

## LAS VEGAS STADIUM DOOR AND COLUMNS OPERATIONS AGREEMENT

THIS AGREEMENT (“Agreement”) is dated and entered into this \_\_\_\_ day of \_\_\_\_\_, 2018 by and between Clark County, a political subdivision of the State of Nevada (“COUNTY”), the Clark County Stadium Authority, a political subdivision of the State of Nevada (“STADIUM AUTHORITY”) and the Las Vegas Stadium Events Company, LLC, a Nevada limited liability company (“DEVELOPER”) The COUNTY, STADIUM AUTHORITY and DEVELOPER are each a party to this Agreement, and together they are the “Parties.”

- A. WHEREAS, the Parties enter into this Agreement for the purpose of outlining procedures involving operable doors and retractable columns, referenced in paragraph F below, at the Las Vegas Stadium.
- B. WHEREAS, the STADIUM AUTHORITY was created by the Southern Nevada Tourism Improvements Act to own and operate the Las Vegas Stadium (“Stadium”) located at 3333 Al Davis Way in Clark County, Nevada; and
- C. WHEREAS, the STADIUM AUTHORITY entered into an Agreement with the DEVELOPER for the construction of the Stadium; and
- D. WHEREAS, County, through the Department of Building & Fire Prevention (“CCDBFP”) issues the construction permits for the Stadium; and
- E. WHEREAS, Clark County Code Title 22, Chapter 22.02.075 Alternate Materials and Methods of Construction, authorizes the Clark County Building Official (“Building Official”) to approve alternate means and methods for construction when the proposed alternate is satisfactory and complies with the intent of the technical codes, and is, at least, equivalent to that prescribed by the technical codes; and
- F. WHEREAS, an Alternate Materials and Methods of Construction Request (“AMMR”) was submitted under Permit Application No. BD18-10708 for the two-panel, 80 feet high by 215 feet wide operable doors (“Doors”), attached hereto as Exhibit A; and
- G. WHEREAS, an AMMR was submitted under Permit Application No. BD18-10708 for 22 retractable columns (“Columns”) to permit the passage of the playing field tray from inside and outside of the building and vice versa, attached hereto as Exhibit B; and
- H. WHEREAS, the Building Official has determined that certain operation restrictions for the doors and columns are required in order for the AMMRs to meet the intent of the technical codes; and

- I. WHEREAS, the Parties desire to enter into this Agreement to memorialize the inspection, reporting responsibilities and operating restrictions stated in the approved AMMRs.

NOW THEREFORE, in consideration of mutual promises herein and contained above recitals, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged; the Parties agree to the recitals set forth above and to the following terms and conditions:

## **SECTION 1 STADIUM MODIFICATIONS**

- I. The Parties agree that the operating restrictions identified in the AMMRs shall be followed to the fullest extent. However, the Building Official may temporarily or permanently approve modifications to the operating restrictions under the following conditions:
  - a. All requests to modify any operating restriction must be sent directly to the Building Official; and
  - b. The request shall include a citation to the applicable Building Code section and number to support the request; and
  - c. The Building Official shall determine that the requested modifications comply with the intent of the technical codes and is, at least, equivalent to that prescribed by the technical codes.

## **SECTION 2 DEVELOPER RESPONSIBILITIES**

DEVELOPER Agrees to:

- I. Provide the Building Official with notice of a minimum of three (3) working days prior to any event in which the intent is to have the Doors in the open position.
- II. Provide the Building Official an inspection report, as described below on the first working day after any event in which the Doors are open or were intended to be open.
  - a. This inspection report for the Doors shall contain the following information:
    - i. Date & time of the report.
    - ii. Report title – “LV Stadium Operable Door Report.”
    - iii. Name & title of individual preparing the report.
    - iv. Forecasted maximum wind speed, actual maximum wind speeds weather station locations Used in determining if the doors were to remain open or not.
    - v. Actual wind speeds reports at the various weather stations identified in the AMMRs.
    - vi. Decisions and actions taken based on data, including names and title of individuals involved in the decision process outline in the AMMR.
- III. Provide the Building Official with notice of a minimum of three (3) working days prior to retracting the Columns at any time.

- IV. Arrange for the inspection of the Columns to assure that the Columns are fully repositioned and engaged prior to the general public occupying the concourse and seating bowl areas supported by the Columns.
  - a. The costs of the inspection shall be the responsibility of the DEVELOPER.
  - b. The inspection may be performed by either an approved Quality Assurance Agency or by a CCDBFP inspector. If an inspection is conducted by a CCCDBFP inspector, the cost shall be based on the actual time of the inspection at the published hourly inspection rate at the time of the inspection and shall be paid in advance of the inspection.
  
- V. Provide the Building Official with an inspection report certifying that all retractable columns are fully repositioned and engaged prior to the general public occupying the concourse and that the seating bowl areas supported by the Columns are, in total or in part, fully or partially retracted. This inspection report must be submitted the following work day.
  - a. The inspection report for the Columns shall contain the following information:
    - i. Date & time of the inspection.
    - ii. Name & title of individual performing the inspection.
    - iii. Title of inspection report “LV Stadium Retractable Column Report”.
    - iv. The means and method of the inspection.
    - v. Results of the Inspection.
  - b. An inspection report is not required if a CCDBFP inspector performs the inspection.
  
