

October 8, 2026

VIA ONENV.US

Washoe County Community Services Department
Planning and Building
1001 E. Ninth Street, Building A
Reno, Nevada 89512-2845

Womble Bond Dickinson (US) LLP

One East Liberty Street
Suite 300
Reno, NV 89501-2128

Garrett Gordon
Partner
Direct Dial: 775-321-3420
Direct Fax: 775.823.2929
E-mail: Garrett.Gordon@wbd-us.com

RE: Special Use Permit Application
Crystal Bay Club Seasonal Rooftop Venue
14 State Route 28, Crystal Bay, Nevada 89402
APN 123-042-15

Dear Planning and Building Staff:

On behalf of Crystal Bay Casino LLC, as applicant, and Miracle Investments LLC, as property owner, we respectfully submit the enclosed Special Use Permit application and supporting materials for the proposed Crystal Bay Club Seasonal Rooftop Venue located at 14 State Route 28 in Crystal Bay, Nevada. The application seeks authorization to convert the rooftop of the existing parking garage into a seasonal outdoor event venue.

The proposed venue would have a maximum capacity of approximately 3,000 attendees and would operate on a limited seasonal basis, with no more than approximately 10 events per year. The project includes a temporary/seasonal stage and truss system, together with new entry and exit stairs, an ADA-accessible elevator, and associated electrical and life-safety improvements.

The application package includes the completed development and Special Use Permit application materials, property-owner authorization materials, site and architectural plans, a transportation analysis, a detailed Parking Management Plan, an amplified music noise assessment, and a lighting design narrative with photometric analysis and fixture information.

The supporting studies have been prepared to evaluate and address the principal potential effects associated with operation of the venue. The transportation analysis concludes that the project provides adequate parking under Washoe County's parking methodology and that level of service at all study intersections remains acceptable with the proposed project. The Parking Management Plan establishes reservation-based onsite parking, free off-site shuttle service, rideshare and drop-off management, event-day monitoring, and other operational measures intended to manage traffic and parking demand.

The noise assessment evaluates amplified music through an event simulation and concludes that, subject to the operational controls identified in the assessment, proposed events are expected to satisfy the applicable 60 dBA CNEL standard at the evaluated community locations. Those controls include



limiting amplified events to approximately four hours, concluding amplified music no later than 10:00 p.m., and monitoring sound-system operating levels during events.

The lighting materials similarly address potential impacts to neighboring properties and Lake Tahoe. The permanent lighting design incorporates controlled and shielded fixtures, while the lighting narrative establishes operational criteria for temporary theatrical and event lighting intended to minimize light trespass, glare, skyward illumination, and off-site impacts.

We respectfully request that Washoe County Planning and Building accept the enclosed materials for processing and review of the Special Use Permit application. Please direct any questions regarding this submittal or requests for supplemental information to the undersigned.

Thank you for your consideration of this application.

Sincerely,

WOMBLE BOND DICKINSON (US) LLP

A handwritten signature in dark ink, reading "Garrett D. Gordon" in a fluid, cursive script.

Garrett D. Gordon

On behalf of Crystal Bay Casino LLC

GG/am



Enclosure List

Crystal Bay Club Seasonal Rooftop Venue Special Use Permit Application

Washoe County Special Use Permit Application

Site Plan and Architectural Plans, prepared by K2 Engineering and Structural Design, dated September 23, 2026, consisting of nine sheets and depicting the proposed rooftop venue, stairs, ADA elevator, exiting, and related improvements.

Crystal Bay Casino Rooftop Concert Venue – Transportation Analysis, prepared by LSC Transportation Consultants, Inc., dated October 6, 2026, including supporting level-of-service descriptions and calculations.
Crystal Bay Casino – Rooftop Concert Venue Parking Management Plan, dated October 6, 2026.

Amplified Music Noise Assessment, Crystal Bay Club Parking Structure Events, prepared by Bollard Acoustical Consultants, Inc., dated September 30, 2026, including appendices, noise survey materials, and event-simulation results.

Crystal Bay Club Rooftop Entertainment Venue Lighting Design Narrative, dated October 2, 2026.

Crystal Bay Club Rooftop Entertainment Venue Lighting Photometrics, Drawing No. 26168, dated October 1, 2026.

Lighting Cut Sheets, Crystal Bay Rooftop Entertainment Venue, dated October 2, 2026, including specifications for the proposed exterior lighting fixtures.

Special Use Permits

Washoe County Code (WCC) Chapter 110, Article 810, Special Use Permit, provides a method of reviewing proposed uses as listed in Article 302, Allowed Uses, which possess characteristics that require special appraisal in order to determine if the uses have the potential to adversely affect other land uses, transportation systems, or public facilities in the vicinity. The Planning Commission, Board of Adjustment, or Hearing Examiner may require conditions of approval necessary to eliminate or minimize, to an acceptable level, any potentially adverse effects of the use. See WCC 110.810, for further information

Development Application Submittal Requirements

Applications are accepted on the 8th of each month. If the 8th falls on a non-business day, applications will be accepted on the next business day.

If you are submitting your application online, you may do so at [OneNV.us](https://www.onenv.us)

1. **Fees:** See Master Fee Schedule. **Most payments can be made directly through the OneNV.us portal.** If you would like to pay by check, please make the check payable to Washoe County and bring your application and payment to the Community Services Department (CSD).
2. **Development Application:** A completed Washoe County Development Application form.
3. **Owner Affidavit:** The Owner Affidavit must be signed and notarized by all owners of the property subject to the application request.
4. **Proof of Property Tax Payment:** The applicant must provide a written statement from the Washoe County Treasurer's Office indicating all property taxes for the current quarter of the fiscal year on the land have been paid.
5. **Neighborhood Meeting:** This project may require a Neighborhood Meeting to be held prior to application submittal. Please contact Washoe County Planning at Planning@washoecounty.gov or by phone at 775-328-6100 to discuss requirements.
6. **Application Materials:** The completed Special Use Permit Application materials.
7. **Proposed Site Plan Specifications (Special Use Permit and Stables):**
 - a. Lot size with dimensions drawn using standard engineering scales (e.g. scale 1" = 100', 1" = 200', or 1" = 500') showing all streets and ingress/egress to the property.
 - b. Show the location and configuration of all existing and proposed buildings (with distances from the property lines and from each other), all existing buildings that will remain (with distances from the property lines and from each other), all existing buildings that will be removed, and site improvements on a base map with existing and proposed topography expressed in intervals of no more than five (5) feet.
 - c. Show the location and configuration of wells and well houses, septic systems and leach fields, overhead utilities, water and sewer lines, and all existing and proposed easements.
 - d. Show locations of parking, landscaping, signage and lighting.
 - e. The cross sections of all rights-of-way, streets, alleys or private access ways within the proposed development, proposed name and approximate grade of each, and approximate radius of all curves and diameter of each cul-de-sac.
 - f. Property boundary lines, distances and bearings.
 - g. Contours at five (5) foot intervals or two (2) foot intervals where, in the opinion of the County Engineer, topography is a major factor in the development.
 - h. Indication of prominent landmarks, rock outcroppings, and natural foliage which will be deciding considerations in the design of the development.

- i. If any portion of the land within the boundary of the development is subject to inundation or storm water overflow, as shown on the adopted Federal Emergency Management Agency's Flood Boundary and Floodway Maps, that fact and the land so affected shall be clearly shown on the map by a prominent note on each sheet, as well as width and direction of flow of each water course within the boundaries of the development.
 - j. Existing and proposed roads, trails or rights-of-way within the development shall be designated on the map. Topography and existing developments within three hundred (300) feet must also be shown on the map.
 - k. Vicinity map showing the proposed development in relation to Interstate 80, Highway 395, I-580, or a major arterial. The vicinity map shall also include a north arrow.
 - l. Date, scale, and number of each sheet in relation to the total number of sheets, and the name of the person preparing the plans.
 - m. Location of snow storage areas sufficient to handle snow removed from public and private street, if above 5,500 feet.
 - n. All known areas of potential hazard (and the basis for delineation) shall be clearly designated on the map. Additionally, active fault lines (post-Holocene) shall be delineated on the map.
 - o. Location of areas with slopes greater than fifteen percent (15%) and thirty percent (30%).
 - p. Boundary of any wetland areas and/or floodplains within the project site.
 - q. Note by the project engineer or design professional indicating compliance with all applicable provisions of the Washoe County Development Code.
 - r. Significant Hydrological Resources. Indicate the critical and sensitive buffer zones according to Article 418 of the Washoe County Development Code.
8. **Site Plan Specifications for Grading:**
- a. Location and limits of all work to be done.
 - b. Existing contours and proposed contours.
 - c. Location of any structures on adjacent parcels that are within fifteen (15) feet of the work site's parcel boundary.
 - d. Existing draining (natural and man-made) and proposed drainage patterns.
 - e. Sufficient elevation data to show the drainage will work as proposed.
 - f. Quantities of excavation fill and disturbed surface area shall be calculated and shown on the site plan. **Areas under buildings and pavement need not be included in these calculations.**
 - g. Quantities of material proposed to be removed from the site must be shown. The proposed disposal area and the disposition of fill must be noted on the plan.
 - h. Limiting dimensions of cut and fill.
 - i. Proposed BMPs (Best Management Practices) for controlling water and wind erosion if a disturbed area is left undeveloped for more than thirty (30) days.
 - j. Cut and fill slopes setback from the property boundary.
 - k. Structure setbacks from a slope.
9. **Grading:** In accordance with the grading provisions of Washoe County Code, Article 438, if the thresholds for a grading permit are met or exceeded, the grading plans shall indicate the existing and proposed grades, slope treatments (i.e. rip rap, erosion control, etc.) and drainage channels and the direction of flow. **Cross sections must be provided at a minimum of two key locations.**
9. **Traffic Impact Report (Special Use Permit and Stables):** Traffic impact reports are required whenever the proposed development project will generate 80 or more weekday peak hour trips as determined using the latest edition Institute of Transportation Engineers (ITE) trip generation rates or other such sources as may be accepted by Washoe County Engineering. Projects with less than 200 peak hour trips may not need to perform an impact analysis for future years. Traffic consultants are

encouraged to contact Washoe County Engineering and Capital Projects staff prior to preparing a traffic impact report.

10. **Landscaping:** Landscape plans may be required, for **stables**. Landscape plans may include: a soils evaluation; color and type of building material, such as fencing material; type of plant material; location of plant material and proposed maintenance schedule; size of plant material at planting and size of plant material at full maturation; type and amount of mulch material; and an irrigation plan.
 - a. **Planting Plan Specifications:** The planting plan must include all necessary information to satisfy Washoe County Code Section 110.412.60, Planting Standards.
 - Proposed Tree Locations. Individual trees shall be graphically depicted in the proposed locations; trees shall be identified as either evergreen or deciduous; trees shall be individually labeled or coded and cross referenced to the proposed plant species in the plant legend.
 - Proposed Plant Material. The preliminary plan must identify where, and a square footage amount for, one or all of the following items: trees, mulch (rock, DG or bark), seeded areas, etc.
 - Existing On-Site Vegetation. In the case of large strands of trees and shrubs, individual locations may be identified with a revision cloud symbol. Smaller numbers or strands of trees (six (6) inch caliper and greater) shall be identified individually. Shrub areas and other forms of vegetation such as grasses shall be identified with a revision cloud symbol.
 - Plant Legend. Legend shall include all proposed plant material, including the following: common name, botanical name, size at planting, spacing and quantity (of trees only).
 - Landscape Area Legend. A summary of proposed areas and their square footages shall include: lawn, existing and or proposed paving, existing trees to be preserved, existing trees to be removed and the amount of proposed shrubs.
 - b. **Irrigation Plan Specifications:** The irrigation plan must include all necessary information to satisfy Washoe County Code Section 110.412.65, Irrigation Standards.
 - Location, size, and specifications of water source(s), water mains, meter(s), valves, and the controller.
 - Temporary or permanent water irrigation systems.
 - Specifications of irrigation equipment identified by manufacturer's name and equipment identification number.
 - An approved backflow prevention device is required on all landscape irrigation systems.
11. **Signage Plan:** The signage plans shall include sign elevations and delineate location, height, style, dimensions, intensity of sign lighting and finish of any proposed signage:
12. **Lighting Plan:** Show the location and configuration of all proposed exterior lighting including a detail of the parking lot light fixtures, pole heights, security lighting, and wall mounted illumination fixtures. Parking lot areas shall be depicted showing lumen isolines demonstrating compliance with the provisions of the Washoe County Development Code.
13. **Building Elevations:** All buildings and structures including fences, walls, poles and monument signs proposed for construction within the project shall be clearly depicted in vertical architectural drawings provided in accurate architectural scale. All architectural elevations from all building faces shall be presented.
14. **Submission Packets:** Two (2) packets and a flash drive. One (1) packet must be labeled "Original" and contain a signed and notarized Owner Affidavit. Any digital documents need to have a resolution of 300 dpi. If materials are unreadable, you will be asked to provide a higher quality copy. The packet shall include one (1) 8.5" x 11" reduction of any applicable site plan, development plan, and/or application map. Labeling on these reproductions should be no smaller than 8 point on the 8.5" x 11" display. Large format sheets should be included in a slide pocket(s). Any specialized reports identified above shall be included as attachments or appendices and be annotated as such.

Notes:

- (i) Application and map submittals must comply with all specific criteria as established in the Washoe County Development Code and/or the Nevada Revised Statutes.
- (ii) Appropriate map engineering and building architectural scales are subject to the approval of the Planning and Building and/or Engineering and Capital Projects.
- (iii) All oversized maps and plans must be folded to a 9" x 12" size.
- (iv) Based on the specific nature of the development request, Washoe County reserves the right to specify additional submittal packets, additional information and/or specialized studies that clarify the potential impacts and potential conditions of development in order to minimize or mitigate impacts resulting from the project. No application shall be processed until the information necessary to review and evaluate the proposed project is deemed complete by the Director of Planning and Building.
- (v) **Labels:** The applicant is required to submit a list of mailing addresses for every tenant residing in a mobile home park that is within five hundred (500) feet of the proposed project (or within seven hundred fifty (750) feet of the proposed project if the proposed project is a project of regional significance).
- (vi) Please be advised that the Washoe County Director of Planning and Building or their designee, Washoe County Board of Adjustment, and/or Washoe County Planning Commission have the ability to determine an application incomplete if they cannot ascertain what the applicant is requesting, or if there is insufficient information to determine a favorable outcome.

Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

Project Information		Staff Assigned Case No.: _____	
Project Name: Crystal Bay Club Seasonal Rooftop Venue			
Project Description: Crystal Bay Casino is planning on converting the rooftop of the parking garage into a seasonal event space for approximately 3,000 people. The project includes construction of a stage and truss which will have a sun shade that will be used in the summer but removed in the off-season.			
Project Address: 14 NV-28, Crystal Bay, NV 89402			
Project Area (acres or square feet): 54,083 s.f.			
Project Location (with point of reference to major cross streets AND area locator): The roof top of the parking garage located at the Crystal Bay Casino located at 14 NV-28, Crystal Bay, NV 89402			
Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
123-042-15	127,446 sq ft		
Indicate any previous Washoe County approvals associated with this application: Case No.(s).			
Applicant Information (attach additional sheets if necessary)			
Property Owner:		Professional Consultant:	
Name: Miracle Investments LLC		Name: Garrett Gordon	
Address:		Address:	
Zip:		Zip:	
Phone:	Fax:	Phone:	Fax:
Email:		Email:	
Cell:	Other:	Cell:	Other:
Contact Person:		Contact Person:	
Applicant/Developer:		Other Persons to be Contacted:	
Name: Crystal Bay Casino LLC		Name: A.J. Martinez	
Address:		Address:	
Zip:		Zip:	
Phone:	Fax:	Phone:	Fax:
Email:		Email:	
Cell:	Other:	Cell:	Other:
Contact Person:		Contact Person:	
For Office Use Only			
Date Received: Initial:		Planning Area:	
County Commission District:		Master Plan Designation(s):	
CAB(s):		Regulatory Zoning(s):	

OPERATING AGREEMENT
FOR
MIRACLE INVESTMENTS, LLC
(A Nevada Limited Liability Company)

THIS OPERATING AGREEMENT is made and entered into as of October 23, 2002, by and among MIRACLE INVESTMENTS, LLC, a Nevada Limited Liability Company (the "Company") and the persons executing this Operating Agreement as members of the Company and all of those who shall hereafter be admitted as members (individually, a "Member" and collectively, the "Members") who agree as follows:

ARTICLE I

ORGANIZATION

1.1 Formation. The Company has been organized as a Nevada Limited Liability Company under and pursuant to the Nevada Limited Liability Company Act (Chapter 86 of the Nevada Revised Statutes) (the "Act") by the filing of Articles of Organization ("Articles") with the Secretary of State of the state of Nevada as required by the Act.

1.2 Name. The name of the Company shall be MIRACLE INVESTMENTS, LLC. The Company may also conduct its business under one or more assumed names.

1.3 Purposes. The purposes of the Company are to engage in any activity for which Limited Liability Companies may be formed under the Act, specifically including, but not limited to, the following:

- a. To engage in any lawful activity.
- b. To do any and all things and carry on all other activities necessary or incidental to the accomplishment of the foregoing purpose or for the protection of the Company's interests.
- c. To raise capital, borrow funds, and to take all necessary and reasonable steps to insure that the Company has adequate working capital to carry out the purpose of the Company set forth above.

The Company shall have all the powers necessary or convenient to affect any purpose for which it is formed, including all powers granted by the Act.

1.4 Duration. The Company shall continue in existence for the period fixed in the Articles for the duration of the Company of thirty (30) years or until the Company shall be sooner dissolved and its affairs wound up in accordance with the Act or this Operating Agreement.

1.5 Registered Office and Resident Agent. The Registered Office and Resident Agent of the Company shall be as designated in the initial Articles or any amendment thereof. The Registered Office and/or Resident Agent may be changed from time to time. Any such change shall be made in accordance with the Act. If the Resident Agent shall ever resign, the Company shall promptly appoint a successor.

1.6 Intention for Company. The Members have formed the Company as a Limited Liability Company under and pursuant to the Act. The Members specifically intend and agree that the Company not be a partnership (including, a limited partnership) or any other venture, but a Limited Liability Company under and pursuant to the Act. No Member or Manager, if any, shall be construed to be a partner in the Company or a partner of any other Member, Manager or person and the Articles, this Operating Agreement and the relationships created thereby and arising therefrom shall not be construed to suggest otherwise.

ARTICLE II

BOOKS, RECORDS AND ACCOUNTING

2.1 Books and Records. The Company shall maintain complete and accurate books and records of the Company's business and affairs as required by the Act and such books and records as shall be kept at the Company's Registered Office.

2.2 Fiscal Year; Accounting. The Company's fiscal year shall have a calendar year-end. The particular accounting methods and principles to be followed by the Company shall be selected by the Manager from time to time.

2.3 Reports. The Manager shall provide monthly reports, if deemed necessary, concerning the financial condition and results of operation of the Company and the Capital Accounts of the Members to the Members in the time, manner and form as the Manager determines. Financial reports shall be provided at least annually as soon as practicable after the end of each fiscal year and shall include a statement of each Member's share of profits and other items of income, gain, loss, deduction and credit. In addition to annual reports, the Manager shall provide the Members, on a monthly basis, if deemed necessary, progress reports on any projects undertaken since the previous report.

2.4 Member's Accounts. Individual Capital Accounts for each Member shall be maintained by the Company. Each Member's Capital Account shall reflect the Member's capital contributions and increases for the Member's share of any net income or gain of the Company. Each Member's Capital Account shall also reflect decreases for distributions made to the Member and the Member's share of any losses and deductions of the Company.

ARTICLE III

CAPITAL CONTRIBUTIONS

3.1 Initial Commitments and Contributions. By the execution of this Operating Agreement, the initial Members hereby agree to make the capital contributions set forth in the attached Exhibit A. The Initial Capital Contributions as set out herein shall be made simultaneous with the signing of this agreement. The interests of the respective Members in the total capital of the Company (their respective "Sharing Ratios") are also set forth in Exhibit A. No interest shall accrue on any capital contribution and no Member shall have any right to withdraw or to be repaid any capital contribution except as provided in the Operating Agreement. A Member's sharing ratio may not be diluted without the unanimous consent of all the Members, except as otherwise provided below.

3.2 The foregoing amounts shall be the minimum balance required to be maintained in each Member's capital account. Capital account balances shall be adjusted at the end of each quarter.

3.3 If either Member fails to pay or convey its initial contribution to the Company's capital at the time and in the form and amount required by this Operating Agreement, the Company shall immediately dissolve and the Member who has paid or conveyed all or any portion of its initial contribution to the Company's capital shall be entitled to a return of the funds and properties contributed, unless the Members shall have entered into a written agreement requiring an alternative procedure for continuing the Company, in which case that alternative procedure shall be followed. Except as provided herein, no Member shall withdraw any portion of the Company's capital without express written consent of the other.

3.4 Each Member grants the other a lien on its interest in the Company to secure payment of contributions and performance of obligations required under this Operating Agreement.

3.5 No Member shall lend or advance money to or for the Company's benefit without the written approval of the other Member. The loaned amount shall not be regarded as an increase in the lending Member's capital, and it shall not entitle the lending Member to any increased share of the Company's profits.

ARTICLE IV

ALLOCATIONS AND DISTRIBUTIONS

4.1 Allocations. Except as may be required by the Internal Revenue Code of 1986 as amended or this Operating Agreement, net profits, net losses and other items of income, gain, loss, deduction and credit of the Company shall be allocated among the Members in accordance with their Sharing Ratios.

4.2 Distributions. The Manager may make distributions to the Members from time to time. Distributions may be made only after the Manager determines in his reasonable judgment, that the Company has sufficient cash on hand which exceeds the current and the anticipated needs of the Company to fulfill its business purposes (including, needs for operating expenses, debt service, acquisitions, reserves and mandatory distributions, if any). All distributions shall be made to the Members in accordance with their Sharing Ratios. Distributions shall be in cash or property or partially in both, as determined by the Manager. No distribution shall be declared or made if, after giving it effect, the Company would not be able to pay its debts as they become due in the usual course of business or the Company's total assets would be less than the sum of its total liabilities plus, the amount that would be needed if the Company were to be dissolved at the time of the distribution, to satisfy the preferential rights of other Members upon dissolution that are superior to the rights of the Members receiving the distribution. All distributions in kind shall be valued at the asset's fair market value as determined by independent third party appraisals or as otherwise mutually agreed upon by the Members.

In the event that distributions paid during any calendar year to either Member exceed that Member's share of the profits of the Company for such calendar year as finally computed, such Member shall pay to the Company the excess of such distributions paid during such calendar year over such Member's distributive share of the profits of the Company for such calendar year.

ARTICLE V

DISPOSITION OF MEMBERSHIP INTERESTS

5.1 General. Except as otherwise provided in this Operating Agreement, no Member may sell, assign, transfer, encumber, or otherwise dispose of any Company interest, Company property, or Company assets without prior written consent of the other Member, and shall not pass title to any Company interest or property in the absence of such consent. No membership interest shall be disposed of if the disposition would cause a termination of the Company under the Internal Revenue Code of 1986, as amended; without compliance with any and all state and federal securities laws and regulations; and, unless the assignee of the membership interest provides the Company with the information and agreements that the Company Manager may require in connection with such disposition. Any transfer prohibited under this section shall be null and void *ab initio*, and any attempt by a Member to dispose of a membership interest in violation of this section shall constitute a material default under this Operating Agreement.

5.2 Admission of Members. Any assignee or other transferee to whom a membership interest is transferred under the terms of this Operating Agreement, and who is not a Member at the time of transfer, shall take the interest subject to all terms and conditions of this Operating Agreement except that a newly admitted Member's capital contribution and share of the Company's profits and losses shall be set forth in the written consent of the Member consenting to the admission of the new Member. No assignee or other transferee shall take title to a membership interest without signing a written agreement to accept and assume the terms and conditions of this Operating Agreement.

ARTICLE VI

MEETINGS OF MEMBERS

6.1 Voting. All Members shall be entitled to vote on any matter submitted to a vote of the Members. Notwithstanding the foregoing, the Members shall have the right to vote on all of the following: (a) the dissolution of the Company; (b) the merger of the Company; (c) an amendment to the Articles; or (d) the sale, exchange, lease or other transfer of all or substantially all of the assets of the Company other than in the ordinary course of business; (e) any mortgage, grant of security interest, pledge or encumbrance upon all or substantially all of the assets and property of the Company. In the event of any tie vote by the Members, ROGER W. NORMAN shall have the deciding vote to control the making of the decisions for the Company; or in the event of his death, the person or entity designated in his last Will and Testament or other appropriate estate planning document that is operable at the time of his death shall have the deciding vote.

6.2 Required Vote. Unless a greater vote is required by the Act or the Articles, the affirmative vote or consent of a majority of the Sharing Ratios of all the Members entitled to vote or consent on such matter shall be required. For purposes of determining voting rights, the after-payout sharing ratios shall be controlling even though payout as defined herein may not have been reached, subject to paragraph 7.2 below.

6.3 Meeting. An annual meeting of the Members for the transaction of such business as may properly come before the Meeting, shall be held at such place, on such date and at such time as the Manager shall determine. Special meetings of the Members for any proper purpose or purposes may be called at any time by the holders of at least thirty-five percent (35%) of the Sharing Ratios of all Members. The Company shall deliver or mail written notice stating the date, time, place and purposes of any meeting to each Member entitled to vote at the meeting. Such notice shall be given not less than ten (10) nor more than sixty (60) days before the date of the meeting. All meetings of Members shall be presided over by a Chairperson designated by the Manager.

6.4 Consent. Any action required or permitted to be taken at an annual or special meeting of the Members may be taken without a meeting, without prior notice, and without a vote, if consents in writing, setting forth the action so taken, are signed by the Members having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all membership interests entitled to vote on the action were present and voted. Every written consent shall bear the date and signature of each Member who signs the consent. Prompt notice of the taking of action without a meeting by less than unanimous written consent shall be given to all Members who have not consented in writing to such action.

ARTICLE VII

MANAGEMENT

7.1 Management of Business. The Company shall be managed by its Member ROGER W. NORMAN ("Manager").

7.2 General Powers of Manager. Except as may otherwise be provided in this Operating Agreement, the ordinary and usual decisions concerning the business and affairs of the Company shall be made by the Manager. The Manager has the power, on behalf of the Company, to do all things necessary or convenient to carry out the business and affairs of the Company, including, the power to: (a) purchase, lease or otherwise acquire any real or personal property, in its name or nominee, on such terms and conditions as the Manager shall deem expedient; (b) sell, convey, mortgage, grant a security interest in, pledge, lease, exchange or otherwise dispose or encumber any real or personal property; (c) open one or more depository accounts and make deposits into and checks and withdrawals against such accounts; (d) borrow money, incur liabilities, and obtain a line of credit as agreed by the Manager with or without collateral at any regulated financial institution; (e) enter into any and all agreements and execute any and all contracts, documents and instruments; (f) engage employees and agents, define their respective duties, and establish their compensation or remuneration; (g) obtain insurance covering the business and affairs of the Company and its property; (h) commence, prosecute or defend any proceeding in the Company's name; and (i) participate with others in associations and strategic alliances.

7.3 Standard of Care Liability. The Manager shall discharge his duties as Manager in good faith, with the care an ordinarily prudent person in a like position would exercise under similar circumstances, and in a manner it reasonably believes to be in the best interests of the Company. The Manager shall not be liable for any monetary damages to the Company for any breach of such duties except for receipt of a financial benefit to which the Manager is not entitled; voting for or assenting to a distribution to Members in violation of this Operating Agreement or the Act; or a knowing violation of the law.

7.4 Manager's Compensation. The Manager shall receive such compensation as the Members agree upon. The Manager shall be reimbursed by the Company for all of his reasonable costs and expenses incurred on behalf of the Company in addition to his annual management fee, including but not by way of limitation, the Manager's general and administrative expenses, office overhead, supplies, travel, and salaries of office and technical personnel directly allocable to the Company's activities.

7.5 Exclusivity. The Manager shall manage the affairs of the Company as a primary and principal activity as may be agreed to by the Members pursuant to Paragraph 1.4. All projects, investments, or other acquisitions relating to the principal activity of the Company, presented to the Manager and/or Members during the term or extended term of the Company shall remain the sole and exclusive property of the Company.

If the Manager should leave the Company or otherwise be unable to devote adequate time to managing the affairs of the Company for any reason during the term of this Agreement, such Member shall: (1) not divulge any proprietary information or data acquired during such Member's tenure with the Company to any third persons, nor (2) shall such Member

of the Manager compete, either directly or indirectly, with the Company with respect to any Investment Opportunity developed and being actively pursued by the Company.

This restrictive covenant shall remain in force for a period of twelve (12) months following the effective date that such Member no longer is serving as the Manager of the Company. As used herein, the term "proprietary information" shall not apply to:

- a. information readily available to the public;
- b. information that becomes known to the Member from another independent source subsequent to such Member leaving the Manager.

ARTICLE VIII

EXCULPATION OF LIABILITY; INDEMNIFICATION

8.1 Exculpation of Liability. Unless otherwise provided by law or expressly assumed, a person who is a Member or Manager, or both, shall not be liable for the acts, debts or liabilities of the Company.

8.2 Indemnification. Except as otherwise provided in this Article, the Company shall indemnify the Manager and may indemnify any employee or agent of the Company who was or is a party or is threatened to be made a party to a threatened, pending or complete action, suit or proceeding, whether civil, criminal, administrative, or investigative, and whether formal or informal, other than an action by or in the right of the Company, by reason of the fact that such person is or was a Manager, employee or agent of the Company against expenses, including attorneys' fees, judgments, penalties, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with the action, suit or proceeding, if the person acted in good faith, with the care an ordinary prudent person in a like position would exercise under similar circumstances, and in a manner that such person reasonably believed to be in the best interests of the Company and with respect to a criminal action or proceeding, if such person had no reasonable cause to believe such person's conduct was unlawful. To the extent that a Member, employee or agent of the Company has been successful on the merits or otherwise in defense of an action, suit or proceeding or in defense of any claim, issue or other matter in the action, suit or proceeding, such person shall be indemnified against actual and reasonable expenses, including attorneys' fees, incurred by such person in connection with the action, suit or proceeding and any action, suit or proceeding brought to enforce the mandatory indemnification provided herein. Any indemnification permitted under this Article, unless ordered by a court, shall be made by the Company only as authorized in the specific case upon a determination that the indemnification is proper under the circumstances because the person to be indemnified has met the applicable standard of conduct and upon an evaluation of the reasonableness of expenses and amounts paid in settlement. Under no circumstances shall the Manager be indemnified as to any act or omission constituting gross negligence. This determination and evaluation shall be made by majority vote of the Members who are not parties or threatened to be made parties of the action, suit or proceeding. Notwithstanding the foregoing to the contrary, no indemnification shall be provided to the Manager, employee or agent of the Company for or in connection with the receipt of a financial benefit to which such person is not entitled, voting for or assenting to a distribution of Members in violation of the Operating Agreement or the Act, or a knowing violation of law.

ARTICLE IX

DISSOLUTION AND WINDING UP

9.1 Dissolution. The Company shall dissolve and its affairs shall be wound up on the first to occur of the following events: (a) at any time specified in the Articles or this Operating Agreement; (b) upon the happening of any event specified in the Articles of this Operating Agreement; (c) by the unanimous consent of all of the Members; (d) upon the death, expulsion, bankruptcy, or dissolution of a Member or the occurrence of any other event that terminates the continued membership of a Member in the Company unless within ninety (90) days after the disassociation of membership as so provided in subparagraph (d), a majority of the remaining Members consent to continue the business of the Company and to the admission of one or more Members as necessary; and (e) an event of dissolution under the Act.

9.2 Winding Up. Upon dissolution, except as provided below, the Company shall cease carrying on its business and affairs and shall commence the winding up of the Company's business and affairs and complete the winding up as soon as practicable. Upon the winding up of the Company, the assets of the Company shall be distributed first to creditors to the extent permitted by law, in satisfaction of Company debts, liabilities and obligations and then to Members first, in satisfaction of liabilities for distributions and then, in accordance with their Sharing Ratios. Such proceeds shall be paid to such Members within ninety (90) days after the date of winding up.

9.3 Assets on Dissolution. Except as may otherwise be expressly agreed by all the Members, the Company property includes not only the assets, tangible and intangible, carried on the Company's books, but also without limitation the name of the Company; its goodwill; its books, records and files; its interests under leases, licenses or franchises; the right to bill and collect for services rendered by persons who are Members or employees of the Company and its interests in and expectations from engagements for clients.

ARTICLE X

SECURITIES LAW PROVISIONS

10. Claim of Exemption. The Company Interests have not been registered under the Securities Act of 1933, as amended (the "Federal Act"), or any other state securities act, and are being offered pursuant to applicable exemptions from registration. The provisions contained in this Article 10 have been included in this Agreement with respect to certain conditions which must be satisfied in order for such exemptions to be available.

10.2 General Provisions.

- a. Each Member hereby represents that (i) the Interest he is acquiring hereunder is being acquired solely for his own account and not for or on behalf of other Persons, (ii) such Interest is being acquired for investment purposes only, and not for resale or distribution, and (iii) he has no intention to enter into any contract, agreement, undertaking or arrangement to sell, transfer or pledge such Interest or any part thereof.

- b. If the Company shall ever have a transfer agent, the Company shall issue stop transfer instructions to the Company's transfer agent with respect to the Interests acquired hereunder, and the Company shall make a notation in the appropriate records of the Company that will prevent the sale, transfer or assignment of such Interest until such time as the Manager is satisfied that any such sale, transfer or assignment is not in violation of the applicable provisions of the Federal Act or state Act, and is not in violation of the restrictions against the sale, transfer or assignment of such Interest contained in this Agreement.
- c. Each Member hereby agrees that he will not sell, transfer or assign his Interest, or any portion thereof, without registration under the Federal Act or state Act or exemption there from.

ARTICLE XI

TRANSFERS OF MEMBERSHIP INTERESTS

11.1 Permitted Transfers. A Member may transfer all or part of its interest in the Company only as follows:

- a. To the other Member.
- b. Pursuant to the written consent of the other Member; or
- c. To a living trust or a family limited partnership which he or she controls, upon written approval of the other Members.

11.2 Right of First Refusal. In the event that either Member receives an offer, whether or not solicited by the Member, from a person not then a Member to purchase all or any portion of the Member's interest in the Company, and in the event that the Member receiving the offer is willing to accept it, the Member may transfer the interest or portion specified in the offer only after he or she has afforded the other Member the following rights of first refusal:

- a. The Member desiring to make the transfer must first notify the other Member in writing of the interest or portion thereof which the Member proposes to transfer, the price and terms on which it is proposed to be transferred, and the identity of the proposed transferee.
- b. Within ten (10) days after receipt by the other Member of the notice of the proposed transfer, the other Member may deliver to the Member who proposed to make the transfer a notice of election to purchase.
- c. If the aggregate interest or portion specified in notice of election timely made by the other Member equals the entire offered interest or portion, the Member desiring to transfer its interest or portion shall sell, and the Member electing to purchase shall purchase, the interest or portion offered at a price equal to the

greater of (a) the value of the capital account of the Member desiring to transfer its interest or portion as of the date of the notice of proposed transfer, adjusted to reflect that Member's share of profits and/or losses for the current calendar year not then reflected in that Member's capital account, payable in cash within thirty (30) days after the notice of election provided for in section b of this paragraph; or, (b) the same price and terms as those specified in the notice of the proposed transfer.

- d. If the aggregate interest or portion specified in the notice of election timely made by the Member electing to purchase is less than the entire interest or portion proposed to be transferred, the election shall be ineffective, and the Member proposing to make the transfer shall not be obligated to sell to the other Member, nor shall the other Member electing to purchase be obligated or entitled to purchase, all or any part of the offered interest or portion.

ARTICLE XII

MISCELLANEOUS PROVISIONS

12.1 Terms. Nouns and pronouns will be deemed to refer to the masculine, feminine, neuter, singular and plural, as the identity of the person or persons, firm or corporation may in the context require.

12.2 Article Headings. The Article headings contained in this Operating Agreement have been inserted only as a matter of convenience and for reference, and in no way shall be construed to define, limit or describe the scope or intent of any provision of this Operating Agreement.

12.3 Counterparts. This Operating Agreement may be executed in several counterparts, each of which will be deemed as original but all of which will constitute one and the same.

12.4 Entire Agreement. This Operating Agreement constitutes the entire agreement among the parties hereto and contains all of the agreements among said parties with respect to the subject matter hereof. This Operating Agreement supersedes any and all other agreements, either oral or written, between said parties with respect to the subject matter hereof.

12.5 Severability. The invalidity or enforceability of any particular provision of this Operating Agreement shall not affect the other provisions hereof, and this Operating Agreement shall be construed in all respects as if such invalid or unenforceable provisions were omitted.

12.6 Amendment. This Operating Agreement may be amended or revoked at any time by a written agreement executed by all of the parties to this Operating Agreement. No change or modification of this Operating Agreement shall be valid unless in writing and signed by all of the parties to this Operating Agreement.

12.7 Notices. Any notice permitted or required under this Operating Agreement shall be conveyed to the party at the address reflected in this Operating Agreement and will be deemed to have been given, when deposited in the United States mail, postage paid, or when delivered in

person, or by courier or by facsimile transmission.

12.8 Binding Effect. Subject to the provisions of this Operating Agreement relating to transferability, this Operating Agreement will be binding upon and shall inure to the benefit of the parties, and their respective distributees, heirs, successors and assigns.

12.9 Governing Law. This Operating Agreement is being executed and delivered in the state of Nevada and shall be governed by, construed and enforced in accordance with the laws of the state of Nevada.

12.10 Arbitration. Any dispute which arises hereunder with respect to the terms of this Agreement which cannot be resolved may be settled by arbitration or mediation. The decision of the mediator or arbitrator(s) shall be final and conclusive on the parties and judgment on the award may be entered in any court of competent jurisdiction.

IN WITNESS WHEREOF, the parties hereto make and execute this Operating Agreement on the dates set below their names, to be effective on the date first above written.

THE COMPANY

MIRACLE INVESTMENTS, LLC
A Nevada limited liability
Company

By: Ron W. Norman

Date: 10-29-02

MEMBERS

Ron W. Norman
ROGER W. NORMAN

Date: 10-29-02

EXHIBIT "A"

<u>Member</u>	<u>Initial Capital Contribution</u>	<u>Sharing Ratio</u>	<u>Voting and Sharing Ratio</u>
Roger W. Norman	\$ <u>50,000.00</u>	One Hundred Percent (100%)	One Hundred Percent (100%)

Special Use Permit Application Supplemental Information

(All required information may be separately attached)

1. What is the project being requested?

Crystal Bay Casino is planning on converting the rooftop of the parking garage into a seasonal event space for approximately 3,000 people. The project includes construction of a stage and truss which will have a sun shade that will be used in the late spring, summer and early fall. The events will be limited to 10 events/weekends per year with some starting in the afternoon others in the evening but all with a 10:00 p.m. curfew.

2. Provide a site plan with all existing and proposed structures (e.g. new structures, roadway improvements, utilities, sanitation, water supply, drainage, parking, signs, etc.)

