THE ARIZONA BOARD OF REGENTS

for and on behalf of,

NORTHERN ARIZONA UNIVERSITY

REQUEST FOR QUALIFICATIONS
for
ARCHITECTURAL AND ENGINEERING DESIGN PROFESSIONAL SERVICES

STUDENT ATHLETE HIGH PERFORMANCE CENTER
Project No. 09.731.191

DUE DATE/TIME: 2:00 PM Local Time, Thursday, January 7, 2019

ARIZONA BOARD OF REGENTS TRI UNIVERSITY MASTER CONTRACTS
STANDARD FORM 2015 EDITION

Time and Date of Pre-Submittal Conference	**11:00 AM, Thursday, December 20, 2018**
Deadline for Inquiries	**2:00 PM, Thursday, December 27, 2018**
Time and Date Set for Submittal	**2:00 PM, Monday, January 7, 2019**

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This Request for Qualifications is separated in two parts: Part I - General Requirements, and Part II - Attachments. The Attachments of Part II are part of the Request for Qualifications and the terms, conditions, and criteria therein must be met by any proposer.

DIVISION I - ADVERTISEMENT

Northern Arizona University ("University" and/or "Owner") extends an invitation to interested design professional firms to submit in writing their qualifications to provide design services for the **Student Athlete High Performance Center, NAU Project #09.731.191** on the NAU Flagstaff Campus.

This project includes programming, design and construction services of a new facility. The Student Athlete High Performance Center is a collaboration between NAU Athletics and the College of Health and Human Services. The proposed 77,000 GSF building will focus on the wellness and development of NAU student-athletes and provide educational opportunities for NAU students. The building's features will include:

- Public Welcome Area including NAU Hall of Fame and Box Office
- Practice/Competition Gym with ~2,200 retractable seats, with option for 3,000 seats
- Strength and Conditioning
- Sports Medicine Facilities
- Nutrition Station
- Oxygen-Related Altitude Training and Recovery
- Lockers & Teams Lounge
- Coaching offices
- Academic Support

The project site is identified as being near the Skydome (Building #73). The construction budget for this project is twenty-eight million dollars and zero cents ($28,000,000.00).

The University is seeking a Design Professional with experience in NCAA Division I facilities, health/sport performance facilities, and athletic competition and practice facilities. Firms submitting a Statement of Qualifications must demonstrate comparable project-type experience.

Any individual(s) or firm(s) proposing to perform engineering and/or architectural services must be appropriately licensed/registered in the State of Arizona at the time of submission of the Qualifications.

A pre-submittal conference will be held on Thursday, December 20, 2018 at 11:00 AM, local time, via Zoom video conference. Information on how to join the video conference is located in Division III of the RFQ.

All vehicles parking on campus must have a permit. Parking permits for the pre-submittal meeting are available at the parking kiosks at the entrances to campus. See http://nau.edu/parking-shuttle-services/ for more information.

SCHEDULE OF DEADLINES

Advertise for Services:	Thursday, December 13, 2018
Pre-SOQ Conference:	11:00 AM, local time, Thursday, December 20,, 2018
Qualifications Due:	2:00 PM, local time, Monday, January 7, 2019
Interviews with Shortlisted Firms (Optional):	Monday, January 28, 2019 (Tentative)
Begin Contract Period:	February 2019

Request for Qualification packages may be obtained from the University Planning, Design and Construction website at http://nau.edu/Facility-Services/Bids_RFQ/ after 3:00 PM, local time, on Thursday, December 13, 2018.

Qualifications are due no later than 2:00 PM, local time, on Monday, January 7, 2019. Deliver qualifications to Facility Services, Building No. 77, Work Control Office, Room 108, Flagstaff, Arizona (Southwest corner of Pine Knoll Drive and San Francisco Drive) or Northern Arizona University, Box 6016, Flagstaff, Arizona, 86011. **Attention: Stephanie Bauer.**

The Board of Regents reserves the right to reject any or all Statements of Qualifications, to waive or decline, to waive irregularities in any Statement of Qualifications, or to withhold the award for any reason it may determine.

Women owned and minority owned firms are encouraged to apply. Persons with a disability may request a reasonable accommodation.

All correspondence relating to this Project should be addressed to:

NAU Facility Services
Attention: Stephanie Bauer
PO Box 5637
Northern Arizona University
Flagstaff, Arizona 86011
Email address: Stephanie.bauer@nau.edu

ARIZONA BOARD OF REGENTS

By: Dan Okoli
VP of Capital Projects and Operations

DIVISION II – PROJECT DESCRIPTION AND SCOPE OF SERVICES

ARIZONA BOARD OF REGENTS
REQUEST FOR QUALIFICATIONS (RFQ)

Northern Arizona University ("University" and/or "Owner") extends an invitation to interested and qualified firms or individuals to submit a Statement of Qualifications ("SOQ" or "Qualifications") to provide professional programming, architectural design and engineering design and construction administration services for the **Student Athlete High Performance Center** under the design professional services agreement described herein.

Any individual(s) or firm(s) proposing to perform architectural and engineering services, pre-construction and construction services must be appropriately licensed / registered in the State of Arizona at the time of submission of the Qualifications.

PROJECT DESCRIPTION AND SCOPE OF SERVICES

This project includes programming, design and construction services of a new facility. The Student Athlete High Performance Center is a collaboration between NAU Athletics and the College of Health and Human Services. The proposed 77,000 GSF building will focus on the wellness and development of NAU student-athletes and provide educational opportunities for NAU students. The building's features will include:

- Public Welcome Area including NAU Hall of Fame and Box Office
- Practice/Competition Gym with ~2,200 retractable seats, with option for 3,000 seats
- Strength and Conditioning
- Sports Medicine Facilities
- Nutrition Station
- Oxygen-Related Altitude Training and Recovery
- Lockers & Teams Lounge
- Coaching offices
- Academic Support Space

The project site is identified as being near the Skydome (Building #73). The construction budget for this project is twenty eight million dollars and zero cents ($28,000,000.00).

The University is seeking a Design Professional with experience in NCAA Division I facilities, Health/Sport Performance Facilities, and athletic competition and practice facilities. Firms submitting a Statement of Qualifications must demonstrate comparable project-type experience.

The selected Design Professional will participate in the selection of the Construction Manager at Risk as an advisor. The DP will work in close partnership and collaboration with the CM@R to deliver the project within a tight schedule and budget.

PROJECT SCHEDULE

Final Programming Package:	March 2019
GMP 1 Package (Site & Foundations)	May 2019
GMP 2 package (Building & Systems)	TBD
Construction Drawings:	TBD
Substantial Completion:	September 2020
Final Completion:	November 2020

SITE DESCRIPTION

Northern Arizona University is located on a volcanic plateau at the base of the San Francisco Peaks, the highest

mountains in Arizona. The 683-acre main campus is located in Flagstaff, Arizona. Flagstaff is a four season city located at an elevation of 7,000 feet. Because the campus is at an elevation of 7000 feet, the climate is vigorous, with cold winters and mild summers. Diurnal temperature changes are considerable, resulting in average first and last occurrences of 32º F. in September and June. Temperature extremes range from -32º F. to 97º F., with average minimums in January of 14º F. The mountain campus includes approximately 170 buildings with over 6 million square feet, including buildings in the Arizona Normal School Historic District which exceeds 90 years of age. The University is governed by the Arizona Board of Regents (ABOR) and is a fully accredited institution of higher learning supported by the State of Arizona.

The proposed site, adjacent to the Skydome (Building #73) currently consists of surface parking and native landscapes. All site improvements are to be made with consideration to the Landscape Master Plan, located online at: https://in.nau.edu/wp-content/uploads/sites/139/2018/07/2015-Landscape-Masterplan-Final-ek.pdf

DIVISION III – PRE-SUBMITTAL CONFERENCE

A pre-submittal conference will be held on Thursday, December 20, 2018 at 11:00 AM, local time, via Zoom video conference. Information on how to join the video conference is located below.

At this pre-submittal conference, University staff will discuss the scope of work, general contract issues, and respond to questions from the attendees. As University staff will not be available to respond to individual inquiries regarding the project outside of this pre-submittal conference, it is strongly recommended that interested firms attend the pre-submittal conference.

Neither Offerors, nor members of their team, shall communicate concerning this project with selection committee members, students, and employees of the University, except as stipulated above. **Failure to abide by this requirement may result in rejection of the Offeror's Statement of Qualifications.**.

Zoom Meeting Information
Stephanie Bauer is inviting you to a scheduled Zoom meeting.

Topic: Presubmittal Meeting - 09.731.191
Time: Dec 20, 2018 11:00 AM Arizona

Join Zoom Meeting
https://zoom.us/j/682844288

One tap mobile
+16699006833,,682844288# US (San Jose)
+16468769923,,682844288# US (New York)

Dial by your location
+1 669 900 6833 US (San Jose)
+1 646 876 9923 US (New York)
Meeting ID: 682 844 288
Find your local number: https://zoom.us/u/aeGpo5znD6

Zoom Help: https://support.zoom.us/hc/en-us/sections/201740096-Training

DIVISION IV – SELECTION CRITERIA

A selection committee will evaluate the Statement of Qualifications submitted in response to this RFQ.