- VI. The DEVELOPER agrees that in the event that the Doors and Columns inspection reports as described above are not submitted to the Building Official as required or that the reports are incomplete, then the COUNTY may require that the inspection of the Doors and Columns be performed only by CCDBFP Inspectors for all events.

**SECTION 3 STADIUM AUTHORITY RESPONSIBILITIES**

The STADIUM AUTHORITY agrees to include the provisions of the Agreement in all successive or future Operating Agreements for the STADIUM. The STADIUM AUTHORITY also agrees to enforce the provisions of this Agreement to ensure compliance by the Stadium Operators.

**SECTION 4 COUNTY RESPONSIBILITIES**

The COUNTY agrees to, when requested by the Stadium Authority, Developer or as legally required, provide inspection personnel to perform Doors and Columns inspection; and to review and file the Doors and Columns inspection reports submitted by the DEVELOPER.

**SECTION 5 TERMINATION**

This Agreement may be terminated voluntarily, by either Party, with a ninety (90) calendar day written notice to the other Parties, provided that:

- a. The Doors have been closed and permanently secured so that they are no longer operational, and
- b. The Columns have been securely fastened in the non-retracted position and the retraction mechanism permanently disabled, or  
The seating and concourse area above the area supported by the columns has permanent barriers installed to prevent this area from being occupied by the public or the ability to add in live or addition dead loads in this area.

The County reserves the right to terminate this Agreement in the event of default of the Agreement, and with a ninety (90) calendar day written notice to the Developer and Stadium Authority. If terminated for default, the Developer and/or the Stadium Authority shall ensure that:

- a. The Doors have been closed and permanently secured so that they are no longer operational, and
- b. The Columns have been securely fastened in the non-retracted position and the retraction mechanism permanently disabled, or  
The seating and concourse area above the area supported by the columns has permanent barriers installed to prevent this area from being occupied by the public or the ability to add in live or addition dead loads in this area.

**SECTION 6 NOTICES**

All notices, demands, requests, consents, approvals or other communications required or permitted to be given pursuant to this Agreement shall be in writing and shall be deemed sufficiently delivered either when personally delivered, by email or if mailed, three (3) business days after deposit in the U.S. Mail, registered or certified mail, return receipt requested, postage pre-paid, addressed as follows:

**Clark County Stadium Authority Representative:** For the purpose of communication, negotiation, or other notices and the following will be considered the Stadium Authority representative:

With a Copy to:  
 Clark County Stadium Authority  
 Attn: Steve Hill, Chairman  
 Address: 6385 S. Rainbow Blvd., Suite 105  
 Las Vegas, Nevada 89118  
 (702) 215-2000  
 Email Address: \_\_\_\_\_

**LV Stadium Events Company, LLC. Representative:** For the purpose of communication, negotiation, or other notices and the following will be considered the Stadium Authority representative:

With a Copy to:

LV Stadium Events Company, LLC  
Attn: Don Webb, Chief Operating Officer  
6223 Las Vegas Boulevard South, Suite 380  
Las Vegas, Nevada 89119  
Email Address: \_\_\_\_\_

**County Representative:** For the purpose of communication, negotiation, scheduling inspections or other notices, the following will be considered the County's representative.

With a copy to:

Clark County Building & Fire Prevention  
Attn: Jerome A. Stueve, Building Official  
4701 W. Russell Road  
Las Vegas, NV 89118  
(702) 455-8187 (Office)  
Email Address: Jerry.Stueve@ClarkCountyNV.gov

#### **SECTION 7 ENTIRE AGREEMENT**

This Agreement, including the Exhibits attached hereto which are incorporated herein by this reference, constitutes the entire Agreement among the Parties. This Agreement, relating to the rights granted and obligations assumed by the Parties is intended as a complete and exclusive statement of the promises, representations, discussions, and other agreement that may have been made in connection with the subject matter hereof. Any prior agreement, contract, promise, negotiation, or representation, either oral or written, relating to the subject matter for this Agreement not expressly set forth in this Agreement is superseded by this Agreement and is of no further force or effect.

Each Party, or responsible representative thereof, has thoroughly read this Agreement, including any exhibits or attachments hereto, and have sought and received whatever competent advice and counsel was necessary for them to form a full and complete understanding of all rights and obligations herein.

#### **SECTION 8 GOVERNING LAW**

This Agreement shall be governed by and construed in accordance with the laws of the State of Nevada.

#### **SECTION 9 EXECUTION IN COUNTERPARTS**

This Agreement may be executed in one or more counterparts; each of which shall be deemed to be an original, but all of which together shall constitute but one and the same instrument.

## **SECTION 10 INDEMNIFICATION**

The DEVELOPER and any of its subcontractors hereby indemnifies and shall defend and hold harmless the COUNTY, its officials, employees, volunteers, representatives and their employees from and against any and all suits, actions, legal and or administrative proceedings, claims, demands, damages, liabilities, interest, attorney's fees, reasonable costs including court costs, judgments, liens, and expenses of whatsoever kind or nature, including those arising out of injury to or death of DEVELOPER's employees, whether arising before or after completion of the work hereunder and in any manner directly or indirectly cause, occasioned, or contributed to in whole or in part by reason of any negligent act, omission or fault or willful misconduct whether active or passive of DEVELOPER, its subcontractors or of anyone acting under its direction or control or on its behalf in connection with or incidental to the performance of this Agreement. COUNTY shall promptly notify DEVELOPER, in writing, of any such claim, demand, or lawsuit. DEVELOPER shall indemnify, defend and hold harmless COUTNY for any attorney's fees or other costs of defense, even if the allegations of the claimer groundless, false or fraudulent.

