provide the indemnity under this Section 7.2.1 provided that the Contracting Party notifies the other Parcel Owner in writing that the Contracting Party elects to include Claims required to be indemnified by such Contractor under Section 7.2.1 within indemnification obligations under Section 7.1 applicable to the Contracting Party, in which event any Claims for bodily injury or personal injury (including death), or loss or damage to tangible or intangible property caused, or alleged to be caused, in whole or in part, by the negligent or willful acts or omissions of such Contractor or any of the directors, officers, agents, or employees or subcontractors of such Contractor shall be indemnified by the Contracting Party under the provisions of Section 7.1 applicable to the Contracting Party.

7.2.2 The Contracting Party shall ensure that its contract with any Contractor causes the Contractor to meet or exceed insurance requirements customarily applicable to the type of service being provided by the Contractor to the Contracting Party. Such coverages usually include the following: commercial general liability, commercial auto liability, and worker’s compensation insurance. However, dependent on the service and risk at hand, other type(s) of coverages may be required. Third party vendors shall be required to endorse their General and Auto liability insurance policies adding the University’s Group and the Healthcare’s Group as additional insureds. All Contractors will be required to waive subrogation in all instances which may be also done through an endorsement to their policies to include workers compensation. If any other coverages are required than those mentioned above, the Contracting Party will ensure any and all applicable protections available under the coverage will be afforded to the University’s Group and the Healthcare’s Group. Notwithstanding the foregoing, if Healthcare Parcel Owner is Banner, Banner may elect to provide on behalf of any Contractor the insurance required to be provided by a Contractor under this Section 7.2.2, including without limitation through a program of self-insurance as provided under Section 4.7.1.

7.2.3 The Contracting Party shall also cause the Contractor to provide Certificates of Insurance (ACORD form or equivalent) providing evidence of all required insurance coverage and endorsements to University Parcel Owner and Healthcare Parcel Owner prior to the Contractor being considered as a potential vendor. The Contracting Party shall also require that any and all insurance policies be made available and delivered to University Parcel Owner and Healthcare Parcel Owner upon request. Notification of policy cancellations, suspensions or modification shall be sent to both University Parcel Owner and Healthcare Parcel Owner in accordance with the underlying policy provisions. Contractors will further be required to cover the risks of their subcontractors and all of the Contractors and subcontractor’s insurance

5237611 8
78198302 7

carriers shall hold an AM’s Best Rating of XIII or better. Notwithstanding the foregoing, if Healthcare Parcel Owner is Banner, and Banner is providing the insurance required to be provided by a Contractor under Section 7.2.2, Banner shall provide such Certificates of Insurance to University Parcel Owner and shall satisfy on behalf of such Contractor all other requirements applicable to such Contractor under this Section 7.2.3.

ARTICLE 8

MISCELLANEOUS

8.1 Covenants Running With The Land. It is hereby agreed and declared that, subject to Section 8.1.1, the Healthcare Parcel and the University Parcel shall be held, transferred, mortgaged, improved, sold, conveyed, used and occupied subject to the easements, rights, covenants and agreements provided by this Declaration, which shall (i) be covenants running with and binding upon the Parcels and (ii) be binding upon and enforceable against Healthcare Parcel Owner, University Parcel Owner, and their respective successors and assigns and all subsequent owners of the Parcels, or any portion thereof, whether by purchase, sale, gift, or otherwise, and each and all individuals and entities by the acceptance of title to any portion of the Parcels or any portion thereof, shall and do thereby agree and covenant to abide by and perform the agreements and obligations contained herein.

8.1.1 Notwithstanding anything to the contrary contained herein, so long as the Ground Lease and Purchase Option Agreement is in effect, neither Declarant nor the University shall be deemed to be Healthcare Parcel Owner on account of its ownership of fee title to the Healthcare Parcel.

8.1.2 Except as otherwise provided in Section 8.1.3 below, all rights of enforcement in respect of each right and easement and each covenant and agreement contained herein shall be enforceable solely by the respective Parcel Owner or Parcel Owners, as fee owner(s) of the respective Parcel or Parcels to which such right and easement is made appurtenant or which is intended to be benefitted by such covenant and agreement, and such Parcel Owner(s)’ successors and assigns as such fee owner(s); and in the event of any division of a Parcel into two or more sub-parcels under separate fee ownership, all rights under this Declaration in respect of such entire Parcel shall be held and exercised by only one fee owner of such Parcel designated by all fee owners of such Parcel in a recorded instrument referencing this Section 8.1.

8.1.3 As used herein, “**Ground Lease**” shall mean a lease by which a Parcel Owner has leased to a lessee an entire Parcel or a substantial part of a Parcel pursuant to which such lessee is responsible for all or substantially all costs of ownership, operation, maintenance and repair of such demised premises (including the improvements thereon) and such lessee has substantially all control of the demised premises (including the improvements thereon). The lessee under a Ground Lease is referred to herein as a “**Ground Lessee**,” and the lessor under a Ground Lease is referred to herein as a “**Ground Lessor**.” Subject to the provisions of Section 8.1.1 above, a Ground Lessee under a Ground Lease shall be jointly and severally liable with its Ground Lessor for all covenants, obligations undertakings as Parcel Owner under this Declaration in respect of the Parcel subject to the Ground Lease, subject to the limitation on

5237611.8
78198302.7

liability provided by Section 8.3 below. All rights (including enforcement rights and self-help rights) under this Declaration in respect of the entire Parcel subject to a Ground Lease shall be held and exercised: (a) in the case of the Healthcare Parcel, so long as the Ground Lease and Purchase Option Agreement is in effect, only by the Ground Lessee thereunder; and (y) in the case of either Parcel, other than as provided in preceding clause (b), either the Ground Lessee or the Ground Lessor, as designated by the Ground Lessor and the Ground Lessee in a recorded instrument referencing this Section 8.1.3, and in the absence of such recorded designation, all such rights shall be held and exercised by the Ground Lessor as the fee owner of the Parcel.

8.2 Liability Upon Transfer. Each Parcel Owner now or hereafter owning any interest in the Parcels shall be liable for performance of all covenants, obligations and undertakings set forth in this Declaration with respect to the Parcel covered by the interest so owned, subject however to the limitation on liability provided by Section 8.3 hereof. All such liability shall terminate upon the conveyance by a Parcel Owner of its ownership interest in its Parcel. Any successor owner of an interest in a Parcel shall succeed to and be bound by any liability, whether or not accrued and whether known or unknown, of any predecessor owner of such interest in the Parcel, subject, however, to the limitation on liability provided by Section 8.3, and provided, however, such successor owner may rely upon, and shall have the protection provided by, any estoppel certificate provided by the other Parcel Owner to such successor owner pursuant to Section 8.6.

8.3 Limitation on Liability. It is understood and agreed that none of the covenants, agreements, undertakings or indemnities made herein by any Parcel Owner are made or intended as covenants, agreements, undertakings or indemnities of such Parcel Owner personally but are solely for the purpose of binding each Parcel Owner's interest in its Parcel, and liability or damage for breach or nonperformance or pursuant to any indemnity shall be collectible only out of a Parcel Owner's interest in its Parcel, and no personal liability is assumed by nor at any time may be asserted or enforced against a Parcel Owner or any of its officers, directors, trustees, managers, partners, members, shareholders, beneficiaries, employees or agents, all such personal liability, if any, being hereby expressly waived and released by each Parcel Owner. The limitations contained in this Section for the benefit of University Parcel Owner shall include and extend to the State of Arizona.

8.4 Priority; Mortgage Protection.

8.4.1 This Declaration and the rights, easements, covenants and agreements contained herein shall remain prior and superior to any mortgage lien or other financing lien, any leases and any development, management or operating agreements imposed by the Parcel Owners upon the respective Parcels. Notwithstanding the foregoing or any other provision of this Declaration to the contrary, no claim of lien resulting from any default in or failure to comply with this Declaration nor the exercise of any remedy provided for in this Declaration shall be superior to or defeat, diminish or impair the lien (or the priority thereof) of any Lender Mortgage, but the rights, easements, covenants and agreements herein contained shall be binding upon and effective against the holder of any such Lender Mortgage and any subsequent owner who acquires title to the Parcel by foreclosure, trustee's sale, or deed in lieu of foreclosure. All Mortgage Lenders of the Parcels from time to time shall be third-party beneficiaries hereof.

with a simultaneous copy to: The University of Arizona
Administration Building, Room 103
1401 E. University Boulevard
P.O. Box 210066
Tucson, AZ 85721-0066
Attention: General Counsel
Facsimile: (520) 621-9001

After the initial conveyance of a leasehold interest in the Healthcare Parcel to Banner and Banner's succeeding to ownership in the Healthcare Parcel Improvements, notice to Banner shall be as follows.

If to Banner: Banner Health
1441 N. 12th Street
Phoenix, AZ 85006
Attention: Vice President, Development and Construction
Facsimile: (602) 747-4185

with a simultaneous copy to: Banner Health
1441 N. 12th Street
Phoenix, AZ 85006
Attention: General Counsel
Facsimile: (602) 747-4528

Either Parcel Owner may change its address upon written notice to the other Parcel Owner delivered in accordance with this Section 8.5.

8.6 Estoppel Certificate. Each Parcel Owner agrees to certify by certificate to the other Parcel Owner and any mortgagee or prospective purchaser of the other Parcel Owner upon request from time to time (a) that to the best knowledge of the certifying party, the requesting party is not in default in the performance of its obligations under this Declaration (or specifying the nature of any such default), and (b) such other factual matters as the requesting party may reasonably request. Each Parcel Owner receiving such request shall execute and return such certificate within ten (10) business days following the receipt thereof. Any such certificate may be relied upon by any party to whom such certificate is addressed.

8.7 No Waiver; Remedies Cumulative. No waiver by a Parcel Owner of any default under this Declaration shall be effective or binding on such Parcel Owner unless made in writing by such Parcel Owner and no such waiver shall be implied from any omission by a Parcel Owner to take action in respect of such default. No express written waiver of any default shall affect any other default or cover any other period of time other than any default, or period of time, or both, specified in such express waiver. One or more written waivers of any default under any provision of this Declaration shall not be deemed to be a waiver of any subsequent default in the performance of the same provision or any other term or provision contained in this Declaration. All of the remedies permitted or available to the Parcel Owners under this Declaration or at law or in equity shall be cumulative and not alternative, and invocation of any

such right or remedy shall not constitute a waiver or election of remedies with respect to any other permitted or available right or remedy.

8.8 Monetary Obligations. All monetary obligations payable by a Parcel Owner to the other Parcel Owner pursuant to the provisions of this Declaration shall be paid within thirty (30) days of the paying Parcel Owner's receipt of a written invoice from the Parcel Owner to whom such payment is owed. The default notice specified in Section 5.1 may be given only after expiration of the foregoing 30-day payment period.

8.9 Legal Expenses. If a Parcel Owner shall bring a legal proceeding at law or in equity against the other Parcel Owner by reason of the breach or alleged violation of any covenant, term or obligation hereof, or for the enforcement of any provision hereof or otherwise arising out of this Declaration, the prevailing party in such proceeding shall be entitled to recover its costs of such proceeding and reasonable attorneys' fees, which shall be payable whether or not such action is prosecuted to judgment. The term "prevailing party" within the meaning of this Section 8.9 shall include, without limitation, a Parcel Owner who dismisses an action for recovery hereunder in exchange for payment of the sums allegedly due or an agreed amount in lieu thereof, performance of covenants allegedly breached, or consideration substantially equal to the relief sought in the action.

8.10 Mitigation of Damages. In all situations arising out of this Declaration, each Parcel Owner shall attempt to avoid and minimize the damages resulting from the conduct of the other Parcel Owner provided the foregoing shall not impose any obligations on any Parcel Owner to exercise its rights under Section 5.4.

8.11 Further Assurances. Each party agrees, upon the request of any other party, to execute such further documents and instruments as may be reasonably requested by such requesting party in order to implement the intent and purposes of this Declaration.

8.12 Annexation of Additional Land. The Parcel Owners may by mutual agreement from time to time (but, except as provided under Sections 3.5.9, 3.6.3, and 3.6.4, neither Parcel Owner shall be obligated) pursuant to an amendment to this Declaration under Section 8.13 executed by the Parcel Owners and recorded in the public records of Pima County, Arizona, add to the Land subject to this Declaration additional real property ("**Additional Land**") that is contiguous to the Land and that is owned either by Healthcare Parcel Owner or by University Parcel Owner, which amendment shall identify which portions of such Additional Land are included in the Healthcare Parcel or the University Parcel, as the case may be, and shall grant any easements and identify and describe any Easement Areas and Easement Improvements located on such Additional Land, whereupon such Additional Land shall be subject to all of the terms and conditions contained in this Declaration, except as may be expressly set forth in such written amendment.

8.13 Amendment; Voluntary Termination. This Declaration may be canceled, changed, modified, amended or terminated in whole or in part only by written instrument executed by both Parcel Owners and recorded in the public records of Pima County, Arizona (without the consent of, or any other action by, any other parties included within the terms "Healthcare Benefited Parties" and "University Benefited Parties"). The rights and easements

5237611_8
78198302_7

hereby created shall not lapse or be terminated by reason of non-use or apparent abandonment thereof nor by or as a consequence of any breach or default hereunder. Notwithstanding the foregoing sentence, each Parcel Owner agrees upon the request of the other Parcel Owner to execute and record such amendments or supplements to this Declaration as may be reasonably necessary to modify or terminate easements herein granted that under the terms of this Declaration are intended or expected to be modified and terminated in the future following the exercise of rights granted herein to the Parcel Owners to construct, alter or demolish buildings or improvements on their respective Parcels.

8.14 Severability. Invalidation of any of the provisions contained in this Declaration, or of the application thereof to any person or in any case by judgment or court order shall in no way affect any of the other provisions hereof or the application thereof to any other person or in any other case and the same shall remain in full force and effect, unless enforcement of this Declaration as so partially invalidated would be unreasonable or grossly inequitable under all the circumstances or would frustrate the purposes of this Declaration.

8.15 Entire Declaration. This Declaration contains the entire agreement of the Parcel Owners with respect to the subject matter hereof. Any prior correspondence, memoranda or agreements are superseded in total by this Declaration. The provisions of this Declaration shall be construed as a whole according to their common meaning and not strictly for or against any party.

8.16 Captions. The captions preceding the text of each Article, Section, subsection or subparagraph hereof are included only for convenience of reference and shall be disregarded in the construction and interpretation of this Declaration.

8.17 Governing Law. This Declaration and all rights and obligations hereunder shall be governed by and construed in accordance with the laws of the State of Arizona without giving effect to any choice or conflict of law provision or rule thereof. Any proceeding pursuant to this Declaration shall be brought solely in the Superior Court of the State of Arizona, Pima County, and each Parcel Owner by virtue of its ownership of any portion of the Land hereby consents to the jurisdiction and venue of such court.


8.18 No Public Dedication. No rights or easements are created or granted herein for the general public or for any persons or entities other than the Parcel Owners and, to the extent specified herein, Mortgage Lenders and other Benefited Parties. No public dedication is intended or effected by this Declaration.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, Declarant has made and executed this Declaration of Easements, Covenants and Restrictions as of the date first above written.

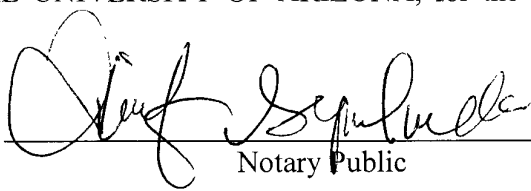
DECLARANT:

THE ARIZONA BOARD OF REGENTS,
a body corporate under the laws of the
State Arizona, for and on behalf of
THE UNIVERSITY OF ARIZONA

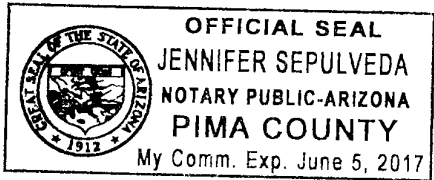
By: 
Name: Gregg Goldman
Title: Senior VP for Business Affairs and Chief
Financial Officer

STATE OF ARIZONA)
) SS
COUNTY OF PIMA)

The foregoing instrument was acknowledged before me, a Notary Public, this 25th day of February, 2015, by Gregg Goldman, Senior VP for Business Affairs and Chief Financial Officer of THE ARIZONA BOARD OF REGENTS, a body corporate under the laws of the State of Arizona, for and on behalf of THE UNIVERSITY OF ARIZONA, for the uses and purposes therein set forth.


Notary Public

[SEAL]



5237611_8
78198302_7

EXHIBIT A
To Declaration of Easements and Covenants

Legal Description of the Healthcare Parcel

[See Attached]

5237611.8
78198302.7



LEGAL DESCRIPTION

PARCEL 1

PORTIONS OF BLOCKS 1 AND 2 OF OLD WORLD ADDITION TO THE CITY OF TUCSON, ACCORDING TO THE PLAT RECORDED IN BOOK 5 OF MAPS AND PLATS AT PAGE 5, RECORDS OF THE PIMA COUNTY RECORDER, PORTIONS OF BLOCKS 5, 12, 13, 14, 19 AND 20 OF PLUMBER & STEWARD'S ADDITION NO. 2, ACCORDING TO THE PLAT RECORDED IN BOOK 2 OF MAPS AND PLATS AT PAGE 13, A PORTION OF A PARCEL IN SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, CONVEYED AND DESCRIBED IN THE DEEDS OF REAL ESTATE, BOOK 88 AT PAGE 213, PORTIONS OF ABANDONED ELM STREET, LEE STREET, MARTIN AVENUE AND ALLEYWAYS, DESCRIBED IN THE QUITCLAIM DEED RECORDED IN DOCKET 9472 AT PAGE 1378 AND PORTIONS OF ABANDONED ELM STREET, LEE STREET, ADAMS STREET, CHERRY AVENUE AND ALLEYWAYS PER ROAD NO. 432 RESOLUTION AND A PORTION OF ABANDONED WARREN AVENUE, DESCRIBED IN THE QUITCLAIM DEED RECORDED IN DOCKET 8915 AT PAGE 1248, ALL DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE;

THENCE NORTH 00°54'36" WEST 2623.87 FEET UPON THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 6 AND THE CENTERLINE OF SAID CAMPBELL AVENUE TO THE EAST ONE QUARTER CORNER OF SAID SECTION 6, MONUMENTED BY A 2 INCH BRASS DISC IN A STREET WELL;

THENCE SOUTH 89°29'59" WEST 99.44 FEET UPON THE NORTH LINE OF SAID SOUTHEAST QUARTER;

THENCE SOUTH 01°03'06" EAST 30.71 FEET, RADIAL TO THE NEXT DESCRIBED CURVE AND PERPENDICULAR TO THE SOUTH RIGHT OF WAY LINE OF CHAUNCEY LANE, TO A POINT ON SAID SOUTH RIGHT OF WAY LINE AND AT THE WEST END OF SAID CURVE, CONCAVE SOUTHERLY, BEING THE NORTHWEST CORNER OF THE EXCEPTION PARCEL DESCRIBED AS PARCEL II IN EXHIBIT "A" OF THE QUITCLAIM DEED RECORDED IN DOCKET 7155 AT PAGE 597, SAID POINT BEING THE **POINT OF BEGINNING**;

THENCE EASTERLY UPON THE ARC OF SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 20°46'13", FOR AN ARC DISTANCE OF 9.06 FEET TO THE NON-TANGENT WEST RIGHT OF WAY LINE OF CAMPBELL AVENUE AND THE NORTHWEST CORNER OF THAT PARCEL CONVEYED FOR RIGHT OF WAY TO THE CITY OF TUCSON IN THE QUIT-CLAIM DEED RECORDED IN DOCKET 11900 AT PAGE 2465;

THENCE SOUTH 02°28'54" EAST 91.47 FEET UPON SAID WEST RIGHT OF WAY

LINE AND UPON THE WEST LINE OF SAID PARCEL TO A TANGENT CURVE CONCAVE NORTHWESTERLY;

THENCE SOUTHWESTERLY UPON SAID WEST RIGHT OF WAY LINE, UPON THE WEST LINE OF SAID PARCEL AND UPON THE ARC OF SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 91°36'56", FOR AN ARC DISTANCE OF 39.97 FEET TO A RADIAL LINE;

THENCE SOUTH 00°51'58" EAST 60.02 FEET UPON THE SOUTHERLY EXTENSION OF SAID RADIAL LINE, UPON SAID WEST RIGHT OF WAY LINE AND UPON THE WEST LINE OF SAID PARCEL TO THE SOUTHWEST CORNER OF SAID PARCEL;

THENCE NORTH 89°07'16" EAST 31.04 FEET UPON SAID WEST RIGHT OF WAY LINE AND UPON THE SOUTH LINE OF SAID PARCEL TO THE SOUTHEAST CORNER OF SAID PARCEL, BEING ON THE WEST RIGHT OF WAY LINE OF SAID CAMPBELL AVENUE BEING A LINE 82.00 FEET WESTERLY OF AND PARALLEL WITH SAID EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 6;

THENCE SOUTH 00°54'36" EAST 321.53 FEET UPON SAID RIGHT OF WAY LINE;

THENCE SOUTH 89°08'48" WEST 284.17 FEET;

THENCE SOUTH 39°08'55" WEST 126.14 FEET;

THENCE SOUTH 00°51'12" EAST 51.78 FEET;

THENCE SOUTH 89°08'48" WEST 3.61 FEET;

THENCE SOUTH 00°51'12" EAST 72.65 FEET;

THENCE SOUTH 88°37'29" WEST 5.73 FEET;

THENCE SOUTH 00°51'12" EAST 65.91 FEET;

THENCE SOUTH 89°08'48" WEST 70.65 FEET;

THENCE SOUTH 00°51'12" EAST 60.87 FEET TO A POINT ON COLUMN LINE NO. 26 ACCORDING TO THE PLAN FOR THE "CLINICAL SCIENCES BUILDING AND TEACHING HOSPITAL COLLEGE OF MEDICINE" DATED DECEMBER 12 1967;

THENCE SOUTH 89°08'48" WEST 97.96 FEET UPON SAID COLUMN LINE;

THENCE NORTH 00°51'12" WEST 10.08 FEET;

THENCE SOUTH 89°08'48" WEST 43.91 FEET;

THENCE SOUTH 00°51'12" EAST 10.08 FEET RETURNING TO SAID COLUMN LINE;

THENCE SOUTH 89°08'48" WEST 248.15 FEET UPON SAID COLUMN LINE AND THE WESTERLY PROLONGATION THEREOF;

THENCE SOUTH 00°51'12" EAST 150.20 FEET;

THENCE SOUTH 89°08'48" WEST 20.49 FEET;

THENCE SOUTH 00°51'12" EAST 31.39 FEET;

THENCE SOUTH 89°08'48" WEST 57.92 FEET;

THENCE SOUTH 00°51'12" EAST 146.77 FEET TO A TANGENT CURVE CONCAVE NORTHWESTERLY;

THENCE SOUTHWESTERLY UPON THE ARC OF SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 90°00'00", FOR AN ARC DISTANCE OF 39.27 FEET TO A TANGENT LINE;

THENCE SOUTH 89°08'48" WEST 297.39 FEET;

THENCE NORTH 00°42'59" WEST 395.57 FEET;

THENCE NORTH 89°02'03" EAST 7.83 FEET;

THENCE NORTH 44°38'13" EAST 22.33 FEET;

THENCE NORTH 00°49'03" WEST 90.20 FEET;
THENCE NORTH 05°57'06" EAST 14.66 FEET;
THENCE NORTH 00°52'50" WEST 90.32 FEET;
THENCE NORTH 01°07'21" WEST 42.02 FEET;
THENCE SOUTH 88°52'04" WEST 36.09 FEET;
THENCE NORTH 00°23'29" WEST 34.54 FEET;
THENCE SOUTH 89°10'08" WEST 2.59 FEET;
THENCE NORTH 01°55'24" WEST 33.05 FEET;
THENCE NORTH 88°07'22" EAST 3.39 FEET;
THENCE NORTH 01°21'48" WEST 29.81 FEET;
THENCE SOUTH 87°45'46" WEST 3.31 FEET;
THENCE NORTH 01°58'40" WEST 65.24 FEET;
THENCE SOUTH 89°24'32" WEST 232.45 FEET;

THENCE NORTH 00°40'10" WEST 299.61 FEET TO A NON-TANGENT CURVE
CONCAVE SOUTHEASTERLY, THE RADIUS POINT OF SAID CURVE BEARS SOUTH
67°18'28" EAST;

THENCE NORTHEASTERLY UPON THE ARC OF SAID CURVE TO THE RIGHT,
HAVING A RADIUS OF 166.23 FEET AND A CENTRAL ANGLE OF 53°19'39", FOR AN
ARC DISTANCE OF 154.72 FEET TO A NON-TANGENT LINE;

THENCE NORTH 01°03'06" WEST 19.94 FEET TO THE SOUTH RIGHT OF WAY
LINE OF 30.00 FOOT WIDE CHAUNCEY LANE;

THENCE NORTH 88°56'54" EAST 1004.45 FEET UPON SAID SOUTH RIGHT OF
WAY LINE TO THE WEST RIGHT OF WAY LINE OF MARTIN AVENUE;

THENCE SOUTH 00°53'47" EAST 30.00 FEET UPON SAID WEST RIGHT OF WAY
LINE TO THE WESTERLY PROLONGATION OF THE NORTH LINE OF BLOCK 1 OF OLD
WORLD ADDITION, A SUBDIVISION OF PIMA COUNTY ACCORDING TO THE PLAT
RECORDED IN BOOK 5 OF MAPS AND PLATS AT PAGE 5, SAID RECORDS OF THE PIMA
COUNTY RECORDER, SAID PROLONGATION ALSO BEING THE WESTERLY
PROLONGATION OF THE SOUTH RIGHT OF WAY LINE OF 60.00 FOOT WIDE
CHAUNCEY LANE;

THENCE NORTH 88°56'54" EAST 344.88 FEET UPON SAID PROLONGATION,
UPON SAID NORTH LINE OF BLOCK 1 AND UPON SAID SOUTH RIGHT OF WAY LINE
TO THE **POINT OF BEGINNING.**

EXCEPT THE FOLLOWING DESCRIBED PARCEL:

NORTH WELL SITE

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH,
RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA
DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, AS MONUMENTED
BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF
SPEEDWAY BOULEVARD AND CAMPBELL AVENUE;

THENCE NORTH 00°54'36" WEST 2623.87 FEET UPON THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 6 AND THE CENTERLINE OF SAID CAMPBELL AVENUE TO THE EAST ONE QUARTER CORNER OF SAID SECTION 6, MONUMENTED BY A 2 INCH BRASS DISC IN A STREET WELL;

THENCE SOUTH 89°29'59" WEST 992.88 FEET UPON THE NORTH LINE OF SAID SOUTHEAST QUARTER;

THENCE SOUTH 01°03'06" EAST 9.31 FEET, PERPENDICULAR TO THE SOUTH RIGHT OF WAY LINE OF CHAUNCEY LANE, TO A POINT ON SAID SOUTH RIGHT OF WAY LINE;

THENCE CONTINUE SOUTH 01°03'06" EAST 18.51 FEET TO THE **POINT OF BEGINNING**;

THENCE NORTH 88°56'54" EAST 51.75 FEET, PARALLEL WITH AND 18.51 FEET SOUTHERLY OF SAID SOUTH RIGHT OF WAY LINE, TO A TANGENT CURVE CONCAVE SOUTHWESTERLY;

THENCE SOUTHEASTERLY UPON THE ARC OF SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 22.00 FEET AND A CENTRAL ANGLE OF 75°36'21", FOR AN ARC DISTANCE OF 29.03 FEET TO A NON-TANGENT LINE;

THENCE NORTH 88°56'54" EAST 12.52 FEET;

THENCE SOUTH 01°03'06" EAST 29.50 FEET;

THENCE SOUTH 88°56'54" WEST 11.50 FEET;

THENCE NORTH 74°31'23" WEST 34.40 FEET;

THENCE SOUTH 88°56'54" WEST 41.11 FEET;

THENCE NORTH 01°03'06" WEST 36.24 FEET TO THE **POINT OF BEGINNING**.

FURTHER EXCEPT THE FOLLOWING DESCRIBED PARCEL:

SOUTH WELL SITE

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE, FOR REFERENCE, A 2 INCH BRASS DISC IN A STREET WELL AT THE EAST ONE QUARTER CORNER OF SAID SECTION 6 BEARS NORTH 00°54'36" WEST AT A DISTANCE OF 2623.87 FEET;

THENCE, PROCEEDING FROM SAID SOUTHEAST CORNER OF SECTION 6, NORTH 33°08'56" WEST 2009.17 FEET TO THE **POINT OF BEGINNING**;

THENCE SOUTH 89°10'25" WEST 100.29 FEET;

THENCE NORTH 00°02'16" WEST 40.92 FEET;

THENCE NORTH 89°01'18" EAST 100.15 FEET;

THENCE SOUTH 00°14'48" EAST 41.19 FEET TO THE **POINT OF BEGINNING**.

PARCEL 2

THE EAST 60.00 FEET OF LOTS 4, 5 AND 6 IN BLOCK 49 OF JEFFERSON PARK ADDITION, A SUBDIVISION OF PIMA COUNTY, ARIZONA, ACCORDING TO THE MAP OR PLAT THEREOF OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF PIMA COUNTY, ARIZONA, IN BOOK 4 OF MAPS AND PLATS AT PAGE 17 THEREOF.

PARCEL 3

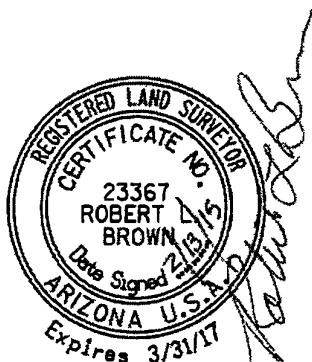
LOTS 1, 2, 3, 4, 7 AND 8, ALL IN BLOCK 50 OF JEFFERSON PARK ADDITION, A SUBDIVISION OF PIMA COUNTY, ARIZONA, ACCORDING TO THE MAP OR PLAT THEREOF OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF PIMA COUNTY, ARIZONA, IN BOOK 4 OF MAPS AND PLATS AT PAGE 17 THEREOF.

PARCEL 4

LOTS 3, 4 AND 7 IN BLOCK 51 OF JEFFERSON PARK ADDITION, A SUBDIVISION OF PIMA COUNTY, ARIZONA, ACCORDING TO THE MAP OR PLAT THEREOF OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF PIMA COUNTY, ARIZONA, IN BOOK 4 OF MAPS AND PLATS AT PAGE 17 THEREOF.

PARCEL 5

LOTS 1, 2, 3 AND 4 AND COMMON AREA A OF JEFFERSON PLACE TOWNHOMES, A SUBDIVISION OF PIMA COUNTY, ARIZONA, ACCORDING TO THE MAP OR PLAT THEREOF OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF PIMA COUNTY, ARIZONA, IN BOOK 36 OF MAPS AND PLATS AT PAGE 39 THEREOF.