The evaluation criteria will relate to the qualifications of the Proposer to perform the services under this RFQ. This evaluation will be based on the Proposer's (A) introduction, (B) prime firm project experience, (C) prime team member experience, (D) subconsultant experience, (E) understanding of the project/additional firm experience, (F) project management controls and team approach, (G) work location, (H) overall evaluation of the firm, (I) Submittal Certification, and (J) Resumes. For those firms shortlisted, the evaluation will also include an interview.

The Statement of Qualifications submitted should be fully self-contained and include the information requested below in the ***listed in order and index tabbed*** the same. Additional response formatting requirements are outlined in Division V – Submittal Requirements.

(A) INTRODUCTION (10 points max)

1. Please provide an introductory cover letter highlighting the prime firm's or (if a legal joint venture) prime team's qualifications for this particular project. Also, indicate the following information for the **primary point(s)-of-contact** of the prime firm:

a. Name
b. Telephone number
c. Direct e-mail address – e-mail with this point-of-contact will be the University's primary form of communication with the firm.

2. Additionally, the license number(s) of the prime architect or engineer for this project must be included. Please note, any firms that are submitting as a Joint Venture or another legal partnering agreement must submit the contract for the formal arrangement before an interview, if shortlisted.

3. Provide an organization chart that represents the intended roles, responsibilities, authorities, and relationships. Please include all key sub-consultant members of the team.

(B) PRIME FIRM PROJECT EXPERIENCE (50 pts max)

Describe a **minimum of five (5) and a maximum of seven (7) projects** similar in terms of project type, size, complexity, budget, and schedule where the Offeror's firm was Engineer of Record or Architect of Record.

The listed projects must demonstrate, through previously completed work, that the firm has developed expertise to provide the services as required for this project.

For each project listed, please provide:

a) A description of the project, including the name of the institution and the size of the institution (number of buildings and acreage).

b) The role of the firm on the project.

c) The name and role of all the sub-consultants you used on these projects.

d) Features of the design that showcase your firm's unique perspective.

e) The original agreement schedule by listing Start Date and Completion Date, and the actual start and completion dates, along with an explanation of any differences.

f) The name of individuals from the proposed team who worked on the projects listed in this section, and what their role was on these past projects.

g) The name and current phone number of the Owner's Project Manager or other representative from the Facilities Management/Construction Department for the project.

h) The name and current phone number of the Owner's Athletic Director or other representative from the Athletics Department that actively uses the facility.

A higher evaluation weighting will be applied to those firms who can substantiate successful demonstrated experience on:

- Projects that were for NCAA Division 1 facilities;
- Projects that were mixed-use facilities with Health/Sport Performance (i.e. sports medicine, athletic training, weight rooms, academic space), and a multi-purpose component (used for both practice and competition);
- Projects at similar climates and elevations;
- Projects which were designed/completed ten (10) or fewer years ago;
- Projects that were completed by the proposed team for this project (including prime firm and

subconsultants team members);
- Projects that included elements of Universal Design;
- Firms that can provide continuous project oversight from Programming through Project Closeout.

(C) PRIME TEAM MEMBER EXPERIENCE (70 pts max):

1. Identify the specific individuals from the prime firm who are proposed to be assigned to this project, including their expertise in similar projects. Resumes are to be included under Section (J)'s requirement. Clearly identify the following specific individual(s) responsible for the following roles:

   - the person who will lead the programming and conceptual design effort;
   - the person who will be responsible for day-to-day management of the project, and coordination and communication with the University during all project phases;
   - the person(s) who will lead the specialty and other engineering design efforts;
   - the person(s) who will lead the project documentation efforts;
   - the person(s) who will lead the USGBC LEED efforts.

2. For each key person identified above, provide their length of time with the firm and at least two (2) comparable projects in which they have played a primary role. If a project selected for a key person is the same as one selected for the firm in Section (B) above, provide only the project name and the role of the key person.

   For other projects provide the following:
   a. Description of project
   b. Role of the person
   c. Project owner
   d. Reference information (current name with telephone number for each project listed)

3. Describe the current workload and availability of designated prime team to service the project (include existing projects, pending projects, and this proposed project).

(D) SUBCONSULTANT EXPERIENCE (50 pts max):

1. Identify the key subconsultant firms, and their primary personnel, who are proposed to be on the team for this project. Resumes are to be included under Section (J)'s requirement. For each firm identified, list **up to five (5) comparable projects** in which they have played a comparable subconsultant role. If a project selected is the same as one selected for the prime firm in Section (B) above, provide only the project name and the role of the firm, along with a more detailed role of the subconsultant scope.

   For other projects provide the following:
   a. Description of project
   b. Role of the firm and team member names
   c. Project owner name
   d. Reference information (current name with telephone number for each project listed)

2. Describe each key subconsultant team members experience with comparable projects, and clarify how these team members contributed to the success of these projects. For example, by managing Owner's requirements, energy efficiency, budget constraints, etc…

3. Describe each key subconsultant's experience working with the prime firm.

A higher evaluation weighting will apply to those Offerors who can provide a subconsultant team that has comparable experience and a history working with the Prime Firm in successfully completing the projects listed in Section (B).

(E) UNDERSTANDING OF THE PROJECT/ADDITIONAL FIRM EXPERIENCE (70 pts max):

1. Discuss the major opportunities and challenges your team has identified on this project, and describe how you intend to address those issues.

2. How would your firm give this building its own identity while keeping it cohesive to the rest of campus?

3. How will the information in Attachment E, Economic Feasibility Study, inform your design?

4. Other than projects previously listed, describe any additional experience or unique capabilities your firm/team has that is relevant to this project.

(F) PROJECT MANAGEMENT CONTROLS AND TEAM APPROACH (70 pts max):

The success of a project is defined by the engaged participation of every single team member, from both the prime firm and its subconsultants. When answering the questions below, please make sure to consider every team member's contribution.

1. Design Management
    a. Describe how your firm uses virtual design to provide certainty of project outcomes, communicate the design to stakeholders, and manage cost.

    b. Describe your firm's experience with energy modeling to achieve timely selection and procurement of envelope and Mechanical/Plumbing/Engineering (MEP) systems and prevent over/under design of system capacities.

    c. Explain how your firm handles a situation where the Owner's Design Guidelines or Technical Standards may not be suited to the project's goals?

2. Budget Methodology and Cost Control
    a. Describe how you design within the Owner's project budget. When a mid-design cost estimate determines a budget problem, how is the design schedule maintained while correcting for cost?

    b. Explain how constructability, recommendations by the Construction Manager at Risk, value engineering, and other design phase cost controls will be utilized;

    c. Define how change orders and other potential add-costs during the construction phase will be avoided and controlled.

3. Quality Control
    a. Summarize your approach to quality control and quality assurance during planning, design, and construction administration.

    b. Explain how your firm will ensure necessary communication to the entire team, and produce properly executed drawings for this project.

4. Schedule Control
    a. Describe your firm's experience with phased packages to support a fast-track schedule.

    b. Provide a proposed design project schedule with recommended phasing for GMP and construction packages (site/foundations and building/systems).

    c. Provide information on your data management, including RFI, ASI and submittal reviews, in order

to stay on schedule.

d. Provide information on how to maintain the schedule in working within the guidelines of University's design guidelines and technical standards, permit process, and general construction procedures.

5. Sustainability
   a. Summarize your firm's approach to sustainability.

   b. Explain how this project will be designed for durability and maintainability.

   c. Describe how your team will incorporate life cycle planning, energy efficiency, durability, water conservation, and other sustainable design aspects into this project.

6. Universal Design
   a. Summarize your firm's approach to universal design.

   b. Describe how this project will address accessibility and universal applications.

(G) WORK LOCATION (10 points max):

1. Indicate the proximity of the Offeror's (and subconsultants') office to the Northern Arizona University campus in Flagstaff, Arizona and your related ability to efficiently respond to all issues associated with the project. Include any logistical challenges your current location presents as related to the project location and how those challenges would be addressed.

2. Define the team's familiarity with the project location with respect to topography, climate, regulations, codes, and other unique requirements.

(H) OVERALL EVALUATION OF THE FIRM (15 points max): This is the overall evaluation of the firm/team and its perceived ability to provide the required services, as determined by the selection panel members. No submittal response is required.

(I) SUBMITTAL CERTIFICATION (no points): Include Attachment A and Attachment B (Participation in Boycott of Israel Certification) found in Part II of this Request for Qualifications.

(J) RESUMES (no points): Resumes will help us determine the level of skills and qualifications of each proposed individual related to this specific type of project. Resumes for each key team member, including both prime firm and subconsultants, shall contain employee information only and no additional company information. Resumes shall be limited to a maximum length of two pages per person.

