

## **STAFF REPORT FOR THE PLANNING COMMISSION MEETING OF JANUARY 15, 2018**

**FILE NO: SUP-18-182**

## AGENDA ITEM: E.3

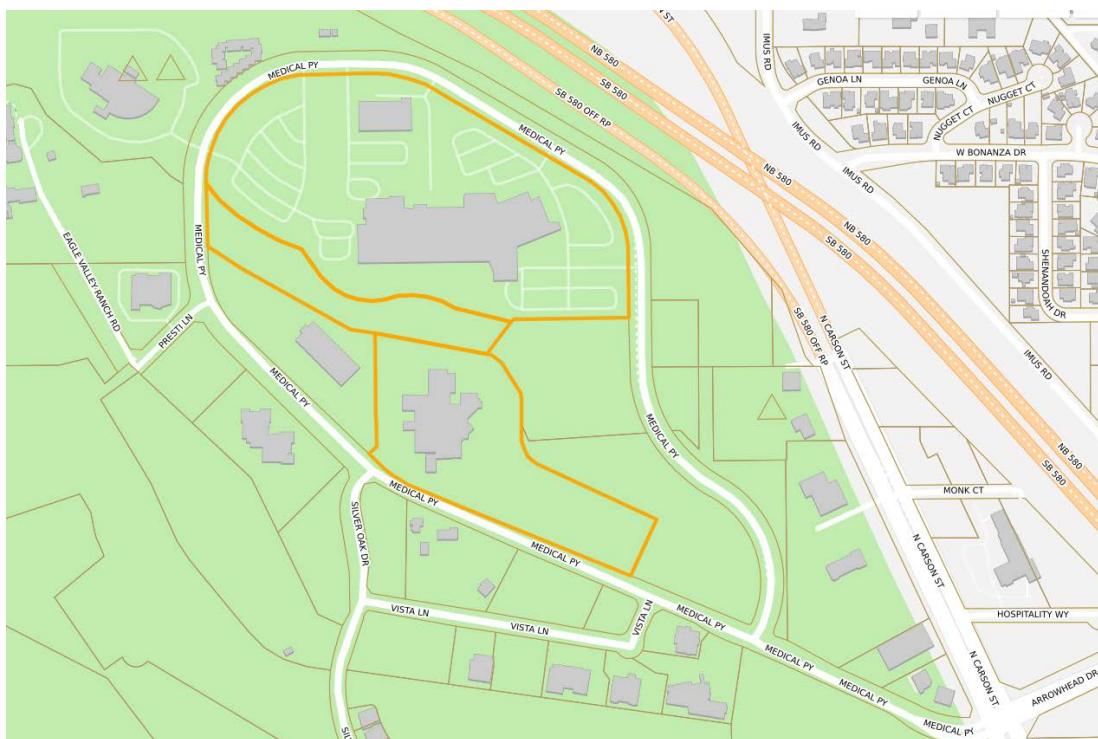
**STAFF CONTACT:** Heather Ferris, Associate Planner

**AGENDA TITLE:** For Possible Action: To consider a request for a Special Use Permit to expand the existing Carson Tahoe Regional Medical Center by adding 6,600 square feet to the existing emergency department, adding approximately 21,000 square feet of floor area to the lower level of the medical center to house support services for the hospital, adding approximately 1,625 square feet to the Sierra Surgery Hospital, and connecting the Surgery Hospital with the Medical Center building with an enclosed pedestrian walkway over Eagle Valley Creek. The subject property is located at 1600 Medical Parkway and 1400 Medical Parkway, APN's 007-531-37, 007-531-38 and 007-531-40.

**STAFF SUMMARY:** The applicant is requesting additions to the existing emergency department, the lower level to accommodate expanded laboratory functions and medical support uses, and to construct an enclosed pedestrian connection over Eagle Creek to the Sierra Surgery Building. Additionally, existing parking and drive aisles will be modified to accommodate these expansions.

**RECOMMENDED MOTIONS:** "I move to approve SUP-18-182, a Special Use Permit request to allow for the construction of an expansion of the existing Carson Tahoe Medical Hospital, expansion of the Sierra Surgery Building, and the connection of the two facilities via an enclosed pedestrian walkway, based on the findings and subject to the conditions of approval contained in the staff report."

## **VICINITY MAP**



**RECOMMENDED CONDITIONS OF APPROVAL:**

*Note: Unless specifically noted, all conditions enumerated in Special Use Permits U-02/03-19 and U-03/04-2 remain in effect.*

**The following shall be completed prior to commencement of the use:**

1. The applicant must sign and return the Notice of Decision for conditions for approval within 10 days of receipt of notification. If the Notice of Decision is not signed and returned within 10 days, then the item may be rescheduled for the next Planning Commission meeting for further consideration.
2. All development shall be substantially in accordance with the development plans approved with this application, except as otherwise modified by these conditions of approval.
3. All on- and off-site improvements shall conform to City standards and requirements.
4. The use for which this permit(s) is approved shall commence within 12 months of the date of final approval. A single, one year extension of time may be requested in writing to the Planning Division thirty days prior to the one year expiration date. Should this permit not be initiated (obtain a Building Permit) within one year and no extension granted, the permit shall become null and void.
5. The project requires application for a Building Permit, issued through the Carson City Building Division. This will necessitate a complete review of the project to verify compliance with all adopted construction codes and municipal ordinances applicable to the scope of the project.
6. The applicant shall provide parking lot lighting consistent with Carson City Development Standards.
7. The applicant shall provide landscaping consistent with the Carson City Development Standards, Division 3 – Landscaping.
8. The applicant shall submit a copy of the Notice of Decision and conditions of approval, signed by the applicant and owner, with any Building Permit application.
9. All construction and improvements must meet the requirements of Carson City and State of Nevada Codes and Development Standards.
10. Any expansion or significant modification to the existing building beyond what is proposed under this Special Use Permit will require additional review and approval by the Planning Commission.
11. Prior to issuance of any building permit, complete a lot line deletion, merging APN's 007-531-37, 007-531-38 and 007-531-40 into one parcel.
12. The proposed channel improvements for Eagle Valley Creek must be completed prior to issuance of the building permit for the bridge connector. The CLOMR/LOMR

process as defined in the Carson City Municipal Code must be completed with this portion of the project.

**LEGAL REQUIREMENTS:** CCMC 18.02.080 (Special Use Permits), CCMC 18.04.130 Retail Commercial (RC)

**MASTER PLAN DESIGNATION:** Public/Quasi-Public, Open Space, and Mixed-Use Employment.

**PRESENT ZONING:** Retail Commercial (RC)

**KEY ISSUES:** Is the proposed expansion consistent with the master plan and zoning, and will it be compatible with surrounding land uses.

**SURROUNDING ZONING AND LAND USE INFORMATION:**

- EAST: Retail Commercial/Eagle Valley Children's Home
- WEST: Retail Commercial/Vacant
- NORTH: Retail Commercial/Carson-Tahoe Health Facility
- SOUTH: Retail Commercial/Vacant, Single Family Residence, and Medical Offices

**ENVIRONMENTAL INFORMATION:**

- FLOOD ZONE: Zone X (Areas of Minimal Flooding); Zone AE (Regulatory Floodway); Zone X-shaded (0.2% Annual Chance Flooding); Zone X (Area with reduced risk due to levee).
- EARTHQUAKE FAULT: Moderate/Fault more than 500 ft. away
- SLOPE/DRAINAGE: The topography is relatively flat.

**SITE DEVELOPMENT INFORMATION:**

- SITE SIZE: 32 +/- ACRES
- EXISTING STRUCTURE SIZE: 344,000 square foot hospital and 51,500 square foot surgical facility
- PROPOSED STRUCTURE SIZE: 6,600 square foot addition to emergency department; 21,000 square foot lower level addition to hospital; 1,625 square foot addition to surgical facility; and enclosed pedestrian walkway connecting the hospital to the surgical center
- PROPOSED PARKING: 953 spaces
- VARIANCES REQUESTED: None

**PREVIOUS REVIEWS:**

MPR-18-151: October 16, 2018 Major Project Review for remodel/expansion of existing hospital and surgery center.

U-03/04-2: July 30, 2003 Special Use Permit for 51,500 square foot surgical facility approved by Planning Commission.

MPA 02/03-01; Z-02/03-02; U-02/03-19: January 29, 2003 Master Plan Amendment to Commercial; Zoning Map Amendment to Retail Commercial; and Special Use Permit 344,000 square foot hospital complex approved by Planning Commission.

## **BACKGROUND AND DISCUSSION:**

On January 29, 2003 the Planning Commission approved a Master Plan Amendment from Low Density Residential, Medium Density Residential, and High Density Residential to Commercial; a Zoning Map Amendment from Conservation Reserve and Single Family One Acre to Retail Commercial; and a Special Use Permit to allow the construction of a hospital (including approval of a helipad and increased height of 65 feet), and additional medical offices. In addition to the approval of the hospital use, the Planning Commission also reviewed and approved the water usage pursuant to the Growth Management Ordinance. The Sierra Surgery Center was approved under a separate use permit on July 30, 2003.

Since the approvals in 2003 the hospital and many of the supporting services have been constructed. The current hospital is a 4 story facility approximately 344,000 square feet in size. The hospital services include 144 acute patient beds, 24-hour emergency services with 29 treatment rooms, surgery, imaging, lab, pharmacy, kitchen/cafeteria, and administrative and support services.

The Sierra Surgery facility is located approximately 380 feet south of the hospital across Eagle Valley Creek. The facility is a single story building approximately 51,500 square feet in size and includes 15 acute patient beds, surgery, imaging, and support services.

A hospital is a conditional use in the Retail Commercial zoning district, therefore a Special Use Permit was required of the original approvals in 2003 and is also required of this proposed expansion and remodel. In addition to the Special Use Permit for the expansion and remodel of the existing facilities, the applicant has also noted that they will be pursuing a lot line deletion to remove the parcel lines to create one large parcel containing the two facilities since the proposed expansion crosses property lines.

In order to keep up with current and future growth and healthcare needs in Carson City and the surrounding area the applicant is requesting a Special Use Permit to allow for the expansion and remodel of the existing Carson Tahoe Hospital and Sierra Surgery facilities. The proposed expansion and remodel of the two facilities will include the following:

- 1) Construction of an approximately 6,600 square foot addition to the existing emergency department.
- 2) Construction of an approximately 21,000 square foot addition to the lower level of the hospital.
- 3) Construction of an approximately 1,625 square foot addition to the Sierra Surgery Hospital.
- 4) Construction of an enclosed, 2 story pedestrian walkway connecting the hospital with the surgery facility.
- 5) Site work will also be necessary to accommodate the necessary changes to the fire access road located along the south side of the Carson Tahoe Regional Medical Center, the addition of fire truck turn-arounds at the surgery center, modifications to the parking lot (including drive isles), and modifications to the ambulance drop-off area.

### Architectural Design

The expansion, remodel, and addition of the enclosed pedestrian walkway will be in keeping

with the design and building colors of the existing facilities. The pedestrian walkway will be constructed with metal panels and clear windows. The expansions, including the enclosed walkway, will be at or below the 45 foot height limit.

#### Parking

Per Carson City Development Standards Division 2, the required parking for a hospital facility must either be determined with the master plan or as indicated in the Institute of Transportation Engineers (ITE) parking generation manual. The parking generation per bed as outlined in the ITE is 5.5 spaces per bed.

Special Use Permit U-02/03-19 for the hospital included 130 beds and 670 parking stalls (5.15 spaces per bed). Special Use Permit U-03/04-2 for the surgery facility included 15 beds and 198 parking stalls (13.2 spaces per bed). Per the ITE the two facilities would require 875 parking stalls. With this proposed expansion and remodel, including additional parking, the hospital and surgery facility will have total of 953 parking spaces which equates to 5.99 spaces per bed.

#### Traffic

Pursuant to Section 12.13.1 of the Carson City Development Standards a full traffic study is required when the proposed project will generate 80 or more peak hour trips or 500 or more trips per day. Based on the information provided by the applicant, the estimated traffic resulting from the proposed expansion is 14 peak hour trips and 174 trips per day. Therefore, a full traffic impact study is not required.

#### Water and Sewer

The water usage for the existing hospital was reviewed and approved in 2003 along with the SUP's for the hospitals. The anticipated usage in 2003 was approximately 141 acre feet per year (126,127 gallons per day). The applicant has provided water usage calculations to evaluate the impact of the hospital expansion on the City's water system. The actual current water usage is 40,658 gallons per day. It is estimated the proposed expansion will result in an increase of approximately 1,812 gallons per day. The total usage for the site will be 42,471 gallons per day which is well below the amount reviewed and approved in 2003.

The applicant has also provided information regarding increased sewer demand. It is not anticipated that the proposed project will result in a significant impact to the existing sewer system.

With the recommended conditions of approval, the required findings can be made in the affirmative. Therefore, staff recommends the Planning Commission approve the Special Use Permit based on the required findings as outlined on the following pages and subject to the recommended conditions of approval.

**PUBLIC COMMENTS:** Public notices were mailed to 32 adjacent property owners within 800 feet of the subject site on December 27, 2018. At the time of the writing of this report, no comments have been received in support or opposition to this request. Any comments that are received after this report is completed will be submitted prior to or at the Planning Commission meeting, depending on their submittal date to the Planning Division.

**OTHER CITY DEPARTMENTS OR OUTSIDE AGENCY COMMENTS:** The following comments were received by various city departments. Recommendations have been incorporated into the recommended conditions of approval, where applicable.

### **Fire Department Comments**

Conditions:

1. Project must comply with the 2018 IFC and northern Nevada fire code amendments as adopted by Carson City.

Comments:

1. The hammerheads on the south side of the existing CTH building need to be extended.
2. Shorten the east end of the island by the west end of the ambulance canopy to provide more drive through aisle space

### **Engineering Division**

The Engineering Division has no preference or objection to the special use request provided that the following conditions are met:

- The proposed channel improvements for Eagle Valley Creek must be completed prior to issuance of the building permit for the bridge connector. The CLOMR/LOMR process as defined in CCMC must be completed with this portion of the project.

The Engineering Division has reviewed the application within our areas of purview relative to adopted standards and practices and to the provisions of CCMC 18.02.080, Conditional Uses. The Engineering Division offers the following discussion:

#### **C.C.M.C. 18.02.080 (5a) - Master Plan**

The request is not in conflict with any Engineering Master Plans.

#### **C.C.M.C. 18.02.080 (5b) – Use, Peaceful Enjoyment, Economic Value, Compatibility**

Development Engineering has no comment on this finding.

#### **C.C.M.C. 18.02.080 (5c) - Traffic/Pedestrians**

The existing infrastructure and drive isles are sufficient to provide safe access and circulation. The majority of the traffic generated from this project is anticipated to go through the intersection of Medical Pkwy and Carson St. This intersection is currently built out and signalized.

#### **C.C.M.C. 18.02.080 (5d) - Public Services**

The existing sewer, water, and storm drain infrastructure are sufficient to provide service to the project. The sewer mains downstream of the project were originally shown as being at capacity in the City's sewer model, however a subsequent field investigation revealed that the existing demand is less than the capacity given by the development standards. The flow contributed to these mains by the project is negligible compared to the existing flow, also the peak flows of a hospital typically occur at different times than the residential uses that make up the majority of the contributing flow, therefore no mitigation to the sewer system is necessary with this project.

**C.C.M.C. 18.02.080 (5e) – Title 18 Standards**

Development Engineering has no comment on this finding.

**C.C.M.C. 18.02.080 (5f) – Public health, Safety, Convenience, and Welfare**

The project meets engineering standards for health and safety.

**C.C.M.C. 18.02.080 (5g) – Material Damage or Prejudice to Other Property**

Development Engineering has no comment on this finding.

**C.C.M.C. 18.02.080 (5h) – Adequate Information**

The plans and reports provided were adequate for this analysis.

**Parks Recreation and Open Space (PROS)**

No comments.

**Health and Human Services**

No comments

**FINDINGS:** Per the provisions of Section 18.02.080 of the CCMC, the Planning Commission, after conducting a public hearing, has the authority to grant a Special Use Permit upon making seven required findings of fact. Staff's recommendation is based upon the findings as required by CCMC Section 18.02.080 (Special Use Permits) enumerated below and substantiated in the public record for the project.

**1. Will be consistent with the master plan elements.**

*The proposed expansion of the hospital and surgery center is consistent with the concept of a Compact and Efficient Pattern of Growth (Guiding Principle 1). Carson City is committed to a compact pattern that makes efficient use of the limited land area and water resources available for urban growth, and that fosters the provision of infrastructure and services in a cost effective manner. The subject property is currently developed as a hospital campus and is served by water and sewer.*

*Guiding Principle 5 discusses the maintenance and enhancement of a strong, diversified economic base. Specifically, policy 5.1a calls for the promotion of the expansion and retention of the City's major employer base. This project includes the expansion of the existing Carson Tahoe Hospital and Sierra Surgery Center and will result in a moderate increase in employees.*

*Staff finds that the proposed development is consistent with the concepts of compact development and the maintenance and enhancement of existing major employers.*

**2. Will not be detrimental to the use, peaceful enjoyment, economic value, or development of surrounding properties or the general neighborhood; and is compatible with and preserves the character and integrity of adjacent development and neighborhoods or includes improvements or modifications either on-site or within the public right-of-way to mitigate development related to adverse impacts such as noise, vibrations, fumes, odors, dust, glare or physical activity.**

*The property was originally designed as a regional medical complex and incorporated buffering from adjacent uses. Existing buffers to the exterior of the hospital campus will be maintained. The project proposes the expansion of uses that currently exist on-site and therefore, will not result in a detrimental impact to surrounding properties or the general neighborhood.*

**3. Will have little or no detrimental effect on vehicular or pedestrian traffic.**

*The project is not anticipated to have detrimental effect on vehicular or pedestrian traffic. Pursuant to Section 12.13.1 of the Carson City Development Standards a full traffic study is required when the proposed project will generate 80 or more peak hour trips or 500 or more trips per day. Based on the information provided by the applicant, the estimated traffic resulting from the proposed expansion is 14 peak hour trips and 174 trips per day. The trip generation does not trigger the need for a full traffic impact study. The proposed enclosed pedestrian walkway will connect the hospital and surgery facility providing for a safe and direct connection between the two buildings.*

*The existing infrastructure and drive isles are sufficient to provide safe access and circulation. The majority of the traffic generated from this project is anticipated to go through the intersection of Medical Parkway and Carson Street. This intersection is currently built and signalized.*

**4. Will not overburden existing public services and facilities, including schools, police and fire protection, water, sanitary sewer, public roads, storm drainage, and other public improvements.**

*The existing sewer, water, and storm drain infrastructure are sufficient to provide service to the project. The sewer mains downstream of the project were originally shown as being at capacity in the City's sewer model, however a subsequent field investigation revealed that the existing demand is less than the capacity given by the development standards. The flow contributed to these mains by the project is negligible compared to the existing flow. Additionally, the peak flows of a hospital typically occur at different times than the residential uses that make up the majority of the contributing flow, therefore, no mitigation to the sewer system is necessary with this project.*

**5. Meets the definition and specific standards set forth elsewhere in this title for such particular use and meets the purpose statement of that district.**

*The proposed expansion of the hospital and surgery facility is consistent with the specific standards set forth in the Carson City Municipal Code and meets the purpose statement of the Retail Commercial zoning district. In accordance with Title 18.04.130, Retail Commercial Conditional Uses, a hospital is a conditional use and requires a Special Use Permit. A Special Use Permit was approved for both the hospital and the surgery facility in 2003 and the proposed expansion also requires the approval of a Special Use Permit because it is modifying the original approval.*

*The proposed expansion, including the pedestrian walkway, will be consistent in architectural design and building color and materials of the existing buildings. Parking will also be increased as a result of this project. Special Use Permit U-02/03-19 for the hospital included 130 beds and 670 parking stalls (5.15 spaces per bed). Special Use Permit U-03/04-2 for the surgery facility included 15 beds and 198 parking stalls (13.2 spaces per bed). Per the ITE the two facilities would require 875 parking stalls. With this proposed expansion and remodel, the hospital and surgery facility will have total of 953 parking spaces which equates to 5.99 spaces per bed. This increase in parking is in excess of the specific standards outlined in Division 2 of the Development Standards.*

**6. Will not be detrimental to the public health, safety, convenience and welfare.**

*The proposed expansion will not be detrimental to the public health, safety, convenience and welfare. The project will enhance the ability of the existing hospital to provide healthcare services to Carson City as well as the surrounding areas. Additionally, pedestrian safety will be enhanced with the construction of the pedestrian walkway connecting the two buildings.*

**7. Will not result in material damage or prejudice to other property in the vicinity, as a result of proposed mitigation measures.**

*The proposed expansion will not result in material damage or prejudice to other property in the vicinity. The property was originally designed as a regional medical complex and incorporated buffering from adjacent uses. There is no change in the proposed on-site uses but simply an expansion of the existing buildings. This expansion is proposed to help to accommodate current and future growth and the corresponding growing healthcare needs in Carson City and the surrounding area.*

Attachments:

City Comments

Conditions of Approval:

U-02/03-19

U-03/04-2

Application (SUP-18-182)

## **Fire Department Comments**

12/28/2018

### **Conditions:**

1. Project must comply with the 2018 IFC and northern Nevada fire code amendments as adopted by Carson City.

### **Comments:**

1. The hammerheads on the south side of the existing CTH building need extended.
2. Shorten the east end of the island by the west end of the ambulance canopy to provide more drive through aisle space

### ***Dave Ruben***

Fire Marshal  
Carson City Fire Department  
777 S. Stewart Street  
Carson City, NV 89701

Direct 775-283-7153  
Main 775-887-2210  
FAX 775-887-2209

**Engineering Division  
Planning Commission Report  
File Number SUP-18-182**

**TO:** Heather Ferris - Planning Department  
**FROM:** Stephen Pottéy – Development Engineering Department  
**DATE:** January 7, 2019

**SUBJECT TITLE:**

SUP-18-182 Expansion of Carson Tahoe Hospital at 1600 Medical Pkwy

**RECOMMENDATION:**

The Engineering Division has no preference or objection to the special use request provided that the following conditions are met:

- The proposed channel improvements for Eagle Valley Creek must be completed prior to issuance of the building permit for the bridge connector. The CLOMR/LOMR process as defined in CCMC must be completed with this portion of the project.

**ENGINEERING DISCUSSION:**

The Engineering Division has reviewed the application within our areas of purview relative to adopted standards and practices and to the provisions of CCMC 18.02.080, Conditional Uses. The Engineering Division offers the following discussion:

**C.C.M.C. 18.02.080 (5a) - Master Plan**

The request is not in conflict with any Engineering Master Plans.

**C.C.M.C. 18.02.080 (5b) – Use, Peaceful Enjoyment, Economic Value, Compatibility**

Development Engineering has no comment on this finding.

**C.C.M.C. 18.02.080 (5c) - Traffic/Pedestrians**

The existing infrastructure and drive isles are sufficient to provide safe access and circulation. The majority of the traffic generated from this project is anticipated to go through the intersection of Medical Pkwy and Carson St. This intersection is currently built out and signalized.

**C.C.M.C. 18.02.080 (5d) - Public Services**

The existing sewer, water, and storm drain infrastructure are sufficient to provide service to the project. The sewer mains downstream of the project were originally shown as being at capacity in the City's sewer model, however a subsequent field investigation revealed that

Engineering Division  
Planning Commission Report

the existing demand is less than the capacity given by the development standards. The flow contributed to these mains by the project is negligible compared to the existing flow, also the peak flows of a hospital typically occur at different times than the residential uses that make up the majority of the contributing flow, therefore no mitigation to the sewer system is necessary with this project.