This indemnity clause will not apply to any negligent acts or omissions solely caused by COUNTY, its employees or agents. Furthermore, this indemnification shall survive the termination of this Agreement.

## **SECTION 11 INSURANCE**

The Parties hereto shall carry commercial general liability and workers compensation insurance, or shall self-insure, in accordance with NRS. Such insurance shall be written by a company licensed by the state of Nevada, and shall respond in tort in accordance with NRS Chapter 41.

The Parties shall also maintain protection (insurance or approved self-insurance) for liability arising in other legal jurisdictions, including federal courts, in which the statutory tort caps of NRS Chapter 41 would not apply. The Parties do not waive and intend to assert available NRS Chapter 41 liability limitations in all cases. The Parties shall not be subject to punitive damages.

## **SECTION 12 HEADINGS**

The Section headings used herein are for reference and convenience only, and in no way define, limit or describe the scope or extent of any provision of this Agreement.

## **SECTION 13 PARTIES AND INTERESTS**

This Agreement is intended only to benefit the Parties hereto and does not create any rights, benefits or causes of action for any other person, entity or member of the general public.

The Parties are associated with each other only for the purposes and to the extent set forth in this Agreement, and in respect to performance of services pursuant to this Agreement, the Parties are and shall be a separate and distinct from the other. Nothing contained in this Agreement shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent or to otherwise create any liability for one agency whatsoever with respect to the indebtedness, liabilities, and obligations of the other agency or any other.

**SECTION 14 RECORDS REQUESTS**

Unless expressly marked confidential, pursuant to NRS 239.010, information or documents in connection with this Agreement may be open to public inspection and copying. In the event COUNTY receives a subpoena, request or other validly issued administrative or judicial process demanding confidential information, the COUNTY will promptly notify DEVELOPER and/or STADIUM AUTHORITY of this request. After notification, unless the demand has been quashed or an injunction granted, COUNTY shall thereafter be entitled to comply with such demand to the extent permitted by law. COUNTY shall not be held criminally or civilly liable for the disclosure of information made pursuant to State law or made in confidence to a Federal, State or local government official for the purpose of reporting or investigating a suspected violation of law.

**SECTION 15 SEVERABILITY**

Should any part of this Agreement be rendered void, invalid, or unenforceable by a court of competent jurisdiction, such provision shall be severed from this Agreement, and the remainder of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date herein above set forth.

PASSED, ADOPTED and approved this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

Clark County

\_\_\_\_\_  
Steve Sisolak, Chairman

\_\_\_\_\_  
Date

PASSED, ADOPTED and approved this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

Clark County Stadium Authority

\_\_\_\_\_  
Steve Hill, Chairman

\_\_\_\_\_  
Date

PASSED, ADOPTED and approved this \_\_\_\_\_ day of \_\_\_\_\_, 2018

LV Stadium Events Company, LLC

\_\_\_\_\_  
Don Webb  
Chief Operating Officer

\_\_\_\_\_  
Date

APPROVED AS TO FORM:  
DISTRICT ATTORNEY  
STEVEN B. WOLFSON

\_\_\_\_\_  
Deputy District Attorney

\_\_\_\_\_  
Date



# **Exhibit A**

Alternate Means and Method  
of Construction Request

## **Operable Doors**



March 15, 2018  
*Revised March 26, 2018*

Clark County Dept. of Building & Fire Prevention  
4701 W Russell Rd  
Las Vegas, NV 89118

**LAS VEGAS RAIDERS STADIUM**  
**LAS VEGAS, NEVADA**  
**ALTERNATE REQUEST – OPERABLE DOORS**

To Whom It May Concern:

This is an Alternate Methods & Materials (AM&M) request to address the Operable Doors in the New Las Vegas Raiders Stadium.

**CODE REQUIREMENT**

The New Las Vegas Raiders Stadium is a building of Type I-B construction. The 2012 Edition of the International Building Code (IBC), requires the building to meet ASCE 7-10 requirements for wind pressure.

**ISSUE**

The New Las Vegas Stadium incorporates an iconic feature in a large operable set of doors at the North end of the Stadium. For the Las Vegas Stadium, the opening will be accomplished through four moving panels each controlled through a series of electric motors that will drive the doors in a coordinated movement within a 10-minute period. When open, the doors will provide a 215' x 80' (17,200 sf) aperture in the building's North façade wall. The operable doors, Components and Cladding (C&C), and the Main Wind Force Resisting System (MWFRS) are designed to ASCE 7-10 wind pressures derived from a 105 mph wind speed and a fully enclosed building configuration. When the doors are in the open position and the building is in a partially enclosed configuration, the lowest impactful wind speed (entering directly at the doors from the northeast) at which the wind pressures on the MWFRS equal those in the fully enclosed configuration (at 105 mph) is 70 mph. The wind speed (entering directly at the doors) at which the local wind pressures on the cladding immediately surrounding the doors equal those in the fully enclosed configuration (at 105 mph) is 60 mph. (See CPP supporting correspondence Attachment A) Under the provisions of ASCE 7-10 for partially open structures, we would propose these wind speeds be reduced for safety factor of .75 to 52 mph and 45 mph per section ASCE 7 respectively. The maximum wind speed recommended by the door's design engineers for door service operations is 40 mph above which the doors will be closed. The Stadium doors will be closed when wind speeds are expected to be 25 mph. The calculations and information provided in this determination was performed by Cermak Peterka Petersen the Wind Engineering & Air Consultants and are provided in the complete report that is attached.