See attached Site Plan

3. What is the intended phasing schedule for the construction and completion of the project?

Construction will be limited to the installation of the new entry and exit stair systems, the new ADA elevator, and associated electrical work. Work will generally proceed with site preparation and layout, followed by installation of the stair systems and elevator. Electrical power will then be extended to the elevator and required safety lighting at the stairs, followed by testing, inspections, and final completion.

4. What physical characteristics of your location and/or premises are especially suited to deal with the impacts and the intensity of your proposed use?

The proposed venue is well suited to accommodate the proposed use because it utilizes the top deck of an existing parking garage, an already developed site designed for public access and large occupancies. The project includes purpose-built event infrastructure, ADA upgrades, and additional emergency access improvements, while operational measures such as off-site parking and shuttles, professional security, a 10:00 p.m. curfew, and comprehensive traffic, parking, sound, and lighting studies are intended to ensure events can be safely and effectively managed. By converting an underutilized portion of the property into a professionally designed and controlled event space, the venue can accommodate entertainment activities while providing structured access, circulation, waste management, and public safety measures.

5. What are the anticipated beneficial aspects or affects your project will have on adjacent properties and the community?

The proposed seasonal event venue will benefit adjacent properties and the broader North Lake Tahoe community by transforming an underutilized area into a professionally designed and managed gathering space, enhancing the appearance of the property, supporting local businesses, creating opportunities for local vendors, nonprofits, and workers, and strengthening Crystal Bay's longstanding identity as a music and entertainment destination. The project is also designed with security, traffic management, waste management, emergency access, and environmental stewardship measures intended to responsibly manage impacts while providing new cultural and economic opportunities for the community.

6. What are the anticipated negative impacts or affect your project will have on adjacent properties? How will you mitigate these impacts?

The primary anticipated impacts on adjacent properties are increased noise, traffic, parking demand, and event-related activity associated with outdoor entertainment events. To address these concerns, the project is being designed with several mitigation measures, including a limit of approximately 10 events/weekends per year, a 10:00 p.m. curfew, off-site parking and shuttle services to reduce local traffic and parking demand, professional security management, designated emergency access improvements, and a proposed perimeter windscreen/barrier around the venue. In addition, traffic, parking, sound, and lighting studies are currently underway to evaluate potential impacts and identify appropriate mitigation measures, and the venue will incorporate operational controls such as waste management, emergency response planning, and ongoing community engagement to help minimize effects on neighboring properties.

7. Provide specific information on landscaping, parking, type of signs and lighting, and all other code requirements pertinent to the type of use being purposed. Show and indicate these requirements on submitted drawings with the application.

See attached site plan

8. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that apply to the area subject to the special use permit request? (If so, please attach a copy.)

☐ Yes	☒ No
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9. Utilities:

a. Sewer Service	IVGID
b. Electrical Service	NV Energy
c. Telephone Service	Spectrum and AT&T internet
d. LPG or Natural Gas Service	Southwest Gas Corporation
e. Solid Waste Disposal Service	IVGID
f. Cable Television Service	Spectrum and Direct TV
g. Water Service	IVGID

For most uses, Washoe County Code, Chapter 110, Article 422, Water and Sewer Resource Requirements, requires the dedication of water rights to Washoe County. Please indicate the type and quantity of water rights you have available should dedication be required.

h. Permit #	N/A	acre-feet per year	N/A
i. Certificate #	N/A	acre-feet per year	N/A
j. Surface Claim #	N/A	acre-feet per year	N/A
k. Other #	N/A	acre-feet per year	N/A

Title of those rights (as filed with the State Engineer in the Division of Water Resources of the Department of Conservation and Natural Resources).

N/A

10. Community Services (provided and nearest facility):

a. Fire Station	North Lake Tahoe Fire Protection District Fire Station 12
b. Health Care Facility	Incline Village Community Hospital,
c. Elementary School	Incline Elementary School
d. Middle School	Incline Middle School
e. High School	Incline High School
f. Parks	State line fire lookout; Incline Village Park; Preston Field and Playground
g. Library	Incline Village Library
h. Citifare Bus Stop	N/A serviced by TART; Hwy 28 / Crystal Bay Club (Shelter)

**Special Use Permit Application
for Grading
Supplemental Information**
(All required information may be separately attached)

1. What is the purpose of the grading?

N/A

2. How many cubic yards of material are you proposing to excavate on site?

N/A

3. How many square feet of surface of the property are you disturbing?

N/A

4. How many cubic yards of material are you exporting or importing? If none, how are you managing to balance the work on-site?

N/A

5. Is it possible to develop your property without surpassing the grading thresholds requiring a Special Use Permit? (Explain fully your answer.)

N/A

6. Has any portion of the grading shown on the plan been done previously? (If yes, explain the circumstances, the year the work was done, and who completed the work.)

N/A

7. Have you shown all areas on your site plan that are proposed to be disturbed by grading? (If no, explain your answer.)

N/A

8. Can the disturbed area be seen from off-site? If yes, from which directions and which properties or roadways?

N/A

9. Could neighboring properties also be served by the proposed access/grading requested (i.e. if you are creating a driveway, would it be used for access to additional neighboring properties)?

N/A

10. What is the slope (horizontal/vertical) of the cut and fill areas proposed to be? What methods will be used to prevent erosion until the revegetation is established?

N/A

11. Are you planning any berms?

Yes N/A

No N/A

If yes, how tall is the berm at its highest? N/A

12. If your property slopes and you are leveling a pad for a building, are retaining walls going to be required? If so, how high will the walls be and what is their construction (i.e. rockery, concrete, timber, manufactured block)?

N/A

13. What are you proposing for visual mitigation of the work?

N/A

14. Will the grading proposed require removal of any trees? If so, what species, how many and of what size?

N/A

15. What type of revegetation seed mix are you planning to use and how many pounds per acre do you intend to broadcast? Will you use mulch and, if so, what type?

N/A

16. How are you providing temporary irrigation to the disturbed area?

N/A

17. Have you reviewed the revegetation plan with the Washoe Storey Conservation District? If yes, have you incorporated their suggestions?

N/A

18. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that may prohibit the requested grading?

Yes N/A

No N/A

If yes, please attach a copy. N/A

Special Use Permit Application for Stables Supplemental Information

(All required information may be separately attached)

1. What is the maximum number of horses to be boarded, both within stables and pastured?

N/A

2. What is the maximum number of horses owned/maintained by the owner/operator of the project, both within stables and pastured?

N/A

3. List any ancillary or additional uses proposed (e.g., tack and saddle sales, feed sales, veterinary services, etc.). Only those items that are requested may be permitted.

N/A

4. If additional activities are proposed, including training, events, competition, trail rides, fox hunts, breaking, roping, etc., only those items that are requested may be permitted. Clearly describe the number of each of the above activities which may occur, how many times per year and the number of expected participants for each activity.

N/A

5. What currently developed portions of the property or existing structures are going to be used with this permit?

N/A

6. To what uses (e.g., restrooms, offices, managers living quarters, stable area, feed storage, etc.) will the barn be put and will the entire structure be allocated to those uses? (Provide floor plans with dimensions).

N/A

7. Where are the living quarters for the operators of the stables and where will employees reside?

N/A

8. How many improved parking spaces, both on-site and off-site, are available or will be provided? (Please indicate on site plan.) Have you provided for horse trailer turnarounds?

N/A

9. What are the planned hours of operation?

N/A

10. What improvements (e.g. new structures including the square footage, roadway/driveway improvements, utilities, sanitation, water supply, drainage, parking, signs, etc.) will have to be constructed or installed and what is the projected time frame for the completion of each?

N/A

11. What is the intended phasing schedule for the construction and completion of the project?

N/A

12. What physical characteristics of your location and/or premises are especially suited to deal with the impacts and the intensity of your proposed use?

N/A

13. What are the anticipated beneficial aspects or affects your project will have on adjacent properties and the community?

N/A

14. What are the adverse impacts upon the surrounding community (including traffic, noise, odors, dust, groundwater contamination, flies, rats, mice, etc.) and what will you do to minimize the anticipated negative impacts or effects your project will have on adjacent properties?

N/A

15. Please describe operational parameters and/or voluntary conditions of approval to be imposed on the administrative permit to address community impacts.

N/A

16. What types of landscaping (e.g. shrubs, trees, fencing, painting scheme, etc.) are proposed? (Please indicate location on site plan.)

N/A

17. What type of signs and lighting will be provided? On a separate sheet, show a depiction (height, width, construction materials, colors, illumination methods, lighting intensity, base landscaping, etc.) of each sign and the typical lighting standards. (Please indicate location of signs and lights on site plan.)

N/A

18. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that apply to the area subject to the administrative permit request? (If so, please attach a copy.)

☐ Yes

☐ No

19. Community Sewer

☐ Yes

☐ No

20. Community Water

☐ Yes

☐ No

MASTER STORM WATER INSPECTION FEE SCHEDULE (Article 421)
Inspection of Storm Water Quality Controls

INSPECTION FEES	
<i>CHARGES FOR PROJECT DURATION AND/OR LOCATION</i> (See Note 9)	<i>CHARGES PER ACRE</i>
0 - 6 Months Construction	\$30
7 - 12 Months Construction	\$60
13 - 18 Months Construction	\$90
19 - 24 Months Construction	\$120
Over 24 Months Construction	\$190
Project within 1,000 feet of a FEMA Flood Zone A, AO, or AE	Additional \$30
Projects of less than one acre but are deemed sensitive/permitted by NDEP	Additional \$30
<i>ADMINISTRATIVE SERVICE FEE</i> (See Note 9)	<i>FOR EACH APPLICATION</i>
Per Site	\$30

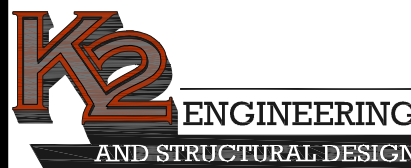
NOTE 9: The above listed fees shall be doubled if the construction activity is commenced prior to the issuance of the required permit and/or installation of the storm water controls. Payment of the double fee shall not preclude the County from taking any other enforcement actions within its authority. This application is not currently available through the Regional License and Permit Platform (Accela), so no regional technology fees (RTF) are charged. The RTF will be added once the application is available through the Platform (Accela).

In accordance with Nevada Revised Statutes, application fees must be deposited the day of receipt. This does not guarantee the application is complete. Pursuant to section 110.90610 of the Washoe County Code, no fees shall be required of a governmental entity or agency thereof.

Crystal Bay Club

Crystal Bay, Nevada

Rooftop Entertainment Venue



880 Maestro Dr, Suite A
Reno, NV 89511
P: (775) 355-0505
F: (775) 355-0566
www.K2eng.net

Crystal Bay, Nevada

Crystal Bay Casino

14 State Route 28
APN: 123-042-15

Brandt T. Kennedy, P.E.
Jared A. Krupa, P.E.



09/23/2026

Revisions

△	
△	
△	

Date	9-23-26
Drawn	K2/JW
Checked	JAK
Project No.	26-239

Cover Sheet
Sheet 1 of 9

A-0

GENERAL NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL JOB SITE REQUIREMENTS AND FOR COORDINATION OF ARCHITECTURAL DRAWINGS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGNER OF ANY DISCREPANCIES, ERRORS, OMISSIONS OR OTHER QUESTIONS RELATING TO THE CONSTRUCTION DOCUMENTS. DO NOT PROCEED WITH THE WORK UNTIL THE INTENT OF THE DOCUMENTS IS CLEAR.
- THE CONTRACT DOCUMENTS ARE COMPLEMENTARY. WORK REQUIRED TO BE DONE BY ONE DOCUMENT AND NOT BY OTHERS SHALL BE DONE AS IF REQUIRED BY ALL.
- CONTRACTORS AND SUBCONTRACTORS SHALL ENSURE THAT ALL WORK IS PERFORMED IN A PROFESSIONAL AND WORKMANLIKE MANNER BY SKILLED MECHANICS OF THE TRADE. SUBCONTRACTORS AND SUPPLIERS ARE HEREBY NOTIFIED THAT THEY ARE TO CONFER AND COOPERATE FULLY WITH EACH OTHER DURING THE COURSE OF CONSTRUCTION TO DETERMINE THE EXACT EXTENT AND OVERLAP OF EACH OTHER'S WORK AND TO SUCCESSFULLY COMPLETE THE EXECUTION OF THE WORK IN A TIMELY MANNER.
- CONTRACTOR AND SUBCONTRACTORS SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES, AND FOR THE SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE RESIDENTIAL DESIGNER SHALL NOT BE RESPONSIBLE FOR JOB SITE CONDITIONS OR COMPLIANCE WITH SAFETY REGULATIONS GOVERNING WORK PERFORMED ON THIS PROJECT. ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK ON OR RELATED TO THESE PLANS, SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED - AND SHALL COMPLY WITH THE 'OCCUPATIONAL SAFETY AND HEALTH REGULATIONS' OF THE U.S. DEPARTMENT OF LABOR AND WITH ANY AND ALL OTHER APPLICABLE STATE AND LOCAL SAFETY REGULATIONS. THE CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE SAFETY CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT AND THAT THIS REQUIREMENT SHALL DEFEND, INDEMNIFY, AND HOLD HARMLESS THE OWNER AND THE RESIDENTIAL DESIGNER FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT.
- CONTRACTOR AND SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, ADEQUACY AND SAFETY OF ERECTION, BRACING, SHORING, TEMPORARY SUPPORTS, ETC. OF THE WORK AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE WORK PRIOR TO THE APPLICATION AND INSTALLATION OF ALL SHEAR WALLS, ROOF AND FLOOR DIAPHRAGMS, AND FINISH MATERIALS. THE STRUCTURE IS NOT DESIGNED AS A STABLE UNIT UNTIL AFTER ALL COMPONENTS ARE IN PLACE, AND THEREFORE THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING NECESSARY TO ENSURE THE STABILITY OF ANY AND ALL PARTS OF THE PROJECT DURING CONSTRUCTION.
- CONTRACTOR AND SUBCONTRACTOR SHALL MAINTAIN THE PREMISES, CLEAN AND FREE OF ALL TRASH AND DEBRIS, AND SHALL PROTECT ALL ADJACENT WORK FROM DAMAGE, SOILING, AND FAINT OVERSPRAY.
- BUILDER'S SET: THIS SET OF DRAWINGS HAS BEEN PREPARED SUFFICIENT TO OBTAIN A BUILDING PERMIT. ALL MATERIALS AND METHODS OF CONSTRUCTION NECESSARY TO COMPLETE THE PROJECT ARE NOT NECESSARILY DESCRIBED IN THIS 'BUILDER'S SET'. THE IMPLEMENTATION OF THE DRAWINGS REQUIRES THE CONTRACTOR TO BE THOROUGHLY KNOWLEDGEABLE WITH THE APPLICATION CODES AND METHODS OF CONSTRUCTION SPECIFIC TO THIS PROJECT AND TYPE OF CONSTRUCTION.
- THE CONTRACTOR AND SUBCONTRACTORS SHALL MAKE NO STRUCTURAL SUBSTITUTIONS, CHANGES OR MODIFICATIONS WITHOUT WRITTEN APPROVAL OF STRUCTURAL ENGINEER.
- UNLESS SPECIFICALLY SHOWN OR NOTED ON THE DRAWINGS, NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED, BORED, OR OTHERWISE WEAKENED WITHOUT THE PERMISSION OF THE STRUCTURAL ENGINEER.
- CODE COMPLIANCE
 - ALL WORK FOR THIS PROJECT SHALL COMPLY WITH THE 2024 INTERNATIONAL BUILDING CODE, INTERNATIONAL FIRE CODE, UNIFORM PLUMBING CODE, UNIFORM MECHANICAL CODE, NATIONAL ELECTRIC CODE, AND OTHER CODES AND ORDINANCES AS CURRENTLY ADOPTED AND AMENDED BY AGENCIES HAVING JURISDICTION OVER THE PROJECT.

BASIS OF DESIGN

BUILDING CODE:
2024 INTERNATIONAL BUILDING CODE - 'IBC'
2024 INTERNATIONAL ENERGY CONSERVATION CODE - 'IECC'
2024 INTERNATIONAL FUEL GAS CODE - 'IFGC'
2024 INTERNATIONAL MECHANICAL CODE - 'IMC'
2024 UNIFORM PLUMBING CODE - 'UPC'
2024 UNIFORM MECHANICAL CODE - 'UMC'
2023 NATIONAL ELECTRICAL CODE - 'NEC'
2024 NORTHERN NEVADA CODE AMENDMENTS BY THE NNCIC
2024 INTERNATIONAL FIRE CODE - 'IFC'
2024 INTERNATIONAL WILDLAND URBAN INTERFACE CODE - 'IUIIC'

ALL OTHER CODES AND ORDINANCES AS CURRENTLY ADOPTED AND AMENDED BY AGENCIES HAVING JURISDICTION OVER THE PROJECT

PROJECT INFORMATION

SCOPE OF WORK:
EXIT STAIRS AND ELEVATOR ADDITIONS TO THE PARKING GARAGE FOR EVENT EXITING

ADDRESS: 14 STATE ROUTE 28
CRYSTAL BAY, NV 89402

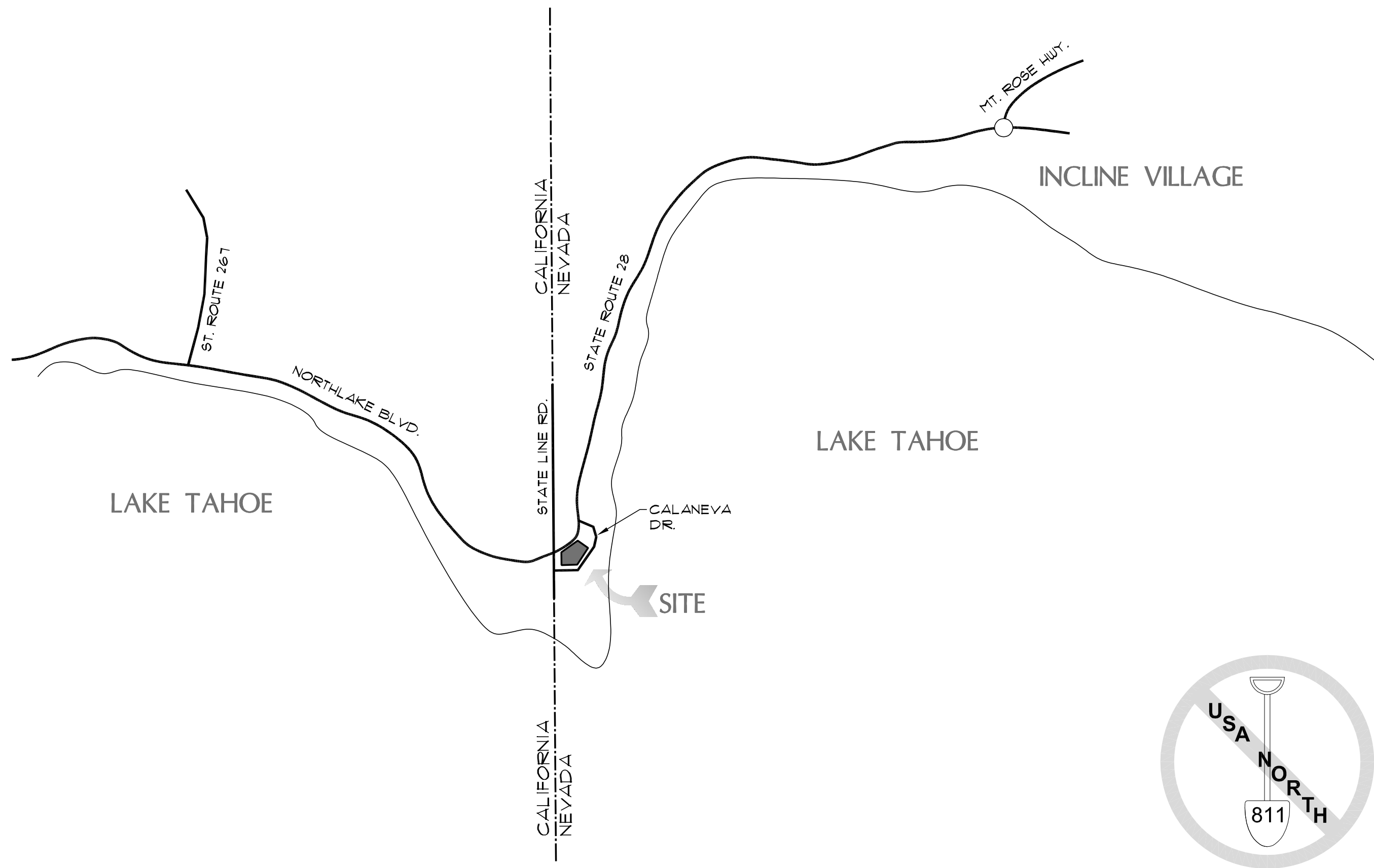
A P N: 123-042-15

ZONING: TA-CBT

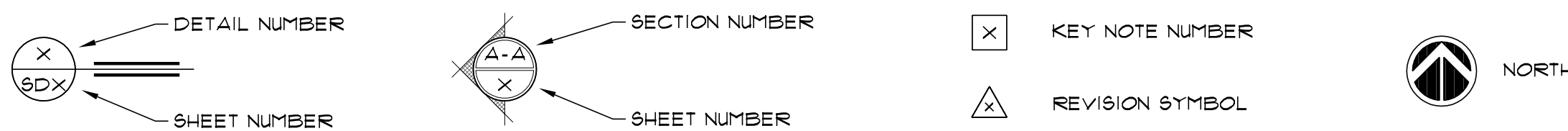
PARCEL AREA: 2.923 ACRES

VICINITY MAP

NO SCALE



SYMBOL LEGEND



DRAWING INDEX

ARCHITECTURAL

- | | |
|-----|---|
| A-0 | COVER SHEET, PROJECT DATA, BASIS OF DESIGN, VICINITY MAP, SYMBOL LEGEND |
| A-1 | SITE PLAN |
| A-2 | FLOOR PLAN |
| A-3 | OCCUPANCY AND EXITING PLAN |
| A-4 | EXIT STAIR AND ELEVATION ADDITION ELEVATIONS |
| A-5 | ENLARGED ELEVATION PLAN AND ELEVATIONS
ENLARGED DECK TO DECK EXIT STAIR PLAN |
| A-6 | ENLARGED NORTH EXIT STAIR PLAN |
| A-7 | ENLARGED NORTH EXIT STAIR ELEVATIONS |
| A-8 | ENLARGED EAST ENTRY STAIR PLAN
ENLARGED EAST ENTRY STAIR ELEVATIONS |

DIRECTORY

OWNER/DEVELOPER
ERIC ROE

ENGINEER
JARED KRUPA
K2 ENGINEERING
880 MAESTRO DR., STE. A
RENO, NV 89511
P: (775) 355-0505
F: (775) 355-0566
WWW.K2ENG.NET

Revisions

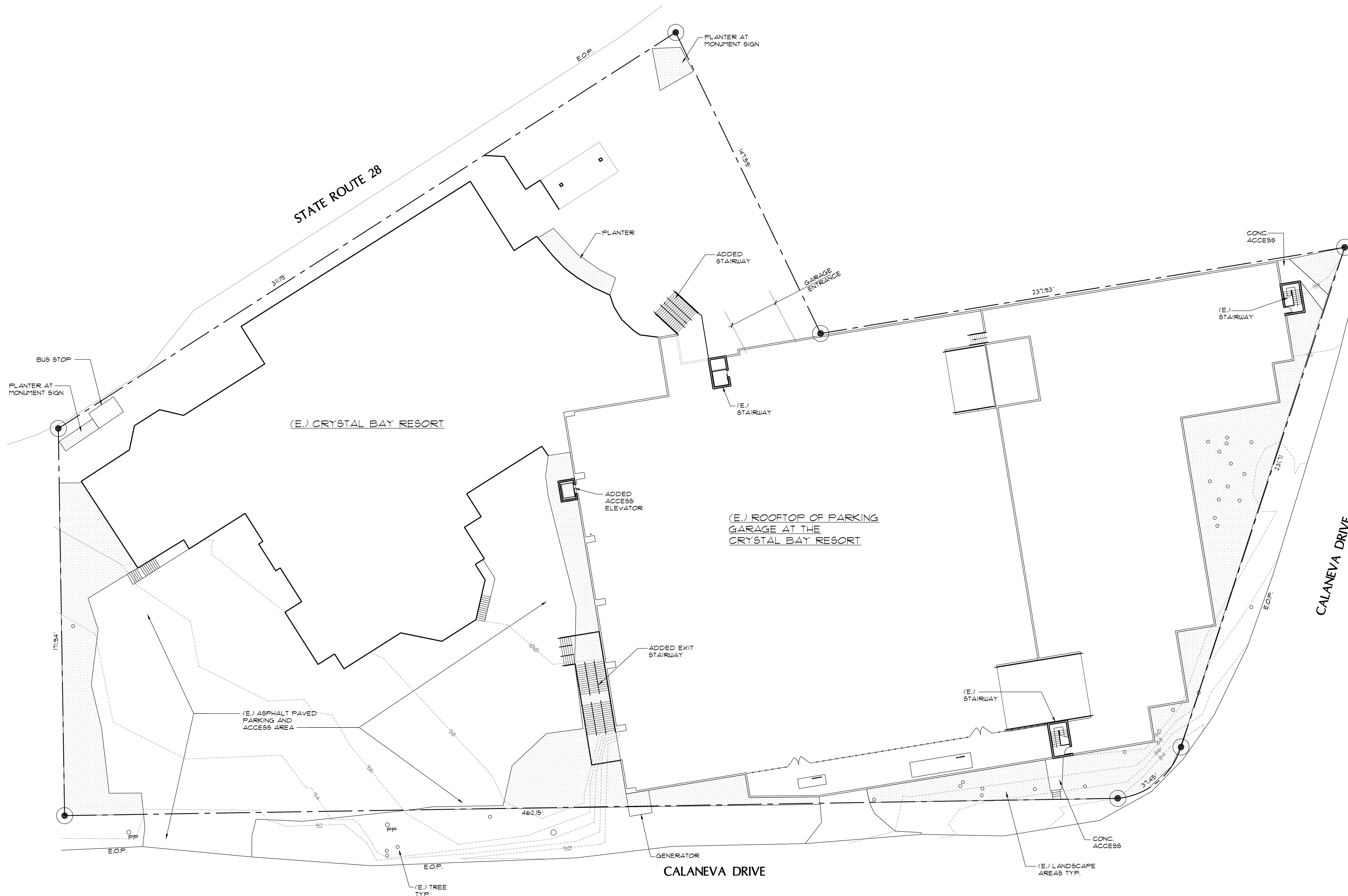
Date	9-23-26
Drawn	K2/JW
Checked	JAK
Project No.	26-239

GENERAL SITE NOTES

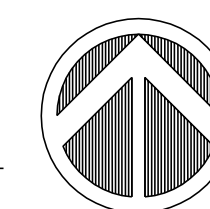
1. ALL WORK MUST CONFORM W/ LOCAL BUILDING CODES, CITY, COUNTY AND STATE ORDINANCES, SUBDIVISION REGULATIONS AND THE INTERNATIONAL BUILDING CODE, UNIFORM MECHANICAL CODE, UNIFORM PLUMBING CODE, INTERNATIONAL ENERGY CONSERVATION CODE (2024 EDITIONS) AND THE 2023 NATIONAL ELECTRICAL CODE.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING AND PROPOSED GRADES, UTILITIES, AND DIMENSIONS PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND COORDINATING ALL SERVICE REQUIREMENTS WITH THE APPROPRIATE PUBLIC AGENCY OR UTILITY PROVIDER. CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH ALL APPLICABLE CODES AND REQUIREMENTS.
4. PLACEMENT OF STRUCTURE WITHIN SETBACKS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. NOTIFY OWNER OF ANY DISCREPANCIES.
5. CONC. FLATWORK TO BE FINISHED PER OWNERS REQUIREMENTS.
6. THIS SITE IS LOCATED IN FEMA FLOOD ZONE X WHICH IS DETERMINED TO BE OUTSIDE OF THE 100 YEAR FLOOD PLAIN. BOUNDARY OF THE 100-YEAR FLOOD PLAIN IS NOT WITHIN 100 FEET OF PROPERTY.
7. THIS SITE IS SERVICED BY MUNICIPAL WATER AND MUNICIPAL SEWER.
8. THE DESIGN FOR THIS SITE HAS BEEN BASED ON THE BEST AVAILABLE INFORMATION. ALL ASSUMED EXISTING AND PROPOSED INFORMATION SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ALL PARTIES SHOULD ANTICIPATE THE POTENTIAL NEED FOR MODIFICATIONS TO THE INITIAL DESIGN IN ORDER TO ACCOMMODATE ACTUAL FIELD CONDITIONS. ALL DISCREPANCIES DISCOVERED IN THE FIELD SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
9. NEITHER A TOPOGRAPHICAL OR BOUNDARY SURVEY WAS PERFORMED FOR THIS SITE. THE BOUNDARY SHOWN IS BASED ON RECORD INFORMATION. IT IS RECOMMENDED THAT PRIOR TO CONSTRUCTION A FULL SURVEY IS PERFORMED IN ORDER TO ACCURATELY PLACE THE IMPROVEMENTS.
10. SHOULD ANY PREHISTORIC OR HISTORIC REMAINS/ARTIFACTS BE DISCOVERED DURING SITE DEVELOPMENT, WORK SHALL TEMPORARILY BE HALTED AT THE SPECIFIC SITE AND THE STATE HISTORIC PRESERVATION OFFICE OF THE DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS, SHALL BE NOTIFIED TO RECORD AND PHOTOGRAPH THE SITE. THE PERIOD OF TEMPORARY DELAY SHALL BE LIMITED TO A MAXIMUM OF TWO (2) WORKING DAYS FROM THE DATE OF NOTIFICATION.
11. THE PLANS HAVE BEEN DESIGNED IN COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF THE WASHOE COUNTY DEVELOPMENT CODE.

Grading Note:

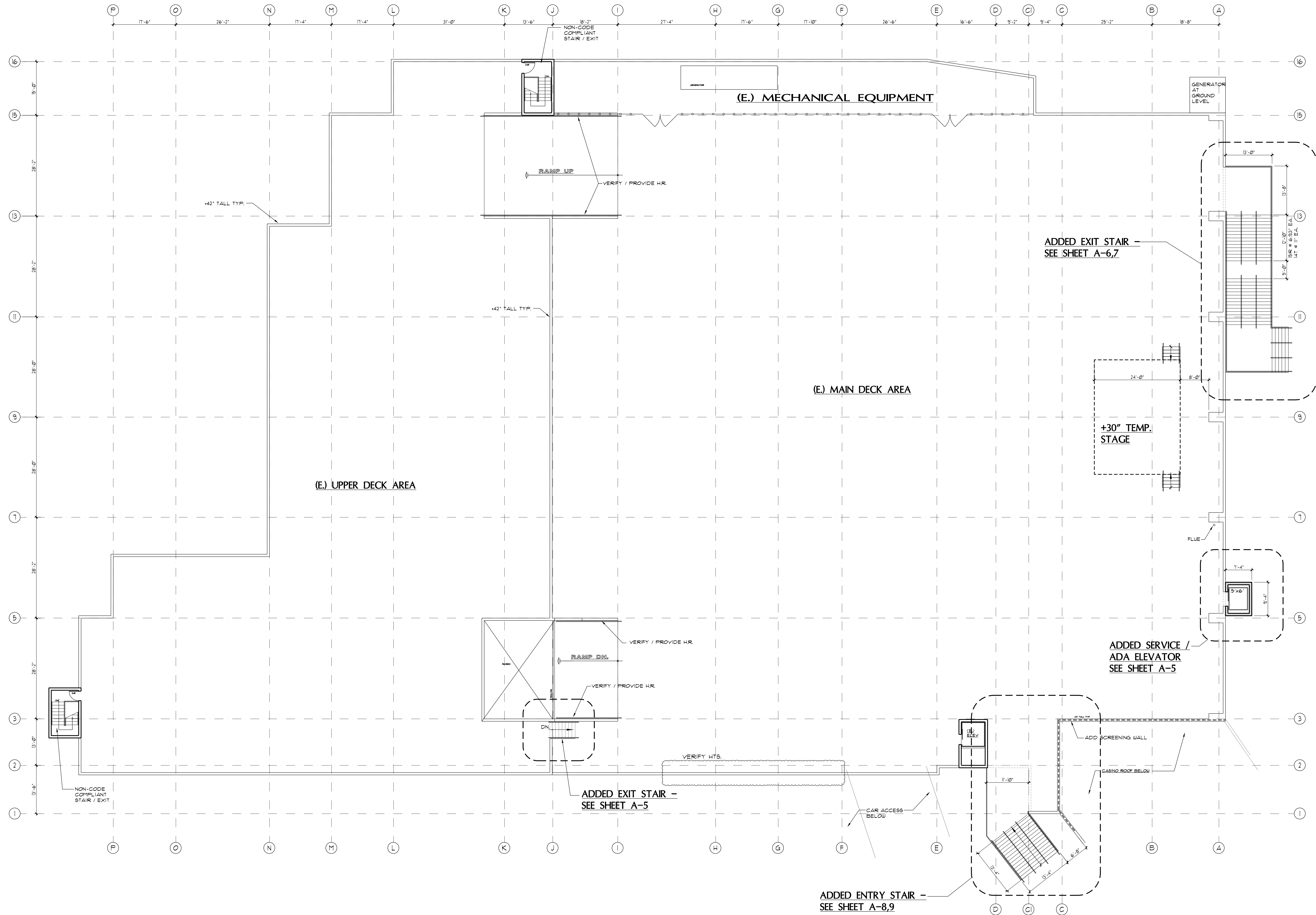
NO GRADING REQUIRED.



SITE PLAN
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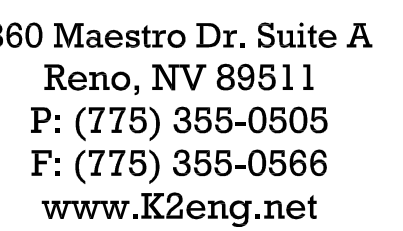


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FLOOR PLAN
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OVERALL - 54,083 SF.