F:\41116_Uofa_Hospital\Survey\Legals\41116LG02_FEE_PARCELS.Docx

EXHIBIT B
To Declaration of Easements and Covenants

Legal Description of the University Parcel

[See Attached]

5237611_8
78198302.7



**LEGAL DESCRIPTION
UNIVERSITY PARCEL**

PORTIONS OF BLOCKS 3, 4 AND 5 OF OLD WORLD ADDITION TO THE CITY OF TUCSON, ACCORDING TO THE PLAT RECORDED IN BOOK 5 OF MAPS AND PLATS AT PAGE 5, RECORDS OF THE PIMA COUNTY RECORDER, PORTIONS OF BLOCKS 5, 6, 11, 12, 14 AND 19 OF PLUMBER & STEWARD'S ADDITION NO. 2, ACCORDING TO THE PLAT RECORDED IN BOOK 2 OF MAPS AND PLATS AT PAGE 13, A PORTION OF A PARCEL IN SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, CONVEYED AND DESCRIBED IN THE DEEDS OF REAL ESTATE, BOOK 88 AT PAGE 213, PORTIONS OF ABANDONED ELM STREET, LEE STREET, MARTIN AVENUE AND ALLEYWAYS, DESCRIBED IN THE QUITCLAIM DEED RECORDED IN DOCKET 9472 AT PAGE 1378, PORTIONS OF ABANDONED ADAMS STREET, MARTIN AVENUE AND ALLEYWAYS DESCRIBED IN THE QUITCLAIM DEED RECORDED IN DOCKET 4459 AT PAGE 908, PORTIONS OF ABANDONED DRACHMAN STREET, MARTIN AVENUE AND ALLEYWAY DESCRIBED IN THE QUITCLAIM DEED RECORDED IN DOCKET 9021 AT PAGE 1184, PORTIONS OF ABANDONED MABLE STREET, DRACHMAN STREET, WARREN AVENUE AND ALLEYWAYS DESCRIBED IN THE DEED RECORDED IN DOCKET 12339 AT PAGE 821, PORTIONS OF ABANDONED ELM STREET, LEE STREET, ADAMS STREET, CHERRY AVENUE AND ALLEYWAYS PER ROAD NO. 432 RESOLUTION AND A PORTION OF ABANDONED WARREN AVENUE, DESCRIBED IN THE QUITCLAIM DEED RECORDED IN DOCKET 8915 AT PAGE 1248, ALL DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE, FOR REFERENCE, A 2 INCH BRASS DISC IN A STREET WELL AT THE EAST ONE QUARTER CORNER OF SAID SECTION 6 BEARS NORTH 00°54'36" WEST AT A DISTANCE OF 2623.87 FEET;

THENCE, PROCEEDING FROM SAID SOUTHEAST CORNER OF SECTION 6, NORTH 00°54'36" WEST 2093.58 FEET UPON THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 6 AND THE CENTERLINE OF SAID CAMPBELL AVENUE;

THENCE SOUTH 89°05'24" WEST 82.00 FEET TO THE **POINT OF BEGINNING** ON THE WEST RIGHT OF WAY LINE OF CAMPBELL AVENUE, SAID POINT BEING AT THE SOUTHEAST CORNER OF THAT PARCEL KNOWN AS THE "HEALTHCARE PARCEL";

THENCE THE FOLLOWING COURSES UPON THE SOUTHERLY AND WESTERLY BOUNDARY LINE OF SAID "HEALTHCARE PARCEL";

THENCE SOUTH 89°08'48" WEST 284.17 FEET;

THENCE SOUTH 39°08'55" WEST 126.14 FEET;

THENCE SOUTH 00°51'12" EAST 51.78 FEET;

THENCE SOUTH 89°08'48" WEST 3.61 FEET;

THENCE SOUTH 00°51'12" EAST 72.65 FEET;
THENCE SOUTH 88°37'29" WEST 5.73 FEET;
THENCE SOUTH 00°51'12" EAST 65.91 FEET;
THENCE SOUTH 89°08'48" WEST 70.65 FEET;
THENCE SOUTH 00°51'12" EAST 60.87 FEET TO A POINT ON COLUMN LINE NO.
26 ACCORDING TO THE PLAN FOR THE "CLINICAL SCIENCES BUILDING AND
TEACHING HOSPITAL COLLEGE OF MEDICINE" DATED DECEMBER 12 1967;
THENCE SOUTH 89°08'48" WEST 97.96 FEET UPON SAID COLUMN LINE;
THENCE NORTH 00°51'12" WEST 10.08 FEET;
THENCE SOUTH 89°08'48" WEST 43.91 FEET;
THENCE SOUTH 00°51'12" EAST 10.08 FEET RETURNING TO SAID COLUMN
LINE;
THENCE SOUTH 89°08'48" WEST 248.15 FEET UPON SAID COLUMN LINE AND
THE WESTERLY PROLONGATION THEREOF;
THENCE SOUTH 00°51'12" EAST 150.20 FEET;
THENCE SOUTH 89°08'48" WEST 20.49 FEET;
THENCE SOUTH 00°51'12" EAST 31.39 FEET;
THENCE SOUTH 89°08'48" WEST 57.92 FEET;
THENCE SOUTH 00°51'12" EAST 146.77 FEET TO A TANGENT CURVE CONCAVE
NORTHWESTERLY;
THENCE SOUTHWESTERLY UPON THE ARC OF SAID CURVE TO THE RIGHT,
HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 90°00'00", FOR AN ARC
DISTANCE OF 39.27 FEET TO A TANGENT LINE;
THENCE SOUTH 89°08'48" WEST 297.39 FEET;
THENCE NORTH 00°42'59" WEST 395.57 FEET;
THENCE NORTH 89°02'03" EAST 7.83 FEET;
THENCE NORTH 44°38'13" EAST 22.33 FEET;
THENCE NORTH 00°49'03" WEST 90.20 FEET;
THENCE NORTH 05°57'06" EAST 14.66 FEET;
THENCE NORTH 00°52'50" WEST 90.32 FEET;
THENCE NORTH 01°07'21" WEST 42.02 FEET;
THENCE SOUTH 88°52'04" WEST 36.09 FEET;
THENCE NORTH 00°23'29" WEST 34.54 FEET;
THENCE SOUTH 89°10'08" WEST 2.59 FEET;
THENCE NORTH 01°55'24" WEST 33.05 FEET;
THENCE NORTH 88°07'22" EAST 3.39 FEET;
THENCE NORTH 01°21'48" WEST 29.81 FEET;
THENCE SOUTH 87°45'46" WEST 3.31 FEET;
THENCE NORTH 01°58'40" WEST 65.24 FEET;
THENCE SOUTH 89°24'32" WEST 232.45 FEET;
THENCE NORTH 00°40'10" WEST 299.61 FEET TO A NON-TANGENT CURVE
CONCAVE SOUTHEASTERLY, THE RADIUS POINT OF SAID CURVE BEARS SOUTH
67°18'28" EAST;
THENCE NORTHEASTERLY UPON THE ARC OF SAID CURVE TO THE RIGHT,

HAVING A RADIUS OF 166.23 FEET AND A CENTRAL ANGLE OF 53°19'39", FOR AN ARC DISTANCE OF 154.72 FEET TO A NON-TANGENT LINE;

THENCE NORTH 01°03'06" WEST 19.94 FEET TO THE SOUTH RIGHT OF WAY LINE OF 30.00 FOOT WIDE CHAUNCEY LANE;

THENCE, DEPARTING SAID BOUNDARY LINE OF THE "HEALTHCARE PARCEL" SOUTH 88°56'54" WEST 60.78 FEET UPON SAID SOUTH RIGHT OF WAY LINE TO A NON-TANGENT CURVE CONCAVE SOUTHEASTERLY ON THE BACK OF THE WESTERLY CURB OF "RING ROAD", THE RADIUS POINT OF SAID CURVE BEARS SOUTH 29°25'33" EAST;

THENCE SOUTHWESTERLY UPON SAID BACK OF CURB AND UPON THE ARC OF SAID CURVE TO THE LEFT, HAVING A RADIUS OF 207.00 FEET AND A CENTRAL ANGLE OF 57°23'04", FOR AN ARC DISTANCE OF 207.32 FEET TO A NON-TANGENT LINE;

THENCE SOUTH 00°38'26" EAST 1082.83 FEET UPON SAID BACK OF CURB TO THE NORTH RIGHT OF WAY LINE OF DRACHMAN STREET;

THENCE NORTH 89°05'45" EAST 302.59 FEET UPON SAID RIGHT OF WAY LINE TO THE EAST RIGHT OF WAY LINE OF CHERRY AVENUE;

THENCE SOUTH 00°53'22" EAST 366.78 FEET UPON SAID EAST RIGHT OF WAY LINE TO THE BACK OF THE NORTHERLY CURB IN A PORTION OF ABANDONED MABLE STREET;

THENCE NORTH 89°07'46" EAST 874.80 FEET UPON SAID BACK OF CURB TO THE EAST END OF SAID ABANDONED PORTION OF MABLE STREET;

THENCE NORTH 00°53'47" WEST 11.87 FEET UPON SAID EAST END TO THE NORTH RIGHT OF WAY LINE OF MABLE STREET;

THENCE NORTH 89°06'12" EAST 362.94 FEET UPON SAID NORTH RIGHT OF WAY LINE TO THE WEST RIGHT OF WAY LINE OF CAMPBELL AVENUE;

THENCE NORTH 00°56'50" WEST 749.67 FEET UPON SAID RIGHT OF WAY LINE;

THENCE NORTH 19°19'26" WEST 21.56 FEET UPON SAID RIGHT OF WAY LINE;

THENCE SOUTH 89°05'25" WEST 6.46 FEET UPON SAID RIGHT OF WAY LINE;

THENCE NORTH 00°51'39" WEST 43.50 FEET UPON SAID RIGHT OF WAY LINE;

THENCE SOUTH 89°58'31" EAST 5.67 FEET UPON SAID RIGHT OF WAY LINE;

THENCE NORTH 00°53'57" WEST 74.27 FEET UPON SAID RIGHT OF WAY LINE;

THENCE NORTH 11°08'34" EAST 38.50 FEET UPON SAID RIGHT OF WAY LINE;

THENCE NORTH 00°54'39" WEST 153.27 FEET UPON SAID RIGHT OF WAY LINE TO THE **POINT OF BEGINNING.**

TOGETHER WITH THE FOLLOWING DESCRIBED PARCEL:

NORTH WELL SITE

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH,

RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA
DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE;

THENCE NORTH 00°54'36" WEST 2623.87 FEET UPON THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 6 AND THE CENTERLINE OF SAID CAMPBELL AVENUE TO THE EAST ONE QUARTER CORNER OF SAID SECTION 6, MONUMENTED BY A 2 INCH BRASS DISC IN A STREET WELL;

THENCE SOUTH 89°29'59" WEST 992.88 FEET UPON THE NORTH LINE OF SAID SOUTHEAST QUARTER;

THENCE SOUTH 01°03'06" EAST 9.31 FEET, PERPENDICULAR TO THE SOUTH RIGHT OF WAY LINE OF CHAUNCEY LANE, TO A POINT ON SAID SOUTH RIGHT OF WAY LINE;

THENCE CONTINUE SOUTH 01°03'06" EAST 18.51 FEET TO THE **POINT OF BEGINNING**;

THENCE NORTH 88°56'54" EAST 51.75 FEET, PARALLEL WITH AND 18.51 FEET SOUTHERLY OF SAID SOUTH RIGHT OF WAY LINE, TO A TANGENT CURVE CONCAVE SOUTHWESTERLY;

THENCE SOUTHEASTERLY UPON THE ARC OF SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 22.00 FEET AND A CENTRAL ANGLE OF 75°36'21", FOR AN ARC DISTANCE OF 29.03 FEET TO A NON-TANGENT LINE;

THENCE NORTH 88°56'54" EAST 12.52 FEET;

THENCE SOUTH 01°03'06" EAST 29.50 FEET;

THENCE SOUTH 88°56'54" WEST 11.50 FEET;

THENCE NORTH 74°31'23" WEST 34.40 FEET;

THENCE SOUTH 88°56'54" WEST 41.11 FEET;

THENCE NORTH 01°03'06" WEST 36.24 FEET TO THE **POINT OF BEGINNING**.

ALSO TOGETHER WITH THE FOLLOWING DESCRIBED PARCEL:

SOUTH WELL SITE

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE, FOR REFERENCE, A 2 INCH BRASS DISC IN A STREET WELL AT THE EAST ONE QUARTER CORNER OF SAID SECTION 6 BEARS NORTH 00°54'36" WEST AT A DISTANCE OF 2623.87 FEET;

THENCE, PROCEEDING FROM SAID SOUTHEAST CORNER OF SECTION 6,

NORTH 33°08'56" WEST 209.17 FEET TO THE **POINT OF BEGINNING**;
THENCE SOUTH 89°10'25" WEST 100.29 FEET;
THENCE NORTH 00°02'16" WEST 40.92 FEET;
THENCE NORTH 89°01'18" EAST 100.15 FEET;
THENCE SOUTH 00°14'48" EAST 41.19 FEET TO THE **POINT OF BEGINNING**.

F:\4116_Uofa_Hospital\Survey\Legals\4116LG10_UA_PARCEL.Docx
REVISED 02/13/2015

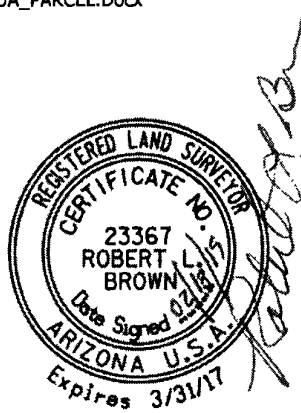


EXHIBIT C
To Declaration of Easements and Covenants

Site Area Plan








[See Attached]

5237611_8
78198302.7

Arizona Health Sciences Center

Site Area Plan

2-23-15

-  University Owned Improvements
-  Healthcare Owned Improvements
-  University Driveways
-  Healthcare Parcel
-  University Parcel
-  Healthcare Driveways
-  Healthcare Private Roads
-  University Private Roads
-  City Owned Roads

Note: Approximation and estimation must be confirmed by a legal description and a surveyor's measurements.

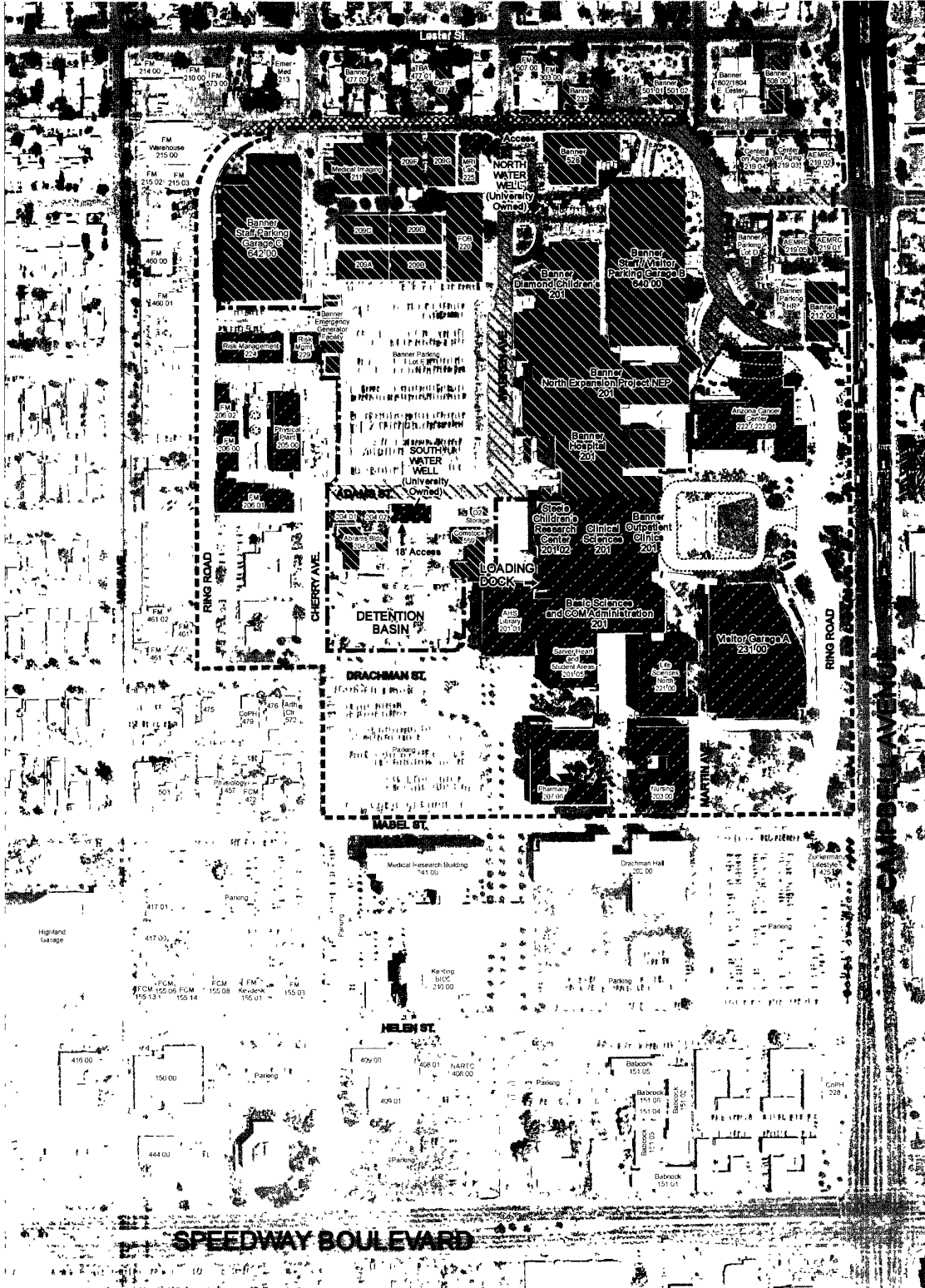


EXHIBIT D
To Declaration of Easements and Covenants

Utility Chart/Plan

[See Attached]

5237611_8
78198302.7

The University of Arizona
 University Medical Center
 Utility Systems

Exhibit D

Utility tag	Utilities to be retained by the University of Arizona (Easement Grant Required)	Utilities to be transferred (No Easement Grant Required)	Public Utilities to be coordinated with the Utility Company and modified as require to maintain service to the campus and community
1.1	Future University waterline to relocated well site		
1.2		Retention basin	
1.3		Detention basin	
1.4			Natural gas service line, Southwest Gas Co.
1.5	Sanitary sewer	Chilled water	Natural gas service line, Southwest Gas Co.
		DI water	
		Water	
1.5A	University UITS communications duct bank		
1.6		Primary power	
1.7	Sanitary sewer	Chilled water	
		DI water	
		Water	
		Primary power	
1.7A	University UITS communications duct bank		
1.8		Storm drain system	
1.9	Transformer and medium voltage switch, unless Building 229 and the parking structure are re-circuited		

January 28, 2015

Page 1 of 17

The University of Arizona
 University Medical Center
 Utility Systems

Exhibit D

Utility tag	Utilities to be retained by the University of Arizona (Easement Grant Required)	Utilities to be transferred (No Easement Grant Required)	Public Utilities to be coordinated with the Utility Company and modified as require to maintain service to the campus and community
1.10	Shallow tunnel	Steam / condensate	
	Fire alarm	Water	
	University UITS Communications cabling		
1.11	Primary power, coordinate with utility ID 1.9		
1.12		University water meters (Banner will tie over existing meters to a new connection from the Tucson Water System).	
1.13	Not Used		
1.14	Not Used		
1.15		8" and 16" chilled water mains	
1.16		Emergency power duct bank	
1.17			Water (Tucson Water)
			Sanitary sewer (Aband)
			Overhead electric Overhead communication
1.18	North well site (until well site is replaced)		

January 28, 2015

Page 2 of 17

The University of Arizona
 University Medical Center
 Utility Systems

Exhibit D

Utility tag	Utilities to be retained by the University of Arizona (Easement Grant Required)	Utilities to be transferred (No Easement Grant Required)	Public Utilities to be coordinated with the Utility Company and modified as require to maintain service to the campus and community
1.19	Water main		Water (Tucson Water)
	Sanitary sewer		Natural gas main, Southwest Gas Co.
			Communications duct bank, Century Link
1.20	University UITS communications duct bank (on acquisition parcels only)		
1.21		Water line to BRL	
1.22	Primary power duct bank		
1.23		Water and fire service lines to generator building	
1.24	University UITS overhead communications backbone, easement to be granted in the future if public R.O.W. is vacated.	University UITS building service drops on acquisition parcels at time of redevelopment	Overhead electric
			Overhead communication
1.25		University UITS communications duct bank on acquisition parcels at time of redevelopment	

January 28, 2015

Page 3 of 17

The University of Arizona
 University Medical Center
 Utility Systems

Exhibit D

Utility tag	Utilities to be retained by the University of Arizona (Easement Grant Required)	Utilities to be transferred (No Easement Grant Required)	Public Utilities to be coordinated with the Utility Company and modified as require to maintain service to the campus and community
1.26	University UITS communications duct bank		
1.27	Primary power duct bank and PMH's		
2.1	North tunnel with primary power duct bank on top of tunnel		
2.2	Primary power duct bank	Underground communication and control duct bank from generator building	
2.3	Tunnel pipe slide		
2.4			High pressure and medium pressure natural gas mains, Southwest Gas Co.
2.5			Natural gas regulator station Southwest Gas Co.
2.6			Potential communications duct bank (FO)
2.7	South tunnel with primary power duct bank on top of tunnel		
2.8	South well site (access easement required for well site parcel)		

January 28, 2015

Page 4 of 17

The University of Arizona
 University Medical Center
 Utility Systems

Exhibit D

Utility tag	Utilities to be retained by the University of Arizona (Easement Grant Required)	Utilities to be transferred (No Easement Grant Required)	Public Utilities to be coordinated with the Utility Company and modified as require to maintain service to the campus and community
2.9		Communications duct bank	
2.10		Communications duct bank	
2.11		Sanitary sewer	
2.12	Water main (12")		
2.13	Water main (8")		
2.14	Tunnel		
2.15			Primary power Communications
2.16	Tunnel vent		
2.17		Storm drainage system	
2.18	Tunnel with primary power duct bank on top of tunnel within acquisition area		Water (Tucson Water)
	Fire service mains		High pressure (6") natural gas mains, Southwest Gas Co.
			Medium pressure natural gas mains, Southwest Gas Co.
			Communications duct bank (Century Link)

January 28, 2015

Page 5 of 17

The University of Arizona
 University Medical Center
 Utility Systems

Exhibit D

Utility tag	Utilities to be retained by the University of Arizona (Easement Grant Required)	Utilities to be transferred (No Easement Grant Required)	Public Utilities to be coordinated with the Utility Company and modified as require to maintain service to the campus and community
2.19	Chilled water mains		Water (Tucson Water)
	Electric (lighting circuits)		High and medium pressure natural gas mains, Southwest Gas Co.
			Communications duct bank (Century Link)
2.20	Sanitary sewer		
2.21			Underground communications (Cox)
2.22			Natural gas service line (Southwest Gas)
2.23		Fire service line and water service line on acquisition parcels at time of redevelopment	
2.24			Communications duct bank and vaults
3.1	Water supply to east irrigation system		
3.2			Natural gas mains, Southwest Gas Co.
			Water (Tucson Water)
			Sanitary sewer (PCRWRD)
			Overhead electric
			Overhead communication

January 28, 2015

Page 6 of 17

The University of Arizona
 University Medical Center
 Utility Systems

Exhibit D

Utility tag	Utilities to be retained by the University of Arizona (Easement Grant Required)	Utilities to be transferred (No Easement Grant Required)	Public Utilities to be coordinated with the Utility Company and modified as require to maintain service to the campus and community
3.3	Water supply to east irrigation system		Storm sewer
			Water (Tucson Water)
			Storm sewer
			Sanitary sewer (PCRWRD)
			Natural gas mains, Southwest Gas Co.
3.4			Water (Tucson Water)
			Sanitary sewer (PCRWRD)
			Natural gas mains, Southwest Gas Co.
3.5	University UITS communications duct bank backbone	University UITS building service duct banks on acquisition parcels at time of redevelopment	
3.6		University UITS building service duct banks on acquisition parcels at time of redevelopment	
3.7	University UITS overhead communications backbone		
3.8	University UITS overhead communications backbone	University UITS building service drops on acquisition parcels at time of redevelopment	
3.9	Storm sewer		

January 28, 2015

Page 7 of 17

The University of Arizona
 University Medical Center
 Utility Systems

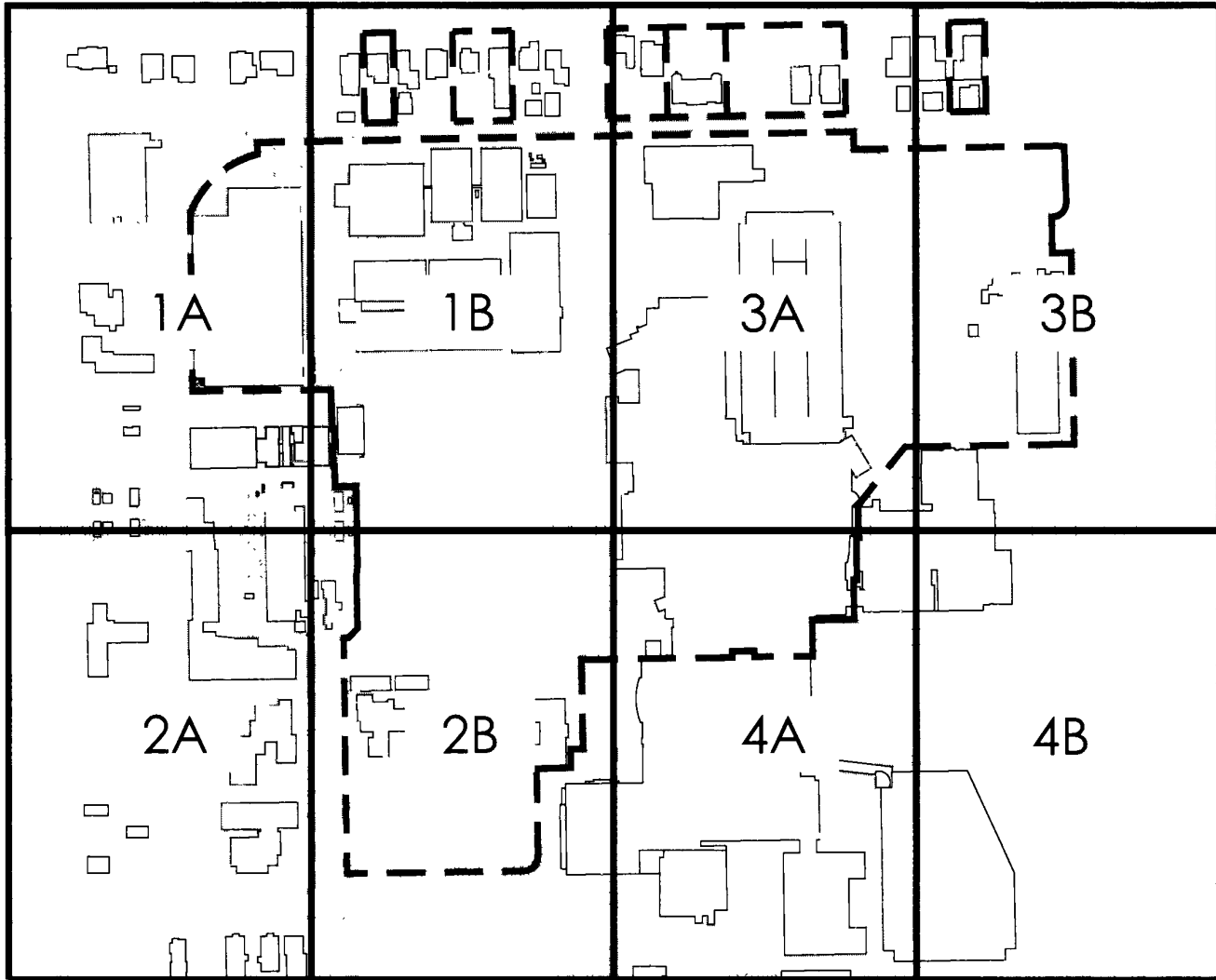
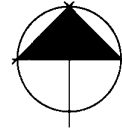
Exhibit D

Utility tag	Utilities to be retained by the University of Arizona (Easement Grant Required)	Utilities to be transferred (No Easement Grant Required)	Public Utilities to be coordinated with the Utility Company and modified as require to maintain service to the campus and community
3.10	Sanitary sewer		
4.1	Not Used		
4.2	Not Used		
4.3	Not Used		
4.4	Not Used		
4.5	Tunnel with primary power duct bank on top of tunnel (potion on acquisition parcel)		Water (Tucson Water) High pressure (6") natural gas mains, Southwest Gas Co. Communications duct bank
4.6	Not Used		
4.7	Not Used		
4.8	Primary power duct bank		
4.9	Not Used		
4.10	Tunnel pipe Slide		
4.11	Not Used		
4.12	Not Used		
4.13	Sanitary sewer		