**C.C.M.C. 18.02.080 (5e) – Title 18 Standards**

Development Engineering has no comment on this finding.

**C.C.M.C. 18.02.080 (5f) – Public health, Safety, Convenience, and Welfare**

The project meets engineering standards for health and safety.

**C.C.M.C. 18.02.080 (5g) – Material Damage or Prejudice to Other Property**

Development Engineering has no comment on this finding.

**C.C.M.C. 18.02.080 (5h) – Adequate Information**

The plans and reports provided were adequate for this analysis.



# CARSON CITY, NEVADA

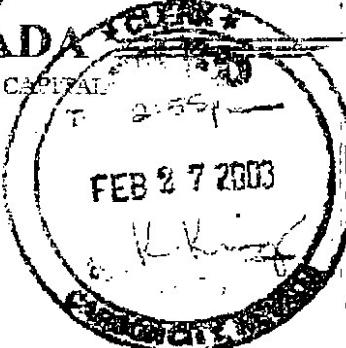
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SEP 15 2003

CARSON CITY  
COMMUNITY DEVELOPMENT

U-02/03-19



PLANNING COMMISSION  
JANUARY 29, 2003

## NOTICE OF DECISION

Requests were received from Palmer and Lauder Engineering (property owner: Carson-Tahoe Hospital) to adopt Resolution 2003-PC-1: (1) to amend the Land Use Element Master Plan designation from Low Density Residential (LDR), Medium Density Residential (MDR), and High Density Residential/Commercial (HDR/C) to Commercial (C), MPA-02/03-1; (2) to change the zoning from Conservation Reserve (CR) and Single Family One Acre (SF1A) to Retail Commercial (RC), Z-02/03-2; (3) to allow a 3-story hospital building to exceed the 45 foot maximum height; (4) to allow hospital facilities as a conditional use; (5) to allow the construction of a hospital, including a helipad and other associated uses within a hospital; (6) to allow a Commercial/Regional Commercial or Office Center exceeding a total of 50,000 square feet on property zoned Retail Commercial (RC), U-02/03-19, on property located at Eagle Valley Ranch Road, APNs 07-511-01, 07-511-02, 08-054-15, 08-054-16, 08-055-03; pursuant to the requirements of the Carson City Municipal Code. Also, a hearing was held regarding proposed design modifications of the Eagle Creek Detention Basin.

The Planning Commission conducted a public hearing on January 29, 2003, in conformance with City and State legal requirements, and approved Land Use Element Master Plan MPA-02/03-1, Change of Land Use Z-02/03-2, and Special Use Permit U-02/03-19, subject to the following conditions of approval:

### RECOMMENDED CONDITIONS OF APPROVAL FOR THE SPECIAL USE PERMIT ARE AS FOLLOWS:

1. All development shall be substantially in accordance with the site development plan submitted and approved with this application.
2. All on- and off-site improvements shall conform to City standards and requirements.
3. The use for which this permit is approved shall commence within twelve months of the date of final approval. A single, one-year extension of time may be granted if requested in writing to the Community Development Department thirty days prior to the one year expiration date. Should this permit not be initiated within one year and no extension granted the permit shall become null and void.
4. The applicant must sign and return the Notice of Decision for conditions for approval within 10 days of receipt of notification. If the Notice of Decision is not signed and returned within 10 days, then the item will be rescheduled for the next Planning Commission meeting for further considerations.

### PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

2621 Northgate Lane, Suite 62 • Carson City, Nevada 89706 • (775) 887-2120 • Fax: (775) 887-2273  
e-mail: [plandep@cl.carson-city.nv.us](mailto:plandep@cl.carson-city.nv.us)

5. An Infrastructure phasing plan shall be developed by the applicant and approved by Planning and Engineering staff prior to submittal for any permits for construction. The phasing plan shall include, but not be limited to, street limits, water and sewer systems, traffic infrastructure, landscaping, pathways, drainage infrastructure, power, telephone and natural gas utilities, and erosion protection. The phasing plan shall be followed in a sequential manner as presented and not altered. Any requested change to the phasing plan shall be approved by both Planning and Engineering staff.
6. The hospital use shall provide access from North Carson Street to the hospital facility with the first phase of the project as indicated in the traffic study by Solaegui Engineers, LTD, dated April 2002. Any modifications to the access/traffic circulation plan shall be submitted for review and approval by the Development Engineering Department prior to or with the phasing plan.
7. All public water and sewer mains shall be installed within streets or future streets.
8. The applicant shall submit a pedestrian access plan with the phasing plan for the approval of the Development Engineering Department to address access from streets to the facilities. Pedestrian access from the street to a building shall occur at regular intervals not to exceed 440 feet, and pedestrian access shall not share the same space as motor vehicles.
9. The project shall utilize "ultra-low flow water use plumbing fixtures" throughout the development, per CCMC 15.09.020, and install state of the art water saving devices throughout the development, where applicable, to the satisfaction of the Utilities Department.
10. Xeriscape techniques for water usage efficiency shall be incorporated throughout the development's landscaping plan in addition to complying with the landscaping requirements of the Development Standards, Division 3.
11. Provisions shall be made to convert to reclaimed water for landscaping in the future, when it becomes available to the site, to the satisfaction of the Utilities Department.
12. The recommendations in the Carson Tahoe Hospital Water Distribution Study, dated October 22, 2002, shall be incorporated into the final design and development.
13. The applicant shall comply with all Environmental Control Authority requirements regarding the wastewater pretreatment and wastewater discharge permit programs.
14. Landscape/tree planters shall be included throughout the parking lots every 10 spaces, on average, for parking lot trees.
15. Lights must be hooded or beamed so as not to create glare onto or illumination of adjacent property. Exterior light fixture details must be submitted with a building

permit application for review and approval by the Planning and Community Development Department prior to installation.

16. The applicant shall contact the Parks and Recreation Department prior to submittal of a phasing plan to discuss bicycle lanes, multi-use paths, bike racks, and connection of the project site to existing and planned bike paths and trails.
17. If the applicant plans on dedicating the landscaped road medians to the City for maintenance, these landscaped areas must be designed and constructed to current Parks and Recreation Department standards. The Parks and Recreation Department shall be contacted prior to final design for the establishment of grades and plant species for these landscaped medians.
18. A public access easement shall be created over the "Optional Creek Trail" identified on Exhibit 6B, whether constructed by the applicant or not.
19. The applicant shall incorporate other Carson City comments and requirements from the Major Project Review for the site, MPR 02/03-13, into the final plans.
20. The applicant and/or future property owners shall submit for Major Project Review prior to submitting for building permits any future hospital expansion identified on the plans, provided that future hospital expansion is substantially in accordance with the plans submitted and approved with this application.
21. The applicant and/or future property owners shall submit for Major Project Review prior to submitting for building permits for the future commercial/office buildings identified on the plans, provided that no major changes are proposed to the total square footage of office and commercial uses in accordance with the plans submitted and approved with this application.
22. This approval shall only become effective and valid upon the approval of the Master Plan Amendment, MPA-02/03-1, and Change of Land Use, Z-02/03-2, by the Board of Supervisors.

This decision was made on a vote of 5 ayes, 0 nays 1 abstaining, and 1 absent regarding the Land Use Element Master Plan, Change of Land Use and Special Use Permit.

This item involving the Land Use Element Master Plan, MPA-02/03-1, and Change of Land Use, Z-02/03-2, is scheduled for the Board of Supervisors regular hearing calendar on March 6, 2003, and the final Notice of Decision will be sent thereafter to be signed and returned to this office.



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FEB 2 Walter Sullivan, Director, AICP  
Planning and Community Development Department

U-01/02-29  
Notice of Decision  
April 24, 2002  
Page 4

Mailed 2/28/03 By Rm

**PLEASE SIGN AND RETURN THIS NOTICE OF DECISION WITHIN TEN DAYS OF RECEIPT.**

This is to acknowledge that I have read and will comply with the Conditions of Approval as approved by the Carson City Planning Commission.

R. M. Johnson  
APPLICANT and/or OWNER SIGNATURE

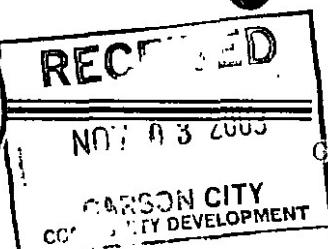
9/11/03  
DATE

R. M. Johnson, CEC  
(Applicant/Owner Printed Name)

**RETURN TO:**

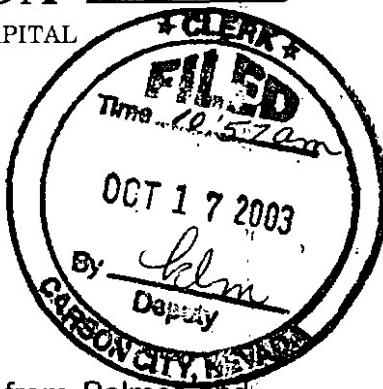
CARSON CITY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT  
2621 Northgate Lane, Suite 82  
Carson City, NV 89706  
ATTN: Rose Mary Johnson

Enclosures: Planning Commission Notice of Decision (2 copies - please sign and return only one; the second copy is for your records)



# CARSON CITY, NEVADA

CONSOLIDATED MUNICIPALITY AND STATE CAPITAL



PLANNING COMMISSION  
July 30, 2003

## NOTICE OF DECISION

A request for a Special Use Permit, U-03/04-2, was received from Palmer and Lauder Engineers, Inc., applicant (property owner: Carson Tahoe Hospital and Carson Ambulatory Surgical Center, Inc.) to construct a hospital/surgical facility (approximately 51,500 feet in size) as a conditional use on property zoned Retail-Commercial (RC), located at 1500 Eagle Valley Ranch Road, Assessor's Parcel Number 008-054-16, pursuant to the requirements of the Carson City Municipal Code.

The Planning Commission conducted a public hearing on July 30, 2003, in conformance with City and State legal requirements, and approved U-03/04-2, subject to the following conditions of approval:

### CONDITIONS OF APPROVAL:

**The following shall be completed prior to commencement of the use:**

1. The applicant must sign and return the Notice of Decision for conditions for approval within 10 days of receipt of notification. If the Notice of Decision is not signed and returned within 10 days, the item will be rescheduled for the next Planning Commission meeting for further considerations.
2. All development shall be substantially in accordance with the development plans approved with this application, except as otherwise modified by these conditions of approval.
3. All on- and off-site improvements shall conform to City standards and requirements.
4. The applicant shall obtain a building permit from the Carson City Building and Safety Department for the proposed construction.
5. The applicant shall obtain a Certificate of Occupancy and final inspection approval for all required improvements prior to commencing the use.
6. The applicant shall meet all the conditions of approval and commence the use for which this permit is granted within twelve months of the date of final

### PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

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approval. A single, one year extension of time may be granted if requested in writing to the Planning and Community Development Department thirty days prior to the one year expiration date. Should this permit not be initiated within one year and no extension granted, the permit shall become null and void.

**The following shall be submitted or included with a building permit or improvement permit application:**

7. The applicant shall submit a copy of the Notice of Decision and conditions of approval, signed by the applicant and owner.
8. The project improvements shall maintain a buffer from the Eagle Creek flood control berm and wetlands.
9. The recommendations in the traffic study by Solaegul Engineers, LTD, dated May 2002, shall be incorporated into the final design of the project as appropriate.
10. The recommendations in the Sanitary Sewer Analysis for Carson Tahoe Hospital by Capital Engineering, dated July 2003, shall be incorporated into the final design of the project.
11. All public water and sewer mains shall be installed within streets or future streets.
12. Pedestrian access shall be provided separate from the space used by motor vehicles (i.e. driveways) for access to the facilities. Pedestrian access from the street to a building shall occur at regular intervals not exceed 440 feet.
13. The project must make provisions to convert to reclaimed water for irrigation in the future.
14. The project shall utilize "ultra-low flow water use plumbing fixtures" throughout the development, per CCMC 15.09.020, and install state of the art water saving devices throughout the development, where applicable, to the satisfaction of the Utilities Department.
15. The applicant shall submit landscape plans in compliance with the Carson City Development Standards, Division 3 (Landscaping) with building permit plans for review and approval by the Planning and Community Development Department. Xeriscape techniques for water usage efficiency shall be incorporated throughout the development's landscaping plan in addition to complying with the landscaping requirements of the Development Standards,

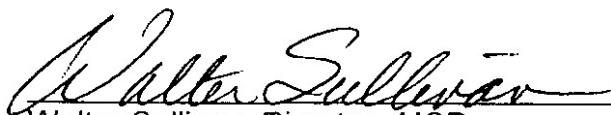
Division 3. Additionally, the use of berthing, retaining walls and/or enhanced landscaping shall be provided along the Eagle Valley Ranch Road frontage to screen parking areas from existing, adjacent residences.

16. The applicant shall submit exterior light fixture details with a building permit application for review and approval by the Planning and Community Development Department. Lights must be recessed or shielded with a 90-degree cutoff so that light is projected downward and not horizontally or upward. Light sources or refractors shall not extend below the bottom of the shield. Maximum parking lot light fixture height shall be 12 feet.

**The following are general requirements applicable through the life of the project:**

17. The project is subject to the applicable conditions of approval of the Special Use Permit, U-02/03-19, for the "regional office/commercial center."
18. Future expansion of the facility as shown on the plans submitted with this Special Use Permit may be permitted subject to administrative Major Project Review. Further expansion of the facility beyond that shown shall be reviewed and approved by Special Use Permit prior to construction.

This decision was made on a vote of 6 ayes, 0 nays, 1 abstain, and 0 absent.

  
\_\_\_\_\_  
Walter Sullivan, Director, AICP  
Planning and Community Development Department

Mailed 10/11/03 By Rea Thompson

**PLEASE SIGN AND RETURN THIS NOTICE OF DECISION WITHIN TEN DAYS OF RECEIPT.**

I This is to acknowledge that I have read and will comply with the Conditions of Approval as approved by the Carson City Planning Commission.

APPLICANT and/or OWNER SIGNATURE

10-23-03

DATE

Kevin Stansbury  
(Applicant/Owner Printed Name)

**RETURN TO:**

CARSON CITY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT  
2621 Northgate Lane, Suite 62  
Carson City, NV 89706  
ATTN: Rose Mary Johnson

Enclosures: Planning Commission Notice of Decision (2 copies - please sign and return only one; the second copy is for your records)



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## CARSON TAHOE HEALTH SPECIAL USE PERMIT

December 20, 2018



BOULDER  
ASSOCIATES  
ARCHITECTS

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## PROJECT DESCRIPTION

### PROJECT SUMMARY

Owner: Michelle Joy, COO – Carson Tahoe Health  
APN Numbers: 007-531-37, 007-531-38, 007-531-40  
Request: This is a request for a Special Use Permit to allow for the expansion of a hospital use within the Retail Commercial zoning district.  
Location: The ±32-acre site is located south of Interstate 580, within the Medical Parkway loop.  
Zoning: Retail Commercial (RC)  
Master Plan: 007-531-37: Public/Quasi-Public & Mixed-Use Employment  
007-531-38: Mixed-Use Employment & Open Space  
007-531-40: Mixed-Use Employment & Open Space

### PROJECT BACKGROUND

The project site (APNs 007-531-37, 007-531-38, 007-531-40) consists of ±32 acres located south of I-580, within the Medical Center Parkway loop. The parcels contain the existing Carson Tahoe Health campus main hospital buildings and the Sierra Surgical building (SSB). The site is surrounded by medical offices and vacant land and is adjacent to I-580 to the north and northeast.

The property is zoned Retail Commercial (RC) and is surrounded by RC zoning. The site holds several master plan designations, including Public/Quasi-Public, Mixed-Use Employment and Open Space.

On January 29, 2003, the Carson City Planning Commission approved a request for a zoning map amendment, master plan amendment and special use permit (U-02/03-19) to allow for a hospital complex, exceeding 50,000 square feet in size. The regional medical facility included medical offices, a cancer center, surgery center, emergency trauma center, business offices, child care facilities, parking structure, heliport, and supporting infrastructure. The hospital was approved for approximately 130 beds. The adjacent Surgical Center was later approved for a special use permit (U-03/04-2) on July 30, 2003, for a 51,500 square foot hospital/surgical facility.

Since that time, the majority of the hospital and supporting services have been constructed. The current Carson Tahoe Health Regional Medical Center is a four-story, 344,000 square foot hospital with a separate Central Utility Plant building. The hospital includes 144 acute patient beds, 24-hour emergency services (29 treatment rooms), surgery, imaging, lab, pharmacy, kitchen/cafeteria, and administration and support services.

The adjacent Sierra Surgery Hospital facility is also constructed and consists of a single-story 51,000 square foot building located south of the main hospital building. The operation includes 15 acute patient beds, surgery, imaging and support services. The two existing hospitals are located on opposite sides of Eagle Valley Creek.

### PROJECT DETAILS

The proposed project consists of two parts. The first is to provide an approximate 6,600 square foot addition to the existing emergency department. This includes site work, as required to modify existing parking and drive aisles impacted by the building addition. The second is to

construct an approximate 21,000 square foot building expansion to the lower level of the Carson Tahoe Health Regional Medical Center and an approximate 1,625 square foot building expansion to the Sierra Surgery Hospital, which will allow for the relocation and expansion of the existing lab and support space. In addition, there will be an enclosed pedestrian walkway over Eagle Valley Creek that connects the Sierra Surgery Hospital and the Carson Tahoe Health Regional Medical Center building.

The emergency department building expansion adds square footage to both the north and west side of the existing emergency department. The north addition provides for the relocation of existing staff support functions to accommodate eight new treatment rooms to the west. Internal building renovations are required within the existing department to improve access to these new rooms. A new mechanical unit will also be needed to serve the additional building square footage. This equipment will be located either on the first floor, adjacent to the new treatment rooms, or on the new ambulance canopy. The final location will be determined through the final design and reviewed with the building permit. The site work associated with this project includes the modification of the existing ambulance drop-off area and the addition of approximately 15 new parking stalls to offset the loss of 14 existing parking stalls.

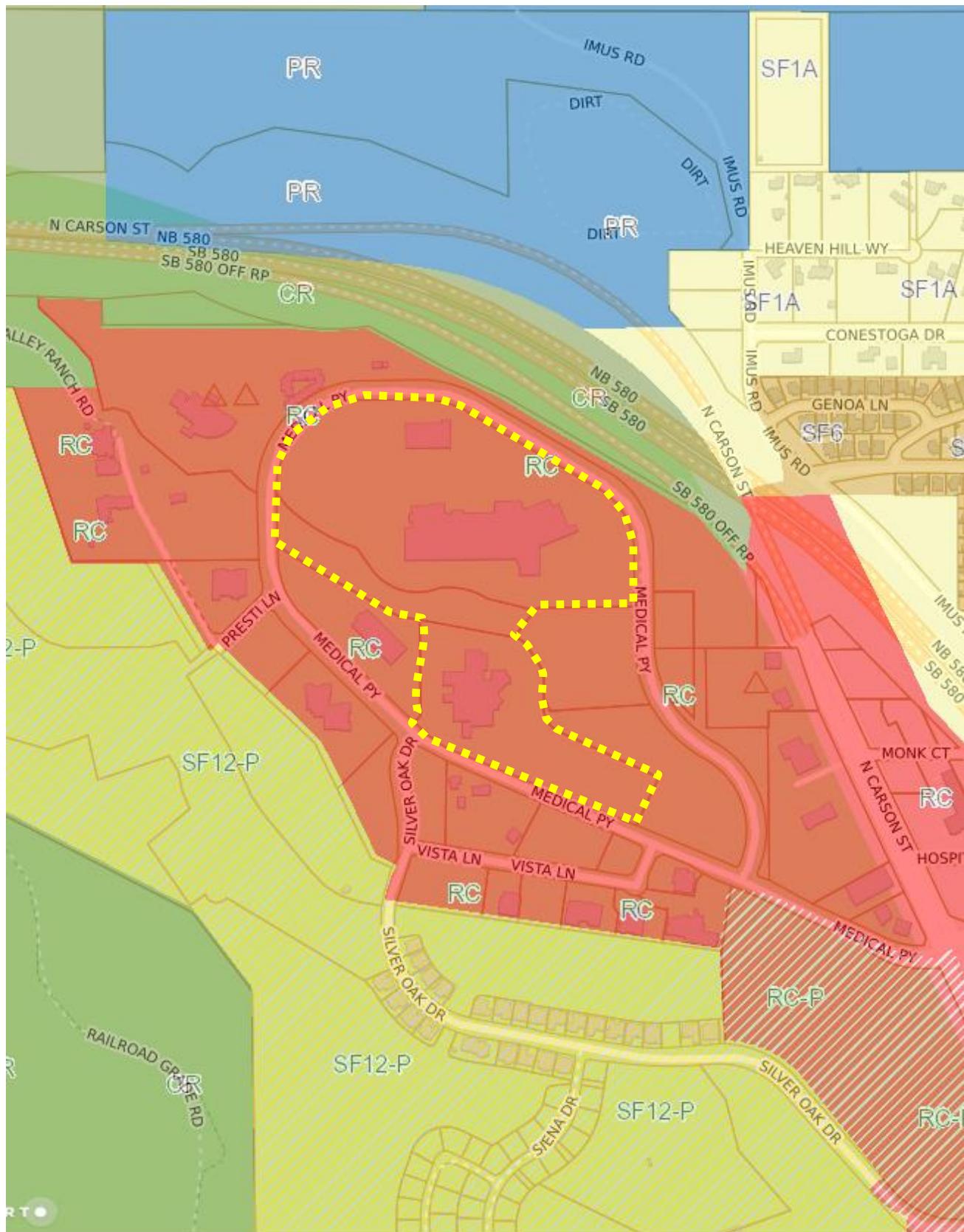
The lower level building addition at the Carson Tahoe Health Regional Medical Center will provide for 21,000 square feet, located to the south of the existing hospital. This portion of the building daylights to the exterior as the grade slopes away. The lower level building houses support services for the hospital and is not accessed by the public. This is also the location of the lower level pedestrian connector that will be used for service and staff circulation to and from the Sierra Surgery Hospital. The upper level of the pedestrian connector will be used by patients and visitors and is located at the public concourse, along the south side of the existing hospital. The lower level will be used for non-ambulatory patients, utilizing gurneys and wheelchairs, whereas, the upper level will be used for ambulatory patients. Once across Eagle Valley Creek, a stair and elevator take up the grade change between the two buildings (approximately 5'). At this point, the pedestrian walkway becomes a single story and enters at the north side of the Sierra Surgery Center.

There is also a small addition to the hospital at this location. The site work associated with this project includes minor changes to the fire access road located along the south side of the Carson Tahoe Health Regional Medical Center, the addition of the fire truck turnarounds at the Sierra Surgery Hospital and the addition of approximately 42 new parking stalls, to make up for the loss of 29 existing parking stalls in the same area.