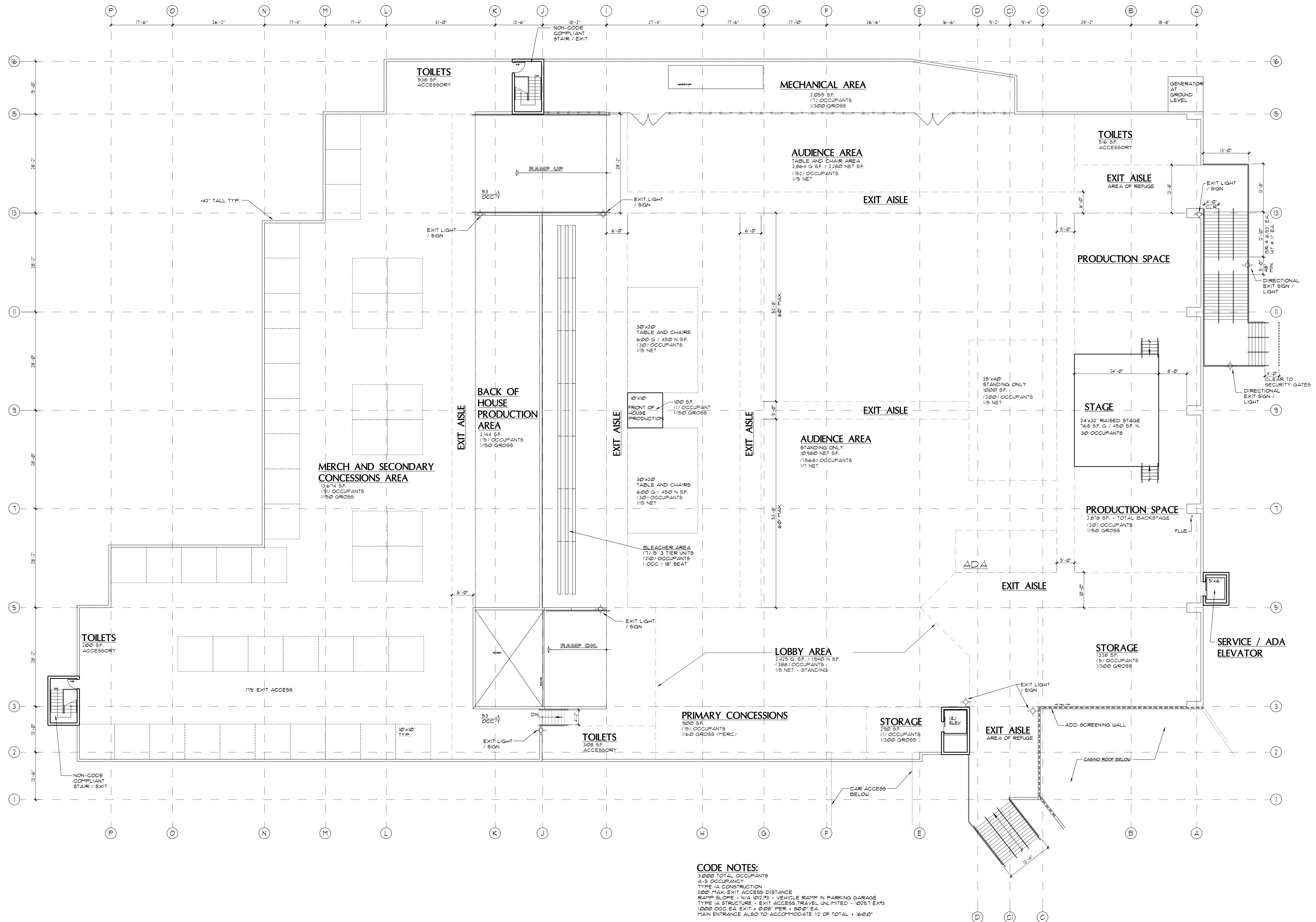
Crystal Bay Casino

APN: 123-042-15

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Overall
Exiting Plan
Sheet 4 of 9

A-3

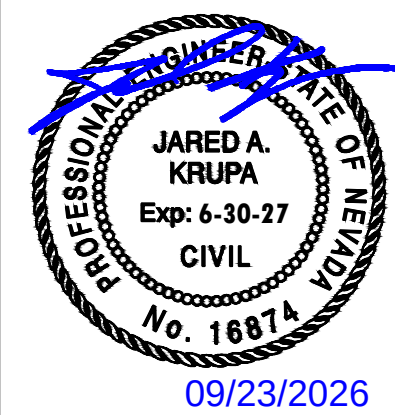


OCCUPANCY AND EXIT PLAN

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Crystal Bay Casino



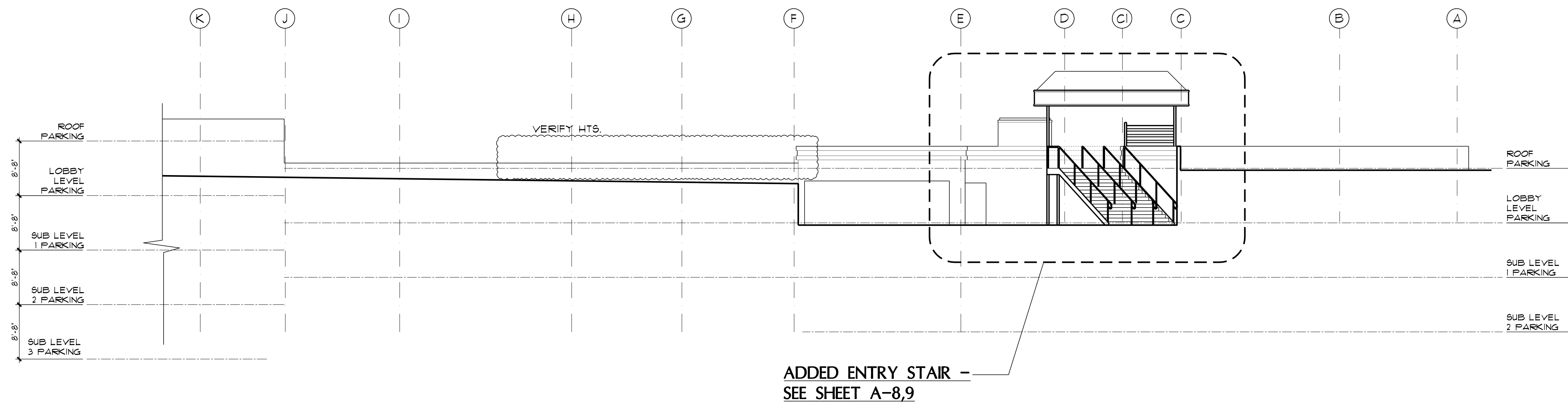
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Elevations

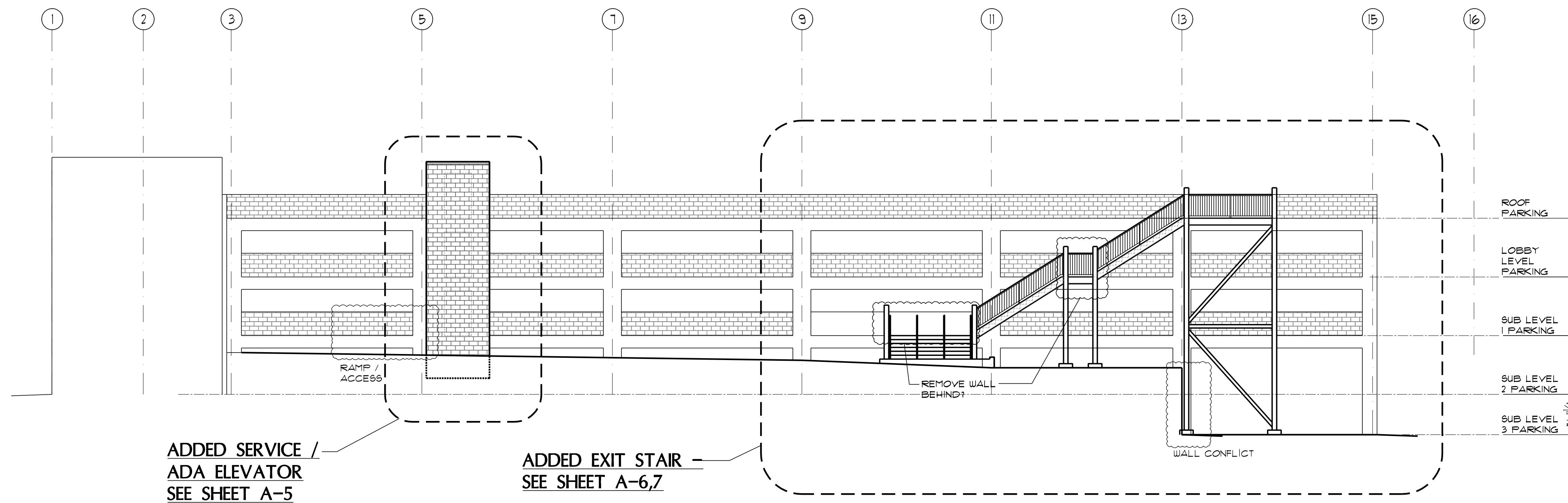
Sheet 5 of 9

A-4



NORTH ELEVATION

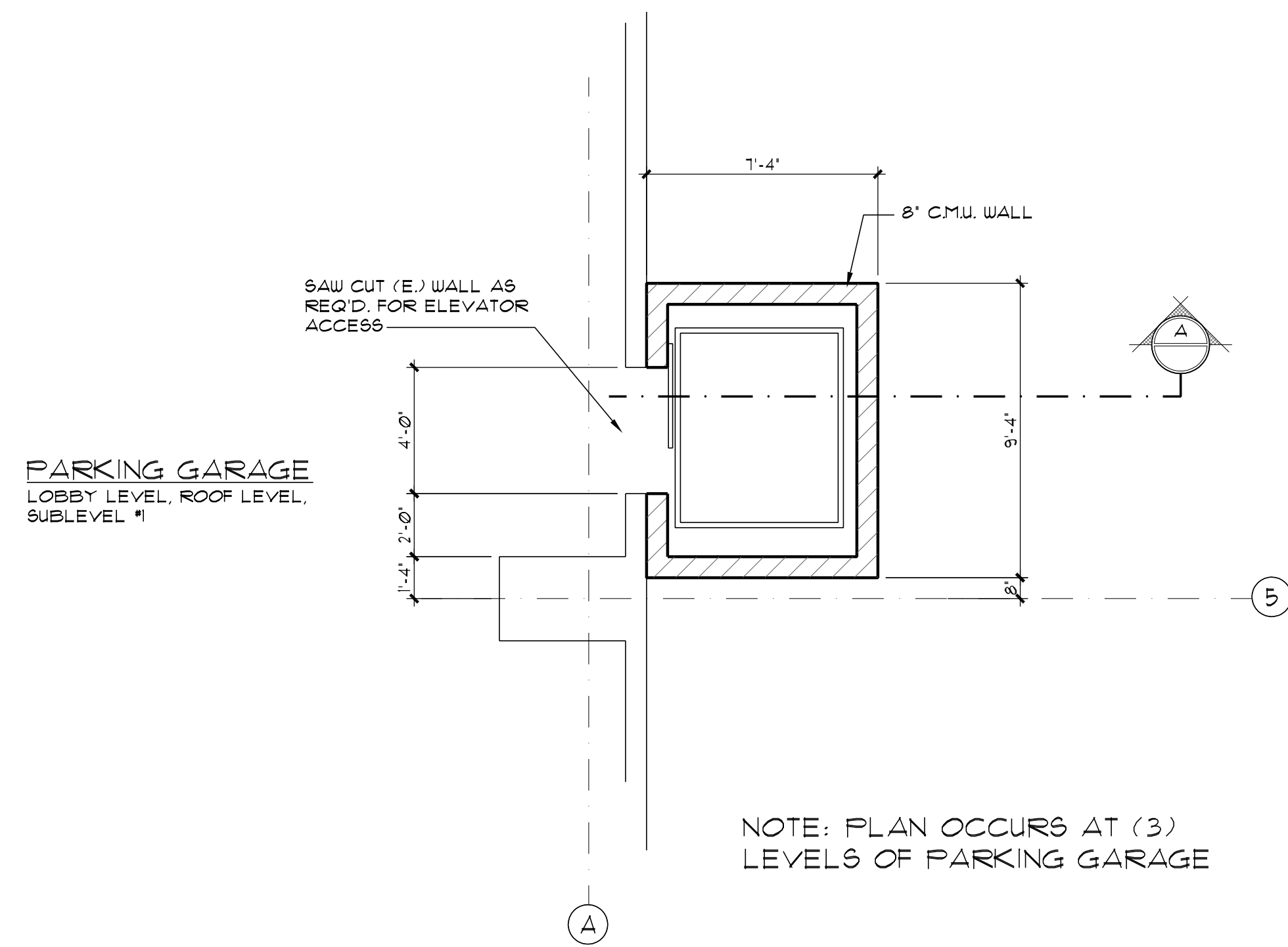
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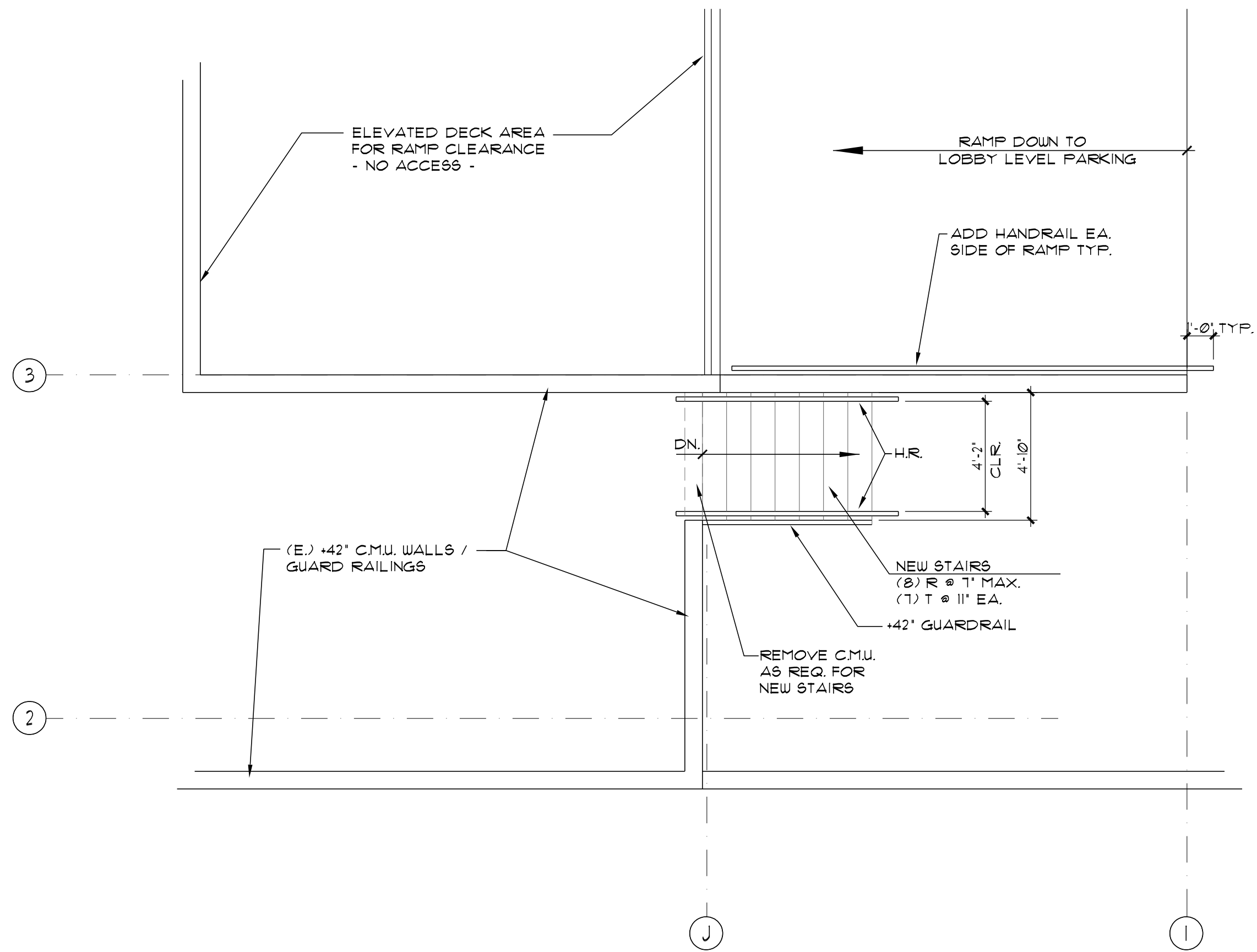
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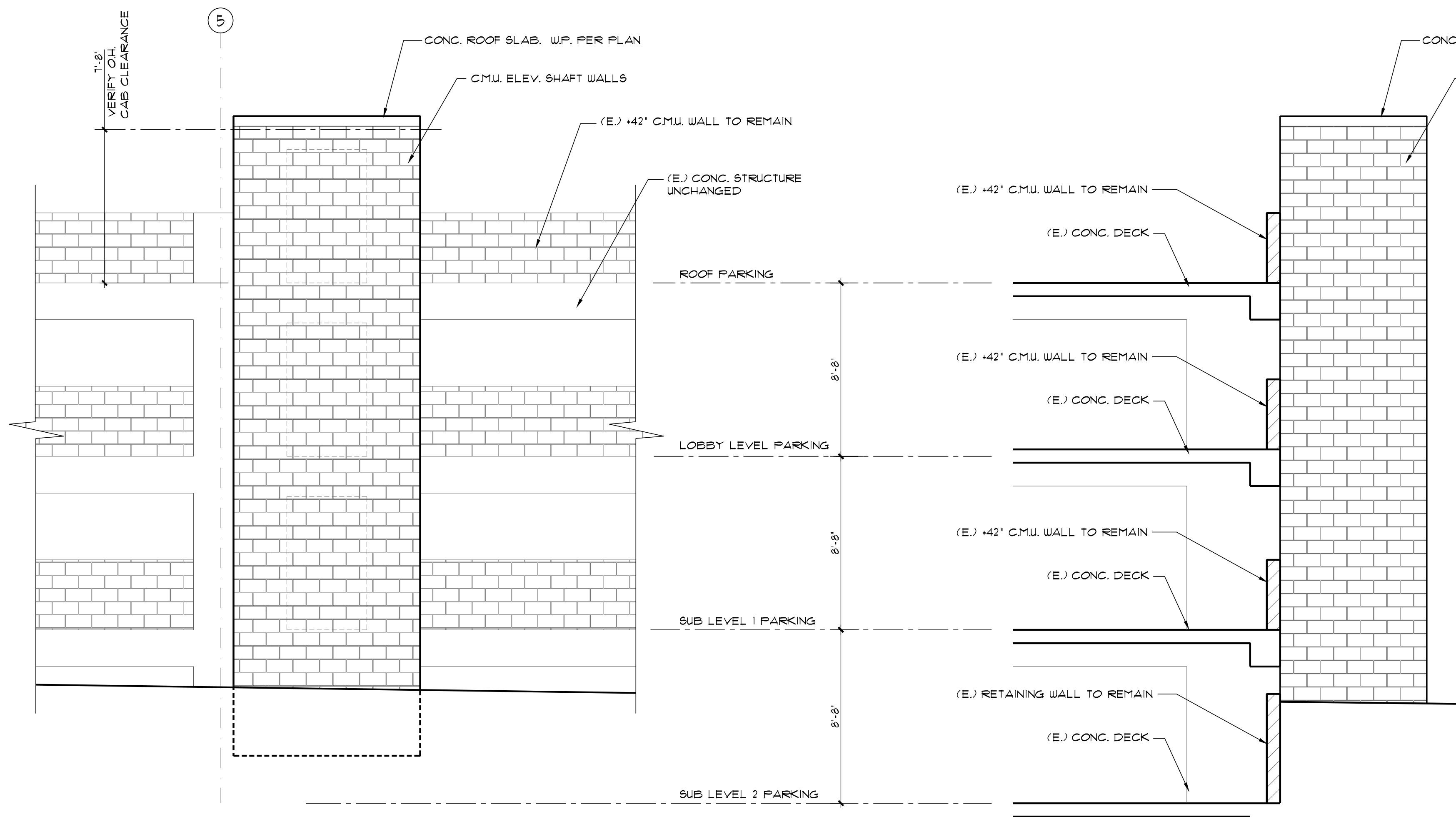
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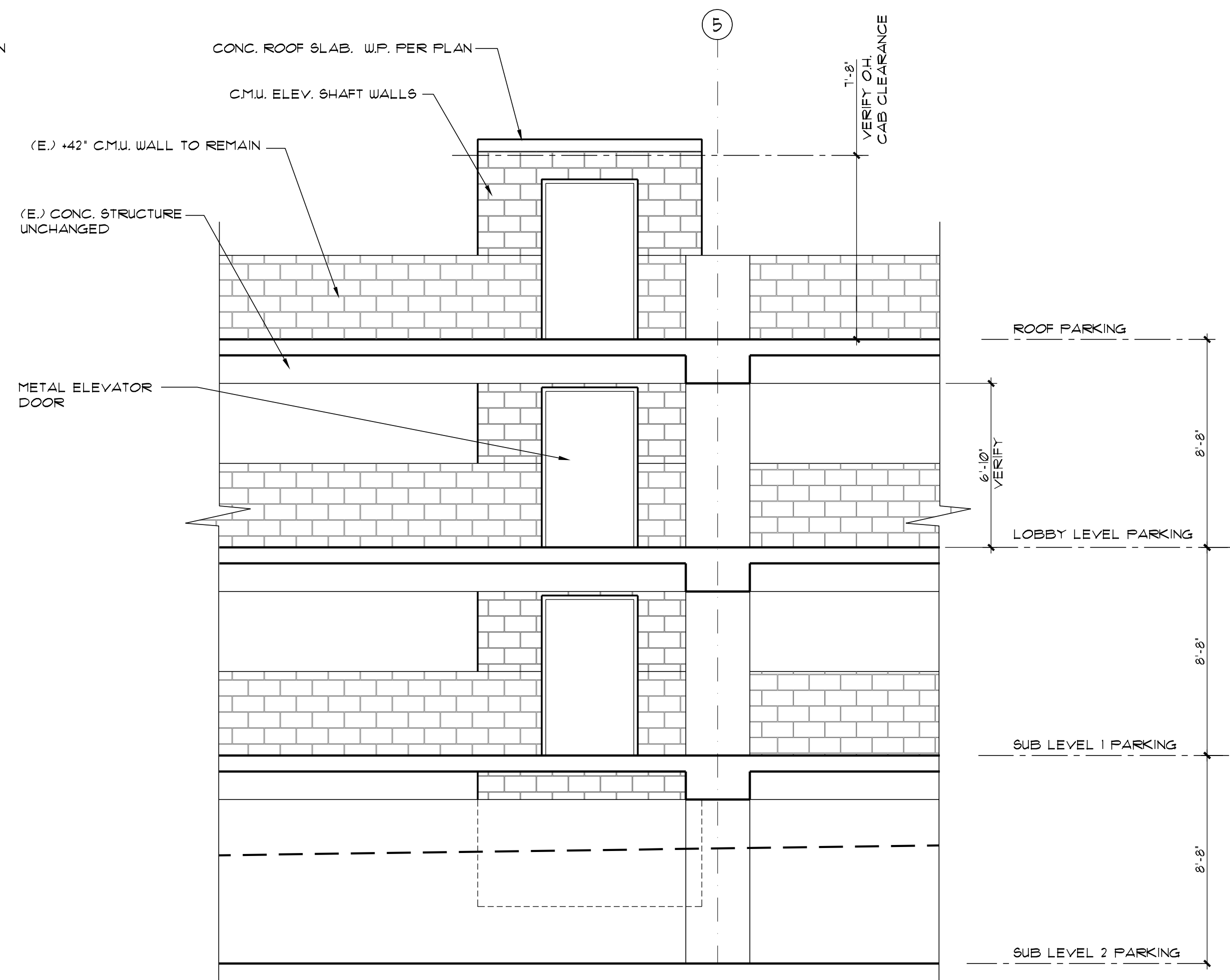
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DECK TO DECK STAIR PLAN
SCALE 1/4" = 1'-0"



EXTERIOR ELEVATIONS
SCALE 1/4" = 1'-0"



GARAGE ELEVATION
SCALE 1/4" = 1'-0"

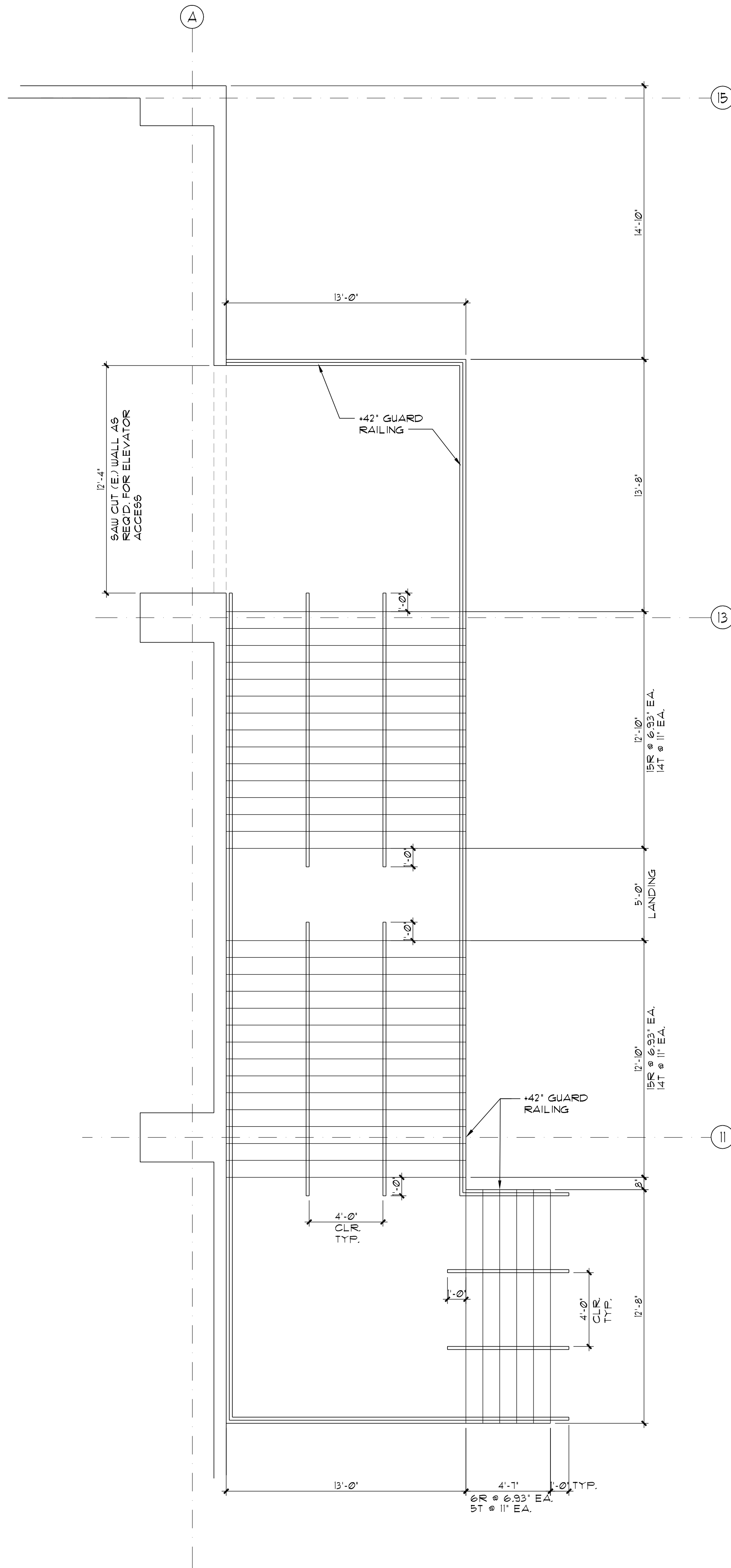


09/23/2026

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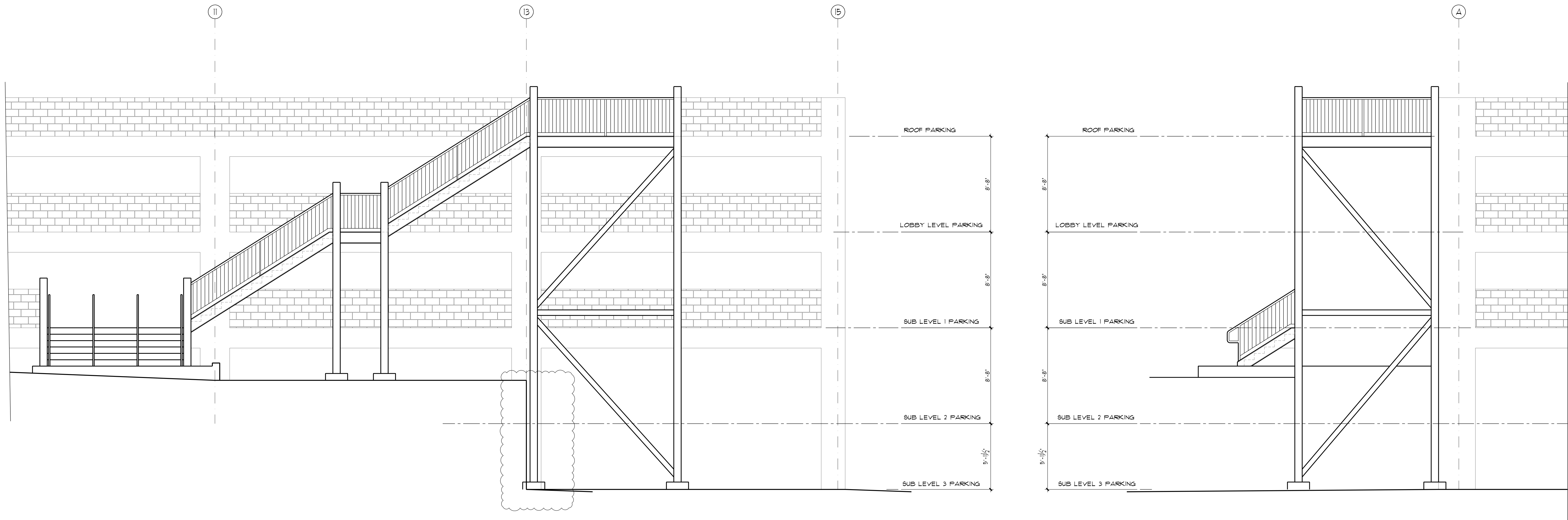
Date 9-23-26
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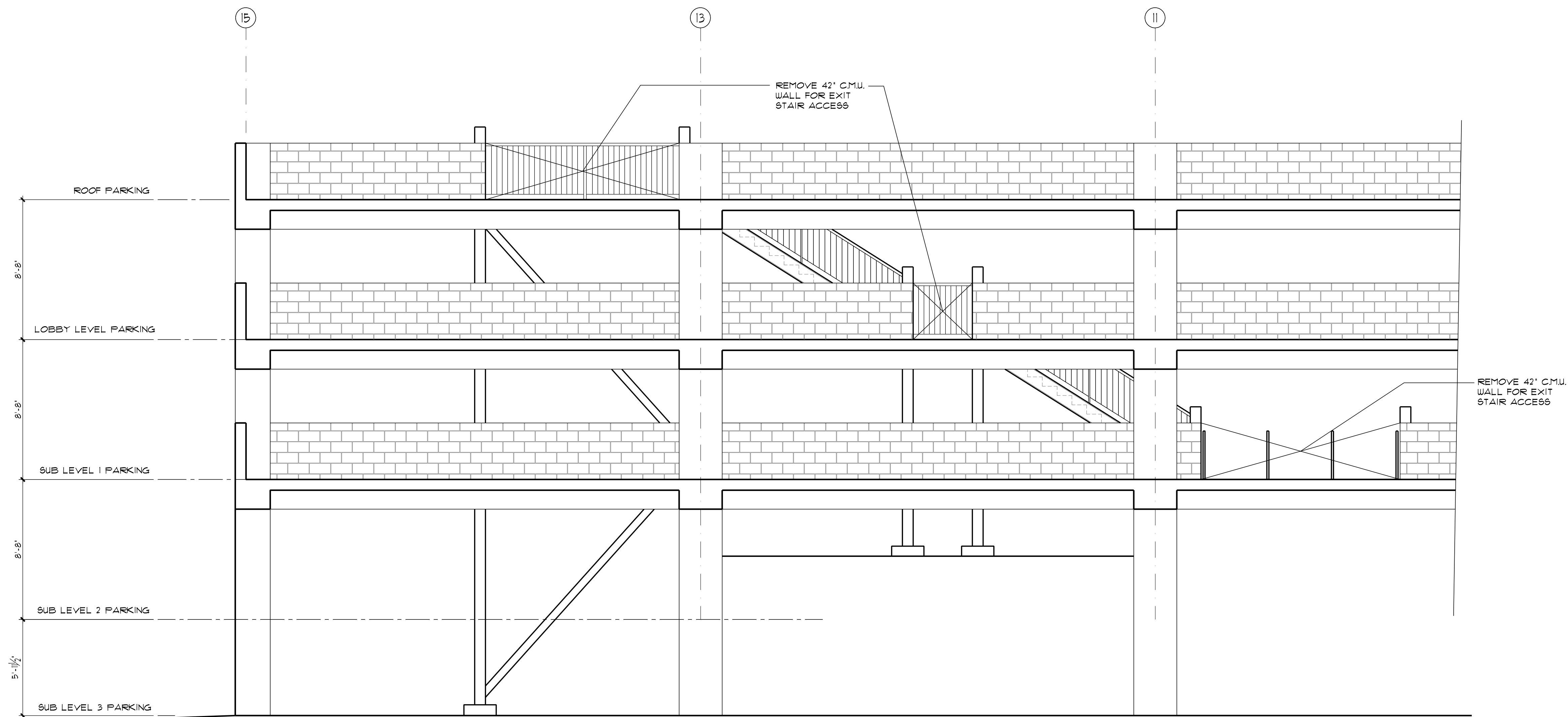
ENLARGED
NORTH EXIT STAIR PLAN
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Date	9-23-26
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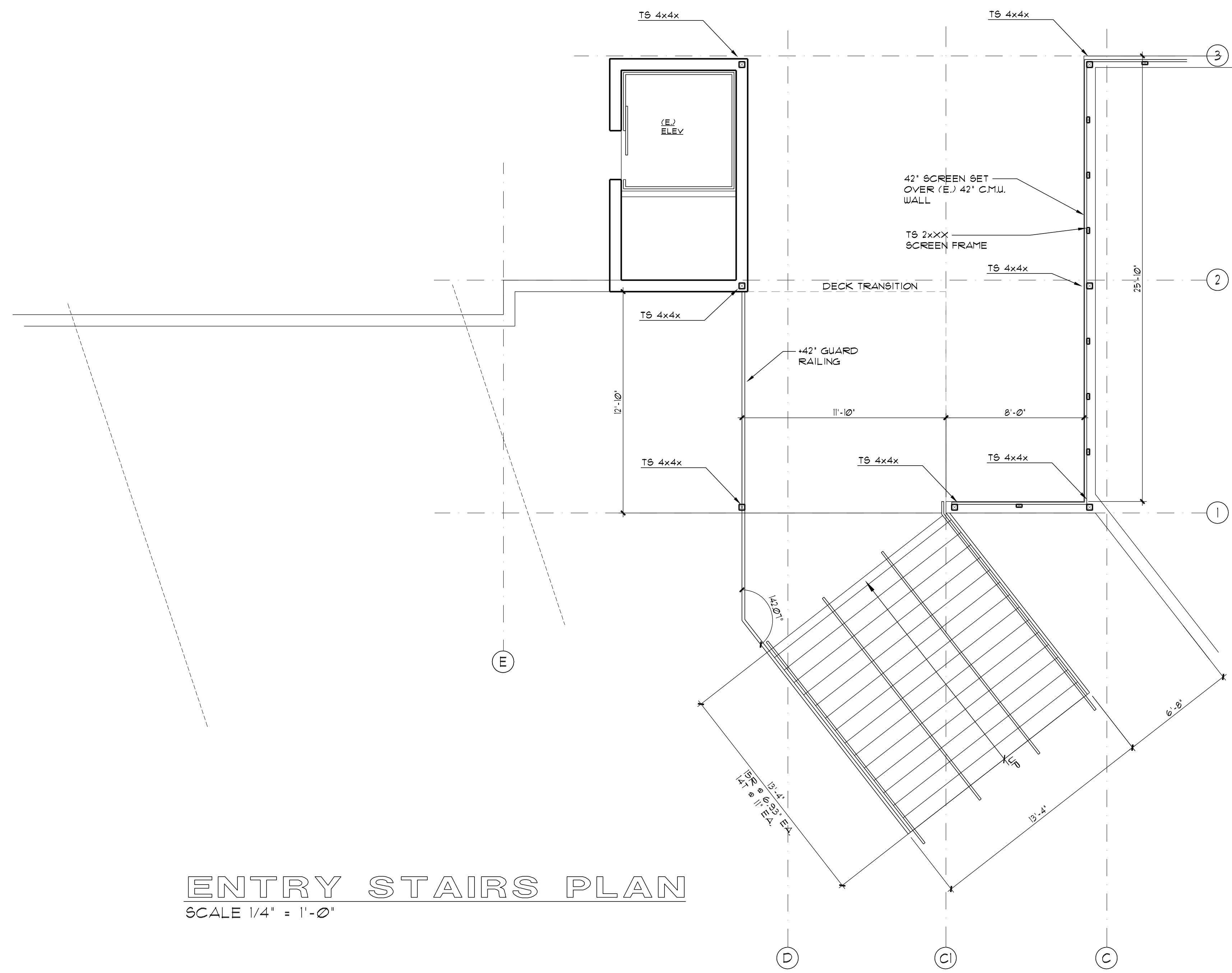


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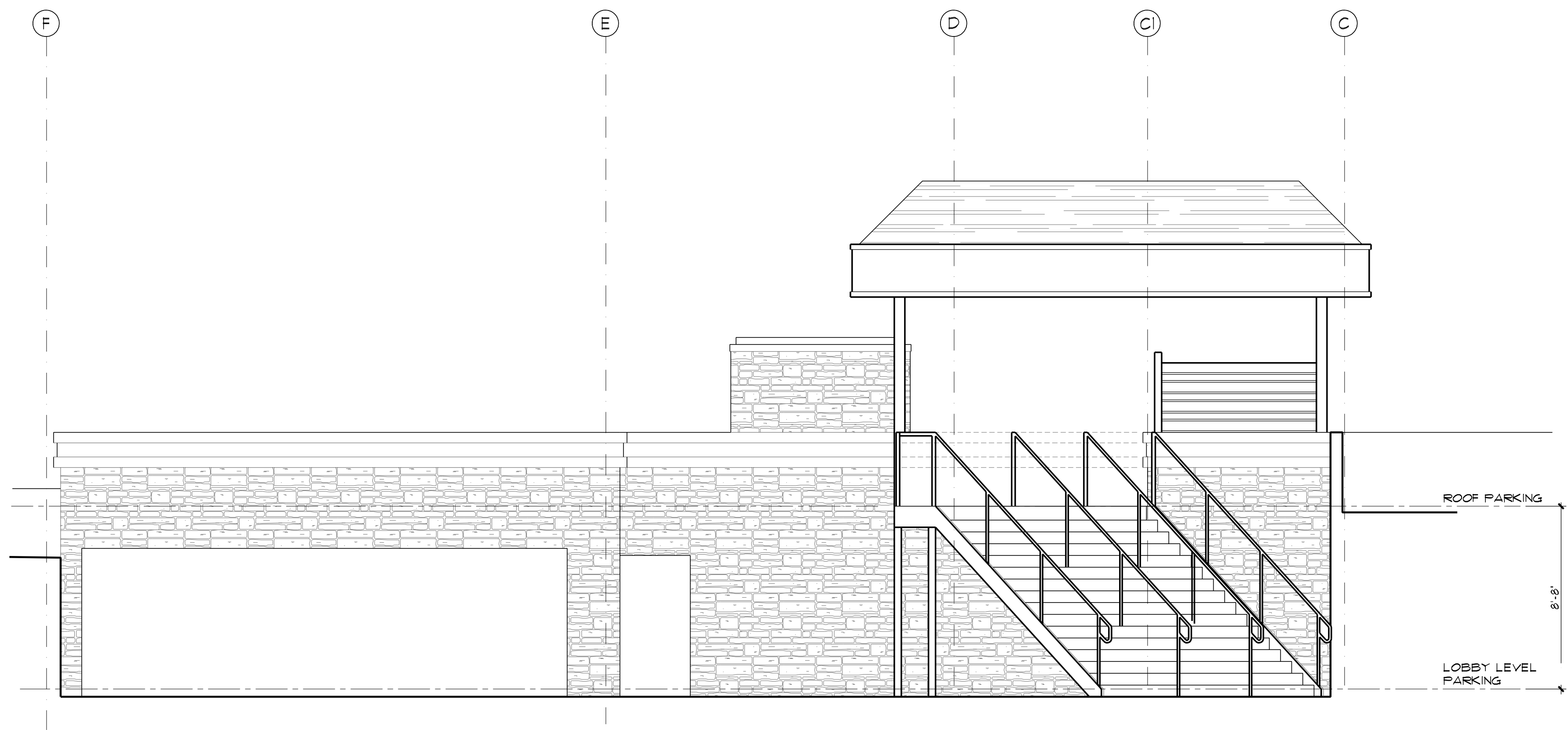


GARAGE ELEVATION
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ENTRY STAIRS PLAN
SCALE 1/4" = 1'-0"



ENTRY ELEVATION
SCALE 1/4" = 1'-0"

Transportation Analysis



LSC Transportation Consultants, Inc.

2690 Lake Forest Road, Suite C

P.O. Box 5875

Tahoe City, CA 96145

530-583-4053

info@lsctrans.com ▲ www.lsctrans.com

TECHNICAL MEMORANDUM

DATE: October 6, 2026

TO: Eric Roe, General Manager, Crystal Bay Casino

FROM: Leslie Suen, PE and Sierra Brown, PE, LSC Transportation Consultants Inc.

SUBJECT: Crystal Bay Casino Rooftop Concert Venue –Transportation Analysis

LSC Transportation Consultants, Inc. has prepared a transportation analysis for the proposed rooftop concert venue located at the Crystal Bay Casino (CBC) at 14 NV-28 in Crystal Bay, Nevada.

The key findings of this analysis are summarized below, with supporting technical documentation provided in the sections that follow.

PROJECT DESCRIPTION

The CBC currently has a 7-level parking garage. Although the rooftop level was originally built to accommodate parking, it is not currently striped and has not been used for parking in at least two decades. The proposed project would convert this rooftop area into a concert venue with a maximum capacity of 3,000 people. The venue would not operate concurrently with the casino's other event spaces and is expected to host no more than 10 events per year, during the summer season.

The CBC is aware that the existing parking supply cannot accommodate a 3,000-person event. To mitigate the limited on-site parking, on event days, the existing parking garage will require advance reservations and paid parking. In addition, the CBC is working with the Truckee North Tahoe Transportation Management Association (TNT-TMA) to provide a free shuttle service from various existing parking areas along the North Shore.

KEY FINDINGS

- The proposed rooftop concert venue has a significant increase in capacity of attendees compared to the existing Crown Room, but due to the limited on-site parking, only a modest increase in traffic to the area is expected. The primary increase in traffic will be due to shuttle trips.



- Parking areas with associated shuttles will be provided off-site at Northstar, Tahoe City 64 acres, and Diamond Peak. While these areas provide sufficient parking to satisfy all attendee parking demand, the Incline Village shuttle from Diamond Peak is expected to be popular and does not currently have enough parking supply for the anticipated demand.
- An existing Crown Room Event currently reaches approximately 80% capacity in the parking garage. Parking for proposed events will be limited by the capacity of the parking garage. An increase in non-auto trips, rideshare/drop-off trips, and shuttle trips will mitigate the limited on-site parking.
- Using Washoe County parking demand rates, the total parking demand is 441 parking spaces. As the total parking supply is 1,393 parking spaces (397 spaces available on-site plus 996 available off-site), the project provides adequate parking under the County's methodology.
- Because proposed concerts are limited to a maximum of 10 per year, the project's impact on the annual average VMT is below the TRPA low-VMT screening criteria and is exempt from further VMT analysis.
- Level of service (LOS) at all study intersections remains acceptable with the proposed rooftop concert project. LOS remains acceptable with the addition of the approved Cal Neva and Biltmore redevelopment projects in the area.