January 28, 2015

Page 8 of 17

EXHIBIT D



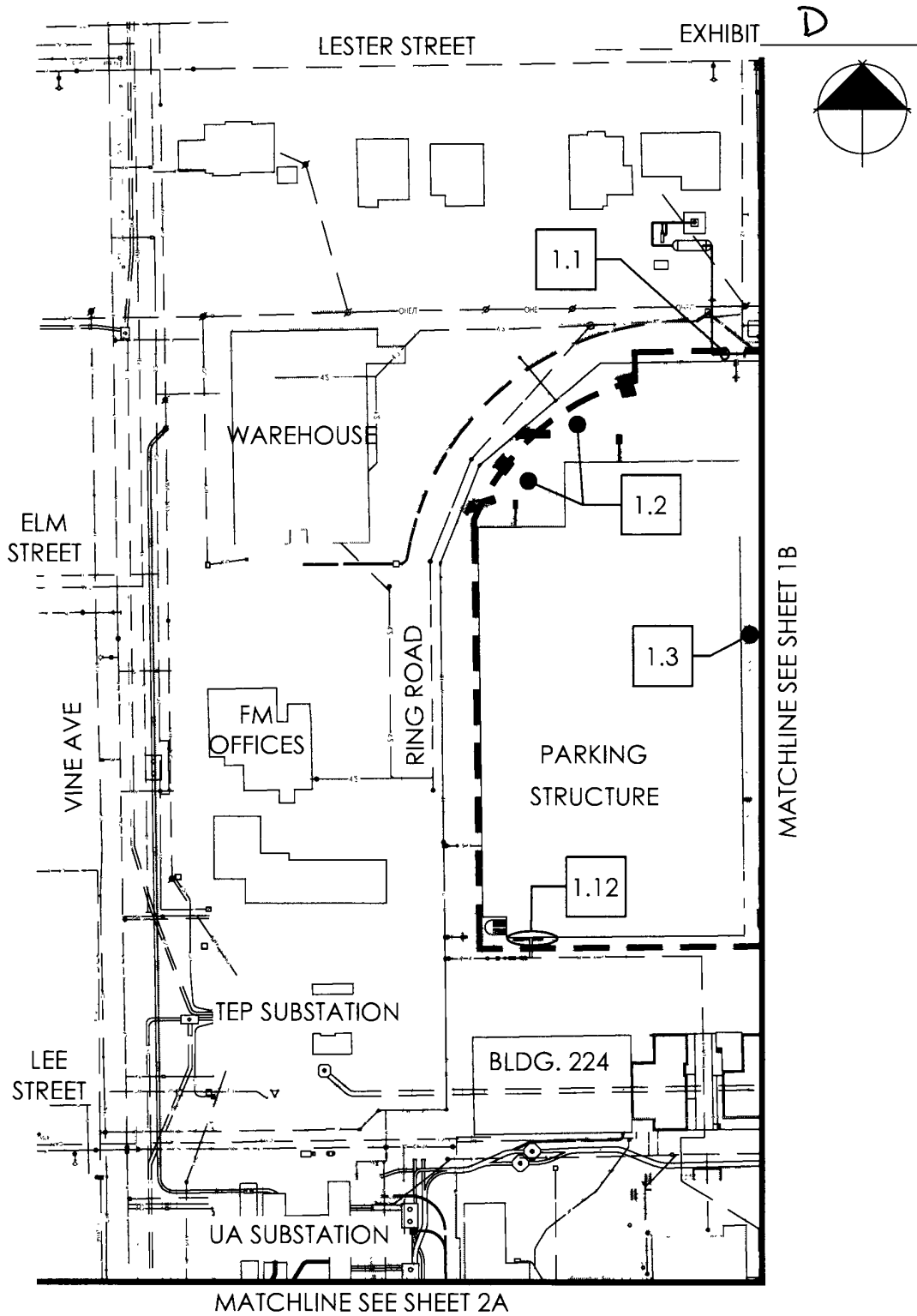
UNIVERSITY OF ARIZONA
UNIVERSITY MEDICAL CENTER
UTILITIES

JANUARY 28, 2015

COVER SHEET

1A	1B	3A	3B
2A	2B	4A	4B

PAGE 9 OF 17



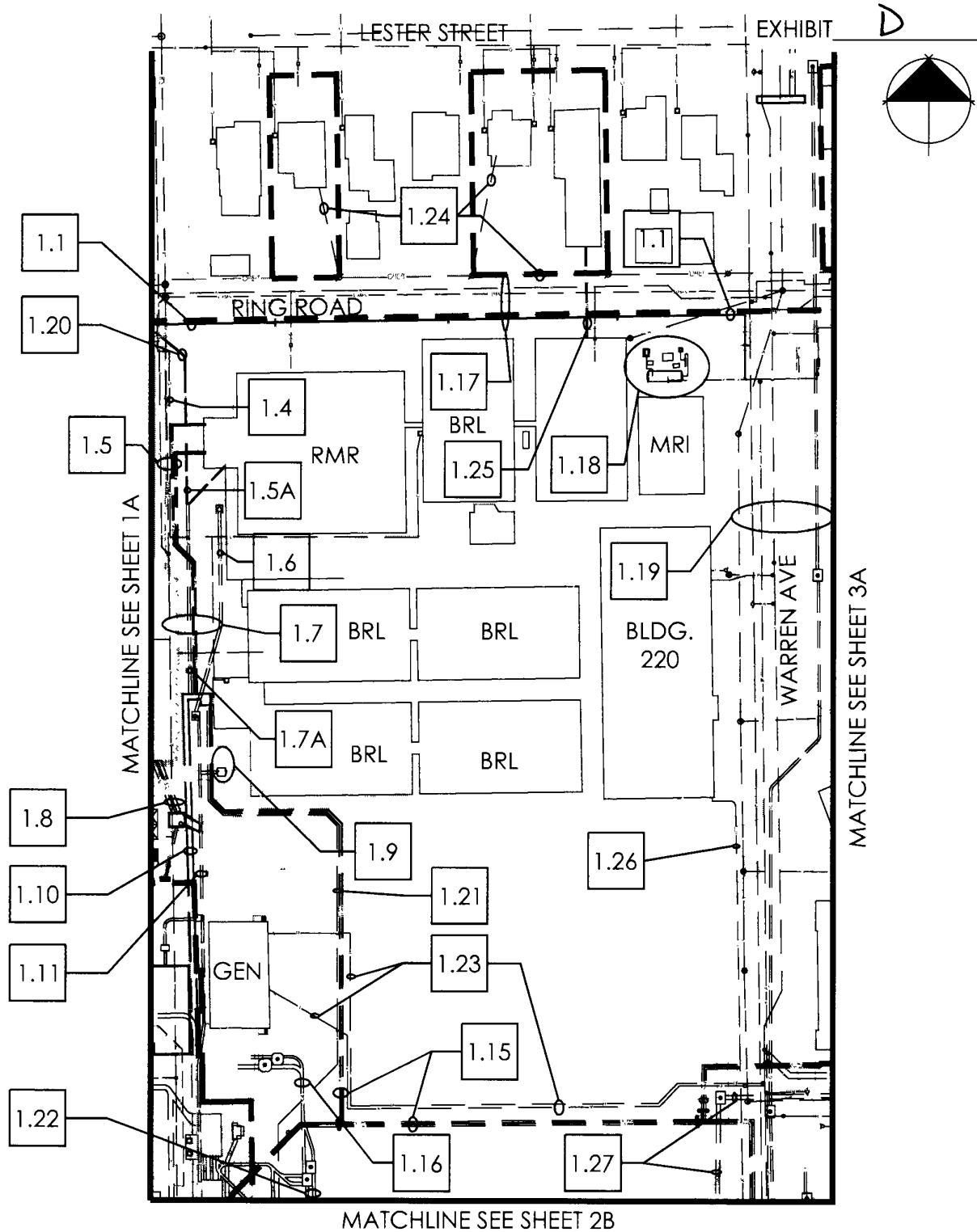
UNIVERSITY OF ARIZONA
 UNIVERSITY MEDICAL CENTER
 UTILITIES

AREA 1A

JANUARY 28, 2015

1A	1B	3A	3B
2A	2B	4A	4B

PAGE 10 OF 17



UNIVERSITY OF ARIZONA
 UNIVERSITY MEDICAL CENTER
 UTILITIES

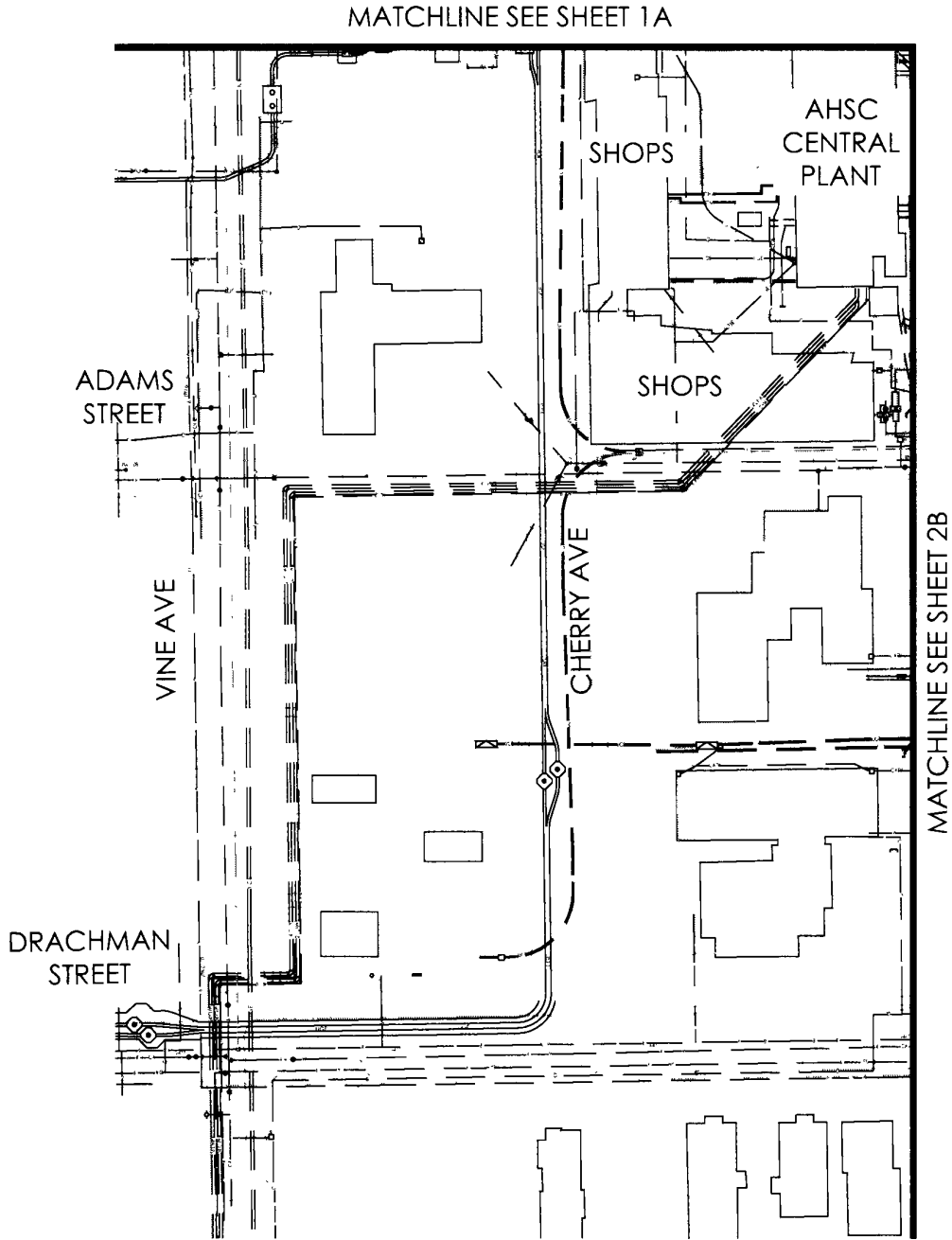
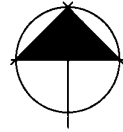
1A	1B	3A	3B
2A	2B	4A	4B

JANUARY 28, 2015

AREA 1B

PAGE 11 OF 17

EXHIBIT D



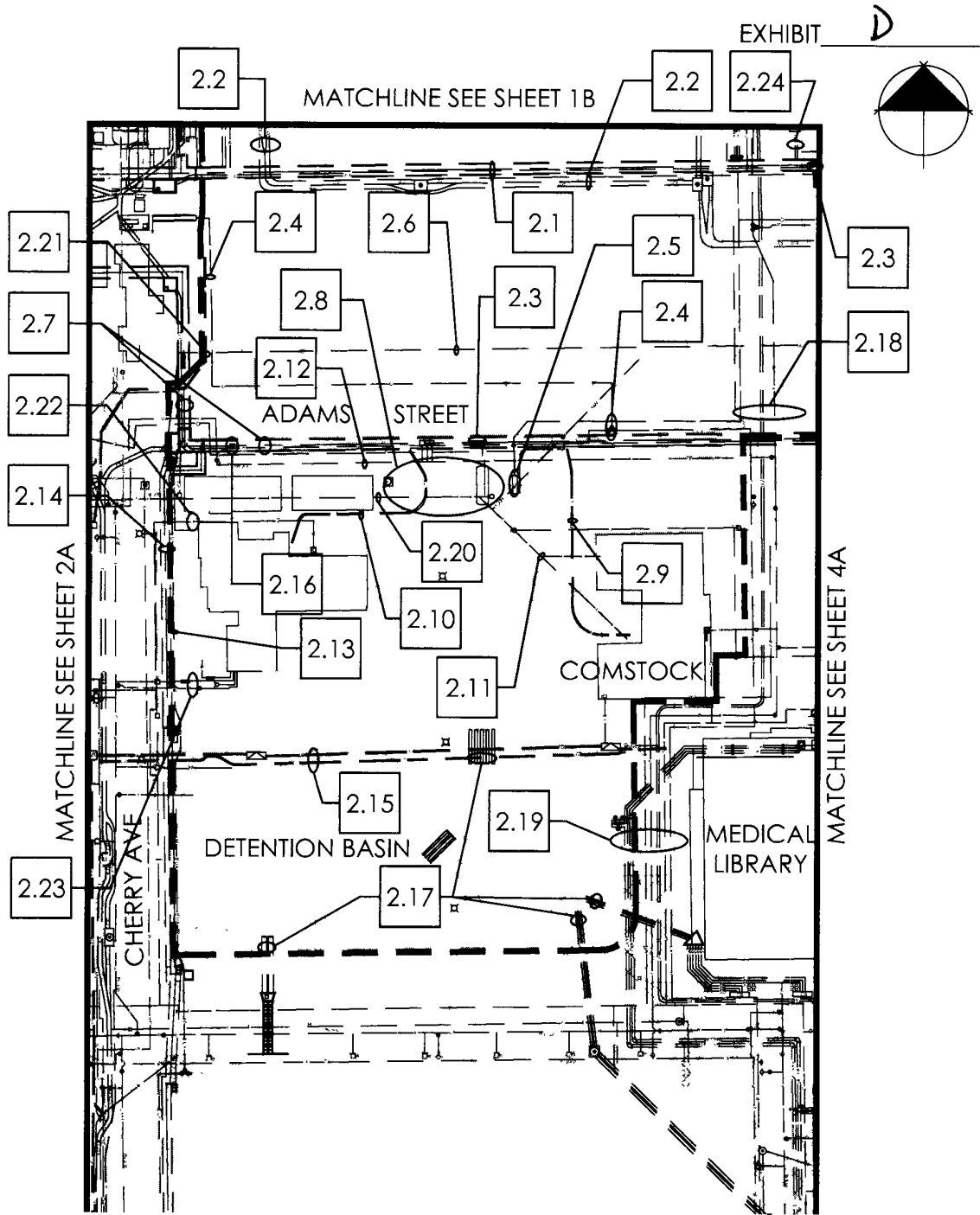
UNIVERSITY OF ARIZONA
 UNIVERSITY MEDICAL CENTER
 UTILITIES

AREA 2A

1A	1B	3A	3B
2A	2B	4A	4B

PAGE 12 OF 17

JANUARY 28, 2015



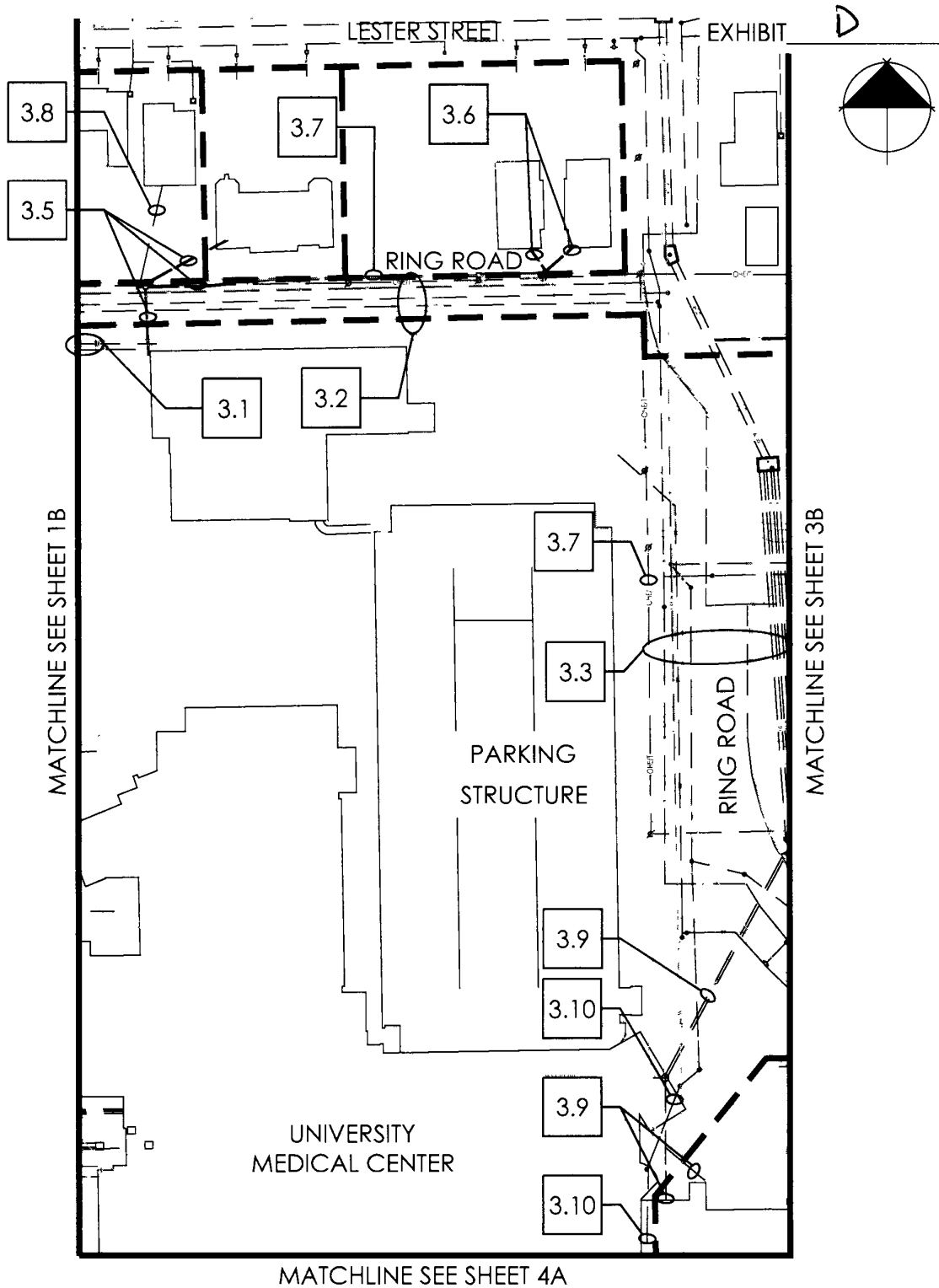
UNIVERSITY OF ARIZONA
 UNIVERSITY MEDICAL CENTER
 UTILITIES

AREA 2B

1A	1B	3A	3B
2A	2B	4A	4B

JANUARY 28, 2015

PAGE 13 OF 17



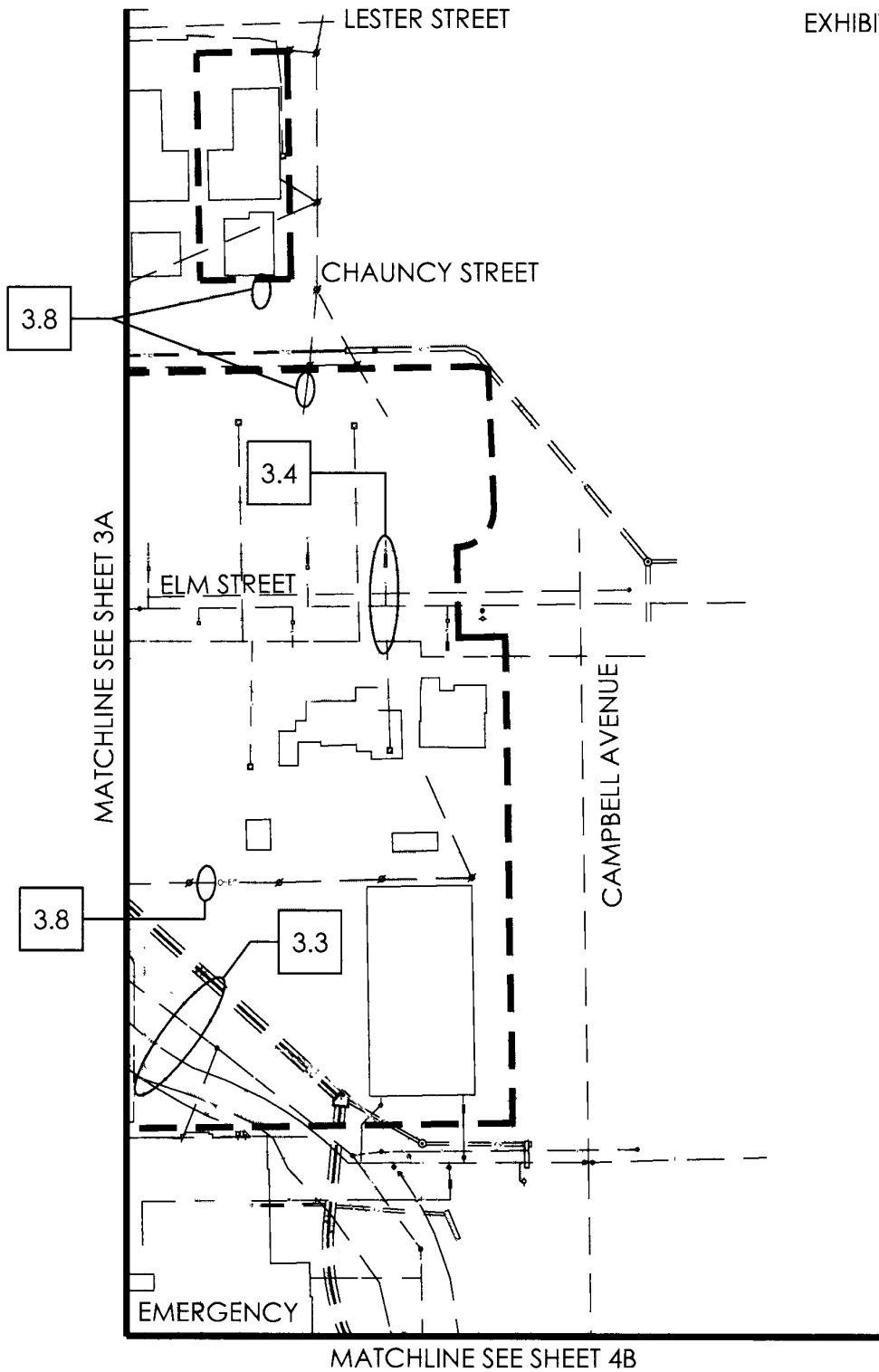
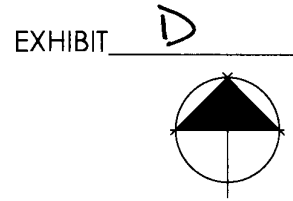
UNIVERSITY OF ARIZONA
 UNIVERSITY MEDICAL CENTER
 UTILITIES

1A	1B	3A	3B
2A	2B	4A	4B

JANUARY 28, 2015

AREA 3A

PAGE 14 OF 17



UNIVERSITY OF ARIZONA
UNIVERSITY MEDICAL CENTER
UTILITIES

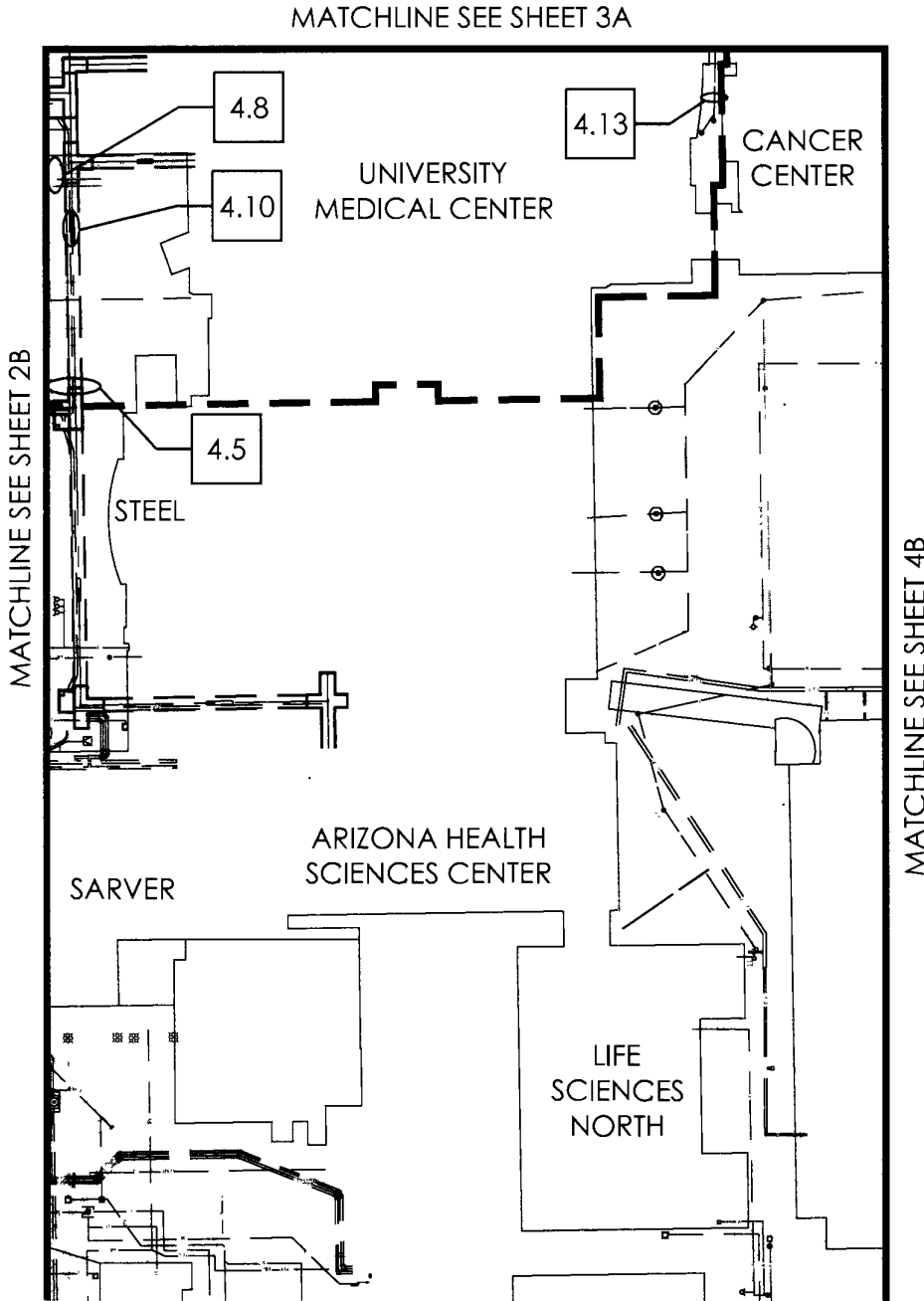
JANUARY 28, 2015

AREA 3B

1A	1B	3A	3B
2A	2B	4A	4B

PAGE 15 OF 17

EXHIBIT D



UNIVERSITY OF ARIZONA
 UNIVERSITY MEDICAL CENTER
 UTILITIES

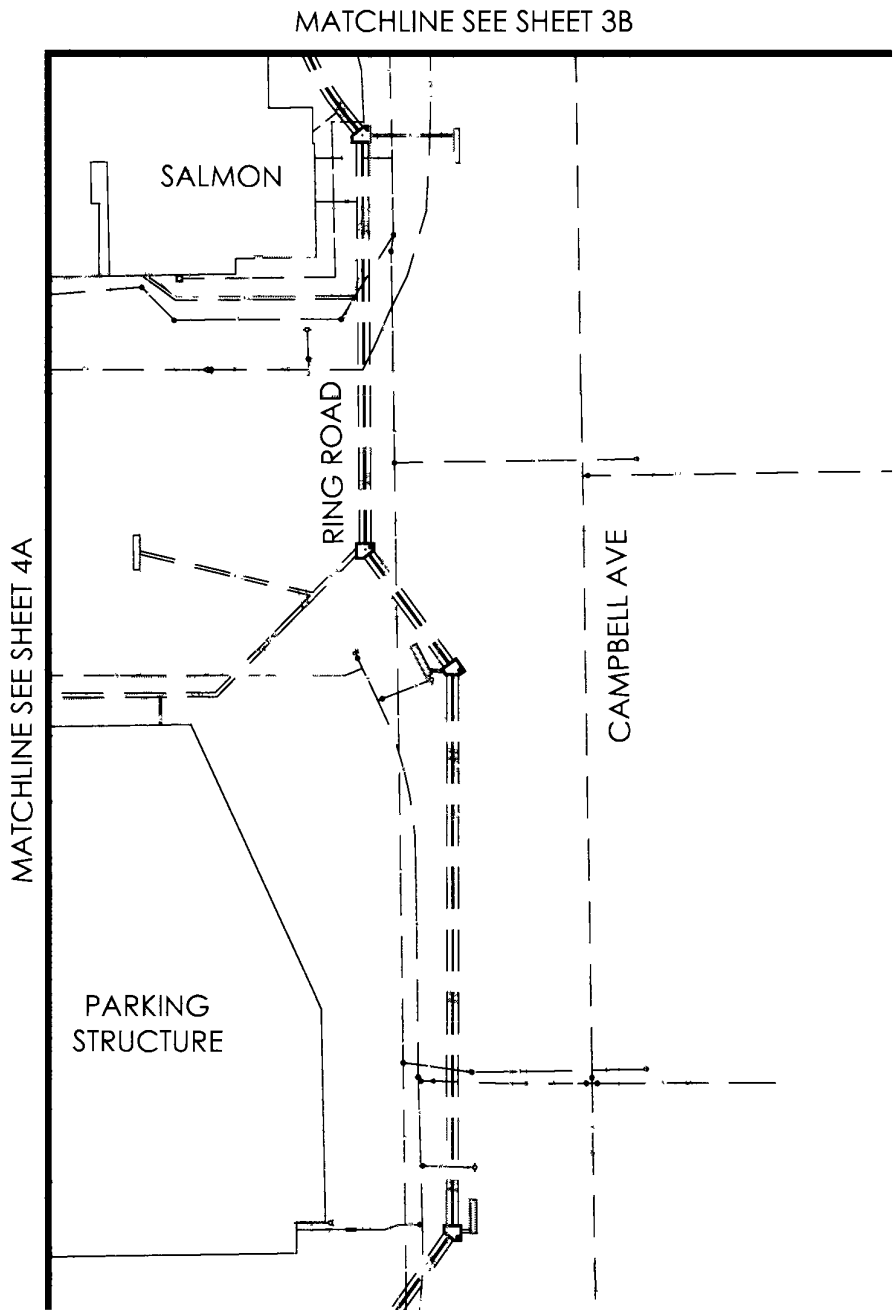
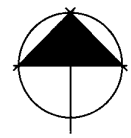
1A	1B	3A	3B
2A	2B	4A	4B

AREA 4A

JANUARY 28, 2015

PAGE 16 OF 17

EXHIBIT D



UNIVERSITY OF ARIZONA
 UNIVERSITY MEDICAL CENTER
 UTILITIES

AREA 4B

JANUARY 28, 2015

1A	1B	3A	3B
2A	2B	4A	4B

PAGE 17 OF 17

EXHIBIT E
To Declaration of Easements and Covenants
Legal Description and Survey of the North Well Site

[See Attached]

5237611_8
78198302.7



**LEGAL DESCRIPTION
NORTH WELL SITE**

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE;

THENCE NORTH 00°54'36" WEST 2623.87 FEET UPON THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 6 AND THE CENTERLINE OF SAID CAMPBELL AVENUE TO THE EAST ONE QUARTER CORNER OF SAID SECTION 6, MONUMENTED BY A 2 INCH BRASS DISC IN A STREET WELL;

THENCE SOUTH 89°29'59" WEST 992.88 FEET UPON THE NORTH LINE OF SAID SOUTHEAST QUARTER;

THENCE SOUTH 01°03'06" EAST 9.31 FEET, PERPENDICULAR TO THE SOUTH RIGHT OF WAY LINE OF CHAUNCEY LANE, TO A POINT ON SAID SOUTH RIGHT OF WAY LINE;

THENCE CONTINUE SOUTH 01°03'06" EAST 18.51 FEET TO THE **POINT OF BEGINNING**;

THENCE NORTH 88°56'54" EAST 51.75 FEET, PARALLEL WITH AND 18.51 FEET SOUTHERLY OF SAID SOUTH RIGHT OF WAY LINE, TO A TANGENT CURVE CONCAVE SOUTHWESTERLY;

THENCE SOUTHEASTERLY UPON THE ARC OF SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 22.00 FEET AND A CENTRAL ANGLE OF 75°36'21", FOR AN ARC DISTANCE OF 29.03 FEET TO A NON-TANGENT LINE;

THENCE NORTH 88°56'54" EAST 12.52 FEET;

THENCE SOUTH 01°03'06" EAST 29.50 FEET;

THENCE SOUTH 88°56'54" WEST 11.50 FEET;

THENCE NORTH 74°31'23" WEST 34.40 FEET;

THENCE SOUTH 88°56'54" WEST 41.11 FEET;

THENCE NORTH 01°03'06" WEST 36.24 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 3,078 SQUARE FEET MORE OR LESS.