DIVISION V – SUBMITTAL REQUIREMENTS

Firms interested in the submitting qualifications for this project should submit a Statement of Qualifications which **has a maximum length of twenty-five (25) pages** for Division IV Items A through G. Item H – Overall Evaluation of the Firm does not require a response. Item I – Submittal Certification and Item J – Resumes are excluded in the twenty-five (25) page count. **Please provide one (1) original plus seven (7) copies (total of eight (8))** of the Statement of Qualifications, each marked as the original or copy respectively **AND one copy on CD or other portable storage medium. Statements of Qualification must be received by 2:00 PM, local time, Monday, January 7, 2019.** Delivered, or hand-carried, submittals must be delivered, and logged, to the Work Control Center Office at the location listed below. On the submittal package, please display: the firm name, project title, and project number.

All submittals should be sent or delivered to:

Facility Services, Building No. 77
Work Control Center Office, Room 108
Flagstaff, Arizona (Southwest corner of Pine Knoll Drive and San Francisco Drive)

or

Northern Arizona University
501 E. Pine Knoll Drive
Flagstaff, Arizona, 86011 - 5637

Attention: Stephanie Bauer, Associate Director for Planning, Design & Construction

Please be advised that failure to comply with the following criteria will be grounds for disqualification and will be strictly enforced:

- Receipt of submittal by the specified cut-off date and time.
- The number of originals and/or copies of the submittal specified.
- Adherence to maximum page requirement.
- Deposit of submittal in correct location.
- Providing company profiles in attached resumes.
- Contacting any University employees regarding this project, other than in the mediums detailed in this RFQ.

Adherence to the maximum page criterion is critical; each page side (maximum 8 1/2" x 11") with criteria information will be counted. Font size may not be less than ten (10) point. Please use paper made out of recycled materials where possible. Pages that have project photos, charts, and graphs will be counted towards the maximum number of pages. **Front and back covers, Table of Contents pages and tabbed divider pages will not be counted if they do not contain submittal information**. **Resumes should not include project pictures or general firm information.**

Note: **THE DESIGN PROFESSIONAL SHALL NOT SUBMIT OR COMMUNICATE, IN ANY FORM TO THE UNIVERSITY, ANY INFORMATION ON FEES, PRICE (HOURLY RATES), MAN-HOURS OR ANY OTHER ASSOCIATED COST INFORMATION. ARIZONA LAW PROHIBITS THE UNIVERSITY FROM CONSIDERING ANY INFORMATION ON FEES, PRICE (HOURLY RATES), MAN-HOURS OR ANY OTHER COST INFORMATION DURING THE REQUEST FOR QUALIFICATIONS (RFQ) COMPETITION.** Accordingly, any sealed formal qualifications that contain any information of this type will be deemed non-responsive, will not be considered, and will be returned to the DP. This exclusion of information applies to the DP's formal sealed qualifications, to any discussion/interview and to all other aspects of the RFQ competition.

DIVISION VI – THE SELECTION PROCESS AND PROJECT SCHEDULE

SELECTION PROCESS. A Selection Committee will evaluate and score each submitted Statement of Qualifications to arrive at a shortlist of no less than three (3) and no more than five (5) Offerors to participate in interviews. The University reserves the right to determine the interview process an optional component and proceed, at its discretion, to verify references. If an interview is held, the Selection Committee may secure additional information and additional reference checks or visit completed projects following the interview.

SCHEDULE OF DEADLINES

Advertise for Services:	Thursday, December 13, 2018
Pre-SOQ Meeting:	11:00 AM, local time, Thursday, December 20, 2018
Deadline for Inquiries:	2:00 PM, local time, Thursday, December 27, 2018
Qualifications Due:	2:00 PM, local time, Monday, January 7, 2019
Interviews with Short-listed Firms (optional):	Monday, January 28, 2019 (tentative)
DP Selection	February 2019
Begin Contract Period:	February 2019

DIVISION VII – GENERAL INFORMATION

DEFINITIONS. All definitions are per ABOR Policy, the Construction Agreement, and NAU's Design Guidelines and Technical Standards, unless otherwise defined within.

SOLICITATION OF STATEMENT OF QUALIFICATIONS BY FACILITY SERVICES. All solicitations are performed in accordance with University policies and procedures.

INFORMAL QUESTIONS. If you have informal questions about technical information regarding this Request for Qualifications or if you have informal questions about the purchasing process, please contact:

Stephanie Bauer, Associate Director
Tel: (928) 523-3839
E-mail Address: Stephanie.bauer@nau.edu

Note: Owner will answer informal questions orally. Owner makes no warranty of any kind as to the correctness of any oral answers and uses this process solely to provide minor clarifications rapidly. Oral statements or instructions shall not constitute an amendment to this RFQ. Offerors shall not rely on any verbal responses from Owner. If Offerors have formal questions about any part of this Request for Qualifications, which could result in a material issue or a formal amendment to this RFQ, see INTERPRETATIONS AND ADDENDA below.

INTERPRETATIONS AND ADDENDA. Should an Offeror find any ambiguity, inconsistency or error in the Request for Qualifications, or should the Offeror be in doubt as to their meaning, they shall at once notify the Owner, in writing, utilizing the included Submittal Inquiry Form. The Owner will subsequently send a written addendum, by e-mail, to all Offerors who are on record with Planning, Design, & Construction as having attended the pre-submittal meeting, and post the addendum to the website. Neither Owner, nor its representatives, will be responsible for oral instructions or information. Interpretation or correction of the RFQ will be made only by written addendum, which will be emailed to each Offeror of record and posted to the Owner's website. The Owner is not responsible for any other explanations or interpretations of the RFQ.

If an Offeror on the final shortlist fails to receive any addendum, or should fail to acknowledge receipt of same, the Offeror shall have the option of staying on the final shortlist under the terms of the Request for Qualifications or of withdrawing from the final shortlist in which event the next most qualified Offeror will be added to the final shortlist. The Owner is not responsible for assuring delivery of addenda to any Offeror. Failure to receive addenda or failure to acknowledge receipt shall not constitute a basis for claim, protest, or reissue of the Request for Qualifications.

This RFQ, the Statement of Qualifications of the successful Offeror, and any addenda issued by the Owner during the RFQ period, are to be included in and will become a part of the agreement when awarded. The Offerors shall acknowledge receipt of addenda on the Statement of Qualifications form in the space provided, on the RFQ Submittal Certification, see Attachment A.

All formal inquiries or requests for significant or material clarification or interpretation, or notification to NAU of errors or omissions relating to this Request for Qualifications must be directed, in writing, email, or by facsimile, to:

Northern Arizona University
Stephanie Bauer
Bldg. 77, Room #132-D
PO Box 5637
Flagstaff, AZ 86011
Phone: (928) 523-3839 Fax: (928) 523-9441
Email address: Stephanie.bauer@nau.edu

Requests must be submitted on a copy of the Submittal Inquiry Form in Attachment C to this RFQ. All formal inquiries must be submitted before the time and date set for closing this RFQ. Failure to submit inquiries by this deadline may result in the inquiry not being answered.

PROPRIETARY INFORMATION. If Offeror submits any information considered proprietary, it must be placed in a separate envelope and marked "Proprietary Information". If Owner concurs, this information will not be considered public information. Owner's Legal Counsel is the final authority as to the extent to which material is considered proprietary or confidential. The Owner assumes no liability for disclosure or use of unmarked data. Unless identified, information submitted in response to this RFQ may be disclosed pursuant to the applicable Arizona Public Records Law and applicable Arizona Revised Statues.

PROFESSIONAL LICENSE/REGISTRATION IN ARIZONA. Any individual or firm that is proposing to perform architectural or engineering services must be appropriately licensed / registered in the State of Arizona at the time of submission of the qualifications.

RELATED WORK. The successful firm awarded a contract may be awarded additional work at Owner's discretion for any other modifications or renovations at the project site through the warranty period of the project, which may be authorized under a separate contract.

OFFERORS INTERESTED IN MORE THAN ONE RFQ RESPONSE. No person, firm, partnership, or corporation, shall be allowed to submit as a prime firm/team member on more than one (1) Statement of Qualifications for architectural and engineering services on the same project. A person, firm, partnership, or corporation, who has submitted as a sub-consultant to an Offeror, is disqualified from submitting a Statement of Qualifications for the project as a prime Offeror. A person, firm, partnership, or corporation shall be allowed to submit a sub-consultant Statement of Qualifications to more than one (1) Offeror.

OBLIGATIONS. This RFQ does not obligate the Owner to pay any costs incurred in the preparation and submission of Statement of Qualificationss nor to enter into a Then agreement with any of the applicants.

SITE VISIT. In advance of negotiating an agreement for design professional services, the highest ranked Offeror may be requested to participate in a site visit with representatives of the Owner to become familiar with the project site and to discuss the Owner's needs. The Offeror's team members in charge of the project, including those from each of the sub-consulting firms, shall attend the meeting.

WITHDRAWAL OF STATEMENT OF QUALIFICATIONS. Statement of Qualificationss may be withdrawn either personally or by written request any time before the scheduled date and time set for receipt.