CHAPTER 1

EXISTING TRAFFIC VOLUMES

AM and PM turning-movement counts were conducted by National Data & Surveying Services (NDS) staff at the following study intersections on Wednesday, July 29, 2026, from 8:00 AM to 11:00 AM and 3:00 PM to 6:00 PM:

- Calaneva Drive/Crystal Bay Casino Garage Entry/Somers Loop
- Calaneva Drive/Stateline Road/Cal Neva Drive
- SR 28/Stateline Road
- SR 28/Pedestrian Crossing Signal
- SR 28/Crystal Bay Casino Driveway
- SR 28/Calaneva Drive

The resulting existing no-project AM and PM peak hour traffic volumes are shown in Table 1. As shown, the PM counts are shown to be higher than the AM counts. As such, the counts collected during the PM peak hour are used as the basis for this analysis. Nevada Department of Transportation (NDOT) daily traffic data along the roadway were reviewed for July and August 2025, the most recent data available at the time of analysis. This data was found to be consistent with typical peak summer weekend conditions; accordingly, no adjustment was applied to collected volumes to reflect peak summer conditions.

Hourly roadway counts were also conducted along SR 28 by NDS staff from Wednesday, August 19 through Saturday, August 22, 2026. Because no Crown Room event occurred during this period, these counts represent existing peak summer background traffic along the roadway. The data show a consistent roadway peak hour of approximately 4:00 PM, aligning with the peak hour observed in the intersection turning-movement counts.

For an anticipated 7:00 PM concert start time, the majority of event traffic is expected to arrive during the hour immediately preceding the event (6:00 PM). Because this arrival window falls after the roadway's 4:00 PM peak, the hourly count data was used to derive a factor of 0.9, representing the relationship between the 4:00 PM roadway peak and the lower volumes typically observed during the 6:00-7:00 PM hour. This factor was applied to the PM existing no-project turning-movement volumes to estimate background traffic specifically during the concert's peak inbound arrival period, resulting in the 'Concert Peak Hour – Background Traffic' volumes shown in Table 1.

While concerts could potentially begin earlier in the day, an earlier start time is more typical of festival-style events (such as the Gambler's Run festival), where attendees tend to arrive gradually over an extended period rather than in the concentrated arrival window characteristic of a standard large concert. Given the anticipated event format, applying the concert peak-hour factor is considered appropriate.

Existing Plus Approved Projects Traffic Volumes

Since there are known approved projects in the area, another scenario with these projects was estimated. The following adjustments were included to define the ‘Existing Plus Approved Projects – No Concert’ volumes:

- Traffic generated to/from the Cal Neva Resort, which is currently under construction and will open as the Lake Tahoe Proper Resort & Casino (anticipated opening date of winter 2027), as reflected in the memo *CalNeva Resort – Trip Generation Analysis* (LSC, July 2019).
- Traffic generated to/from the *Waldorf Astoria Lake Tahoe Transportation Impact Study* (LSC, April 2023), which was approved by the Tahoe Regional Planning Agency (TRPA) in 2023.
 - The approved WALT project at the Tahoe Biltmore site is no longer moving forward. Per discussions with Washoe County staff, a reduced project reflecting what is allowed under current zoning could instead be included as background traffic rather than the full WALT project impact. However, to remain conservative, the full WALT project is assumed for this analysis.

These volumes are added to ‘Concert Peak Hour – Background Traffic’ volumes to produce ‘Existing Plus Approved Projects – No Concert’ volumes shown in Table 1.

EXISTING PARKING SUPPLY AND DEMAND

Hourly parking counts were performed at the CBC by LSC staff on Friday, August 7, 2026, between 5:00 PM and 11:00 PM. No events occurred at the CBC on this day to estimate background parking associated with the casino.

On the day of the counts, the parking supply was as follows:

- Parking Garage – 301 parking spaces
- Front Lot – 9 parking spaces + 3 motorcycle parking spaces
- Back Lot – 19 parking spaces
- Total Available Parking - 329 parking spaces + 3 motorcycle parking spaces

Over the six-hour count period, the parking garage held between 55 and 66 vehicles, peaking at 66 vehicles (approximately 22% utilization) at 10:00 PM. Across all available on-site parking, demand ranged from 66 to 86 vehicles, also peaking at 10:00 PM at approximately 26% utilization.

TABLE 1: CBC Rooftop Concert Venue - Peak-Hour Intersection Traffic Volumes - 1 of 2

Intersection	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
Existing No Project AM													
Calaneva Drive / CBC Garage Entry	5	0	17	0	0	4	1	3	5	11	0	1	47
Calaneva Drive / Stateline Road	2	6	0	6	15	0	2	9	9	0	4	6	59
SR 28 / Stateline Road	5	2	7	7	2	6	5	618	0	19	594	1	1,266
SR 28 / Pedestrian Crossing	0	0	0	0	0	0	0	632	0	0	618	0	1,250
SR 28 / Crystal Bay Casino Driveway	6	0	9	0	0	0	0	620	12	7	610	0	1,264
SR 28 / Calaneva Drive	4	0	10	0	0	0	0	621	2	13	609	0	1,259
Existing No Project PM													
Calaneva Drive / CBC Garage Entry	3	0	10	6	1	3	3	7	2	4	3	1	43
Calaneva Drive / Stateline Road	7	16	0	4	5	1	4	7	4	0	8	11	67
SR 28 / Stateline Road	3	1	21	7	0	15	2	734	1	7	739	4	1,534
SR 28 / Pedestrian Crossing	0	0	0	0	0	0	0	757	0	0	752	0	1,509
SR 28 / Crystal Bay Casino Driveway	18	0	15	0	0	0	0	740	17	10	733	0	1,533
SR 28 / Calaneva Drive	6	0	22	0	0	0	0	757	1	9	739	0	1,534
Concert Peak Hour - Background Traffic (6:00 PM)													
Calaneva Drive / CBC Garage Entry	3	0	10	6	1	3	3	7	2	4	3	1	43
Calaneva Drive / Stateline Road	7	16	0	4	5	1	4	7	4	0	8	11	67
SR 28 / Stateline Road	3	1	21	7	0	15	2	662	1	7	667	4	1,390
SR 28 / Pedestrian Crossing	0	0	0	0	0	0	0	683	0	0	678	0	1,361
SR 28 / Crystal Bay Casino Driveway	18	0	15	0	0	0	0	667	17	10	661	0	1,388
SR 28 / Calaneva Drive	6	0	22	0	0	0	0	683	1	9	667	0	1,388
Project Net Impact													
Calaneva Drive / CBC Garage Entry	0	0	0	0	0	0	47	0	0	0	30	66	143
Calaneva Drive / Stateline Road	0	0	0	0	0	0	0	47	0	0	24	6	77
SR 28 / Stateline Road	0	0	6	0	0	0	0	105	0	0	34	0	145
SR 28 / Pedestrian Crossing	0	0	0	0	0	0	0	111	0	0	34	0	145
SR 28 / Crystal Bay Casino Driveway	34	0	63	0	0	0	0	30	81	129	0	0	337
SR 28 / Calaneva Drive	0	0	0	0	0	0	0	69	24	72	129	0	294

TABLE 1: CBC Rooftop Concert Venue - Peak-Hour Intersection Traffic Volumes - 2 of 2

Intersection	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
Concert Peak Hour - With Event Traffic (6:00 PM)													
Calaneva Drive / CBC Garage Entry	3	0	10	6	1	3	50	7	2	4	33	67	186
Calaneva Drive / Stateline Road	7	16	0	4	5	1	4	54	4	0	32	17	144
SR 28 / Stateline Road	3	1	27	7	0	15	2	767	1	7	701	4	1,535
SR 28 / Pedestrian Crossing	0	0	0	0	0	0	0	794	0	0	712	0	1,506
SR 28 / Crystal Bay Casino Driveway	40	0	68	0	0	0	0	697	87	132	661	0	1,685
SR 28 / Calaneva Drive	6	0	22	0	0	0	0	752	25	81	796	0	1,682
Existing Plus Approved Projects - No Concert													
Calaneva Drive / CBC Garage Entry	3	0	10	6	1	3	3	7	2	4	3	1	43
Calaneva Drive / Stateline Road	7	16	0	4	5	1	4	7	4	0	8	11	67
SR 28 / Stateline Road	3	1	21	52	0	75	80	681	1	7	712	77	1,710
SR 28 / Pedestrian Crossing	0	0	0	0	0	0	0	737	0	0	796	0	1,533
SR 28 / Crystal Bay Casino Driveway	18	0	15	0	0	0	0	721	17	10	779	0	1,560
SR 28 / Calaneva Drive	7	0	22	0	0	0	0	736	2	9	784	0	1,560
Existing Plus Approved Projects Plus Concert Project													
Calaneva Drive / CBC Garage Entry	3	0	10	6	1	3	50	7	2	4	33	67	186
Calaneva Drive / Stateline Road	7	16	0	4	5	1	4	54	4	0	32	17	144
SR 28 / Stateline Road	3	1	27	52	0	75	80	786	1	7	746	77	1,855
SR 28 / Pedestrian Crossing	0	0	0	0	0	0	0	848	0	0	830	0	1,678
SR 28 / Crystal Bay Casino Driveway	40	0	68	0	0	0	0	751	87	132	779	0	1,857
SR 28 / Calaneva Drive	7	0	22	0	0	0	0	805	26	81	913	0	1,854

Source: LSC Transportation Consultants, Inc.

Additional parking capacity exists at the CBC beyond what was available during the count. The following restrictions were in place on the day of the count:

- Parking Garage Basement – gated off, typically used for storage (~47 spaces)
- Parking Garage Level 2 – blocked off by orange mesh (~3 spaces)
- Parking Garage Level 3 – small area used for storage (~17 spaces)
- Parking Garage Level 4 – blocked off by orange mesh (~3 spaces)
- Parking Garage Level 6 – gated off (~47 spaces)
- Parking Garage Roof – gated off, unstriped (~128 spaces)

Per CBC staff, the realistic maximum capacity of the garage will be 397 available parking spaces during the proposed event.

EVENT ATTENDEE ORIGIN/DESTINATION

Trip distribution patterns for trips to and from the CBC are based on existing event ticket sales data. Because online ticket purchasers typically provide their home location at the time of purchase, this data provides a reasonable proxy for geographic distribution.

Based on a total of 67,102 ticket sales for CBC events, approximately 33% of ticket sales originated from within the local drive market, defined as approximately a one-hour drive of the site. A distribution based on ticket sales within the local drive market was determined and is summarized in Table 2.

Purchasers located outside this radius were excluded from the initial distribution analysis, as attendees traveling from greater distances are assumed to be staying locally overnight. A separate distribution based on the locations of local accommodation was applied to these attendees. This distribution was confirmed by CBC event management staff. Combining the local drive market and out-of-area market distributions produces the total market distribution presented in Table 2.

TABLE 2: CBC Rooftop Concert Venue - Event Attendee Origin/Destination

Origin/Destination	Local Drive Market ¹	Out-of-Area Market ²	Total Market
Crystal Bay, NV	2%	1%	2%
Incline Village, NV	6%	13%	20%
Kings Beach/Tahoe Vista, CA	4%	17%	20%
Tahoe City, CA	0%	7%	7%
South Lake Tahoe, CA	2%	7%	9%
Truckee, CA	9%	9%	18%
Reno, NV	9%	10%	19%
Carson City, NV	1%	3%	4%
Total	33%	67%	100%

Note 1: Distribution based on existing ticket sales within the local drive market of the CBC.

Note 2: Distribution based the location of tourist accommodations and CBC management staff.

Source: LSC Transportation Consultants, Inc. and Crystal Bay Casino

CHAPTER 2

BASELINE PARKING DEMAND ANALYSIS

The parking demand for both an existing Crown Room event and a proposed Rooftop Event was calculated and compared.

Baseline Parking Demand – Existing Event

Events currently occur at the CBC’s Crown Room, which has a maximum capacity of 750 attendees. As the events at the existing location will not occur at the same time as a proposed event, the parking demand associated with an existing event is calculated as a point of comparison.

Parking Demand of Existing Event Attendees

The distributions from Table 2 were applied to the Crown Room’s 750-attendee capacity to estimate the number of attendees arriving from each origin as shown in Table 3.

TABLE 3: CBC Rooftop Concert Venue - Event Attendee Count		
Origin/Destination	Existing Crown Room Attendees	Proposed Concert Attendees
Crystal Bay, NV	18	72
Incline Village, NV	148	593
Kings Beach/Tahoe Vista, CA	152	607
Tahoe City, CA	53	211
South Lake Tahoe, CA	64	258
Truckee, CA	139	555
Reno, NV	145	581
Carson City, NV	31	123
Total	750	3,000
<i>Source: LSC Transportation Consultants, Inc.</i>		

The project site is served by Tahoe Truckee Area Regional Transportation (TART) transit service and the North Lake Tahoe Express. While TART Connect microtransit does not directly serve Nevada, the service operates in California just west of Stateline Road and is readily accessible to concert attendees. Other rideshare services such as Uber and Lyft are also available on the North Shore. In addition, the site is located approximately 0.8 miles (or a 20 minute walk/7 minute bike ride) from the eastern edge of the main commercial corridor in Kings Beach, California.

Non-auto trips were assumed to originate primarily from Crystal Bay, NV, and Kings Beach/Tahoe Vista, CA, while rideshare trips were assumed to primarily originate from Incline Village, NV, and Kings Beach/Tahoe Vista, CA. After applying reductions for non-auto and rideshare, a total of 623 attendees are assumed to drive and park at the CBC for an existing event, as shown in Table 4.

Assuming an average occupancy of 3.0 attendees per vehicle, the total parking demand associated with an existing event is 208 vehicles.

Origin/Destination	Total Existing Attendees ¹	Attendees Arriving via Non-Auto		Attendees Arriving via Drop-Off/Rideshare		Remaining Attendees Driving
		% by Location	Total by Location	% by Location	Total by Location	
Crystal Bay, NV	18	75%	14	0%	0	4
Incline Village, NV	148	0%	0	25%	37	111
Kings Beach/Tahoe Vista, CA	152	25%	38	25%	38	76
Tahoe City, CA	53	0%	0	0%	0	53
South Lake Tahoe, CA	64	0%	0	0%	0	64
Truckee, CA	139	0%	0	0%	0	139
Reno, NV	145	0%	0	0%	0	145
Carson City, NV	31	0%	0	0%	0	31
Total	750		52		75	623

Note 1: See Table 3.
 Source: LSC Transportation Consultants, Inc.

Parking Demand of Existing Event Employees

A total of 25 employees are assumed to work each event (in addition to staff supporting typical casino operations). Approximately 5% are assumed to arrive via non-auto and an additional 5% are assumed to arrive via rideshare or drop-off vehicles, leaving 23 employees assumed to arrive by personal vehicle. The average vehicle occupancy associated with employees is approximately 1.1 persons per vehicle, consistent with data found in the census. As such, the total parking demand associated with event employees is approximately 21 parking spaces.

Parking Demand of Typical Casino Operations

The total parking demand associated with typical casino operations (including hotel guests, visitors and employees) was found to be between 66 and 86 parked vehicles. Parking counts show demand gradually increasing through the evening, likely reflecting hotel guests checking in and staying overnight. To remain conservative, a peak background demand of 90 vehicles is assumed to already be on-site at the time of an event.

Total Parking Demand of Existing Event

Combining event attendee, event employee, and background casino parking demand results in a total demand of 319 vehicles at the CBC. Even with existing restrictions on the parking supply applied, no off-site parking is currently required. Assuming the additional parking areas were open, the garage reaches approximately 80% capacity during an existing event. This is consistent with CBC staff observations that the garage does not reach full capacity during existing Crown Room events.

Baseline Parking Demand – Proposed Event

Under implementation of the proposed project, events will occur on the rooftop of the existing parking garage. These rooftop events will have a maximum capacity of 3,000 attendees, and an existing Crown Room event will not run concurrently.

Parking Demand of Proposed Event Attendees

The distributions from Table 2 were applied to the proposed event's 3,000-attendee capacity to estimate the number of attendees arriving from each origin as shown in Table 3.

As the project site is not changing, the non-auto assumptions applied under existing conditions remains the same. However, due to the implementation of paid parking, it is assumed more people would now use non-auto modes or rideshare/drop-off. In addition, TRPA has a requirement that any event with the potential for more than 500 attendees "must include strategies for encouraging the use of alternatives to personal automobiles and should include plans for bike valet, shuttle services, and rideshare drop-off locations" (TRPA Code of Ordinances, Section 22.7.6.B). Due to this requirement and the CBC's Parking Management Plan, a higher non-auto and rideshare/drop-off reduction is assumed, as shown in Table 5.

After applying reductions for non-auto and rideshare/drop-off, a total of 2,153 attendees are assumed to travel via personal vehicle, as shown in Table 5.

Assuming an average occupancy of 3.0 attendees per vehicle, the total parking demand associated with a proposed event is 718 vehicles.

Origin/Destination	Total Rooftop Concert Attendees ¹	Attendees Arriving via Non-Auto		Attendees Arriving via Drop-Off/Rideshare		Attendees Arriving via
		% by Location	Total by Location	% by Location	Total by Location	
Crystal Bay, NV	72	100%	72	0%	0	0
Incline Village, NV	593	0%	0	50%	297	296
Kings Beach/Tahoe Vista, CA	607	50%	304	25%	152	151
Tahoe City, CA	211	5%	11	5%	11	189
South Lake Tahoe, CA	258	0%	0	0%	0	258
Truckee, CA	555	0%	0	0%	0	555
Reno, NV	581	0%	0	0%	0	581
Carson City, NV	123	0%	0	0%	0	123
Total	3,000		387		460	2,153

Note 1: See Table 3.
 Source: LSC Transportation Consultants, Inc.

Parking Demand of Proposed Event Employees

A total of 60 employees are assumed to work each proposed event (in addition to staff supporting typical casino operations). Due to the limited on-site parking, CBC staff has indicated it will encourage event staff to carpool or utilize non-auto or drop-off modes of transportation during large events to reduce the on-site parking demand. Approximately 10% are assumed to arrive via non-auto and an additional 25% are assumed to arrive via rideshare or drop-off vehicles. Assuming an increased average vehicle occupancy of 2.0 for employees, the total parking demand associated with event employees is approximately 20 parking spaces.

Parking Demand of Typical Casino Operations

As previously discussed, typical casino operations will continue during a proposed rooftop event; however, due to the implementation of paid, reservation-based parking beginning several hours prior to the event, non-attending patrons are unlikely to pay to park solely to visit the casino. Because paid

parking is not in effect at the start of the day, some vehicles associated with typical operations may already be parked on-site when the system takes effect; however, this is expected to decrease as the event approaches, as patrons who arrived earlier in the day complete their visit and depart.

The CBC hotel has a limited capacity of 10 suites, and guests staying on-site are reasonably assumed to be attendees of the concert, rather than a separate source of background parking demand. As such, on-site parking associated with typical operations during a proposed event is expected to be minimal, consisting primarily of a small number of remaining casino patrons who have not yet departed, along with staff supporting typical casino operations.

The client has indicated approximately 40 parking spaces will be available for employees to park on-site. Assuming 20 of these spaces will be used by the event employees (calculated above), an additional 20 spaces will be left available for employees associated with typical casino operations. To remain conservative, a peak background demand of 30 vehicles associated with typical casino operations is assumed to remain on-site (including 20 non-event staff vehicles and 10 remaining casino patrons who have not yet departed) at the time of a proposed event.

Total Parking Demand of Proposed Event

Combining event attendee, event employee, and background casino parking demand results in a total demand of 768 vehicles. Onsite parking can accommodate 397 vehicles. Assuming 40 spaces will be made available for CBC employees, and 10 spaces will be filled by background casino patrons, a total of 347 parking spaces remain for event attendees. About 1,041 attendees can park in these spaces, with the remaining attendees, 1,113 persons, required to park off-site and utilize the free concert shuttles. These 1,113 attendees could have to have lower vehicle occupancy when parking off-site, of 2 persons per vehicle. Therefore, the estimated off-site parking demand is therefore expected to be between 371 vehicles (assuming 3 persons per vehicle) and 557 vehicles (assuming 2 persons per vehicle) as shown in Table 6.

PARKING DEMAND AT OFF-SITE LOTS

As stated previously, the project is working with the TNT-TMA to provide off-site parking locations as well as a free shuttle service. Though agreements have not yet been formalized, various locations have indicated they are willing to allow use of their lots. Based on initial discussions, off-site parking is expected to be available at the following locations:

- Truckee, CA – Northstar (766 parking spaces)
- Incline Village, NV – Diamond Peak (100 parking spaces)
- Tahoe City, CA – Tahoe City Transit Center (130 parking spaces – though, as this is a public parking lot, this number cannot be guaranteed)

In addition, the Incline Village and Tahoe City shuttle routes are proposed to stop at some of the existing TART stops on the way to the CBC.

TABLE 6: CBC Rooftop Concert Venue - Baseline Parking Demand

Description	Existing	Proposed
Event Attendee Parking Demand		
Maximum Capacity of Event Space	750	3,000
Total Attendees Arriving via Non-Auto (Walk, Bike, TART bus)	52	387
Total Arriving Via Rideshare (TART Connect, Uber, Lyft) or Dropped Off	75	460
Total Attendees Driving	623	2,153
Average Vehicle Occupancy at CBC	3.0	3.0
Total Parking Demand of Event	208	718
Event Employee Parking Demand		
Total Employees Working Event	25	60
Total Employees Arriving via Non-Auto or Shuttle	1	6
Total Arriving Via Rideshare (TART Connect, Uber, Lyft) or Dropped Off	1	15
Total Employees Driving	23	39
Average Vehicle Occupancy	1.1	2.0
Total Parking Demand of Event Employees	21	20
Total Parking Demand at CBC		
Vehicles Parked On-Site for Typical Casino Operations ¹	90	30
Total Parking Demand at CBC	319	768
Parking Demand Required Off-Site		
Maximum Capacity of CBC Parking Areas	397	397
<u>Minimum</u> # Vehicles Required to Park Off-site (Assuming Occupancy of 3.0)	0	371
# Attendees Required to Park Off-Site	-	1,113
Average Vehicle Occupancy at Shuttle Location	-	2.0
<u>Maximum</u> # Vehicles Required to Park Off-site (Assuming Occupancy of 2.0)	-	557
Note 1: Based on existing parking counts taken at the casino on a typical summer day with no event. Source: LSC Transportation Consultants, Inc.		

Shuttle Parking Demand by Area

The parking demand for each shuttle parking area is shown in Table 7 based on the attendee's origin and the lot that is the most convenient. To remain conservative, this distribution was applied to the upper estimated shuttle parking demand of 557 vehicles from Table 6 to provide the maximum off-site parking demand.

As shown in Table 7, the Northstar lot has much more capacity than demand and easily accommodates demand. The Tahoe City Shuttle has a demand of 78 vehicles; as the Tahoe City shuttle is proposed to stop at existing TART stops, those located in Kings Beach/Tahoe Vista as well as a portion of those in Tahoe City, will likely utilize the TART stops rather than park at the 64-Acre lot. As such, the remaining demand at the lot is likely able to be accommodated despite the parking lot being public. The Incline Village shuttle has more demand than parking supply, and an additional 151 vehicles would like to park there.

Origin/Destination	% Origin/ Destination ¹	# Vehicles that will Park Off-Site ²	% to Use Each Shuttle				# Vehicles to Utilize Each Shuttle			
			Incline Village Shuttle	Northstar Shuttle	Tahoe City Shuttle	Total	Incline Village Shuttle	Northstar Shuttle	Tahoe City Shuttle	Total
Incline Village, NV	14%	77	100%	0%	0%	100%	77	0	0	77
Kings Beach/Tahoe Vista, CA	7%	39	0%	25%	75%	100%	0	10	29	39
Tahoe City, CA	9%	49	0%	0%	100%	100%	0	0	49	49
South Lake Tahoe, CA	12%	67	100%	0%	0%	100%	67	0	0	67
Truckee, CA	26%	143	0%	100%	0%	100%	0	143	0	143
Reno, NV	27%	150	50%	50%	0%	100%	75	75	0	150
Carson City, NV	6%	32	100%	0%	0%	100%	32	0	0	32
Total		557					251	228	78	557
Proposed Parking Supply at each Lot							100	766	130	996
Parking Surplus/Deficit							-151	538	52	439

Note 1: Based on the number of driving attendees calculated in Table 5.
 Note 2: Assumes a vehicle occupancy of 2.0, as shown in Table 6.
 Source: LSC Transportation Consultants, Inc.

Since the proposed lot locations and sizes do not fully accommodate the parking demand at each location, parking management strategies to help distribute the demand are discussed in the following section.

PARKING MANAGEMENT STRATEGIES

Several parking management strategies are recommended to help distribute demand efficiently across shuttle locations and encourage non-auto travel:

- Encouragement Employee Carpool/Non-Auto travel. A limited number of spaces will be reserved for employees to park on-site. Employees will be encouraged to arrive via carpool or non-auto means to ensure the on-site parking demand is not exceeded.
- Reserved shuttle parking at constrained lots. Attendees wishing to park in the Incline Village lot would be required to reserve this free parking at the time of event ticket purchase, ensuring the lot does not exceed capacity on event days. Though parking at the Tahoe City lot cannot be reserved as it is a public parking lot, an option to “reserve a spot on the shuttle” can be made available with a note that parking is not guaranteed and indicating the options of existing TART stops or redirecting purchasers to the Northstar lot.
- Incentivize use of the Northstar lot. Because the Northstar location has sufficient capacity to accommodate all off-site parking demand, ticket sales could default to or prioritize Northstar parking, supported by incentives such as food vouchers for attendees using the Northstar shuttle.
- Extend incentives to non-auto travelers. Similar vouchers or incentives could be offered to attendees who check in at the bike valet, further encouraging non-auto travel consistent with TRPA's special event policy.
- Pursue additional off-site parking capacity. The project team is coordinating with the Incline Village General Improvement District (IVGID) to explore additional off-site parking spaces located at school lots, which typically have low demand during summer months.

WASHOE COUNTY PARKING DEMAND

For comparison purposes, and consistent with Washoe County review requirements, parking demand was also estimated using Washoe County's standard parking demand rates. Parking rates are provided in Appendix A of the *Washoe County Tahoe Area Plan* (December 17, 2025). The land use most relevant to the proposed project is "Privately Owned Assembly and Entertainment. The parking demand rates are as follows:

- Privately Owned Assembly and Entertainment - Auditorium
 - 1 space/ full-time employee; and
 - 1 space / 150 s.f. GFA; or
 - 1 space / 3 seats

As the outdoor venue is a temporary use, no fixed seats will be provided. Thus, the applicable governing parking rates would be those based on the number of employees plus the gross square footage. As stated previously, a total of 60 employees are assumed to work at a proposed event in addition to 20 employees associated with typical casino operations. The proposed concert venue has a gross floor area of 54,083 square feet. Applying Washoe County's rates to the combined employee count and building square footage results in a total demand of 441 parking spaces without taking reductions for non-auto or rideshare/drop-off trips.

The project provides a total parking supply of 397 on-site spaces and 996 off-site spaces, for a combined total of 1,393 spaces. This supply exceeds the 441-space demand generated under Washoe County's standard parking rates, indicating the project provides adequate parking under the County's methodology.

It is important to note that Washoe County's parking rates are a generalized, land-use-based standard not specifically calibrated to concert or special event venues, and do not account for event-specific factors such as actual attendee mode share, vehicle occupancy, or proximity to transit. By contrast, the person-trip analysis conducted for this project (described above) is based on project-specific ticket sales data, observed mode-share patterns, and TRPA travel survey data calibrated to the site's actual transit and bicycle accessibility. This more detailed, data-driven methodology is expected to produce a more accurate and realistic estimate of actual parking demand and is considered conservative relative to the generalized Washoe County standard, which does not reflect the project's specific shuttle and non-auto mitigation measures.

CHAPTER 3

DAILY TRIP GENERATION ANALYSIS

Trip generation is the process by which engineers estimate the amount of traffic that would be associated with a development proposal. The source of trips at the project site will be those associated with attendees parking on-site, employees, concert shuttles, and rideshare drop-offs.

The trip generation analysis will consider the difference between the existing events in the Crown Room and the proposed rooftop concert events. First, the trips associated with an existing event is calculated. Then the trips associated with a proposed rooftop concert event is shown. The net change between the proposed events compared to the existing events result in the impact of the project.

Trip Generation of Existing Events

As shown in Table 6, a total of 208 attendee vehicles are assumed to park at the CBC during an existing event. As each attendee vehicle will make one inbound trip at the beginning of the concert and one outbound trip at the conclusion of the concert, a total of 416 trips are associated with the attendee vehicles, as shown in the top portion of Table 8.

Employees, likewise, are assumed to make one inbound trip at the beginning of their shift and one outbound trip at the conclusion. As a total of 21 vehicles are associated with event employees parking on-site, a total of 42 trips are associated with the employees.

For employees and event attendees who get dropped off, each drop-off vehicle generates both an inbound and an immediate outbound driveway movement as the vehicle departs after dropping off its passengers. Pick-up activity at the conclusion of the event/employee shift will also result in an inbound and an immediate outbound driveway movement. A total of 104 attendee drop-off trips and 4 employee drop-off trips would be generated from these trips.

Combining all existing event trips, a total of 566 vehicle trips are currently estimated to access CBC site driveways. The existing trips are summarized in Table 8.

Trip Generation of Proposed Events

As with the existing events, the vehicle trips at the project site are those associated with attendees parking on-site, employees of the CBC, and rideshare drop-offs. In addition, trips associated with the concert shuttle will also access the site.

Trip Generation of Personal Vehicles and Drop-Offs

Using the same inbound and outbound assumptions from the existing concert, a total of 694 attendee trips, 616 attendee rideshare trips, 40 employee trips, and 60 employee rideshare trips will access site driveways, as shown in the middle section of Table 8.

Trip Generation of Personal Vehicles Going to Off-Site Lots

Consistent with the baseline parking demand, between 371 and 557 vehicles are assumed to park off-site at the shuttle lots. Assuming each vehicle makes an inbound and outbound trip, the off-site trips will be between 742 and 1,114 vehicle trips. To estimate the maximum impact, the upper bound is analyzed.

Trip Generation of Shuttles

Though no arrangements have been formalized, a tentative shuttle schedule has been provided by CBC staff. The proposed schedule at each location is as follows:

- Shuttle Location: Northstar
 - Available Parking: 766 parking spaces
 - Fleet: Ten 40-passenger vehicles plus one additional bus on call for ADA passengers
 - Shuttle Frequency:
 - Before Concert: Bus departures are staggered so a vehicle departs Northstar approximately every 10 minutes
 - After Concert: All buses depart the CBC every 30 minutes
 - Total estimated trips: 112 inbound plus 112 outbound
- Shuttle Location: Diamond Peak
 - Available Parking: 100 parking spaces
 - Fleet: Three 32-passenger vehicles
 - Shuttle Frequency:
 - Before Concert: Bus departures are staggered so a vehicle departs Diamond Peak approximately every 10 minutes
 - After Concert: All vans depart the CBC every 30 minutes
 - Total estimated trips: 36 inbound plus 36 outbound
 - These vans are also proposed to stop at TART bus stops
- Shuttle Location: Tahoe City Transit Center
 - Available Parking: 130 parking spaces
 - Fleet: Five 40-passenger vehicles
 - Shuttle Frequency:
 - Before Concert: Bus departures are staggered so a vehicle departs Tahoe City approximately every 20 minutes
 - After Concert: All buses depart the CBC every 60 minutes
 - Total estimated trips: 22 inbound plus 22 outbound
 - These vans are also proposed to stop at TART bus stops

Note that this schedule is preliminary and does not account fully for bus loading/unloading time, stops at TART bus stops, or typical summer traffic delays (particularly in Kings Beach); however, these simplified assumptions produce a maximum estimated trips and impacts at site driveways during the peak hour, providing a conservative basis for analysis.

Total Trip Generation

Combining all trips associated with the proposed rooftop concert event results in a total of 1,749 vehicle trips accessing site driveways as shown in Table 8. As the attendee vehicles driving to shuttle lots do not access site driveways, the trips associated with these attendees increase the total trips to 2,863 daily trips. The net impact on trips at the CBC would be an increase of 1,183 daily trips.

TABLE 8: CBC Rooftop Concert Venue - Vehicle Miles Traveled (VMT) Analysis

Description	Daily Vehicle Trips	Average Trip Length (miles) ¹	VMT
Existing Crown Room Event			
Attendee Vehicles Driving	416	9.6	3,995
Attendee Rideshare/Drop-Off	104	3.9	402
Event Employees Driving	42	6.5	274
Employee Rideshare/Drop-Off	4	6.5	26
<i>Total Existing Event</i>	<i>566</i>		<i>4,697</i>
Proposed Rooftop Concert Event			
Attendee Vehicles Driving to CBC	694	10.5	7,269
Attendee Rideshare/Drop-Off to CBC	616	4.8	2,961
Event Employees Driving to CBC	40	6.5	261
Employee Rideshare/Drop-Off to CBC	60	6.5	391
Attendee Vehicles Driving to Shuttle Lots ²	1,114	6.0	6,651
Shuttle Trips to CBC	339	6.1	2,066
<i>Total Proposed Event</i>	<i>2,863</i>		<i>19,599</i>
<i>Total Proposed Event Accessing CBC Site Driveways</i>	<i>1,749</i>		
Net Change			
Total Net Change	1,183		14,902
Peak VMT to Average Annual VMT			
Total Days in Operation ³			10
Peak Day - to - Average Annual Factor ³			0.03
TRPA Basin Average Annual VMT			408
Screened?	Yes, the LOW VMT Screen is 1,300 average annual VMT for TRPA.		

Note 1: The CBC is located in PIA Zone 72.

Note 2: Attendees driving to shuttle lots do not access CBC driveways.

Note 3: A maximum of 10 large special events are proposed to occur over the course of a summer.

Source: LSC Transportation Consultants, Inc.

VEHICLE-MILES TRAVELED (VMT) ANALYSIS

The VMT analysis for the proposed project is based on the latest *TRPA Project Impact Assessment Guidelines* (August 15, 2025), which serves as the applicable regional standard. Washoe County has not adopted a separate vehicle miles traveled (VMT) methodology.

TRPA VMT Screening Criteria

Per TRPA standards, this analysis focuses on VMT generated within the Tahoe Basin only. According to the “Project Impact Assessment Guidelines,” projects that meet the low-VMT screen will be screened out of further VMT analysis. The project is located within the Kings Beach/Crystal Bay town center half-mile buffer zone. Therefore, the low VMT generation threshold to be screened out is 1,300 average daily VMT.

Existing VMT Analysis

Per the TRPA Code of Ordinances Section 65.2.3.C, the trips associated with the most recent permanent use of a project site may be credited against the proposed project's trip generation, provided that use existed for more than 90 consecutive days within the 60 months preceding submission of a complete application. As an existing Crown Room event will be prohibited from occurring concurrently with a proposed event, the trips (and thus VMT) associated with the Crown Room during these 10 events may therefore be credited against the proposed project.

Average Trip Lengths

The project is located in PIA Zone 72, which has an average trip length of 6.52 miles. This trip length was applied to both the driving employees and the employee rideshare/drop-off trips.

For attendee vehicles parking at the CBC, an extended trip length was calculated based on the estimated origins/destinations of the driving attendees. An average trip length (truncated at the TRPA boundary) of trips between the CBC and each of the origins/destinations listed was then estimated. Using the distribution of remaining attendees driving and the average trip lengths to each origin/destination, a weighted average trip length of 9.6 miles was calculated for event attendees.

For attendees utilizing rideshare services, a shorter trip length was assumed based on the actual origins of rideshare trips estimated in Table 5. A weighted average trip length of 3.9 miles was calculated for attendee rideshare trips.

Existing VMT

Applying the average trip lengths to the number of daily trips associated with each trip type results in a total VMT of 4,697 daily VMT as shown in Table 8.

Proposed VMT Analysis

Under proposed project conditions, VMT associated with attendees driving and parking at the site, event employees, and attendee rideshare was calculated. In addition, the VMT associated with the concert shuttles as well as the VMT associated with attendees driving to the shuttle lots must also be accounted for.

Average Trip Lengths

Consistent with the existing VMT analysis, the PIA Zone 72 average trip length of 6.52 miles was applied to both the driving employees and the employee rideshare/drop-off trips.

For attendee vehicles parking at the CBC, a weighted average trip length of 10.5 miles was calculated for event attendees. This trip length is slightly longer than that of the existing Crown Room event due to the increase of non-auto and rideshare trips by origin/destinations closer to the CBC.

For attendees utilizing rideshare services, a weighted average trip length of 4.8 miles was calculated. This is slightly longer than under existing conditions, as paid parking would increase the distance people would be willing to travel using these services.

The proposed shuttles will only travel between the shuttle lots and the CBC, with a slight deviation for the Incline Village shuttle to stop at existing TART stops. Based on the number of shuttles provided at each location, the weighted average trip length was calculated to be 6.1 miles for the shuttles.

Though event attendees driving to shuttle lots do not access site driveways, the amount of VMT associated with these trips must be accounted for. For those driving to shuttle lots, a weighted average trip length of 6.0 miles was calculated. Due to trip lengths being truncated at the TRPA boundary, this average trip length is less than the average trip length driving to the CBC due to the high percentage of Reno and Truckee attendees accessing the Northstar lot, which is located outside of the Tahoe Basin.

Proposed VMT

Applying the average trip lengths to the number of daily trips associated with each trip type results in a total daily VMT of 19,599 daily VMT, as shown in Table 8.

Project Net Impact in VMT

Compared to an existing Crown Room Event, the proposed concert represents a net increase of 14,902 daily VMT.

Peak VMT to Average Annual VMT

Per TRPA standards, the screening criteria is based on average daily VMT. As the proposed concert will only occur a maximum of 10 times a year, a peak day-to-annual average factor of 0.03 was applied to the total net VMT. Applying this factor results in a project impact of 408 average annual VMT. Because the project VMT is below the 1,300 VMT threshold, the project is screened from further analysis.

Approved Background Projects Impact on VMT

Upon opening of the under-construction hotel at the CalNeva or the proposed project at the WALT, additional overnight accommodations will be available in Crystal Bay, NV. As both of these accommodations are located within walking distance of the CBC, it can reasonably be concluded that during large concert events, both places would attract event attendees.

Shifting event attendees to these accommodations would increase those arriving via non-auto, which would reduce vehicle trips and thus reduce VMT. It can be concluded that under the opening of either approved project, the CBC rooftop event project will continue to meet the low-VMT threshold and can be screened from further analysis.

CHAPTER 4

PEAK HOUR TRIP GENERATION ANALYSIS

Not all concert-related trips occur during a single hour. The two hours with the highest concentration of activity are anticipated to be the hour before the concert begins (6:00 PM) and the hour in which it ends (10:00 PM). Concert-related trips were distributed between 4:00 PM (approximately three hours before the concert start) and 12:00 AM, when the final shuttle departures leave the CBC.