F:\4116_Uofa_Hospital\Survey\Legals\4116LG04_NORTH_WELL_SITE.Docx



PAGE 1 OF 2

© 2015 Rick Engineering Company

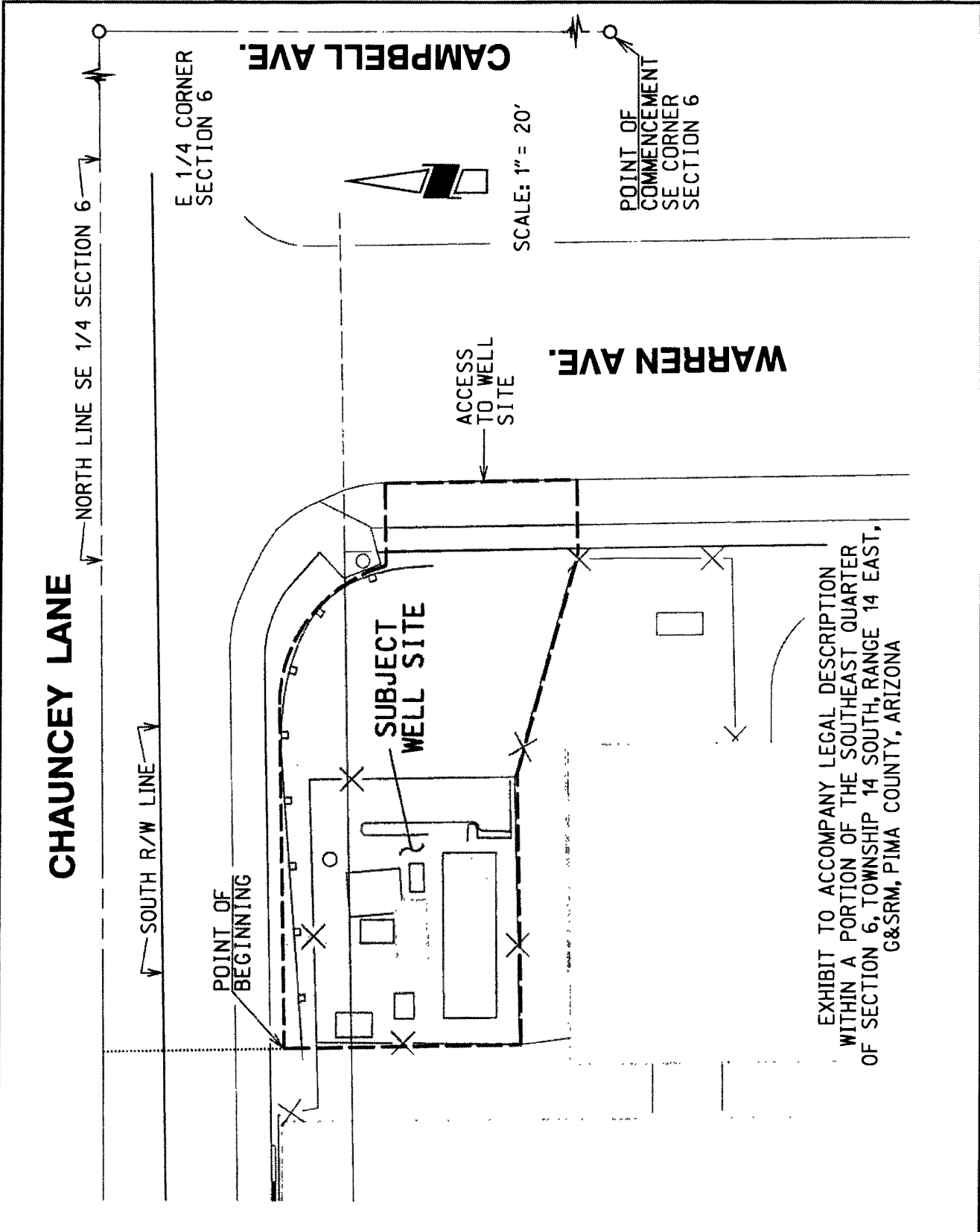


EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION
 WITHIN A PORTION OF THE SOUTHEAST QUARTER
 OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST,
 G&SRM, PIMA COUNTY, ARIZONA



3945 EAST FORT LOWELL ROAD - SUITE 111
 TUCSON, AZ 85712
 520.795.1000
 (FAX) 520.322.6956

EXHIBIT F
To Declaration of Easements and Covenants
Legal Description and Survey of the South Well Site

[See Attached]

5237611_8
78198302.7



**LEGAL DESCRIPTION
SOUTH WELL SITE**

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE, FOR REFERENCE, A 2 INCH BRASS DISC IN A STREET WELL AT THE EAST ONE QUARTER CORNER OF SAID SECTION 6 BEARS NORTH 00°54'36" WEST AT A DISTANCE OF 2623.87 FEET;

THENCE, PROCEEDING FROM SAID SOUTHEAST CORNER OF SECTION 6, NORTH 33°08'56" WEST 2009.17 FEET TO THE **POINT OF BEGINNING**;

THENCE SOUTH 89°10'25" WEST 100.29 FEET;

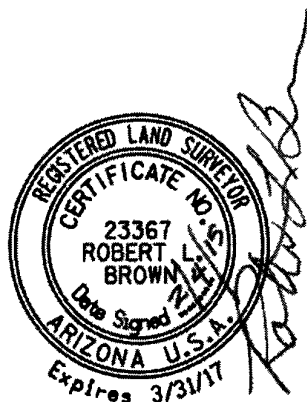
THENCE NORTH 00°02'16" WEST 40.92 FEET;

THENCE NORTH 89°01'18" EAST 100.15 FEET;

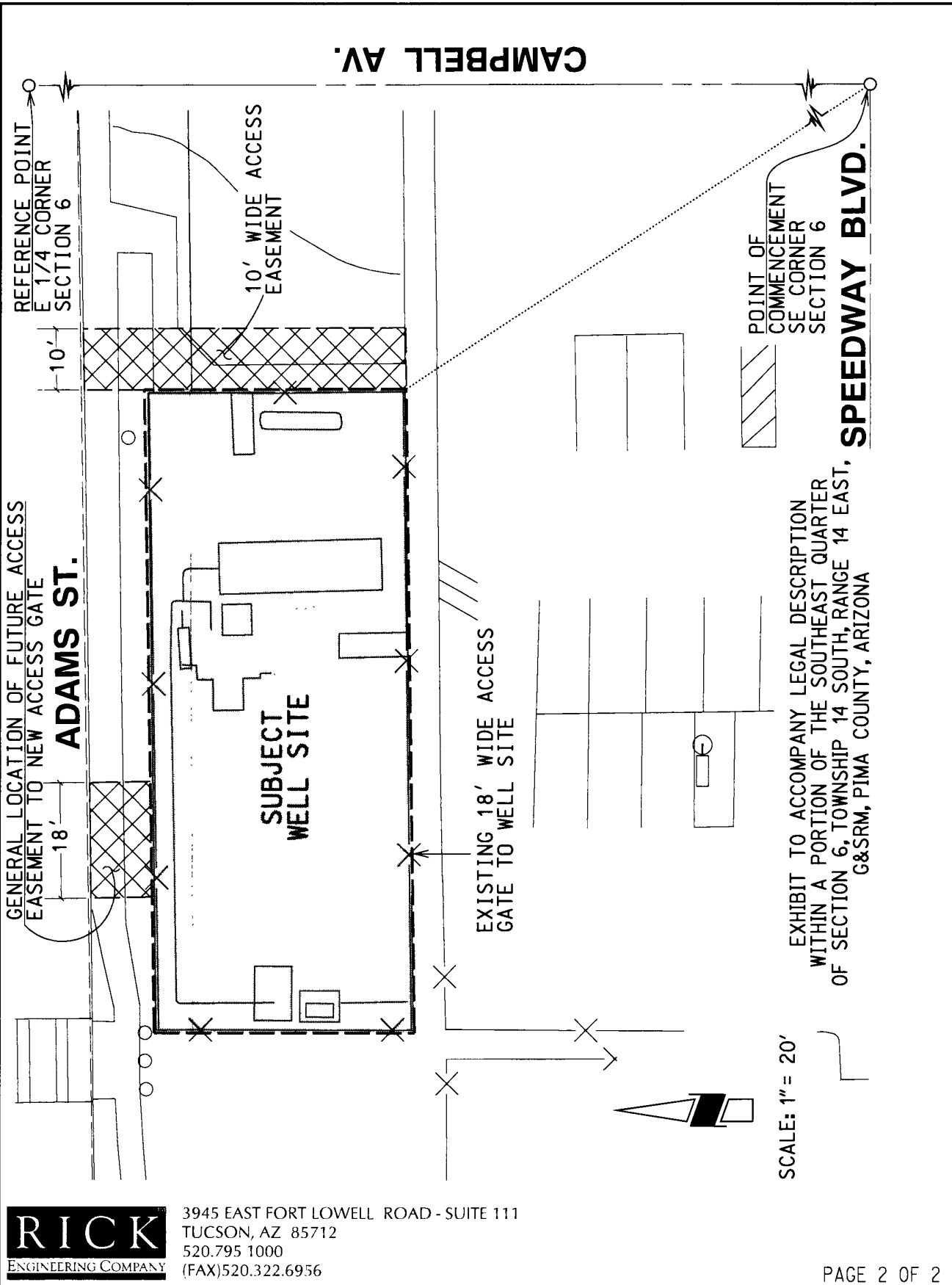
THENCE SOUTH 00°14'48" EAST 41.19 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 4,114 SQUARE FEET MORE OR LESS.

F:\4116_Uofa_Hospital\Survey\Legals\4116LG05_SOUTH_WELL_SITE.Docx
ORIGINAL: 01/16/2015
REVISED: 02/04/2015



© 2015 Rick Engineering Company



3945 EAST FORT LOWELL ROAD - SUITE 111
 TUCSON, AZ 85712
 520.795 1000
 (FAX) 520.322.6956

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION
 WITHIN A PORTION OF THE SOUTHEAST QUARTER
 OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST,
 G&SRM, PIMA COUNTY, ARIZONA

SCALE: 1" = 20'

EXHIBIT G
To Declaration of Easements and Covenants
Legal Description and Survey of Slide Pull Areas

[See Attached]

5237611_8
78198302.7



**LEGAL DESCRIPTION
PIPE SLIDE ACCESS AREA NO. 1**

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE, FOR REFERENCE, A 2 INCH BRASS DISC IN A STREET WELL AT THE EAST ONE QUARTER CORNER OF SAID SECTION 6 BEARS NORTH 00°54'36" WEST AT A DISTANCE OF 2623.87 FEET;

THENCE, PROCEEDING FROM SAID SOUTHEAST CORNER OF SECTION 6, NORTH 24°34'51" WEST 2105.01 FEET TO THE **POINT OF BEGINNING**;

THENCE SOUTH 89°00'58" WEST 22.79 FEET;

THENCE NORTH 00°59'02" WEST 14.00 FEET;

THENCE NORTH 89°00'58" EAST 22.79 FEET;

THENCE SOUTH 00°59'02" EAST 14.00 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 319 SQUARE FEET ACRES MORE OR LESS.

F:\4116_Uofa_Hospital\Survey\Legals\4116LG06_ACCESS_AREA1.Docx



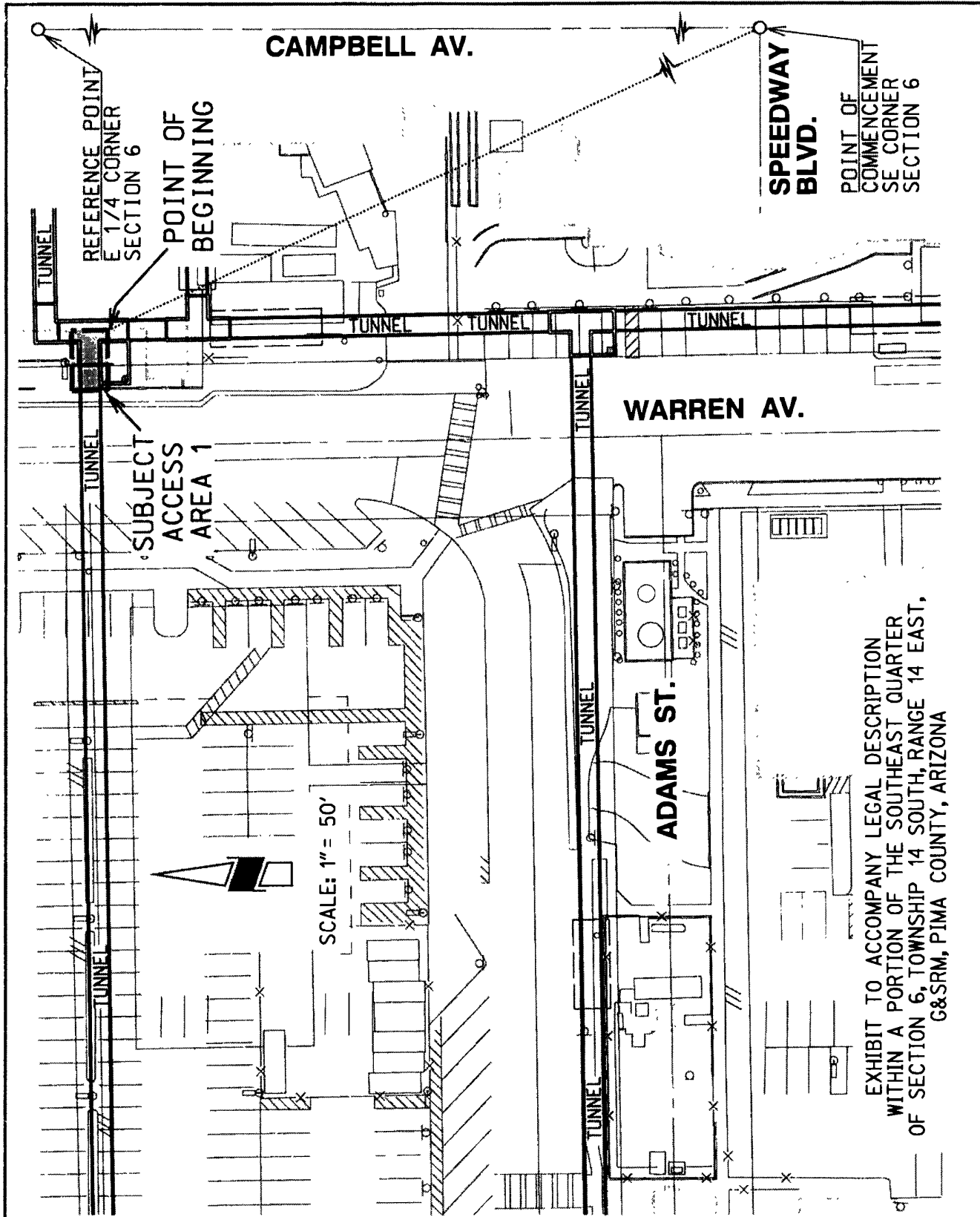


EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION
 WITHIN A PORTION OF THE SOUTHEAST QUARTER
 OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST,
 G&SRM, PIMA COUNTY, ARIZONA

© 2015 Rick Engineering Company



3945 EAST FORT LOWELL ROAD - SUITE 111
 TUCSON, AZ 85712
 520.795.1000
 (FAX) 520.322.6956

PAGE 2 OF 2



**LEGAL DESCRIPTION
PIPE SLIDE ACCESS AREA NO. 2**

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE, FOR REFERENCE, A 2 INCH BRASS DISC IN A STREET WELL AT THE EAST ONE QUARTER CORNER OF SAID SECTION 6 BEARS NORTH 00°54'36" WEST AT A DISTANCE OF 2623.87 FEET;

THENCE, PROCEEDING FROM SAID SOUTHEAST CORNER OF SECTION 6, NORTH 23°48'35" WEST 2047.30 FEET TO THE **POINT OF BEGINNING**;

THENCE SOUTH 89°02'38" WEST 33.60 FEET;

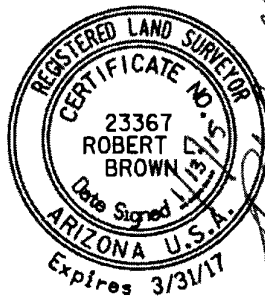
THENCE NORTH 00°57'22" WEST 14.00 FEET;

THENCE NORTH 89°02'38" EAST 33.60 FEET;

THENCE SOUTH 00°57'22" EAST 14.00 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 470 SQUARE FEET MORE OR LESS.

F:\4116_Uofa_Hospital\Survey\Legals\4116LG07_ACCESS_AREA2.Docx



Robert Brown

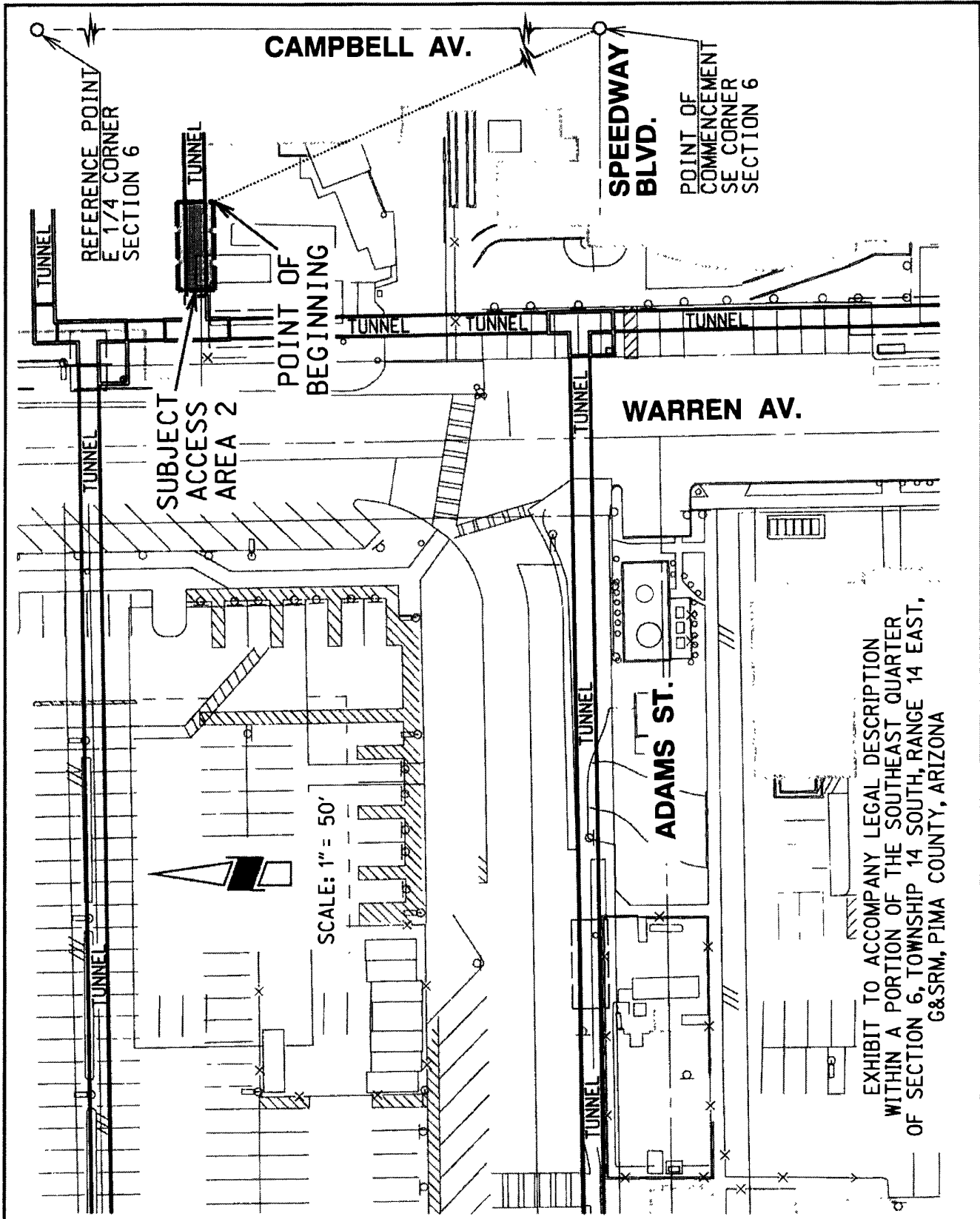


EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION
 WITHIN A PORTION OF THE SOUTHEAST QUARTER
 OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST,
 G&SRM, PIMA COUNTY, ARIZONA

© 2015 Rick Engineering Company



3945 EAST FORT LOWELL ROAD - SUITE 111
 TUCSON, AZ 85712
 520.795.1000
 (FAX) 520.322.6956

PAGE 2 OF 2



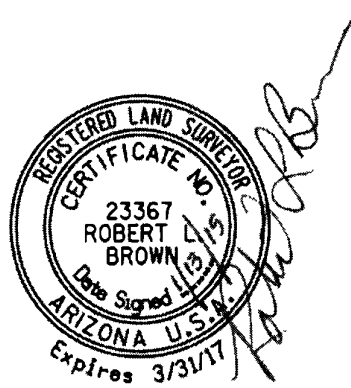
**LEGAL DESCRIPTION
PIPE SLIDE ACCESS AREA NO. 3**

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE, FOR REFERENCE, A 2 INCH BRASS DISC IN A STREET WELL AT THE EAST ONE QUARTER CORNER OF SAID SECTION 6 BEARS NORTH 00°54'36" WEST AT A DISTANCE OF 2623.87 FEET;
THENCE, PROCEEDING FROM SAID SOUTHEAST CORNER OF SECTION 6, NORTH 25°20'31" WEST 2026.92 FEET TO THE **POINT OF BEGINNING**;
THENCE SOUTH 89°02'38" WEST 14.00 FEET;
THENCE NORTH 00°57'22" WEST 43.00 FEET;
THENCE NORTH 89°02'38" EAST 14.00 FEET;
THENCE SOUTH 00°57'22" EAST 43.00 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 602 SQUARE FEET MORE OR LESS.

F:\4116_Uofa_Hospital\Survey\Legals\4116LG08_ACCESS_AREA3.Docx



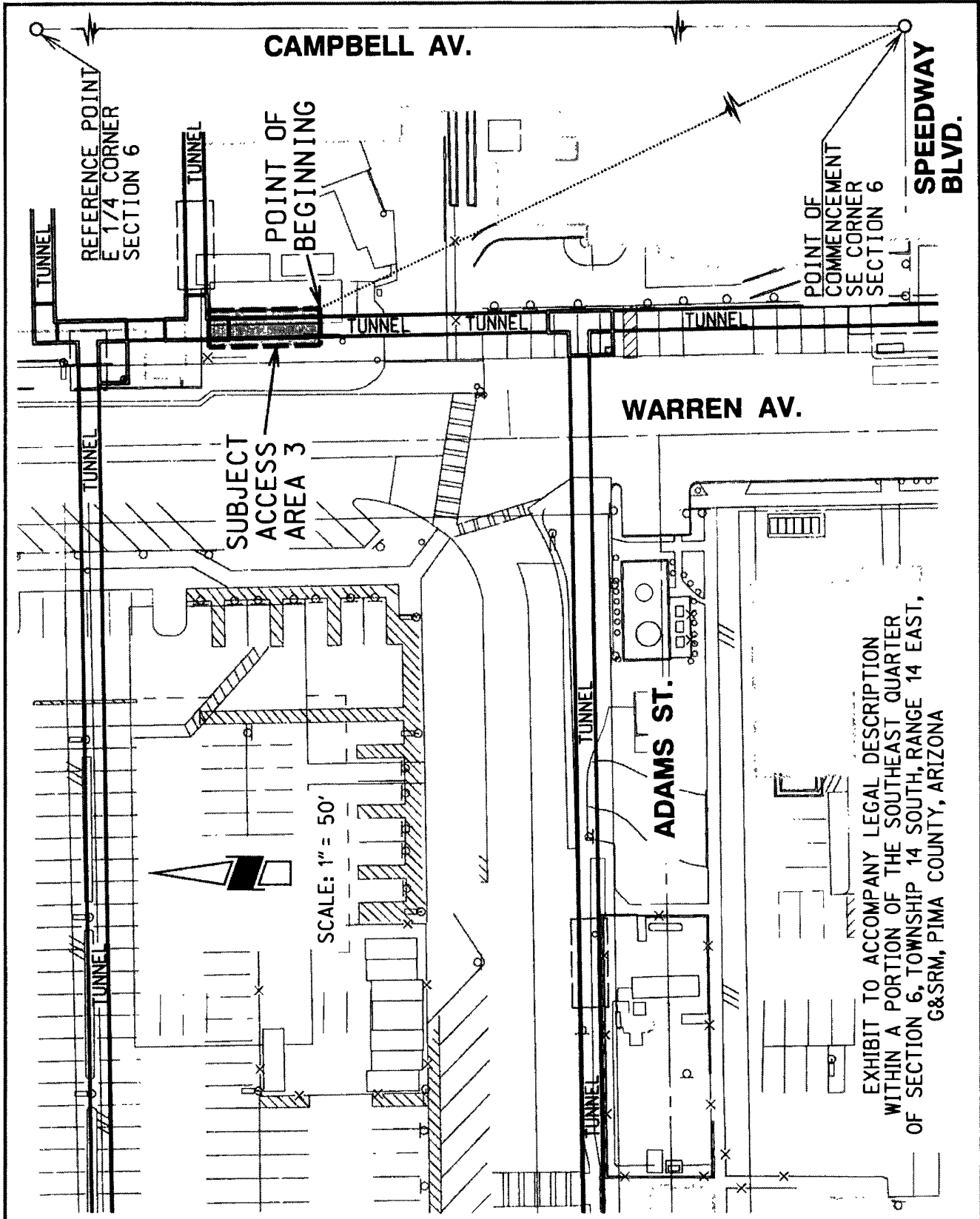


EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION
 WITHIN A PORTION OF THE SOUTHEAST QUARTER
 OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST,
 G&SRM, PIMA COUNTY, ARIZONA

© 2015 Rick Engineering Company



3945 EAST FORT LOWELL ROAD - SUITE 111
 TUCSON, AZ 85712
 520.795.1000
 (FAX) 520.322.6956

PAGE 2 OF 2

F:\4116_UofA_Hospital\Survey\Legals\4116LG08_ACCESS_AREA3.dgn

13-JAN-2015



**LEGAL DESCRIPTION
PIPE SLIDE ACCESS AREA NO. 4**

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, AS MONUMENTED BY A 3 INCH BRASS DISC IN A STREET WELL BEING AT THE INTERSECTION OF SPEEDWAY BOULEVARD AND CAMPBELL AVENUE, FOR REFERENCE, A 2 INCH BRASS DISC IN A STREET WELL AT THE EAST ONE QUARTER CORNER OF SAID SECTION 6 BEARS NORTH 00°54'36" WEST AT A DISTANCE OF 2623.87 FEET;
THENCE, PROCEEDING FROM SAID SOUTHEAST CORNER OF SECTION 6, NORTH 32°35'10" WEST 2042.80 FEET TO THE **POINT OF BEGINNING**;
THENCE SOUTH 89°02'38" WEST 33.75 FEET;
THENCE NORTH 00°57'22" WEST 14.00 FEET;
THENCE NORTH 89°02'38" EAST 33.75 FEET;
THENCE SOUTH 00°57'22" EAST 14.00 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 473 SQUARE FEET MORE OR LESS.