**JUSTIFICATION**

The design team is requesting the opening made by the operable doors be permitted on the basis of a wind probability study and the analysis performed by the structural engineering team. The technology to accomplish this type of door has been available for many years and has been incorporated in numerous major Stadiums including AT&T Stadium in Dallas and Lucas Oil Stadium in Indianapolis.

**LOW PROBABILITY OF OCCURRENCE**

The Las Vegas Stadium has been programmed and designed with strict tolerances for energy consumption and resulting operating procedures. Included in that proforma is a planned percentage of time when the operable doors will be in the open position. Utilizing the weather data for Las Vegas, Stadium Operations anticipates the doors will be open no more than the time when major assembly events are in the Stadium. Accounting for NFL, UNLV, post-season bowl games, and the anticipated trade events, the open times look like what is accounted for in the following table. The operator anticipates and recognizes the importance of non-football events where the seating bowl will be occupied and with the desire to have the doors in the open position. For reasons of safety, the procedures outlined below will apply for BOTH FOOTBALL and NON-FOOTBALL events. For non-football events, the Stadium Management will consult with the event's lead promoters for determination of initial door position. Following that initial decision, the SOP outlined below will govern door position and operation.

Stadium Events	Number	Hours	Total Hours	Total hours in a year	% of potential opening
Raiders	10	6	60		
UNLV	6	6	36		
International Soccer	2	6	12		
Concerts	5	4	20		
Festival Days	4	8	32		
Rugby	3	6	18		
Bowl/Conf Championships	2	6	12		
Public Show	5	8	40		
Neutral Site CFB Game	1	6	6		
Motorsports	6	8	48		
Combative Events	1	4	4		
Major Non-Recurring	1	6	6		
E-Sports	1	8	8		
Corporate Social Gatherings	100	4	400		
Graduations	22	6	132		
<b>TOTAL HOURS</b>			<b>834</b>	<b>8760</b>	<b>10%</b>



## STANDARD OPERATING PROCEDURE (SOP)

Recognizing that the probability of the occurrence is not zero, (although statistically improbable) Stadium Operations is committed to establishing a set of operating procedures related to the operable doors and the decision as to when they will and won't be closed. These are outlined below under three possible scenarios. One, under normal Stadium operations. Two, under the occurrence of a monitored wind or storm event in the area. Then three, in the event of a power failure during an occupied event.

1. **Normal Stadium Operations** – Under normal Stadium operations the NFL requires that Stadium management have available a fully detailed weather monitoring system capable of monitoring weather systems up to 250 miles out from the Stadium. This system on game day is under constant monitoring at the offices of the Stadium management and will be available through the primary and secondary Fire Command Centers at the Stadium. Under normal operations the NFL requires the home team to make the decision on position of any operable portion of the Stadium 90 minutes prior to game time. Typically, that decision is maintained throughout the course of the game with the intent of maintaining equal competitive environments for both teams. However, in the event of a weather event, the NFL requires the head of Stadium operations, and the top League official to meet and discuss the maintenance of a safe Stadium environment. Below is an excerpt from the 2017 NFL Game Operations Manual addressing operable Stadium issues (emphasis added). This procedure for monitoring weather events will be utilized for all events that the doors may be open:

***“Y. Domed Stadiums (Retractable Roof and/or Retractable Wall)***

*(For purposes of this policy, “wall” refers to retractable end zone walls, doors, or panels made of glass or any other material.)*

*Until 90 minutes prior to kickoff, the home club will have the authority to determine if the retractable roof and/or the retractable wall should be open or closed for each preseason and regular season game. The home club may choose to open the roof and/or wall for some games and not for others. The decision to open or close the wall is independent of the election the club makes for opening or closing its stadium’s roof. In the event a game is started with the roof and/or wall in the open position and it is closed pursuant to the procedures set forth below, the roof and/or wall must thereafter remain in the closed position for the duration of the game. For Wild Card and Divisional playoff games, the Commissioner will defer to the home team’s written policy, if reasonable under the circumstances. If, however, the Commissioner determines that the home team’s roof and/or wall policy is unreasonable, or in the event the home team does not have a written policy, then the decision is solely at the discretion of the Commissioner. For the Conference Championship games, the Pro Bowl, and the Super Bowl, the decision is solely at the discretion of the Commissioner.*