The pre-concert peak hour (6:00 PM) is estimated to generate approximately 480 vehicle trips (353 inbound, 127 outbound) based on a person trip analysis as shown in Table 9.

Although the post-concert hour is expected to see a higher number of departing guests (550 vehicle trips), background roadway volumes along SR 28 during this period are much lower at approximately 28% of the roadway's peak hour volume, compared to 90% during the 6:00 PM hour. Therefore, the 6:00 PM hour represents the greater impact on roadway operations and was selected for impact analysis.

The concert hourly trip generation is presented in Table 9.

TABLE 9: CBC Rooftop Concert Venue - Event Day PM Hourly Trip Generation at CBC

Hour Start Time		Background Casino Traffic		Maximum Rooftop Concert Event Trips ^{1,2}								Total Vehicle Trips		
				Attendee Vehicles at CBC		Attendee Drop-Off/Rideshare Vehicle Trips		Concert Shuttles		Event Employee Trips ³				
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total
	12:00 PM										0	0	0	
	1:00 PM										0	0	0	
	2:00 PM										0	0	0	
	3:00 PM	66	20								66	20	86	
	4:00 PM		20	17		7	7	0	0	35	15	59	42	101
	5:00 PM		16	87		38	38	8	6		133	60	193	
	6:00 PM		0	226		97	97	30	30		353	127	480	
	7:00 PM			17		8	8	31	32		56	40	96	
	8:00 PM					3	3	31	30		34	33	67	
	9:00 PM				18	8	8	23	8		31	34	65	
	10:00 PM				260	116	116	27	31		143	407	550	
	11:00 PM				52	23	23	20	26		43	101	144	
	12:00 AM				17	7	7	0	6	15	35	22	65	87
Total		66	56	347	347	307	307	170	169	50	50	940	929	1,869

Note: Peak Hour Before Concert and After Concert is shaded.

Note 1: The proposed concert is assumed to start at 7:00 PM and end at 10:00 PM.

Note 2: Assumes paid parking is implemented 2 hours prior to the start of the concert.

Note 3: Event employees are assumed to arrive approximately 3 hours before the concert begins.

Source: LSC Transportation Consultants, Inc. and Crystal Bay Casino

TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution is based on the attendee/trip origin shown previously. The concert-generated traffic volumes are assigned through the study intersections by applying the distribution percentages (summarized in Table 10) to the number of peak-hour vehicle trips. The resulting project's net impact traffic volumes are shown in Table 1. The concert peak-hour intersection turning movement volumes are then added to the 'Concert Peak Hour- Background Traffic' volumes, yielding the 'Concert Peak Hour- With Event Traffic' peak-hour intersection traffic volumes presented in Table 1.

The project-generated peak-hour intersection turning movement volumes are likewise added to the 'Existing Plus Approved Projects – No Concert' volumes, yielding the 'Existing Plus Approved Projects Plus Concert Project' peak-hour intersection traffic volumes presented in Table 1.

Due to the anticipated decrease of background traffic entering/exiting the CBC during the concert peak hour, these background traffic volumes entering and exiting the site driveway were reduced by 66% to account for this decrease, consistent with the decrease assumed in Table 6 for reduction in the number of vehicles parked on site.

TABLE 10: CBC Rooftop Concert Venue - Trip Distribution			
To/From	Attendees who Park at CBC	Attendees who Drop-Off/ Rideshare to CBC	Shuttle
East on SR 28 (towards Incline Village)	58%	65%	20%
West on SR 28 (towards Tahoe City)	42%	35%	80%
Total	100%	100%	100%
Note 1: See Table 2 for the detailed Special Event Guest Origin/Destination assumptions. Source: LSC Transportation Consultants, Inc.			

LEVEL OF SERVICE (LOS) ANALYSIS

LOS is a measure of traffic conditions at isolated intersections or roadway segments, ranging from LOS "A" (free flow, no congestion) to LOS "F" (system failure with gridlock or stop-and-go conditions). Intersection LOS was evaluated using procedures presented in the *Highway Capacity Manual 7th Edition* (Federal Highway Administration, 2022) and the Synchro software application (Version 12.3, Trafficware). LOS descriptions and calculations are attached for reference.

LOS Standards

TRPA LOS Standards

The *Connections 2050: Regional Transportation Plan/Sustainable Communities Strategy* (TRPA, July 2025) establishes six major goals for the transportation system – safety, environment, mobility, prosperity, resilience, and performance. Under each of those goals are policies to help attain those goals. Policy 6.10 under the "performance" goal summarizes the LOS criteria for the region as shown below:

Policy 6.10: Level of service (LOS) criteria for the region's highway system and signalized intersections during peak periods shall be: "C" on rural recreational/scenic roads; "D" on rural developed area roads; "D" on urban developed area roads; "D" for signalized intersections. Level of Service "E" may be acceptable during peak periods in urban areas, but not to exceed four hours per day. These vehicle LOS criteria may be exceeded when provisions for multi-modal amenities and/or services (such as transit, bicycling, and walking facilities) are adequate to provide mobility for users at a level that is proportional to the project-generated traffic in relation to overall traffic conditions on affected roadways. Transit and active transportation improvements should be considered before road widening projects.

TRPA has no standards specific to unsignalized intersections.

Nevada Department of Transportation (NDOT) Standards

The NDOT *Terms and Conditions Relating to Right-of-Way Occupancy Permits* (NDOT, 2021) provides Traffic Impact Analysis guidelines in Appendix A, which establish the following capacity and Level of Service requirements:

The report shall demonstrate that adequate means are provided, under the proposed permit, to accommodate all site traffic within the roadway systems and that site traffic will not reduce signal progression to an unacceptable level. Level of Service "C" will be the design objective for capacity and under no circumstances will less than Level of Service "D" be accepted for site and non-site traffic.

NDOT does not provide standards specific to unsignalized intersections or minor movements.

Washoe County Tahoe Area Plan LOS Standards

The *Washoe County Tahoe Area Plan* (December 17, 2025) states the following policy as shown below:

Policy T4-1 Level of Service: Attain and maintain the Level of Service (LOS) at key intersections consistent with the Regional Transportation Plan and the Washoe County Land Use and Transportation Element.

Washoe County LOS Standards

The LOS standards for Washoe County were set forth in the *Washoe County Development Code* (July 10, 2010). The code states the following general requirement as shown below:

Section 110.436.20 A – Level of Service Requirements: Streets shall be designed to meet a Level of Service (LOS) standard C, or as otherwise provided for by Regional Transportation Commission Policy.

The *Envision Washoe 2040 Master Plan* defers to the Washoe County Regional Transportation Plan (RTP) regarding LOS standards. According to the Washoe County 2050 RTP, the LOS standards used for assessing the need for street and highway improvements at a planning level are as follows:

- LOS D for all regional roadway facilities projected to carry less than 27,000 ADT at the latest RTP horizon (such as SR 28); and
- LOS E for all regional roadway facilities projected to carry 27,000 or more ADT at the latest RTP horizon.

- Additionally, all regional road intersections in this study area shall be designed to provide a LOS consistent with maintaining the policy LOS of the intersecting corridors.

Governing LOS Standards

Consistent with the above standards, the LOS threshold for signalized intersections is LOS D.

None of the applicable standards establish a specific adopted LOS threshold for minor movements at unsignalized intersections. As the above standards do not indicate a specific adopted standard for minor movements on unsignalized intersections, individual traffic movements with LOS “F” are considered a concern.

Existing Level of Service

As shown in Table 11, all study intersections currently operate within acceptable LOS thresholds under the existing no-project condition. With implementation of the proposed project, average delays would increase slightly; however, LOS at all intersections would remain acceptable.

When traffic volumes from approved background developments are added, average delay at the SR 28/Stateline Road intersection increases significantly, degrading the intersection to LOS F. The addition of the project would then increase the delay at the intersection, maintaining LOS F. No other intersections are degraded to LOS F upon implementation of the proposed project and approved projects.

In summary, LOS at all study intersections would remain acceptable with implementation of the proposed project.

Temporary Traffic Control

Temporary traffic control is not anticipated to be warranted for the proposed rooftop events. During the pre-concert peak hour (6:00 PM), the intersections operate at acceptable levels as shown in Table 11.

During the post-concert peak hour (10:00 PM), though not formally analyzed for LOS, background roadway volumes along SR 28 are approximately 28% of the PM peak hour volume; with substantially fewer conflicting through-vehicles, exiting traffic is expected to experience less delay than during the pre-concert peak. Also, as demonstrated in the Baseline Parking Demand Analysis, existing Crown Room events already result in the garage reaching approximately 80% capacity without traffic control. Because the proposed reservation-based parking system caps on-site attendee vehicle demand at the garage's available capacity, the proposed rooftop events are expected to result in only a modest increase in on-site vehicle trips relative to existing operations. The primary source of additional trips (the shuttle fleet) will be staged in the back lot of the CBC, keeping these vehicles off SR 28 and out of the main highway corridor.

TABLE 11: CBC Rooftop Concert Venue - Intersection LOS Summary

Intersection	Control Type	LOS Threshold ^{1,2,3}	No Project		Plus Proposed Concert	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Existing Traffic						
Calaneva Drive / CBC Garage Entry	TWSC	F	8.8	A	9.8	A
Calaneva Drive / Stateline Road	TWSC	F	9.4	A	10.1	B
SR 28 / Stateline Road	TWSC	F	30.9	D	37.6	E
SR 28 / Pedestrian Crossing	Signalized	D	7.4	A	9.2	A
SR 28 / Crystal Bay Casino Driveway	TWSC	F	16.0	C	29.7	D
SR 28 / Calaneva Drive	TWSC	F	19.9	C	31.5	D
Existing Traffic with Approved Development Traffic⁴						
Calaneva Drive / CBC Garage Entry	TWSC	F	8.8	A	9.8	A
Calaneva Drive / Stateline Road	TWSC	F	9.4	A	10.1	B
SR 28 / Stateline Road	TWSC	F	67.4	F	96.1	F
SR 28 / Pedestrian Crossing	Signalized	D	7.2	A	8.4	A
SR 28 / Crystal Bay Casino Driveway	TWSC	F	17.4	C	38.6	E
SR 28 / Calaneva Drive	TWSC	F	24.3	C	45.6	E
BOLD text indicates that LOS standard is exceeded.						
TWSC = Two-Way Stop-Control						
Note 1: Level of service for signalized intersections is reported for the total intersection.						
Note 2: Level of service for roundabouts and other unsignalized intersections is reported for the worst movement.						
Note 3: There is no currently adopted threshold for unsignalized intersections under TRPA or Washoe County jurisdiction. Individual traffic movements with LOS "F" are considered a concern.						
Note 4: Under this scenario, traffic associated with the approved Cal Neva and Tahoe Biltmore projects are added to the roadway network.						
Source: LSC Transportation Consultants, Inc.						

CHAPTER 5

CONCLUSIONS

The following conclusions are made based on this analysis:

- The total parking demand at the CBC during an existing Crown Room event is approximately 319 vehicles parked on-site. As the CBC has a maximum parking capacity of 397, the CBC already utilizes 80% of its parking capacity under existing Crown Room events.
- Parking demand for a proposed rooftop concert event will exceed the maximum parking capacity of the garage. Between 371 and 557 vehicles are anticipated to need to park off-site and be shuttled in.
- Distributing the off-site vehicles between the three shuttle lots, a deficit of approximately 151 parking spaces is anticipated in Incline Village. Notably, all parking can be accommodated at the Northstar lot. Parking management strategies such as increasing the supply in Incline Village or redistributing these vehicles to the Northstar lot would satisfy this deficit.
- Using Washoe County parking demand rates, the total parking demand is 441 parking spaces. As the total parking supply is 1,393 parking spaces (397 spaces available on-site plus 996 available off-site), the project provides adequate parking under the County's methodology.
- The total VMT associated with the project is 19,599 daily VMT. Comparing this to the existing Crown Room VMT of 4,697, the proposed project results in a net increase of 14,902 daily VMT.
- Because proposed concerts are limited to a maximum of 10 per year, the average annual VMT associated with the project is 408 average annual daily VMT. This meets the TRPA low-VMT screen and is thus exempt from further VMT analysis.
- LOS at all study intersections remains acceptable with the proposed project. Under the approved background project scenario, the SR 28/Stateline intersection will degrade to LOS F without the project. As this degradation is not due to concert traffic, no mitigations are required.

LEVELS OF SERVICE DESCRIPTIONS AND CALCULATIONS

DESCRIPTIONS OF LEVELS OF SERVICE

The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with level of service A representing the best operating conditions and level of service F the worst.

Level of Service Definitions

In general, the various levels of service are defined as follows for uninterrupted flow facilities:

- **Level of service A** represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.
- **Level of service B** is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.
- **Level of service C** is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.
- **Level of Service D** represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
- **Level of service E** represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to “give way” to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.
- **Level of service F** is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level of service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and level of service F is an appropriate designation for such points.

Intersection

Int Delay, s/veh 5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	7	2	4	3	1	3	0	10	6	1	3
Future Vol, veh/h	3	7	2	4	3	1	3	0	10	6	1	3
Conflicting Peds, #/hr	4	0	0	0	0	5	0	0	0	5	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	8	2	4	3	1	3	0	11	7	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	9	0	0	10	0	0	32	33	14	37	34	13
Stage 1	-	-	-	-	-	-	15	15	-	18	18	-
Stage 2	-	-	-	-	-	-	17	18	-	19	16	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1610	-	-	1610	-	-	976	859	1066	969	859	1068
Stage 1	-	-	-	-	-	-	1005	883	-	1002	881	-
Stage 2	-	-	-	-	-	-	1003	880	-	1000	882	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1603	-	-	1610	-	-	964	851	1061	945	851	1058
Mov Cap-2 Maneuver	-	-	-	-	-	-	964	851	-	945	851	-
Stage 1	-	-	-	-	-	-	1003	881	-	994	874	-
Stage 2	-	-	-	-	-	-	992	874	-	983	880	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.81	3.62	8.52	8.77
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1037	431	-	-	857	-	-	966
HCM Lane V/C Ratio	0.014	0.002	-	-	0.003	-	-	0.011
HCM Ctrl Dly (s/v)	8.5	7.3	0	-	7.2	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection

Int Delay, s/veh 5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	7	4	0	8	11	7	16	0	4	5	1
Future Vol, veh/h	4	7	4	0	8	11	7	16	0	4	5	1
Conflicting Peds, #/hr	17	0	17	23	0	23	17	0	23	23	0	17
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	6	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	8	4	0	9	12	8	17	0	4	5	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	92	87	46	97	88	63	24	0	0	40	0	0
Stage 1	32	32	-	56	56	-	-	-	-	-	-	-
Stage 2	60	56	-	41	32	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	892	803	1024	886	802	1001	1591	-	-	1569	-	-
Stage 1	985	869	-	957	849	-	-	-	-	-	-	-
Stage 2	951	849	-	974	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	832	767	985	829	766	958	1566	-	-	1535	-	-
Mov Cap-2 Maneuver	832	767	-	829	766	-	-	-	-	-	-	-
Stage 1	966	852	-	931	826	-	-	-	-	-	-	-
Stage 2	905	826	-	937	852	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.41	9.26	2.22	2.94
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	548	-	-	833	866	697	-
HCM Lane V/C Ratio	0.005	-	-	0.02	0.024	0.003	-
HCM Ctrl Dly (s/v)	7.3	0	-	9.4	9.3	7.4	0
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	662	1	7	667	4	3	1	21	7	0	15
Future Vol, veh/h	2	662	1	7	667	4	3	1	21	7	0	15
Conflicting Peds, #/hr	32	0	39	10	0	3	39	0	10	3	0	32
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	6	-	-	-6	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	744	1	8	749	4	3	1	24	8	0	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	786	0	0	784	0	0	1592	1590	793	1558	1588	823
Stage 1	-	-	-	-	-	-	788	788	-	799	799	-
Stage 2	-	-	-	-	-	-	804	802	-	759	788	-
Critical Hdwy	4.12	-	-	4.12	-	-	8.32	7.72	6.82	5.92	5.32	5.62
Critical Hdwy Stg 1	-	-	-	-	-	-	7.32	6.72	-	4.92	4.32	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.32	6.72	-	4.92	4.32	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	833	-	-	834	-	-	51	63	340	154	183	429
Stage 1	-	-	-	-	-	-	296	309	-	495	519	-
Stage 2	-	-	-	-	-	-	288	304	-	514	523	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	808	-	-	803	-	-	44	58	325	131	167	400
Mov Cap-2 Maneuver	-	-	-	-	-	-	44	58	-	272	302	-
Stage 1	-	-	-	-	-	-	283	297	-	471	495	-
Stage 2	-	-	-	-	-	-	261	289	-	468	501	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.03			0.1			30.89			16.13		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	167	5	-	-	19	-	-	348				
HCM Lane V/C Ratio	0.168	0.003	-	-	0.01	-	-	0.071				
HCM Ctrl Dly (s/v)	30.9	9.5	0	-	9.5	0	-	16.1				
HCM Lane LOS	D	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.2				

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	667	17	10	661	18	15
Future Vol, veh/h	667	17	10	661	18	15
Conflicting Peds, #/hr	0	5	6	0	5	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	725	18	11	718	20	16

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	749
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	860
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	855
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	15.98
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	364	-	-	855	-
HCM Lane V/C Ratio	0.099	-	-	0.013	-
HCM Ctrl Dly (s/v)	16	-	-	9.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	683	1	9	667	6	22
Future Vol, veh/h	683	1	9	667	6	22
Conflicting Peds, #/hr	0	2	4	0	2	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	759	1	10	741	7	24

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	764
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	849
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	846
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.12	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	273	-	-	24	-
HCM Lane V/C Ratio	0.114	-	-	0.012	-
HCM Ctrl Dly (s/v)	19.9	-	-	9.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

4: SR 28 & Ped Xing Performance by movement

Movement	EBT	WBT	All
Denied Delay (hr)	0.1	0.2	0.3
Denied Del/Veh (s)	0.5	0.8	0.6
Total Delay (hr)	2.0	1.1	3.1
Total Del/Veh (s)	9.6	5.1	7.4
Avg Speed (mph)	12	10	12
Vehicles Entered	761	743	1504
Vehicles Exited	760	743	1503
Hourly Exit Rate	760	743	1503
Input Volume	761	756	1517
% of Volume	100	98	99

Intersection: 4: SR 28 & Ped Xing

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	233	79
Average Queue (ft)	159	74
95th Queue (ft)	244	80
Link Distance (ft)	195	65
Upstream Blk Time (%)	3	21
Queuing Penalty (veh)	24	154
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	50	7	2	4	33	67	3	0	10	6	1	3
Future Vol, veh/h	50	7	2	4	33	67	3	0	10	6	1	3
Conflicting Peds, #/hr	4	0	0	0	0	5	0	0	0	5	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	8	2	4	36	73	3	0	11	7	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	114	0	0	10	0	0	166	240	14	207	204	81
Stage 1	-	-	-	-	-	-	117	117	-	86	86	-
Stage 2	-	-	-	-	-	-	49	122	-	121	118	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1476	-	-	1610	-	-	798	661	1066	750	692	979
Stage 1	-	-	-	-	-	-	887	798	-	922	824	-
Stage 2	-	-	-	-	-	-	964	795	-	883	798	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1469	-	-	1610	-	-	759	632	1061	706	661	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	759	632	-	706	661	-
Stage 1	-	-	-	-	-	-	854	769	-	915	817	-
Stage 2	-	-	-	-	-	-	953	788	-	837	768	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	6.39			0.28			8.76			9.78		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	972	1460	-	-	61	-	-	763
HCM Lane V/C Ratio	0.015	0.037	-	-	0.003	-	-	0.014
HCM Ctrl Dly (s/v)	8.8	7.5	0	-	7.2	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	8.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	54	4	0	32	17	7	16	0	4	5	1
Future Vol, veh/h	4	54	4	0	32	17	7	16	0	4	5	1
Conflicting Peds, #/hr	17	0	17	23	0	23	17	0	23	23	0	17
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	6	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	59	4	0	35	18	8	17	0	4	5	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	105	87	46	122	88	63	24	0	0	40	0	0
Stage 1	32	32	-	56	56	-	-	-	-	-	-	-
Stage 2	73	56	-	66	32	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	875	803	1024	853	802	1001	1591	-	-	1569	-	-
Stage 1	985	869	-	957	849	-	-	-	-	-	-	-
Stage 2	937	849	-	944	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	783	767	985	745	766	958	1566	-	-	1535	-	-
Mov Cap-2 Maneuver	783	767	-	745	766	-	-	-	-	-	-	-
Stage 1	966	852	-	931	826	-	-	-	-	-	-	-
Stage 2	856	826	-	853	852	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	10.06		9.68		2.22		2.94					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	548	-	-	779	823	697	-	-				
HCM Lane V/C Ratio	0.005	-	-	0.087	0.065	0.003	-	-				
HCM Ctrl Dly (s/v)	7.3	0	-	10.1	9.7	7.4	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-				

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	767	1	7	701	4	3	1	27	7	0	15
Future Vol, veh/h	2	767	1	7	701	4	3	1	27	7	0	15
Conflicting Peds, #/hr	32	0	39	10	0	3	39	0	10	3	0	32
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	6	-	-	-6	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	862	1	8	788	4	3	1	30	8	0	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	824	0	0	902	0	0	1748	1746	911	1714	1744	861
Stage 1	-	-	-	-	-	-	906	906	-	838	838	-
Stage 2	-	-	-	-	-	-	842	840	-	877	906	-
Critical Hdwy	4.12	-	-	4.12	-	-	8.32	7.72	6.82	5.92	5.32	5.62
Critical Hdwy Stg 1	-	-	-	-	-	-	7.32	6.72	-	4.92	4.32	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.32	6.72	-	4.92	4.32	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	806	-	-	754	-	-	38	48	285	126	155	410
Stage 1	-	-	-	-	-	-	244	263	-	477	505	-
Stage 2	-	-	-	-	-	-	271	288	-	460	480	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	781	-	-	726	-	-	32	44	272	102	141	383
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	44	-	238	277	-
Stage 1	-	-	-	-	-	-	234	251	-	454	480	-
Stage 2	-	-	-	-	-	-	244	274	-	400	460	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.02			0.1			37.63			17.15		
HCM LOS							E			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	145	5	-	-	18	-	-	321				
HCM Lane V/C Ratio	0.241	0.003	-	-	0.011	-	-	0.077				
HCM Ctrl Dly (s/v)	37.6	9.6	0	-	10	0	-	17.2				
HCM Lane LOS	E	A	A	-	B	A	-	C				
HCM 95th %tile Q(veh)	0.9	0	-	-	0	-	-	0.2				

Intersection

Int Delay, s/veh 2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	697	89	136	661	40	68
Future Vol, veh/h	697	89	136	661	40	68
Conflicting Peds, #/hr	0	5	6	0	5	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	758	97	148	718	43	74

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	860
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	781
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	777
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.83	29.66
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	261	-	-	777	-
HCM Lane V/C Ratio	0.45	-	-	0.19	-
HCM Ctrl Dly (s/v)	29.7	-	-	10.7	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	2.2	-	-	0.7	-

Intersection

Int Delay, s/veh 1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	752	25	81	796	6	22
Future Vol, veh/h	752	25	81	796	6	22
Conflicting Peds, #/hr	0	2	4	0	2	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	836	28	90	884	7	24

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	867
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	776
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	774
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.95	31.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	167	-	-	166	-
HCM Lane V/C Ratio	0.187	-	-	0.116	-
HCM Ctrl Dly (s/v)	31.5	-	-	10.3	0
HCM Lane LOS	D	-	-	B	A
HCM 95th %tile Q(veh)	0.7	-	-	0.4	-

4: SR 28 & Ped Xing Performance by movement

Movement	EBT	WBT	All
Denied Delay (hr)	0.4	0.3	0.6
Denied Del/Veh (s)	1.6	1.2	1.4
Total Delay (hr)	2.9	1.0	4.0
Total Del/Veh (s)	12.1	4.9	8.7
Avg Speed (mph)	11	10	10
Vehicles Entered	867	771	1638
Vehicles Exited	866	771	1637
Hourly Exit Rate	866	771	1637
Input Volume	884	791	1676
% of Volume	98	97	98

Intersection: 4: SR 28 & Ped Xing

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	233	79
Average Queue (ft)	185	75
95th Queue (ft)	263	80
Link Distance (ft)	195	65
Upstream Blk Time (%)	9	21
Queuing Penalty (veh)	75	159
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection

Int Delay, s/veh 5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	7	2	4	3	1	3	0	10	6	1	3
Future Vol, veh/h	3	7	2	4	3	1	3	0	10	6	1	3
Conflicting Peds, #/hr	4	0	0	0	0	5	0	0	0	5	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	8	2	4	3	1	3	0	11	7	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	9	0	0	10	0	0	32	33	14	37	34	13
Stage 1	-	-	-	-	-	-	15	15	-	18	18	-
Stage 2	-	-	-	-	-	-	17	18	-	19	16	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1610	-	-	1610	-	-	976	859	1066	969	859	1068
Stage 1	-	-	-	-	-	-	1005	883	-	1002	881	-
Stage 2	-	-	-	-	-	-	1003	880	-	1000	882	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1603	-	-	1610	-	-	964	851	1061	945	851	1058
Mov Cap-2 Maneuver	-	-	-	-	-	-	964	851	-	945	851	-
Stage 1	-	-	-	-	-	-	1003	881	-	994	874	-
Stage 2	-	-	-	-	-	-	992	874	-	983	880	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.81	3.62	8.52	8.77
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1037	431	-	-	857	-	-	966
HCM Lane V/C Ratio	0.014	0.002	-	-	0.003	-	-	0.011
HCM Ctrl Dly (s/v)	8.5	7.3	0	-	7.2	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection

Int Delay, s/veh 5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	7	4	0	8	11	7	16	0	4	5	1
Future Vol, veh/h	4	7	4	0	8	11	7	16	0	4	5	1
Conflicting Peds, #/hr	17	0	17	23	0	23	17	0	23	23	0	17
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	6	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	8	4	0	9	12	8	17	0	4	5	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	92	87	46	97	88	63	24	0	0	40	0	0
Stage 1	32	32	-	56	56	-	-	-	-	-	-	-
Stage 2	60	56	-	41	32	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	892	803	1024	886	802	1001	1591	-	-	1569	-	-
Stage 1	985	869	-	957	849	-	-	-	-	-	-	-
Stage 2	951	849	-	974	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	832	767	985	829	766	958	1566	-	-	1535	-	-
Mov Cap-2 Maneuver	832	767	-	829	766	-	-	-	-	-	-	-
Stage 1	966	852	-	931	826	-	-	-	-	-	-	-
Stage 2	905	826	-	937	852	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.41	9.26	2.22	2.94
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	548	-	-	833	866	697	-
HCM Lane V/C Ratio	0.005	-	-	0.02	0.024	0.003	-
HCM Ctrl Dly (s/v)	7.3	0	-	9.4	9.3	7.4	0
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	80	681	1	7	712	77	3	1	21	52	0	75
Future Vol, veh/h	80	681	1	7	712	77	3	1	21	52	0	75
Conflicting Peds, #/hr	71	0	39	10	0	42	39	0	10	3	0	32
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	6	-	-	-6	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	765	1	8	800	87	3	1	24	58	0	84
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	958	0	0	805	0	0	1839	1958	815	1885	1915	953
Stage 1	-	-	-	-	-	-	985	985	-	930	930	-
Stage 2	-	-	-	-	-	-	855	973	-	956	985	-
Critical Hdwy	4.12	-	-	4.12	-	-	8.32	7.72	6.82	5.92	5.32	5.62
Critical Hdwy Stg 1	-	-	-	-	-	-	7.32	6.72	-	4.92	4.32	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.32	6.72	-	4.92	4.32	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	718	-	-	819	-	-	31	33	330	101	128	368
Stage 1	-	-	-	-	-	-	215	235	-	437	472	-
Stage 2	-	-	-	-	-	-	265	239	-	427	453	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	670	-	-	789	-	-	16	22	314	62	86	331
Mov Cap-2 Maneuver	-	-	-	-	-	-	16	22	-	181	208	-
Stage 1	-	-	-	-	-	-	159	173	-	399	431	-
Stage 2	-	-	-	-	-	-	187	218	-	297	334	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.18			0.08			67.43			37.83		
HCM LOS							F			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	85	189	-	-	16	-	-	247				
HCM Lane V/C Ratio	0.332	0.134	-	-	0.01	-	-	0.578				
HCM Ctrl Dly (s/v)	67.4	11.2	0	-	9.6	0	-	37.8				
HCM Lane LOS	F	B	A	-	A	A	-	E				
HCM 95th %tile Q(veh)	1.3	0.5	-	-	0	-	-	3.3				

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	721	17	10	779	18	15
Future Vol, veh/h	721	17	10	779	18	15
Conflicting Peds, #/hr	0	5	6	0	5	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	784	18	11	847	20	16

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	808
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	817
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	812
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.12	17.36
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	327	-	-	812	-
HCM Lane V/C Ratio	0.11	-	-	0.013	-
HCM Ctrl Dly (s/v)	17.4	-	-	9.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	736	2	9	784	7	22
Future Vol, veh/h	736	2	9	784	7	22
Conflicting Peds, #/hr	0	2	4	0	2	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	818	2	10	871	8	24

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	824
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	806
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	803
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.11	24.28
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	219	-	-	20	-
HCM Lane V/C Ratio	0.147	-	-	0.012	-
HCM Ctrl Dly (s/v)	24.3	-	-	9.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

4: SR 28 & Ped Xing Performance by movement

Movement	EBT	WBT	All
Denied Delay (hr)	0.0	0.6	0.6
Denied Del/Veh (s)	0.1	2.3	1.3
Total Delay (hr)	1.9	1.3	3.2
Total Del/Veh (s)	9.6	5.2	7.2
Avg Speed (mph)	12	10	11
Vehicles Entered	720	892	1612
Vehicles Exited	718	892	1610
Hourly Exit Rate	718	892	1610
Input Volume	824	888	1711
% of Volume	87	100	94

Intersection: 4: SR 28 & Ped Xing

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	230	83
Average Queue (ft)	134	75
95th Queue (ft)	273	83
Link Distance (ft)	195	65
Upstream Blk Time (%)	5	27
Queuing Penalty (veh)	44	225
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	50	7	2	4	33	67	3	0	10	6	1	3
Future Vol, veh/h	50	7	2	4	33	67	3	0	10	6	1	3
Conflicting Peds, #/hr	4	0	0	0	0	5	0	0	0	5	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	8	2	4	36	73	3	0	11	7	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	114	0	0	10	0	0	166	240	14	207	204	81
Stage 1	-	-	-	-	-	-	117	117	-	86	86	-
Stage 2	-	-	-	-	-	-	49	122	-	121	118	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1476	-	-	1610	-	-	798	661	1066	750	692	979
Stage 1	-	-	-	-	-	-	887	798	-	922	824	-
Stage 2	-	-	-	-	-	-	964	795	-	883	798	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1469	-	-	1610	-	-	759	632	1061	706	661	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	759	632	-	706	661	-
Stage 1	-	-	-	-	-	-	854	769	-	915	817	-
Stage 2	-	-	-	-	-	-	953	788	-	837	768	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	6.39	0.28	8.76	9.78
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	972	1460	-	-	61	-	-	763
HCM Lane V/C Ratio	0.015	0.037	-	-	0.003	-	-	0.014
HCM Ctrl Dly (s/v)	8.8	7.5	0	-	7.2	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0

Intersection

Int Delay, s/veh 8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	54	4	0	32	17	7	16	0	4	5	1
Future Vol, veh/h	4	54	4	0	32	17	7	16	0	4	5	1
Conflicting Peds, #/hr	17	0	17	23	0	23	17	0	23	23	0	17
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	6	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	59	4	0	35	18	8	17	0	4	5	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	105	87	46	122	88	63	24	0	0	40	0	0
Stage 1	32	32	-	56	56	-	-	-	-	-	-	-
Stage 2	73	56	-	66	32	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	875	803	1024	853	802	1001	1591	-	-	1569	-	-
Stage 1	985	869	-	957	849	-	-	-	-	-	-	-
Stage 2	937	849	-	944	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	783	767	985	745	766	958	1566	-	-	1535	-	-
Mov Cap-2 Maneuver	783	767	-	745	766	-	-	-	-	-	-	-
Stage 1	966	852	-	931	826	-	-	-	-	-	-	-
Stage 2	856	826	-	853	852	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.06	9.68	2.22	2.94
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	548	-	-	779	823	697	-
HCM Lane V/C Ratio	0.005	-	-	0.087	0.065	0.003	-
HCM Ctrl Dly (s/v)	7.3	0	-	10.1	9.7	7.4	0
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-

Intersection

Int Delay, s/veh 5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	80	786	1	7	746	77	3	1	27	52	0	75
Future Vol, veh/h	80	786	1	7	746	77	3	1	27	52	0	75
Conflicting Peds, #/hr	71	0	39	10	0	42	39	0	10	3	0	32
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	6	-	-	-6	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	883	1	8	838	87	3	1	30	58	0	84

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	996	0	0	923	0	0	1995	2114	933	2042	2071	991
Stage 1	-	-	-	-	-	-	1102	1102	-	968	968	-
Stage 2	-	-	-	-	-	-	893	1011	-	1073	1103	-
Critical Hdwy	4.12	-	-	4.12	-	-	8.32	7.72	6.82	5.92	5.32	5.62
Critical Hdwy Stg 1	-	-	-	-	-	-	7.32	6.72	-	4.92	4.32	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.32	6.72	-	4.92	4.32	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	695	-	-	740	-	-	23	25	276	82	108	352
Stage 1	-	-	-	-	-	-	178	199	-	421	459	-
Stage 2	-	-	-	-	-	-	250	226	-	381	415	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	648	-	-	712	-	-	11	16	264	~ 45	69	316
Mov Cap-2 Maneuver	-	-	-	-	-	-	11	16	-	152	184	-
Stage 1	-	-	-	-	-	-	124	139	-	384	418	-
Stage 2	-	-	-	-	-	-	172	206	-	241	290	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.06	0.09	96.05	47.83
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	71	166	-	-	15	-	-	219
HCM Lane V/C Ratio	0.487	0.139	-	-	0.011	-	-	0.652
HCM Ctrl Dly (s/v)	96.1	11.5	0	-	10.1	0	-	47.8
HCM Lane LOS	F	B	A	-	B	A	-	E
HCM 95th %tile Q(veh)	2	0.5	-	-	0	-	-	4

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s
+: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	751	89	136	779	40	68
Future Vol, veh/h	751	89	136	779	40	68
Conflicting Peds, #/hr	0	5	6	0	5	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	816	97	148	847	43	74

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	919
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	743
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	738
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.65	38.65
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	220	-	-	738	-
HCM Lane V/C Ratio	0.533	-	-	0.2	-
HCM Ctrl Dly (s/v)	38.6	-	-	11.1	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	2.8	-	-	0.7	-

Intersection

Int Delay, s/veh 1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	805	26	81	913	7	22
Future Vol, veh/h	805	26	81	913	7	22
Conflicting Peds, #/hr	0	2	4	0	2	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	894	29	90	1014	8	24

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	927
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	737
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	734
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.86	45.62
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	120	-	-	147	-
HCM Lane V/C Ratio	0.268	-	-	0.123	-
HCM Ctrl Dly (s/v)	45.6	-	-	10.6	0
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	1	-	-	0.4	-

Intersection

Int Delay, s/veh 29.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	558	102	10	555	0	108	6	22	2	2	3
Future Vol, veh/h	5	558	102	10	555	0	108	6	22	2	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	5	-	-	-11	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	607	111	11	603	0	117	7	24	2	2	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	603	0	0	717	0	0	1299	1298	662	1246	1353	603
Stage 1	-	-	-	-	-	-	673	673	-	625	625	-
Stage 2	-	-	-	-	-	-	626	625	-	621	728	-
Critical Hdwy	4.12	-	-	4.12	-	-	8.12	7.52	6.72	4.92	4.32	5.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.12	6.52	-	3.92	3.32	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.12	6.52	-	3.92	3.32	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	974	-	-	884	-	-	~ 96	113	421	322	342	600
Stage 1	-	-	-	-	-	-	369	377	-	692	699	-
Stage 2	-	-	-	-	-	-	397	401	-	694	669	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	974	-	-	884	-	-	~ 93	110	421	279	333	600
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 93	110	-	279	333	-
Stage 1	-	-	-	-	-	-	366	373	-	680	686	-
Stage 2	-	-	-	-	-	-	386	394	-	637	662	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.07	0.16	293.13	14.54
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	107	13	-	-	32	-	-	385
HCM Lane V/C Ratio	1.383	0.006	-	-	0.012	-	-	0.02
HCM Ctrl Dly (s/v)	293.1	8.7	0	-	9.1	0	-	14.5
HCM Lane LOS	F	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	10.4	0	-	-	0	-	-	0.1

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s
 +: Computation Not Defined *: All major volume in platoon

4: SR 28 & Ped Xing Performance by movement

Movement	EBT	WBT	All
Denied Delay (hr)	0.1	0.4	0.5
Denied Del/Veh (s)	0.5	1.8	1.2
Total Delay (hr)	2.8	1.2	3.9
Total Del/Veh (s)	12.5	4.9	8.6
Avg Speed (mph)	10	10	10
Vehicles Entered	789	860	1649
Vehicles Exited	792	860	1652
Hourly Exit Rate	792	860	1652
Input Volume	947	922	1870
% of Volume	84	93	88

Intersection: 4: SR 28 & Ped Xing

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	234	83
Average Queue (ft)	172	76
95th Queue (ft)	297	81
Link Distance (ft)	195	65
Upstream Blk Time (%)	10	23
Queuing Penalty (veh)	91	202
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Parking Management Plan



CRYSTAL BAY CASINO - ROOFTOP CONCERT VENUE

Parking Management Plan

October 6, 2026

BACKGROUND

The Crystal Bay Casino (CBC), located in Crystal Bay, Nevada, is currently planning to convert the rooftop level of its existing parking garage into an outdoor concert venue. Events in this space would be used during the summer season only, for a maximum of 10 events per year, with a maximum attendee capacity of 3,000 people. This Parking Management Plan (PMP) has been prepared to ensure that adequate parking and transportation conditions are provided when these events occur.

This parking management plan is consistent with the CBC Rooftop Concert Venue TA (LSC, October 6, 2026). Because the existing on-site parking garage cannot accommodate the parking demand for a 3,000-person event, this plan relies on a combination of a paid, reservation-based on-site parking system and a network of off-site shuttle locations to accommodate the remaining parking demand. The project proposes providing approximately 40 on-site spaces within the garage for CBC staff, ensuring staff are not stranded at the conclusion of an event; carpooling among staff will be encouraged to help this allocation accommodate demand. Remaining on-site garage capacity will be prioritized for attendees who reserve a space in advance, with remaining attendee parking demand accommodated through free shuttle service from three off-site locations: Northstar Resort, Diamond Peak, and the Tahoe City Transit Center.

MANAGEMENT STRATEGIES

The strategies outlined below represent the project's current operational intent. Specific implementation details may be refined in coordination with TRPA and Washoe County staff as the project advances.