F:\4116_Uofa_Hospital\Survey\Legals\4116LG09_ACCESS_AREA4.Docx



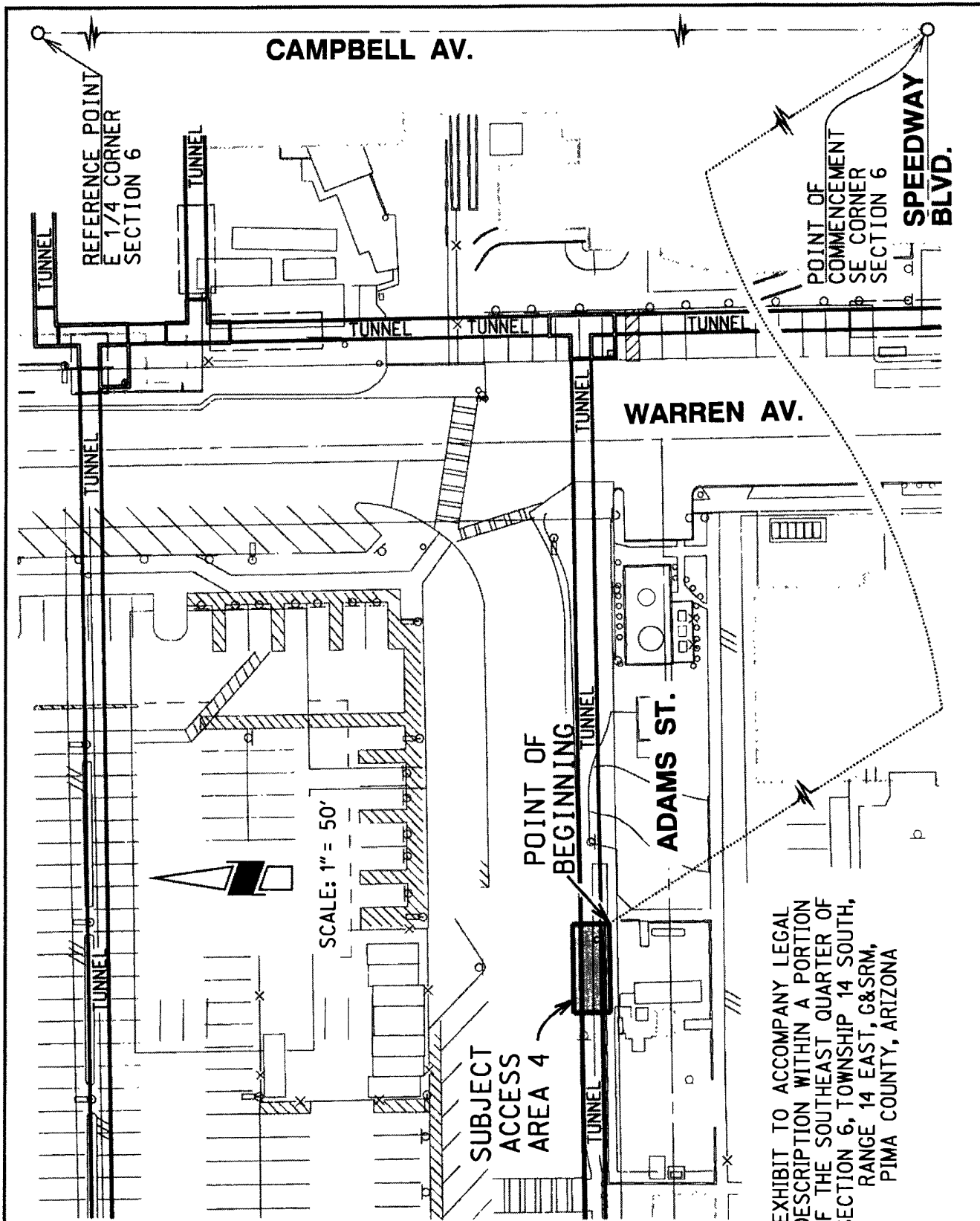


EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION WITHIN A PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 14 SOUTH, RANGE 14 EAST, G&SRM, PIMA COUNTY, ARIZONA

© 2015 Rick Engineering Company

RICK
ENGINEERING COMPANY

3945 EAST FORT LOWELL ROAD - SUITE 111
TUCSON, AZ 85712
520.795.1000
(FAX) 520.322.6956

PAGE 2 OF 2

EXHIBIT H
To Declaration of Easements and Covenants

Healthcare Private Roads

The portions of the following streets constitute Healthcare Private Roads under the Declaration and are depicted in the plan included in this Exhibit H:

- The portion of the northern Ring Road that is not dedicated as a public right-of-way and is owned by the City of Tucson and located between the eastern line of the western Ring Road and the eastern Ring Road;
- The portion of the eastern Ring Road located west of Campbell Avenue and running in a southerly direction from its intersection with the publicly dedicated portion of the northern Ring Road at the northern end of the Healthcare Parcel to the boundary of the Healthcare Parcel located adjacent to the northern end of the Arizona Cancer Center on the University Parcel;
- The northern portion of the U-shaped driveway serving the Diamond Children's Center and the Arizona Cancer Center;
- Elm Street, running in a westerly direction from west of its intersection with Campbell Avenue to its intersection with the eastern Ring Road;
- Warren Avenue, running in a southerly direction from its intersection with the northern Ring Road on the north to its intersection with Adams Street;
- Adams Street, running in an easterly direction from its intersection with Cherry Avenue to Warren Avenue.

University Private Roads

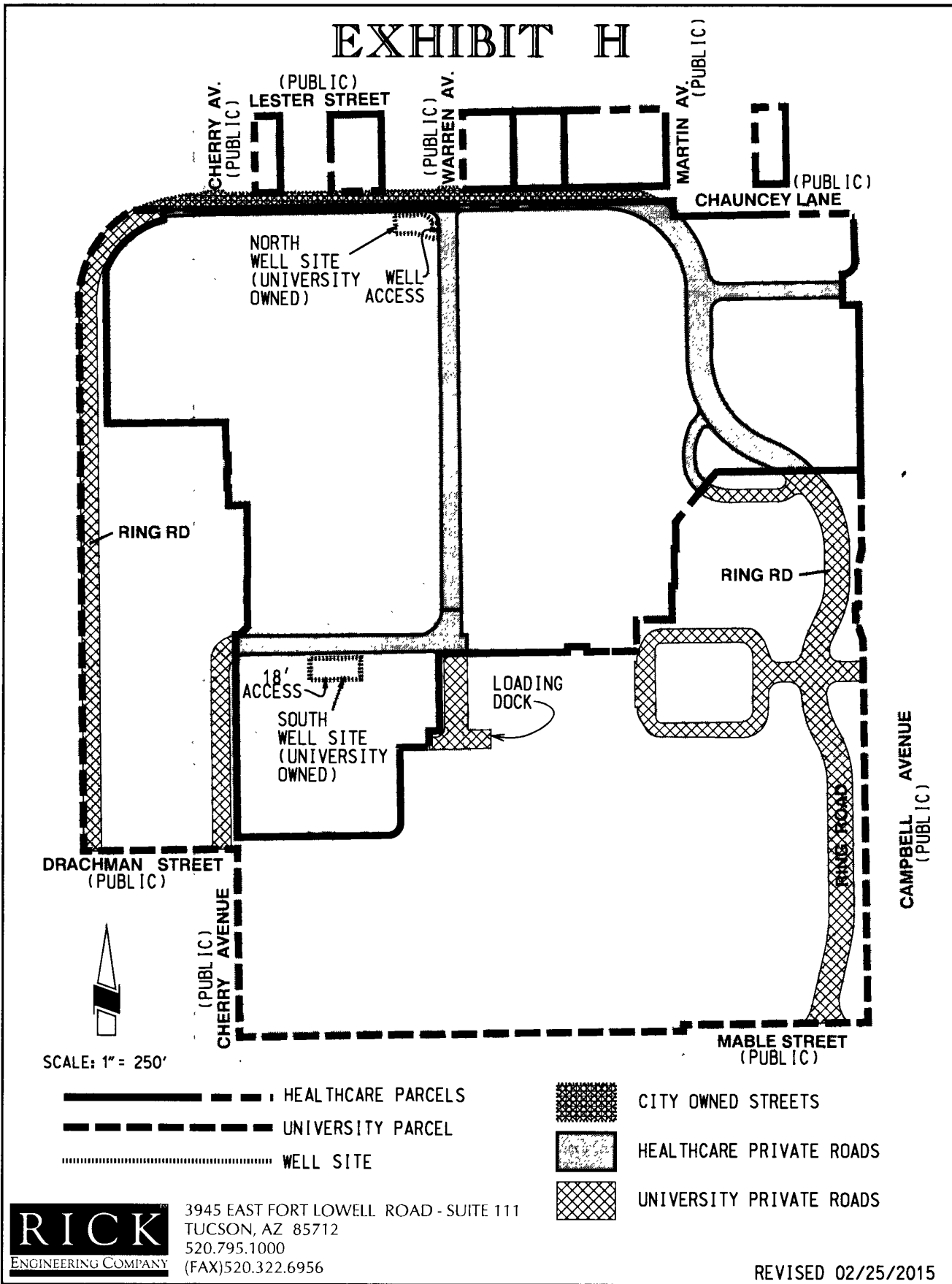
The portions of the following streets constitute University Private Roads under the Declaration and are depicted in the plan included in this Exhibit H:

- The portion of the eastern Ring Road located west of Campbell Avenue and running in a southerly direction from the boundary of the Healthcare Parcel located adjacent to the northern end of the Arizona Cancer Center to Mabel Street, a publicly dedicated road;
- The portion of the western Ring Road located east of Vine Avenue and running in a southerly direction from its intersection with the publicly dedicated portion of the northern Ring Road at the Northern boundary of the Healthcare Parcel to its intersection with the northern line of Drachman Street;

- Warren Avenue, south of its intersection with the southern line of Adams Street to the Loading Dock;
- Cherry Avenue, running in a northerly direction from its intersection with the northern line Drachman Street to Adams Street.
- The southern portion of the U-shaped driveway serving the Diamond Children's Center and the Arizona Cancer Center.
- The circular driveway located west of the eastern Ring Road, east of the eastern end of the University 201 Building, south of the southern end of the Arizona Cancer Center, and north of the Visitor Garage.

5237611_8
78198302.7

EXHIBIT H



© 2015 Rick Engineering Company



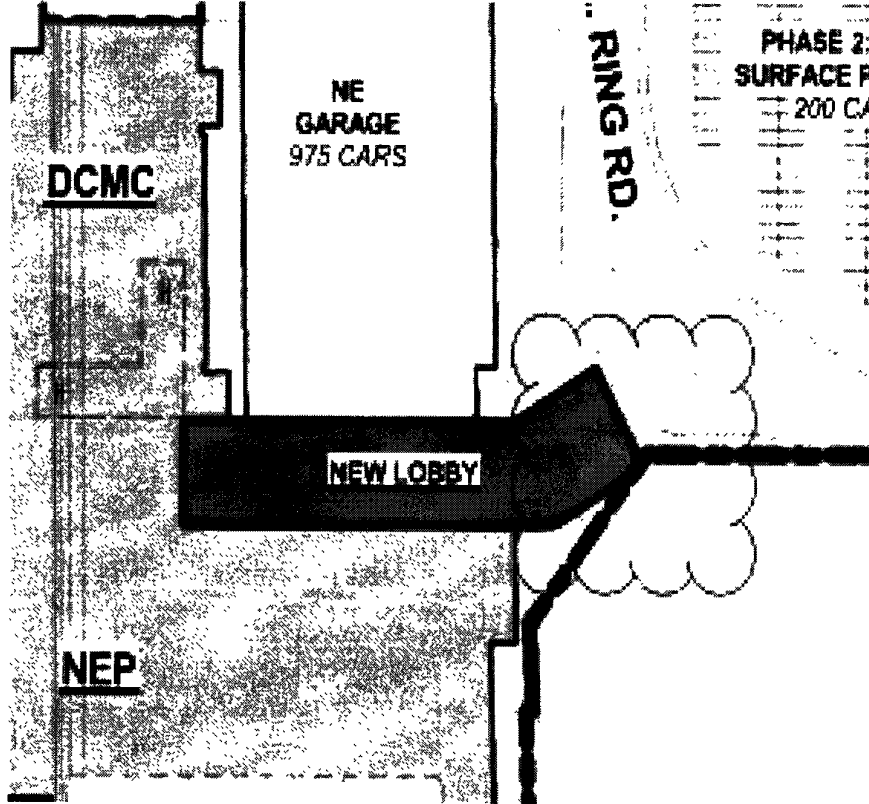
3945 EAST FORT LOWELL ROAD - SUITE 111
TUCSON, AZ 85712
520.795.1000
(FAX) 520.322.6956

REVISED 02/25/2015

F:\4116_UofA_Hospital\Survey\Legals\4116EX01_H.dgn

EXHIBIT I
To Declaration of Easements and Covenants

Proposed Location of New Entrance to Diamond Children's Medical Center



5237611_8
78198302.7



APPENDIX E

Banner Health Electric Vehicle Charging
Station Standards

ELECTRIC VEHICLE CHARGING STATION STANDARDS

The following guidelines/standards and specifications are to be used on all applicable projects. These standards are based on best practice to date in this emerging technological field. , Please contact the Banner Health Design Team for any clarifications.

REGULATORY

A. Codes and Standards

The design, fabrication and installation of all buildings shall be in accordance with the latest adopted editions of the following:

- 1) International Building Code (per local authority having jurisdiction)
- 2) International Energy Conservation Code
- 3) AABC
- 4) ADA (28CFR Part 36)
- 5) ANSI
- 6) ASCE
- 7) ASTM
- 8) IEEE Standards
- 9) NFPA 70
- 10)Local City Codes
- 11)UL

INTRODUCTION

By 2020 it is estimated that ten percent (10%) of the vehicles produced for use in the United States will be electric. In anticipation of this new market, the installation of charging stations for electric vehicles at Banner Facilities needs to be considered in all existing and new parking areas.

STATION TYPES

Rapid charging stations are 240 volt type that can completely charge a battery in 2 hours. They require a 40 amp single phase circuit and draw up to 30 amps during charging. Stations can be wall or pedestal mounted and equipped with at SAE J1772 compliant connector.

Slow charging stations are 120 volt type that can completely charge a battery in 8 hours. They require a 20 amp single phase circuit and draw up to 15 amps during charging. Stations can be wall or pedestal mounted and equipped with at SAE J1772 compliant connector.

STATION FACILITY REQUIREMENTS

All stations will require a Local Area Network connection to be able to send and receive vehicle user information to a 3rd party network. Depending on manufacturer, this is either a hardwired or wireless connection.

All stations will be circuited from normal power.

All stations shall be accessible by the campus Building Automation System (BAS). The BAS shall have the capability to disable the charging station as necessary to shed electrical load as necessary to avoid creating a new peak electrical demand for the facility.

ELECTRIC VEHICLE CHARGING STATION STANDARDS

No extension cords will be permitted and no vehicles will be allowed to be charged in locations other than those equipped with the charging stations described herein.

Banner Health will provide no adaptors, cords, etc. required to charge any electric vehicles.

STATION QUANTITY PER FACILITY

Visitor Parking - Rapid Charging Stations (240 Volt)

Each facility will determine the number of charging stations required. The number of recommended charging stations to be installed based on square footage as follows:

100,000 or less: One (1) station per facility should be installed in visitor parking areas. Circuit and infrastructure capacity for five percent (5%) of the total number of visitor spaces shall be included in the design of all new visitor parking lots. Charging stations can be excluded in **rural** facilities if no Electric Vehicles are being used within the service area of the facility.

100,000 to 750,000: Two (2) stations per facility should be installed in visitor parking areas. Circuit and infrastructure capacity for ten percent (10%) of the total number of visitor spaces shall be included in the design of all new visitor parking lots.

750,000 and above: Three (3) stations per facility should be installed in visitor parking areas. Circuit and infrastructure capacity for ten percent (10%) of the total number of visitor spaces shall be included in the design of all new visitor parking lots.

Employee Parking - Slow Charging Stations (120 Volt)

Each facility will determine the number of charging stations required. The number of recommended charging stations to be installed based on square footage as follows:

100,000 or less: A minimum of 1 charging station will be installed. The number of charging stations installed will increase as necessary up to five percent (5%) of the employee parking spaces at each facility based on demand. Circuit and infrastructure capacity for five percent (5%) of the total number of employee parking spaces shall be included in the design of all new employee parking lots. Charging stations can be excluded in rural facilities if no Electric Vehicles are being used within the service area of the facility.

100,000 to 750,000: A minimum of 2 charging stations will be installed. The number of charging stations installed will increase as necessary up to five percent (5%) of the employee parking spaces at each facility based on demand. Circuit and infrastructure capacity for ten percent (10%) of the total number of employee parking spaces shall be included in the design of all new employee parking lots.

750,000 and above: A minimum of 3 charging stations will be installed. The number of charging stations installed will increase as necessary up to five percent (5%) of the employee parking spaces at each facility based on demand. Circuit and infrastructure capacity for ten percent (10%) of the total number of employee parking spaces shall be included in the design of all new employee parking lots.

STATION LOCATIONS

Rapid charging stations shall be located in the visitor parking area adjacent to the main building and as close as possible to an acceptable electrical power source.

ELECTRIC VEHICLE CHARGING STATION STANDARDS

The following guidelines/standards and specifications are to be used on all applicable projects. These standards are based on best practice to date in this emerging technological field. , Please contact the Banner Health Design Team for any clarifications.

REGULATORY

A. Codes and Standards

The design, fabrication and installation of all buildings shall be in accordance with the latest adopted editions of the following:

- 1) International Building Code (per local authority having jurisdiction)
- 2) International Energy Conservation Code
- 3) AABC
- 4) ADA (28CFR Part 36)
- 5) ANSI
- 6) ASCE
- 7) ASTM
- 8) IEEE Standards
- 9) NFPA 70
- 10) Local City Codes
- 11) UL

INTRODUCTION

By 2020 it is estimated that ten percent (10%) of the vehicles produced for use in the United States will be electric. In anticipation of this new market, the installation of charging stations for electric vehicles at Banner Facilities needs to be considered in all existing and new parking areas.

STATION TYPES





Rapid charging stations are 240 volt type that can completely charge a battery in 2 hours. They require a 40 amp single phase circuit and draw up to 30 amps during charging. Stations can be wall or pedestal mounted and equipped with at SAE J1772 compliant connector.

Slow charging stations are 120 volt type that can completely charge a battery in 8 hours. They require a 20 amp single phase circuit and draw up to 15 amps during charging. Stations can be wall or pedestal mounted and equipped with at SAE J1772 compliant connector.




APPENDIX F

Banner Health Exterior Lighting Standards and Site Photometrics & Lighting

USE TYPE	ILLUMINANCE LEVELS (MAINTAINED)	LUMINAIRE TYPE	LUMINAIRE DESCRIPTION
<p style="text-align: center;">PARKING GARAGE</p>	<p>AMBIENT AND TASK LIGHTING :</p> <p>(THESE FC LEVELS ARE “MAINTAINED” LEVELS, AND ARE TO BE ACHIEVED BY A DYNAMIC COMBINATION OF ELECTRIC LIGHT AND DAYLIGHTING.)</p>	<p style="text-align: center;">T</p> <p style="text-align: center;">ROUND OR RECTANGULAR</p> <p>SPECIALTY GARAGE LED LUMINAIRE WITH A SYMMETRIC DISTRIBUTION, & OPTICS AND/OR LENSING THAT PREVENTS DIRECT VIEW OF THE LEDs.</p>	 <p>Initial Lumens ≥ 7,000 Wattage ≤ 100</p>  <p>Initial Lumens ≥ 3,700 Wattage ≤ 55</p>
	<p style="text-align: center;">INTERIOR LEVELS</p> <p>MINIMUM AT ANY POINT 1.0 HOR.FC</p>	<p>ALL LUMINAIRES ARE TO BE MOUNTED AT THE LOWEST HEIGHT THAT WILL STILL PROVIDE SOME ILLUMINATION ON THE NEARBY CEILING OR BEAMS, WHILE STILL PROVIDING THE PROPER PROTECTION FROM IMPACT BY VEHICLES.</p>	 <p>Initial Lumens ≈ 5,000 – 9,000 Wattage ≈ 50 - 110</p>
	<p style="text-align: center;">ROOFTOP LEVEL</p> <p>MINIMUM AT ANY POINT 0.4 HOR.FC</p> <p style="text-align: center;">ENTRY RAMPS</p> <p>MINIMUM AVERAGE (FOR A DISTANCE OF 66’) 50.0 HOR.FC</p>	<p style="text-align: center;">U</p> <p style="text-align: center;">SQUARE OR RECTANGULAR</p> <p>PENDANT- OR TRUNION-MOUNT LED “SHOEBOX”-STYLE LUMINAIRE.</p> <p>(INTENDED FOR GENERATING THE ADDITIONAL “EYE ADAPTATION” LIGHTING THAT IS NEEDED ABOVE EACH ENTRY LANE DURING THE DAYTIME ONLY.)</p>	 <p>Initial Lumens ≈ 15,000 – 28,000 Wattage ≈ 200 - 290</p>

LUMINAIRE SPECIFICATIONS	CONTROL STRATEGY
<p>T LED 4000K ONLY. COLOR: (TO WITHIN 3 MAC. ELLIPSES)</p> <p>U LED 5000K – 6500K. COLOR: (TO WITHIN 3 MAC. ELLIPSES)</p> <p>CRI: R1-8 ≥ 70 AND R9 ≥ 25</p> <p>CURRENT: ≤ 525 mA at all times.</p> <p>AMBIENT TEMP RATING: ≥ 40° C.</p> <p>L70 LIFE: ≥ 50,000 HOURS</p> <p>DRIVER: 0 – 10V DIMMING TO A MIN. OF ≤ 10%, AND WITH A CAPACITY OF ≥ 110% OF LUMINAIRE WATTAGE.</p> <p>VOLTAGE: UNIV. 120V – 277V</p> <p>WARRANTY: ≥ 7 years complete-luminaire replacement. (ENHANCED WARRANTIES USUALLY NEED TO BE NEGOTIATED DIRECTLY WITH THE MANUFACTURER OR THEIR LOCAL REP)</p> <p>T <u>PRE-APPROVED MANUFACT.:</u></p> <ul style="list-style-type: none"> • CREE, VG SERIES • MCGRAW-EDISON, TOP.TIER SER. • PHILIPS, VIZORLED-GEN3 SER. <p>U <u>PRE-APPROVED MANUFACT.:</u></p> <ul style="list-style-type: none"> • COLUMBIA, LLHP-50 SERIES • CREE, TSP-EHO SERIES • LSI, XHB3 SERIES • MCGRAW-EDISON, VPL VALET SER. • VISIONAIRE, PARKING-STAR-II SER. 	<p>THE OVERALL CONCEPT FOR CONTROLLING THIS LIGHTING IS:</p> <ul style="list-style-type: none"> • ALL OF THE LIGHTING WILL BE CONNECTED TO A WIRELESS CONTROL SYSTEM THAT WILL BE COMPOSED OF GROUPS/ZONES SO THAT SEVERAL NEARBY LUMINAIRES WILL DIM/RAISE OR SWITCH AT THE SAME TIME. • THE GROUPS/ZONES OF LUMI-NAIRES WILL RESPOND TO TIME-OF-DAY EVENTS, DAYLIGHT-SENSORS, & MOTION SENSORS. • THE PROGRAMMING IS TO BE ENTERED INTO A CENTRAL CONTROLLER THAT WILL BE LOCATED IN THE FACILITY ELECTRICAL ROOM, WHICH THEN DISSEMINATES THIS PROGRAMMING TO 1-2 “HUBS” PER FLOOR, OR DIRECTLY TO MODULES INSTALLED WITHIN OR NEARBY EACH LUMINAIRE. • ADDITIONAL LIGHTING IS TO BE INSTALLED AT EACH ENTRY INTO THE GARAGE FOR A DISTANCE OF ~66’. THIS “EYE ADAPTATION” LIGHTING IS INTENDED TO ACHIEVE A MAINTAINED AVERAGE OF AT LEAST 50 FC, AND BE CONTROLLED VIA THE EQUIVALENT OF A REVERSE-LIGHT-LEVEL-SENSOR SO THAT IT DIMS/RAISES AS NEEDED AND IS ONLY ON DURING THE DAY.

USE TYPE	ILLUMINANCE LEVELS (MAINTAINED)	LUMINAIRE TYPE	LUMINAIRE DESCRIPTION
PARKING LOT	<p style="text-align: center;">AMBIENT AND TASK LIGHTING DURING “EVENING” & “MORNING” MODE :</p> <hr style="width: 20%; margin: auto;"/> <p>MINIMUM AT ANY POINT 0.20 HORIZ. FC</p> <p style="text-align: center;"><i>MAINTAINED AVERAGE THROUGHOUT THE LOT OF AT LEAST</i></p> <p>2.0 HORIZ. FC</p> <p>UNIFORMITY RATIO OF ≤ 20-TO-1 MAX-TO-MIN</p> <p>(ALL OF THE ABOVE FC VALUES ARE BASED UPON THE USE OF A “BLUE”-RICH LIGHT SOURCE SUCH AS LED OR METAL HALIDE.)</p>	<p style="text-align: center;">V1 / V2 12 – 20’ 20 – 45’ POLE-MOUNTED LED LUMINAIRE FOR THE NIGHTTIME-ONLY ILLUMINATION OF :</p> <p>WALK-WAYS, OPEN AREAS, PARKING LOTS, AND THE ROOF LEVEL OF PARKING GARAGES.</p> <p>THE LUMINAIRES ARE TO DIMMABLE VIA 0-10V DRIVERS, WHICH ARE TO BE CONTROLLED LOCALLY BY MOTION SENSORS. AND CONTROLLED CENTRALLY BY A WIRELESS OR POWERLINE-CARRIER CONTROL SYSTEM.</p> <p>THIS SYSTEM WILL PROVIDE THE FUNCTIONS OF AN ASTRONOMICAL TIME-CLOCK FOR “ON-OFF” CONTROL, TIME-OF-DAY EVENTS FOR LATE-NIGHT DIMMING, AND ALLOW LUMINAIRES ON DIFFERENT POLES TO ACT AS A GROUP WHEN MOTION IS SENSED,</p>	<div style="text-align: center;">  </div> <p style="text-align: center; background-color: yellow;">XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX</p>

LUMINAIRE SPECIFICATIONS	CONTROL STRATEGY
<p>LED 4000K ONLY. COLOR: (TO WITHIN 3 MAC. ELLIPSES) CRI: R1-8 ≥ 70 AND R9 ≥ 25 CURRENT: ≤ 525 mA at all times. AMBIENT TEMP RATING: ≥ 40° C. L70 LIFE: ≥ 50,000 HOURS DRIVER: 0 – 10V DIMMING TO A MIN. OF ≤ 10%, AND WITH A CAPACITY OF ≥ 110% OF LUMINAIRE WATTAGE. VOLTAGE: UNIV. 120V – 277V WARRANTY: ≥ 7 years complete-luminaire replacement. (ENHANCED WARRANTIES USUALLY NEED TO BE NEGOTIATED DIRECTLY WITH THE MANUFACTURER OR THEIR LOCAL REP)</p> <p>V PRE-APPROVED MANUFACT.:</p> <ul style="list-style-type: none"> • CREE, XXXXXXXXXXXX • KIM, XXXXXXXXXXXX • LITHONIA, XXXXXXXXXXXX • LITHONIA, XXXXXXXXXXXX <p>THE CONTROL OF THESE LUMINAIRES CAN BE COORDINATED WITH WALL-OR CANOPY-MOUNTED LUMINAIRES NEAR THE BUILDING ENTRIES.</p>	<p>THE OVERALL CONCEPT FOR CONTROLLING THIS LIGHTING IS:</p> <ul style="list-style-type: none"> • ALL OF THE LIGHTING WILL BE CONNECTED TO A WIRELESS CONTROL SYSTEM THAT IS PROGRAM-MED FOR SEVERAL GROUPS / ZONES SO THAT SEVERAL NEARBY LUMINAIRES WILL DIM/RAISE OR SWITCH-OFF AT THE SAME TIME. • THE GROUPS/ZONES OF LUMINAIRES WILL BE RESPONSIVE TO TIME-OF-DAY EVENTS AND MOTION SENSORS. THE SCHEDULE CAN BE FOR 7-DAYS, OR BE DIFFERENT FOR SAT & SUN. • “EVENING MODE” – THE LIGHTING TURNS ON AT DUSK, TO A MAXIMUM OF ~90%, AND REMAINS THAT WAY UNTIL THE SITE ENTERS “NIGHTTIME MODE” • “NIGHTTIME MODE” (~10 PM) – LIGHTING DIMS TO ~20%, AND REMAINS AT THAT LEVEL UNTIL MOTION IS SENSED BY ANY OF THE SENSORS. THIS SENSOR WILL THEN COMMUNICATES WITH ALL OTHER FIXTURES ASSIGNED TO ITS GROUP/ZONE, AND RAISE THE LIGHTING BACK TO ~90%. IT WILL THEN DIM BACK TO ~20% AFTER THE SELECTED DELAY. • “MORNING MODE” (~5 AM) – THE LIGHTING RETURNS TO 90% OUTPUT AND REMAINS THERE UNTIL ALL OF THE LIGHTS AUTO-MATICALLY TURN OFF AT DAWN.