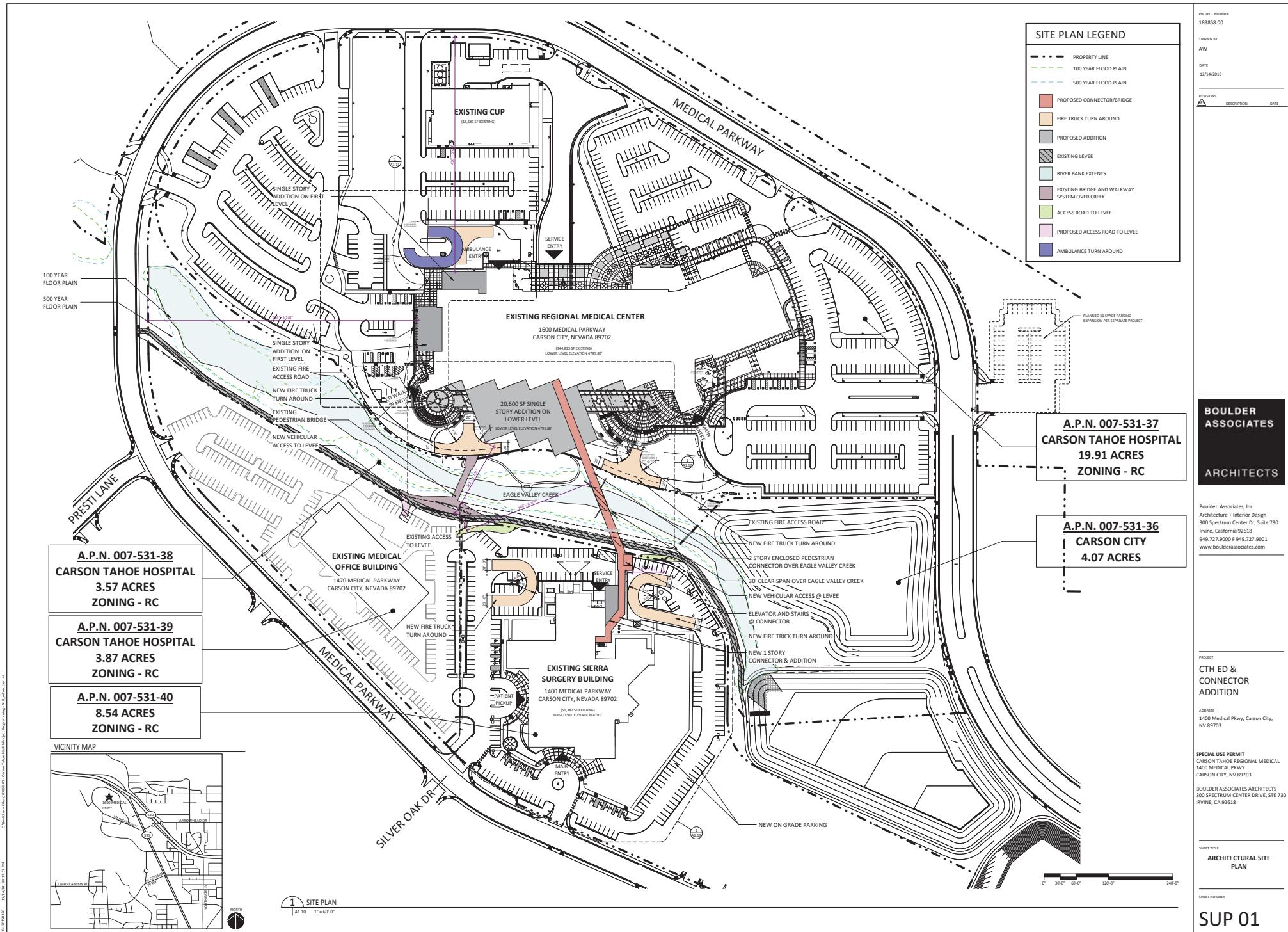
It should also be noted that future mapping applications are anticipated to remove lot lines where proposed buildings cross parcel lines.



**Figure 1 - Vicinity Map**



**Figure 2 – Zoning Map**



### Figure 3 - Site Plan

### **Traffic**

A traffic impact investigation was prepared to determine if the proposed development would require the provision of a detailed traffic engineering study. The analysis found estimated trips associated with the proposed building expansion and pedestrian bridge would result in approximately 20 (in/out) daily trips generated by additional staff and 174 (in/out) daily trips generated by non-staff visits to the site.

The estimated traffic generated from the proposed project does not exceed the requirements for providing a detailed traffic engineering study. The traffic impact investigation is provided in Appendix B, with a summary provided below.

The trip generation calculations were broken down by staff and patient volumes. Table 1 displays the estimated average daily traffic attributed to future staffing associated with the proposed project.

<b>Table 1 - Trip Generation - Staff</b>			
<b>Department</b>	<b>Current SF</b>	<b>Additional SF</b>	<b>Additional FTEs / Shift</b>
Connector (Circulation)		11,250	0
Lower Level Addition			
Lab	7,200	2,700	5
Materials Management	5,900	1,950	0*
Environmental Services	1,950	2,200	1
Biomedical Engineering	1,400	2,000	0**
Infection Control	200	275	0
Emergency Department	19,500	6,500	4

*\* Additional Storage Capacity*

*\*\*Relocated to Provide Additional Storage Capacity for Another Existing Department*

The square footage increase associated with most of the departments listed above is required to right size the space to meet current needs and in anticipation of future needs. The additional projected staff is 10 and generates approximately 20 trips (in/out).

Table 2 displays the estimated average daily traffic attributed to anticipated growth in future patient visits with population growth in the service area utilizing the Regional Medical Center. This is only applicable to the emergency department renovation project, and would create additional daily traffic regardless of the proposed project. The future patient visits are calculated assuming the emergency department is at capacity with the additional treatment rooms.

<b>Table 2 - Trip Generation - Patients</b>				
<b>Department</b>	<b>Total Visits</b>	<b>Projected Total Peak Month Visits</b>	<b>Projected Total Daily Visits</b>	<b>Projected Total Peak Daily Visits*</b>
Current Emergency Department	42,630	4,263	140	168
Future Emergency Department	67,000	6,700	220	255

*\* Poisson Distribution*

The additional projected Total Peak Daily Visits is 87 and generates approximately 174 trips (in/out). Assuming Peak Shift Visits to be 60% of the Peak Daily Visits over an 8-hour period, the projected Peak Shift Visits per hour are 7 and generates approximately 14 trips (in/out).

The estimated traffic generated from the proposed project does not exceed the requirements for providing a detailed traffic engineering study especially when factoring in that the estimated increase in emergency room visits is more of a function of population growth within the service area of the Regional Medical Center than a function of the additional space within the emergency room.

### ***Parking and Loading***

Per the parking requirements in the Carson City Development Standards, hospital parking standards are either determined with the master plan or as indicated in the Institute of Transportation Engineers (ITE) parking generation manual. Parking calculations can either be based on bed count or on number of employees. Medical uses can also be calculated based on total building square footage.

The original approval for the Regional Medical Center provided for 130 beds and the special use permit identified 670 parking stalls. The proposed site plan, with 144 patient beds, will provide for 691 standard parking stalls, plus 46 accessible parking stalls for a total of 737 parking stalls.

The original special use permit approval for the Sierra Surgery Center identified 198 parking stalls. The parking analysis provided at that time was based on a parking demand of 3.1 spaces per 1,000 square feet of building area. The total parking needed was 160 spaces (51,500 SF/1,000 x 3.1 spaces).

There are currently 939 parking stalls between the two facilities. The proposed site plan provides for 737 parking spaces at the Regional Medical Center and 216 parking spaces at the Sierra Surgery Center for a total combined parking of 953 spaces, which is an increase of 14 new stalls, and exceeds the overall ITE parking requirements of 875 spaces.

### **Parking Required**

ITE Parking Generation Per Bed: 5.5 spaces per bed

Regional Medical Center – 144 beds

Sierra Surgery Center – 15 beds

Total beds – 159 beds

*159 beds x 5.5 parking spaces = 875 parking stalls required*

### **Parking Provided**

Regional Medical Center - 737 spaces (690 standard and 46 accessible)

Sierra Surgery Center - 216 spaces (198 standard and 18 accessible)

*Total Parking Provided – 953 parking spaces*

### ***Architectural Design***

The building expansion has been designed to match the architectural style, building colors and materials as the existing facility. The pedestrian bridge is an enclosed structure with metal panels and clear windows. The connection will be used by patients, staff and visitors, who will be able to take in views of the outside as they walk between facilities. The maximum height allowed in the Retail Commercial zoning district is 45 feet. All proposed plans included in the project request will be within the maximum height requirement of 45 feet.

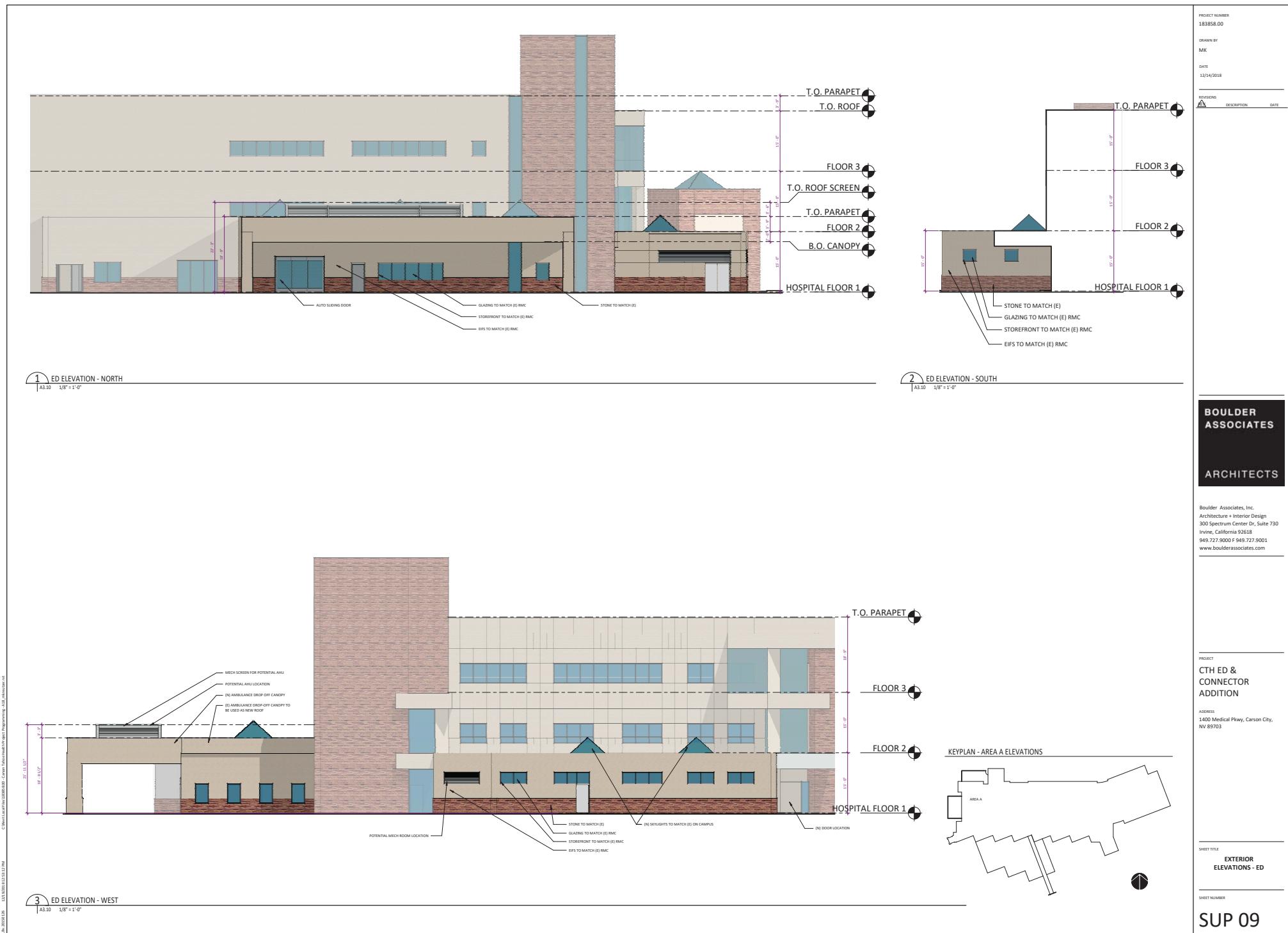


Figure 4 - Emergency Department Building Elevations

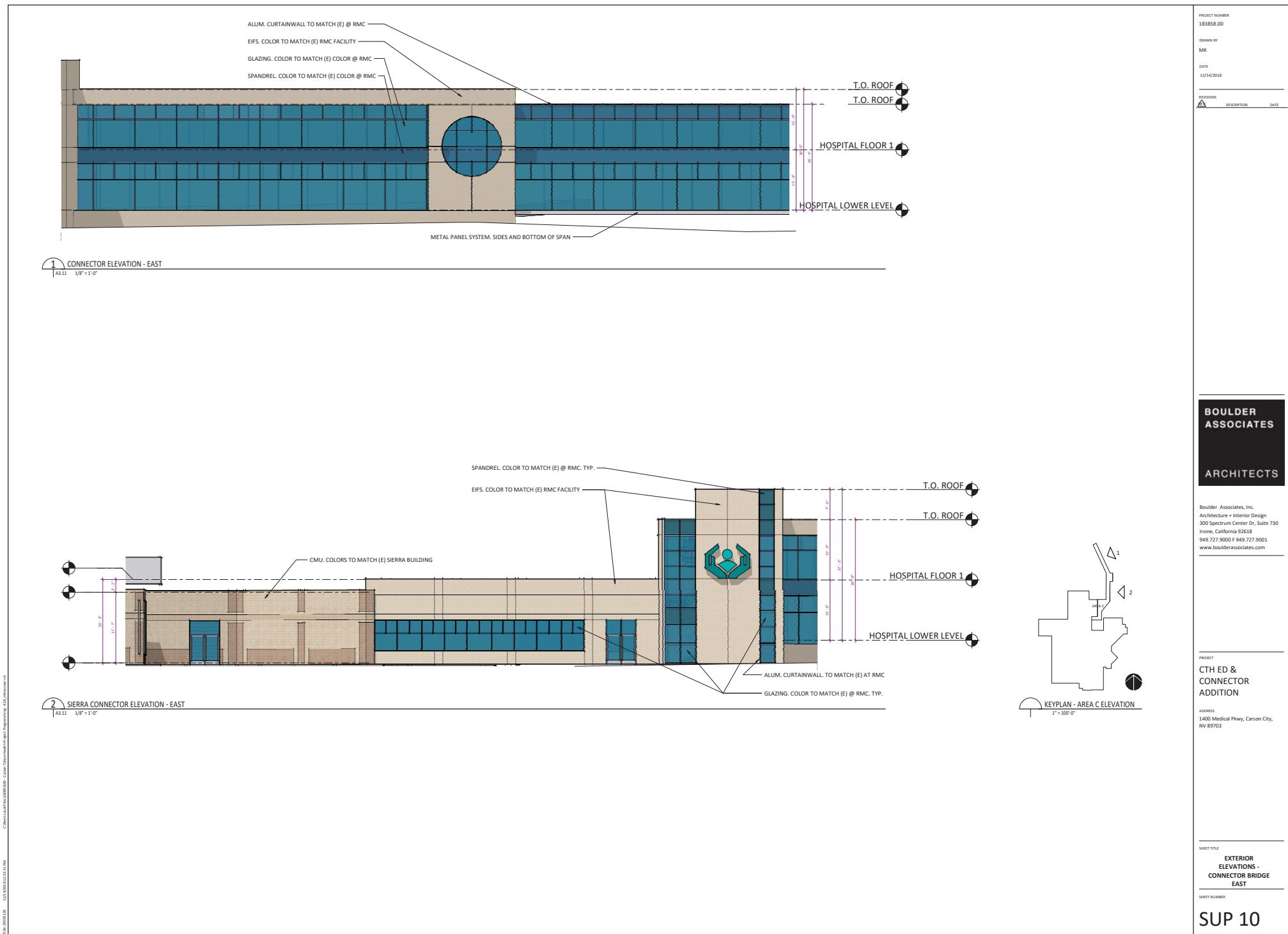
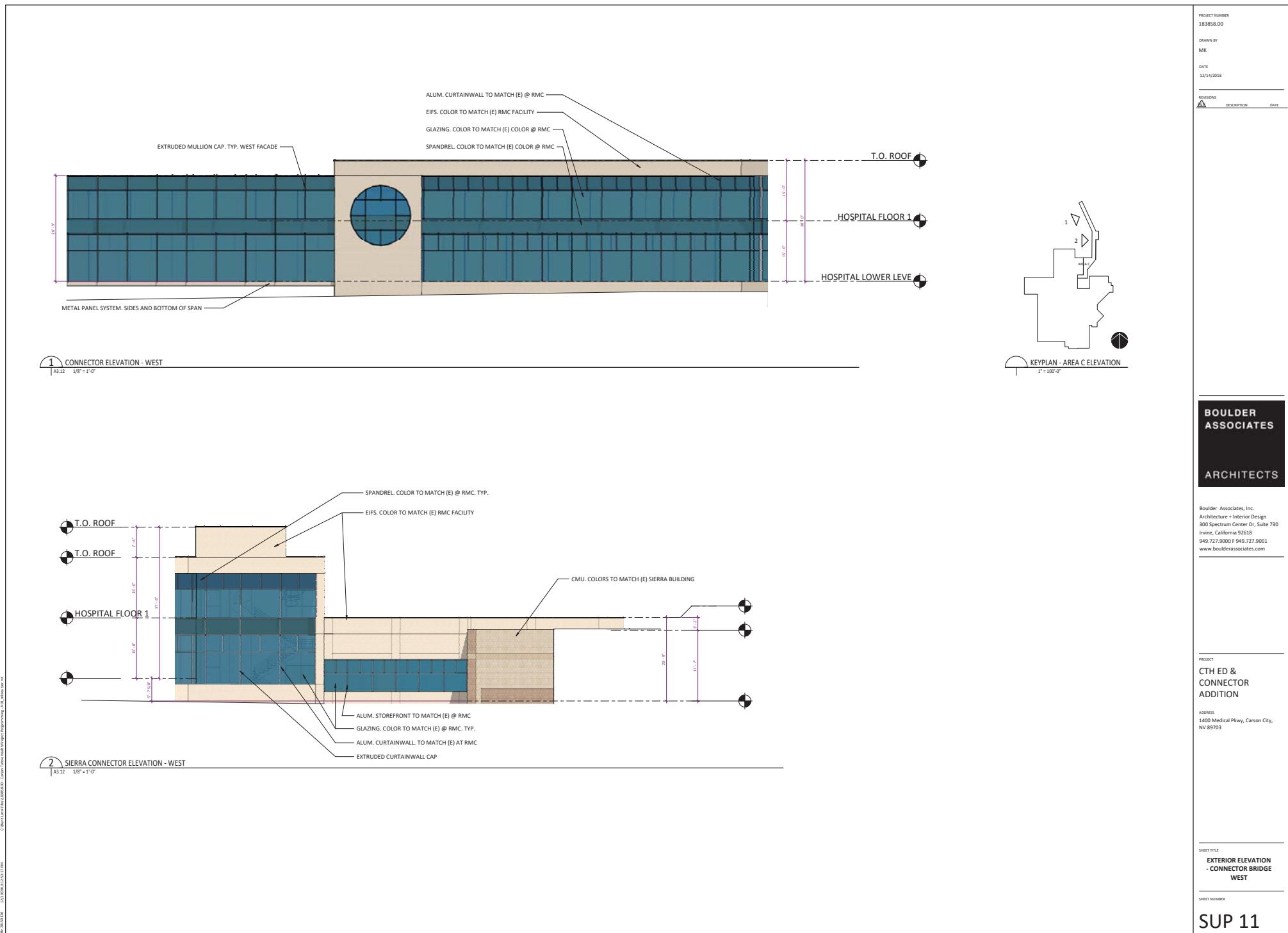
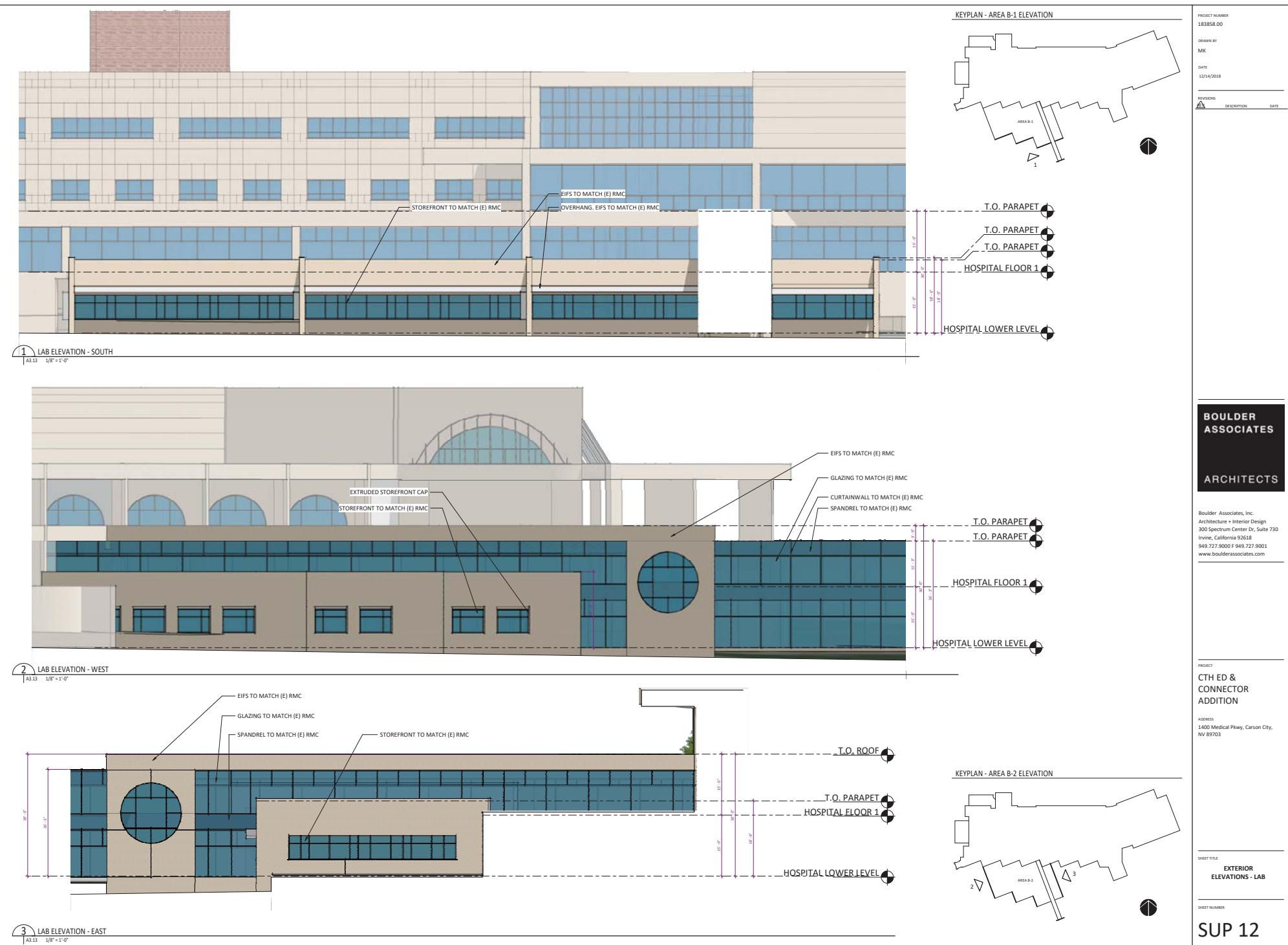


Figure 5 - Sierra Surgery East Building Elevations



## Figure 6 - Sierra Surgery West Building Elevations



## **ENGINEERING & UTILITIES**

### ***Water Analysis***

The property is currently served by public water, and will remain on public water after the expansion. An existing 12-inch water main is located on Medical Parkway. It is not anticipated that the proposed project will require any additional water infrastructure, other than the addition of fixtures within the hospital, and the relocation of an existing waterline that passes under the proposed connector.