Under this Parking Management Plan:

- A foundational principle of this Parking Management Plan is that on-site garage parking during large events will be limited to attendees and staff who reserve a space at the time of ticket purchase or through event staff scheduling. Approximately 40 spaces will be made available on-site for CBC staff, with the remainder available to attendees who reserve and pay for a space in advance. No additional on-site attendee parking will be available without prior reservation. This ensures the garage is not exceeded beyond its available capacity and provides advance certainty regarding the volume of vehicles arriving on-site.
- The project will designate a single Parking/Transportation Manager responsible for oversight of this Parking Management Plan, shuttle coordination, and event-day operations.
- The Parking/Transportation Manager will provide their name, phone number, and email, and instruct the public to contact them with any comments or complaints regarding parking or shuttle operations on event days. This information will be made available via the event ticketing platform and provided to TRPA, Washoe County, and the Truckee North Tahoe Transportation Management Association (TNT-TMA) in advance of each event.
- The project will coordinate with the TNT-TMA to provide free shuttle service to and from three off-site locations:
 - **Northstar Resort** (Truckee, CA) – approximately 766 available parking spaces, served by a fleet of ten 40-passenger vehicles plus one additional ADA-accessible vehicle on call.
 - **Diamond Peak** (Incline Village, NV) – approximately 100 available parking spaces, served by three 32-passenger vehicles, which will also make stops at existing TART bus stops.



- **Tahoe City Transit Center** (Tahoe City, CA) – approximately 130 available parking spaces, served by five 40-passenger vehicles, which will also make stops at existing TART bus stops.
- Because the Diamond Peak/Incline Village location has limited available parking relative to anticipated demand (an estimated deficit of approximately 160 spaces under a maximum off-site parking scenario), parking at this location will require advance reservation at the time of ticket purchase to prevent the lot from exceeding capacity.
- Because the Tahoe City lot is a public parking facility, reservations for parking itself are not available; however, attendees may reserve a seat on the Tahoe City shuttle in advance, with a notice that parking availability at this location is not guaranteed. Attendees unable to confirm parking may be directed to use an existing TART stop or be redirected to the Northstar lot.
- Because the Northstar lot has sufficient capacity to accommodate all off-site parking demand, ticket sales will default to or prioritize Northstar parking where possible, supported by the incentives described below.
- Shuttle service will begin approximately three hours prior to the event start time and continue until approximately midnight, allowing adequate time for both pre-event arrivals and staggered post-event departures.
- The project will pursue additional off-site parking capacity through coordination with the Incline Village General Improvement District (IVGID), which may be able to provide supplemental parking at school lots that typically have low demand during summer months.
- A designated, clearly signed, rideshare and drop-off zone, separate from shuttle loading and general site circulation, will be established to accommodate attendees arriving via Uber, Lyft, or personal drop-off, reducing conflicts with shuttle and pedestrian activity near the site entrance.
- Following each event, an optional indoor after-party may be offered at the Crown Room to encourage a portion of attendees to extend their stay beyond the 10:00 PM event end time (consistent with existing noise ordinance requirements). Combined with shuttle service continuing until midnight, this strategy is intended to help distribute departure traffic over a longer period rather than concentrating it in a single peak interval. This option would be limited by Crown Room capacity.
- Shuttle usage, parking utilization, and traffic conditions will be monitored during at least three events of the first operating season, with shuttle frequency, parking allocations, or incentive programs adjusted as needed based on observed performance.

INCENTIVES

- Information regarding non-auto transportation options will be made available to ticket purchasers and at the venue, including:
 - Concert Shuttle stops and schedules.
 - TART Mainline Route schedules.
 - TART Connect microtransit (available on the California side of the North Shore).
 - Rideshare service availability (Uber, Lyft).
 - Bicycle and walking route information.
- Per TRPA's special event policy, bike valet service will be provided, and incentives (such as food vouchers) may be offered to attendees who check in at the bike valet to further encourage non-auto travel.

- Incentives, such as food vouchers, could be offered to attendees utilizing the Northstar shuttle to encourage use of this highest-capacity off-site location.
- Additional incentives may be explored and finalized as specialized for each event based on projected attendance and shuttle and remote parking reservations.

The project will provide approximately 40 on-site parking spaces within the garage for the 60 staff working large events (in addition to staff supporting typical casino operations), ensuring employees are accommodated at the conclusion of an event once concert shuttles cease operations. Because on-site employee parking is limited relative to total event staffing, the project will implement the following to encourage carpooling and reduce single-occupancy staff trips:

- Event staff will be encouraged to carpool to on-site parking spaces, with the Parking/Transportation Manager coordinating carpool matching among staff as needed.
- The project will explore participation in the TNT-TMA's regional transportation programs to support employee travel options, including carpool or vanpool coordination for staff commuting from outlying areas.
- Employees will have access to secure bike storage on site to encourage travel to/from work via bike.

USE RESTRICTIONS

The following restrictions will be implemented to manage parking and traffic demand during large events:

- On-site garage parking will be gated or monitored to confirm reservations for all vehicles.
- No on-site parking will be available without prior reservation, and employee access to on-site parking will be limited to the designated staff allocation to preserve capacity for attendee demand.
- Shuttle vehicles will stage in the back lot of the CBC following each event, rather than queuing along SR 28, to minimize impacts to highway operations.
- Parking in neighborhood streets or informal areas near the CBC in lieu of using the on-site reservation system or off-site shuttle locations is prohibited. CBC staff will not independently cite or tow vehicles, as this is outside the project's authority; however, the project will monitor for recurring patterns of overflow parking and coordinate with the appropriate local agency, as needed, on potential responses such as signage or enforcement referral. The project will coordinate with Washoe County and/or NDOT to install temporary event-specific signage in areas where overflow parking is repeatedly observed.

MONITORING PLAN

To ensure adherence to this parking management plan, the project will commit to the following monitoring items:

- A public complaint log will be maintained by the Parking Manager, which, at a minimum, will include the following for each complaint:
 - Date and time of complaint.
 - Specifics (time of day, type of vehicle, location, etc.).
 - Person making the complaint (or anonymous), with address, phone, and email address.
 - Actions taken to resolve the complaint.
 - Date complaint was resolved.

- A shuttle ridership and parking utilization log will be maintained for each event, including:
 - Total ridership by shuttle location.
 - Parking utilization at each off-site lot (where applicable).
 - On-site parking garage utilization.
- During each event, the Parking/Transportation Manager (or designated staff) will monitor roadways and parking areas within a reasonable distance of the CBC (including nearby residential streets and informal pull-off areas along SR 28 and Calaneva Drive) for vehicles parked illegally or in violation of posted restrictions, in an effort to identify attendees attempting to avoid the on-site parking fee or shuttle system. Observations will be logged, including:
 - Date and time observed.
 - General location and number of vehicles.
 - Whether vehicles appear event-related (e.g., parked in a cluster near the venue shortly before or during event hours).
- CBC staff will not independently cite or tow illegally parked vehicles. Where overflow or illegal parking is observed, the project will document the occurrence and may notify the applicable local agency as appropriate; any resulting citation, towing, or other enforcement action would be at that agency's discretion.
- If monitoring identifies a recurring pattern of illegal or overflow parking in a specific area, the project will coordinate with Washoe County and/or NDOT, as applicable, to install temporary signage (e.g., "No Event Parking" or event-specific restricted parking signage) in the affected area in advance of subsequent events. The need for and location of such signage will be reassessed following each event season based on observed conditions.

These monitoring items will be summarized and provided upon request to appropriate agencies such as TRPA or Washoe County.

Amplified Music Event Noise Assessment

Amplified Music Noise Assessment

Crystal Bay Club Parking Structure Events

Crystal Bay (Washoe County), Nevada

BAC Job # 2026-100

Prepared For:

Womble Bond Dickinson (US) LLP

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1601 19th Street, Suite 1000
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Prepared By:

Bollard Acoustical Consultants, Inc.



Paul Bollard, President

September 30, 2026



Introduction

The Crystal Bay Club is located at 14 State Route 28 in Crystal Bay, Washoe County, Nevada. The project proposes to conduct amplified music events on the upper level of the existing parking structure. The project and noise measurement locations are shown on Figure 1.

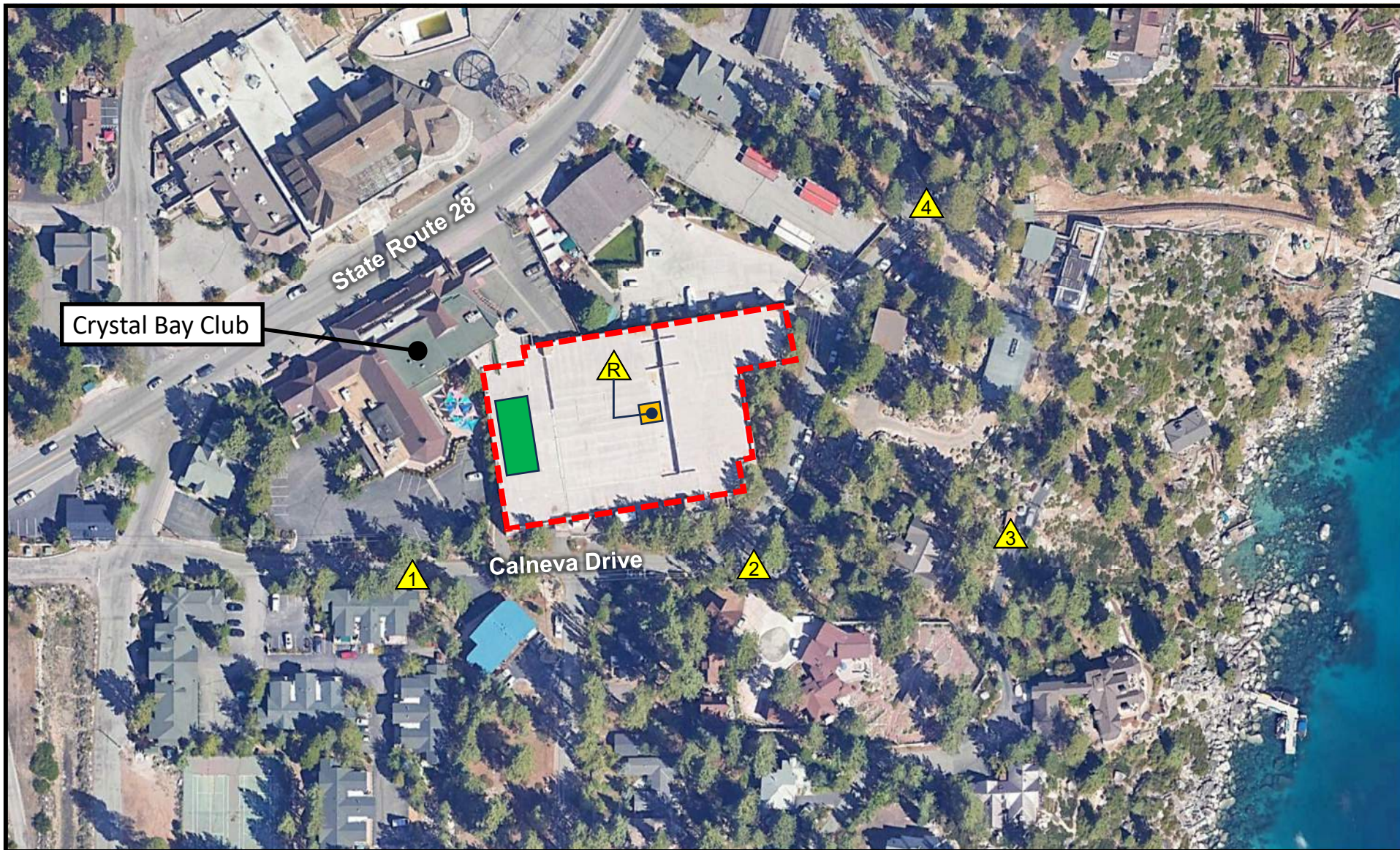
It is our understanding that a maximum of 10 amplified music events would occur per year at this location. For purposes of this assessment, BAC conservatively assumed that each event could last up to four hours, from 6:00 p.m. to 10:00 p.m.

Bollard Acoustical Consultants, Inc. (BAC) was retained by Womble Bond Dickinson (US) LLP to prepare this noise assessment in response to a request from Washoe County regarding the proposed amplified music events on the Crystal Bay Club parking structure. The purpose of this assessment is to quantify amplified music noise levels at the boundaries of the project site and nearby residential uses based on an event simulation, evaluate those levels relative to the applicable Washoe County noise standards, and identify operational measures necessary to maintain compliance.

Noise Fundamentals and Terminology

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard, and thus are called sound. Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. Appendix A contains definitions of Acoustical Terminology. Figure 2 shows common noise levels associated with various sources.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighting the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels in decibels.

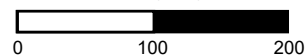


Legend

- Project Boundary (Approximate)
- ▲ Noise Measurement Locations
- Proposed Stage Area
- Proposed Mixing Booth Location (appx)



Scale (Feet)



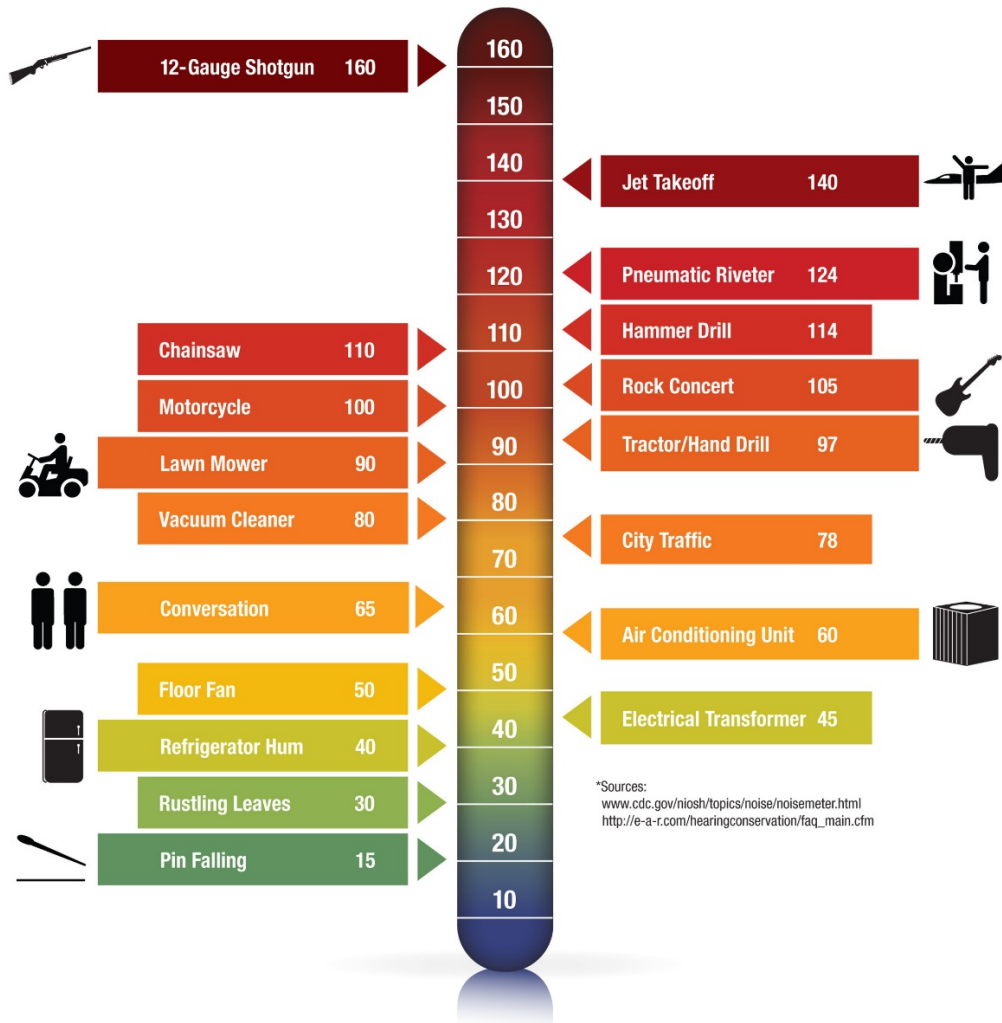
Project and Noise Survey Locations

Crystal Bay Club Amplified Music
Events – Washoe County, NV

Figure 1



Figure 2
Noise Levels Associated with Common Noise Sources
Decibel Scale (dBA)*



Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool used to describe environmental noise is the average, or equivalent, sound level (L_{eq}) over a specified time period. The L_{eq} is also the foundation of cumulative 24-hour noise descriptors such as the Community Noise Equivalent Level (CNEL).

The Community Noise Equivalent Level (CNEL) is based on the average noise exposure over a 24-hour day, with a +5-decibel weighting applied to noise occurring during evening hours (7:00 p.m. to 10:00 p.m.) and a +10-decibel weighting applied to noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.). Because CNEL represents a 24-hour energy average, the duration and time of day of a noise event affect the resulting CNEL value.

Criteria for Acceptable Noise Exposure

Washoe County Tahoe Area Plan

Section 110.220.420 of the Washoe County Development Code establishes maximum Community Noise Equivalent Level (CNEL) standards for regulatory zones within the Tahoe Planning Area. The Crystal Bay Club is located within the Crystal Bay Tourist regulatory zone. The applicable maximum cumulative noise event standard for the Crystal Bay Tourist regulatory zone is 60 dBA CNEL (Source: Washoe County Tahoe Area Plan, Section 110.220.420 / Table 4.10, Cumulative Noise Event Standards).

Evaluation of Project Noise Generation

Amplified Music Event Simulation

To quantify amplified music noise exposure expected at nearby residential areas during events occurring on the parking structure, an event simulation was conducted on August 26, 2026, using a sound system configured to represent the system anticipated for parking structure events. The proposed stage area, reference monitoring position on the parking structure, and four community measurement locations are shown on Figure 1.

For the event simulation, Star Sound Audio, the same audio contractor that has provided sound reinforcement for previous Crystal Bay Club parking structure events, set up and operated the sound system in a configuration representative of proposed future events. According to Star Sound Audio, the system was operated at sound levels comparable to those used during prior events. In addition, the sound levels measured at the reference location shown on Figure 1 were consistent with BAC data collected at other similarly sized amplified music events in recent years.

The sound reinforcement equipment utilized by Star Sound Audio for the event simulation, including main loudspeakers, stage monitors, and subwoofers, was comparable to the equipment expected to be used during proposed future events. Appendix B shows photographs of the equipment utilized during the amplified music event simulation.

BAC understands that, in recent years, parking structure events have been conducted pursuant to event-specific permits and that no noise complaints were received in association with those events. This information is provided as background only; the conclusions of this assessment are based on the noise levels measured during the August 26, 2026 event simulation, and comparison of those levels with the applicable Washoe County noise standard.

During the simulation, BAC measured amplified music noise levels at a reference position on the parking structure approximately 100 feet from the loudspeakers and at four locations in the surrounding community. The reference position was used to document the sound system operating level during the simulation, while Sites 1 through 4 were selected to quantify event-generated noise exposure at nearby residential areas. Appendix C shows the reference levels measured approximately 100 feet from the speakers during the event simulation and the corresponding sound levels measured at the four community monitoring sites.

The sound system produced a measured average level of 87 dBA Leq and a maximum level of 91 dBA Lmax at the reference position. For a four-hour event level extending from 6:00 p.m. to 10:00 p.m., the resulting event-day CNEL is approximately 4 dB lower than the measured four-hour Leq. If the amplified music events end prior to 7 pm, the computed CNEL would be approximately 8 dBA below the average noise levels. Table 1 summarizes the corresponding measured levels at the community monitoring locations and the calculated event-day CNEL values conservatively assuming the events would occur during evening hours.

Table 1
Event Music Simulation Noise Measurement Results and Calculated CNEL Values
Crystal Bay Club Parking Structure Events – Crystal Bay (Washoe County), Nevada

Measurement Location	Measured Leq (dBA)	Measured Lmax (dBA)	Calculated Event-Day CNEL (dBA) ¹
Reference	87	91	83
Site 1	64	70	60
Site 2	62	70	58
Site 3	46	54	42
Site 4	61	67	57

¹ Calculated assuming a four-hour event from 6:00 p.m. to 10:00 p.m., consisting of one daytime hour and three evening hours subject to the +5 dB CNEL evening weighting penalty. The calculated event-day CNEL is approximately 4 dB below the measured event Leq. The Reference location is an on-site sound-system reference position and is not a community compliance location.

Source: Bollard Acoustical Consultants, Inc. (2026)

Analysis of Event Simulation Results

As shown in Table 1, the calculated event-day CNEL at Site 1 is 60 dBA, which satisfies the applicable Washoe County standard. Calculated event-day CNEL values at Sites 2 through 4 are 58, 42, and 57 dBA, respectively, and also satisfy the 60 dBA standard. Based on the event simulation and the operating assumptions described above, amplified music noise exposure is predicted to satisfy the applicable 60 dBA CNEL criterion during proposed events.

The Site 1 result provides essentially no margin relative to the 60 dBA CNEL criterion. Therefore, maintaining the sound-system operating level at or below the level used during the BAC event simulation is important to continued compliance during actual events. The following section provides recommended operational noise controls to help ensure ongoing compliance and minimize the potential for public complaints.

Recommended Operational Noise Controls

1. Amplified music events should be limited to a duration of approximately four hours and should conclude no later than 10:00 p.m.
2. The amplified music sound system should be operated so that the average sound level at the on-site reference monitoring location approximately 100 feet from the loudspeakers does not exceed an hourly average of 87 dBA Leq, consistent with the event simulation.
3. The sound system configuration and loudspeaker orientation should remain generally consistent with the event simulation configuration shown on Figure 1 and as depicted in the photographs presented in Appendix B, unless an acoustical evaluation demonstrates that an alternate configuration would provide equal or lower noise exposure at nearby residences.
4. A qualified sound-system operator should monitor the reference location during events and reduce system output if measured average levels approach or exceed the reference level used for this assessment.
5. If event hours or sound-system operating levels are proposed to increase beyond the assumptions evaluated in this report, additional acoustical review should be conducted.

Conclusions

BAC evaluated amplified music noise associated with proposed events on the Crystal Bay Club parking structure in response to a request from Washoe County. The evaluation was based on measured amplified music noise levels obtained during an event simulation at one on-site reference position and four nearby community monitoring locations.

Assuming a four-hour event from 6:00 p.m. to 10:00 p.m., the measured event Leq values correspond to calculated event-day CNEL values of 60 dBA or less at the nearby community noise monitoring locations. These values satisfy the 60 dBA CNEL standard applicable to the Crystal Bay Tourist regulatory zone.

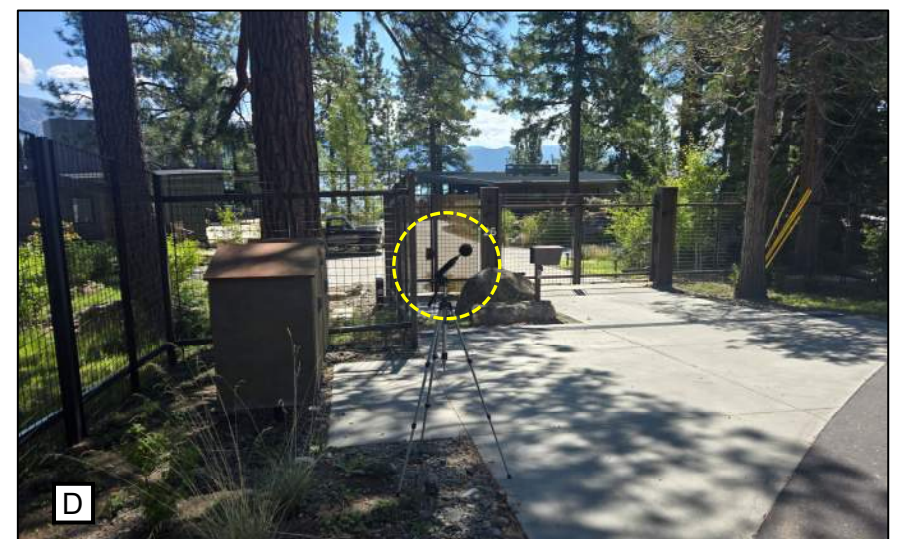
Provided that event duration, ending time, sound-system configuration, and operating level remain consistent with the assumptions and reference level evaluated in this report, amplified music events are expected to satisfy the applicable Washoe County CNEL standard at the evaluated community locations. Because the simulation results indicate minimal margin relative to the 60 dBA CNEL standard, the operational noise controls described above should be implemented during events.

This concludes BAC's amplified music noise assessment for the proposed Crystal Bay Club parking structure events in Crystal Bay, Washoe County, Nevada. Please contact BAC at (530) 745-2328 or PaulB@bacnoise.com with questions regarding this assessment.

Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human auditory response.
Decibel or dB	Fundamental unit of sound. A logarithmic unit used to express sound level, representing the ratio of a measured sound pressure to a reference.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 – 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Impulsive Noise	Sound of short duration, usually less than one second with an abrupt onset and rapid decay.
DNL/L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean square (RMS) sound level measured over a given period of time.
Loudness Ratio	A subjective term for the sensation of the magnitude of perceived sound.
Masking	The amount (or the process) by which the threshold of audibility for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level.
RT₆₀	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.



Legend

- A** Noise Monitoring Site 1
- B** Noise Monitoring Site 2
- C** Noise Monitoring Site 3
- D** Noise Monitoring Site 4

Event Simulation and Noise Survey
Photographs

Crystal Bay Club Amplified Music
Events – Washoe County, NV

Appendix B-1





Legend

- A** Top of Parking Structure – Reference Noise Monitoring Site
- B** Sound Amplification System Used During Event Simulation
- C** View of Parking Structure from Calvea Drive
- D** Event Area – Top Level of Parking Structure

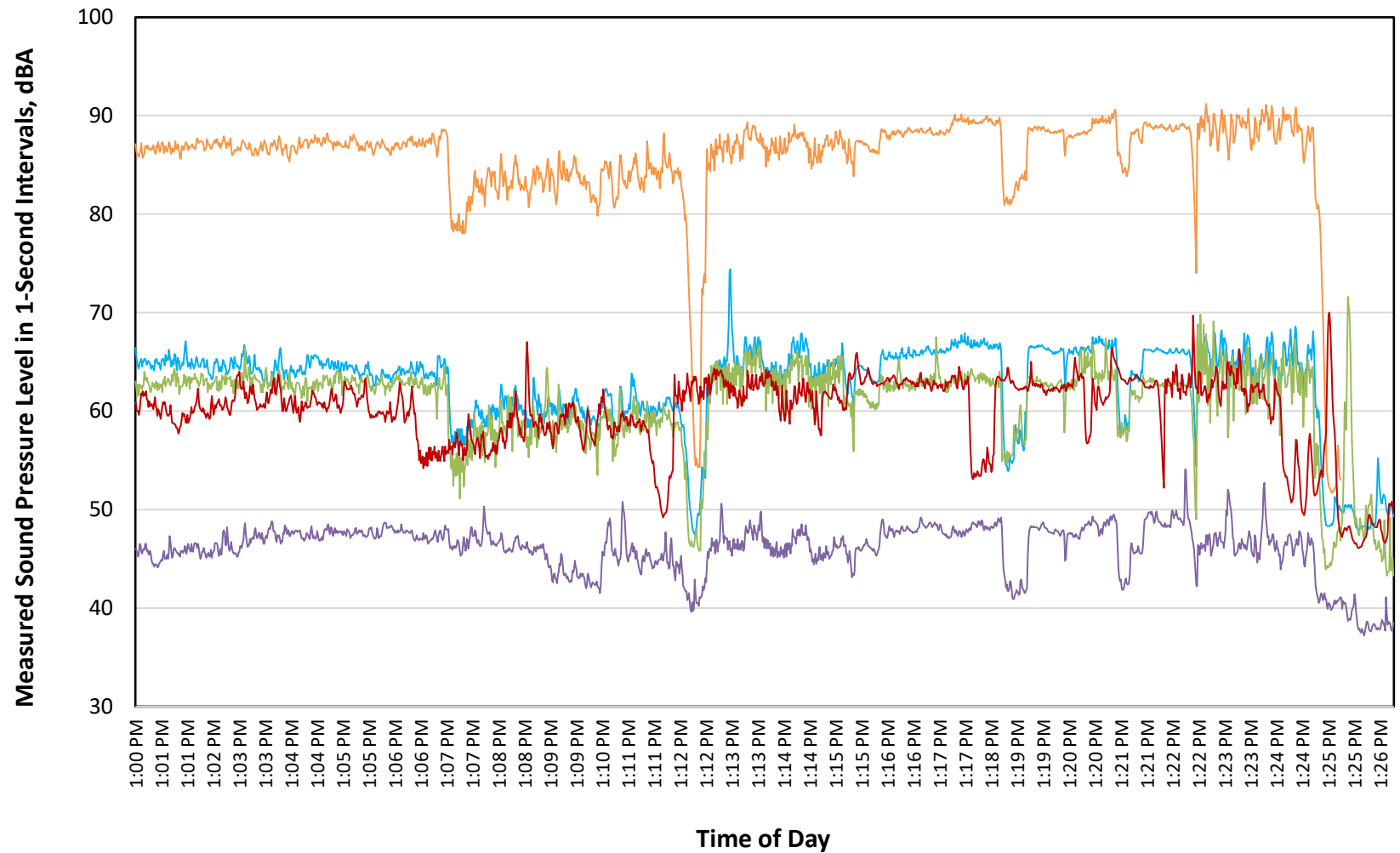
Event Simulation and Noise Survey
Photographs

Crystal Bay Club Amplified Music
Events – Washoe County, NV

Appendix B-2



Appendix C
Measured Sound Levels During August 26, 2026 Amplified Music Event Simulation
Crystal Bay Club - Incline Village (Washoe County), Nevada



Lighting Design Narrative, Photometrics and Cutsheets

Crystal Bay Club Rooftop Entertainment Venue

Lighting Design Narrative

Purpose and Intent

This Lighting Design Narrative has been prepared in support of the Special Use Permit application for the proposed Crystal Bay Club Rooftop Entertainment Venue in Crystal Bay, Nevada. The narrative is intended to accompany the photometric calculations, fixture information, and schedules for the permanently installed lighting prepared for the project.

The lighting approach has been developed with particular consideration for the venue's proximity to adjacent properties and Lake Tahoe. The primary objective is to provide lighting necessary for the safe and functional operation of the rooftop venue while minimizing light trespass, glare, unnecessary sky glow, and visibility of light sources from surrounding properties and Lake Tahoe.

The lighting study addresses two categories of lighting:

1. Permanently installed exterior lighting, which is shown on the accompanying lighting plans and included in the photometric calculations.
2. Temporary theatrical, stage, event, and supplemental venue lighting, which has not yet been fully designed and is therefore addressed through the performance and operational criteria established in this narrative.

The final temporary theatrical and event lighting systems will be designed and selected by others. Such systems shall comply with the criteria established herein, the approved Special Use Permit, applicable Tahoe Regional Planning Agency (TRPA) requirements, and other applicable codes and conditions of approval.

Applicable Lighting Requirements

The conceptual lighting design and criteria have been developed with consideration of Washoe County Development Code Article 414, Section 110.414.21, Light and Glare, and TRPA Code of Ordinances Chapter 36 exterior lighting requirements.

The design intent is to minimize lighting to that necessary for the intended use; direct permanent exterior lighting downward; utilize appropriate shielding and cutoff characteristics; minimize stray light and off-site illumination; and limit adverse lighting impacts to adjacent properties and Lake Tahoe.

Temporary event lighting shall also be operated and configured to minimize off-site lighting impacts. Where temporary or special-event lighting is permitted through the applicable approval process, the operational criteria described below shall apply.

Permanent Exterior Lighting

Permanently installed exterior lighting is shown on the accompanying lighting plans and has been included in the photometric analysis. The proposed lighting provides illumination for exterior circulation, stairs, venue egress, and other areas associated with operation of the rooftop venue.



The proposed exterior fixtures utilize a maximum correlated color temperature of 3000K and have been selected and located using controlled distributions, shielding, and appropriate mounting locations to minimize unnecessary illumination and off-site light trespass. The photometric analysis demonstrates that the proposed permanent exterior lighting results in 0.0 footcandles at the north property line spill calculation and a maximum of 0.1 footcandles at the south property line spill calculation.

The proposed permanent exterior lighting represents approximately 22,050 lumens over an illuminated site area of approximately 2.94 acres. Based on the TRPA maximum of 100,000 lumens per acre, the applicable site allowance is approximately 294,000 lumens. The proposed permanent exterior lighting is therefore substantially below the applicable site lumen allowance.

Exterior lighting controls will further reduce unnecessary illumination when full lighting levels are not required. Building-mounted and exterior fixtures will utilize photocell and occupancy-based controls, with fixtures reducing to 30 percent output during periods when occupancy is not detected and returning to full output when occupancy is detected.

Refer to the accompanying lighting plans, photometric calculations, fixture schedule, and fixture information for additional information regarding the permanent exterior lighting included in this study.

Temporary and Event Lighting

The rooftop venue is anticipated to utilize temporary or event-specific lighting during performances and other events. This may include theatrical stage lighting, supplemental audience or seating-area lighting, temporary concession and service-area lighting, and other lighting associated with event operations.

Because the specific equipment and configuration of these systems will vary depending upon the event and final production design, temporary/event lighting has not been individually selected or included in the accompanying photometric calculations. Instead, the following criteria establish the required design and operational intent for these systems:

- Temporary lighting shall be located, mounted, aimed, and shielded to keep illumination within the rooftop venue to the greatest extent practicable and minimize light trespass onto adjoining properties.
- Fixtures shall not be intentionally aimed toward Lake Tahoe, adjacent properties, public roadways, or into the night sky.
- Beam angles shall be selected and fixtures positioned so that the intended performance, seating, concession, or service area intercepts the primary beam. Where necessary, louvers, snoots, barn doors, shields, or similar accessories shall be utilized to control spill light.
- Temporary lighting shall be limited to the quantity and output reasonably necessary for the event or activity being served.
- Temporary lighting shall be energized only when required for event setup, operation, breakdown, safety, or security and shall be extinguished when no longer necessary.



- Flashing, sweeping, rotating, skyward-directed, searchlight-type, or similar lighting effects that project beyond the venue shall not be utilized unless specifically authorized by the applicable agency approval.
- Lighting equipment shall be installed and operated so that direct views of high-intensity light sources from adjacent properties and Lake Tahoe are minimized.
- Final fixture selection, mounting, aiming, shielding, programming, and operation shall remain subject to applicable conditions established through the Special Use Permit and TRPA approval.

Temporary Theatrical and Stage Lighting

The proposed seasonal/temporary stage is anticipated to utilize a theatrical lighting system controlled as part of the venue's production lighting system. The final theatrical lighting designer will determine the specific fixtures, positions, programming, and production requirements. The project team has indicated that the stage will ultimately include a full lighting array and that event lighting will be controlled through the venue's lighting console.

Stage lighting shall be focused principally toward the stage and performance areas. Fixture locations and aiming shall be selected to use the stage, stage roof or canopy, backdrops, scenery, and other venue elements as beam-intercepting surfaces wherever practicable. Fixtures shall not be intentionally aimed beyond the venue perimeter, toward Lake Tahoe, or directly toward adjoining properties.

High-output theatrical fixtures shall utilize appropriate beam-control accessories where necessary to reduce spill light. Programming of automated or moving fixtures shall establish position limits or equivalent controls to prevent beams from sweeping beyond the intended performance area or projecting into the sky, toward Lake Tahoe, or onto adjacent properties.

These requirements apply during performances as well as rehearsals, focusing, programming, setup, and testing.

Seating and Audience Areas

Supplemental lighting serving audience and seating areas may be provided as part of the temporary/event lighting system. Such lighting shall primarily provide low-level illumination appropriate for audience circulation and venue operation.

Temporary audience lighting shall be downward-directed or otherwise shielded so that the illuminated seating or circulation surface intercepts the light. Fixtures shall be positioned to minimize direct visibility from adjacent properties and Lake Tahoe and shall not be aimed horizontally beyond the venue perimeter.

Where house lighting is integrated with the venue production controls, lighting levels should be reduced during performances to the extent consistent with safe venue operation.



Concessions, Restrooms, and Support Areas

Temporary lighting associated with concessions, restrooms, merchandise, production, and other support functions shall be localized to the area being served. Fixtures should generally be mounted beneath or within temporary structures, canopies, counters, tents, or similar elements where those elements can assist in containing the emitted light.

Open, unshielded high-output fixtures intended to broadly illuminate the rooftop shall not be used for these functions. Supplemental task lighting shall be directed toward counters, work surfaces, entrances, and circulation areas and shall be extinguished when the associated function is no longer in operation.

8. Controls and Operations

Lighting controls will be an important component of mitigating lighting impacts from the rooftop venue. Permanent and temporary lighting systems shall be separately controllable to allow lighting to be limited to the systems and areas required for a particular event or operating condition.

Event and theatrical lighting shall be operated under the supervision of venue or production personnel familiar with the lighting restrictions established for the project. Fixture aiming, programming, or configuration shall not be modified in a manner that results in intentional illumination beyond the venue or otherwise conflicts with the approved lighting criteria.

Following events, temporary and event lighting shall be extinguished when no longer required for event operations, cleanup, safety, or security. Permanent lighting may remain operational as necessary for circulation, security, and other approved functions.