*(1) Pregame Procedures*

*a. In the week prior to a game and on game day, to preserve and protect the field, the League’s tarp rule will be in effect, if the roof is open (see pages A52-54). b. No later than 90 minutes prior to kickoff, the home club is required to notify the Referee or the highest-ranking League official working at the game whether the roof and/or wall shall be open or closed. The opening or closing of the roof and/or wall as designated by the home club must be completed no later than 60 minutes prior to kickoff. All overhead lighting must be on prior to team warm-ups and must remain on for the duration of the game.*

*c. If curtains can be used to cover windows on the retractable wall, then the home club must make a final determination, no later than 90 minutes prior to kickoff, as to whether the curtains will remain*



*open or closed for the game. The opening or closing of curtains must be completed no later than 60 minutes prior to kickoff.*

***d. If, subsequent to the home club's decision to have the roof and/or wall in the open position for the game, a hazardous condition (lightning, severe winds, etc.) develops, or is anticipated, that threatens the welfare of participants and/or spectators, as determined by the Referee after receiving input from the Stadium Manager and the League representative working at the game, the roof and/or wall shall be closed immediately (if both the roof and wall are open, both must be closed). If precipitation begins at any time after the club's decision to have the roof in the open position for the game, the roof shall be closed immediately, by signal of the Referee to the Stadium Manager.***

*If precipitation begins at any time after the club's decision to have the wall in the open position for the game, the club may elect to close the wall, but must advise the League representative of its decision prior to taking such action.*

**(2) In-Game Procedures**

***a. If a game starts with the roof and/or wall open, it shall be closed at any time due to the development or anticipation of a hazardous condition that threatens the welfare of participants and/or spectators.***

*The Referee, in consultation with the League representative, after receiving input from the Stadium Manager, will decide if the roof and/or wall should be closed. If the roof and/or wall is closed pursuant to the above, it must remain closed for the duration of the game. Play may continue while the roof and/or wall is being closed, subject to the Referee suspending play pursuant to the procedures for emergency situations.*

***b. If a game starts with the roof open, it shall be closed any time up to the last five minutes of the fourth period if precipitation begins. The decision to close the roof will be made by the Referee, who will signal to the Stadium Manager or otherwise communicate to him to begin closing the roof. Play will continue while the roof is closing. If a game starts with the wall open, it can be closed any time up to the last five minutes of the fourth period if precipitation begins. The decision to close the wall in the event of precipitation will be made by the club. The club must, however, advise the League representative of its decision prior to taking such action. Play will continue while the wall is closing.***

***c. If the fourth period ends with the roof and/or wall in the open position, no change will be made prior to or during an overtime period, unless the roof and/or wall is closed pursuant to the procedures for hazardous conditions as set forth in (a) above."***

2017 NFL Game Operations Manual – Chapter 3 Stadium Facilities; Page A30

- 2. Operations Under a Monitored Weather Event** – As mentioned previously, the Stadium will come equipped with a weather monitoring station capable of monitoring potential weather events at least 250 miles out from the Stadium. Engineering and analysis of the Stadium design, notes that there will be no significant impact to MWFRS Structural Loads (overall loading) until wind speeds entering directly thru the doors exceed 54 mph, with cladding pressures immediately around the doors when exceeding 45 mph. (reference the Probability of Risk section above for percentage probability of occurrence with doors open). Under design for the Stadium, the door engineers have recommended, for smooth operation, the Stadium operating procedure mandate the doors be closed when the Stadium monitoring system identifies the potential exists for winds exceeding 40 mph. Again, recognizing that the probability of the occurrence is not zero, (although statistically



improbable) Stadium Operations is committed to establishing a contingency cushion beyond this recommendation by closing the doors when winds are anticipated to exceed **25 mph or greater**. At this occurrence, the procedures mandated by the NFL under Item Y of Chapter 3 in the Game Operations Manual, will be put into effect as outlined above under Scenario #1.

**Operations During a Power Failure Event** – The New Las Vegas Stadium is being designed with 100% power redundancy as agreed to by Nevada Energy. From each of two separate transformer stations the Stadium will be able to receive 100% of its operating power. To back up this system even further, the life safety systems of the Stadium will be supported via a system of backup diesel generators. The operable doors, not being part of the life safety system, will not be supported by the emergency generators but will benefit from the Stadium's power redundancy. In the unlikely event, however, of both power sources going down and the Stadium being fed by emergency power, the Stadium Operations is committing to an Operating Procedure to manually close the operable doors. The doors are designed to be extremely well balanced and can operate with minimal friction and can be moved with a pull force of less than 4 kips (4,000 lbs.) This can be provided by any ½ ton vehicle on the market today.