Based on the looped nature of the system around Medical Parkway and the large demand that the existing system already supplies to the hospital, it is not anticipated that there will be any issues with fire flow for this expansion.

Water usage calculations have been performed based on Carson City Municipal Code Section 12.01 to evaluate the impact of the hospital expansion on Carson City's water system. Lumos & Associates acquired a billing statement from Carson City Utilities Department from the last year to evaluate the current usage of the hospital (calculated at approximately 40,658 gallons per day (gpd)). Boulder and Associates provided the amount of existing fixtures within the hospital (approximately 942 fixtures), along with the amount of proposed fixtures associated with the expansion (42 fixtures). Using the fixtures and existing demand of the hospital, it can be estimated that the addition of 42 fixtures will cause an increase of approximately 1,812 gpd, with the new estimated total usage of the hospital at 42,471 gpd.

Due to the size of the system and the complexity of the interactions between the multiple pressure zones within the City, Lumos did not model the proposed improvements to verify the impact on the Carson City water system. With that being said, the inclusion of an additional average of 1,812 gpd, as compared to the existing demand of 40,658 gpd upon the system is not anticipated to cause a noticeable impact compared to the overall demands on the system, even in peak periods.

In summary, the proposed expansion has no appreciable impact on the performance of the water system.

### ***Fire Flow Analysis***

Carson City staff has provided Lumos with fire flow data from two hydrants on Presti Lane and on Silver Oak Drive. Based on fire flow tests, there are no fire flow issues in the system.

The additional flow added to the water system does not add to the overall system fire protection requirements; therefore, with the existing system being able to supply the necessary fire flow there is not anticipated to be an impact to the water system in terms of fire flow requirements.

### ***Sanitary Sewer Analysis***

The proposed improvements will continue to use the existing sewer service connections to the Carson City sewer system for collection and treatment. There may be some minor modification to the system within the expansion footprint, but the general flow direction and routing will not change.

Carson City staff has identified two areas of potential concern downstream of the Carson Tahoe Hospital that may result in potential capacity challenges with additional flows generated by the new improvements. These capacity challenges are generated based on the City's sewer model.

These areas are identified as:

- N. Carson Street between Silver Oak and College Parkway – 10-inch main – 45% full
- College Parkway between Imperial Way and Northgate Lane – 12-inch main - 50% full, which is defined as at capacity per City code.

Based upon the water use estimates provided above, it is estimated that the additional sewer generated by the proposed project will be an increase of 1,812 gpd (1.26 gpm average; 5.03 gpm with a peaking factor of 4). This estimate and the methodology behind it have been provided to the Carson City public works staff for incorporation into the City's sewer model for determination of the impact on the existing facilities. At the time of this submittal, a final determination had not been made by City staff, via their sewer model, on downstream capacity.

However, as a comparison, a 12-inch PVC main at a minimum slope of 0.22% has a flow capacity of 4,875 gpm when 50% full and a maximum discharge of 10,488 gpm. Assuming an existing flow in a 12-inch pipe of 4,875 gpm and adding an estimated peak additional flow of 5 gpm for a total flow of 4,880 gpm, would result in the example 12-inch main still being at a capacity of 50% as the additional 5 gpm is only 0.001% of the total flow capacity at 50% full and really has no measureable impact.

Based on the comparison example provided above, it is not anticipated that the proposed project will cause a significant impact to the existing collection system, which would result in the exceedance of existing capacity.

## FINDINGS

State law requires that the Planning Commission consider and support the statements below with facts in the record.

1. Will be consistent with the objectives of the Master Plan elements.

**Response:** The proposed development is consistent with the following objectives of the Carson City Master Plan:

### *1.1b – Urban Service Area*

*Discourage growth in locations not currently served by urban services or not planned to be served by the city's water and wastewater infrastructure by prohibiting the rezoning of lands for urban development intensities in locations not served or planned to be served by urban services, as identified in the City's Water and Wastewater Master Plan.*

The proposed development site is in a location that is already equipped with the necessary infrastructure to support the proposed hospital expansion.

### *1.2a – Priority Infill and Redevelopment Areas*

*Two levels of priority have been identified for areas identified for potential infill and redevelopment on the Land Use Map. Areas targeted for infill and redevelopment can be distinguished by their mixed-use land use categories and include downtown, mixed-use activity centers, and major gateway corridors, among others. Levels of priority are intended to help guide the future allocation of staffing and other resources and are generally defined as follows:*

*High Priority Areas—Implementation Strategies should be occurring concurrent with the adoption of the Master Plan or soon after. The City will take an active role encouraging infill and redevelopment activity in these locations in the short to mid-term (6 month to 3-year timeframe) by conducting targeted infrastructure improvements, streamlining zoning tools, pursuing public/private partnerships, or offering incentives. Downtown is considered a High Priority Area.*

*Moderate Priority Areas—Some Implementation Strategies may begin soon after adoption (e.g., mixed-use zone districts could be established—perhaps as an optional overlay that provides additional flexibility and incentive for property owners, or a streamlined development process could be offered for projects in these locations). Focus in these areas is important and infill and redevelopment will be encouraged, however, they are viewed as secondary to Downtown in terms of citywide priorities and investments. Areas designated for mixed-use development along the City's major gateway corridors are considered Moderate Priority Areas. Downtown (top) will be the highest priority for infill and redevelopment within the City, although it will also be encouraged along major gateway corridors, such as North Carson (bottom). 3-4 A Balanced Land Use Pattern*

*The above priorities should be periodically reviewed and updated to reflect ongoing development activities, changing market dynamics, and other related factors.*

Portions of the proposed development lie within a designated Mixed Use Employment area on the Carson City Land Use Map, making the area a Moderate Priority Area for infill and

redevelopment for the City. The proposed development will function as infill in an area identified for such as desired and prioritized.

#### *1.4c – Protection of Existing Site Features*

*Ensure that development at the Urban Interface is designed to minimize disturbances to existing stands of mature trees, distinctive topographic features (hillsides/ridgelines), and other character defining features, particularly those that are visible from other locations in the community. Require a detailed site analysis for any development at the Urban Interface to identify unique features to be protected.*

The proposed development aims to minimize disturbances to Eagle Valley Creek in the construction of the proposed pedestrian bridge.

2. Will not be detrimental to the use, peaceful environment, economic value, or development surrounding properties or the general neighborhood; and is compatible with and preserves the character and integrity of adjacent development and neighborhoods or includes improvements or modifications either on-site or within the public right-of-way to mitigate development related to adverse impacts such as noise, vibrations, fumes, odors, dust, glare or physical activity.

**Response:** The proposed expansion of the existing hospital use meets the finding in that it does not generate impacts to the surrounding area that would be dissimilar to other uses permitted within the Regional Commercial zoning district. This property has been designed to be used as a Regional Medical Facility, including sufficient utilities, roadway connections, access and buffering from adjacent uses. The proposed building expansion has been designed to match the same look and architectural design as the existing buildings, and provides a seamless transition between the existing and new. The pedestrian bridge will provide for a direct route to transport patients between facilities and will provide for a safer connection for visitors and staff, so that they will no longer have to walk outside or drive between facilities.

3. Will have little or no detrimental effect on vehicular or pedestrian traffic.

**Response:** The proposed pedestrian bridge will provide an enclosed route between the two medical facilities. Patients are currently transported between facilities by ambulance, while staff and visitors have to either walk outside or drive between buildings. The proposed pedestrian bridge will provide a safe and direct connection that will benefit everyone. The proposed building expansion will have no negative impact on the vehicular traffic. The site plan provides additional parking spaces, which is also a benefit to the staff and visitors.

4. Will not overburden existing public services and facilities, including schools, police and fire protection, water, sanitary sewer, public roads, storm drainage and other public improvements.

**Response:** Adequate public services and facilities exist, including police and fire protection, water, sanitary sewer, roads and storm drainage. The property is currently served by public water, and will remain on public water after the expansion. Using the fixtures and existing demand of the hospital, it can be estimated that the addition of 42 fixtures will cause an

increase of approximately 1,812 gpd, with the new estimated total usage of the hospital at 42,471 gpd. The inclusion of an additional average of 1,812 gpd, as compared to the existing demand of 40,658 gpd upon the system is not anticipated to cause a noticeable impact compared to the overall demands on the system, even in peak periods.

The additional flow added to the water system does not add to the overall system fire protection requirements; therefore, with the existing system being able to supply the necessary fire flow there is not anticipated to be an impact to the water system in terms of fire flow requirements.

The proposed improvements will continue to use the existing sewer service connections to the Carson City sewer system for collection and treatment. There may be some minor modification to the system within the expansion footprint, but the general flow direction and routing will not change. It is not anticipated that the proposed project will cause a significant impact to the existing collection system, which would result in the exceedance of existing capacity.

5. Meets the definition and specific standards set forth elsewhere in Carson City Municipal Code, Title 18 for such particular use and meets the purpose statement of that district.

**Response:** Both the hospital complex and the Sierra Surgery Center were previously approved for special use permits (U-02/03-19 and U-03/04-2). The proposed expansion is in conformance with the Carson City Municipal Code and the Development Standards and meets the intent of the original approvals. The proposed architecture, including the pedestrian bridge, uses the same building materials and colors as the existing building. The additional parking spaces exceeds the ITE parking requirements, and helps to address facility needs.

6. Will not be detrimental to the public health, safety, convenience and welfare.

**Response:** The proposed request will not be detrimental to the public health, safety, convenience and welfare, and will enhance the ability to serve the community. The expansion will increase pedestrian safety between the two facilities by creating an enclosed walkway for patients, staff and visitors. The community will be better served by the proposed expansion by having more medical beds and health services.

7. Will not result in material damage or prejudice to other property in the vicinity, as a result of proposed mitigation measures.

**Response:** As described above, the proposed expansion is consistent with the original special use permit approvals and helps to serve the broader community needs. The enclosed pedestrian bridge will provide for a safer pedestrian connection between the two facilities. The additional building square footage will help to serve the communities medical needs, while also provide additional parking.



View of proposed Emergency Department building addition.



View of proposed addition location at the ambulance entry.

**Figure 8 – Site Photos**



**Figure 9 – Site Photos**

**Carson City Planning Division**  
**108 E. Proctor Street • Carson City NV 89701**  
**Phone: (775) 887-2180 • E-mail: planning@carson.org**

## FILE # SUP - 18 -

APPLICANT	PHONE #
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PROPERTY OWNER	PHONE #
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EMAIL ADDRESS	
afuss@lumosinc.com	

Project's Assessor Parcel Number(s): 007-531-37, 007-531-38, 007-531-40	Street Address 1600 Medical Parkway and 1400 Medical Parkway	
Project's Master Plan Designation Public/Quasi-Public, Mixed-Use Employment, Open Space	Project's Current Zoning RC	Nearest Major Cross Street(s) Medical Parkway

Please provide a brief description of your proposed project and/or proposed use below. Provide additional pages to describe your request in more detail. Request for a Special Use Permit for 1) a 6,500 SF addition to the existing emergency department with associated site work on parking and driveways, and 2) construction of a +/- 21,000 SF expansion to the lower level to accommodate expanded laboratory functions and medical support uses, and 3) construction of an enclosed pedestrian connection over Eagle Creek to the Sierra Surgery Building.

### PROPERTY OWNER'S AFFIDAVIT

I, Michelle Joy, being duly deposed, do hereby affirm that I am the record owner of the subject property, and that I have knowledge of, and I agree to, the filing of this application.

Michelle Joy  
Signature

1600 Medical Parkway  
Address

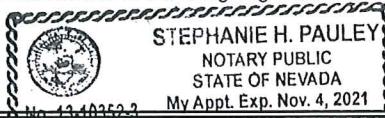
12/18/2018  
Date

Use additional page(s) if necessary for additional owners.

STATE OF NEVADA  
COUNTY  
)  
)

On December 18, 2018, Michelle Joy, personally appeared before me, a notary public, personally known (or proved) to me to be the person whose name is subscribed to the foregoing document and who acknowledged to me that he/she executed the foregoing document.

Stephanie H. Pauley  
Notary Public



NOTE: If your project is located within the Historic District or airport area, it may need to be scheduled before the Historic Resources Commission or the Airport Authority in addition to being scheduled for review by the Planning Commission. Planning staff can help you make this determination.

### **ACKNOWLEDGMENT OF APPLICANT**

I certify that the forgoing statements are true and correct to the best of my knowledge and belief. I agree to fully comply with all conditions as established by the Planning Commission. I am aware that this permit becomes null and void if the use is not initiated within one-year of the date of the Planning Commission's approval; and I understand that this permit may be revoked for violation of any of the conditions of approval. I further understand that approval of this application does not exempt me from all City code requirements.

*Michelle Joy*

Applicant's Signature

*MICHELE Joy*

Print Name

*12/14/2018*

Date


[Treasurer Home](#) [Assessor Data Inquiry](#) [Back to Last Page](#)
**Secured Tax Inquiry Detail for Parcel # 007-531-40**

Property Location: 1380 MEDICAL PKWY  
 Billed to: CARSON-TAHOE HOSPITAL  
 % CHIEF FINANCIAL OFFICER  
 P O BOX 2168  
 CARSON CITY, NV 89702-0000

Tax Year: 2018-19  
 Roll #: 003253  
 District: 2.4  
 Tax Service:  
 Land Use Code: 920 [Code Table](#)

**Outstanding Taxes:**

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due
<b>Current Year</b>					
08/20/18	41,343.02		41,343.02	41,343.02	.00
10/01/18	41,339.00		41,339.00	41,339.00	.00
01/07/19	41,339.00		41,339.00	41,339.00	.00
03/04/19	41,339.00		41,339.00	41,339.00	.00
<b>Totals:</b>	<b>165,360.02</b>	<b>.00</b>	<b>165,360.02</b>	<b>165,360.02</b>	

[Payment Cart](#)
[History](#)
**Additional Information**

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0
Abatement Amount	21,757.24	25,006.50	21,961.43		5,815.06

Note: Subject parcels 007-531-37 and 007-531-38 are tax exempt.

# Master Plan Policy Checklist

## Special Use Permits & Major Project Reviews & Administrative Permits

### PURPOSE

The purpose of a development checklist is to provide a list of questions that address whether a development proposal is in conformance with the goals and objectives of the 2006 Carson City Master Plan that are related to non-residential and multi-family residential development. This checklist is designed for developers, staff, and decision-makers and is intended to be used as a guide only.

Development Name: Carson Tahoe Health Special Use Permit

Reviewed By: \_\_\_\_\_

Date of Review: \_\_\_\_\_

### DEVELOPMENT CHECKLIST

The following five themes are those themes that appear in the Carson City Master Plan and which reflect the community's vision at a broad policy level. Each theme looks at how a proposed development can help achieve the goals of the Carson City Master Plan. A check mark indicates that the proposed development meets the applicable Master Plan policy. The Policy Number is indicated at the end of each policy statement summary. Refer to the Comprehensive Master Plan for complete policy language.

#### CHAPTER 3: A BALANCED LAND USE PATTERN



The Carson City Master Plan seeks to establish a balance of land uses within the community by providing employment opportunities, a diverse choice of housing, recreational opportunities, and retail services.

##### Is or does the proposed development:

- Meet the provisions of the Growth Management Ordinance (1.1d, Municipal Code 18.12)?
- Use sustainable building materials and construction techniques to promote water and energy conservation (1.1e, f)?
- Located in a priority infill development area (1.2a)?
- Provide pathway connections and easements consistent with the adopted Unified Pathways Master Plan and maintain access to adjacent public lands (1.4a)?

- Protect existing site features, as appropriate, including mature trees or other character-defining features (1.4c)?
- At adjacent county boundaries or adjacent to public lands, coordinated with the applicable agency with regards to compatibility, access and amenities (1.5a, b)?
- In identified Mixed-Use areas, promote mixed-use development patterns as appropriate for the surrounding context consistent with the land use descriptions of the applicable Mixed-Use designation, and meet the intent of the Mixed-Use Evaluation Criteria (2.1b, 2.2b, 2.3b, Land Use Districts, Appendix C)?
- Meet adopted standards (e.g. setbacks) for transitions between non-residential and residential zoning districts (2.1d)?
- Protect environmentally sensitive areas through proper setbacks, dedication, or other mechanisms (3.1b)?
- Sited outside the primary floodplain and away from geologic hazard areas or follows the required setbacks or other mitigation measures (3.3d, e)?
- Provide for levels of services (i.e. water, sewer, road improvements, sidewalks, etc.) consistent with the Land Use designation and adequate for the proposed development (Land Use table descriptions)?
- If located within an identified Specific Plan Area (SPA), meet the applicable policies of that SPA (Land Use Map, Chapter 8)?

## CHAPTER 4: EQUITABLE DISTRIBUTION OF RECREATIONAL OPPORTUNITIES



The Carson City Master Plan seeks to continue providing a diverse range of park and recreational opportunities to include facilities and programming for all ages and varying interests to serve both existing and future neighborhoods.

### Is or does the proposed development:

- Provide park facilities commensurate with the demand created and consistent with the City's adopted standards (4.1b)?
- Consistent with the Open Space Master Plan and Carson River Master Plan (4.3a)?

## CHAPTER 5: ECONOMIC VITALITY



The Carson City Master Plan seeks to maintain its strong diversified economic base by promoting principles which focus on retaining and enhancing the strong employment base, include a broader range of retail services in targeted areas, and include the roles of technology, tourism, recreational amenities, and other economic strengths vital to a successful community.

### Is or does the proposed development:

- Encourage a citywide housing mix consistent with the labor force and non-labor force populations (5.1j)
- Encourage the development of regional retail centers (5.2a)
- Encourage reuse or redevelopment of underused retail spaces (5.2b)?
- Support heritage tourism activities, particularly those associated with historic resources, cultural institutions and the State Capitol (5.4a)?
- Promote revitalization of the Downtown core (5.6a)?
- Incorporate additional housing in and around Downtown, including lofts, condominiums, duplexes, live-work units (5.6c)?

## CHAPTER 6: LIVABLE NEIGHBORHOODS AND ACTIVITY CENTERS



The Carson City Master Plan seeks to promote safe, attractive and diverse neighborhoods, compact mixed-use activity centers, and a vibrant, pedestrian-friendly Downtown.

### Is or does the proposed development:

- Use durable, long-lasting building materials (6.1a)?
- Promote variety and visual interest through the incorporation of varied building styles and colors, garage orientation and other features (6.1b)?
- Provide variety and visual interest through the incorporation of well-articulated building facades, clearly identified entrances and pedestrian connections, landscaping and other features consistent with the Development Standards (6.1c)?
- Provide appropriate height, density and setback transitions and connectivity to surrounding development to ensure compatibility with surrounding development for infill projects or adjacent to existing rural neighborhoods (6.2a, 9.3b 9.4a)?
- If located in an identified Mixed-Use Activity Center area, contain the appropriate mix, size and density of land uses consistent with the Mixed-Use district policies (7.1a, b)?
- If located Downtown:
  - Integrate an appropriate mix and density of uses (8.1a, e)?
  - Include buildings at the appropriate scale for the applicable Downtown Character Area (8.1b)?
  - Incorporate appropriate public spaces, plazas and other amenities (8.1d)?
- Incorporate a mix of housing models and densities appropriate for the project location and size (9.1a)?

## CHAPTER 7: A CONNECTED CITY



The Carson City Master Plan seeks promote a sense of community by linking its many neighborhoods, employment areas, activity centers, parks, recreational

amenities and schools with an extensive system of interconnected roadways, multi-use pathways, bicycle facilities, and sidewalks.

**Is or does the proposed development:**

- Promote transit-supportive development patterns (e.g. mixed-use, pedestrian-oriented, higher density) along major travel corridors to facilitate future transit (11.2b)?
- Maintain and enhance roadway connections and networks consistent with the Transportation Master Plan (11.2c)?
- Provide appropriate pathways through the development and to surrounding lands, including parks and public lands, consistent with the Unified Pathways Master Plan (12.1a, c)?

December 18, 2018

Stephen Pottey  
Carson City Development Department  
108 E. Proctor Street  
Carson City, NV 89701

Subject: Carson Tahoe Health Connector, Lab Relocation and ED Addition/Renovation  
Traffic Impact Investigation

The proposed project will add an enclosed pedestrian connection over Eagle Valley Creek to the Sierra Surgical Hospital, add 21,000sf to the lower level of the Regional Medical Center to accommodate the relocation of the existing Lab and additional support services, and add 6,500sf (8 treatment rooms) to the existing Emergency Department.

This investigation letter will estimate the Average Daily Trips (ADT) that could be attributed to the proposed project to determine if the new traffic volumes will require a technical traffic study pursuant to the *Carson City Development Standards*.

In accordance with the Section 12.13.1 of the Development Standards, traffic engineering studies are required if one or more of the following conditions are met:

1. The proposed development will generate 80 or more peak hour trips (the sum of all existing trips plus all entering trips) as determined using the Institute of Traffic Engineers (ITE) trip generation rates or other such sources accepted by the Engineering Division.
2. The proposed development will generate 500 or more trips per day.
3. The proposed development contains phasing, and impacts from the cumulative phase have net effect of items 1 or 2. In this case, a traffic study shall be required with the first phase of the development.
4. The Engineering Department determines that a traffic study is required.
5. The proposed development contributes to the need for a traffic signal/or signal improvements.

The proposed project traffic volumes are estimated based on future staffing and the anticipated growth in future patient visits due to population growth in the area.

**Table 1** displays the estimated average daily traffic (ADT) attributed to future staffing associated with the proposed project.

<b>Table 1 - Trip Generation - Staff</b>			
<b>Department</b>	<b>Current SF</b>	<b>Additional SF</b>	<b>Additional FTEs / Shift</b>
Connector (Circulation)		11,250	0
Lower Level Addition			
Lab	7,200	2,700	5
Materials Management	5,900	1,950	0*
Environmental Services	1,950	2,200	1
Biomedical Engineering	1,400	2,000	0**
Infection Control	200	275	0
Emergency Department	19,500	6,500	4

*\* Additional Storage Capacity*  
*\*\*Relocated to Provide Additional Storage Capacity for Another Existing Department*

The square footage increase associated with most of the departments listed above is required to right size the space to meet current needs and in anticipation of future needs. The additional projected staff is 10 and generates approximately 20 trips (in/out).

**Table 2** displays the estimated average daily traffic (ADT) attributed to anticipated growth in future patient visits with population growth in the service area utilizing the Regional Medical Center. This is only applicable to the ED Addition/Renovation project and would create additional daily traffic regardless of the proposed project. The future patient visits are calculated assuming the ED is at capacity with the additional treatment rooms.