9. Conclusion

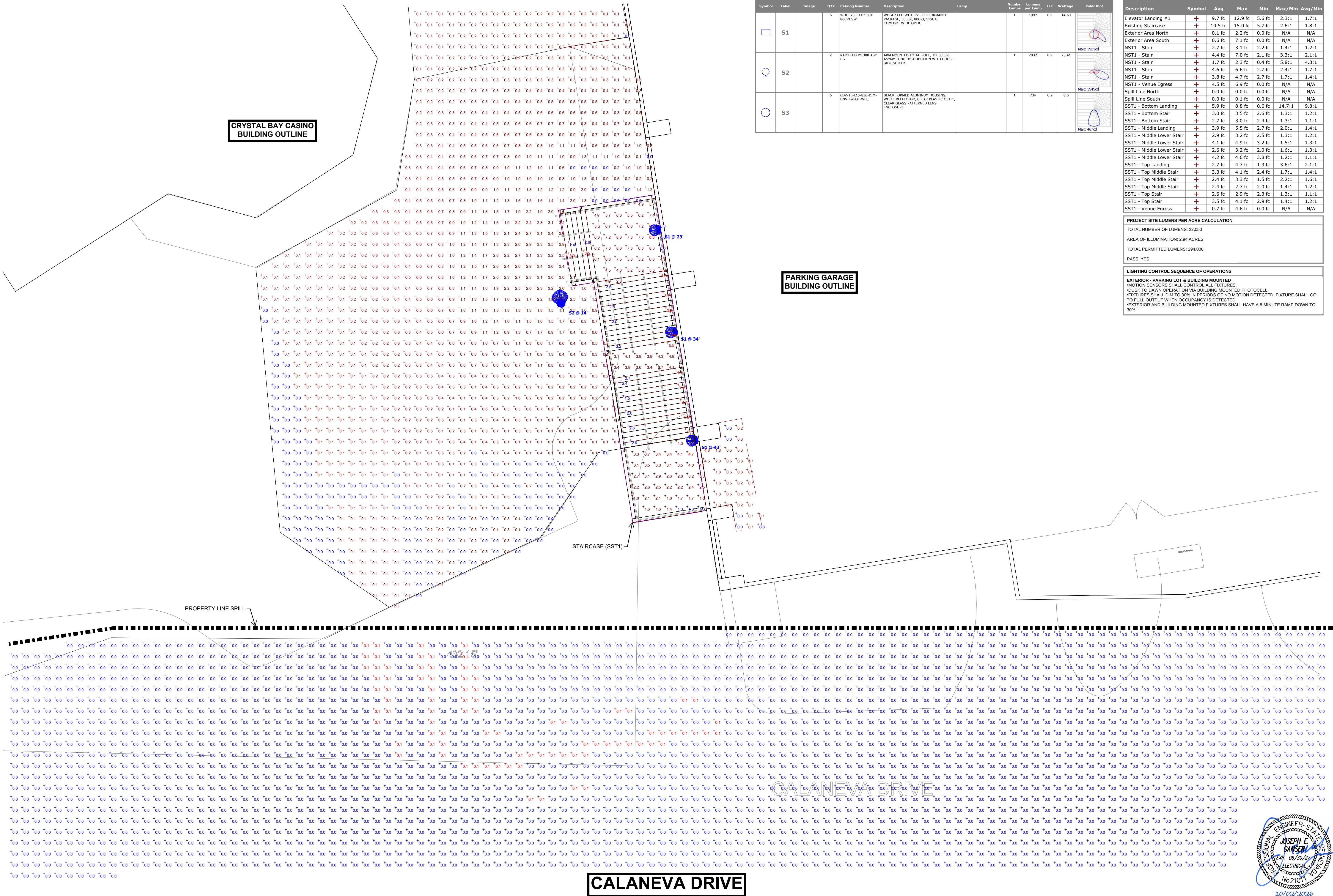
The accompanying photometric analysis demonstrates that the proposed permanently installed exterior lighting has been designed to provide functional illumination for the rooftop venue and associated circulation areas while minimizing illumination beyond the project site. The calculated permanent lighting load is approximately 22,050 lumens over 2.94 acres, and calculated property-line spill is limited to 0.0 footcandles along the north spill line and a maximum of 0.1 footcandles along the south spill line.

Temporary theatrical, stage, audience, concession, restroom, and other event lighting is not included in the photometric calculations because the specific equipment and event configurations have not yet been established. Accordingly, compliance of those systems will be achieved through the performance, aiming, shielding, control, and operational criteria established in this narrative and through final fixture selection and configuration by the theatrical/event lighting designer.

The combined intent of the permanent lighting design and temporary lighting criteria is to provide the illumination necessary for safe and functional operation of the rooftop entertainment venue



while minimizing light trespass, glare, skyward illumination, and adverse lighting impacts to adjoining properties and Lake Tahoe.



Schedule										
Symbol	Label	Image	QTY	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF	Wattage
	S1		6	WIDGE2 LED P2 30K BICO1 VW	WIDGE2 LED WITH P2 - PERFORMANCE PACKAGE, 3000K, 80CRI, VISUAL COMFORT WIDE OPTIC		1	1997	0.9	14.53
	S2		2	RADI LED P1 30K ASY RS	ARM MOUNTED TO 1/4" POLE, P1 3000K ASYMMETRIC DISTRIBUTION WITH HOUSE SIDE SHIELD.		1	2832	0.9	25.41
	S3		6	60R-TL-L10-830-DIM-UNV-LW-OF-WHL	BLACK FORMED ALUMINUM HOUSING, WHITE REFLECTOR, CLEAR PLASTIC OPTIC, CLEAR GLASS PATTERNED LENS ENCLOSURE		1	734	0.9	8.5

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Elevator Landing #1	+	9.7 fc	12.9 fc	5.6 fc	2.3:1	1.7:1
Existing Staircase	+	10.5 fc	15.0 fc	5.7 fc	2.6:1	1.8:1
Exterior Area North	+	0.1 fc	2.2 fc	0.0 fc	N/A	N/A
Exterior Area South	+	0.6 fc	7.1 fc	0.0 fc	N/A	N/A
NST1 - Stair	+	2.7 fc	3.1 fc	2.2 fc	1.4:1	1.2:1
NST1 - Stair	+	4.4 fc	7.0 fc	2.1 fc	3.3:1	2.1:1
NST1 - Stair	+	1.7 fc	2.3 fc	0.4 fc	5.8:1	4.3:1
NST1 - Stair	+	4.6 fc	6.6 fc	2.7 fc	2.4:1	1.7:1
NST1 - Stair	+	3.8 fc	4.7 fc	2.7 fc	1.7:1	1.4:1
NST1 - Venue Egress	+	4.5 fc	6.9 fc	0.0 fc	N/A	N/A
Spill Line North	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
Spill Line South	+	0.0 fc	0.1 fc	0.0 fc	N/A	N/A
SST1 - Bottom Landing	+	5.9 fc	8.8 fc	0.6 fc	14.7:1	9.8:1
SST1 - Bottom Stair	+	3.0 fc	3.5 fc	2.6 fc	1.3:1	1.2:1
SST1 - Bottom Stair	+	2.7 fc	3.0 fc	2.4 fc	1.3:1	1.1:1
SST1 - Middle Landing	+	3.9 fc	5.5 fc	2.7 fc	2.0:1	1.4:1
SST1 - Middle Lower Stair	+	2.9 fc	3.2 fc	2.5 fc	1.3:1	1.2:1
SST1 - Middle Lower Stair	+	4.1 fc	4.9 fc	3.2 fc	1.5:1	1.3:1
SST1 - Middle Lower Stair	+	2.6 fc	3.2 fc	2.0 fc	1.6:1	1.3:1
SST1 - Middle Lower Stair	+	4.2 fc	4.6 fc	3.8 fc	1.2:1	1.1:1
SST1 - Top Landing	+	2.7 fc	4.7 fc	1.3 fc	3.6:1	2.1:1
SST1 - Top Middle Stair	+	3.3 fc	4.1 fc	2.4 fc	1.7:1	1.4:1
SST1 - Top Middle Stair	+	2.4 fc	3.3 fc	1.5 fc	2.2:1	1.6:1
SST1 - Top Middle Stair	+	2.4 fc	2.7 fc	2.0 fc	1.4:1	1.2:1
SST1 - Top Stair	+	2.6 fc	2.9 fc	2.3 fc	1.3:1	1.1:1
SST1 - Top Stair	+	3.5 fc	4.1 fc	2.9 fc	1.4:1	1.2:1
SST1 - Venue Egress	+	0.7 fc	4.6 fc	0.0 fc	N/A	N/A

PROJECT SITE LUMENS PER ACRE CALCULATION
TOTAL NUMBER OF LUMENS: 22,050
AREA OF ILLUMINATION: 2.94 ACRES
TOTAL PERMITTED LUMENS: 294,000
PASS: YES

LIGHTING CONTROL SEQUENCE OF OPERATIONS	
EXTERIOR - PARKING LOT & BUILDING MOUNTED	
-MOTION SENSORS SHALL CONTROL ALL FIXTURES.	
-DUSK TO DAWN OPERATION VIA BUILDING MOUNTED PHOTOCELL.	
-FIXTURES SHALL DIM TO 30% IN PERIODS OF NO MOTION DETECTED; FIXTURE SHALL GO TO FULL OUTPUT WHEN OCCUPANCY IS DETECTED.	
-EXTERIOR AND BUILDING MOUNTED FIXTURES SHALL HAVE A 5-MINUTE RAMP DOWN TO 30%.	

Schedule									
Symbol	Label	Image	QTY	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF Wattage
	S1		6	WIDGE2 LED P2 30K 80CRI VW	WIDGE2 LED WITH P2 - PERFORMANCE PACKAGE, 3000K, 80CRI, VISUAL COMFORT WIDE OPTIC		1	1997	0.9 14.53
	S2		2	RAD1 LED P1 30K ASY HS	AS8M MOUNTED TO 14" POLE, P1 3000K ASYMMETRIC DISTRIBUTION WITH HOUSE SIDE SHIELD.		1	2832	0.9 25.41
	S3		6	6DR-TL10-830-03M-UVN-LW-OF-WHL	BLACK FORMED ALUMINUM HOUSING, WHITE REFLECTOR, CLEAR PLASTIC OPTIC, CLEAR GLASS PATTERNED LENS ENCLOSURE		1	734	0.9 8.5

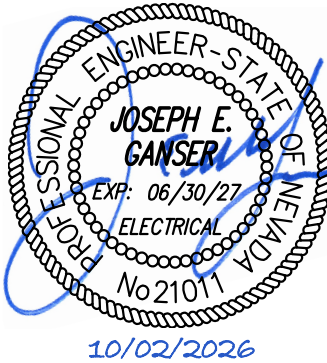
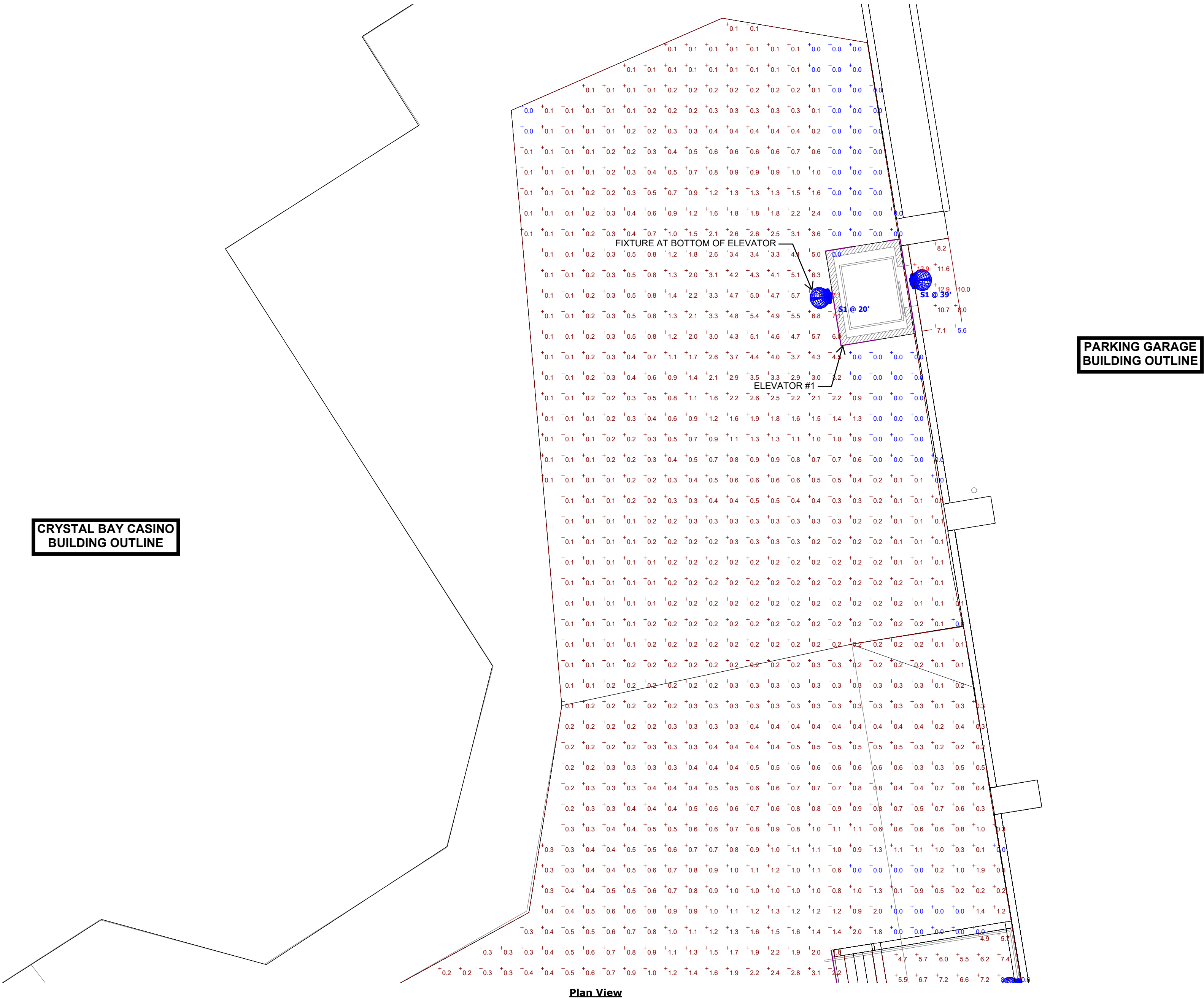
Max: 1523cd

Max: 1545cd

Max: 467cd

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Elevator Landing #1	+	9.7 fc	12.9 fc	5.6 fc	2.3:1	1.7:1
Existing Staircase	+	10.5 fc	15.0 fc	5.7 fc	2.6:1	1.8:1
Exterior Area North	+	0.1 fc	2.2 fc	0.0 fc	N/A	N/A
Exterior Area South	+	0.6 fc	7.1 fc	0.0 fc	N/A	N/A
NST1 - Stair	+	2.7 fc	3.1 fc	2.2 fc	1.4:1	1.2:1
NST1 - Stair	+	4.4 fc	7.0 fc	2.1 fc	3.3:1	2.1:1
NST1 - Stair	+	1.7 fc	2.3 fc	0.4 fc	5.8:1	4.3:1
NST1 - Stair	+	4.6 fc	6.6 fc	2.7 fc	2.4:1	1.7:1
NST1 - Stair	+	3.8 fc	4.7 fc	2.7 fc	1.7:1	1.4:1
NST1 - Venue Egress	+	4.5 fc	6.9 fc	0.0 fc	N/A	N/A
Spill Line North	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
Spill Line South	+	0.0 fc	0.1 fc	0.0 fc	N/A	N/A
SST1 - Bottom Landing	+	5.9 fc	8.8 fc	0.6 fc	14.7:1	9.8:1
SST1 - Bottom Stair	+	3.0 fc	3.5 fc	2.6 fc	1.3:1	1.2:1
SST1 - Bottom Stair	+	2.7 fc	3.0 fc	2.4 fc	1.3:1	1.1:1
SST1 - Middle Landing	+	3.9 fc	5.5 fc	2.7 fc	2.0:1	1.4:1
SST1 - Middle Lower Stair	+	2.9 fc	3.2 fc	2.5 fc	1.3:1	1.2:1
SST1 - Middle Lower Stair	+	4.1 fc	4.9 fc	3.2 fc	1.5:1	1.3:1
SST1 - Middle Lower Stair	+	2.6 fc	3.2 fc	2.0 fc	1.6:1	1.3:1
SST1 - Middle Lower Stair	+	4.2 fc	4.6 fc	3.8 fc	1.2:1	1.1:1
SST1 - Top Landing	+	2.7 fc	4.7 fc	1.3 fc	3.6:1	2.1:1
SST1 - Top Middle Stair	+	3.3 fc	4.1 fc	2.4 fc	1.7:1	1.4:1
SST1 - Top Middle Stair	+	2.4 fc	3.3 fc	1.5 fc	2.2:1	1.6:1
SST1 - Top Middle Stair	+	2.4 fc	2.7 fc	2.0 fc	1.4:1	1.2:1
SST1 - Top Stair	+	2.6 fc	2.9 fc	2.3 fc	1.3:1	1.1:1
SST1 - Top Stair	+	3.5 fc	4.1 fc	2.9 fc	1.4:1	1.2:1
SST1 - Venue Egress	+	0.7 fc	4.6 fc	0.0 fc	N/A	N/A

PROJECT SITE LUMENS PER ACRE CALCULATION									
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AREA OF ILLUMINATION: 2.94 ACRES									
TOTAL PERMITTED LUMENS: 294,000									
PASS: YES									
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-DUSK TO DAWN OPERATION VIA BUILDING MOUNTED PHOTOCCELL.									
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-EXTERIOR AND BUILDING MOUNTED FIXTURES SHALL HAVE A 5-MINUTE RAMP DOWN TO 30%.									



Designer
KB
Date
10/01/2026
Scale
Not to Scale
Drawing No.
26168
Summary

STATE ROUTE 28

CRYSTAL BAY CASINO
BUILDING OUTLINE

PARKING GARAGE
BUILDING OUTLINE

Schedule									
Symbol	Label	Image	QTY	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF Wattage
	S1		6	WEDGE LED P2 30K BKCR VV	WEDGE LED WITH P2 - PERFORMANCE PACKAGE, 3000K, BKCR, VISUAL COMFORT WIDE OPTIC		1	1997	0.9 14.53
	S2		2	RAD1 LED P1 30K ASY HS	ARM MOUNTED TO 1/4" POLE, P1 3000K ASYMMETRIC DISTRIBUTION WITH HOUSE SIDE SHIELD.		1	2832	0.9 25.41
	S3		6	60R-TL-L10-830-DIM-UNV-LW-OF-WHL.	BLACK FORMED ALUMINUM HOUSING, WHITE REFLECTOR, CLEAR PLASTIC OPTIC, CLEAR GLASS PATTERNED LENS ENCLOSURE		1	734	0.9 8.5

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Elevator Landing #1	+	9.7 fc	12.9 fc	5.6 fc	2.3:1	1.7:1
Existing Staircase	+	10.5 fc	15.0 fc	5.7 fc	2.6:1	1.8:1
Exterior Area North	+	0.1 fc	2.2 fc	0.0 fc	N/A	N/A
Exterior Area South	+	0.6 fc	7.1 fc	0.0 fc	N/A	N/A
NST1 - Stair	+	2.7 fc	3.1 fc	2.2 fc	1.4:1	1.2:1
NST1 - Stair	+	4.4 fc	7.0 fc	2.1 fc	3.3:1	2.1:1
NST1 - Stair	+	1.7 fc	2.3 fc	0.4 fc	5.8:1	4.3:1
NST1 - Stair	+	4.6 fc	6.6 fc	2.7 fc	2.4:1	1.7:1
NST1 - Stair	+	3.8 fc	4.7 fc	2.7 fc	1.7:1	1.4:1
NST1 - Venue Egress	+	4.5 fc	6.9 fc	0.0 fc	N/A	N/A
Spill Line North	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
Spill Line South	+	0.0 fc	0.1 fc	0.0 fc	N/A	N/A
SST1 - Bottom Landing	+	5.9 fc	8.8 fc	0.6 fc	14.7:1	9.8:1
SST1 - Bottom Stair	+	3.0 fc	3.5 fc	2.6 fc	1.3:1	1.2:1
SST1 - Bottom Stair	+	2.7 fc	3.0 fc	2.4 fc	1.3:1	1.1:1
SST1 - Middle Landing	+	3.9 fc	5.5 fc	2.7 fc	2.0:1	1.4:1
SST1 - Middle Lower Stair	+	2.9 fc	3.2 fc	2.5 fc	1.3:1	1.2:1
SST1 - Middle Lower Stair	+	4.1 fc	4.9 fc	3.2 fc	1.5:1	1.3:1
SST1 - Middle Lower Stair	+	2.6 fc	3.2 fc	2.0 fc	1.6:1	1.3:1
SST1 - Middle Lower Stair	+	4.2 fc	4.6 fc	3.8 fc	1.2:1	1.1:1
SST1 - Top Landing	+	2.7 fc	4.7 fc	1.3 fc	3.6:1	2.1:1
SST1 - Top Middle Stair	+	3.3 fc	4.1 fc	2.4 fc	1.7:1	1.4:1
SST1 - Top Middle Stair	+	2.4 fc	3.3 fc	1.5 fc	2.2:1	1.6:1
SST1 - Top Middle Stair	+	2.4 fc	2.7 fc	2.0 fc	1.4:1	1.2:1
SST1 - Top Stair	+	2.6 fc	2.9 fc	2.3 fc	1.3:1	1.1:1
SST1 - Top Stair	+	3.5 fc	4.1 fc	2.9 fc	1.4:1	1.2:1
SST1 - Venue Egress	+	0.7 fc	4.6 fc	0.0 fc	N/A	N/A

PROJECT SITE LUMENS PER ACRE CALCULATION	
TOTAL NUMBER OF LUMENS:	22,050
AREA OF ILLUMINATION:	2.94 ACRES
TOTAL PERMITTED LUMENS:	294,000
PASS:	YES
LIGHTING CONTROL SEQUENCE OF OPERATIONS	
EXTERIOR - PARKING LOT & BUILDING MOUNTED	
-MOTION SENSORS SHALL CONTROL ALL FIXTURES.	
-DUSK TO DAWN OPERATION VIA BUILDING MOUNTED PHOTOCELL.	
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-EXTERIOR AND BUILDING MOUNTED FIXTURES SHALL HAVE A 5-MINUTE RAMP DOWN TO 30%.	

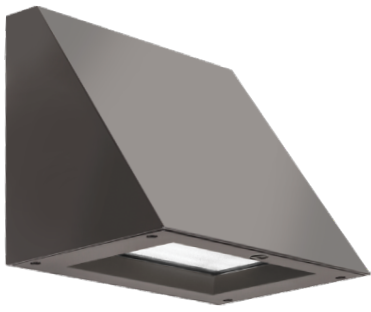
Lighting Cut Sheets

Crystal Bay Rooftop Entertainment Venue

October 2nd, 2026



PK Electrical, Inc.
ENGINEERING | DESIGN | CONSULTING



WDGE2 LED

Architectural Wall Sconce

Visual Comfort Optic



Catalog
Number

Notes

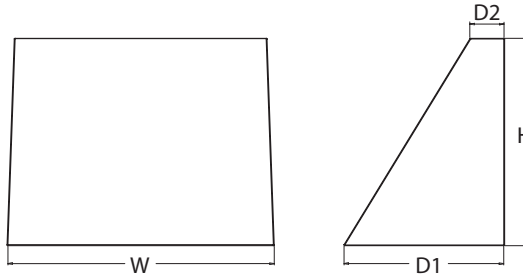
Type

TYPE S1

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Depth (D1): 7"
Depth (D2): 1.5"
Height: 9"
Width: 11.5"
Weight: 13.5 lbs
(without options)



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 delivers up to 6,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.



Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.

*See ordering tree for details

WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P0	P1	P2	P3	P4	P5	P6
WDGE1 LED	Visual Comfort	4W		--	750	1,200	2,000	--	--	--	--
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	--	1,200	2,000	3,000	4,500	6,000	--
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	--	--
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	6,000	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	Precision Refractive			Standalone / nLight	--	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI VF MVOLT SRM DDBXD

Series	Package		Color Temperature		CRI	Distribution	Voltage	Mounting	
WDGE2 LED	P1 ¹	P1SW	27K	2700K	80CRI	VF Visual comfort forward throw	MVOLT	SRM	Shipped included
	P2 ¹	P2SW	30K	3000K	90CRI	VW Visual comfort wide	347 ³	SRM	Surface mounting bracket
	P3 ¹	P3SW	35K	3500K			480 ³	ICW	Indirect Canopy/Ceiling Washer bracket (dry/damp locations only) ⁴
	P4 ¹	Door with small window (SW) is required to accommodate sensors. See page 2 for more details.		40K	4000K				
	P5 ¹			50K ²	5000K				
									Shipped separately
									AWS 3/8inch Architectural wall spacer ⁵
									PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available. ⁵

Options						
E4WH	Emergency battery backup, Certified in CA Title 20 MAEDBS (4W, 0°C min)		Standalone Sensors/Controls (only available with P1SW, P2SW & P3SW)			
E10WH	Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 5°C min)		PIR	Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching.		
E20WC	Emergency battery backup, Certified in CA Title 20 MAEDBS (18W, -20°C min)		PIRH	Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching		
PE	Photocell, Button Type ⁶		PIR1FC3V	Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.		
DS	Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details) ⁷		PIRH1FC3V	Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation.		
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately) ⁸		Networked Sensors/Controls (only available with P1SW, P2SW & P3SW)			
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.		NLTAIR2 PIR	Embedded wireless controls by nLight with Passive Infrared Occ sensor and on/off photocell for 8-15' mounting heights.		
DSLE	Dual Switching (1 Driver, 2 Light Engines)		NLTAIR2 PIRH	Embedded wireless controls by nLight with Passive Infrared Occ sensor and on/off photocell for 15-30' mounting heights.		
CCE	Coastal Construction ⁵		NLTAIREM2 PIR	Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared Occ sensor and on/off photocell for 8-15' mounting heights ⁹		
			NLTAIREM2 PIRH	Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared Occ sensor and on/off photocell for 15-30' mounting heights ⁹		
			See page 4 for out of box functionality			
			DDBXD	Dark bronze		
			DBLXD	Black		
			DNAXD	Natural aluminum		
			DWHXD	White		
			DSSXD	Sandstone		
			DDBTXD	Textured dark bronze		
			DBL BXD	Textured black		
			DNATXD	Textured natural aluminum		
			DWHGXD	Textured white		
			DSSTXD	Textured sandstone		



COMMERCIAL OUTDOOR

1 Acuity Way • Decatur, GA 30035 • Phone: 1-800-705-SERV (7378) • www.lithonia.com
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WDGE2 LED
Rev. 07/06/26

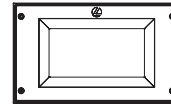
Accessories

Ordered and shipped separately.

WDGEAWS DDBXD	WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE2PBBW DDBXD U	WDGE2 surface-mounted back box (specify finish)

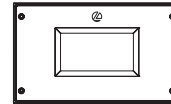
NOTES

- 1 P1-P5 not available with sensors/controls. Sensors/controls only available with P1SW, P2SW and P3SW.
- 2 50K not available in 90CRI.
- 3 347V and 480V not available with E4WH, E10WH, E20WC, DS or DSLE.
- 4 Not qualified for DLC. Not available with emergency battery backup or sensors/controls.
- 5 For PBBW and AWS with CCE option, require an RFA.
- 6 PE not available in 480V or with sensors/controls.
- 7 DS option not available with E4WH, E10WH, E20WC or sensors/controls.
- 8 DMG option not available with sensors/controls.
- 9 Available with MVOLT only and only rated to 25C ambient.



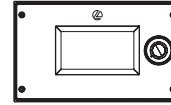
Default configuration with no sensors/controls.

Power Packages: P1, P2, P3, P4, P5



Small Window (SW) configuration

Power Packages: P1SW, P2SW, P3SW



Configuration with sensors/controls

Power Packages: P1SW, P2SW, P3SW

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)					30K (3000K, 80 CRI)					35K (3500K, 80 CRI)					40K (4000K, 80 CRI)					50K (5000K, 80 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P1 / P1SW	10W	VF	1,166	119	0	0	0	1,209	123	0	0	0	1,251	128	0	0	0	1,256	128	0	0	0	1,254	128	0	0	0
		VW	1,197	122	0	0	0	1,241	126	0	0	0	1,284	131	0	0	0	1,289	131	0	0	0	1,286	131	0	0	0
P2 / P2SW	15W	VF	1,878	129	1	0	0	1,947	134	1	0	0	2,015	139	1	0	0	2,023	139	1	0	0	2,019	139	1	0	0
		VW	1,927	133	1	0	0	1,997	137	1	0	0	2,067	142	1	0	0	2,075	143	1	0	0	2,071	143	1	0	0
P3 / P3SW	23W	VF	2,908	129	1	0	0	3,015	134	1	0	0	3,119	138	1	0	0	3,132	139	1	0	0	3,126	139	1	0	0
		VW	2,983	132	1	0	0	3,093	137	1	0	0	3,200	142	1	0	0	3,213	143	1	0	0	3,206	142	1	0	0
P4	35W	VF	4,096	117	1	0	1	4,247	121	1	0	1	4,394	126	1	0	1	4,412	126	1	0	1	4,403	126	1	0	1
		VW	4,202	120	1	0	0	4,357	125	1	0	1	4,508	129	1	0	1	4,526	129	1	0	1	4,517	129	1	0	1
P5	48W	VF	5,567	115	1	0	1	5,772	119	1	0	1	5,972	123	1	0	1	5,996	124	1	0	1	5,984	124	1	0	1
		VW	5,711	118	1	0	1	5,921	122	1	0	1	6,127	126	1	0	1	6,151	127	1	0	1	6,139	127	1	0	1

Electrical Load

Performance Package	System Watts	Current (A)					
		120V	208V	240V	277V	347V	480V
P1 / P1SW	10W	0.082	0.049	0.043	0.038	--	--
	13W	--	--	--	--	0.046	0.033
P2 / P2SW	15W	0.132	0.081	0.072	0.064	--	--
	18W	--	--	--	--	0.056	0.041
P3 / P3SW	23W	0.195	0.114	0.100	0.088	--	--
	26W	--	--	--	--	0.079	0.058
P4	35W	0.302	0.175	0.152	0.134	--	--
	38W	--	--	--	--	0.115	0.086
P5	48W	0.434	0.241	0.211	0.184	--	--
	52W	--	--	--	--	0.157	0.119

Lumen Multiplier for 90CRI

CCT	Multiplier
27K	0.845
30K	0.867
35K	0.845
40K	0.885
50K	0.898

Lumen Output in Emergency Mode (4000K, 80 CRI)

Option	Dist. Type	Lumens
E4WH	VF	646
	VW	647
E10WH	VF	1,658
	VW	1,701
E20WC	VF	2,840
	VW	2,913

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient	Lumen Multiplier
0°C	1.03
10°C	1.02
20°C	1.01
25°C	1.00
30°C	0.99
40°C	0.98

Projected LED Lumen Maintenance

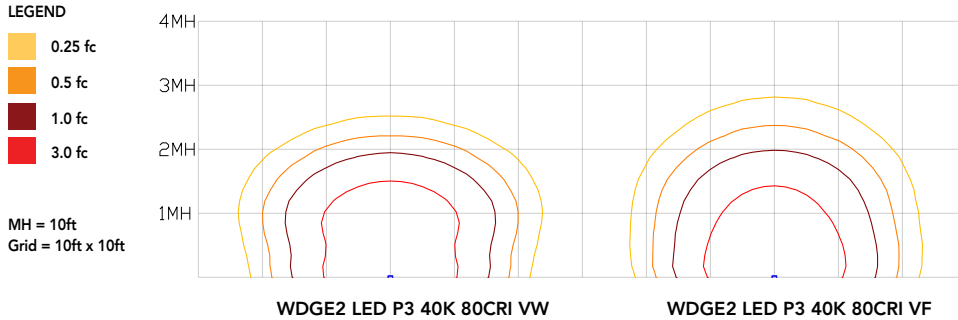
Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.96	>0.95	>0.91

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage.
Tested in accordance with IESNA LM-79 and LM-80 standards.



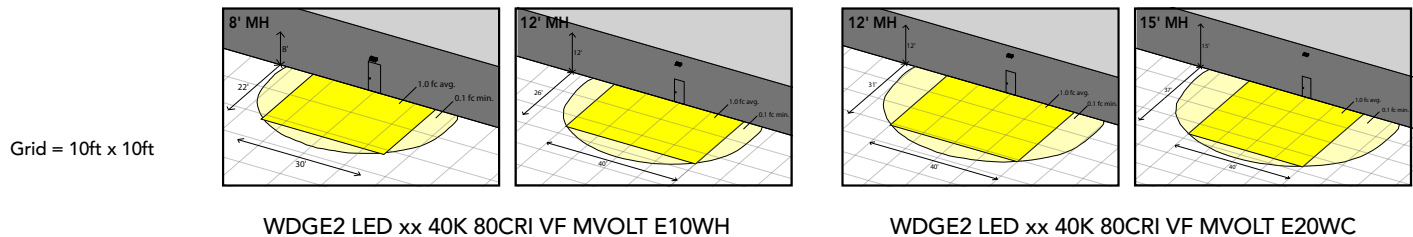
Emergency Egress Options

Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain a minimum of 60% of the light output at the end of 90 minutes.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

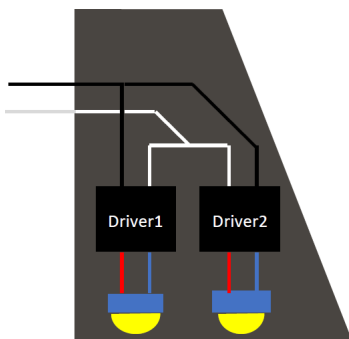
The examples below show illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E10WH or E20WC and VF distribution.



Dual Switching (DS) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with two drivers and two light engines. These work completely independent to each other so that a failure of any individual component does not cause the whole luminaire to go dark.

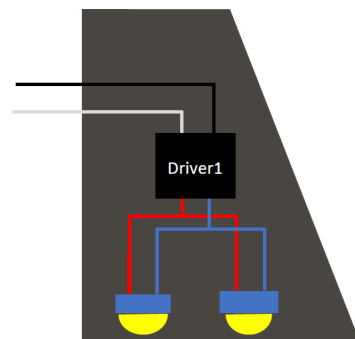
Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9



Dual Switching Light Engine (DSLE) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with one driver and two light engines. These work completely independent to each other so that a failure of either light engine does not cause the whole luminaire to go dark.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9



Motion/Ambient Sensor (PIR, PIRH)

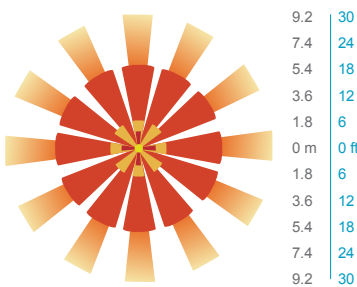
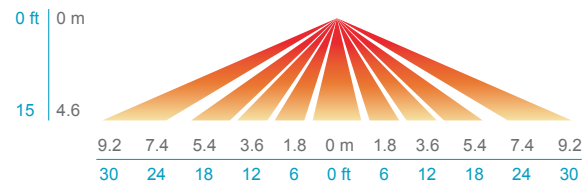
Motion/Ambient sensor (Sensor Switch MSOD) is integrated into the the luminaire. The sensor provides both Motion and Daylight based dimming of the luminaire. For motion detection, the sensor utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size motion while preventing false tripping from the environment. The integrated photocell enables additional energy savings during daytime periods when there is sufficient daylight. Optimize sensor coverage by either selecting PIR or PIRH option. PIR option comes with a sensor lens that is optimized to provide maximum coverage for mounting heights between 8-15ft, while PIRH is optimized for 15-40ft mounting height.

Networked Control (NLTAIR2)

nLight® AIR is a wireless lighting controls platform that allows for seamless integration of both indoor and outdoor luminaires. Five-tier security architecture, 900 MHz wireless communication and app (CLAIRITY™ Pro) based configurability combined together make nLight® AIR a secure, reliable and easy to use platform.

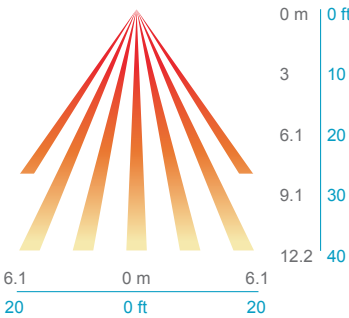
PIR

HIGH VIEW

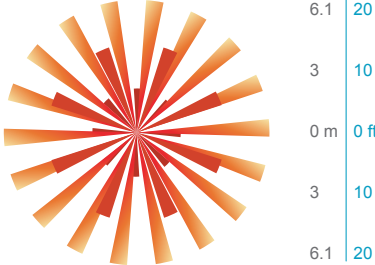


PIRH

SIDE VIEW



TOP VIEW



Option	Dim Level	High Level (when triggered)	Photocell Operation	Motion Time Delay	Ramp-down Time	Ramp-up Time
PIR or PIRH	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
PIR1FC3V, PIRH1FC3V	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 1fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
NLTAIR2 PIR, NLTAIR2 PIRH (out of box)	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	7.5 min	5 min	Motion - 3 sec Photocell - 45 sec

UL 924 Response – nLight AIR Devices with EM Option

- NLTAIREM2 devices will remain at their high-end trim and ignore wireless lighting control commands, unless a normal-power-sensed (NPS) broadcast is received at least every 8 seconds.
- Using the CLAIRITY+ mobile app, NLTAIREM2 devices must be associated with a group that includes a normal power sensing device to receive NPS broadcasts.
- The non-emergency devices, NLTAIR2 PIR and NLTAIR2 PIRH, with version 3.4 or later firmware can be used for normal power sensing.



**NLTAIR2 PIR – nLight AIR
Motion/Ambient Sensor**

D = 7"

H = 11"

W = 11.5"



PBBW – Surface-Mounted Back Box
Use when there is no junction box available.

D = 1.75"

H = 9"

W = 11.5"



AWS – 3/8inch Architectural Wall Spacer

D = 0.38"

H = 4.4"

W = 7.5"

FEATURES & SPECIFICATIONS

INTENDED USE

Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION

The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP66 rating for the luminaire.

FINISH

Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes. COASTAL CONSTRUCTION (CCE) Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under super durable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with scribe rating of 10. Additional lead-times may apply.

OPTICS

Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2). Fixture ships standard with 0-10v dimmable driver.

INSTALLATION

A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8" Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface. The ICW option can be used to mount the luminaire inverted for indirect lighting in dry and damp locations. Design can withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 2700K and 3000K color temperature only and SRM mounting only.

GOVERNMENT PROCUREMENT

BAA – Buy American Act: This product is available in a version that qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS.

BABA – Build America Buy America: This product is available in a version that qualifies as produced in the United States under the definitions of the Build America, Buy America Act, as implemented by 2 C.F.R. Part 184 and other agency implementing regulations, including Department of Transportation regulations.

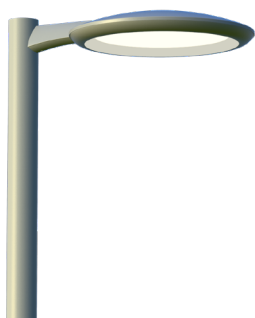
Please refer to www.acuitybrands.com/resources/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:

www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



Radean Arm Mount LED Area Luminaire



Specifications

EPA: 0.75 ft²
(0.05 m²)

Length:

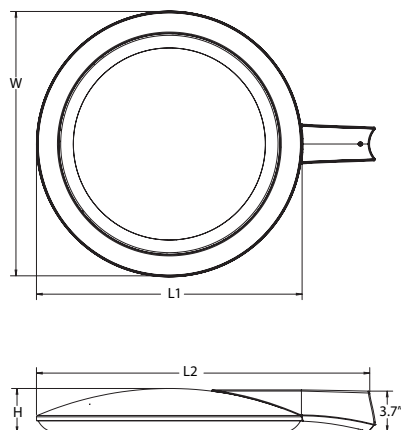
L1 24" (61cm)

L2 30" (60.96 cm)

Width: 24" (61cm)

Height: 4" (10.2cm)

Weight (max): 29lbs
(13.15Kg)



Catalog
Number

Notes

Type

TYPE S2 - 14' POST

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The RADEAN arm mount luminaire is the perfect choice for pedestrian applications where daytime aesthetics and visual comfort are needed. Adding architectural flair to any space, the RADEAN's low-profile shape and smooth curves blend in while adding a touch of elegance.

Perfect for campuses, parks, pedestrian malls, courtyards and pathways, the RADEAN arm mount is the Architect's choice to provide beautiful aesthetics both day and night.