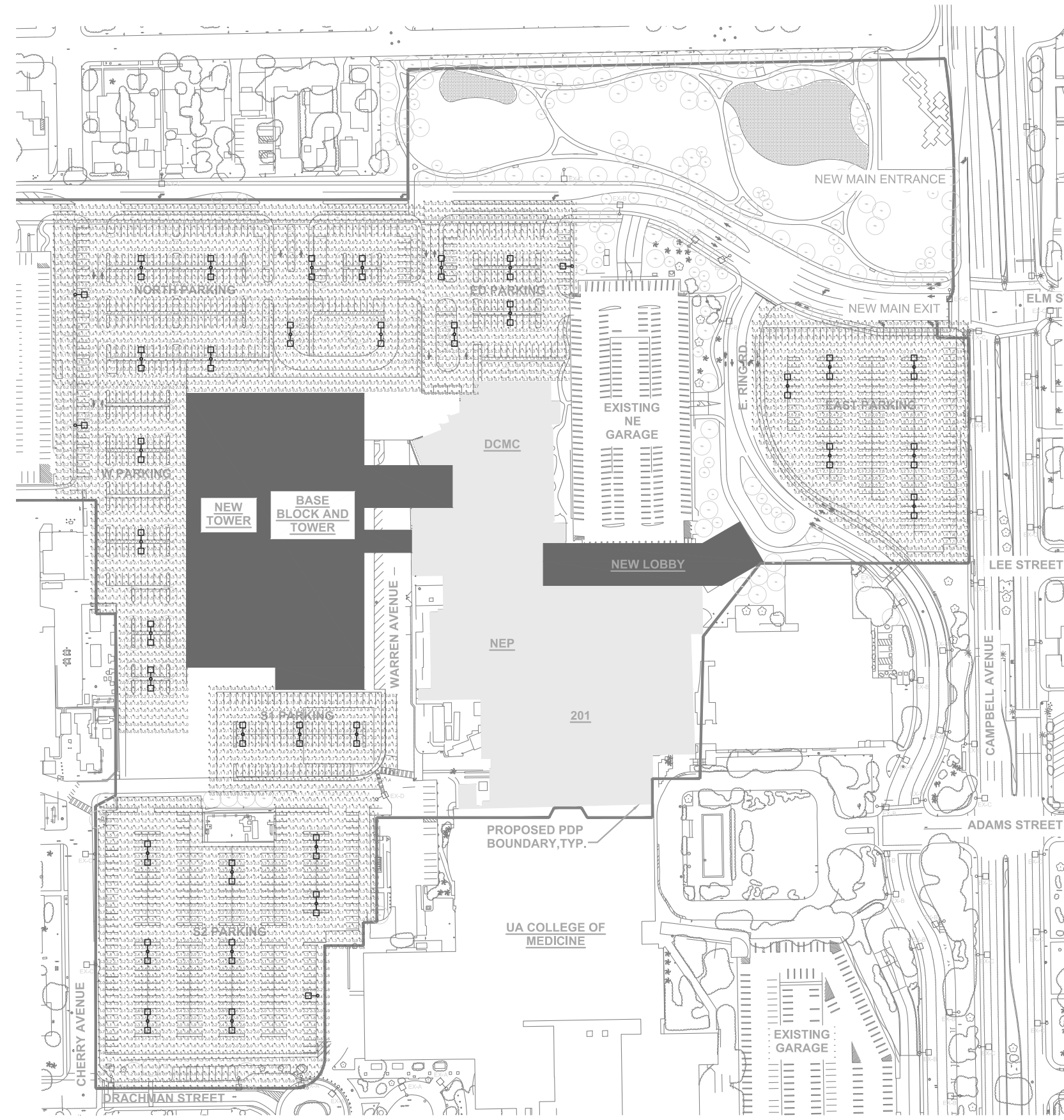


Banner Health

AEI Affiliated Engineers
Affiliated Engineers Inc.
4712 N. 20th Street, Suite 102
Phoenix, Arizona 85016
Tel: 800.429.9897 Fax: 800.793.5431
Project No. 14703-00

Shepley Bulfinch
Shepley Bulfinch Richardson & Abbott
Architecture / Planning / Interiors / Est. 1874
3443 North Central Avenue, South Ruidra
Phoenix, AZ 85012
T: 602.430.3223 | F: 800.934.9891
2 Seaport Lane
Boston, MA 02210
T: 617.423.1700 | F: 800.934.9891
www.ShepleyBulfinch.com

Banner UAMC - Master Plan
1501 N. Campbell Avenue
Tucson, AZ 85724



LUMINAIRE SCHEDULE

Symbol	Label	Manufacturer	Description	Lamp	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage
☐	SA	Lithonia Lighting	FULL CUTOFF AREA LIGHT MOUNTED AT 25 FT AFG	3000K LED	1	18911.85	0.81	550
☐	SB	Lithonia Lighting	FULL CUTOFF AREA LIGHT MOUNTED AT 25 FT AFG	3000K LED	1	18032.89	0.81	275
☐	EX 1 (Existing)	LSI INDUSTRIES	ESTIMATED EXISTING CONDITION	1- 100W HPS	1	9500	0.81	128
☐	EX 2 (Existing)	American Electric Lighting	ESTIMATED EXISTING CONDITION	ONE 55-WATT CLEAR T-17 LOW PRESSURE SODIUM	1	8000	0.81	80
☐	EX 3 (Existing)	American Electric Lighting	ESTIMATED EXISTING CONDITION	1-150 HPS	1	15000	0.81	180

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
East Parking	+	1.9 fc	3.8 fc	0.1 fc	38.0:1	19.0:1	0.5:1
ED Parking	+	2.1 fc	4.5 fc	0.1 fc	45.0:1	21.0:1	0.5:1
North Parking	+	1.8 fc	4.0 fc	0.0 fc	N/A	N/A	0.5:1
S1 Parking	+	1.9 fc	3.4 fc	0.5 fc	6.8:1	3.8:1	0.6:1
S2 Parking	+	1.8 fc	3.2 fc	0.3 fc	10.7:1	6.0:1	0.6:1
West Parking	+	1.7 fc	3.6 fc	0.1 fc	36.0:1	17.0:1	0.5:1

SITE PHOTOMETRICS



01/29/15 6:07:22 PM H:\PROJECTS\BANNER UAMC\14703-00 BANNER UAMC MASTER PLAN\DRAWINGS\ELC\SITE PHOTOMETRIC.DWG

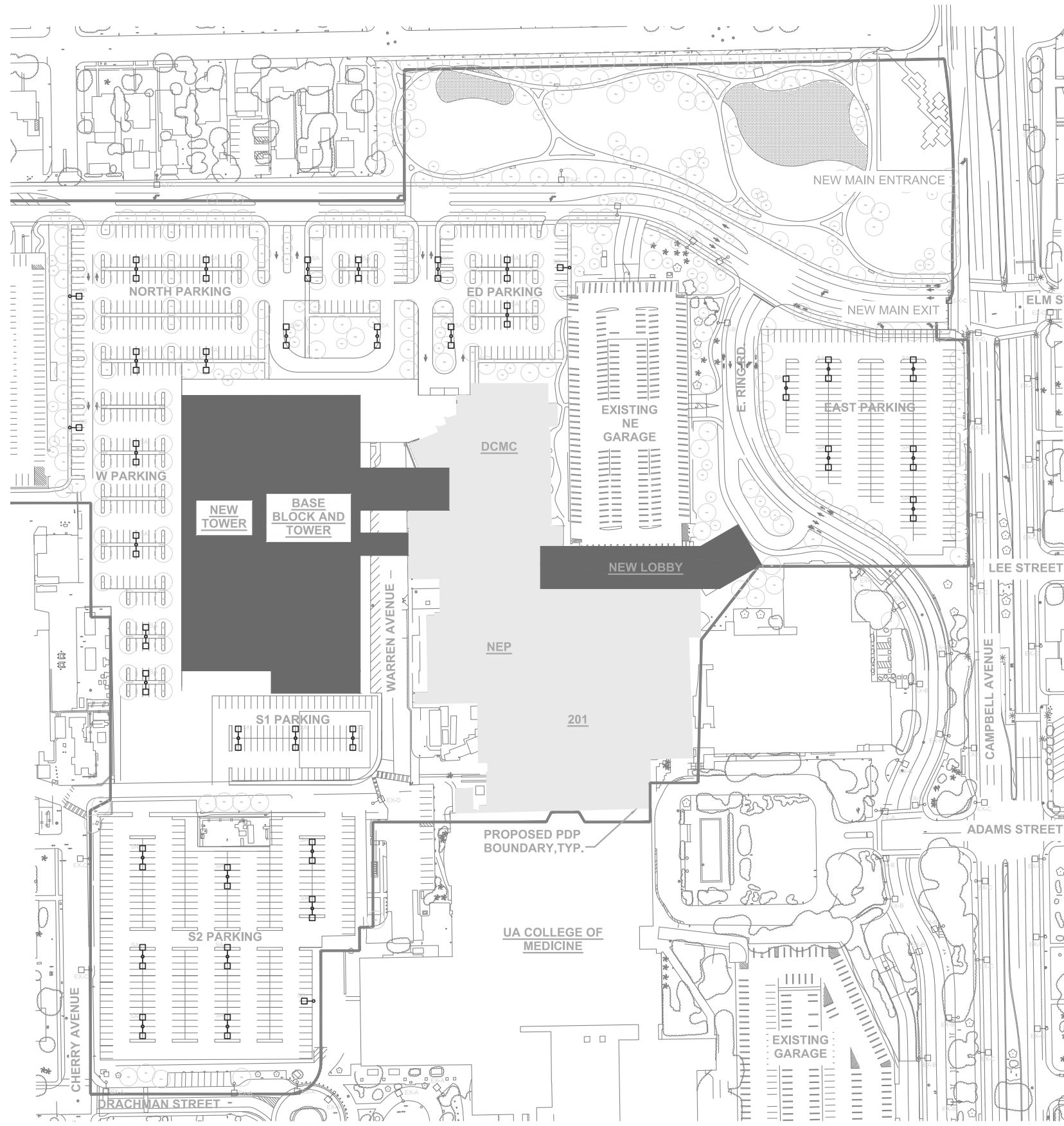
THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

SITE PHOTOMETRIC

Date: 01/29/15
Drawn by: BTM






Alt Project No.: Banner Health Project No.: 14703-00

ES-2



SITE LIGHTING PLAN 

LUMINAIRE SCHEDULE

Symbol	Label	Manufacturer	Description	Lamp	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage
	SA	Lithonia Lighting	FULL CUTOFF AREA LIGHT MOUNTED AT 25 FT AFG	3000K LED	1	18911.85	0.81	550
	SB	Lithonia Lighting	FULL CUTOFF AREA LIGHT MOUNTED AT 25 FT AFG	3000K LED	1	18032.89	0.81	275
	EX 1 (Existing)	LSI INDUSTRIES	ESTIMATED EXISTING CONDITION	1- 100W HPS	1	9500	0.81	128
	EX 2 (Existing)	American Electric Lighting	ESTIMATED EXISTING CONDITION	ONE 55-WATT CLEAR T-17 LOW PRESSURE SODIUM	1	8000	0.81	80
	EX 3 (Existing)	American Electric Lighting	ESTIMATED EXISTING CONDITION	1-150 HPS	1	15000	0.81	180

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
East Parking	+	1.9 fc	3.8 fc	0.1 fc	38.0:1	19.0:1	0.5:1
ED Parking	+	2.1 fc	4.5 fc	0.1 fc	45.0:1	21.0:1	0.5:1
North Parking	+	1.8 fc	4.0 fc	0.0 fc	N/A	N/A	0.5:1
S1 Parking	+	1.9 fc	3.4 fc	0.5 fc	6.8:1	3.8:1	0.6:1
S2 Parking	+	1.8 fc	3.2 fc	0.3 fc	10.7:1	6.0:1	0.6:1
West Parking	+	1.7 fc	3.6 fc	0.1 fc	36.0:1	17.0:1	0.5:1



AEI Affiliated Engineers
 Affiliated Engineers Inc.
 4742 N. 20th Street, Suite 102
 Phoenix, Arizona 85016
 Tel: 800-425-9500 Fax: 850-753-5431
 Project No. 14703-00

Shepley Bullfinch
 Shepley Bullfinch Richardson & Abbott
 Architecture / Planning / Interiors / Est. 1874
 3443 North Central Avenue, South Rolanda
 Phoenix, AZ 85012
 T: 602.430.3223 | F: 800.934.9691
 2 Seaport Lane
 Boston, MA 02210
 T: 617.423.1700 | F: 800.534.9691
 www.ShepleyBullfinch.com

Banner UAMC - Master Plan
 1501 N. Campbell Avenue
 Tucson, AZ 85724

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

SITE LIGHTING PLAN

1/8" = 1'-0"

Date: 01/29/15
 Drawn by: BTM

Project No.: Banner Health Project No. 14703-00

Sheet No.: ES-1

01/29/15 6:08:05 PM H:\PROJECTS\BANNER UAMC\14703-00 BANNER UAMC MASTER PLAN\DRAWINGS\LED-SITE PHOTOMETRIC.DWG



APPENDIX G

Banner Health Signage Standards

APPENDIX G



Banner
University Medical Center
Tucson Campus





Banner Health®

Banner Health Design Standards Interior / Exterior Signage

The information provided in the links below is to help describe the minimum requirements. Any deviations from this is required to have approval from the Sr. Director of Design.

TIPS: Updated templates may have multiple drawing sheets and multiple templates. Open the thumbnails on the left to make navigating between sheets easier.

Click on the desired link below, use thumbnails or scroll page by page.

INTERIOR

DOCUMENT AVAILABLE
UNDER DEVELOPMENT

EXTERIOR

The following signage standards were created to establish design parameters and fabrication guidelines for internal and external signage. These standards were developed in conjunction with System Branding; any changes or modifications to these standards shall require the approval of the Brand Services Program Manager and the Sr. Director of Design & Development.

The primary reasons to develop standards are:

- Consistency of design
- Branding
- Wayfinding
- Cost savings
- Service and warranty

Refer to the approved Contractor/Vendor list for the approved signage vendors:

(RFP considerations)

- Technology
- Experience
- Warranty and repair
- Customization ability
- Service and follow up

All of the following buildings in the Arizona and Western Regions fall under these standards and guidelines:

- Hospital campuses
- MOBs (Medical Office Buildings)
- Medical and Physician Clinics
- Surgery Centers / Banner Support Buildings (i.e. MediSun, Corporate Offices and Admin Support Buildings.)



Banner Health®

External Signs and Signage Packages:

Process

The facility based project executive (PE) is responsible for the overall process; design, submittal and permitting, and installation. There are several different signage designs and processes, each require city, municipality or county reviews and sign off.

Any and all signage that requires redesign or replacement shall be submitted for approval to the Brand Services Program Manager and the Sr. Director of Design & Construction.

The Banner Exterior Sign Standards gives an overview on what is required for each type of sign, sign package or replacement signage.

Guidelines

The facility based PE is responsible to set up a pre-design meeting with the sign manufacturer, the Brand Services Program Manager, and the Sr. Director of Design & Construction before engaging an A/E firm or consultant to do any design work.

The following guidelines for the submittal of signage are rough, estimated time frames and will vary depending on the owner, municipality reviews and the permitting process.

Campus Signage (new facility)

Design of signage package: Facility team with sign manufacturer, (LINK standards – site adaptation), should be submitted with the proposed campus site package.

Design time for submittal package: Approx. 45-60 days

Submittal of comprehensive sign package to municipality/design review board (DRB) for approval: Approx. 60-90 days

Upon approval of the comprehensive sign package by municipality/DRB, submittal for permits: Approx. 30-45 days

Production of signs will start with final approval by municipality and Banner Health.

Fabrication time frame will depend on the number, type and size of the signs. Approx. 30-60 days

Installation: 2-3 days per lighted sign and 1-2 days per non-lighted sign.

Campus Replacement Signage

Design of existing signage (cabinets or structural support) requires the existing comprehensive sign package to be updated and modified. Design time for submittal package: Approx. 30-40 days

Submittal of comprehensive sign package must be reviewed and approved by municipality: Approx. 60-90 days

Upon approval of the comprehensive sign package by municipality/DRB, submittal for permits: Approx. 30-45 days

Production of signs will start with final approval by municipality and Banner Health.

Fabrication time frame will depend on the number, type and size of the signs. Approx. 30-60 days

Installation: 2-3 days per lighted sign and 1-2 days per non-lighted sign.



Banner Health[®]

Corporate Standards for External Campus Signage

April, 2009

Table of Contents

General Information

General Information	1	Signage is a critical element of the Banner Health Medical Campus. In order to provide the maximum required wayfinding clarity for a wide variety of pedestrian and vehicular traffic, Banner Health has developed a standard Comprehensive Signage Package which will be included as part of an approved Master Site Plan. The final Comprehensive Signage Package, including sign locations, designs and material and color specifications, will require formal approval from the local municipality's Design Review Board (DRB) and certain individual signs will require Sign Permits and/or variances per the requirements of the local municipality's Sign Code.
Campus Signage Standards - External	2	
Site Plan / Sign Locations (example)	3	
Colors, Materials, Fonts, Graphics	4	Consistency of appearance is critical to the development and maintenance of an effective branded signage and wayfinding system. The user should be able to clearly recognize that they have entered a Banner Health Medical Campus and the directional information displayed on the various signs should provide clear direction to key campus destinations.
Main ID Monument Sign (A, A.1)	5 - 6	
Directory Sign (B)	7	Banner Health Medical Campus users include but are not limited to the following:
Directional Sign (C)	8	<ul style="list-style-type: none"> • Patients • Visitors • Emergency Room Drive-up/Walk-in Patients • Emergency Room Vehicular Transport Users • Physicians • Employees – Hospital/Outpatient and Medical Office • Outpatient Users – Surgery Center, Medical Office and Others • Suppliers and Vendor Delivery – Central Plant and Other Campus Facilities • Commercial/Retail Users
Freeway Sign - optional - (D)	9	
Main ID Wall Sign (E)	10	
Emergency, Ambulance Parapet Signs (F, G)	11	
Emergency Wall Sign (H)	12	The Banner Health Medical Campus will be operational 24/7 with users accessing the campus at all hours of the day and night in various states of need, urgency and emotions. The campus will require a wide range of identification signage including monument, freeway and wall mounted as well as directional wayfinding signage, some of which will require internal or external illumination during night time hours. Some signage may need to be larger in scale than typical commercial signage to facilitate identification of key campus destinations.
Informational Wall Signs (I, J)	13	The information and examples that follow shall be used as guidelines when developing new or refurbishing existing Banner Health Medical Campus sign systems.

Campus Signage Standards - External

The Master Campus Sign Location Plan (Gateway example shown on page 3) describes the placement and quantity of signs.

There are four types of wayfinding ground signs which will meet the Banner standards:

- A - Main ID Monument Signs (specification guidelines shown on page 4)
- B - Directory Signs (specification guidelines shown on page 5)
- C - Directional Signs (specification guidelines shown on page 6)
- D - Freeway Sign - optional (specification guidelines shown on page 7)

A. Main ID Monument Signage shall meet the following standards:

- a. Internally illuminated
- b. Directional sign cabinet panels are removable
- c. Requires 277V power/ 10 amps
- d. Main cabinet ID signage shall:
 - i. Be aluminum with routed logo and text backed with translucent white acrylic with opaque vinyl overlays
 - ii. Have internal fluorescent illumination
 - iii. Be white background with correct logo arrangement / branding, unless two facilities occupy the same sign - one background will be white and the other will be brushed aluminum
- e. Directional cabinet signage shall:
 - i. Be aluminum with routed text and directional arrows backed with translucent white acrylic
 - ii. Have internal fluorescent illumination
 - iii. Be PMS-300 blue background, except for emergency which is always PMS-186 red

B. Directory Signage shall meet the following standards:

- a. Internally illuminated
- b. Directional sign cabinet panels are removable
- c. Requires 277V power/ 10 amps
- d. Main cabinet ID signage shall:
 - i. Be aluminum with routed logo and text backed with translucent white acrylic with opaque vinyl overlays
 - ii. Have internal fluorescent illumination
 - iii. Be white background with correct logo arrangement / branding, unless two facilities occupy the same sign - one background will be white and the other will be brushed aluminum
- e. Directional cabinet signage shall:
 - i. Be aluminum with routed text and directional arrows backed with translucent white acrylic
 - ii. Have internal fluorescent illumination
 - iii. Be PMS-300 blue background, except for emergency which is always PMS-186 red

C. Directional Signage shall meet the following standards:

- a. Non-illuminated
- b. Sign cabinet to be fabricated metal/aluminum with permanently attached text panels
- c. Text and graphics to be surface applied vinyl letters
- d. Colors used on these signs can be designed to meet themes of the Campus Guideline materials
- e. Logos are not permitted on these signs

D. Optional Freeway Sign shall meet the following standards:

- a. Internally illuminated
- b. Height will vary per sign code / zoning requirements
- c. Requires 277V power/ 70 amps
- d. Main cabinet ID signage shall:
 - i. Be aluminum with routed logo and text backed with translucent white acrylic with opaque vinyl overlays
 - ii. Have internal fluorescent illumination
 - iii. Be white background with correct preferred logo arrangement / branding
- e. Electronic message board will require additional internal review and approval

There are three types of wall mounted signs which will meet the Banner standards:

- E - Main ID Sign (specification guidelines shown on page 9)
- F G - Emergency, Ambulance Signs (specification guidelines shown on page 10)
- H - Informational Signs (specification guidelines shown on page 11)

E. Wall Mounted ID Sign shall meet the following standards:

- a. Internally illuminated
- b. Mounting height on building will vary per sign code / zoning requirements
- c. Requires 277V power/ 30 amps

F. Wall Mounted Emergency Sign shall meet the following standards:

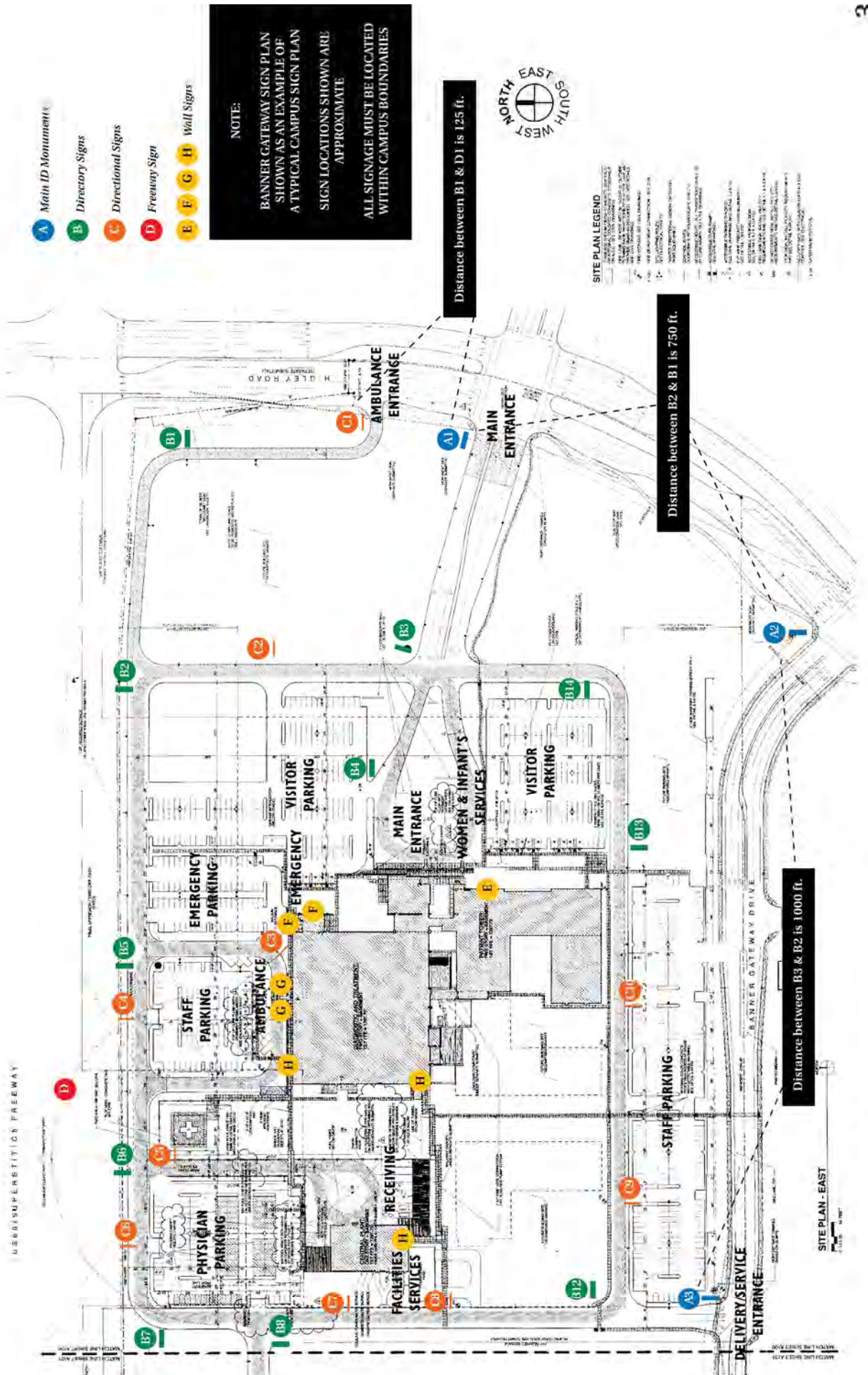
- a. Internally illuminated - individual pan channel letters are face illuminated, must be red
- b. Requires 277V power/ 9 amps

G. Wall Mounted Ambulance Sign shall meet the following standards:

- a. Internally illuminated - individual pan channel letters are face illuminated, must be red
- b. Requires 277V power/ 9 amps

H. Wall Mounted Information Signs shall meet the following standards:

- a. Non illuminated - individual reverse pan channel or flat cut out letters



STANDARD FONTS

ABCDEFGHIJKLMN**OP**QRSTUVVWXYZ & 0123456789

Utopia Regular

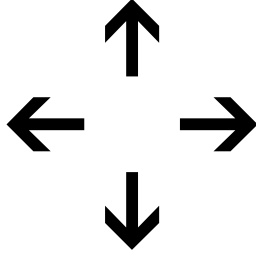
ABCDEFGHIJKLMN**OP**QRSTUVVWXYZ & 0123456789

Utopia Semibold

ABCDEFGHIJKLMNOP**QRSTUVVWXYZ & 0123456789**

Helvetica Bold (directional information, "EMERGENCY" and "AMBULANCE" only)

STANDARD DIRECTIONAL ARROW(S)



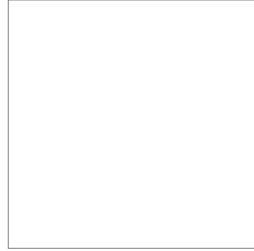
STANDARD COLORS / MATERIALS



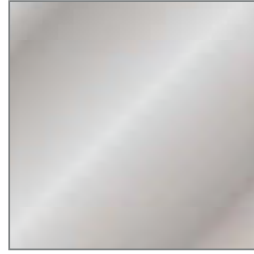
BANNER LIGHT BLUE
Paint to match PMS 300C
3M Intense Blue Vinyl (220-47)



BANNER DARK BLUE
Paint to match PMS 282C
3M Light Navy Vinyl (220-197)



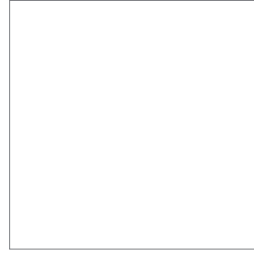
WHITE
Paint to match satin white
3M White Vinyl (220-10)



BRUSHED ALUMINUM
Paint to match satin aluminum
3M Silver Vinyl (220-120)



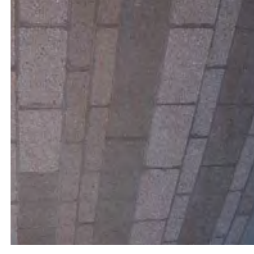
RED (EMERGENCY PANELS)
Paint to match PMS 186
3M Perfect Match Red Vinyl (220-263)



TRANSLUCENT WHITE ACRYLIC
For use with blue directional panels



TRANSLUCENT DAY/NIGHT ACRYLIC
For use with brushed aluminum directional panels



MASONRY STONE
To match exterior stone used on building (Gateway stone shown for example only)

A

Main ID Monument Sign
Illuminated
Scale: 1/4" = 1'-0"

GENERAL SPECIFICATIONS

Fabricated aluminum internally illuminated sign cabinet(s) painted to match approved colors. Main ID sign cabinet has routed logo and text backed with translucent acrylic and/or vinyl, internal fluorescent illumination.

Directional sign cabinet has removable panels with routed text and graphics backed with translucent acrylic and internal fluorescent illumination.

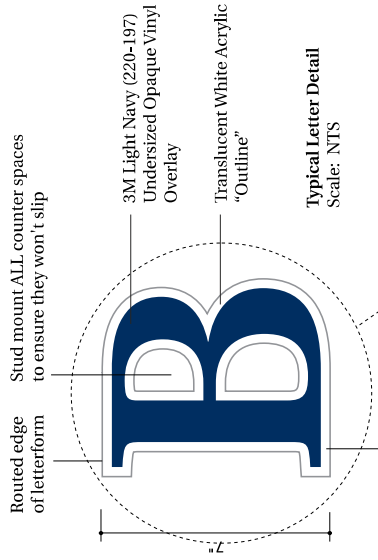
Power requirements: 10 amps @ 277V each location.

Text shown for example only, actual text TBD.

Masonry shown for reference only; the actual masonry design shall be: in a block or linear fashion to match the design of the signage cabinetry. The block or masonry products can match the theme of the campus buildings.

Decorative cap shown for reference only, actual decorative cap to match campus architecture and color scheme.

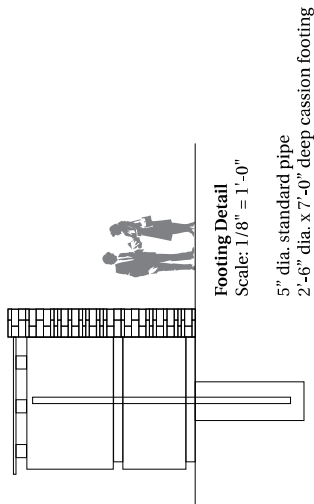
NOTE: all masonry and decorative embellishments shall be designed to enhance the sign cabinets.



Typical Letter Detail
Scale: NTS

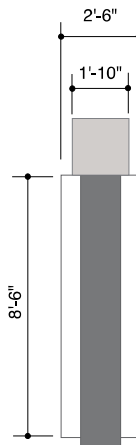
1/4" inset (typ.) for 7" cap height UC/LC letters only.

NOTE: inset to be proportional to actual overall letter height.



Footing Detail
Scale: 1/8" = 1'-0"

5" dia. standard pipe
2'-6" dia. x 7'-0" deep cast-in-place footing

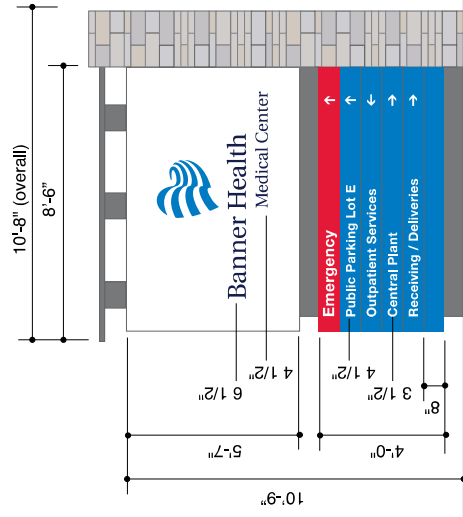


Plan View

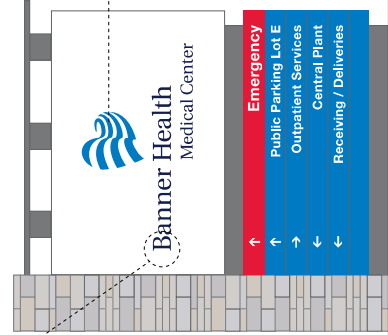
2'-6"

1'-10"

1'-4"



Side A



Side B



Back



Front



Main ID Monument Sign (two name option)
Illuminated
Scale: 1/4" = 1'-0"

GENERAL SPECIFICATIONS

Fabricated aluminum internally illuminated sign cabinet(s) painted to match approved colors.
Main ID sign cabinets have routed logo and text backed with translucent acrylic and/or vinyl, internal fluorescent illumination.

NOTE: Brushed aluminum color shown for second cabinet is not formally approved. Any deviation of the colors will require sign off by the Branding Manager and the Sr. Director of Design and Construction.

Directional sign cabinet has removable panels with routed text and graphics backed with translucent acrylic and internal fluorescent illumination.

Power requirements: 10 amps @ 277V each location.

Text shown for example only, actual text TBD.

Masonry shown for reference only, the actual masonry design shall be: in a block or linear fashion to match the design of the signage cabinetry. The block or masonry products can match the theme of the campus buildings.

Decorative cap shown for reference only, actual decorative cap to match campus architecture and color scheme.

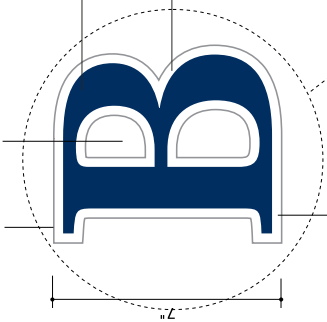
NOTE: all masonry and decorative embellishments shall be designed to enhance the sign cabinets.