#### **Closing Procedure**

1. Prior to initiating any door movement, Stadium operations staff will confirm weather events for the duration of the event and decide if the doors will be opened.
2. If doors are open the Stadium staff will monitor weather conditions during the event.
3. If the doors are open with the Stadium occupied and a weather event with winds exceeding the mph criteria listed in the ISSUE section above occurs, the stadium staff will take the following steps to shut the doors.
  - a. Stadium staff will clear occupants from the Concourses and limit access to the area located around the door.
  - b. Upon verification that all areas around the door are clear and secured, the door closing will start.
  - c. Once the door is closed, the automated locking pin is put in place to secure the doors. Only then will occupants will be allowed back in the area.
4. If the doors for any reason do not operate and are unable to be closed when the Stadium is occupied the following steps will be taken to ensure the safety of the occupants.
  - a. Stadium staff will activate measures outlined in 'Operations During Power Failure Event' listed above to manually close the doors.
5. Should manual operation of the doors not be successful, the following measures will be taken:
  - a. Stadium staff will clear occupants from the Concourses and limit access to the area located around the door.
  - b. Stadium staff will be posted as safe distance away from the doors and prevent access to the portion of the stadium that is in the area of the door for the remainder of the event.
  - c. Operation of a full cycle in normal operating mode will be required before occupants will be allowed back into the area around the doors.
  - d. In a case where anticipated wind speeds of 45 mph or greater are predicted by the National Weather Service to occur during a public event and the doors cannot be closed during the such event, the event will be cancelled and the public will be evacuated from the facility.



## SUMMARY

The doors will be shut when wind speeds are expected to exceed 25 mph, the method of monitoring the wind will be done the same for events that anticipate the door to be open. All stadium personnel responsible for operation of the doors will receive proper training on how to close the doors in the event that a wind event occurs during an event. If for any reason the doors will not shut during an event the area within proximity of the doors will be evacuated and monitored by stadium staff. In the event that the doors cannot be shut prior to an event the event will be delayed until doors can be shut.

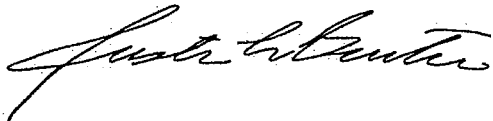
## CONCLUSION

Based on the low probability of occurrence, the procedures listed in Section Y of the 2017 NFL Game Operations Manual, the Standard Operating Procedures for the building, and the ability to close the doors manually, the design team has determined that the differential wind criteria maintains the level of safety required by the IBC for Main Wind Force Resisting System.

If you have any questions or comments, please feel free to contact me.

Submitted by:

**FP&C Consultants KC, LLC**



Justin Burton

JB/mjf

Attachment

Cc: Lanson Nichols, HNTB  
Paul Griesemer, HNTB





# LV Stadium Events Company, LLC

BUS-10100  
Approved

March 26, 2018

Mr. Jerry Stueve, P.E.  
Director  
Clark County Department of Building and Fire Prevention  
4701 W Russell Road  
Las Vegas, Nevada 89119

**Re: Las Vegas Stadium Alternate Means and Method Request – Operable Doors**

Dear Mr. Stueve,

This letter will serve to confirm that until an agreement between LV Stadium Events Company, LLC, Clark County Stadium Authority and Clark County pertaining to the operation of the stadium doors is reached, the operable doors covered by the AMMR will remain in the closed position for all public events.

Please feel free to contact me at any time to further discuss this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Don Webb", written over a horizontal line.

Don Webb  
Chief Operating Officer





March 16, 2018

Mr. Jerry Stueve, P.E.  
Director  
Clark County Department of Building and Fire Prevention  
4701 W Russell Road  
Las Vegas, Nevada 89119

**Re: Las Vegas Stadium Alternate Means and Method Request – Operable Doors**

Dear Mr. Stueve,

This letter will serve as the formal request by LV Stadium Events Company for approval of the above-captioned item in compliance with the applicable Clark County building codes.

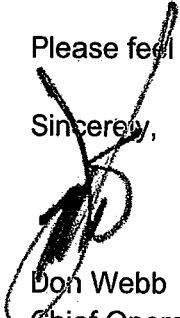
In the matter of the large operable lanai doors, LV Stadium Events Company, as the developer and operator of the stadium, is in full support and agreement with the prescribed Standard Operating Procedures (SOPs) outlined in the attached Alternate Means and Methods Request. LV Stadium Events Company is fully committed to the safety of every person who will utilize our facility. This commitment includes compliance with the operation and maintenance of the operable lanai doors as described in the SOPs.

The doors are among the iconic signature features of the stadium design and will provide a unique impression of the Las Vegas skyline to national television audiences as well as stadium attendees. Similar large operable features have been successfully incorporated into numerous stadiums such as those in Dallas, Indianapolis and Minneapolis and we consider the doors to be an indispensable component of our stadium's design. We recognize however that even such an iconic feature is not worth risking serious damage to the stadium's structure or injury to any of its occupants. We are therefore committed to the intent of the AMMR as well as to working with the Clark County Building and Fire Department to have a completed and approved agreement incorporating this AMMR and SOPs by the end 2018.

I am personally committed to working with you and your department to reach a mutually agreeable approach that will permit this feature to move forward in our design process without delay.

Please feel free to contact me at any time to further discuss this matter.

Sincerely,



Don Webb  
Chief Operating Officer

# **Exhibit B**

Alternate Means and Method  
of Construction Request

## **Retractable Columns**

1330 Burlington Street, Suite 200  
 North Kansas City, MO 64116  
 T 816.931.3377  
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March 15, 2018  
 Revised March 26, 2018

Clark County Dept. of Building & Fire Prevention  
 4701 W Russell Road  
 Las Vegas, Nevada 89118

**LAS VEGAS RAIDERS STADIUM**  
**LAS VEGAS, NEVADA**  
**ALTERNATE REQUEST – ARTICULATING COLUMNS**

To Whom It May Concern:

This is an Alternate Methods & Materials (AM&M) request to address the Articulating Columns in the New Las Vegas Raiders Stadium

**CODE REQUIREMENT AND OVERVIEW**

The New Las Vegas Raiders Stadium is a building of Type I-B construction which includes provisions for a mobile, natural grass playing surface (the Field Tray) supported by its own, independent structural system. The 2012 Edition of the International Building Code (IBC), Chapter 16 requires the buildings' structural components to safely support the loads in which the buildings' elements are designed. The information provided will demonstrate that the structure meets the design loads for the two possible conditions, columns up (building not occupied by the public and Concourse not loaded), and columns down (Concourse loaded and building occupied by public).