Ordering Information

EXAMPLE: RAD1 LED P3 30K SYM MVOLT RPA PE DNAXD

RAD1 LED										
Series	Performance package		Color temperature		Distribution		Voltage		Mounting	
RAD1 LED	P1	3,000 Lumens	27K	2700K	SYM	Symmetric type V	MVOLT ²	277 ²	SPA	Square pole mounting (includes adapter)
	P2	5,000 Lumens	30K	3000K	ASY	Asymmetric type IV	120 ²	347	RPA	Round pole mounting
	P3	7,000 Lumens	35K	3500K	PATH	Pathway type III	208 ²	480	WBA	Wall bracket
	P4	11,000 Lumens	40K	4000K			240 ²			
	P5	16,000 Lumens	50K	5000K						

Control options		Other options		Finish (required)	
Shipped installed		Shipped separately			
NLTAIR2	nLight AIR 2.0 enabled ³	SF	Single Fuse ²	HS	Houseside shield ⁵
PE	Button photocell ³	DF	Double Fuse ²		
FAO	Field adjustable output ³	L90	Left rotated optics	DDBXD	Dark bronze
DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)	R90	Right rotated optics	DBLXD	Black
				DNAXD	Natural aluminum
				DWHXD	White
				DNATXD	Textured natural aluminum
				DWHGXD	Textured white

Accessories

Ordered and shipped separately.

RADHS Houseside shield (shield is white)

For more control options, visit [DTL](#) and [ROAM](#) online.

NOTES

- 2700K and 3500K may require extended lead-times.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- NLTAIR2 not available with PE or FAO. Must link to external nLight Air network. Does not include occupancy sensor. For more information refer to [rSBOR](#) pole mount sensor.
- DMG not available with NLTAIR2 or FAO.
- Also available as a separate accessory; see Accessories information. Shield is field rotatable in 45° increments.



COMMERCIAL OUTDOOR

1 Acuity Way, Decatur, GA 30035 • Phone: 1-800-705-SERV (7378) • www.lithonia.com
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RAD1 LED
Rev. 12/08/25

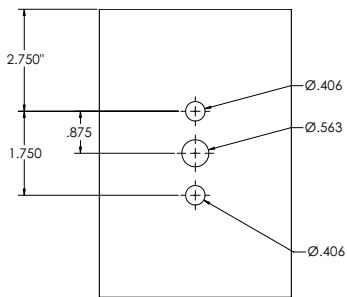
Mounting

Recommended Poles for use with RADEAN RAD1 LED Luminaires.

Acuity Part Number	Description	For luminaires:	Used with Mounting
RSS 10 4B DM19RAD DDBXD	10' Round Straight Steel - Template #20 Drilling	RAD1 LED	RPA
RSS 12 4B DM19RAD DDBXD	12' Round Straight Steel - Template #20 Drilling	RAD1 LED	RPA
RSS 14 4B DM19RAD DDBXD	14' Round Straight Steel - Template #20 Drilling	RAD1 LED	RPA
RSS 16 4B DM19RAD DDBXD	16' Round Straight Steel - Template #20 Drilling	RAD1 LED	RPA
RSS 18 4B DM19RAD DDBXD	18' Round Straight Steel - Template #20 Drilling	RAD1 LED	RPA
RSS 20 4B DM19RAD DDBXD	20' Round Straight Steel - Template #20 Drilling	RAD1 LED	RPA
RSS 25 4B DM19RAD DDBXD	25' Round Straight Steel - Template #20 Drilling	RAD1 LED	RPA
SSS 10 4C DM19RAD DDBXD	10' Square Straight Steel - Template #20 Drilling	RAD1 LED	SPA
SSS 12 4C DM19RAD DDBXD	12' Square Straight Steel - Template #20 Drilling	RAD1 LED	SPA
SSS 14 4C DM19RAD DDBXD	14' Square Straight Steel - Template #20 Drilling	RAD1 LED	SPA
SSS 16 4C DM19RAD DDBXD	16' Square Straight Steel - Template #20 Drilling	RAD1 LED	SPA
SSS 18 4C DM19RAD DDBXD	18' Square Straight Steel - Template #20 Drilling	RAD1 LED	SPA
SSS 20 4C DM19RAD DDBXD	20' Square Straight Steel - Template #20 Drilling	RAD1 LED	SPA
SSS 25 4C DM19RAD DDBXD	25' Square Straight Steel - Template #20 Drilling	RAD1 LED	SPA

* Customer must verify pole loading per required design criteria and specified wind speed. Consult pole specification sheet for additional details.

Drilling Template #20



RAD1 has a unique drilling pattern. Specify this drilling pattern when specifying poles, per the table below.

DM19RAD	Single unit	DM29RAD	2 at 90° ^{1,2}
DM28RAD	2 at 180°	DM39RAD	3 at 90° *
DM49RAD	4 at 90° ¹	DM32RAD	3 at 120°

Example: SSA 20 4C **DM19RAD** DDBXD

Visit Lithonia Lighting's [POLES CENTRAL](#) to see our wide selection of poles, accessories and educational tools.

1. Round pole top must be 4.25" O.D. minimum.
2. Square pole top must be 3.125" O.D. minimum.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Contact factory for performance data on any configurations not shown here.

Performance Package	Input Wattage	Distribution	2700K					3000K					3500K					4000K					5000K				
			Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	25	ASY	3,103	1	0	1	122	3,207	1	0	1	126	3,285	1	0	1	129	3,362	1	0	1	132	3,362	1	0	1	132
		PATH	2,695	2	0	2	106	2,785	2	0	2	110	2,853	2	0	2	112	2,920	2	0	2	115	2,920	2	0	2	115
		SYM	3,271	2	0	1	129	3,380	2	0	1	133	3,461	2	0	1	136	3,543	2	0	1	139	3,543	2	0	1	139
P2	38	ASY	4,798	1	0	2	126	4,958	1	0	2	130	5,078	2	0	2	134	5,198	2	0	2	137	5,198	2	0	2	137
		PATH	4,167	2	0	2	110	4,306	3	0	3	113	4,410	3	0	3	116	4,514	3	0	3	119	4,514	3	0	3	119
		SYM	5,056	2	0	1	133	5,225	3	0	1	137	5,351	3	0	1	141	5,478	3	0	1	144	5,478	3	0	1	144
P3	54	ASY	6,779	2	0	2	126	7,005	2	0	2	131	7,174	2	0	2	134	7,344	2	0	2	137	7,344	2	0	2	137
		PATH	5,887	3	0	3	110	6,084	3	0	3	113	6,231	3	0	3	116	6,378	3	0	3	119	6,378	3	0	3	119
		SYM	7,144	3	0	2	133	7,382	3	0	2	138	7,561	3	0	2	141	7,739	3	0	2	144	7,739	3	0	2	144
P4	86	ASY	10,773	3	0	3	126	11,132	3	0	3	130	11,401	3	0	3	133	11,671	3	0	3	136	11,671	3	0	3	136
		PATH	9,356	3	0	3	109	9,668	3	0	3	113	9,902	3	0	3	116	10,136	3	0	3	118	10,136	3	0	3	118
		SYM	11,353	3	0	2	133	11,731	3	0	2	137	12,015	3	0	2	140	12,299	3	0	2	144	12,299	3	0	2	144
P5	122	ASY	15,001	3	0	3	123	15,501	3	0	3	127	15,876	3	0	3	130	16,251	3	0	3	133	16,251	3	0	3	133
		PATH	13,028	4	0	4	107	13,462	4	0	4	110	13,788	4	0	4	113	14,114	4	0	4	116	14,114	4	0	4	116
		SYM	15,808	4	0	3	130	16,335	4	0	3	134	16,731	4	0	3	137	17,126	4	0	3	140	17,126	4	0	3	140

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		LAT Factor
0°C	32°F	1.06
5°C	41°F	1.05
10°C	50°F	1.04
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.96

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **RAD1 LED P5** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Projected LED Lumen Maintenance				
	0	25,000	50,000	100,000
P1	1.00	0.96	0.91	0.82
P2	1.00	0.96	0.91	0.82
P3	1.00	0.96	0.91	0.82
P4	1.00	0.96	0.91	0.82
P5	1.00	0.95	0.89	0.78

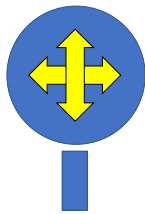
Electrical Load

Lumen Package	LED Drive Current	Voltage	Wattage		Current (A)					
					120	208	240	277	347	480
P1	500	42.8	21.4	Input Current	0.22	0.13	0.11	0.1	0.08	0.06
				System Watts	26	26	26	27	25	26
P2	770	43	33.1	Input Current	0.33	0.19	0.16	0.14	0.11	0.08
				System Watts	39	39	39	39	38	38
P3	1100	43.2	47.5	Input Current	0.46	0.26	0.23	0.2	0.16	0.12
				System Watts	55	54	54	54	54	54
P4	900	87.3	78.6	Input Current	0.73	0.42	0.36	0.32	0.25	0.18
				System Watts	87	86	86	86	86	86
P5	1250	88.2	110.2	Input Current	1	0.58	0.5	0.44	0.35	0.25
				System Watts	120	119	119	119	120	120

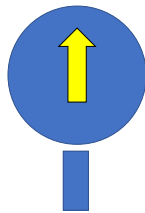


Standard Optic

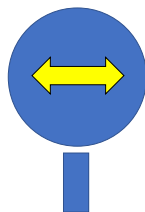
RAD1 SYM



RAD1 ASY Standard

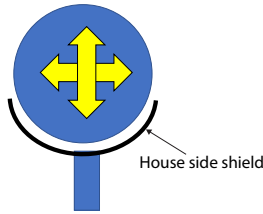


RAD1 PATH

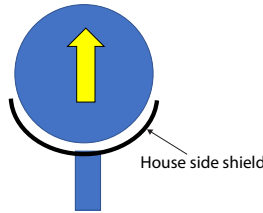


House side Shield

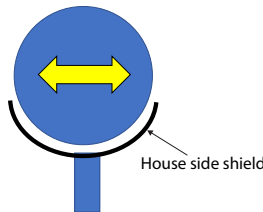
RAD1 SYM HS



RAD1 ASY HS

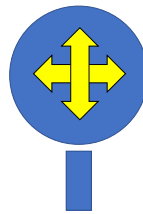


RAD1 PATH HS

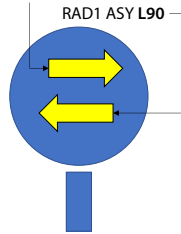


Rotated R90

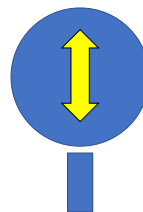
RAD1 SYM R90



RAD1 ASY R90



RAD1 PATH R90



FEATURES & SPECIFICATIONS

INTENDED USE

Pedestrian areas such as parks, campuses, pathways, courtyards and pedestrians malls.

CONSTRUCTION

Single-piece die-cast aluminum housing with nominal wall thickness of 0.125" on a 6mm thick acrylic waveguide is fully gasketed with a single piece tubular silicone gasket.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum and white. Available in textured and non-textured finishes.

OPTICS

6MM thick acrylic waveguide with 360° flexible LED board. Available in 2700K, 3000K, 3500K, 4000K and 5000K (80CRI) CCT configurations.

ELECTRICAL

Light engine consists of 96 high-efficacy LEDs mounted to a flexible circuit board and aluminum heat sink, ensuring optimal thermal management and long life. Fixtures ship standard with 0-10v dimming driver (order option DMG for connection to exterior controls). Class 1 electronic driver has a power factor >90%, THD <20%, with an expected life of 100,000 hours with <1% failure rate. Serviceable 10kV surge protection device meets a minimum Category C Low for operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Included luminaire and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color or less.

GOVERNMENT PROCUREMENT

BAA – Buy America(n) Act: Product qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product also qualifies as manufactured in the United States under DOT Buy America regulations.

BABA – Build America Buy America: Product qualifies as produced in the United States under the definitions of the Build America, Buy America Act.

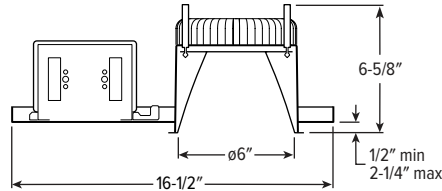
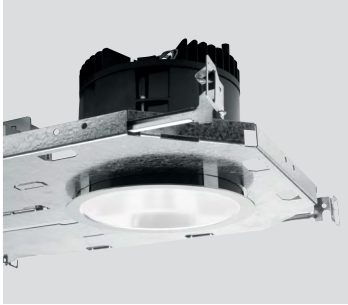
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

6DR LED 6" Downlight – Round



L30 – L40 Lumens shown

CATALOG #: _____

TYPE: **TYPE S2 - UNDER CANOPY**

PROJECT: _____

NEW CONSTRUCTION AND REMODEL



TrimLock®



ORDERING EXAMPLE: 6DR - TL - L20/835 - OPTIONS - CONTROL/DIM - UNV - OW - OF - CS - TRIM OPTIONS - N - F1

HOUSING

SERIES	LUMENS ^[1]	CRI	CCT	OPTIONS	CONTROL	DRIVER	VOLTAGE
6DR - TL	Single CCT or TW	8 80	27 2700K	See page 3 for EMERGENCY BATTERY OPTIONS .	Click HERE for control options.	See page 6 for ADDITIONAL DRIVER OPTIONS .	UNV 120-277V
TrimLock	L10 1,000lm	9 90 ^[2]	30 3000K	See page 4 for APERTURE ADAPTOR ORDERING INFO .	– None	DIM Dimming driver, 0-10V	347 347V ^[8]
	L15 1,500lm		35 3500K	SCA_ Sloped ceiling adapter ^[3]		DIM1 1% Dimming driver, 0-10V	
	L20 2,000lm		40 4000K	ATH Airtight construction		DIM LINE Driver with line voltage dimming wires ^[7]	
	L30 3,000lm		50 5000K	F Fuse			
	L40 4,000lm		TW Tunable white (80 CRI, 2700K-5000K)	CP Chicago plenum (CCEA) ^[4]			
	Single CCT only			SDT Stepdown transformer ^[5]			
	L50 5,000lm			(L_) Additional lower lumen packages available. ^[6]			
	L60 6,000lm			Example: 11,000 lumens = 6DR-TL-L120/835-(L110)			
	L70 7,000lm						
	L80 8,000lm						
	L100 10,000lm						
	L120 12,000lm						

TRIM ^[9]

TRIM TYPE	DISTRIBUTION	FLANGE TYPE	REFLECTOR FINISH	TRIM OPTIONS
O Open reflector	See page 2 for BEAM ANGLE .	OF 1/2" standard flange	Open trim types	CS Clear semi-specular powder coat
F Open reflector with polycarbonate frosted top diffuser ^[10]	W Wide	SF 1/4" mud-in flange ^[16]	SG Satin-glow anodize	WH White texture powder coat
L Flush lens	M Medium ^[13]		GD Gold anodize	BL Black texture powder coat
R Regressed lens	N Narrow ^[14]		CG Champagne gold anodize	
A Angled lens ^[11]	WW Wall wash ^[15]		PW Pewter anodize	
S Non-conductive flush lens for shower applications ^[12]			SPC Clear specular anodize	
			RG Rose gold anodize	
			WH White texture powder coat	
			BL Black texture powder coat	

MOUNTING

MOUNTING TYPE ^[23]	MOUNTING HARDWARE ^[24]
N Open pan for new construction	F1 Integral 2-position fixed pan bracket, universal bar hanger included ^[27]
I IC-rated enclosure for new construction ^[25]	F1S New construction mounting pan shipped ahead, integral 2-position fixed bracket, universal bar hangers included ^[28]
R Remodel kit ^[26]	BA1 Adjustable butterfly pan bracket, bar hanger not included ^[29]
	CA1 Adjustable caterpillar pan bracket, universal bar hanger included ^[30]

NOTES

- Lumen output based on CS (O and F Trim Types), or WH (L, R and A Trim Types) Reflector Finish, W distribution, 80 CRI, 3500K for static white and 4000K for tunable white. Actual performance may vary +/-5%. See page 2 for FIXTURE PERFORMANCE DATA. Additional lumen packages available, see Options
- Not available with tunable white.
- 11-1/2" aperture, specify degrees of slope in 5° increments, 05°-30°. Not available with I Mounting Type, S Trim Type, ATH, IP, or WET/CC Options. Painted white. Other colors available, consult factory. See page 4 for SLOPED CEILING ADAPTOR DETAILS.
- I Mounting Type required.
- May be required for 347V, see product builder at hew.com/product-builder
- Specify in increments of 100 nominal lumens. Option must be specified with next higher lumen package.
- L15 min to L60 max lumen packages. Not available with tunable white.
- Not available with Tunable White, EM batteries, or DMX Drivers.
- Trim ships separately.
- L50 lumen package max.
- Available with WW Distribution only.
- W Distribution, OF Flange Type and WH Reflector Finish only. Standard with AD, IP and WET/CC Trim Options.
- Not available with lumen stops L50 and higher when specified with L or R Trim Types.
- Not available with lumen stops L50 and higher when specified with L or R Trim Types.
- O and A Trim Types only.
- For use with mud-in plaster construction only, supplied with mud flange installation kit. See page 4 for FLANGE TYPE DETAILS. Not available with ATH, IP, or MWT Options.
- Not available with WH Reflector Finish, L or S Trim Types.
- L and R Trim Types only.
- Not available with O or F Trim Types. W and WW Distributions only.
- Not available with O or F Trim Types. W and WW Distributions only.
- L50 lumen package max with O Trim Type.
- WH and BL Reflector Finishes only. Not available with S Trim Type.
- Mounting hardware required (N and I only), ordered separately, see MOUNTING HARDWARE ordering info. See page 5 for MOUNTING TYPE DETAILS.
- Additional mounting hardware options available. See page 5 for MOUNTING HARDWARE DETAILS.
- L30 lumen package max. Not available with EM batteries.
- Also used in new construction sheetrock ceilings. Pan-less installation.
- N and I Mounting Types only. I Mounting requires external brackets.
- N Mounting Type only.
- N Mounting Type only.
- N Mounting Type only.

6DR LED

6" Downlight – Round

FEATURES

- Innovative TrimLock reflector retention system ensures trim remains flush with ceiling plane
- Wide range of lumen options for general illumination
- Beam angles ranging from 10° narrow to 65° wide for tailored performance
- Industry-leading efficacies as high as 134 lm/W
- New construction mounting pan, IC-rated, or pan-less remodel kit available
- Fully room-side accessible
- Die-cast trim includes flush, regressed or angled lens
- Sloped adapter accommodates vaulted ceilings
- Optional non-conductive lens for shower applications
- IP65-rated die-cast trim includes easy-to-clean flush lens
- Open reflector with nine finishes complements any interior style
- Support human-centric design with adaptive, individualized lighting using tunable white light
- IP65-rated die-cast trim includes easy-to-clean flush lens
- Low UGR meets LEED and WELL requirements
- Wireless in-fixture control solutions available
- Made Right Here® in the USA

SPECIFICATIONS

- HOUSING** – Die-cast aluminum trim housing and heat sink. Galvanized steel splice compartment with driver mounting plate/enclosure. Swing-out mounting arms field adjust for ceiling thickness from 1/2" – 2-1/4".
- TRIMLOCK** – Innovative TrimLock reflector retention system ensures the trim remains flush with the ceiling plane.
- OPEN REFLECTOR** – Low-iridescent anodized aluminum. Clear semi-specular finish standard.
- LENSED TRIM** – Die-cast aluminum frame with micro-prismatic, acrylic lens.
- ELECTRICAL** – High-performance Class 2 C.O.B. LED array. Modular quick-connect plug for easy field-connection of LED light assembly to driver. Reported L70>55,000 hours. Reported L90>55,000 hours. Estimated L70 = 200,000 hours. Tunable White products use LEDs of multiple CCTs and may produce a perceptibly different shade of white from single-CCT products at the same CCT. All CCTs are within 3 MacAdam ellipses.
- MOUNTING** – Recessed 20 ga. galvanized steel mounting pan for new construction or IC-rated enclosure. Remodel kit option includes receiver bracket hardware. Minimum 24" O.C. marked spacing required for L60 – L120 lumen packages.

LISTINGS –

- cCSAus conforms to UL STD 1598; Certified to CAN/CSA STD C22.2 No. 250.0 for dry and damp locations. LED light assembly conforms to UL 2108 for remote installation.
- Suitable for wet location under covered ceiling when specified with WET/CC option.
- IC-rated for direct contact with insulation when specified with I Mounting Type.
- City of Chicago Environmental Air approved when specified with CP option.
- IP65 rated trim when specified with IP option.
- Complies with ASTM-E283 when specified with ATH option.
- RoHS compliant.
- Title 24 (JA8) compliant in select configurations, see cacertappliances.energy.ca.gov
- Build America, Buy America (BABA) and Buy American Act (BAA) compliant. Request certification at hew.com/buy-american
- WARRANTY** – 5-year limited warranty, see hew.com/warranty

FIXTURE PERFORMANCE DATA

	DISTRIBUTION	WATTAGE	OPEN (O)		OPEN TOP DIFFUSER (F)		FLUSH (L)		REGRESSED (R)	
			DELIVERED LUMENS	EFFICACY (lm/W)	DELIVERED LUMENS	EFFICACY (lm/W)	DELIVERED LUMENS	EFFICACY (lm/W)	DELIVERED LUMENS	EFFICACY (lm/W)
L10	W	8.5	1016	120	803	94	734	86	688	81
	M	8.5	993	117	825	97	894	105	875	103
	N	8.5	947	111	791	93	924	109	909	107
L15	W	12.8	1554	121	1228	96	1122	88	1052	82
	M	12.8	1518	119	1262	99	1368	107	1338	105
	N	12.8	1448	113	1211	95	1413	110	1391	109
L20	W	16.2	2078	128	1642	101	1500	93	1407	87
	M	16.2	2030	125	1687	104	1829	113	1789	110
	N	16.2	1937	120	1619	100	1889	117	1860	115
L30	W	23.0	3092	134	2458	107	2198	96	2081	90
	M	23.0	3018	131	2532	110	2538	110	2474	108
	N	23.0	2876	125	2427	106	2662	116	2613	114
L40	W	31.7	4105	129	3263	103	2919	92	2763	87
	M	31.7	4006	126	3362	106	3370	106	3284	104
	N	31.7	3818	120	3222	102	3534	111	3469	109
L50	W	38.7	5121	132	4148	107	3948	102	3703	96
	M	38.7	5060	131	4261	110	–	–	–	–
	N	38.7	4824	125	4099	106	–	–	–	–
L60	W	46.7	6166	132	–	–	4754	102	4458	95
	M	46.7	6092	130	–	–	–	–	–	–
	N	46.7	5808	124	–	–	–	–	–	–
L70	W	55.9	7177	128	–	–	5533	99	5189	93
	M	55.9	7091	127	–	–	–	–	–	–
	N	55.9	6761	121	–	–	–	–	–	–
L80	W	64.6	8161	126	–	–	6292	97	5900	91
	M	64.6	8063	125	–	–	–	–	–	–
	N	64.6	7688	119	–	–	–	–	–	–
L100	W	79.7	10018	126	–	–	7383	93	6912	87
	M	79.7	9748	122	–	–	–	–	–	–
	N	79.7	9287	117	–	–	–	–	–	–
L120	W	105.0	12219	116	–	–	9005	86	8431	80
	M	105.0	11889	113	–	–	–	–	–	–
	N	105.0	11327	108	–	–	–	–	–	–

¹ Distribution will also be affected, consult factory.

² Beam angle based on CS or WH Reflector Finish.

- Photometrics tested in accordance with IESNA LM-79. Results based on CS (O and F Trim Types), or WH (L, R and A Trim Types) Reflector Finish, W Distribution, 80 CRI, 3500K for single CCT and 4000K for tunable white, wattage for 120V input, and 25°C ambient temperature. Actual performance may vary +/-5%.
- To calculate lumen output in emergency mode, multiply the battery wattage by the efficacy.
- Use multiplier tables to calculate additional options.

MULTIPLIER TABLES

	COLOR TEMPERATURE		
	CCT	SINGLE CCT	TW
80 CRI	2700K	0.98	0.83
	3000K	1.00	1.00
	3500K	1.00	0.99
	4000K	1.01	1.00
	5000K	0.99	0.98

90 CRI	2700K	0.93	–
	3000K	0.95	–
	3500K	0.96	–
	4000K	0.97	–
	5000K	0.94	–

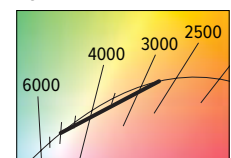
REFLECTOR FINISH		
CATALOG NUMBER	CONVERSION FACTOR	
	O TRIM	R TRIM
CS	1.00	0.98
SG ^[1]	0.92	–
GD	0.93	–
CG	0.96	–
PW	0.86	–
SPC	1.02	–
RG	0.88	–
WH ^[1]	0.89	1.00
BL ^[1]	0.47	0.79

TRIM OPTIONS	
CATALOG NUMBER	CONVERSION FACTOR
F	0.75
S	0.85
AD	0.85
PD	0.85
WET/CC	0.85

BEAM ANGLE

	TRIM TYPE ^[2]			
	O	F	L	R
W	65°	70°	55°	55°
M	35°	35°	35°	35°
N	10°	20°	25°	25°

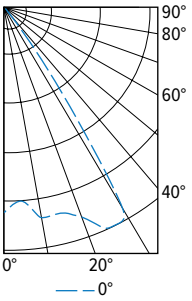
TUNABLE WHITE



6DR LED 6" Downlight – Round

PHOTOMETRY

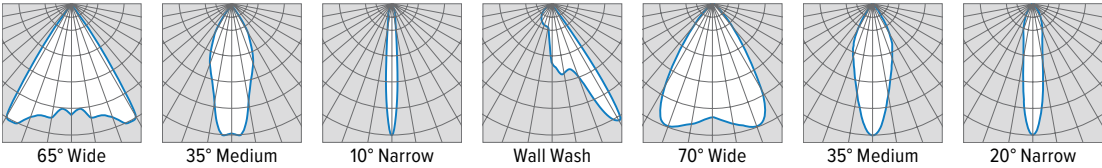
6DR-TL-L10/835-DIM-UNV-OW-OF-CS Total Luminaire Output: 1016 lumens; 8.5 Watts | Efficacy: 120 lm/W | 80 CRI; 3500K CCT



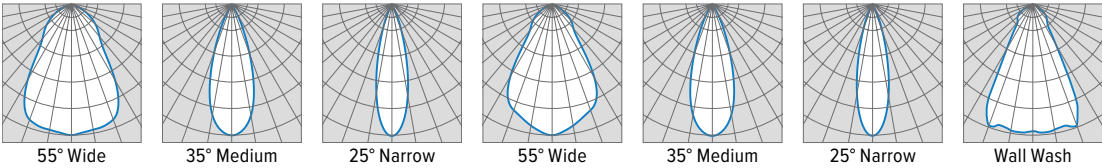
CANDLEPOWER DISTRIBUTION	VERTICAL ANGLE	HORIZONTAL ANGLE	ZONAL LUMENS
		0°	
	0	810	
	5	765	76
	15	842	242
	25	961	434
	35	293	238
	45	22	19
	55	6	6
	65	1	1
	75	0	0
	85	0	0
	90	0	0

LUMEN SUMMARY	ZONE	LUMENS	% FIXTURE
	0 - 40	989	97
	0 - 60	1015	100
	0 - 90	1016	100
	0 - 180	1016	100

OPEN (O)



FLUSH (L)



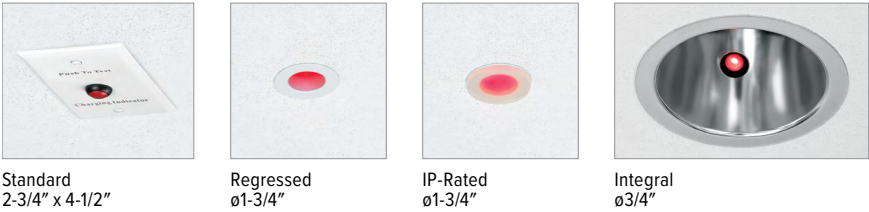
EMERGENCY BATTERY OPTIONS

ORDERING EXAMPLE: EM/7W/RTS		
EMERGENCY BATTERY	TEST SWITCH	
EM/7W 7-watt emergency battery	–	Standard ^[2]
EM/10W 10-watt emergency battery ^[1]	/RTS	Regressed test switch ^[3]
	/IPRTS	IP65 rated regressed test switch ^[4]
	/ITS	Integral test switch ^[5]

Additional limitations apply, see page 1. Specify CEC in the option code when California Energy Commission regulations are required. Max remote distance is 50', connection by others.

- ¹ Not available with L10 lumen package.
- ² Not available with S Trim Type or IP Trim Option.
- ³ Not available with S Trim Type, IP or WET/CC Trim Options.
- ⁴ Must specify IP or WET/CC Trim Options.
- ⁵ O and F Trim Types only. N Mounting Type and OF Flange Type only. Top access required. Not available with WW Distribution, WET/CC Trim Option, ATH, CP or SCA Options. 3/8" to 1-1/4" ceiling thickness only.

TEST SWITCH DETAILS



6DR LED 6" Downlight – Round

APERTURE ADAPTOR ORDERING INFO

ORDERING EXAMPLE: 4DR - GR - 0575 - WHT				
SERIES	CATALOG #	CEILING CUTOUT	FINISH	
4AR 6AR 8DR	GR	Specify ceiling cutout in 1/8" increments. Example: 5.75" = 0575 See Kit Components for application limits.	CS	Clear semi-specular powder coat
4DR 6DR			WH	White texture powder coat
4DS 6DS			BL	Black texture powder coat
4PR 6PR				
4PS 6PS				

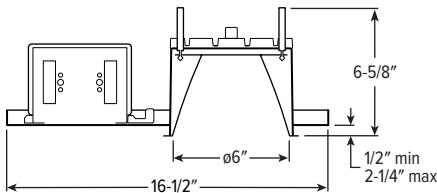
Adaptor (goof ring) corrects ceiling cutout errors during remodel downlight installation.

Additional finishes available, consult factory.

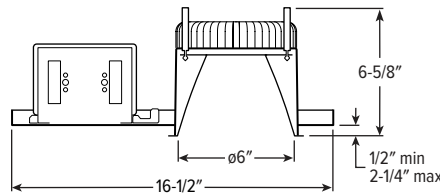
For limitations and instructions, see hew.com/aperture-adaptor.pdf

CROSS SECTIONS

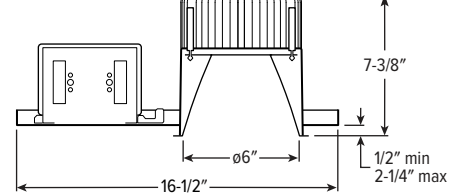
L10 – L20 LUMENS



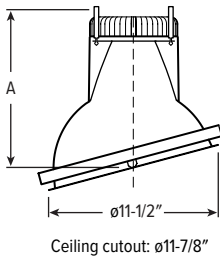
L30 – L40 LUMENS



L50 – L120 LUMENS



SLOPED CEILING ADAPTOR DETAILS



LUMENS	A (HEIGHT)						PLENUM HEIGHT
	5°	10°	15°	20°	25°	30°	
L10 - L40	10-11/16"	10-7/8"	10-15/16"	10-7/8"	10-13/16"	10-5/8"	11-1/4"
L50 - L120	11-7/16"	11-9/16"	11-5/8"	11-5/8"	11-1/2"	11-1/4"	12"

15° Shown

TRIMLOCK INSTALLATION DETAILS

TWIST



PULL

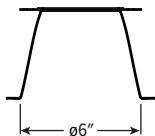


RELEASE

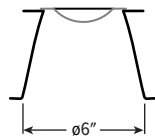


TRIM TYPE DETAILS

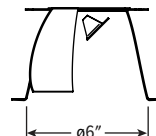
OPEN



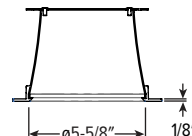
OPEN TOP DIFFUSER



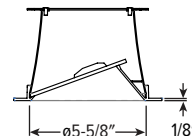
OPEN (WALL WASH)



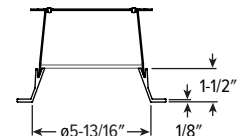
FLUSH | SHOWER



ANGLED

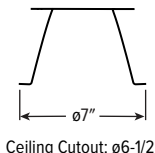


REGRESSED

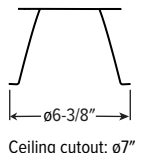


FLANGE TYPE DETAILS

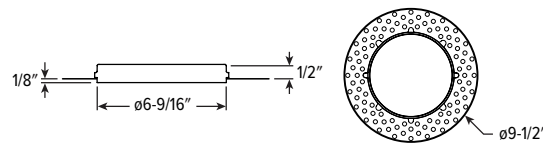
1/2" STANDARD



1/4" MUD-IN

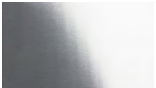
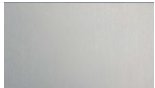
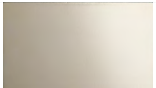
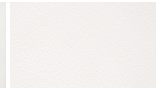
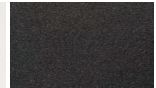


MUD FLANGE MOUNTING KIT (SLIM FLANGE TYPE)



6DR LED 6" Downlight – Round

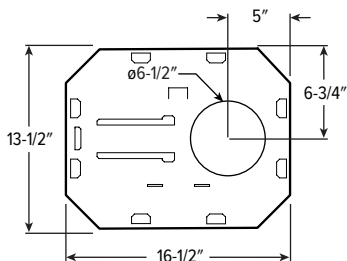
REFLECTOR FINISH DETAILS

SPC	SG	PW	GD	CG	RG	CS	WH	BL
Clear specular	Satin glow	Pewter	Gold	Champagne gold	Rose gold	Clear semi-specular	White	Black
								

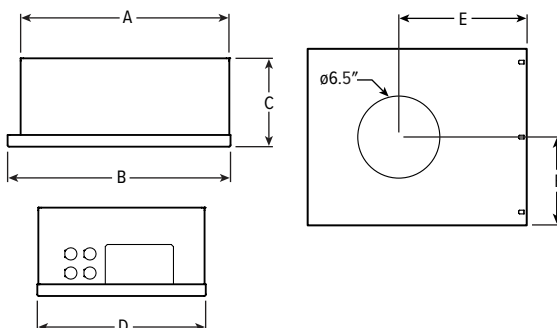
MOUNTING TYPE DETAILS

Flex conduit is recommended for installation.

NEW CONSTRUCTION



IC-RATED



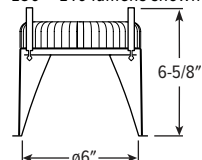
	LENGTH					
LUMENS	A	B	C	D	E	F
L10 - L20	15-3/16"	16"	6-3/8"	12-1/8"	9-1/2"	6-1/16"
L30	16-5/8"	17-1/2"	7-7/8"	14"	10-1/4"	7"

REMODEL

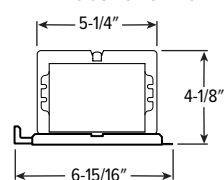
H.E. Williams Inc. strongly recommends installing a trial fixture to confirm fitment on-site prior to ordering full project quantities.

CROSS SECTION

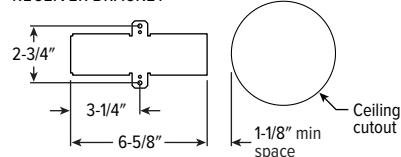
L30 – L40 lumens shown



DRIVER & JUNCTION BOX

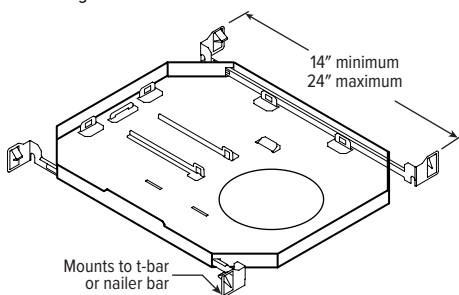


RECEIVER BRACKET

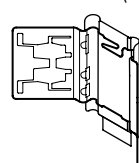


MOUNTING HARDWARE DETAILS

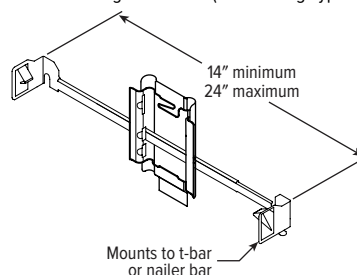
F1 Integral 2-position fixed pan bracket, universal bar hanger included



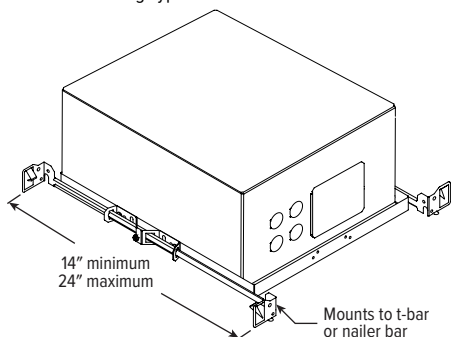
BA1 Adjustable butterfly pan bracket, bar hanger not included (N Mounting Type only)



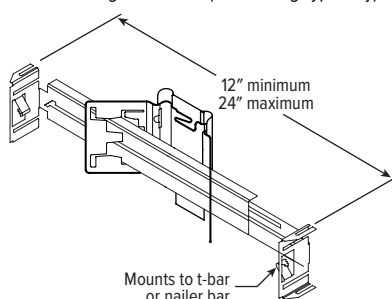
CA1 Adjustable caterpillar pan bracket, universal bar hanger included (N Mounting Type only)



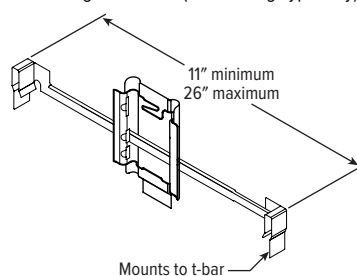
F1 with I Mounting Type



BA2 Adjustable butterfly pan bracket, heavy-duty universal bar hanger included. (N Mounting Type only)



CA2 Adjustable caterpillar pan bracket, t-bar hanger included (N Mounting Type only)



SEE NEXT PAGE FOR DRIVER DETAILS.



6DR LED

6" Downlight – Round

ADDITIONAL DRIVER OPTIONS

Lumen restrictions apply: L40 max for DMX driver, L40 max for Lutron driver, L15 min to L60 max for DIM LINE driver. R mounting type requires top access with DMX drivers. 347V may require stepdown transformer, see product builder at hew.com/product-builder. I Mounting Type not available with Lutron driver.

CATALOG NUMBER	DESCRIPTION
DIM	Driver with external dimming wires prewired for 0-10V low voltage applications (tunable white: (1) 0-10V signal controls dimming and (1) 0-10V signal controls CCT)
DIM1	1% driver with external dimming wires prewired for 0-10V low voltage applications
DIM LINE ^[1]	Line voltage dimming driver (TRIAC and ELV compatible, 120V only)
DA	Driver with 12V auxiliary power, without external dimming wires (not available with 347V)
DALI	DALI dimming driver
DMX	Driver prewired for DMX applications
LDE1 ^[1]	Lutron Hi-Lume 1% EcoSystem dimming driver
LD2	Lutron DALI-2 digital driver, 1%
DCC	Remote UL Class 2 DC constant current supply, UL- or CSA-listed, by others

¹ Single CCT only.

TUNABLE WHITE DRIVER DETAILS