<b>Table 2 - Trip Generation - Patients</b>				
<b>Department</b>	<b>Total Visits</b>	<b>Projected Total Peak Month Visits</b>	<b>Projected Total Daily Visits</b>	<b>Projected Total Peak Daily Visits*</b>
Current Emergency Department	42,630	4,263	140	168
Future Emergency Department	67,000	6,700	220	255

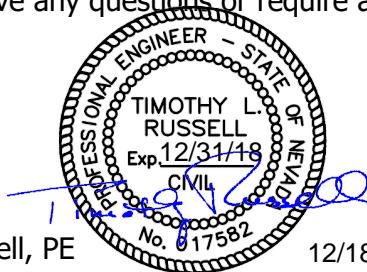
*\* Poisson Distribution*

The additional projected Total Peak Daily Visits is 87 and generates approximately 174 trips (in/out). Assuming Peak Shift Visits to be 60% of the Peak Daily Visits over an 8-hour period, the projected Peak Shift Visits per hour are 7 and generates approximately 14 trips (in/out).

The estimated traffic generated from the proposed project does not exceed the requirements for providing a detailed traffic engineering study especially when factoring in that the estimated increase in emergency room visits is more of a function of population growth within the service area of the Regional Medical Center than a function of the additional space within the emergency room.

If you have any questions or require additional information, please contact me.

Sincerely,



Tim Russell, PE  
Group Manager – Engineering Division

12/18/18

# **CONCEPTUAL DRAINAGE STUDY**

**FOR**

**CARSON TAHOE HEALTH – CONNECTOR, LAB RELOCATION  
AND EMERGENCY DEPARTMENT ADDITION/RENOVATION  
CARSON CITY, NEVADA**

**Prepared For:**

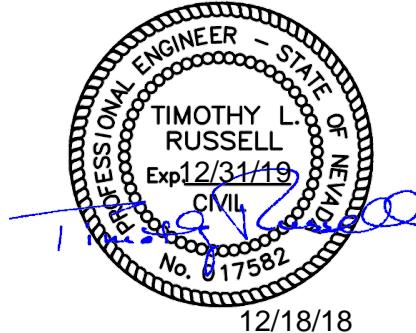
Carson Tahoe Health  
1600 Medical Parkway  
Carson City, Nevada 89703

**Prepared By:**



Lumos & Associates, Inc.  
800 E. College Parkway  
Carson City, NV 89706

JN: 9349.001  
December 2018



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*[File Doc: L:\LAProj\9153.003 - CTH Connector\Civil\Hydrology\Report\9153.003-Conceptual Drainage Study.docx]*

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- B Drainage Plans
- C Rational Calculations
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## 1. INTRODUCTION

### 1.1. Description of Project

This document is presented as a Conceptual Drainage Study in support of the Special Use Permit (SUP) for Carson Tahoe Health's (CTH) proposed connector, lab relocation and emergency department addition/renovation. The project site is located in Carson City, NV. Improvements will provide an approximate 6,600sf addition to the existing emergency department, 21,000sf expansion to the lower level of the Carson Tahoe Health Regional Medical Center (RMC), and 1,625sf expansion to the Sierra Surgery Hospital (SSH) to accommodate the relocation/expansion of the existing lab and support spaces. In addition, there will be an enclosed pedestrian connection over Eagle Valley Creek to the Sierra Surgery Hospital. The improvements will require site work to rework existing parking and drive aisles impacted by the additions.

The two hospital buildings are located on opposite sides of Eagle Valley Creek. The creek corridor is within APN 007-531-38, while the RMC is located north of Eagle Valley Creek (APN 007-531-37) and the SSH is located south of the creek (APN 007-531-40).

This report identifies the existing and conceptually proposed site conditions in addition to the potential drainage improvements for the connector and building expansion. At this time, a Conditional Letter of Map Revision (CLOMR) application for Eagle Valley Creek is undergoing review with FEMA [1]. Both the CLOMR and this report have been conducted in accordance with FEMA, the Carson City Municipal Code and the Carson City Development Standards.

### 1.2. Existing Site Conditions

The RMC's frontage area, facing Eagle Valley Creek, is currently developed. The hospital's upper terraced area is paved with grass landscaping islands. The upper area is routed to existing yard drains which connect into the storm drain network. The lower area consists of paved and compacted dirt pathways with native landscaping islands. An existing compacted dirt access road is at the north bank of the channel. Slopes through this area range from one percent to three percent and generally slope towards Eagle Valley Creek, to the south.

The SSH's frontage area, facing Eagle Valley Creek, consists of a parking lot with landscaped medians. Surface flows drain to drop inlets, situated at low points. The area has slopes less than three percent.

Vegetation within the majority of Eagle Valley Creek consists of highly-overgrown and unmaintained brush and trees. The landcover transitions to rip rap with sparse shrub coverage in the vicinity of the lateral weir structure, adjacent to the upper detention basin. Longitudinal slope upstream of Medical Parkway is relatively steep, at five percent. Slopes reduce downstream of Medical Parkway to around three percent. Per the Flood Insurance Study for Carson City, Eagle Valley Creek has a 1-percent-annual-chance peak discharge of 499 cfs [2].

Three regional detention facilities are located at the downstream end of Eagle Valley Creek. Overflow from the creek enters the upper detention basin at the lateral weir structure, approximately 200 feet downstream from the proposed connector. The upper basin also receives flow from the storm drain network crossing through the RMC property. The remaining flow in Eagle Valley Creek enters the middle detention facility. Overflow from the upper basin enters the middle and then overtops into the lower facility. Flows exit the lower basin onto Medical Parkway via overflow from a low point at the south.

### 1.3. General Location Map

Please see Appendix A for the General Location Map.

## 2. EXISTING AND PROPOSED HYDROLOGY

### 2.1. Drainage Basin Boundaries

The project area is divided into four on-site subbasins, as depicted in the Drainage Plans in Appendix B. The total basin area accounts for approximately 1.5 acres. The subbasin boundaries are maintained in the existing and proposed conditions, to provide a comparison for determining the peak flow increase. The following summarizes the general characteristics of each subbasin:

- Area 1 (E1 & P1) includes the frontage of the RMC and covers the limits of proposed improvements. The subbasin is the largest in the study, at 0.9 acres.
- Area 2 includes for the future connector's alignment across Eagle Valley Creek. The subbasin is the smallest in the study, at 0.1 acres.
- Area 3 accounts for the SSH parking lot, which drains directly to the storm drain network through drop inlets. The total area is 0.5 acres.
- Area 4 is the expansion of the RMC, to the northwest. The area drains to existing catch basins in the parking lot.

### 2.2. Design Storm and 100 year Flow Calculations

Peak rate of runoff was computed using the Rational Method. The Rational Method determines peak runoff by expressing the ground cover, site gradient, and soil type as a ratio relative to a completely impervious site, using the following equation:

$$Q = CiA$$

Where,

$Q$ = Peak Runoff (cfs)
$C$ = Runoff Coefficient (unitless)
$i$ = Rainfall Intensity (in/hr)
$A$ = Area of Drainage Basin (ac)

Composite runoff coefficients were derived from the Truckee Meadows Regional Drainage Manual. Five- and 100-year coefficients were selected for existing and proposed conditions based upon the ground cover and land use type.

Rainfall intensity was derived from the NOAA Atlas 14, included in Appendix D. The design rainfall intensity was based upon the time of concentration for runoff.

Time of concentration is defined as the time from the end of excessive rainfall to the end of direct runoff. In practical calculations, time of concentration is the flow time from the most hydraulically remote point in a drainage basin to the point of discharge. Concentration time is therefore a combination of two related factors: initial overland flow time and concentrated flow time. The initial time is based on the distance travelled over the ground surface prior to concentrating into organized channels (sheet flow). The minimum time of concentration was set at 10 minutes.

Peak flow for the existing and proposed 5- and 100-year events was derived, as shown in Table 1. Calculations and supporting equations are included in Appendix C. A summary of the peak flows has been included on the Drainage Plans in Appendix B.

ID	Area [ac]	C <sub>5</sub>	C <sub>100</sub>	i <sub>5</sub> [in/hr]	i <sub>100</sub> [in/hr]	Q <sub>5</sub> [cfs]	Q <sub>100</sub> [cfs]	Proposed - Existing Q <sub>5</sub> [cfs]	Proposed - Existing Q <sub>100</sub> [cfs]
E1	0.88	0.60	0.72	1.53	3.68	0.82	2.33		
E2	0.05	0.20	0.50	1.53	3.69	0.02	0.10		
E3	0.45	0.73	0.83	1.54	3.70	0.50	1.37		
E4	0.15	0.86	0.89	1.54	3.70	0.20	0.51		
P1	0.88	0.86	0.88	1.54	3.70	1.17	2.89	0.35	0.55
P2	0.05	0.85	0.87	1.54	3.70	0.07	0.17	0.05	0.07
P3	0.45	0.88	0.92	1.54	3.70	0.60	1.52	0.10	0.15
P4	0.15	0.85	0.87	1.54	3.70	0.20	0.50	0.00	-0.01
<b>A<sub>total</sub>:</b>	<b>1.5</b>					<b>Total Increase in Peak Flow =</b>	<b>0.50</b>	<b>0.76</b>	

Table 1: Peak Flow Summary

Proposed peak flows have increased slightly due to the impervious area added as a result of the facility improvements. Increases for the 5- and 100-year peak flows are 0.5 and 0.8 cfs, respectively.

### 2.3. On-site and Downstream Drainage

All onsite subbasins ultimately enter Eagle Valley Creek's detention facilities via surface flow and storm drain pipe. In order to analyze the impacts to the downstream facilities, the hydrologic analysis for Carson Tahoe Hospital was referenced [3] [4]. The analysis designated the entire medical campus as a commercial land use. Local additions to the RMC and SSH will not impact this land use designation. In addition, the increase to peak flow is relatively insignificant compared to flow through Eagle Valley Creek. As a result, the improvements will have little impact on the functionality of the detention system.

### 2.4. Floodplain

Eagle Valley Creek is mapped on FEMA FIRM panel 3200010083F, dated February 2014 [5]. The effective FIRM panel is located in Appendix A. The creek has been defined with a detailed Zone AE Special Flood Hazard Area with a defined floodway. The 0.2% annual chance flood is also indicated on the panel. A levee is located on the south side of the creek and spans from the Medical Parkway Bridge to the lowest detention basin. Peak flow for the creek is 499 cfs for the 100-year event.

## 3. PROPOSED DRAINAGE FACILITIES

### 3.1. Routing of Flow in and/or around Site

Lumos proposes to reconfigure the storm drain network where it intersects with the RMC's building expansion. Conceptual routing is depicted on the proposed drainage plan located in Appendix B. The pipes will be located south of the expansion footprint, and cross below the connector, prior to tying into the existing network. Pipes crossing the Connector on the SSH property will cross below the connector. The storm drain network will be analyzed and appropriately sized for the final design.

The proposed connector will have a clear-span structure designed to pass the 100- and 500-year flows from Eagle Valley Creek. The structure will tentatively be dimensioned with a 30 ft span and 5 ft height and have an open-bottom design. The structure's alignment will be slightly skewed from the connector in order to maintain alignment with Eagle Valley Creek. Grading improvements will be made to the channel in order to increase capacity and provide adequate freeboard for the connector and levee structures. Analysis of the structure and channel is included in the CLOMR application [1].

In addition to the proposed routing, two points of access will be provided for maintenance vehicles. Refer to the Schematic Civil Plans, produced by Lumos in December 2018, for the locations. These two points will allow levee access to the City to maintain the channel and levee.

The project will also feature 34 new on-grade parking stalls directly east of the SSC main entry. The stalls will be situated on both sides of the existing drive. Reference the Architectural Site Plan provided with the SUP submittal. The stalls will not have a substantial impact on the generated peak flow. The area will be analyzed for the final design.

### 3.2. Mitigation Measures

Best Management Practices techniques will be implemented to manage the quantity and improve the quality of storm water runoff, minimize local erosion, and minimize potential discharges to adjacent properties.

### 3.3. Floodplain Modification

The proposed floodplain boundary, per the current CLOMR, is included in the Drainage Plans in Appendix B. The connector will feature a structure to pass 100- and 500-year flows. In addition, modifications will be made to the channel to improve the channel to fully contain the 500-yr event. Reference the CLOMR Technical Support Narrative for the analysis and design details [1].

### 3.4. Exhibit

A drainage plan showing the proposed improvements and drainage features is included in Appendix B.

## 4. CONCLUSIONS

Carson Tahoe Health's hospital expansion and connector structure, as proposed, will allow for the construction of a direct route from the RMC to the SSH. The project will also provide additional space for expansion. Local flows are predicted to increase by approximately 0.8 cfs in the 100-year event. Based on review of the previous study and the relatively small increase, the improvements will not impact the functionality of the downstream detention facilities. The design and hydrologic studies of the proposed connector have been conducted in compliance with the drainage guidelines for FEMA, Carson City Municipal Code and Carson City Development Standards.

## 5. REFERENCES

- [1] Lumos & Associates, Inc., "CLOMR Technical Support Narrative for Eagle Valley Creek," December 2018.
- [2] FEMA, "Flood Insurance Study, Independent Study, Carson City, Nevada," Revised December 22, 2016.
- [3] WRC Nevada, Inc., "Carson City Hospital Hydrologic Analysis Eagle Canyon Creek," Reno, NV, 2003.
- [4] WRC Nevada, Inc. , "Supplemental Addendum Carson Tahoe Hospital Hydrologic Analysis Eagle Valley Creek," Reno, NV, 2005.
- [5] FEMA, "FIRM Panel 3200010083F," February 19, 2014.

## **APPENDIX A**

### **MAPS**



800 E. COLLEGE PARKWAY  
CARSON CITY, NV 89406  
TEL (775) 883-7077  
FAX (775) 883-7114

CARSON TAHOE HEALTH

## GENERAL LOCATION MAP

CARSON CITY

NEVADA

Date: DEC 2018  
Scale: N.T.S.  
Job No: 9153.001  
EXHIBIT

A1

## NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or Floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be used in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services  
NOAA, NNGS12  
National Geodetic Survey  
SSMC-3, #9202  
1315 East-West Highway  
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov/>.

Base map information shown on this FIRM was provided in digital format by the USDA National Agriculture Imagery Program (NAIP). This information was photogrammetrically compiled at a scale of 1:12,000 from aerial photography dated 2010.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted due to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map showing the layout of map panels for this jurisdiction.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

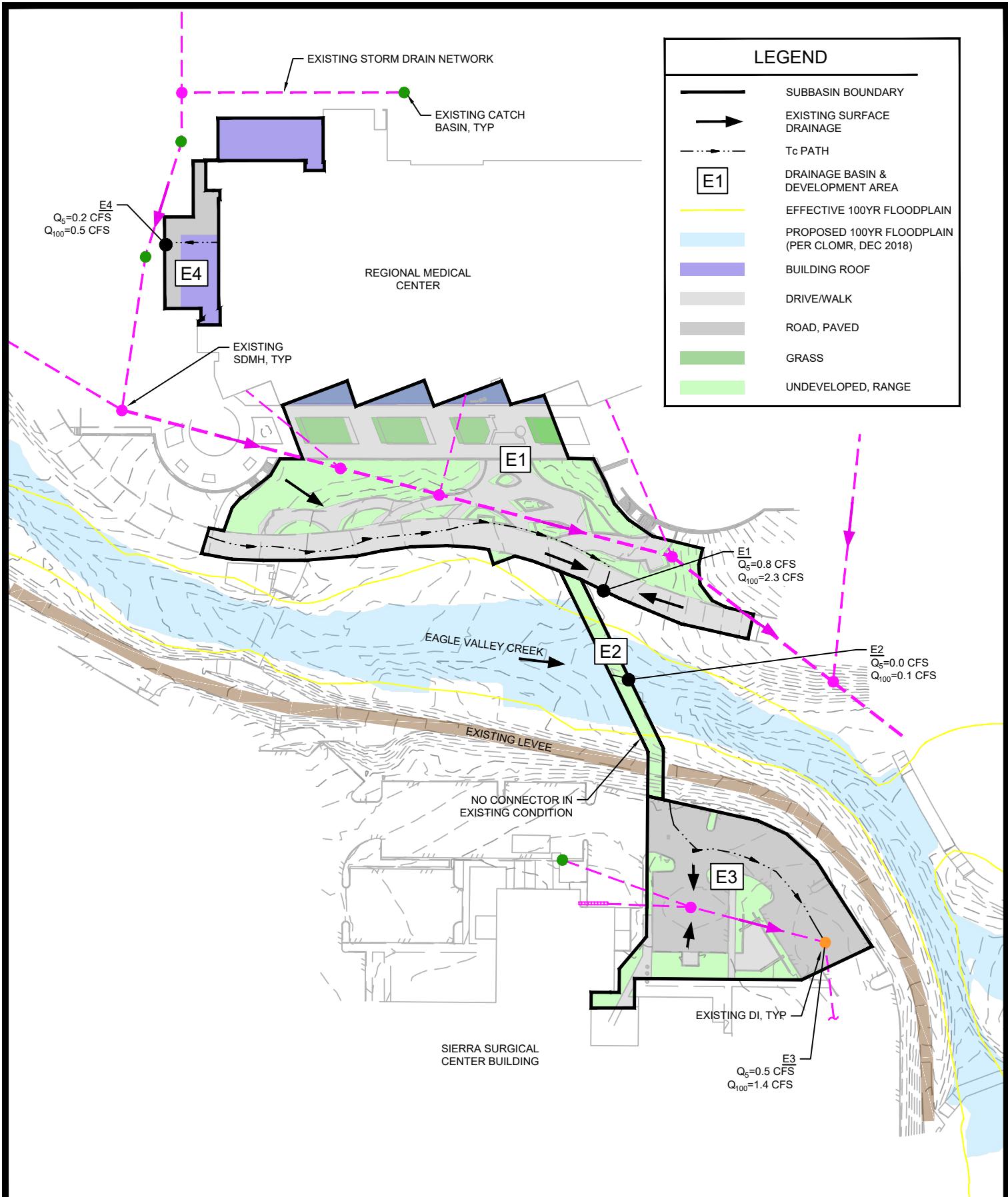
Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance-level) and Emergency Action Plan, on the levee system(s) shown as providing protection for area on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at <http://www.fema.gov/business/nfip/index.shtml>.

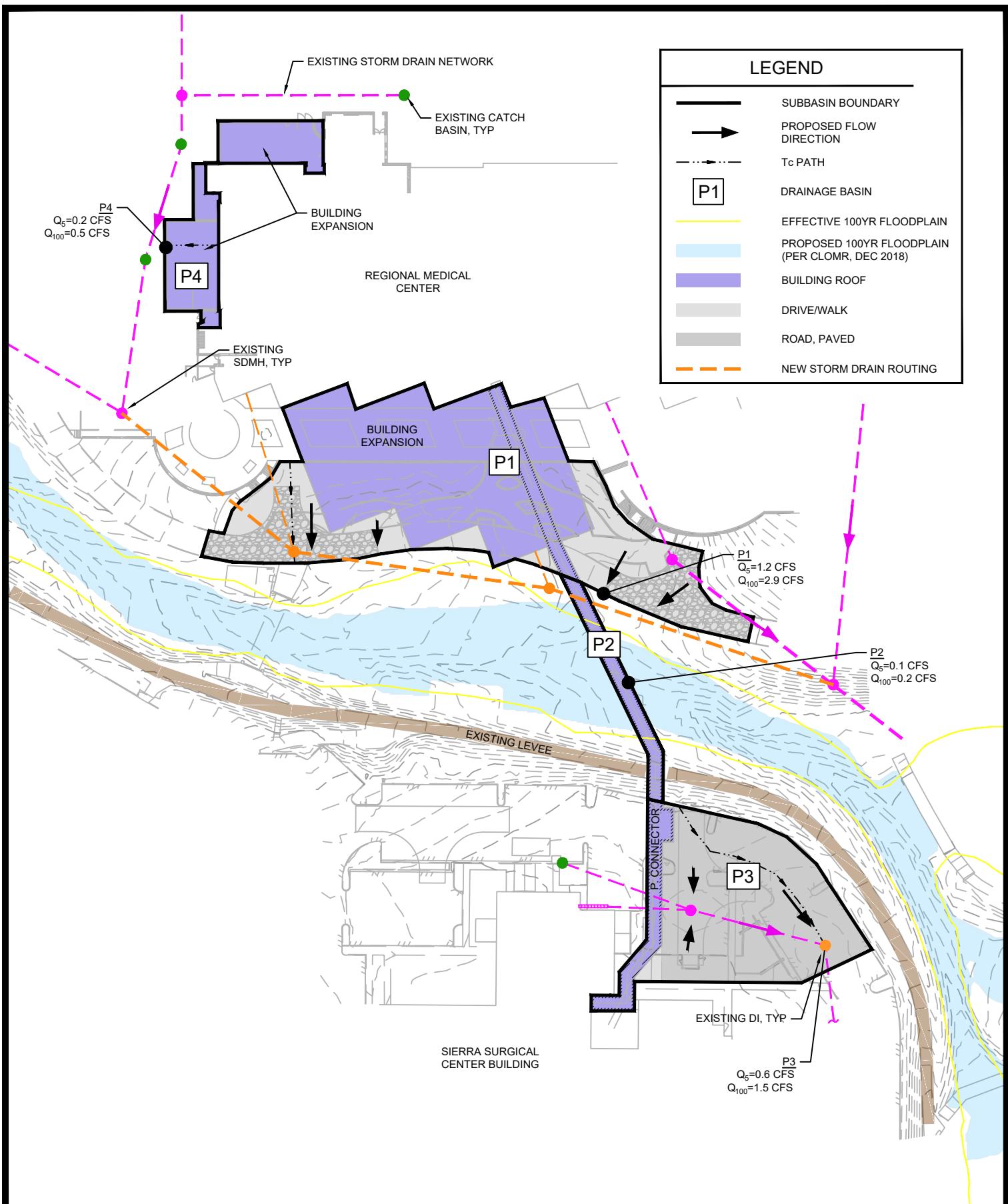


NATIONAL FLOOD INSURANCE PROGRAM			
FIRM FLOOD INSURANCE RATE MAP			
CARSON CITY, NEVADA INDEPENDENT CITY			
PANEL 83 OF 275 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)			
CONTAINS: COMMUNITY NUMBER PANEL SUFFIX			
CARSON CITY 320001 0083 F			
MAP NUMBER 3200010083F			
MAP REVISED FEBRUARY 19, 2014			
Federal Emergency Management Agency			

## **APPENDIX B**

### **DRAINAGE PLANS**





## **APPENDIX C**

### **RATIONAL CALCULATIONS**

Land Use	$C_5$	$C_{100}$
Gravel	0.25	0.50
Paved	0.88	0.93
Undeveloped, Range	0.20	0.50
Grass	0.05	0.03
Drives/Walks (Dirt Drive)	0.87	0.90
Roof	0.85	0.87

E1	[sf]	[ac]	%
Total Area	38517	0.88	100.0%
Gravel			0.0%
Streets/Roads, Paved			0.0%
Undeveloped, Range	12270		31.9%
Grass	2439		6.3%
Drives/Walks (Dirt Drive)	22255		57.8%
Roof	1553		4.0%
$\Sigma C_5$		0.60	
$\Sigma C_{100}$		0.72	

E2	[sf]	[ac]	%
Total Area	2268	0.05	100.0%
Gravel			0.0%
Streets/Roads, Paved			0.0%
Undeveloped, Range	2268		100.0%
Grass			0.0%
Drives/Walks (Dirt Drive)			0.0%
Roof			0.0%
$\Sigma C_5$		0.20	
$\Sigma C_{100}$		0.50	