Movement of the Field Tray is accomplished by a self-propelled transport system that is integral with the Field Tray system and guided along a rail system embedded in the Event Level concrete floor slab. This moving element facilitates the growth of natural grass as the football playing surface – honoring the historical tradition of the game. The Field Tray enters and exits the Stadium at the south end of the Bowl. The Field Tray is located outdoor in the growing position between 87% and 92% of the year. The other 8% to 13% of the year the tray will be located indoor for events that utilize the Stadium grass, there are an estimated 30 to 50 events per year.

To facilitate the movement of the Field Tray from inside to outside and back again, the south end of the Stadium must create a clear opening across the Field Tray path. To achieve this, the structure consists of eight, parallel steel trusses that have two retractable intermediate supports each (16 total); the truss at the inboard edge of the Stadium Bowl is shallower in depth and has six intermediate retractable supports which support the seating above and support the vertical closure doors which reestablish enclosure for purposes of cooling the Stadium. These trusses support both Concourse and fixed seating areas, and have a total of 22 retractable columns. The trusses are designed for a condition of dead load and a nominal 20 psf live load on both Concourse and fixed seating areas without engagement of the intermediate retractable

supports (See Load Case 3 below from the Structural Basis of Design). This temporary condition occurs during Field Tray movement operations only. During games and other events, the area supported by the truss system with the intermediate columns in place is designed to be fully loaded with dead and a live load of 100 psf on Concourse areas and 60 psf on fixed seating areas.

#### **STRUCTURAL BASIS OF DESIGN FOR THE TRUSSES:**

There are three load cases being applied to the final design of the trusses spanning across the travel path of the Field Tray. The steel trusses are supported at the ends by concrete columns and via a series of retractable columns (described above) to enable the Field Tray to move underneath the trusses. There are three loading conditions for these trusses:

1. Normal operation – Field Tray is stationary and fully within the building or fully outside of the building. All retractable columns are engaged to carry loads from the trusses into the foundations. Design to code live loads.
2. Field Tray transit operation – Field Tray is moving below the trusses. All retractable columns are disengaged and not carrying any loads. As part of the moving field operation plan the incidental live loading above the trusses at all levels will be limited to 20 psf.
3. In addition to the normal design conditions above, the extraordinary case of failure to adhere to the occupancy permit or failure of a retractable column mechanism to engage the foundation below will be analyzed. This case will be per ASCE 7-10 Section 2.5.2 Equation 2.5-1 where the quantity  $(A_k + 0.5L)$  will be equal to the full un-factored live load and the members shall be designed for stability per Section 2.5.3 with expected strengths and strength reduction factors ( $\phi$ ) equal to 1.0. Under this scenario, the design is being developed as though none of the 22 retractable columns are in place to carry any structural load.

#### **RETRACTABLE COLUMN OPERATING PROCEDURE**

Retractable columns are included in the design to allow the free yet controlled movement of the Field Tray. In order for the columns to retract, the following procedure is required to insure proper operation of the system:

1. Ensuring that the live load has been removed from the area of all concourses and the Bowl supported by the Bowl trusses.
2. Ensuring that the Field Tray movement occurs only when the columns are retracted.
3. Ensuring the full engagement of the intermediate columns prior to introducing the full live load in the Bowl of the Stadium.

This will be accomplished as outlined in the sequence of operation. In addition to the procedures outlined below each column will be equipped with a limit switch that provides a signal to a status indicator panel located in the fire command center. The indicator panel will show the location of each column by indicating green for down and red for up.

#### **GENERAL SEQUENCE FOR THE CONTROLLED MOVEMENT OF THE RETRACTABLE COLUMNS AND FIELD TRAY:**

1. Physical inspection of the Bowl and Concourse areas to ensure that live load has been removed, including public, and non-essential loading.
2. Physical inspection of the Field Tray path below the trusses to make sure that personnel and obstructions are clear. A warning signal (audible and visible signal) is sounded at the Event Level,



in the Field Tray path that the column movement is about to ensue. This is a safety precaution to ensure that the path of the columns is free from obstructions and the area is clear.

3. Initiate jacking sequence – this operation will unload the intermediate columns prior to their movement.
4. Initiate column retraction sequence – this operation will move the columns free of the path of the Field Tray and rotate them upward toward the underside of the trusses
5. With column retraction complete and confirmed, Field Tray movement can begin.
6. When the Field Tray reaches its final position (either inside or outside of the stadium), the sequence outlined above is followed in reverse order.