AWARD OR REJECTION OF STATEMENT OF QUALIFICATIONS. Owner has the right to cancel this Request for Qualifications, to reject any or all Statement of Qualifications, and to waive or decline to waive any irregularities in any submitted Statement of Qualifications, or to withhold the award for any reason it may determine in the best interest of Owner and also reserves the right to hold open any or all Statement of Qualifications for a period of NINETY (90) DAYS after the date of opening thereof and the right to accept a Statement of Qualifications not withdrawn before the scheduled opening date.

NEGOTIATION OF THE AGREEMENT. Owner may proceed to negotiate a contract for services at a compensation which the Owner determines to be fair and reasonable. In making this decision, Owner may take into account the estimated value of the scope of services, the complexity, and the professional nature of the services to be rendered. If Owner is unable to negotiate a satisfactory contract with the Offeror considered to be the most qualified, at a price determined to be fair and reasonable, negotiations with that Offeror will be formally terminated. Owner may then undertake negotiations with the next most qualified Offeror in sequence until an agreement is reached or a determination is made to reject all Statements of Qualifications. The Owner will negotiate a fee for total services, along with a fee break down per each individual phase of the work. The Owner will negotiate Reimbursable Expenses, along with a breakdown of each expense category per each individual phase of the work.

DELIVERY OF INSURANCE POLICIES OR CERTIFICATES AND EXECUTION OF AGREEMENT. Promptly after selection of the most responsible and responsive Offeror, Offeror will begin creating a priced proposal based on the DP Agreement to be executed by the successful Offeror. This DP Agreement will be the form in Attachment D or Owner's then current form of agreement. The successful Offeror shall execute and return to Owner the Agreement within ten (10) days after receipt of the Agreement issued after negotiation of the priced proposal. Failure to return the executed copies of the Agreement may result in rejection of the successful Offeror's Statement of Qualifications and withdrawal of the award. Within three (3) days of issuance of the DP Agreement, the successful Offeror shall deliver to Owner the required insurance policies or certificates in a form satisfactory to Owner. Failure to do so may result in rejection of the successful Offeror's Statement of Qualifications and withdrawal of the award.

OWNERSHIP OF DOCUMENTS. The Offeror's attention is directed to the DP Agreement, concerning ownership and use of the Design Professional's documents.

RETURN OF STATEMENT OF QUALIFICATIONS. Owner will not return any Statement of Qualifications that are submitted.

AIR POLLUTION. In accordance with an executive order titled 'Air Pollution Emergency Proclamation' modified by the Governor of Arizona on July 16, 1996, the Owner requests that all products used in the performance of any agreement that results from this solicitation be of low- or no-content reactive organic compounds, to the maximum extent possible.

SMALL AND SMALL DISADVANTAGED BUSINESS. Owner is committed to the development of Small Business and Small Disadvantaged Business (SB & SDB) suppliers. If subcontracting is necessary, the successful Offeror will make every effort to use SB & SDB in the performance of any contract resulting from this Request for Qualifications. Include a statement within your firm's Statement of Qualifications as to whether or not any of your sub-consultants falls under into either of these categories.

POLICIES. Owner's policies are listed online at: https://nau.edu/university-policy-library/. Offeror shall abide by Owner's policies when performing work on behalf of Owner.

PROTESTS. Owner believes that it can best maintain its reputation for treating contractors and/or suppliers in a fair, honest, and consistent manner by conducting solicitations in good faith and by granting competitors an equal opportunity to win an award. If Offeror feels that Owner has fallen short of these goals, Offeror may submit a protest pursuant to the Arizona Board of Regents procurement procedures, Section 3-809, in particular Section 3-809C. This paragraph does not include all of the provisions of the Regents procedures, but it does provide the information to initiate a protest. First, the individual or group has to be an "interested party". "An interested party" is an actual or prospective contractor submitting a Statement of Qualifications whose direct economic interest may be affected by the issuance of a solicitation, the award of a Then agreement, or by the failure to award a Then agreement. Whether an actual prospective contractor has a *direct* economic interest will depend upon the circumstances in each case. At a minimum, the interest must be substantial and must be tangibly affected by the administrative action or proposed action concerned in the case. Second, the protest must be submitted in a timely manner. In procurements requesting Statements of Qualifications, protests based upon alleged errors, irregularities or improprieties in a solicitation that are apparent before the closing date for receipt of initial Statement of Qualifications shall be filed before the closing date for receipt of initial Statement of Qualifications.

Protests concerning improprieties that do not exist in the initial solicitation, but that are subsequently incorporated into the solicitation, shall be filed by the next closing date for receipt of Statement of Qualifications following the incorporation. In cases other than those just covered, protests shall be filed no later than ten (10) days after a Then agreement is awarded in connection with the procurement action. Failure to file a protest in a timely manner shall be deemed a waiver of all rights. Third, and finally, protests shall be in writing and shall include the following information: (1) The name, address, area code, telephone number, and fax number of the protestor; (2) The signature of the protestor or its representative; (3) Identification of the solicitation or Then agreement number; (4) Detailed statement of the legal and factual grounds of the protest including copies of relevant documents; and (5) The response or relief requested. Protests should be directed to:

Becky McGaugh
Contract & Purchasing Services
Northern Arizona University
PO Box 4124
Flagstaff AZ 86011

Tel: (928) 523-6415
Fax: 928) 523-9441

Email address: **becky.mcgaugh@nau.edu**

Please note that as Owner takes protests very seriously, we expect Offerors to do so as well. Frivolous protests will not result in gain for the Offeror's firm.

PART II: ATTACHMENTS

Attachment A: RFQ Submittal Certification

Attachment B: Participation in Boycott of Israel Certification

Attachment C: Submittal Inquiry Form

Attachment D: DP Agreement

Attachment E: Economic Feasibility Study and Programming – Nations Group

Attachment F: Program Development & Conceptual Design Review

ATTACHMENT A: RFQ SUBMITTAL CERTIFICATION

_____
(Date)

Facility Services
Northern Arizona University
Flagstaff, AZ 86011

The undersigned certifies that to the best of his/her knowledge: Check one.

☐ There is no officer or employee of Northern Arizona University who has, or whose relative has, a substantial interest in any agreement award subsequent to this Statement of Qualifications/.

☐ The names of any and all public officers or employees of Northern Arizona University who have, or whose relative has, a substantial interest in any Then agreement award subsequent to this Statement of Qualifications are identified by name as part of this submittal.

The undersigned further certifies that their firm ☐ IS or ☐ IS NOT currently debarred, suspended, or proposed for debarment by any federal entity. The undersigned agrees to notify the University of any change in this status, should one occur, until such time as an award has been made under this procurement action.

The undersigned further agrees that their firm or individual warrants to the University, that they have completed an internal manpower loading plan and their firm has the personnel and resources to complete this project, should their firm or an individual be awarded this project.

In compliance with **NAU PROJECT: 09.731.191 – Student Athlete High Performance Center** project and after carefully reviewing all the terms, conditions and requirements contained therein, the undersigned agrees to furnish such goods/services in accordance with the specifications/scope of work.

THE FOLLOWING ADDENDA ARE HEREBY ACKNOWLEDGED AS FOLLOWS:

ADDENDUM NUMBER: _____DATED:_____ADDENDUM NUMBER: _____DATED:_____

ADDENDUM NUMBER: _____DATED:_____ADDENDUM NUMBER: _____DATED:_____

FORM OF AGREEMENT. The undersigned certifies that the undersigned has read Owner's current pro forma of Agreement Between Owner and Design Professional (Construction Manager at Risk) including the contract with the construction manager at risk and general conditions, which contain provisions applicable to the design professional, all of which are attached to the RFQ. If selected as the design professional for this project, the undersigned agrees to execute this agreement, subject only to the exceptions listed in the space below. The undersigned understands that any exceptions taken to the agreement that are not accepted and/or approved by the Owner may be a basis for rejection of the undersigned's Statement of Qualifications as non-responsive. The undersigned also understands that Owner may make changes in the standard form of agreement and that therefore the form of agreement presented to the successful Proposer may be different from the agreement attached to the RFQ, in which case the successful Proposer will be given the opportunity to review the changes.

List any objections to agreement here or attach a separate sheet behind this certification:_____

_____

_____

_____

_____ (Firm)	_____ (Address)
_____ (Signature required)	_____ (Phone no.)
_____ (Print name)	_____ (Fax no.)
_____ (Title)	_____ (Fed. tax id no.)

ATTACHMENT B: PARTICIPATION IN BOYCOTT OF ISRAEL CERTIFICATION

Legislation has been enacted to prohibit the University from contracting with firms currently engaged in a Boycott of Israel. To ensure compliance with A.R.S. §35-393 and §35-393.01 this form to be completed and returned with Bid Package.

By signing this form, Offeror certifies that it is not currently engaged in and agrees, for the duration of the Contract, to not engage in a Boycott of Israel.

Name of Offeror		
Name of Contact		Title of Contact
Address 1		Address 2
City	State	Zip Code
		-
Telephone Number		E-mail address, if available
( ) -		( ) -
Print Name of Offerors's Authorized Agent		Signature of Offerors's Authorized Agent
Title of Offerors's Authorized Agent		Date

ATTACHMENT C: SUBMITTAL INQUIRY FORM
(Pre-submittal Questions, General Clarifications, etc.)