Routed edge of letterform to ensure they won't slip

3M Light Navy (220-197) Undersized Opaque Vinyl Overlay

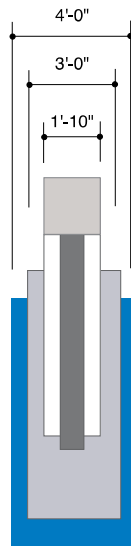
Translucent White Acrylic "Outline"

Typical Letter Detail
Scale: NTS

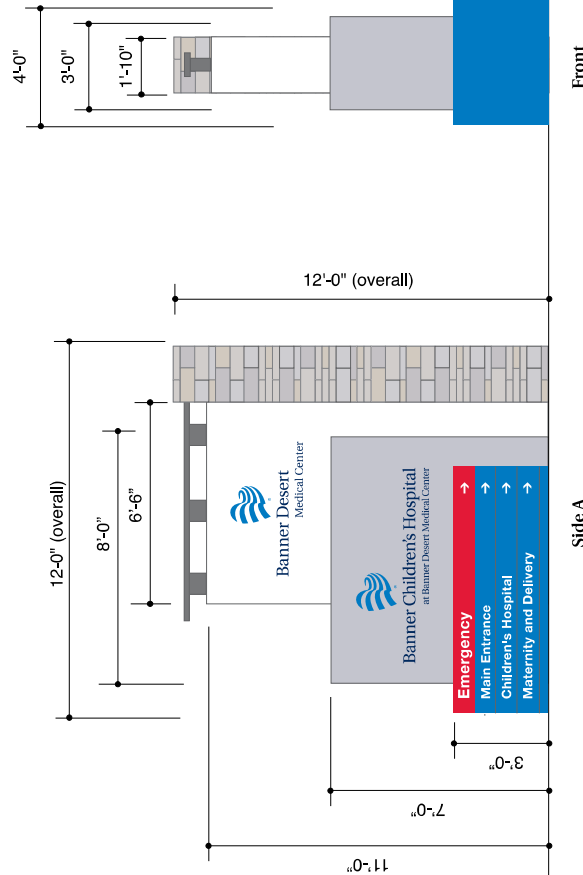


1/4" Inset (typ.) for 7" cap height UC/LC letters only.

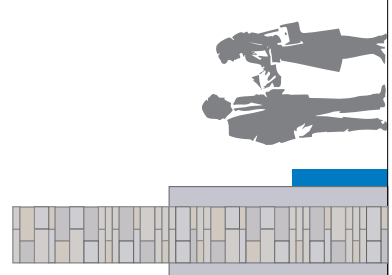
NOTE: inset to be proportional to actual overall letter height.



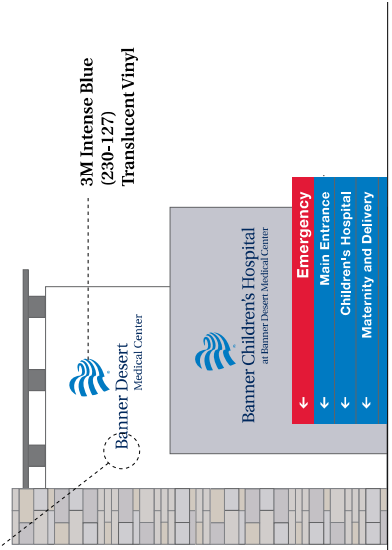
Plan View



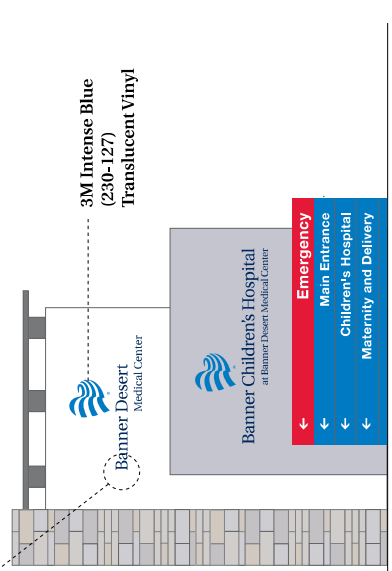
Front



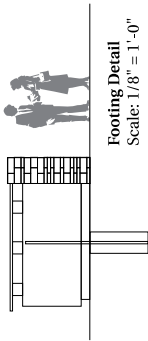
Back



Side A

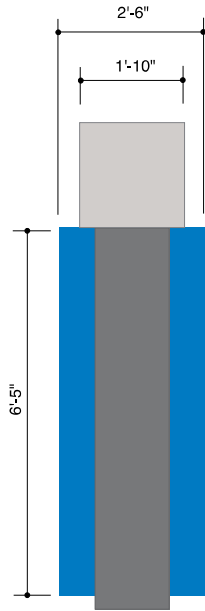


Side B

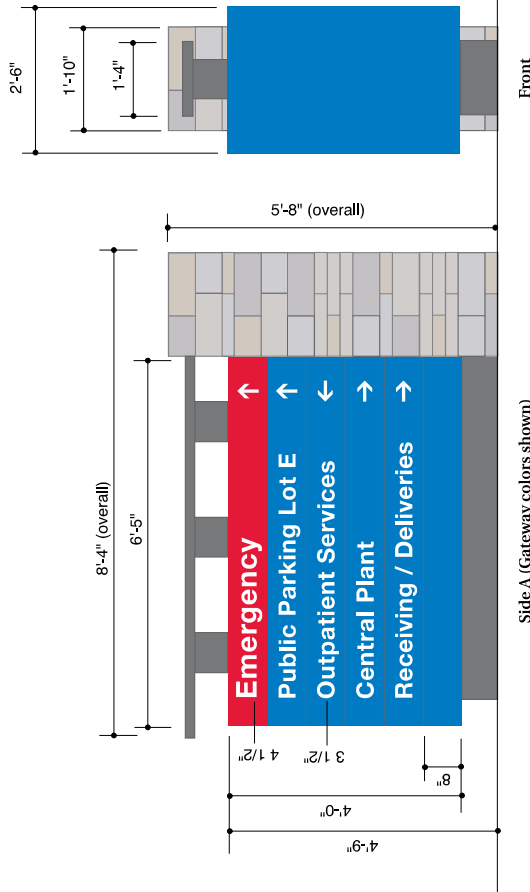


Footings Detail
Scale: 1/8" = 1'-0"

2" dia. standard pipe
1'-6" dia. x 4"-0" deep cast-in-place footing
Sign Area: 30 square feet



Plan View



Side A (Gateway colors shown)

Back

Front

Side B (preferred colors shown)

B

Directory Sign Illuminated
Scale: 1/2" = 1'-0"

GENERAL SPECIFICATIONS

Fabricated aluminum internally illuminated sign cabinet(s) painted to match approved colors.

Directional sign cabinet has removable panels with routed text and graphics backed with translucent acrylic and internal fluorescent illumination.

Power requirements: 10 amps @ 277V each location.

Text shown for example only; actual text TBD.

Masonry shown for reference only; the actual masonry design shall be: in a block or linear fashion to match the design of the signage cabinetry. The block or masonry products can match the theme of the campus buildings.

Decorative cap shown for reference only; actual decorative cap to match campus architecture and color scheme.

NOTE: all masonry and decorative embellishments shall be designed to enhance the sign cabinets.

C

Directional Sign
 Non-Illuminated
 Scale: 1" = 1'-0"

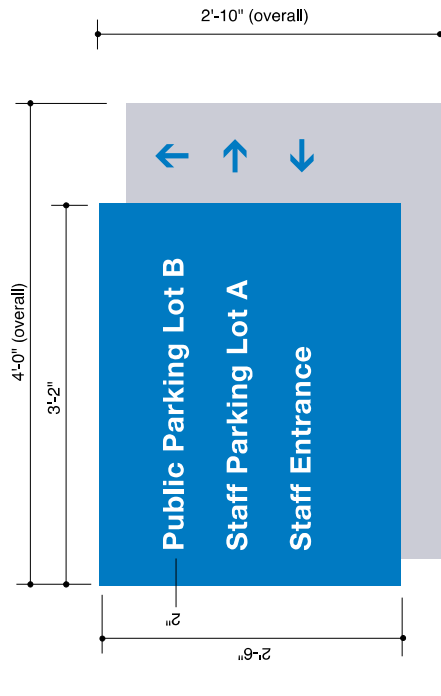
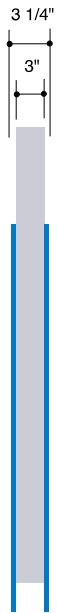
GENERAL SPECIFICATIONS

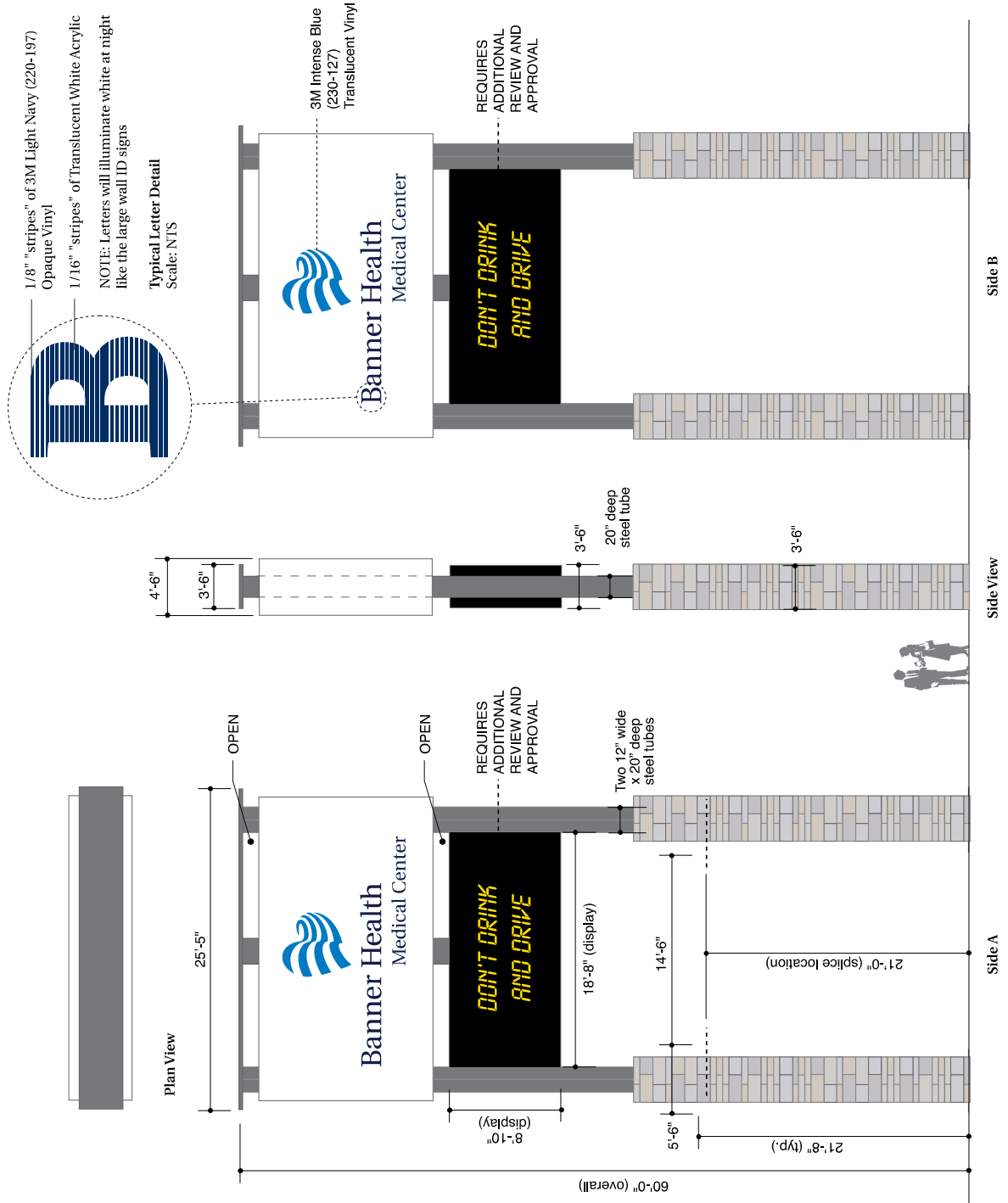
Fabricated aluminum non illuminated sign cabinet with permanently attached text panels painted to match approved colors.

Text and graphics to be surface applied vinyl.

Text shown for example only, actual text TBD.

Colors shown for reference only, actual colors TBD based on campus architecture and color scheme.





D

Freeway Sign - OPTIONAL
Illuminated

Scale: 1/8" = 1'-0"

GENERAL SPECIFICATIONS

NOTE: This sign requires the approval of the VP of Design and Construction.

Fabricated aluminum internally illuminated sign cabinet painted to match approved colors. Main ID sign cabinet has routed logo and text backed with translucent acrylic and/or vinyl, internal fluorescent illumination.

Electronic message board (amber or red LED) to be double-sided with changeable messages created and remotely controlled by client. Cabinet housing message board to be mechanically fastened to mounting poles.

NOTE: electronic message board requires additional internal review and approval.

Decorative pole covers shown for reference only, actual pole covers TBD based on campus architecture and color scheme.

Support poles to be square steel tubes, dimensions as shown determined by structural engineer.

Footing size and depth TBD by structural engineer.

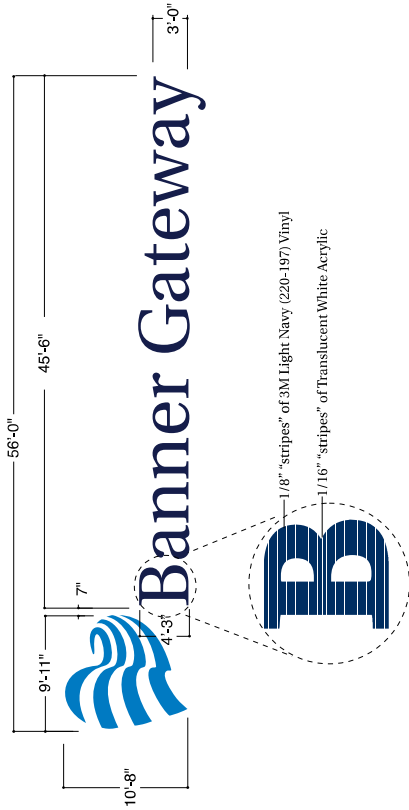
277 V power to be brought to sign location (by others). Step-down transformer to be used for power provided to message board (where allowed).

Power requirements: 70 amps @ 277 V.

Text shown for example only, actual text TBD.

Colors shown for reference only, actual colors TBD based on campus architecture and color scheme.

Height and overall size of sign to be determined by applicable Municipal codes.



E

Illuminated Wall Mounted Identity Sign - Horizontal Layout
Scale: 3/32" = 1'-0"

GENERAL SPECIFICATIONS

Logo: Reverse pan channel with 5" returns and 1" stand-offs, painted to match PMS 300C - halo illuminated.
Letters: Pan channel letters with 5" returns and translucent acrylic faces with vinyl overlays - face illuminated.
Returns of letters to be painted white. Letters to be flush mounted onto wall.

Power Requirement: 277 V - 30 amps.

Colors shown for reference only.

Banner Gateway text shown for example only.

Area where sign will be installed and square footage allowed by applicable Municipal codes will determine overall size of sign.

NOTE: wherever possible, it is preferable to use the "stacked" logo format:



Banner Gateway Wall Sign Shown For Example
No Scale



Banner Thunderbird Wall Sign Shown For Example
No Scale



F Illuminated Parapet Mounted Emergency Sign

Scale: 3/8" = 1'-0"

GENERAL SPECIFICATIONS

Letters: pan channel letters with translucent red acrylic faces, illuminate via red neon or LED.

3 1/2" returns painted to match PMS 186C red.

Letters mount to transformer housing.

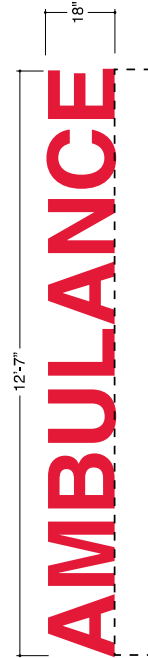
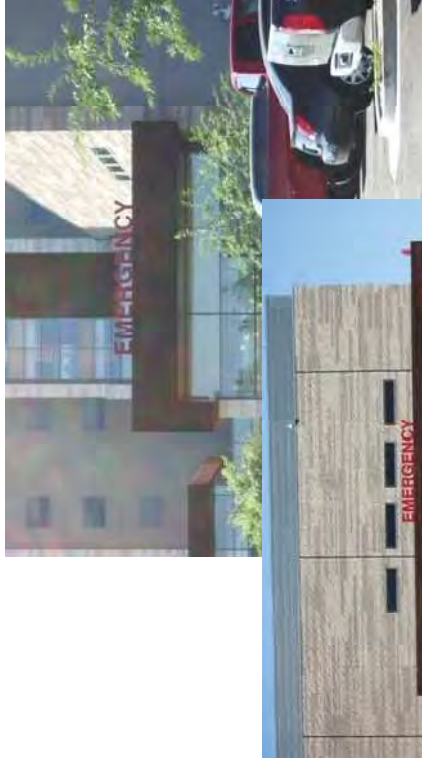
Transformer housing painted to match building color.

Power Requirement: 277V - 9 amps.

Colors shown for reference only.

Text shown is actual.

Area where sign will be installed and square footage allowed by applicable Municipal codes will determine overall size of sign.



G Illuminated Parapet Mounted Ambulance Sign

Scale: 3/8" = 1'-0"

GENERAL SPECIFICATIONS

Letters: pan channel letters with translucent red acrylic faces, illuminate via red neon or LED.

3 1/2" returns painted to match PMS 186C red.

Letters mount to transformer housing.

Transformer housing painted to match building color.

Power Requirement: 277V - 9 amps.

Colors shown for reference only.

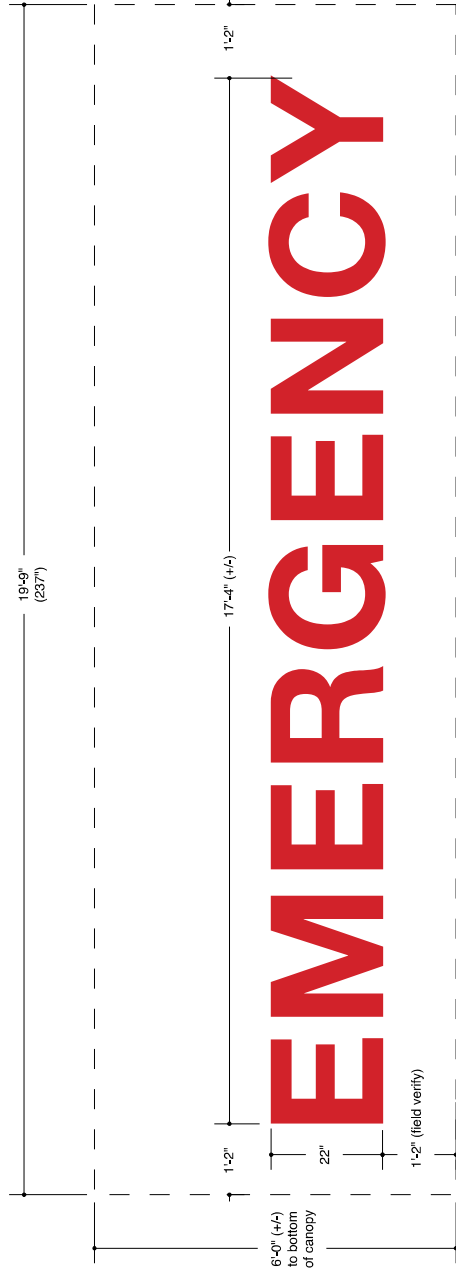
Text shown is actual.

Area where sign will be installed and square footage allowed by applicable Municipal codes will determine overall size of sign.



Banner Gateway Emergency Parapet Sign Shown For Example
No Scale

Banner Gateway Ambulance Parapet Sign Shown For Example
No Scale



H

Illuminated Wall Mounted Emergency Sign

Scale: 1" = 1'-0"

GENERAL SPECIFICATIONS

Fabricated internally illuminated channel letters with translucent red acrylic faces. Illuminate via red LED's. 5" returns painted to match PMS 186 red.

Flush mount to wall as required.

Power Requirement: 277V - 9 amps.

Colors shown for reference only.

Text shown is actual.

Wall area where sign will be installed and square footage allowed by applicable Municipal codes will determine overall size of sign.



Banner Thunderbird Emergency Wall Sign Rendering Shown For Example
No Scale



I Non-illuminated Wall Mounted Informational Sign
Scale: 3/8" = 1'-0"

GENERAL SPECIFICATIONS

Letters: reverse pan channel (RPC) with 3 1/2" returns painted to match building colors.
Mount to building wall using 1/2" stand-offs.

NOTE: text shown for example only, actual text TBD.

Wall area where sign will be installed and square footage allowed by applicable Municipal codes will determine overall size of sign.



J Non-illuminated Wall Mounted Informational Sign
Scale: 3/8" = 1'-0"

GENERAL SPECIFICATIONS

Letters: 1/4" thick precision cut FCO letters painted to match building colors.
Flush mount to building walls.

NOTE: text shown for example only, actual text TBD.

Wall area where sign will be installed and square footage allowed by applicable Municipal codes will determine overall size of sign.



Banner Gateway Wall Sign Shown For Example
No Scale



APPENDIX H

Banner Health Building Design and Construction Standards

BUILDING DESIGN AND CONSTRUCTION STANDARDS

The following guidelines/standards and specifications are to be used on all projects. These standards are based on best practice, sound design principals and lessons learned from previous projects. Please contact the Banner Health Design Team for any clarifications.

This standard is separated into two parts. Part 1 addresses general building design standards and Part 2 addresses design standards specific to the Central Utility Plant.

Participants:

Dan Dupaix, Susie McCann, Mike Naymik
Deb Olguin, Patty Banuelos, and BD&C
Energy Goals Team
Standards Steering Committee

Banner Health Referenced Standards

Templates

[Furniture Standards](#)

[Finishes Standards](#)

[Elevator Standards](#)

[Lighting Standards](#)

REGULATORY

A. Codes and Standards

The design, fabrication and installation of all buildings shall be in accordance with the latest adopted editions of the following:

- | | |
|--|--|
| 1) International Building Code (per local authority having jurisdiction) | 14) IEEE Standards |
| 2) International Energy Conservation Code | 15) NFPA 70 |
| 3) AABC | 16) NFPA 90A |
| 4) ADA (28CFR Part 36) | 17) NFPA 99 |
| 5) FGI Guidelines for Design and Construction of Health Care Facilities (2010 Edition) | 18) NFPA 101 |
| 6) ANSI | 19) NFPA 110 |
| 7) ASCE | 20) Local City Codes |
| 8) ASHRAE Standards | 21) CTI ATC-128, 105, 136 |
| 9) ASPE | 22) Life Safety Code |
| 10) ARI 550-590 | 23) Local Emissions Code |
| 11) ASME Boiler and Pressure Vessel Code | 24) Joint Commission on the Accreditation of Healthcare Facilities |
| 12) ASTM | 25) SMACNA |
| 13) AWWA | 26) OSHA |
| | 27) UL |

PART 1 – GENERAL BUILDING DESIGN STANDARDS

Guidelines and Design Intent

Revised 7/17/2014

Page 1

BUILDING DESIGN AND CONSTRUCTION STANDARDS

1. Building Energy Modeling
 - a. Computer energy modeling using a software program such as DOE-2 shall be employed on all projects where 50,000 additional square feet is added or where renovations to areas with exterior walls are being designed.
 - b. Energy models will be created to optimize the performance and interaction of building elements such as insulation, glazing, orientation, lighting, etc.
 - c. Two models shall be created one showing baseline and one showing anticipated performance as defined by ASHRAE 90.1 2007.
 - d. The information from these models will be used to make project specific design decisions.
 - e. Modeling costs shall be identified in the project budget as Architectural pre-construction services.
2. Energy Consumption Goal
 - a. The design shall, at a minimum, exceed ASHRAE 90.1 2007 requirements by ten (10) percent.
 - b. Incentives may be offered for exceeding the above requirement by local utilities. The design team must submit the application for incentives.
 - c. All results shall be measured and verified before incentives will be paid by the utility company. The utility company will be responsible for hiring the verification agent.
 - d. All incentives shall be approved by Banner Health Development and Construction Engineer prior to submission.
3. Building Orientation/Siting
 - a. Building shall be oriented to minimize the need to address sun/solar problems.
 - b. Design fixed sun control devices into south and west faces of building for glazing.
 - c. Building shall be sited to minimize the amount of grading and soil modification required.
4. Building Envelope
 - a. Exterior wall assembly shall have a minimum U-factor of 0.089.
 - b. Roof assembly shall have a minimum U-factor of 0.027.
 - c. Glazing Solar Heat Gain Coefficient shall meet or exceed the values listed in Table 5.5 of ASHRAE 90.1 2007 for the appropriate climate zone.
 - d. Double or triple pane glazing shall be evaluated for ROI particularly on south and west facing walls.
 - e. All glazing frames shall have thermal breaks to prevent frosting and heat transmission.
 - f. Use fritted glazing where appropriate to reduce solar radiation. (Typically South and West facing curtain wall system).
5. Building Form
 - a. A simple rectangular form shall be the basis for design. "Understated excellence" shall be the goal in all elements.
 - b. Vestibules shall be incorporated at entrances with automatic doors and shall be 20 feet in length to prevent both sets of doors from opening simultaneously. Doors shall be at right angles to prevent intrusion of elements.
 - c. Where feasible, building entrances should be on the leeward side of the building from the prevailing wind direction.
 - d. Group areas with similar uses and occupied hours together to allow equipment to be shut down or operated at reduced load during unoccupied times.
6. Natural Lighting
 - a. Incorporate natural lighting in common areas such as nurse stations and waiting rooms, and along exterior walls. Reflect sunlight off of ceilings where possible.

BUILDING DESIGN AND CONSTRUCTION STANDARDS

- b. Limit building depth to allow greater light penetration into interior spaces.
- c. Internal shading shall be incorporated to control sunlight. Manually operated shading shall be used in offices, exam rooms, patient rooms and other individually staffed spaces. Motorized shades shall be used in public spaces with large glass areas.

7. Building Finishes

- a. Specify low Volatile Organic Compound (VOC) materials including carpet, paint, resilient flooring, etc.
- b. Resilient flooring shall be wax-less type.
- c. Specify materials that do not release toxic chemicals or byproducts during their life cycle or contain known carcinogens.
- d. Specify materials that can be cleaned with biodegradable cleaning products.
- e. Specify Anti-Microbial surfaces in patient care areas on door hardware.

8. Building Materials

- a. Building materials shall be purchased from local manufacturers whenever possible.
- b. All materials shall meet or exceed Banner Health standards for quality and durability.
- c. Materials which can be re-used shall be incorporated where feasible.
- d. All waste materials shall be sorted and recycled to reduce amount of waste ending up in landfill.
- e. Specify materials that do not release toxic chemicals or byproducts during their life cycle or contain known carcinogens.
- f. Specify materials and products containing high post-consumer content.
- g. Specify wood products that are from rapidly renewable sources.
- h. Specify materials that are easily re-useable, recyclable or biodegradable.

9. Construction

- a. Construction projects shall be required to have and implement a waste management plan for separation and recycling of construction and demolition debris and waste.
- b. Work with manufacturers to minimize the amount of packaging waste. Recycle or re-use all packaging waste.
- c. Incorporate adequate and appropriate flush out period to remove all initial out gassing of materials and finishes.

10. Landscape

- a. Only climate adaptive or native plants shall be used.
- b. Install landscaping that does not require permanent irrigation. (Xeriscaping).
- c. Minimize the amount of grading and soil modification required.
- d. No water features shall be allowed.
- e. No trees that flower or require excessive clean up shall be specified.
- f. No cactus species that bloom and require replacement within 10 years shall be specified.

11. Site

- a. Site selection and building orientation shall minimize the amount grading and filling required.
- b. Site selection shall consider nearby farm land to prevent pesticides from being introduced into the facility.
- c. Site shall be above the 100 year flood plain elevation as dictated by local code.
- d. Redevelopment of existing brownfield sites shall be evaluated rather than undeveloped rural land.
- e. Site shall be located within ½ mile of existing or planned public transportation stops where practical.

12. Building Form

- a. Outdoor areas of respite shall be incorporated in the site to promote healing.

BUILDING DESIGN AND CONSTRUCTION STANDARDS

13. Air Handling Units

- a. Air handling units shall be provided to serve all areas of the facility to maintain design temperature conditions. The air handlers shall be Variable Air Volume (VAV) type. Each air handler shall be equipped with separate supply and return fans and an airside economizer. Air handlers shall be sized for 20% additional coil and air capacity to accommodate future loads, future use and equipment degradation.
- b. Validation of additional capacity shall be performed at the completion of the project.
- c. Cooling coils shall be 8 row minimum to ensure adequate dehumidification capacity and shall have a maximum of 10 fins per inch.
- d. VAV boxes shall not be mounted higher than three feet from bottom of box to ceiling grid to allow for adequate maintenance access.
- e. All air handlers shall have emergency power
- f. All air handling equipment with a capacity greater than 36,000 btu/hr (3-tons) shall be equipped with outside air economizers.
- g. If air handler is elevated more than 24 inches above roof, a platform will be provided.

14. Ductwork

- a. Ductwork shall be sized adequately for air flow and velocity to optimize the fan motor horsepower required to move the air.
- b. All medium pressure ductwork shall be sized at a maximum velocity of 2000 feet per minute.
- c. All ductwork shall be pressure tested in accordance with SMACNA for leakage and meet the leakage requirements of SMACNA for the duct pressure classification.
- d. All ductwork (Supply, return and exhaust) shall be leakage tested in its normal operating state (positive or negative) at 1.5 times design pressure. Leakage of the ductwork system shall not exceed 1% of the total system volumetric flow rate.
- e. All supply ductwork shall be insulated with minimum R-3.5 insulation.

15. Building Controls

- a. Building controls shall be Direct Digital Control (DDC) using BACnet open protocol. Controls shall be compatible with the existing campus system or approved by the campus facilities department.
- b. Control architecture shall incorporate real time metering of energy used for all major utilities. This metering will be used to monitor and optimize building system performance and control demand usage.
- c. Dashboards shall be used for real-time energy monitoring.
- d. System shall be capable of implementing load shedding strategies.
- e. System shall interface and command lighting control system as necessary.

16. Energy Recovery

- a. Group general exhaust into common systems to take advantage of recovering energy from air stream. Perform payback analysis to determine feasibility.
- b. Consider waste heat recovery in systems such as boiler/hot water stack, condenser water, boiler blow-down, etc. Perform payback analysis to determine feasibility.

17. HVAC Zoning

- a. Group areas with similar uses and occupied hours together to allow equipment to be shut down or operated at reduced load during unoccupied times.

18. Air Distribution

BUILDING DESIGN AND CONSTRUCTION STANDARDS

- a. Air change rates and pressurizations shall conform to the requirements of the FGI Guidelines and ASHRAE 170. Air change rates shall not exceed those recommended in ASHRAE 170 without approval of the Development and Construction Engineer.
- b. Displacement ventilation shall be considered, where applicable and allowed by Authority Having Jurisdiction. Perform payback analysis and propose areas of use for approval by Banner Development and Construction prior to proceeding.
- c. Chilled Beams (both active and passive) shall be considered, where applicable and allowed by Authority Having Jurisdiction. Perform payback analysis and propose areas of use for approval by Banner Development and Construction prior to proceeding.