E3	[sf]	[ac]	%
Total Area	19466	0.45	100.0%
Gravel			0.0%
Streets/Roads, Paved	13146		67.5%
Undeveloped, Range	4350		22.3%
Grass			0.0%
Drives/Walks	1970		10.1%
Roof			0.0%
$\Sigma C_5$		0.73	
$\Sigma C_{100}$		0.83	

E4	[sf]	[ac]	%
Total Area	6707	0.15	100.0%
Gravel			0.0%
Streets/Roads, Paved	1971		29.4%
Undeveloped, Range			0.0%
Grass			0.0%
Drives/Walks			0.0%
Roof	4736		70.6%
$\Sigma C_5$		0.86	
$\Sigma C_{100}$		0.89	

Land Use	$C_5$	$C_{100}$
Gravel	0.25	0.50
Paved	0.88	0.93
Undeveloped, Range	0.20	0.50
Grass	0.05	0.03
Drives/Walks (Dirt Drive)	0.87	0.90
Roof	0.85	0.87

P1	[sf]	[ac]	%
Total Area	38517	0.88	100.0%
Gravel			0.0%
Streets/Roads, Paved			0.0%
Undeveloped, Range			0.0%
Grass			0.0%
Drives/Walks (Dirt Drive)	15475		40.2%
Roof	23042		59.8%
$\Sigma C_5$		0.86	
$\Sigma C_{100}$		0.88	

P2	[sf]	[ac]	%
Total Area	2268	0.05	100.0%
Gravel			0.0%
Streets/Roads, Paved			0.0%
Undeveloped, Range			0.0%
Grass			0.0%
Drives/Walks (Dirt Drive)			0.0%
Roof	2268		100.0%
$\Sigma C_5$		0.85	
$\Sigma C_{100}$		0.87	

P3	[sf]	[ac]	%
Total Area	19466	0.45	100.0%
Gravel			0.0%
Streets/Roads, Paved	16577		85.2%
Undeveloped, Range			0.0%
Grass			0.0%
Drives/Walks	333		1.7%
Roof	2556		13.1%
$\Sigma C_5$		0.88	
$\Sigma C_{100}$		0.92	

P4	[sf]	[ac]	%
Total Area	6707	0.15	100.0%
Gravel			0.0%
Streets/Roads, Paved			0.0%
Undeveloped, Range			0.0%
Grass			0.0%
Drives/Walks			0.0%
Roof	6707		100.0%
$\Sigma C_5$		0.85	
$\Sigma C_{100}$		0.87	

Subbasin Data		Initial/Overland Time (Ti)			Travel Time (Tt)			Urbanized Basins Check <sup>2</sup>			Final Tc <sup>3</sup>	
ID	R	Area [ac]	Length [ft]	Slope [%]	Ti [min]	Length [ft]	Slope [%]	Velocity <sup>1</sup> [fps]	Tt [min]	Tc [min]	Tc [ft]	Tc [min]
E1	0.60	0.88	220	2.7	9.5	340	2.5	3.16	0.6	10.1	560	13.1
E2	0.20	0.05				15	1.6	2.53	10.1	10.1	15	10.1
E3	0.73	0.45	45	1.8	3.7	130	2.3	3.03	1.4	5.1	175	11.0
E4	0.86	0.15	42	1.0	2.8				2.8	42	42	10.2
P1	0.86	0.88	80	2.0	3.1				3.1	80	80	10.4
P2	0.85	0.05	15	0.5	2.2				2.2	15	15	10.1
P3	0.88	0.45	40	1.8	2.1	120	2.3	3.03	1.5	3.6	160	10.9
P4	0.85	0.15	42	1.0	2.9				2.9	42	42	10.2

<sup>1</sup> Per the Truckee Meadows Regional Drainage Manual's Travel Time Velocity Figure

<sup>2</sup> Per the *Urban Hydrology for Small Watersheds* document developed by the US Department of Agriculture, Soil Conservation Service

ID	Area [ac]	C <sub>5</sub>	C <sub>100</sub>	i <sub>5</sub> [in/hr]	i <sub>100</sub> [in/hr]	Q <sub>5</sub> [cfs]	Q <sub>100</sub> [cfs]	Proposed -	Proposed -
								Existing Q <sub>5</sub> [cfs]	Existing Q <sub>100</sub> [cfs]
E1	0.88	0.60	0.72	1.53	3.68	0.82	2.33		
E2	0.05	0.20	0.50	1.53	3.69	0.02	0.10		
E3	0.45	0.73	0.83	1.54	3.70	0.50	1.37		
E4	0.15	0.86	0.89	1.54	3.70	0.20	0.51		
P1	0.88	0.86	0.88	1.54	3.70	1.17	2.89	0.35	0.55
P2	0.05	0.85	0.87	1.54	3.70	0.07	0.17	0.05	0.07
P3	0.45	0.88	0.92	1.54	3.70	0.60	1.52	0.10	0.15
P4	0.15	0.85	0.87	1.54	3.70	0.20	0.50	0.00	-0.01
<b>A<sub>total</sub>:</b>	<b>1.5</b>							<b>0.50</b>	<b>0.76</b>
<b>Total Increase in Peak Flow =</b>									

## **APPENDIX D**

### **NOAA FREQUENCY ESTIMATES**



**NOAA Atlas 14, Volume 1, Version 5**  
**Location name: Carson City, Nevada, USA\***  
**Latitude: 39.2013°, Longitude: -119.7842°**  
**Elevation: 4795.41 ft\*\***  
 \* source: ESRI Maps  
 \*\* source: USGS



### POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps & aerials](#)

#### PF tabular

<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)<sup>1</sup></b>										
<b>Duration</b>	<b>Average recurrence interval (years)</b>									
	<b>1</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>	<b>1000</b>
<b>5-min</b>	<b>1.22</b> (1.06-1.44)	<b>1.52</b> (1.32-1.80)	<b>2.02</b> (1.73-2.39)	<b>2.50</b> (2.12-2.95)	<b>3.29</b> (2.71-3.90)	<b>4.01</b> (3.20-4.78)	<b>4.86</b> (3.74-5.86)	<b>5.88</b> (4.36-7.21)	<b>7.51</b> (5.26-9.42)	<b>9.00</b> (5.99-11.5)
<b>10-min</b>	<b>0.924</b> (0.804-1.10)	<b>1.16</b> (1.00-1.37)	<b>1.54</b> (1.32-1.82)	<b>1.90</b> (1.62-2.25)	<b>2.50</b> (2.06-2.96)	<b>3.05</b> (2.44-3.64)	<b>3.70</b> (2.86-4.46)	<b>4.48</b> (3.32-5.49)	<b>5.71</b> (4.00-7.17)	<b>6.85</b> (4.56-8.75)
<b>15-min</b>	<b>0.768</b> (0.664-0.908)	<b>0.956</b> (0.832-1.13)	<b>1.27</b> (1.09-1.51)	<b>1.57</b> (1.34-1.86)	<b>2.07</b> (1.70-2.45)	<b>2.52</b> (2.01-3.00)	<b>3.06</b> (2.36-3.68)	<b>3.70</b> (2.74-4.54)	<b>4.72</b> (3.30-5.92)	<b>5.66</b> (3.77-7.23)
<b>30-min</b>	<b>0.516</b> (0.446-0.610)	<b>0.644</b> (0.560-0.762)	<b>0.856</b> (0.734-1.01)	<b>1.06</b> (0.902-1.25)	<b>1.39</b> (1.15-1.65)	<b>1.70</b> (1.35-2.02)	<b>2.06</b> (1.59-2.48)	<b>2.49</b> (1.85-3.06)	<b>3.18</b> (2.23-3.99)	<b>3.81</b> (2.54-4.87)
<b>60-min</b>	<b>0.320</b> (0.277-0.378)	<b>0.398</b> (0.346-0.472)	<b>0.530</b> (0.454-0.628)	<b>0.656</b> (0.558-0.775)	<b>0.862</b> (0.710-1.02)	<b>1.05</b> (0.838-1.25)	<b>1.27</b> (0.983-1.54)	<b>1.54</b> (1.14-1.89)	<b>1.97</b> (1.38-2.47)	<b>2.36</b> (1.57-3.01)
<b>2-hr</b>	<b>0.215</b> (0.192-0.246)	<b>0.267</b> (0.238-0.304)	<b>0.339</b> (0.299-0.386)	<b>0.402</b> (0.352-0.458)	<b>0.498</b> (0.424-0.570)	<b>0.584</b> (0.486-0.675)	<b>0.682</b> (0.552-0.798)	<b>0.801</b> (0.628-0.951)	<b>1.01</b> (0.755-1.25)	<b>1.20</b> (0.868-1.52)
<b>3-hr</b>	<b>0.172</b> (0.155-0.193)	<b>0.214</b> (0.193-0.241)	<b>0.267</b> (0.239-0.300)	<b>0.310</b> (0.276-0.348)	<b>0.372</b> (0.325-0.419)	<b>0.425</b> (0.365-0.483)	<b>0.484</b> (0.407-0.556)	<b>0.561</b> (0.462-0.654)	<b>0.687</b> (0.549-0.839)	<b>0.809</b> (0.630-1.02)
<b>6-hr</b>	<b>0.121</b> (0.109-0.135)	<b>0.151</b> (0.136-0.169)	<b>0.186</b> (0.167-0.208)	<b>0.214</b> (0.191-0.239)	<b>0.252</b> (0.221-0.283)	<b>0.281</b> (0.244-0.318)	<b>0.311</b> (0.265-0.355)	<b>0.346</b> (0.289-0.399)	<b>0.396</b> (0.322-0.465)	<b>0.440</b> (0.351-0.526)
<b>12-hr</b>	<b>0.080</b> (0.072-0.090)	<b>0.100</b> (0.090-0.113)	<b>0.126</b> (0.112-0.141)	<b>0.146</b> (0.129-0.164)	<b>0.173</b> (0.151-0.195)	<b>0.193</b> (0.167-0.220)	<b>0.214</b> (0.182-0.246)	<b>0.236</b> (0.197-0.274)	<b>0.264</b> (0.215-0.313)	<b>0.287</b> (0.229-0.345)
<b>24-hr</b>	<b>0.053</b> (0.048-0.059)	<b>0.066</b> (0.060-0.073)	<b>0.083</b> (0.075-0.092)	<b>0.097</b> (0.087-0.107)	<b>0.116</b> (0.104-0.129)	<b>0.131</b> (0.117-0.146)	<b>0.147</b> (0.130-0.164)	<b>0.163</b> (0.143-0.183)	<b>0.186</b> (0.160-0.210)	<b>0.204</b> (0.173-0.232)
<b>2-day</b>	<b>0.032</b> (0.028-0.036)	<b>0.040</b> (0.035-0.045)	<b>0.050</b> (0.045-0.057)	<b>0.059</b> (0.053-0.067)	<b>0.071</b> (0.063-0.081)	<b>0.081</b> (0.071-0.092)	<b>0.092</b> (0.080-0.105)	<b>0.103</b> (0.088-0.118)	<b>0.118</b> (0.099-0.137)	<b>0.130</b> (0.108-0.153)
<b>3-day</b>	<b>0.023</b> (0.021-0.026)	<b>0.029</b> (0.026-0.033)	<b>0.038</b> (0.033-0.043)	<b>0.044</b> (0.039-0.050)	<b>0.054</b> (0.047-0.061)	<b>0.062</b> (0.054-0.070)	<b>0.070</b> (0.060-0.080)	<b>0.079</b> (0.067-0.091)	<b>0.091</b> (0.076-0.106)	<b>0.101</b> (0.083-0.119)
<b>4-day</b>	<b>0.019</b> (0.017-0.022)	<b>0.024</b> (0.021-0.027)	<b>0.031</b> (0.028-0.036)	<b>0.037</b> (0.033-0.042)	<b>0.045</b> (0.040-0.052)	<b>0.052</b> (0.045-0.059)	<b>0.059</b> (0.051-0.068)	<b>0.067</b> (0.057-0.077)	<b>0.078</b> (0.065-0.090)	<b>0.087</b> (0.071-0.101)
<b>7-day</b>	<b>0.013</b> (0.011-0.015)	<b>0.016</b> (0.014-0.018)	<b>0.021</b> (0.019-0.024)	<b>0.025</b> (0.022-0.028)	<b>0.031</b> (0.027-0.035)	<b>0.035</b> (0.030-0.040)	<b>0.040</b> (0.034-0.045)	<b>0.045</b> (0.038-0.051)	<b>0.052</b> (0.043-0.060)	<b>0.057</b> (0.047-0.067)
<b>10-day</b>	<b>0.010</b> (0.009-0.011)	<b>0.013</b> (0.011-0.015)	<b>0.017</b> (0.015-0.019)	<b>0.020</b> (0.017-0.022)	<b>0.024</b> (0.021-0.027)	<b>0.027</b> (0.024-0.031)	<b>0.031</b> (0.027-0.035)	<b>0.034</b> (0.029-0.039)	<b>0.039</b> (0.033-0.046)	<b>0.043</b> (0.036-0.050)
<b>20-day</b>	<b>0.006</b> (0.006-0.007)	<b>0.008</b> (0.007-0.009)	<b>0.010</b> (0.009-0.012)	<b>0.012</b> (0.011-0.014)	<b>0.015</b> (0.013-0.017)	<b>0.017</b> (0.015-0.019)	<b>0.019</b> (0.016-0.021)	<b>0.020</b> (0.018-0.023)	<b>0.023</b> (0.020-0.026)	<b>0.025</b> (0.021-0.029)
<b>30-day</b>	<b>0.005</b> (0.004-0.005)	<b>0.006</b> (0.006-0.007)	<b>0.008</b> (0.008-0.009)	<b>0.009</b> (0.008-0.011)	<b>0.011</b> (0.010-0.013)	<b>0.013</b> (0.011-0.014)	<b>0.014</b> (0.012-0.016)	<b>0.016</b> (0.014-0.018)	<b>0.018</b> (0.015-0.020)	<b>0.019</b> (0.016-0.022)
<b>45-day</b>	<b>0.004</b> (0.003-0.004)	<b>0.005</b> (0.004-0.005)	<b>0.006</b> (0.006-0.007)	<b>0.007</b> (0.007-0.008)	<b>0.009</b> (0.008-0.010)	<b>0.010</b> (0.009-0.011)	<b>0.011</b> (0.010-0.012)	<b>0.012</b> (0.010-0.013)	<b>0.013</b> (0.011-0.015)	<b>0.014</b> (0.012-0.016)
<b>60-day</b>	<b>0.003</b> (0.003-0.004)	<b>0.004</b> (0.004-0.005)	<b>0.006</b> (0.005-0.006)	<b>0.006</b> (0.006-0.007)	<b>0.008</b> (0.007-0.008)	<b>0.008</b> (0.007-0.009)	<b>0.009</b> (0.008-0.010)	<b>0.010</b> (0.009-0.011)	<b>0.011</b> (0.009-0.012)	<b>0.011</b> (0.010-0.013)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

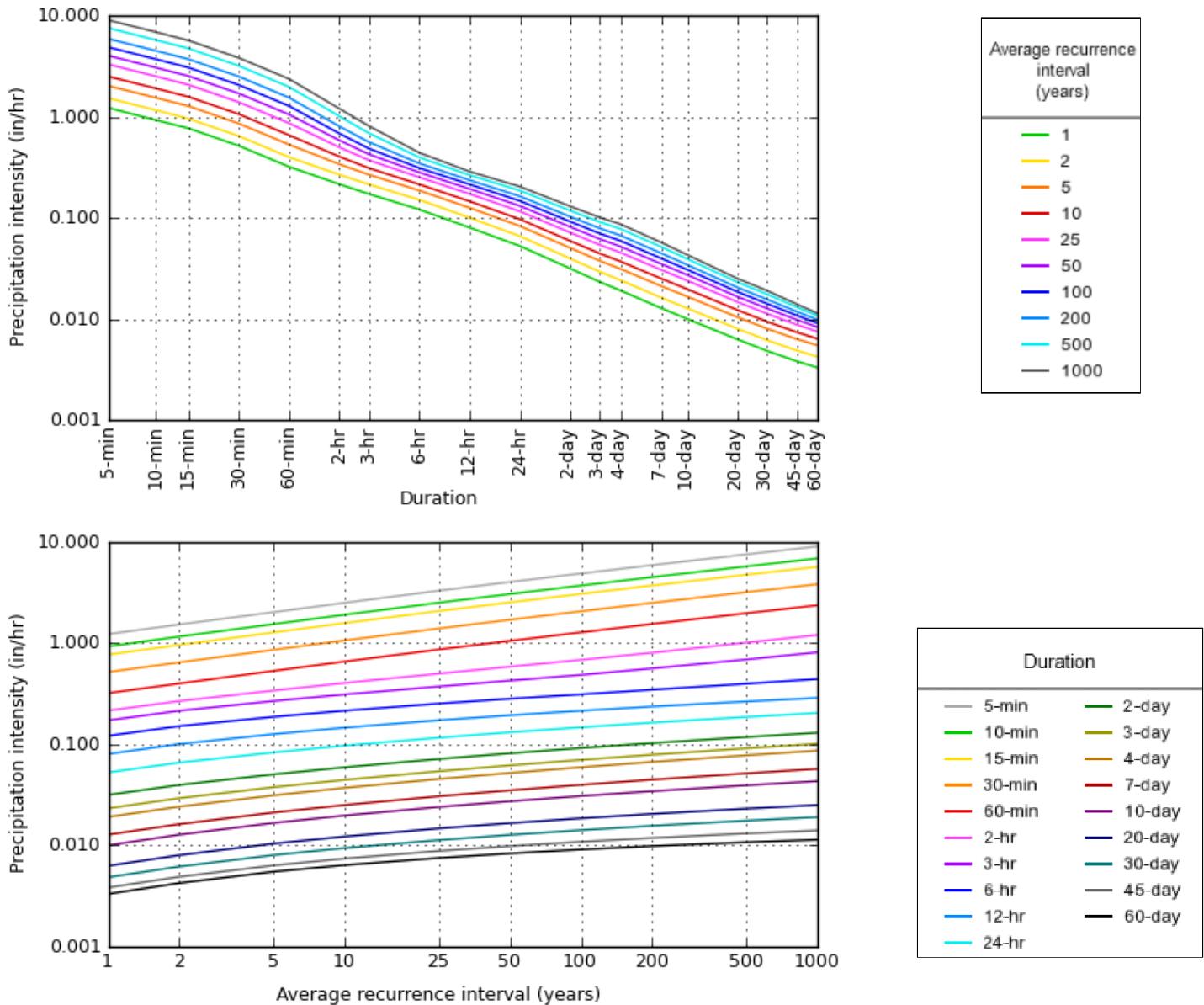
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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#### PF graphical

PDS-based intensity-duration-frequency (IDF) curves  
Latitude: 39.2013°, Longitude: -119.7842°



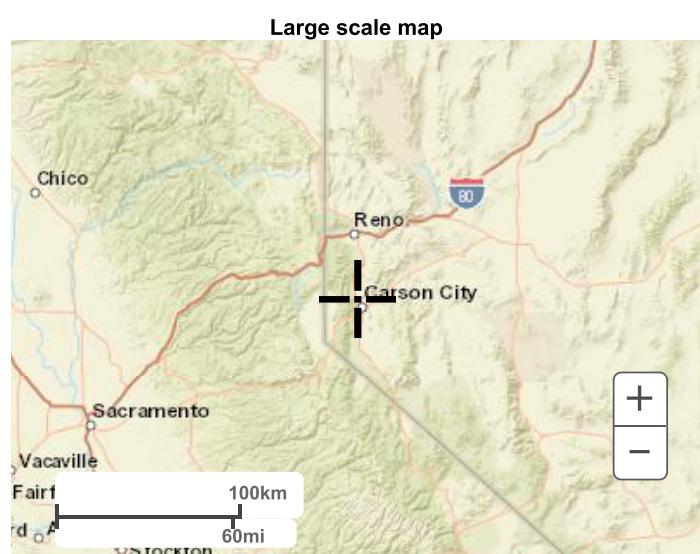
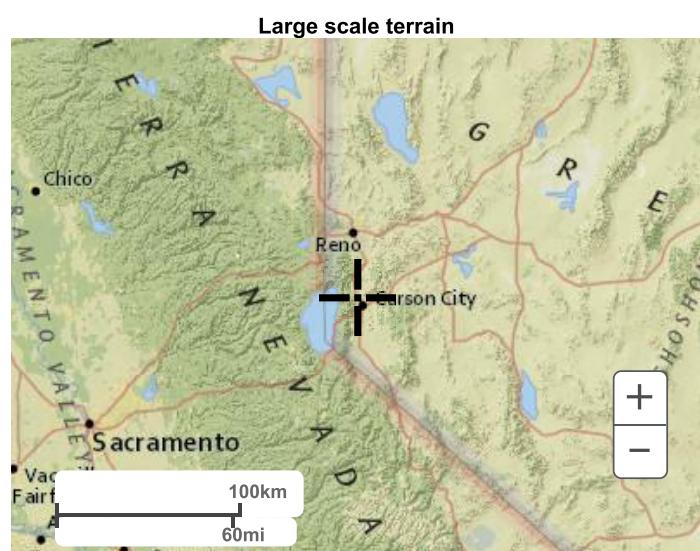
NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Thu Dec 13 17:24:29 2018

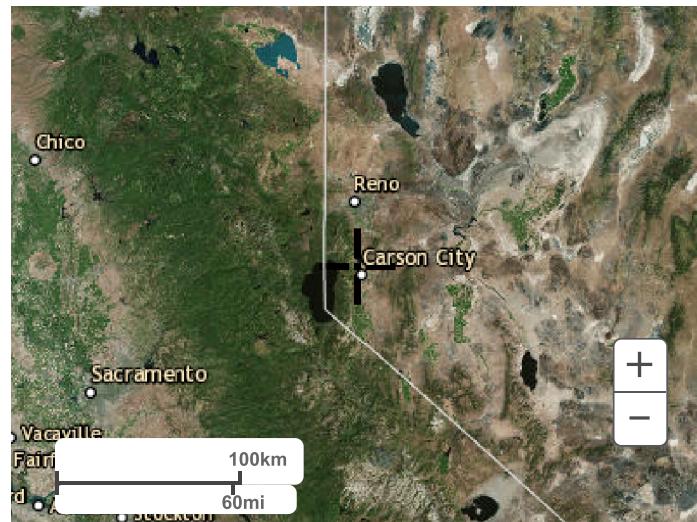
[Back to Top](#)

## Maps & aerials

[Small scale terrain](#)



**Large scale aerial**



[Back to Top](#)

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[US Department of Commerce](#)  
[National Oceanic and Atmospheric Administration](#)  
[National Weather Service](#)  
[National Water Center](#)  
1325 East West Highway  
Silver Spring, MD 20910  
Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

[Disclaimer](#)

December 17, 2018

Stephen Pottey, Senior Project Manager  
Public Works – Engineering Division  
108 E. Proctor Street  
Carson City, NV 89703

**RE: Carson Tahoe Health - ER Expansion and Connector to Sierra Surgery Center**

Dear Mr. Pottey:

Pursuant to the October 31<sup>st</sup>, 2018 comments from MPR Review meeting with Carson City Community Development staff, Lumos and Associates has prepared the following water and sewer impact reports to support the referenced Special Use Permit.

Carson Tahoe Health Regional Medical Center is an existing four-story 344,000 square foot hospital with a separate Central Utility Plant building. The hospital includes 144 acute patient beds, 24-hour emergency services (29 treatment rooms), surgery, imaging, lab, pharmacy, kitchen/cafeteria, administration and support services. The Sierra Surgery Hospital is a single-story 51,000 square foot building. The hospital includes 15 acute patient beds, surgery, imaging and support services. The existing hospitals are located on opposite sides of Eagle Valley Creek.