PROJECT NAME: Student Athlete High Performance Center

PROJECT NUMBER: 09.731.191

INQUIRY DEADLINE: 2:00 PM, local time, Thursday, December 27, 2018

QUESTIONS ON: ____ ORIGINAL RFQ PACKET ____ or ____ ADDENDUM NO. ____

SECTION NUMBER: _____

WRITER: _____

FAX NO. _____ **PHONE NO.** _____

COMPANY: _____

COMPANY E-MAIL ADDRESS: _____

DATE: _____

QUESTIONS:

ATTACHMENT D: DESIGN PROFESSIONAL AGREEMENT

DESIGN PROFESSIONAL AGREEMENT
(CONSTRUCTION MANAGER AT RISK FORM)

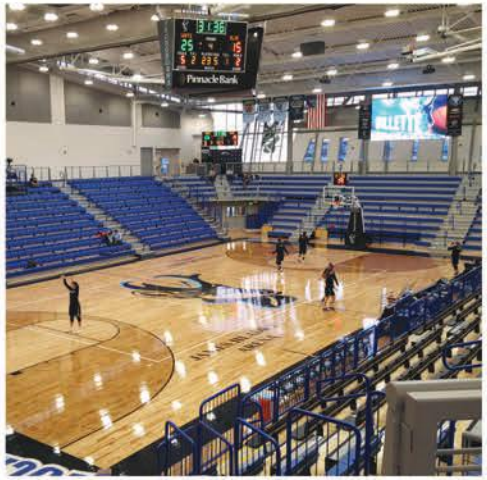
The Design Professional Standard Form Agreement and Exhibit A are located at the following website, under "Contracts": https://in.nau.edu/facility-services/dp-contract/

The Construction Manager at Risk Standard Form Agreement and General Conditions are also located at the following website, under "Contracts": https://in.nau.edu/facility-services/dp-contract/

ATTACHMENT E: ECONOMIC FEASIBILITY STUDY AND PROGRAMMING

October 5, 2018 – Nations Group

NORTHERN ARIZONA UNIVERSITY
STUDENT-ATHLETE PERFORMANCE CENTER
FEASIBILITY STUDY



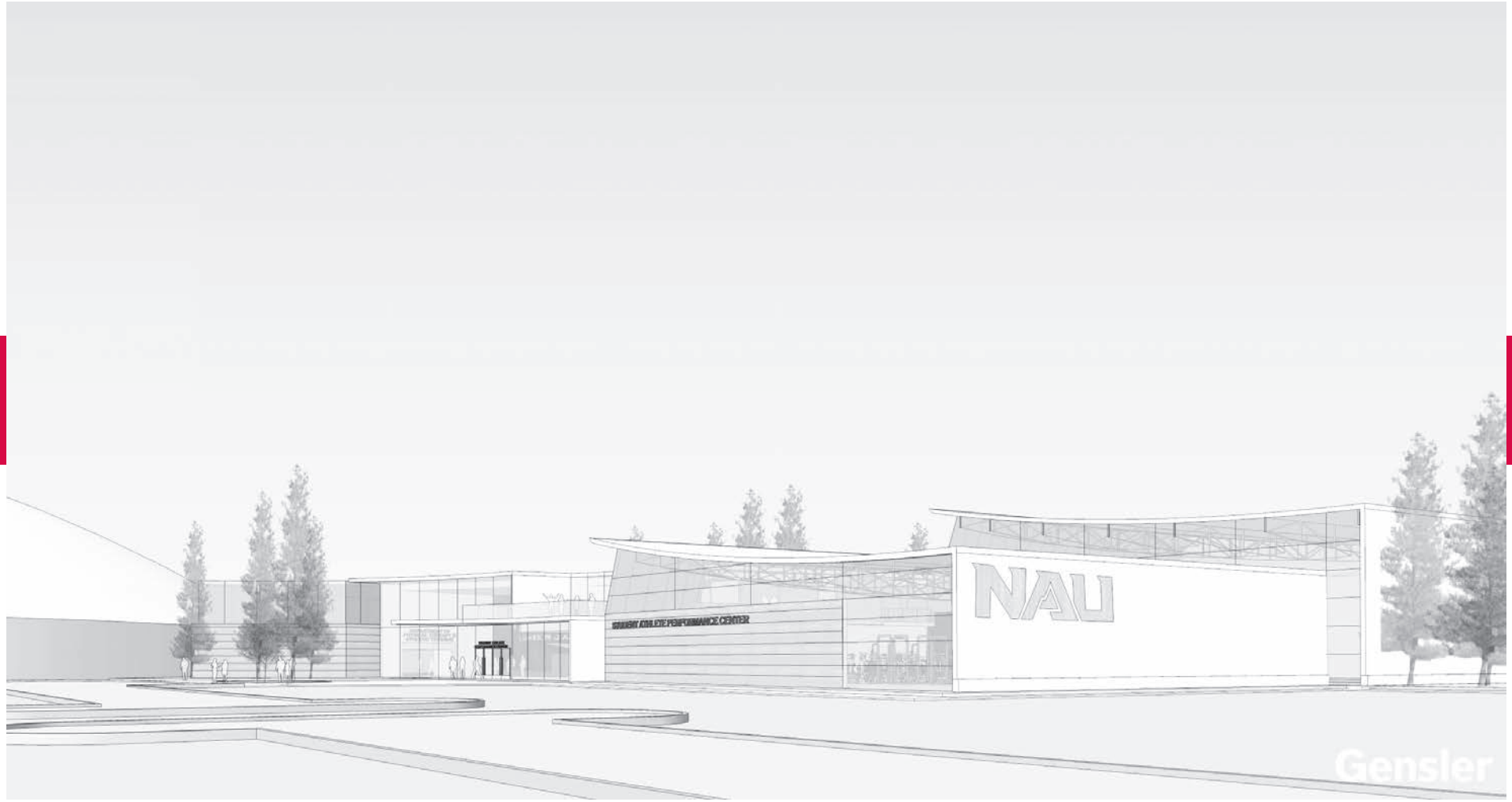
NATIONS | GROUP

NAU NORTHERN ARIZONA UNIVERSITY

October 5, 2018

NORTHERN ARIZONA UNIVERSITY
STUDENT-ATHLETE PERFORMANCE CENTER
FEASIBILITY STUDY

FACILITY PLANNING, PROGRAMMING & DESIGN



NATIONS | GROUP

NAU NORTHERN ARIZONA UNIVERSITY

OVERVIEW

When considering the overall project, the anticipated and (in some cases) already-identified goals of various stakeholder groups, and the benefits of a state-of-the-art Performance Center for Northern Arizona University's current and future Student-Athletes as well as to the University itself, Nations Group took a holistic approach. We evaluated the project with a fully comprehensive, facts-based perspective, utilized our current knowledge of and unique experience in the collegiate sports facilities industry, and leveraged our strong relationships within the market in order to provide a realistic, viable plan of action that clearly shows a forward path to success for Northern Arizona University and its Student-Athletes.

Through the process, Nations Group identified the purpose of the Performance Center project, the ideal location, potential partnerships and key aspects for creating the best possible facility.

Purpose:

The purpose of the Performance Center is to be completely focused on the wellness and development of NAU Student-Athletes and to provide educational opportunities for students on the NAU campus

Location:

The ideal location for the Performance Center is adjacent to the J. Lawrence Walkup Skydome, which is home to NAU Athletics Administration offices and Day-of-Game facilities for NAU Football

Partnerships:

Conversations are open and ongoing between the College of Health & Human Services and NAU Athletics in order to align wants/needs in the most mutually beneficial ways possible

Key Aspects:

1. Elevated Science
2. Athletics Base Camp
3. Aspiration

A further exploration of the identified key aspects of the program and the program summary categories are shown on the following page.