19. Lighting

- a. LED fixtures shall be used wherever possible.
- b. Halogen lamps shall not be used unless first consulting with the Banner Health.
- c. Fluorescent Ballasts shall be electronic type, high frequency (20 kHz or greater), and have a power factor greater than 0.90.
- d. Lamps shall have a Color Rendering Index of 85 or higher and a color temperature of 3500 Kelvin or higher.
- e. All lighting in unoccupied or intermittently occupied rooms shall be controlled by an occupancy sensor.
- f. All lighting in Mechanical and Electrical rooms shall be controlled by a 4-hour twist timer switch with override function.
- g. All lighting in areas with exterior windows except patient rooms shall be equipped with light level sensors and dimmable ballasts to take advantage of natural lighting.
- h. Exterior lighting shall be designed to minimize light trespass from the site and reduce glare.
- i. Incorporation of a lighting control system shall be considered and evaluated on all projects.
- j. Emergency egress lighting shall be fed from generators and shall not have battery packs in all areas except operating rooms and generator rooms.

20. Electrical Distribution

- a. Feeder voltage drop shall not exceed 2% at design load.
- b. Branch circuit voltage drop shall not exceed 3% at design load
- c. All electrical systems shall have a coordination study provided as part of the design and verified at the end of construction.
- d. All distribution panelboards shall have a minimum capacity of 225 Amps and 42 circuits. Each panelboard shall have a minimum of 5% spare/empty circuit breaker capacity.
- e. All air handlers shall have emergency power.
- f. All distribution panelboards shall be labeled with arc flash hazard information.
- g. All panels 400 amps and larger shall have metering capability and be monitored by the Building Automation System.

21. Low Voltage Cabling

- a. All low voltage (Building Automation, Lighting Control, etc.) cabling shall be installed in accordance with Banner cabling standards.

22. Motors

- a. All motors greater than 1 horsepower shall be premium efficiency type as defined by NEMA Standard MG-1
- b. All motors greater than 1 horsepower shall be equipped with variable frequency drives.
- c. All motors 1 horsepower or less shall be ECM (Electronically Commutated Motor).

BUILDING DESIGN AND CONSTRUCTION STANDARDS

23. Plumbing Fixtures

- a. Water Closets shall be floor mounted, rear discharge, 4-inch outlet, 1.28 gallons per flush.
- b. Urinals shall be 1 pint (16 ounces) per flush or waterless type.
- c. Lavatory Faucets shall be 1.5 gallon per minute laminar flow.
- d. Lavatory faucets shall be manual in all staff toilet rooms.
- e. Showers shall be 1.8 gallon per minute flow.
- f. Flush valves shall be manual piston type.

24. Landscape Irrigation

- a. Use municipally provided non-potable water if available.
- b. Recover and re-use cooling tower wastewater.

25. Medical Gas Zone Valves

- a. Valves shall be equipped with quick connect fittings and valves for temporary connection and back feeding.

26. Sterile Processing Equipment

- a. Equipment shall have self-contained steam generators.
- b. No "House" steam will be available.
- c. All remodels and equipment replacements in existing facilities shall have self-contained steam generators.

27. Kitchen Equipment

- a. Equipment shall have self-contained steam generators.
- b. No "House" steam will be available.
- c. All remodels and equipment replacements in existing facilities shall have self-contained steam generators.

Design Conditions

Pipe Velocities

Maximum Water Velocity in Plant	10 ft/sec
Maximum Water Velocity in Service Lines and Headers	8 ft/sec

Duct Velocities

Maximum Air Velocity in low pressure supply ducts	1,000 ft/min
Maximum Air Velocity in medium pressure supply ducts	2,000 ft/min
Maximum Air Velocity in branch return ducts	1,000 ft/min
Maximum Air Velocity in main return ducts	1,500 ft/min
Maximum Air Velocity in branch general exhaust ducts	1,000 ft/min
Maximum Air Velocity in main general exhaust ducts	1,500 ft/min

Temperatures

Chilled Water Supply Temperature	44 deg F
Peak cooling load chilled water supply temperature	44 deg F
Average summer cooling load chilled water supply temperature	48 deg F

BUILDING DESIGN AND CONSTRUCTION STANDARDS

Average spring & fall cooling load chilled water supply temperature	53 deg F
Average winter cooling load chilled water supply temperature	56 deg F
Highest winter cooling load chilled water supply temperature	60 deg F
Heating Hot Water Supply	180 deg F
Heating Hot Water Return	140 deg F
Domestic Hot Water Supply	140 deg F
Condenser Water Supply	85 deg F
Condenser Water Return	95 deg F
Domestic Hot Water Supply	140 deg F

Note: The condenser water temperatures above are for equipment sizing. Temperature set-points should be as low as can be tolerated by the connected chillers.

System Test Pressures

Chilled, Heating and Condenser Water Piping and Fittings	1.5 x Design Pressure
--	-----------------------

Design Criteria

(Temperatures shown are for Arizona Region. All others use ASHRAE 1% or local best practice.)

Summer Design Dry Bulb Temperature (For Outside Air/Mixed Air)	115 deg F
Summer Design Wet Bulb Temperature For Outside Air/Mixed Air)	72 deg F
Summer Design Dry Bulb Temperature (For Coil Sizing)	97 deg F
Summer Design Wet Bulb Temperature (For Coil Sizing)	76 deg F
Winter Design Dry Bulb Temperature	31 deg F
Indoor Design Temperature Range for Conditioned Space	66-78 deg F
Indoor Design Temperature for Unconditioned Space	85 deg F

All air handler cooling coils shall be selected for a chilled water temperature range of 50 to 60 degrees F to maximize waterside economizer use.

Note: Individual spaces may require temperatures outside the ranges indicated above. The design team shall account for acceptable temperatures in each individual space and consider input from the users when selecting the appropriate temperature for each space.

BUILDING DESIGN AND CONSTRUCTION STANDARDS

PART 2 - CENTRAL PLANT

Space

Central Plant should include space for the following equipment:

- 1) Chillers
- 2) Cooling towers
- 3) Chilled water pumps
- 4) Plate & frame heat exchanger
- 5) Condensate pumps
- 6) Boilers
- 7) Gas service/meter
- 8) Heat exchangers
- 9) Heating hot water pumps
- 10) Domestic water heaters
- 11) Domestic water pumps
- 12) Domestic water softeners
- 13) Fire pump
- 14) Medical vacuum pump
- 15) Waste anesthesia gas vacuum pump
- 16) Medical air compressors
- 17) Medical gas manifold/cylinder storage
- 18) Bulk oxygen tank
- 19) Electric utility equipment – switches, capacitors, transformers
- 20) Electrical service meter(s) and service disconnects
- 21) Electrical distribution equipment for central plant
- 22) Diesel fueled engine/generators
- 23) Engine/generator day tanks
- 24) Bulk diesel fuel tanks
- 25) Generator synchronizing gear
- 26) Automatic transfer switches for central plant
- 27) Maintenance shops
- 28) Administrative spaces

The Central plant shall include adequate access and maintenance space. The central plant should include storage space for replacement parts.

The cooling tower layout should allow any one cooling tower cell to be taken off line and serviced without impact to the remaining cells.

Design Assumptions

- A. Redundancy - Refer to Redundancy Matrix.
- B. Variable - Primary chilled water, condenser water and heating water pumping system.
- C. Chilled water system design around a 15 degree delta T.
- D. Stainless steel cooling towers shall be specified. Cooling towers shall be equipped with concrete sumps. Sumps shall have septum walls to allow shut down of individual cooling tower cells for periodic maintenance activities. Sump water capacity shall be adequate to allow operation of the cooling towers for a 4 hour period without make-up water.
- E. Condenser water system shall be configured to supply two different, simultaneous water temperatures to allow a chiller to operate simultaneously with the waterside economizer.
- F. New Banner Health hospitals will include a tunnel between central plant and D&T Building and Patient Towers.
- G. Electrical Service Equipment shall be located indoors to minimize weather damage and facilitate maintenance.
- H. Electrical Service Equipment shall be switchgear construction with draw out power circuit breakers.
- I. Electrical distribution equipment rated 1600 amperes and higher shall be switchgear or switchboard construction; rear accessible with draw-out mains and feeder circuit breakers.

BUILDING DESIGN AND CONSTRUCTION STANDARDS

(Draw-out allows future changes without de-energizing equipment. Rear accessible allows feeders to be terminated without reaching across bus bars – if it is draw-out, it is necessarily rear accessible.) A lifting mechanism capable of supporting the weight of all switchgear located in the central utility plant shall be included with the switchgear. This mechanism shall be integral to the gear.

- J. The central plant systems shall be designed to support a maximum hospital build out of 750,000 square feet.
- K. Equipment sized at 80% of peak calculated load for maximum campus build out.
- L. Design shall include a plate/frame heat exchanger for waterside economizer. (ASME Rating shall be required). Heat exchanger capacity shall match the largest chiller BTU/hr and shall be piped so that the chilled water return from the building is diverted to the heat exchanger before the first chiller. (Side-stream configuration on the chilled water return piping)
- M. Domestic water heat exchangers will be located in the basement of the D&T building.
- N. Heating hot water heat exchangers will be located in the basement of the D&T building.
- O. Design should accommodate the local electrical power company's equipment sizes.
- P. Chillers shall be able to handle voltage drop that occurs during initial Generator start up without shutting down.
- Q. Electrical Service shall be 480 Volt (Secondary Service).
- R. Electric Service from the utility shall have two dedicated feeds from different substations.
- S. All Electric meters shall be totalized on each campus.
- T. Cooling towers/condenser water loop shall be equipped with side stream filtration system capable of filtering to 25 microns to prevent fouling of chiller tubes.
- U. All Chillers and Cooling Towers shall be fed from equipment branch power.
- V. Domestic water service from the utility shall be provided from two separate mains adjacent to the campus.
- W. Electrical System Redundancy
The Electrical System will consist of *network or radial* wired utility transformers to double-ended (main-tie-main) rear connected switchgear which will increase reliability/redundancy with redundant service disconnects via draw-out construction. Utility service shall be provided from two separate substations and feeders. The Central Plant shall have various emergency power distribution points to connect rental generators without the need to shut down any electrical system.
- X. All electrical systems shall have a coordination study provided as part of the design and verified at the end of construction.
- Y. All distribution panelboards shall have a minimum capacity of 225 Amps and 42 circuits. Each panelboard shall have a minimum of 5% spare/empty circuit breaker capacity.
- Z. All fuel distribution and control equipment shall be fed from emergency power circuits.

Design Notes/Considerations

- A. Future Addition
The central plant shall be designed to allow for addition and expansion of Mechanical, Plumbing and Electrical systems as the facility grows. The Design Team shall indicate this future growth and expansion in the initial central plant design.
- B. Fire pump room shall have fire separation from the rest of the building.
- C. Emergency load side equipment cannot be in the same room as the engine/generators.
- D. All loads in the Central Plant shall have some sort of emergency power – two (2) equipment branch automatic transfer switches, one (1) life safety branch ATS and one (1) critical branch ATS.

BUILDING DESIGN AND CONSTRUCTION STANDARDS

- E. Truck access required for:
- a. Electric utility pad mounted switches
 - b. Electric utility pad mounted capacitors
 - c. Electric utility pad mounted transformers
 - d. Bulk oxygen
 - e. Diesel fuel
 - f. Medical gas bottles
 - g. Brine tank (via dump truck)
 - h. Natural gas meter/regulator
 - i. Water treatment chemical delivery
- F. Design to minimize impact of:
- a. Engine/generator noise – plenum behind radiators to direct air up
 - b. Engine/generator exhaust noise
 - c. Cooling tower drift/spray
- G. All circuit breakers shall be by the same manufacturer including the engine/generator disconnects.
- H. Worst case electrical equipment yard should include four (4) 2000 kVA PMTs, four (4) pad mounted switches and two (2) pad mounted capacitors.
- I. All conductors shall be color coded in lieu of phase tape to identify phases.
- J. Configure central plant for adjacent equipment systems such as:
- a. Bulk diesel fuel storage tanks near boilers and diesel generators.
 - b. Cooling towers near chillers
 - c. Chilled water pumps near chillers
 - d. Transformers near service entrance switchgear and distribution boards
 - e. Synchronization gear near generators
- K. The minimum space required for the Maintenance shop area shall be 1800 square feet in the central plant. The basement level of the attached hospital shall have 2600 square feet of trade-specific shop areas.
- L. The minimum floor to ceiling height within Generator room should be 17 feet. Height should be verified by design team to coordinate with required mufflers.

Equipment Basis of Design

1. GENERAL

i. System Description

This document describes the design parameters, equipment, materials and work that will be required for the central plant systems. The central plant will consist of the following equipment:

- 1) Chillers
- 2) Pumps
- 3) Cooling Towers
- 4) Heat Exchangers
- 5) Medical Air Compressors
- 6) Medical Vacuum Pumps
- 7) Bulk Oxygen Equipment
- 8) Domestic Water Heaters
- 9) Domestic Water Pumps
- 10) Fire Pump

BUILDING DESIGN AND CONSTRUCTION STANDARDS

- 11) Diesel Fueled Engine/Generators
- 12) Diesel Fuel Tanks
- 13) Electrical Service Entrance Switchgear/Distribution Equipment
- 14) Engine/Generator Synchronizing Switchgear
- 15) Automatic Transfer Switches

2. PLANT SYSTEM DESCRIPTIONS

A. Water Chilling System

The central plant shall be configured with multiple centrifugal type variable speed electric drive chillers piped in parallel. The chilled water plant shall have an overall efficiency of 0.55 kW/ton. Chillers shall have a minimum IPLV efficiency of 0.50 kW/ton.

Primary chilled water pumps shall be provided to distribute chilled water to the campus. Primary chilled water pumps shall be equipped with variable speed drives. Variable speed drives will be used to modulate chilled water flow to match chiller loading.

The piping system shall be equipped with valves and connection points for temporary chiller connection.

Turbine type flow meters shall measure the flow entering the chillers and leaving the central plant to the campus. The lowest anticipated chilled water delta T is 5 deg F.

Unobstructed tube pull space will be provided for each chiller. A minimum of six feet will be provided between centrifugal chillers. Each chiller shall be equipped with a lifting davit for removal of the end bells for maintenance activities.

B. Condenser Water System

Packaged stainless steel cooling towers will provide the heat rejection for the chillers. Variable speed drives will be used on the condenser water pumps to modulate flow to match chiller loading. Variable speed drives will be used to modulate the cooling tower fan speeds.

The central plant shall be provided with all necessary structure to support the packaged towers. Cooling towers shall be equipped with concrete sumps. Sumps shall have septum walls to allow shut down of individual cooling tower cells for periodic maintenance activities. Sump water capacity shall be adequate to allow operation of the cooling towers for a 4-hour period during peak cooling season without makeup water.

Condenser water system shall be configured to allow the Waterside Economizer to operate simultaneously with one chiller each at different condenser water temperatures. This will require separate sumps.

The piping system shall be equipped with valves and connection points for temporary cooling tower connection.

Ultrasonic type flow meters shall measure the flow entering the chillers and leaving the cooling towers.

All necessary piping to interconnect the cooling plant and cooling towers shall be provided. Space shall be allowed in the central plant for the Owner's chemical treatment system. A pH meter and water meter shall be provided in the cooling tower blow down lines.

C. Makeup Water System

BUILDING DESIGN AND CONSTRUCTION STANDARDS

Makeup water will be provided to the central plant. Water will be used to make-up the chilled water, heating hot water, and condenser water systems. All makeup water shall be metered to track usage.

D. Water Treatment

The water treatment chemicals, injection pumps and water softener shall be located within the central plant. These items shall be located to allow for easy service access. Chemical storage tanks shall be located to allow truck access for filling.

E. Filtration

The chilled water and heating hot water systems will include a coalescing-type combination air/dirt separator. The condenser water system will include a dirt separator installed in a side stream configuration to handle 50% of the total (future) condenser water flow.

Each separator will be provided with a removable, flanged lower head. The separators will be located within the central plant, adequate access and removal space will be provided for cleaning and disassembly.

F. Refrigerant Ventilation and Monitoring System

The refrigeration ventilation and monitoring system shall be provided in accordance with ASHRAE 15. The ventilation will be designed for the complete plant build-out (3,750 tons). The refrigerant monitor system will be provided with additional sampling ports to allow for the future plant build-out.

All chiller relief vents will be extended to the exterior of the central plant and will terminate at a location to meet all applicable codes.

G. Heating Hot Water System

Heating hot water will be generated by condensing-type hot water boilers piped in parallel. Natural gas shall serve as the primary fuel source and fuel oil as a secondary fuel source. Boilers shall have required redundancy per the Redundancy Table. Primary heating hot water pumps shall be provided to distribute heating water to the campus and shall be equipped with variable speed drives. The primary piping system shall be equipped with valves and connection points for temporary boiler connection.

Turbine type flow meters shall measure the flow entering the chillers and leaving the central plant to the campus. The lowest anticipated chilled water delta T is 5 deg F.

Solar-Thermal water heating shall be evaluated on all new installations and boiler replacement projects to determine feasibility and payback.

H. Building Control System

The central plant will be controlled by a DDC type control system, by a manufacturer to be selected. A graphical user workstation will be provided within the plant to allow for full operator interface. The control system will be 'Native' BacNET.

I. Waterside Economizer System

The central plant shall be configured with a plate and frame heat exchanger piped to connect into the secondary chilled water return header. A chilled water pump for the heat exchanger shall be provided to circulate chilled water to heat exchanger. A condenser water pump for the heat exchanger shall be provided to circulate condenser water to heat exchanger.

BUILDING DESIGN AND CONSTRUCTION STANDARDS

J. Plant Electrical System

1) Utility Power

Two dedicated feeds with tie breakers in the substation are preferred. This requirement must be investigated with the utility to evaluate the cost.

2) Normal Power

Service Entrance Switchgear – 480/277V, Main-Main with Automatic Throwover system (ATO), free standing, front and rear accessible, dead front switchgear construction; individually compartmented draw-out construction circuit breaker overcurrent protective devices for mains and feeders.

Service Entrance Switchgear will serve 480/277V Distribution Switchboards. Switchboards will be free standing, front accessible, dead front with fixed mounted main and feeder devices – individually mounted devices larger than 800A.

Distribution Switchboards will connect to Distribution and Branch panelboards – 480V and below; front accessible, dead front, wall mounted; Distribution - group mounted branch circuit breakers; Branch - bolt-on molded case circuit breakers; galvanized steel enclosure with hinged front cover.

3) Emergency Power

NOTE: Not all generators are required to be diesel. Diesel is only required for life safety and critical power circuits. Natural gas shall be considered for other circuits.

A. Diesel Generators: The emergency power system will consist of diesel fueled, turbo-charged, 1800 RPM Max engines with (remote or engine mounted) radiators and generators with transient voltage performance not more than 10% variation for 50% step load increase or decrease; voltage recovery of two seconds; upon application of 100% rated load voltage shall not exceed 2 ½%; steady state frequency bandwidth of 0.5% of rated frequency from no load to full load and electronic governor. Radiators shall be sized for 120 degree F ambient temperature.

B. Natural Gas Generators: Natural gas generators shall be equipped with heat recovery systems (after coolers, water jacket, oil coolers, etc). A chilled water line shall be connected to the generator turbocharger to maximize generator capacity.

C. Emergency Power Bus: All generators shall be connected to a common emergency power bus.

The engine-generators will connect to a line-up of 480/277V free standing, front and rear accessible, dead front paralleling switchgear; metal-enclosed cubicles and compartments; individually compartmented, draw-out construction overcurrent protective devices for mains and feeders. Overcurrent protection shall be same manufacturer as service entrance switchgear.

The paralleling switchgear will be equipped with a Master Control cubicle, engine generator control and distribution cubicles. Control features to include programmable logic controls for load addition, load shedding, sequencing, etc.

Chillers will be individually served from the paralleling switchgear via Automatic Bypass/Isolation Transfer Switches. Additional transfer switches, one or more for each Essential Electrical System, will also be provided.

BUILDING DESIGN AND CONSTRUCTION STANDARDS

Closed Transition Bypass/Isolation Automatic Transfer Switches shall be free standing, either four-pole with full rated neutral or three-pole without neutral. Draw-out type transfer switch assembly, completely isolated from the bypass/isolation switch. **This must be acceptable to the local utility provider. VERIFY THAT IT IS ACCEPTABLE**

The Central Plant shall have various emergency power distribution points to connect rental generators. Show location on drawings.

Generator manufacturer shall provide emission factors to allow emission calculations based on the following table format.

#2 low sulfur fuel oil	Emission Factor	Unit	Pounds of Emissions
CO		gallons	-
NOX		gallons	-
PM-10		gallons	-
SOX		gallons	-
VOC		gallons	-

4) Motor Controllers

The 460V chiller motors will be controlled with a closed-transition, reduced-voltage auto-transformer type medium voltage controllers.

The 460V motors will be controlled with Variable Frequency Drives (VFDs), solid-state soft starters as illustrated on one-line diagram.

5) Electrical Equipment Location

All the normal power equipment (480V switchgear, switchboard(s), distribution and branch circuit panelboards, etc.) will be housed in a dedicated fire rated electrical room.

The emergency paralleling switchgear and automatic transfer switches will be located in a separate dedicated fire rated electrical room.

Both rooms will be air conditioned.

6) Electrical Interconnections

The local utility incoming service to the site will be in an underground duct bank per utility requirements.

Electrical connections between electrical buildings and between electrical building and outdoor equipment will be underground.

3. PLANT EQUIPMENT REQUIREMENTS

All equipment (including skid/package sub-systems) shall have appropriate isolation valves to allow the system it serves to continue to operate while service is performed. Additionally, all equipment inlets and outlets shall be equipped with temperature and pressure gauges selected appropriate for their fluid and temperature range.

A. Centrifugal Water Chillers

Packaged centrifugal water chillers will be provided installed in the central plant. Each chiller will be tested at the chiller manufacturer's plant on an ARI certified stand. The tests will be conducted at 100%, 75%, 50% and 25% of design capacity utilizing the ARI tolerances. An additional 4-hour operational test will be performed at 55 degree F entering condenser water temperature while the chiller is subjected to 100% design capacity.

BUILDING DESIGN AND CONSTRUCTION STANDARDS

Requirements:

Evaporator Leaving Water Temperature	42 deg F
Evaporator Entering Water Temperature	57 deg F
Lowest Evaporator Delta T	5 deg F
Evaporator Tubes	Enhanced
Evaporator Tube Wall Thickness	0.028"
Evaporator Fouling Factor	Standard
Condenser Tubes	Enhanced
Condenser Tube Wall Thickness	0.035"
Condenser Fouling Factor	0.00025
Condenser Waterbox Type	Marine
Waterbox Connections (Evaporator and Condenser)	Welded Raised Faced Flanges
Water box Coating	Factory applied Belzona or Equal
Voltage	480 V
Min. Motor Power Factor w/ PF Correction Capacitor	95%
IPLV	0.50 kW/Ton
Motor Starter	Auto-Transformer
Min. Unloading with Design Entering Cond. Water	15%
Parts and Labor Warranty – Complete Chiller	5 years
Min. Insulation Thickness – Armaflex	1 inch.
Pressure Relief Device	Reseating Type
End bell lifting davit	

B. Cooling Towers

The cooling towers will be packaged-type constructed of stainless steel. ALL metal used in the cooling tower shall be stainless steel. Cooling tower fan speed will be adjustable through a variable speed drive. The structure to support the towers will be provided.

Access ladders, maintenance platforms and all safety requirements will be provided by the cooling tower manufacturer.

Cooling towers shall be equipped with concrete sumps. Sumps shall have septum walls to allow shut down of individual cooling tower cells for periodic maintenance activities. Sump water capacity shall be adequate to allow operation of the cooling towers for a 4-hour period during peak cooling season without makeup water.

The towers shall be concealed from view by a screen wall. Screen wall loads will be provided by the Structural Engineer. All fasteners shall be 316 stainless steel.

Requirements:

Casing Material	Stainless Steel
Basin Material	Stainless Steel
Fill Material	PVC
Fill sheet Thickness (after forming)	20 mils
Maximum Fan Motor Horsepower	ASHRAE 90.1
Fan Type	Propeller
Fan Drive	Belt
Maximum Drift	0.005%

Concrete Sump shall be treated with an epoxy coating for waterproofing.

BUILDING DESIGN AND CONSTRUCTION STANDARDS

Towers shall be equipped with a basin sweeper system and side-stream filtration. Configure piping in sump to keep sump stirred up.

C. Pumps

The pumps will be base-mounted centrifugal split case type. The pumps may be configured as horizontal or vertical. If vertical pumps are utilized, an external flush must be provided for the pump seals. All pumps will be non-overloading at all points on the pump curve.

Requirements:

Maximum Impeller Size	95% of Largest Impeller
Maximum Speed	1800 rpm
Additional Capacity	20% without overloading
Electrical	480/60/3

D. Expansion Tanks

Chilled water and heating hot water expansion tanks will be provided in the central plant. A makeup water line and quick-fill will be connected to each tank. Both lines will be extended to a connection point on the exterior of the packaged central plant.

Requirements:

Expansion Tank Size	Determined By Engineer
Makeup Water Line Size	Determined By Engineer
Quick-fill Line Size	2 Inch

E. Water Treatment

A chemical storage tank, injection pump and water softener will be located in the central plant. A blowdown line from the cooling towers will be provided with a pH meter and a water meter. Chilled water, heating hot water and steam systems shall be equipped with a 5 gallon chemical pot feeder. Each system shall be equipped with a make-up water meter.

Requirements:

Space to be allocated for chemical treatment	5' x 15'
Space to be allocated for water softener	5' x 12'
Chemical Storage(Brine)Tank capacity	10 Tons
Injection Pump	Determined by Engineer
Water Softener Capacity	Determined by Engineer
pH	6.5 to 8.0
Alkalinity	<700 PPM CaCO ₃

F. Filtration

Filtration of chilled, heating hot and condenser water will be accomplished utilizing coalescing separators. All separators will have a removable lower head to facilitate cleaning. The blowdown connection for each separator will have a manually operated valve. Each line will be extended to the exterior of the packaged central plant. Separators shall be sized for the current water flow and accommodations made to the distribution piping to allow for future expansion.

Requirements:

Condenser Water	
Type	Dirt Separator
Entering Water Velocity	10 FPS
Chilled Water	
Type	Air/Dirt Separator
Entering Water Velocity	10 FPS
Heating Hot Water	

BUILDING DESIGN AND CONSTRUCTION STANDARDS

Type	Air/Dirt Separator
Entering Water Velocity	10 FPS

G. Fans

A refrigerant purge fan will be provided within the central plant. Discharge location of the fan will be determined by the Engineer to comply with all applicable codes and space constraints. The design of the purge airflow pattern through the central plant shall be in accordance with ASHRAE 15 and will be the full responsibility of the packaged central plant manufacturer. Fan shall be controlled by the refrigerant monitoring system.

Requirements:

Airflow CFM	ASHRAE 15
-------------	-----------

H. Refrigerant Monitor

The refrigerant monitor will be an infrared type capable of sensing multiple points and multiple refrigerants. Future sensing points will be provided to accommodate additional chillers. The monitor shall be capable of communication with the building management system.

I. Boilers

1) Package condensing hot water boilers will be provided and installed in the central plant. Boilers shall be rated and listed by the American Boiler Manufacturers Association and constructed, tested and stamped in accordance with the latest ASME code. Each boiler will be completely assembled and tested at the manufacturer's plant prior to shipment. Boilers shall operate at a minimum 85% efficiency when fired at 30% to 100% of rated capacity for both natural gas and fuel oil. Fuel burners shall bear UL label and be factory mounted, wired, mounted and tested. Boilers shall be equipped with stack economizers O2 trim and modulating burner controls.

Requirements:

Turndown Ratio	8:1
Boiler Horsepower	350
Boiler Output Rating	11,700 MBH
Natural Gas Inlet Pressure	2 psi

Burner shall meet all local, state and federal air quality standards related to emissions.

Manufacture shall supply emission factors to allow hospital personnel to calculate annual pounds of emissions based on the following table formats.

Natural Gas	Emission Factor	Unit	Pounds of Emissions
CO		therms	-
NOX		therms	-
PM-10		therms	-
SOX		therms	-
VOC		therms	-

#2 low sulfur	Emission Factor	Unit	Pounds of Emissions
---------------	-----------------	------	---------------------

BUILDING DESIGN AND CONSTRUCTION STANDARDS

fuel oil			
CO		gallons	-
NOX		gallons	-
PM-10		gallons	-
SOX		gallons	-
VOC		gallons	-

J. Bulk Fuel Tank

Bulk fuel storage tanks shall be above ground, concrete vault type. Tank and concrete vault shall be finished as one unit at the factory and require no assembly, construction or completion at the installation site. The bulk fuel storage tank(s) shall provide 48 hours of continuous operation of all generators and boilers based on full rated load. When calculating fuel capacity all future generators and boilers shall be included. Bulk fuel tanks shall be equipped with fuel polisher and cooling system as required.

K. Fuel Day Tank

Fuel day tanks shall be double wall, packaged type with integral controls and pumps required for a complete self-contained operation. Day tanks shall be self filling and designed for unattended operation. Each day tank shall be equipped with duplex pumps, fuel level indicator, high and low tank level alarms, leak detection alarm, temperature gauges and a fuel oil cooler. Tank capacity shall be 200 gallons. Fuel oil supply and return piping shall have meters and shall be connected into the building automation system for logging and monitoring. Provide dry contacts to send alarms to both the generator alarm panels (remote and local alarm panels) and building automation system.

4. STANDARDS OF ACCEPTANCE - SEE PREFERRED VENDOR LIST ON DEVELOPMENT AND CONSTRUCTION SHAREPOINT SITE

BUILDING DESIGN AND CONSTRUCTION STANDARDS

REDUNDANCY TABLE

Equipment Type	Redundancy Level AZ	Redundancy Level WR	Remarks
Chillers	N+70%	N+70%	Redundant chiller to be sized to meet spring/fall conditions and maximize efficiency
Cooling Towers	N+1	N+1	
Pumps	N+1	N+1	
Hot Water Heat Exchangers	2/3 N +2/3 N	N+1	
Boilers	2/3 N +2/3 N	N+1	
Domestic Water Booster Pumps	2/3 N +2/3 N	2/3 N +2/3 N	Only applies to buildings more than 2 stories.
Medical Vacuum Pump	One additional pump on skid	One additional pump on skid One additional pump on skid	WAGD shall be connected to Medical Vacuum System. (no separate WAGD System)
Medical Air Compressors	One additional pump on skid		
Diesel Engine Generators	1/2N + 1/2N	1/2N + 1/2N	
Diesel Fuel Storage	48 hours	48 Hours	



APPENDIX I

Architectural Renderings

APPENDIX I



Banner University Medical Center

Diamond Children's



Diamond Children's

Banner University Medical Center
Banner Health