The proposed project consists of two parts. The first is to provide an approximate 6,600 square foot addition to the existing emergency department. This includes site work as required to rework existing parking and drive aisles impacted by the additions. The second is to construct an approximate 21,000 square foot expansion to the lower level of the Carson Tahoe Health Regional Medical Center and an approximate 1,625 square foot expansion to the Sierra Surgery Hospital to accommodate the relocation/expansion of the existing lab and support spaces. In addition, there will be an enclosed pedestrian connection over Eagle Valley Creek to the Sierra Surgery Hospital. This includes site work, as required, to modify the existing parking and drive aisles impacted by the additions.

The emergency department project adds square footage to both the north and west sides of the existing emergency department. The north addition provides for the relocation of existing staff support functions to accommodate the addition of eight (8) treatment rooms to the west.

The lower level addition at the Carson Tahoe Health Regional Medical Center adds 21,000 square feet to the south of the existing hospital and daylights to the exterior as the grade slopes away. The lower level houses support services for the hospital and is not accessed by the public. This begins the lower level of the pedestrian connector used for service and staff circulation to/from the Sierra Surgery Hospital. The upper level of the pedestrian connector will be used by patients/visitors and begins at the public concourse along the south side of the existing hospital. Once across Eagle Valley Creek, a stair and elevator take up the grade change between the two buildings (approximately 5'). At this point, the connector becomes a single story and enters at the north side of the Sierra Surgery Hospital. There is also a small addition to the hospital at this location. The site work associated with this project includes the modifications of the Fire Department access road along the south side of the Carson Tahoe Health Regional Medical Center, the addition of Fire Department turnaround at the

Sierra Surgery Hospital and the addition of approximately 41 new parking stalls to offset the loss of 29 existing parking stalls.

## **WATER**

The Carson Tahoe Hospital is currently served by public water, and will remain on public water after the expansion. An existing 12" water main is located on Medical Parkway. It is not anticipated that the proposed project will require any additional water infrastructure, other than the addition of fixtures within the hospital, and the relocation of an existing waterline that passes under the proposed connector.

Based on the looped nature of the system around Medical Parkway and the large demand that the existing system already supplies to the hospital, it is not anticipated that there will be any issues with fire flow for this expansion.

Water usage calculations have been performed based on section 12.01 of the Carson City Municipal Code to evaluate the impact of the hospital expansion on Carson City's water system. Calculations are attached to the back of this letter. Lumos & Associates (Lumos) acquired a billing statement from Carson City Utilities department from the last year to evaluate the current usage of the hospital (calculated at approximately 40,658 gallons per day (gpd)). Boulder and Associates (the architect responsible for this expansion project) has also provided the amount of existing fixtures within the hospital (942 fixtures), along with the amount of fixtures associated with the expansion (42 fixtures). Using the fixtures and existing demand of the hospital, it can be estimated that the addition of 42 fixtures will cause an increase of approximately 1,812 gpd, with the new estimated total usage of the hospital at 42,471 gpd.

Due to the size of the City System and the complexity of the interactions between the multiple pressure zones in the City, Lumos did not model the proposed improvements to verify the impact on the Carson City water system. With that being said, the inclusion of an additional average of 1,812 gpd, as compared to the existing demand of 40,658 gpd upon the system is not anticipated to cause a noticeable impact compared to the overall demands on the system, even in peak periods.

In summary, we feel that the expansion of the Carson Tahoe Hospital has no appreciable impact on the performance of the water system.

## **FIRE FLOW ANALYSIS**

Carson City staff has provided Lumos with fire flow data from two hydrants on Presti Lane and one on Silver Oak Drive (attached to the back of this letter). Per the attached fire flow tests there are no fire flow issues in the system.

The additional flow added to the water system does not add to the overall system fire protection requirements; therefore, with the existing system being able to supply the necessary fire flow there is not anticipated to be an impact to the water system in terms of fire flow requirements.

## **SANITARY SEWER CAPACITY**

The proposed improvements to the Carson Tahoe Hospital will continue to use the existing sewer service connections to the Carson City sewer system for collection and treatment. There may be

some minor modification to the system within the expansion footprint but the general flow direction and routing will not change.

Per the MPR letter, the City staff has identified two areas of potential concern downstream of the Carson Tahoe Hospital that may result in potential capacity challenges with additional flows generated by the new improvements. These capacity challenges are generated based on the City's sewer model.

These areas are identified as:

- N. Carson Street between Silver Oak and College Parkway – 10-inch main – 45% full
- College Parkway between Imperial Way and Northgate Lane – 12-inch main - 50% full which is defined as at capacity per City code.

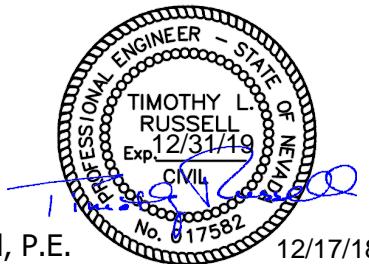
Based upon the water use estimates provided above, it is estimated that the additional sewer generated by the proposed project will be an increase of 1,812 gpd (1.26 gpm average; 5.03 gpm with a peaking factor of 4). This estimate and the methodology behind it have been provided to the Carson City public works staff for them to incorporate the data into the City's sewer model for determination of the impact on the existing facilities. At the time of this letter a final determination has not been made by City staff, via their sewer model, on downstream capacity.

However; as a comparison, a 12" PVC main at a minimum slope of 0.22% (Ten State Standards) has a flow capacity of 4875 gpm when 50% full and a maximum discharge of 10,488 gpm. Assuming an existing flow in a 12" pipe of 4875 gpm and adding an estimated peak additional flow of 5 gpm for a total flow of 4880 gpm, would result in the example 12-inch main still being at a capacity of 50% as the additional 5 gpm is only 0.001% of the total flow capacity at 50% full and really has no measureable impact.

We are still awaiting confirmation from the City their assessment of the impacts on the existing collection system with the estimated additional flows from the proposed project; however, based on the comparison example provided above it is not anticipated that the proposed project will cause a significant impact to the existing collection system which would result in the exceedance of existing capacity.

If you have any questions, do not hesitate to give me a call at 883-7077.

Sincerely,



Tim Russell, P.E.  
Group Manager – Engineering Division

**Carson Tahoe Hospital Expansion - Water Usage Calculations**

	Oct-18	Sep-18	Aug-18	Jul-18	Jun-18	May-18	Apr-18	Mar-18	Feb-18	Jan-18	Dec-17	Nov-17	Total - Last Year
Water Bill Volume Cost (\$)	3,474	6,601	5,966	5,733	4,984	3,357	3,389	2,775	3,816	3,936	4,056	5,306	53,391
Price Per 1,000 Gallons	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	42
Volume Used (Gallons per Month)	984,000	1,870,000	1,690,000	1,624,000	1,412,000	951,000	960,000	786,000	1,081,000	1,115,000	1,149,000	1,503,000	15,125,000
	Oct-18	Sep-18	Aug-18	Jul-18	Jun-18	May-18	Apr-18	Mar-18	Feb-18	Jan-18	Dec-17	Nov-17	Average - Last Year
Conversion - Gal/Month To Gal/Day	31,742	60,323	54,516	52,387	45,548	30,677	30,968	25,355	34,871	35,968	37,065	48,484	40,659

Total Existing Hospital Fixtures	942.00
Additional Hospital Fixtures	42.00
Calculated Gallons Per Day Per Fixture	43.16
<b>Calculated Existing Usage (GPD)</b>	<b>40,658.60</b>
<b>Usage of Expansion (GPD)</b>	<b>1,812.80</b>
<b>Total Usage after Expansion (GPD)</b>	<b>42,471.41</b>

# Fire Flow Test Data Sheet

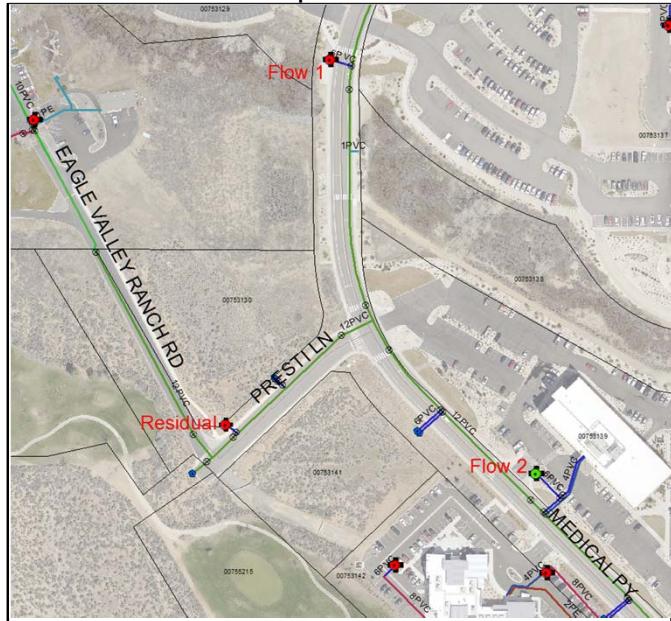


Location of Test (Street and Cross Street):	Medical Parkway and Presti	
Address Nearest Residual Hydrant:	1505 Medical Parkway	
Test Date: 3/10/2018	Test Time: 910	
Testing Personnel: MT, NR, JR, NB		
Pressure Zone: 5030	Main Size: 12"	
Comments:		

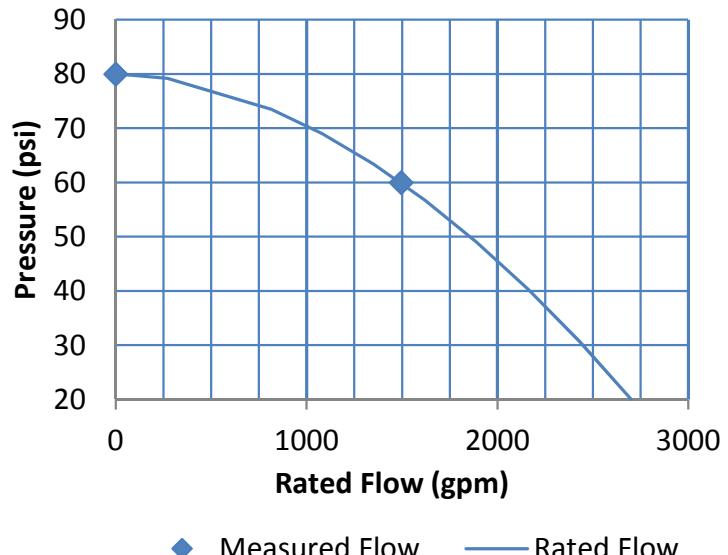
## Test Results:

Residual Hydrant		Flow Hydrant(s)				
Static:	80 psi	Hydrant Tester	Pitot Pressure (psi)	Discharge Diameter (in)	Outlet Coeff. (c)	Pitot Flow (gpm)
Residual:	60 psi					
Pressure Drop:	20 psi	Flow 1	HM2	25	2	1.307
	25 %	Flow 2	HM1	21	2	1.307
		Flow 3				
					Total	1495

Area Map



Rated Flow



Rated Pressure (for Rated Capacity Calculation) 20 psi

Rated Capacity at 20 psi residual pressure. 2,700 gpm

Based on NFPA 291 - 2016 Edition and APWA Manual 17 - Fourth Edition

Pursuant to NFPA 291, fire flow test data over five years old should not be used.

Hydrant OBJECTID:

FD Runbook Page: 205X00

Data Sheet File Name: MedicalParkway-Presti1.pdf



**CARSON CITY NEVADA**  
**Consolidated Municipality and State Capital**  
**PUBLIC WORKS**

**PUBLIC WORKS FIRE FLOW DATA SHEET\***

Testing Personnel: Nick B., Mike T., Curtis B.

Date of Test: 8-19-15 Time of Test: 9:15 Am

Requested By: Tom Grundy Phone: \_\_\_\_\_

Email address: tgrundy@caron.org

Test Locations: 1555 Medical Parkway  
 (Street and Cross Street)

Pressure Zone 5030

Comments: \_\_\_\_\_

Mainline Size: 12"

Pressure: Static (S) 75 PSI

Residual (R) 62 PSI

Pitot (P) 50 PSI

Pitot Flow Value 1115 GPM

Exit Coefficient (C) 0.845 Exit Diameter (inches) (D) 2.5"

$Q_F$  = Flow Quantity From Hydrant

$$Q_F = (29.84) \times (C) \times (D^2) \times (\sqrt{P})$$

$$Q_F = (29.84) \times (0.845) \times (2.5^2) \times (\sqrt{50})$$

$$Q_F = 1114 \text{ Gallons Per Minute}$$

Available Water Calculation:

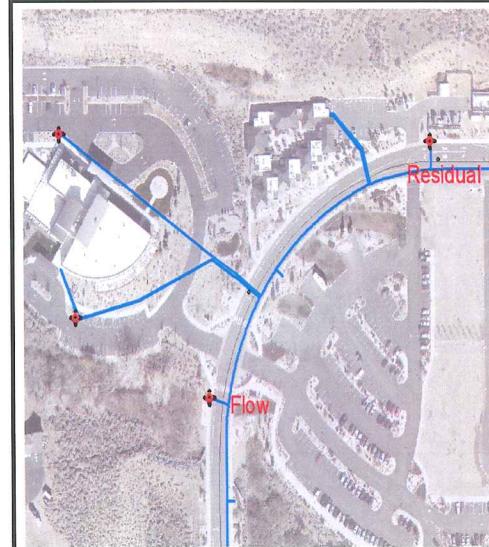
$$H_f = S - R$$

$$H_f = 75 - 62 = 13$$

$$H_r = S - 20$$

$$H_r = 75 - 20 \text{ PSI} = 55$$

$$Q_R = 2,400 \text{ G.P.M.} = \text{Total Available Water at 20 PSI Residual.}$$



\*Based on NFPA 291 – 2013 Edition

Updated 8/5/2013

Pursuant to NFPA 291 (2013 Edition) fire flow test data over 5 years old should not be used.

3505 Butti Way, Carson City, NV 89701 (775) 887-2355 FAX (775) 887-2112

Operations: Water, Sewer, Streets, Wastewater, Landfill, Environmental  
 Engineering, Transportation, Capital Projects

# Fire Flow Test Data Sheet

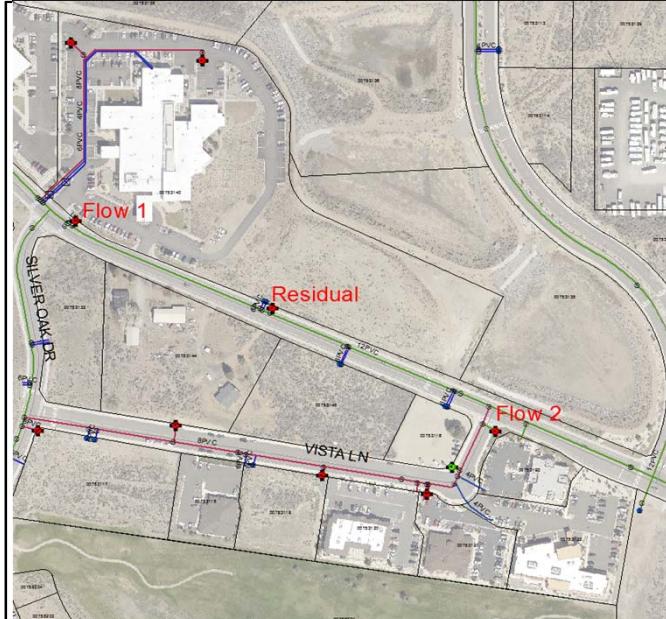


Location of Test (Street and Cross Street): Medical Parkway and SilverOakDr  
 Address Nearest Residual Hydrant: 1380 Medical Parkway  
 Test Date: 4/18/2018 Test Time: 910  
 Testing Personnel: MT, NB, NR, JR  
 Pressure Zone: 5030 Main Size: 12"  
 Comments: \_\_\_\_\_

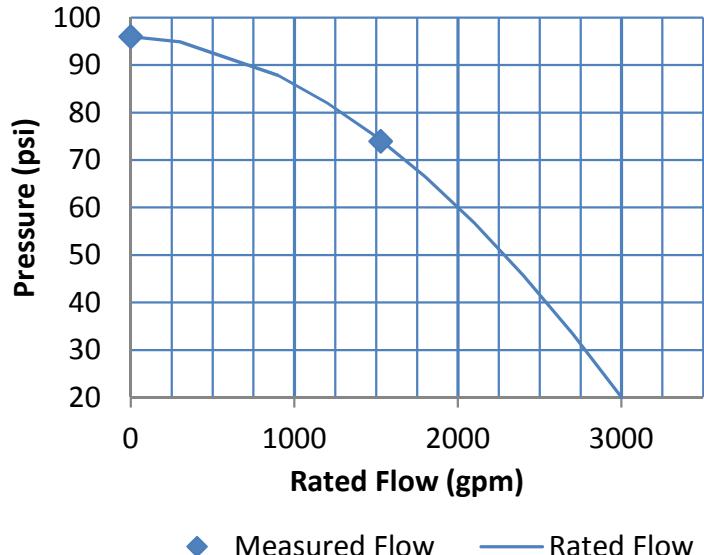
## Test Results:

Residual Hydrant		Flow Hydrant(s)				
Static:	96 psi	Hydrant Tester	Pitot Pressure (psi)	Discharge Diameter (in)	Outlet Coeff. (c)	Pitot Flow (gpm)
Residual:	74 psi		24	2	1.307	764
Pressure Drop:	22 psi 23 %	Flow 1	HM2	24	1.307	764
		Flow 2	HM1	2		
		Flow 3				
					Total	1529

Area Map



Rated Flow



Rated Pressure (for Rated Capacity Calculation) 20 psi

Rated Capacity at 20 psi residual pressure. 3,000 gpm

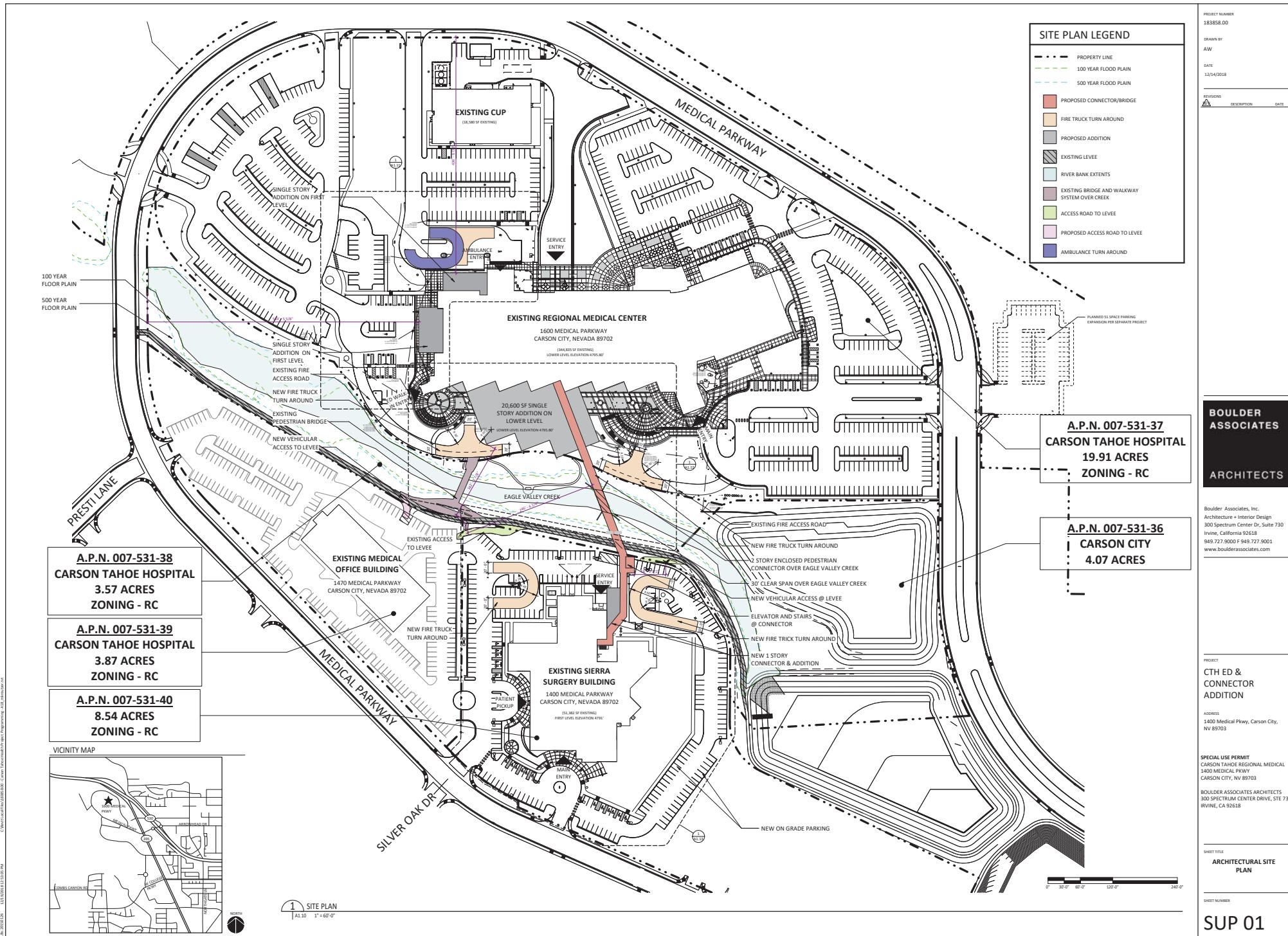
Based on NFPA 291 - 2016 Edition and APWA Manual 17 - Fourth Edition

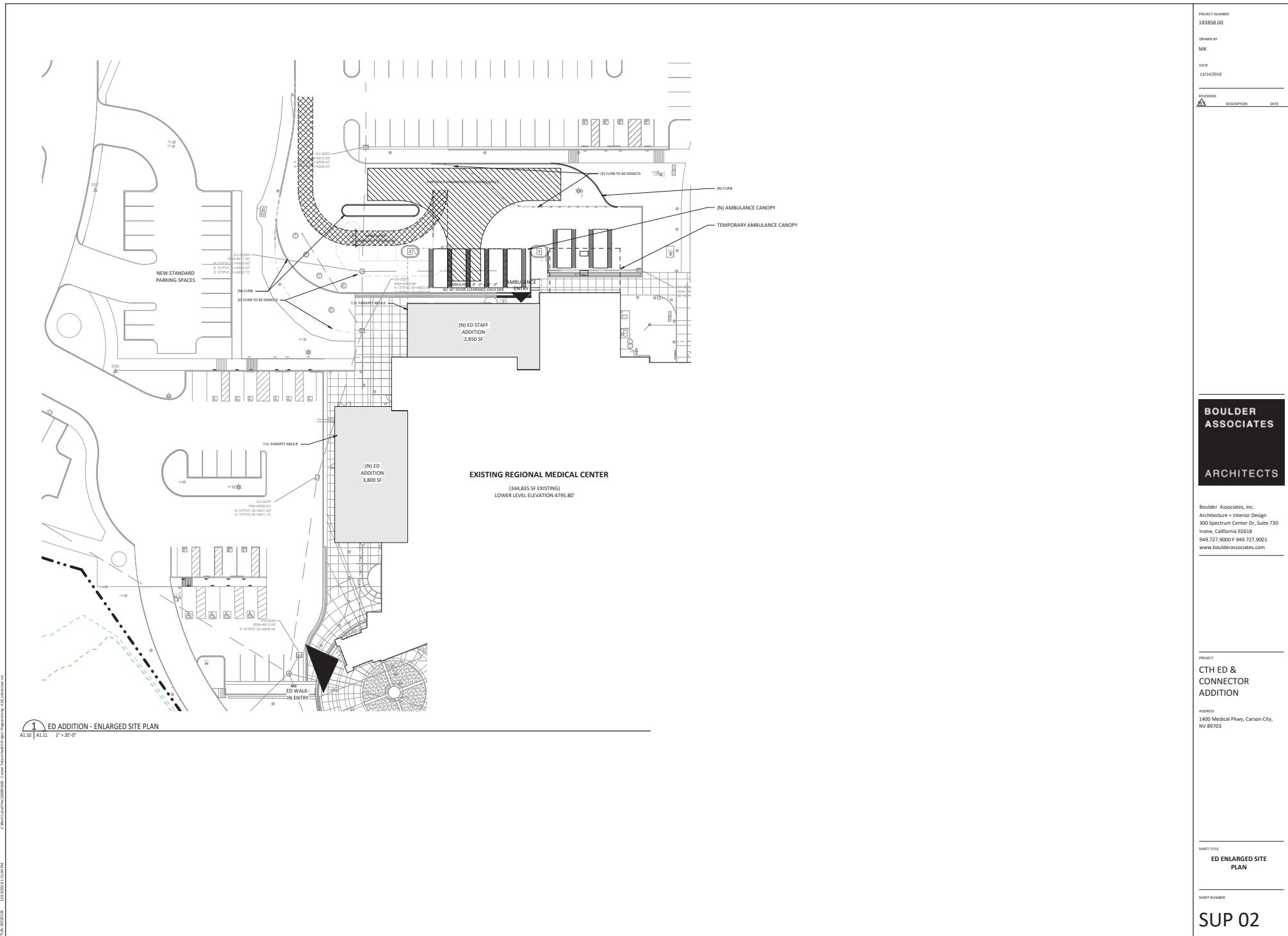
Pursuant to NFPA 291, fire flow test data over five years old should not be used.