Nations Group identified three keys aspects of a Performance Center:

1. Elevated Science

Flagstaff is a destination for elite, world-class athletes to train at high altitude. The Performance Center will:

- Accentuate NAU's unique advantage in location
- Employ oxygen management technology to create an ideal conditioning and recovery environment
- Become a leading-edge center for training by utilizing scholarly influence and by representing a powerful recruiting tool for ambitious athletes

2. Athletics "Base Camp"

The physical and mental well-being of NAU's Student-Athletes is paramount. The Performance Center will:

- Centralize critical resources for Student-Athletes
- Co-locate the weight room, training room, nutrition and academic support, which will save valuable time each day so Student-Athletes can rest, study, and engage in their common pursuits within one location
- Create a more efficient environment for social engagement for Student-Athletes and professional engagement among staff

3. Aspiration

The Lumberjack spirit is exemplified by NAU Student-Athletes. The Performance Center will:

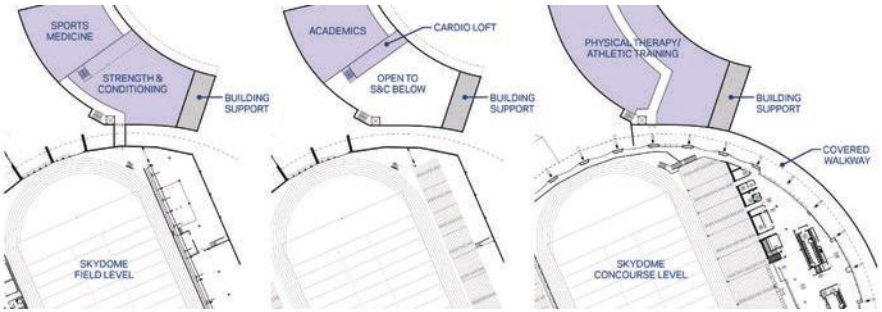
- Convey the importance of the development and improvement of Student-Athletes and the NAU Athletics program
- Be a highly visible symbol of the University's commitment to well-rounded excellence within the community
- Establish the unique connection between Athletics and the College of Health and Human Services

PROGRAM SUMMARY

- **Competition and Practice Gym**
- **Team Areas**
- **Auditorium**
- **Coaches' Spaces**
- **Strength and Conditioning**
- **Sports Medicine**
- **Nutrition**
- **Academic Support**
- **Public Spaces (Hall of Fame/Ticket Box Office)**
- **Meeting and other spaces available for collaborative opportunities between Athletics and the College of Health and Human Services**
- **Research Partnership (Future Program)**
- **Oxygen-Related Altitude Training and Recovery**

FACILITY PLANNING, PROGRAMMING & DESIGN

In mid-2016, the University commissioned renderings and programming for a Health Research Sport Performance Center.



HEALTH RESEARCH SPORT PERFORMANCE AND CONVOCATION CENTER

PROJECT NO. 09.731.151 | MAY 20, 2016

FACILITY PLANNING, PROGRAMMING & DESIGN

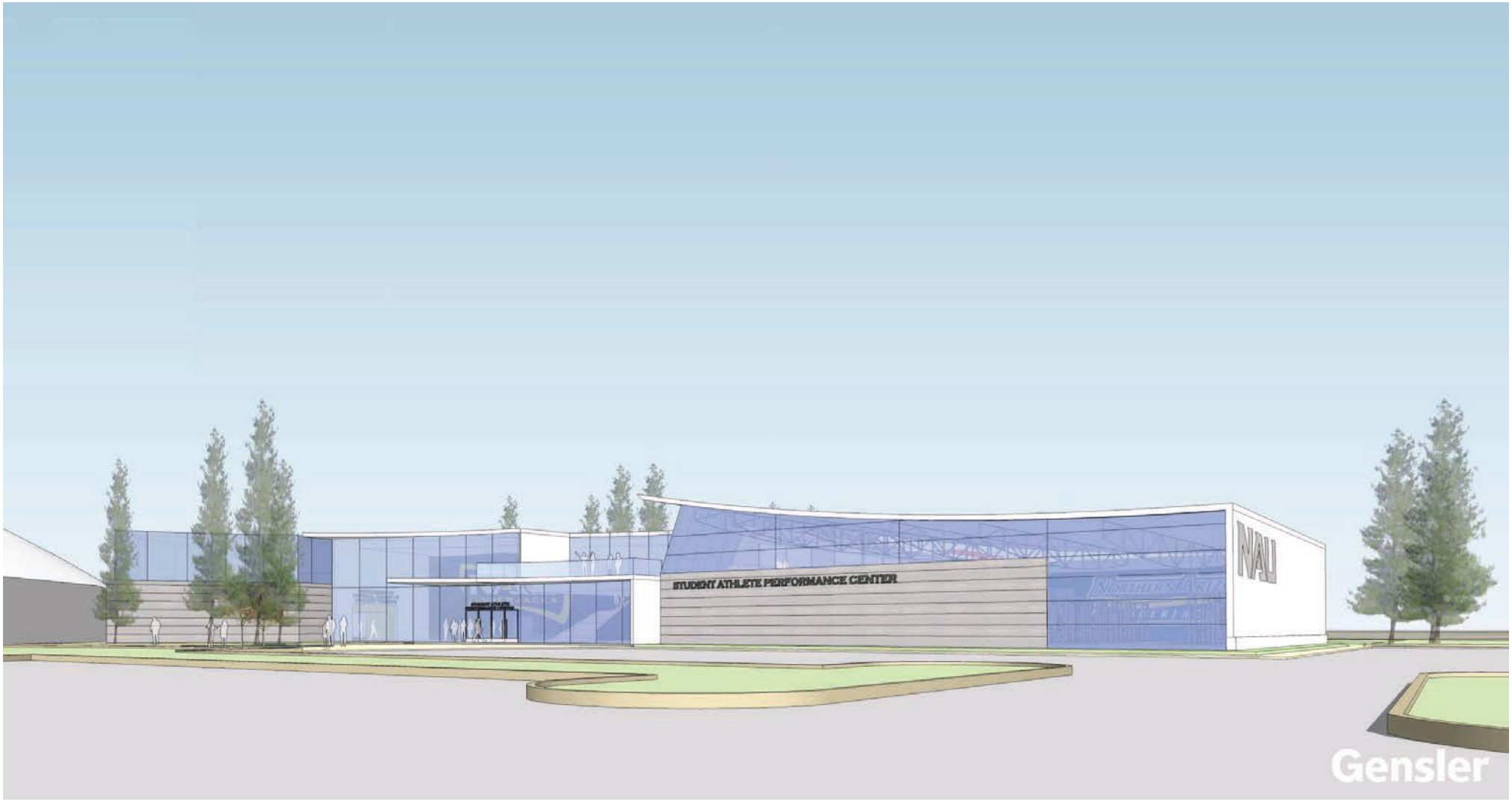
Through a series of meetings with key University staff beginning in July 2018, Nations Group examined University priorities and wishes and reviewed past studies and their conclusions. With a clear understanding of both, Nations Group then analyzed our proposed project scope to ensure it aligned, developed a detailed project schedule, project budget, plan of finance and finance timeline, identified roles and responsibilities, and created recommendations for success.

The renderings contained on the following pages illustrate the current vision for the Performance Center, based on this process.