**DETAILED SEQUENCE OF OPERATION:**

1. Prior to initiating the retraction of the columns in the Field Tray path, Stadium operations staff will visually inspect the habitable areas directly above the path of the Field Tray including the Seating Bowl, Concourses, and the Field Tray path itself to confirm only stadium operations staff are in the area.
2. Staff will be posted in the Bowl and at the major entrances to the Concourses to limit access to the habitable areas above the path of the Field Tray.
3. Upon verification that all habitable areas are clear and secured, the column retraction and Field Tray movements may be initiated.
4. Initiate movement of retractable columns through the following steps:
  - a. Release (raise) the jack plunger at the base of each retractable column (22 locations) so the column is free to rotate clear of the baseplate and concrete floor.
  - b. Visually inspect each retractable column to verify that the jack plunger is fully withdrawn from the baseplate receiver socket and able to rotate free of the baseplate and concrete floor.
  - c. Initiate rotation of the retractable columns from their vertical load carrying position to a horizontal position underneath the super trusses. Retractable columns have a hinged pin connection between the underside of the truss and the retractable column.
  - d. Visually inspect each retractable column (22 locations) to verify that it is has fully rotated into the horizontal position before initiating the Field Tray movement.
5. Initiate Field Tray movement.
6. Once the Field Tray has fully cleared the area of the tray path directly under the retractable columns (moving in or out of the stadium), the process of rotating the columns back into their vertical, load carrying position can be initiated.
7. Staff to verify that the area underneath the retractable columns is free of people and materials before initiating the column movement.
8. Staff shall visually inspect each baseplate receiver socket (22 locations) to verify it is clean and clear of debris and ready to receive the jack plunger for each retractable column.
9. Initiate rotation of retractable columns through the following steps:
  - a. Rotate the retractable columns from their horizontal retracted position to their vertical, load carrying alignment.
  - b. Verify the alignment of each column's jack plunger with the baseplate receiver socket in the concrete floor.
  - c. Initiate the jacking operation to lower each jack plunger into the receiver socket in the baseplate.
  - d. Verify the top of each jack plunger plate is flush with the top of the baseplate receiver socket thus verifying the load carrying capacity of the column has been restored – both lateral and vertical carrying capacity.



10. Once all 22 jack plunger plates have been verified to be in their proper load carrying position, then the all clear can be given to allow the public to occupy the habitable areas above the Field Tray path.

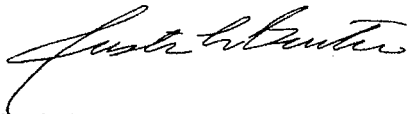
## CONCLUSION

Based on the information provided, and the sequence of operations, the structural stability of the building will be maintained based on the specific design use for each of the two individual conditions. The operator of the facility will ensure these items are complied with prior to any operation of the stadium or the columns. With the detailed sequence of operation and the status indicator panel, assurance can be given that the columns will be operated and in place prior to all events that occupy the stadium.

If you have any questions or comments, please feel free to contact me.

Submitted by:

**FP&C Consultants KC, LLC**



Justin Burton

JB/lmb

Cc: Lanson Nichols, HNTB  
Paul Griesemer, HNTB





# LV Stadium Events Company, LLC

March 29, 2018

Mr. Jerry Stueve, P.E.  
Director  
Clark County Department of Building and Fire Prevention  
4701 W Russell Road  
Las Vegas, Nevada 89119

**Re: Las Vegas Stadium AMMR – Articulating Support Columns**

Dear Mr. Stueve,

This letter will serve to modify my letter of March 28, 2018 regarding the above-captioned item.

In the event that the articulating support columns are unable to be fully repositioned and engaged, the general public will be prohibited from occupying the seating bowl and concourses supported by the columns.

Please feel free to contact me at any time to further discuss this matter.

Sincerely,

Don Webb  
Chief Operating Officer



# LV Stadium Events Company, LLC

March 16, 2018

Mr. Jerry Stueve, P.E.  
Director  
Clark County Department of Building and Fire Prevention  
4701 W Russell Road  
Las Vegas, Nevada 89119

**Re: Las Vegas Stadium Alternate Means and Method Request – Articulating Columns**

Dear Mr. Stueve,

This letter will serve as the formal request by LV Stadium Events Company for approval of the above-captioned item in compliance with the applicable Clark County building codes.

In the matter of the articulating columns, LV Stadium Events Company, as the developer and operator of the stadium, is in full support and agreement with the prescribed Standard Operating Procedures (SOPs) outlined in the attached Alternate Means and Methods Request. LV Stadium Events Company is fully committed to the safety of every person who will utilize our facility. This commitment includes compliance with the operation and maintenance of the columns as described in the SOPs.

A similar retractable natural-turf field is successfully employed at the University of Phoenix Stadium and is one of the indispensable components of our stadium's design made possible by the use of the articulating columns. We recognize however that even such an iconic feature is not worth risking serious damage to the stadium's structure or injury to any of its occupants. We are therefore committed to the intent of the AMMR as well as to working with the Clark County Building and Fire Department to have a completed and approved agreement incorporating this AMMR and SOPs by the end 2018.

I am personally committed to working with you and your department to reach a mutually agreeable approach that will permit this feature to move forward in our design process without delay.

Please feel free to contact me at any time to further discuss this matter.

Sincerely,



Don Webb  
Chief Operating Officer