Hydrant OBJECTID: 2463

FD Runbook Page: 205X00

Data Sheet File Name: SilverOakDr-MedicalParkway.pdf





OBJECT NUMBER  
3858.00

K

14/2018

DESCRIPTION DATE

BOULDER  
ASSOCIATES

## ARCHITECTS

Boulder Associates, Inc.  
Architecture + Interior Design  
10 Spectrum Center Dr, Suite 730  
Irvine, California 92618  
(949) 727.9000 F (949) 727.9001  
[www.boulderassociates.com](http://www.boulderassociates.com)

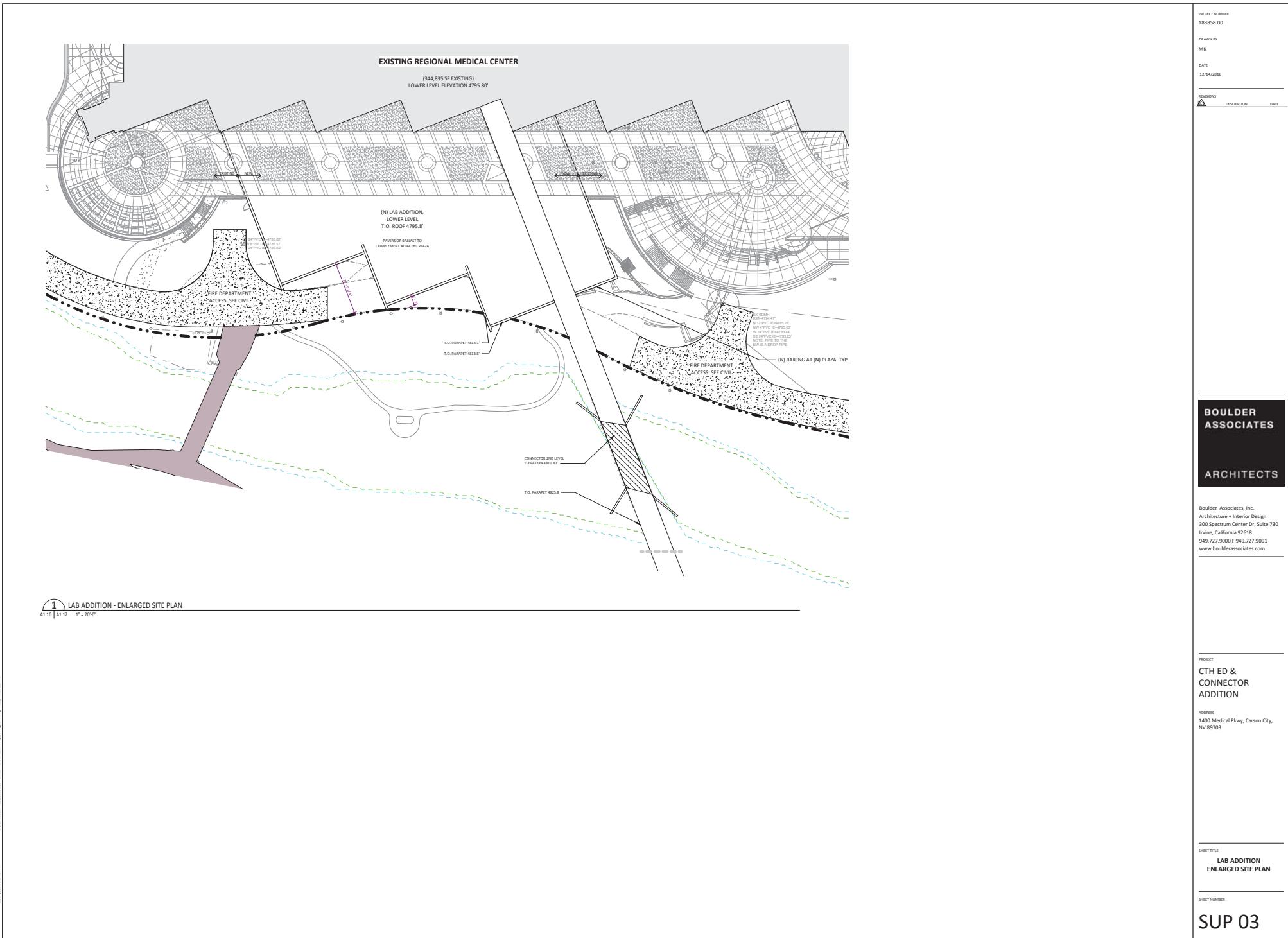
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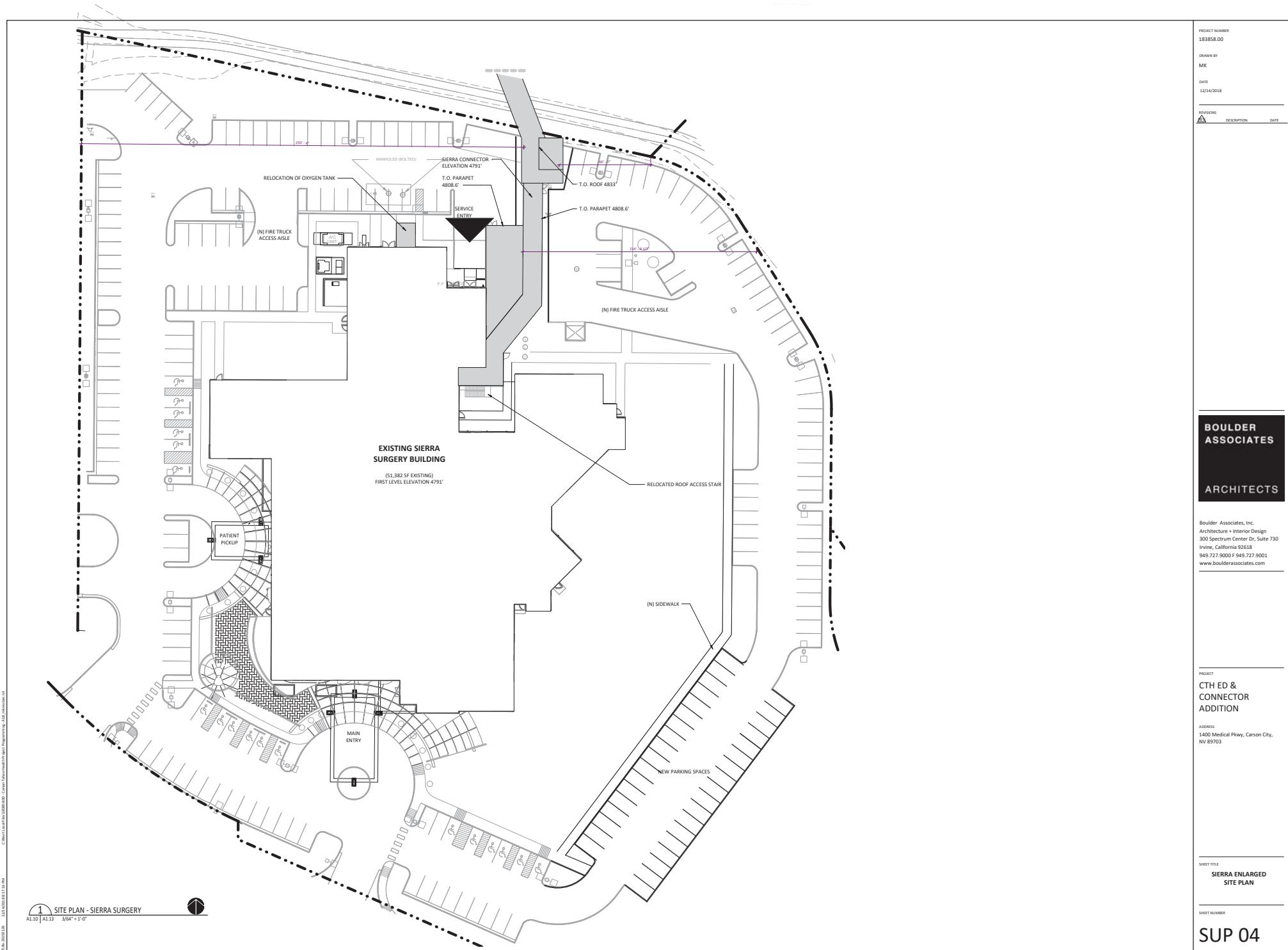
100 Medical Pkwy, Carson City,  
89703

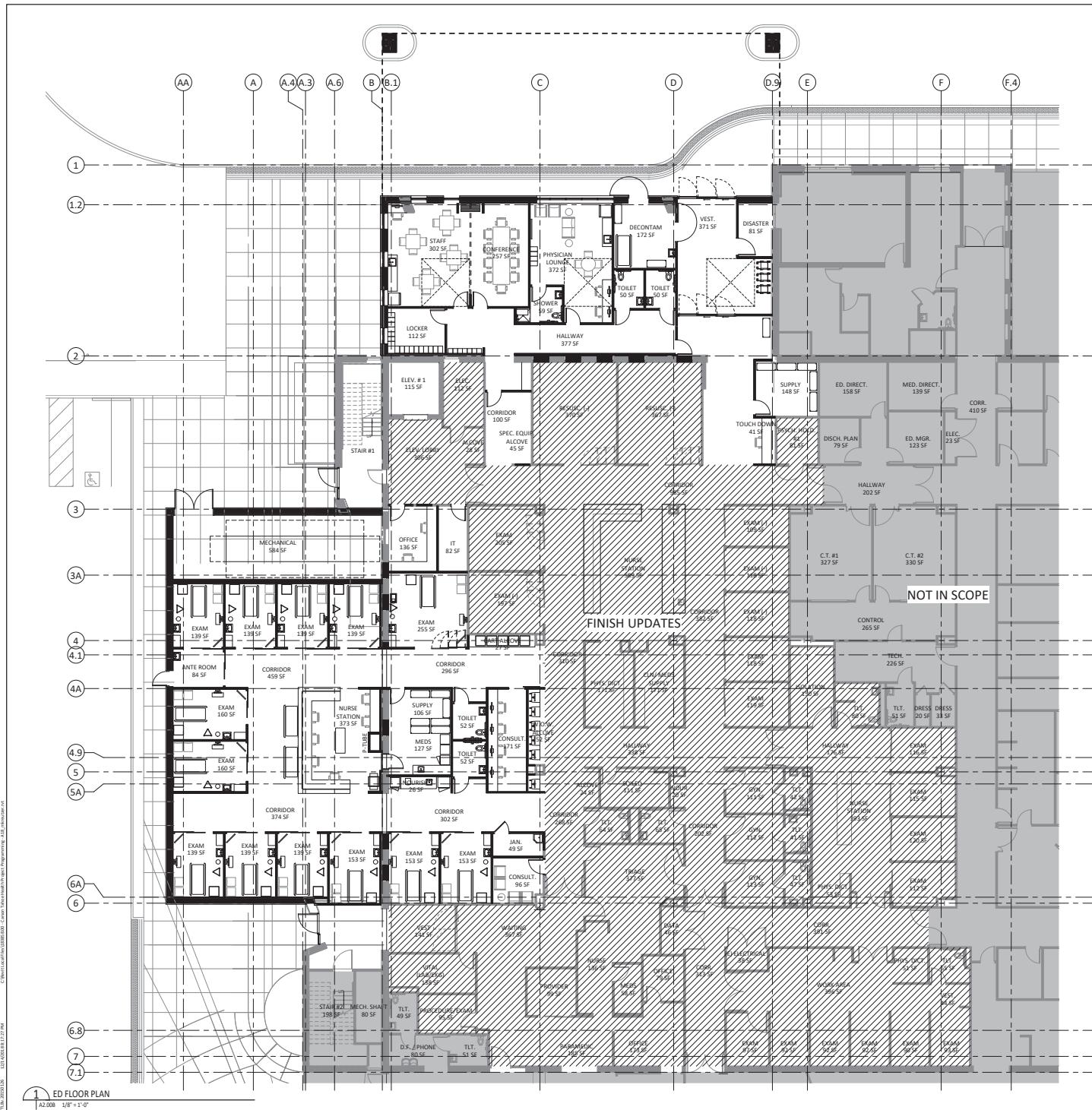
ED ENLARGED SITE  
PLAN

STREET NUMBER

SUP 02







PROJECT NUMBER  
183858.00

DRAWN BY  
MK

DATE

REVISIONS

BOULDER  
ASSOCIATES

ARCHITECTS

Boulder Associates, Inc.  
Architecture + Interior Design  
300 Spectrum Center Dr, Suite 730  
Irvine, California 92618  
949.727.9000 F 949.727.9001  
[www.boulderassociates.com](http://www.boulderassociates.com)

## PROJECT CTH ED & CONNECTOR ADDITION

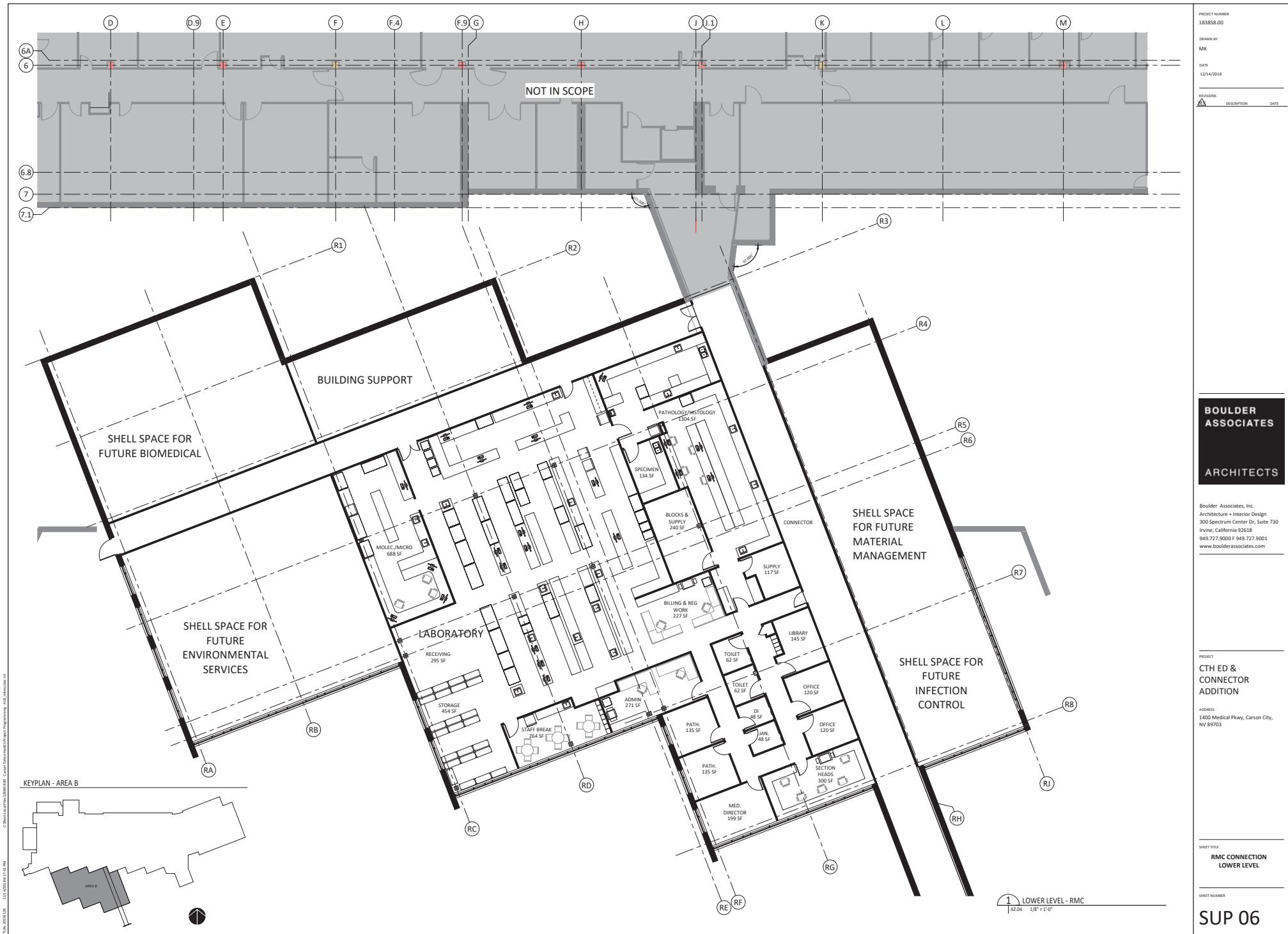
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1400 Medical Pkwy, Carson City,  
NV 89703

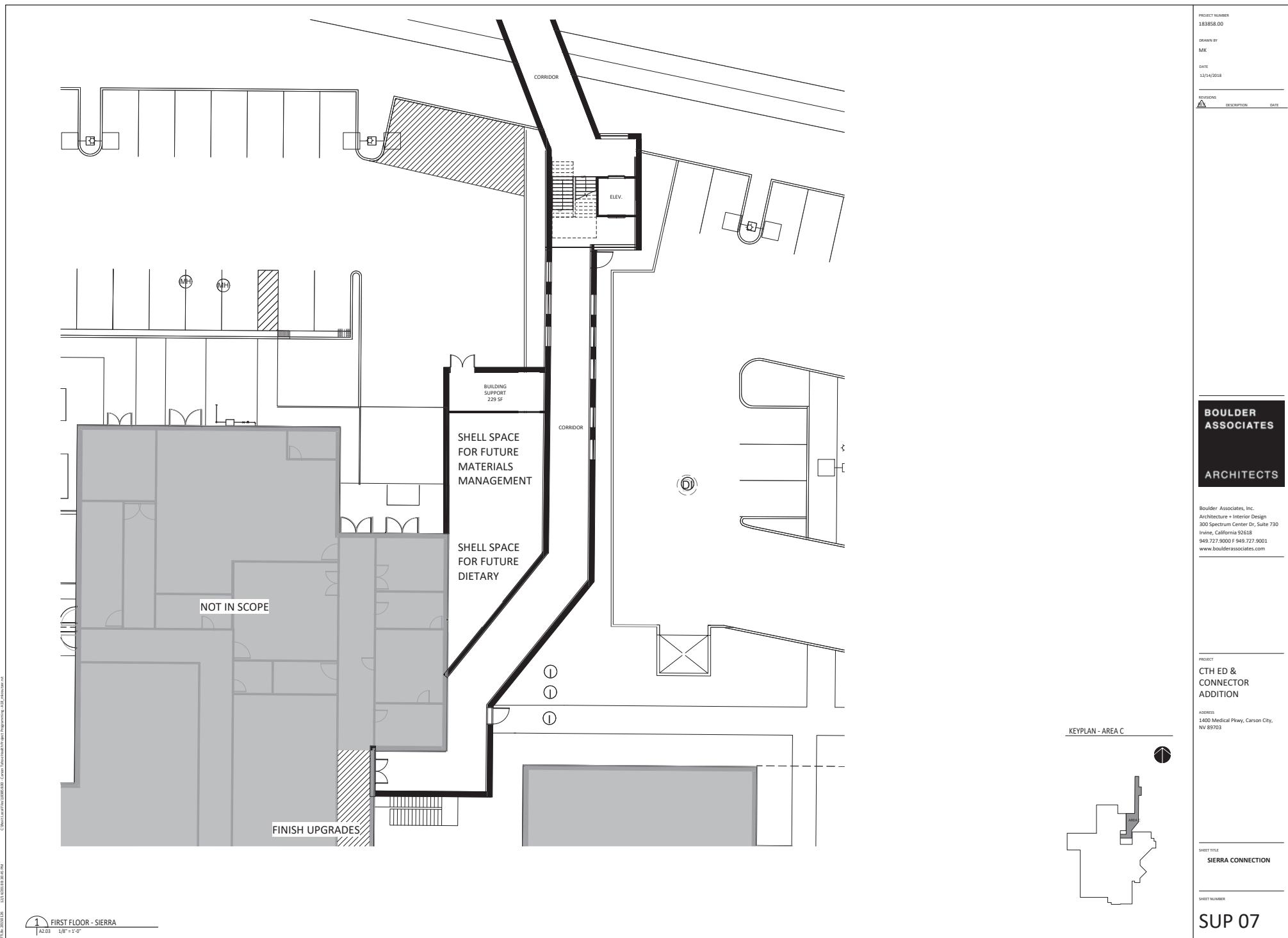
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**SHEET TITLE**

SHEET NUMBER

SUP 05







CONNECTOR PERSPECTIVE - EAST



CONNECTOR PERSPECTIVE - WEST

PROJECT NUMBER  
183858.00  
DRAWN BY  
MK  
DATE  
12/14/2018  
REVISIONS  
A DESCRIPTION DATE

**BOULDER  
ASSOCIATES**

**ARCHITECTS**

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300 Spectrum Center Dr, Suite 730  
Irvine, California 92618  
949.727.9000 | 949.727.9001  
[www.boulderassociates.com](http://www.boulderassociates.com)

PROJECT  
**CTH ED &  
CONNECTOR  
ADDITION**

ADDRESS  
1400 Medical Pkwy, Carson City,  
NV 89703

SHEET TITLE  
**PERSPECTIVE VIEWS**

SHEET NUMBER

**SUP 08**