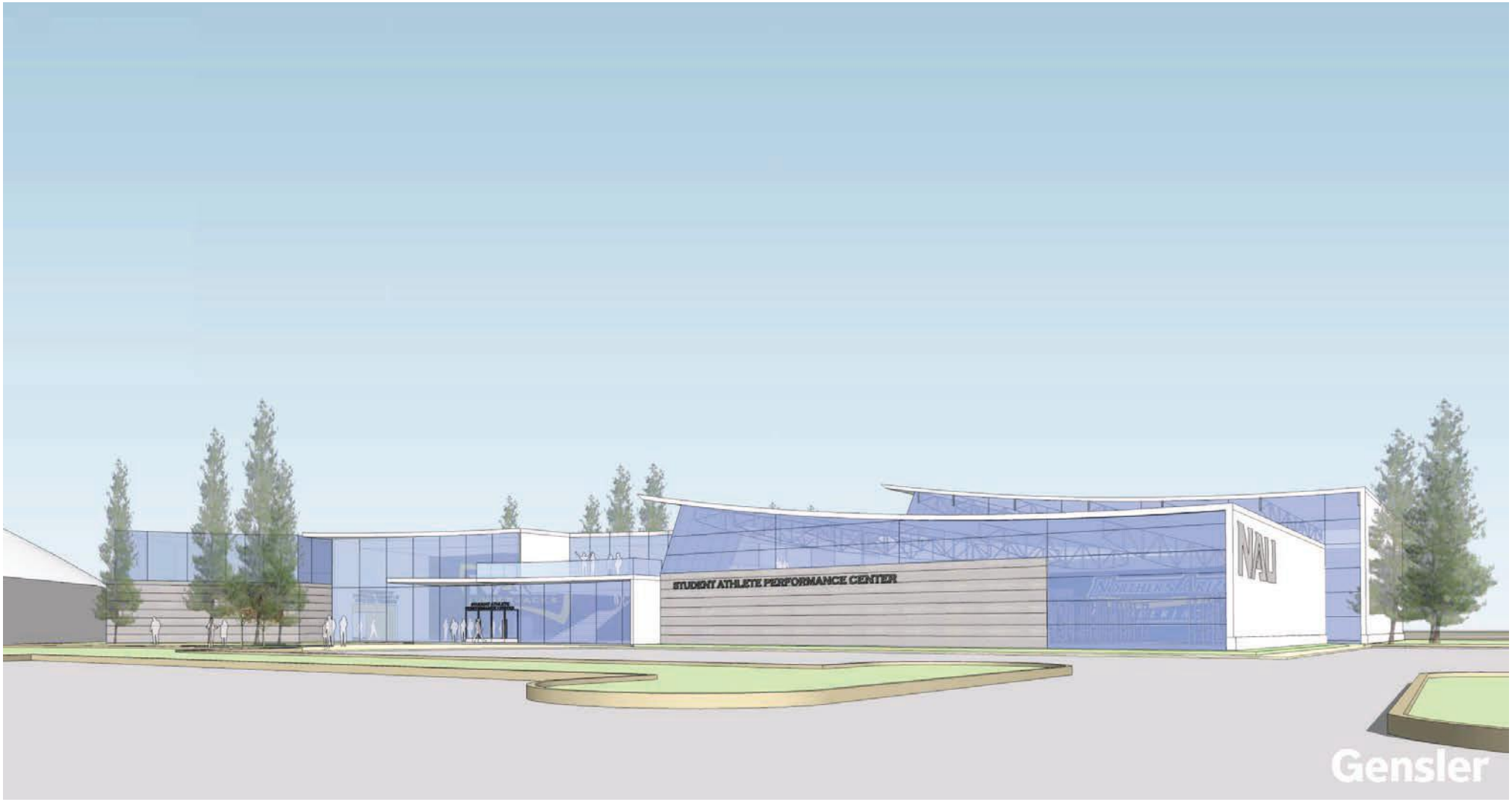
2018

2018

2018



2018



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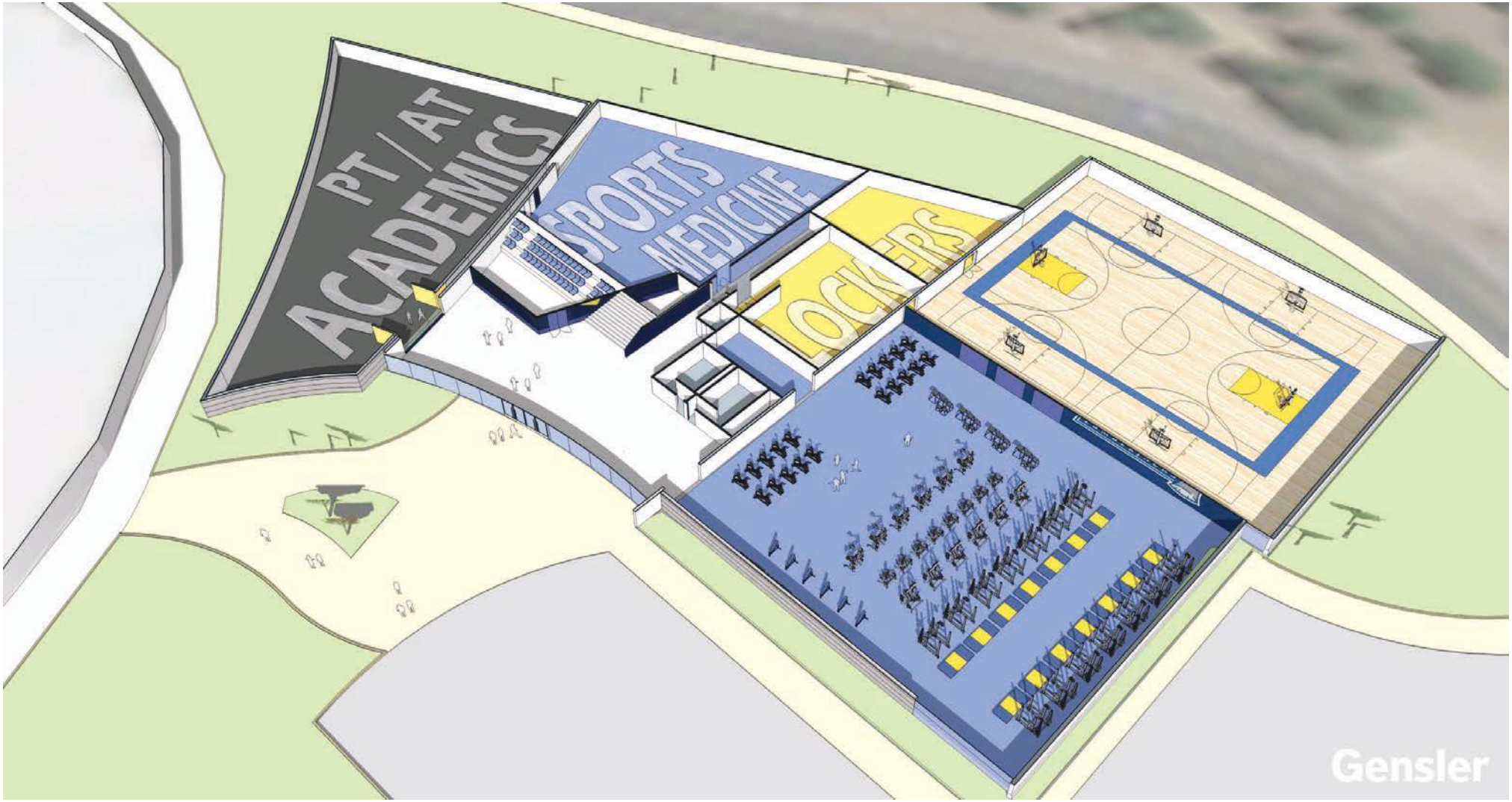

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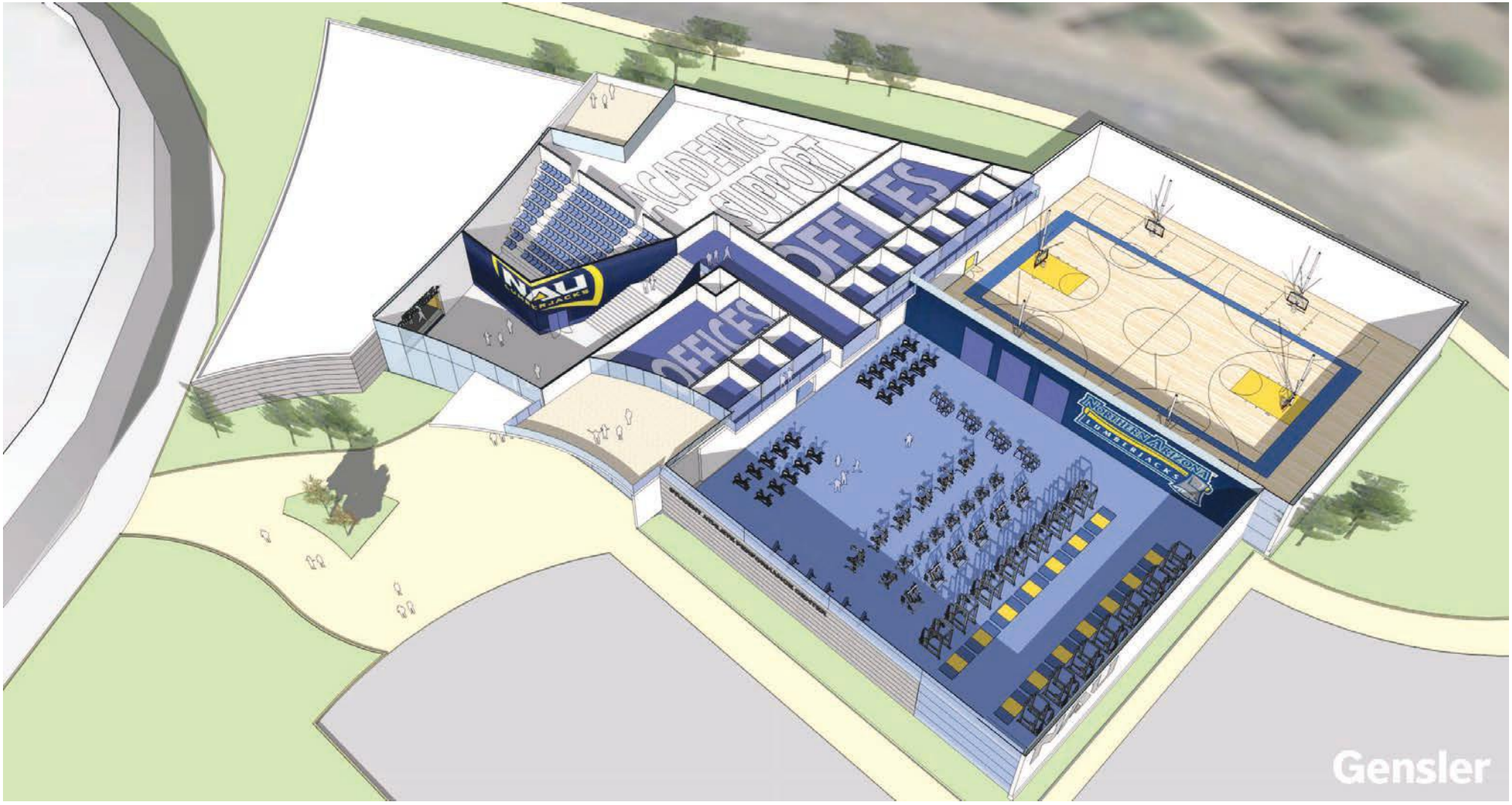
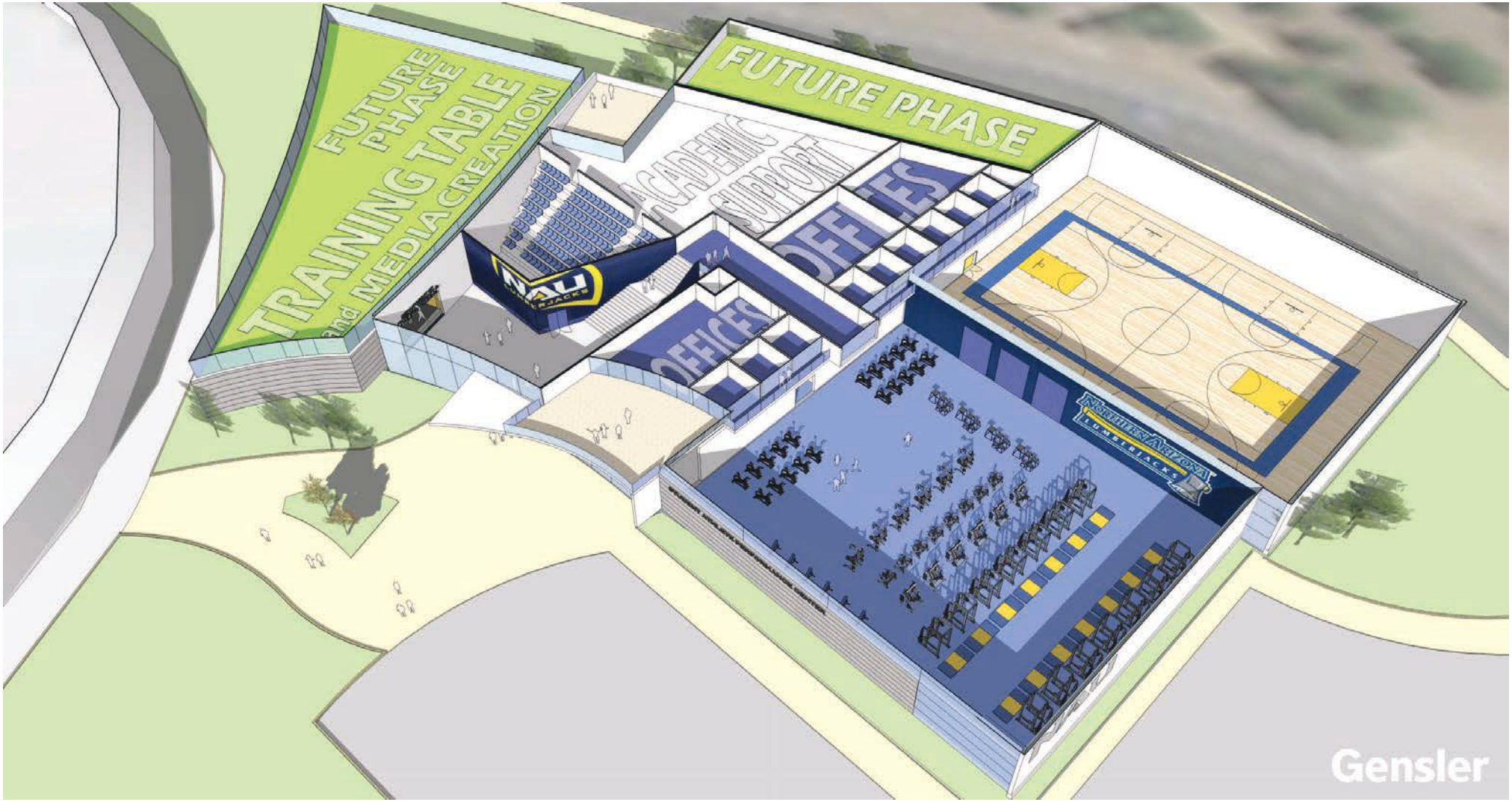
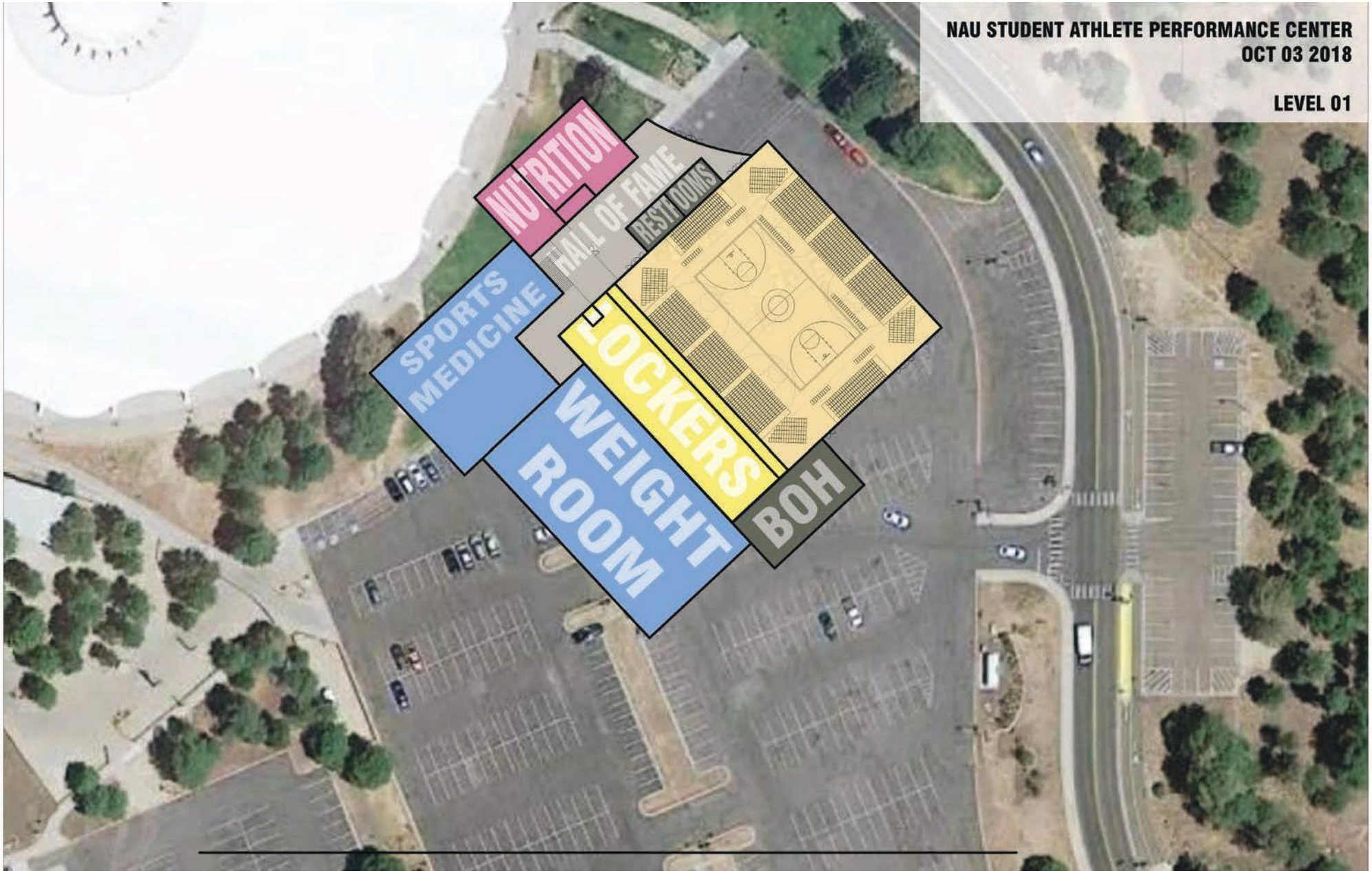

ACADEMIC SUPPORT
OFFICES
OFFICES
NAU
LUMBERJACKS
Gensler

2018


FUTURE PHASE
TRAINING TABLE
and MEDIA CREATION
FUTURE PHASE
ACADEMIC SUPPORT
OFFICES
OFFICES
Gensler

2018


NAU STUDENT ATHLETE PERFORMANCE CENTER
OCT 03 2018
LEVEL 01
NUTRITION
HALL OF FAME
REST ROOMS
SPORTS MEDICINE
LOCKERS
WEIGHT ROOM
BOH

2018

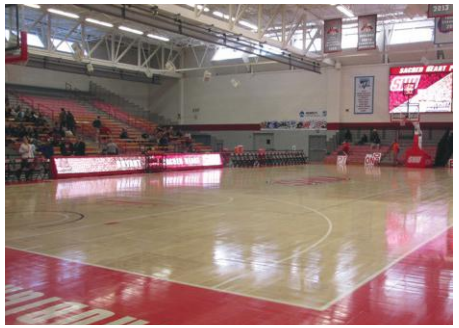

NAU STUDENT ATHLETE PERFORMANCE CENTER
OCT 3 2018
LEVEL 02
ACADEMIC
OFFICES

COMPARABLE FACILITIES


Aliston Lavietes Pavilion


Buffalo Koessler Athletic Center


Clinton Templeton PE Center


Hamilton Cotterell Court


Hanover Leede Arena


High Point Millis Athletic Convocation Center


Jacksonville University Swisher Gymnasium


Long Island University Wellness, Rec & Athletic Center


Longwood University Willett Hall


Lowell Costello Athletic Center


Manhattan Draddy Gymnasium


Niagra University Gallagher Center

COMPARABLE FACILITIES


Portland State University Peter Stott Center

Rider University Alumni Gymnasium


San Antonio Mcdermott Center


Staten Island Spiro Sports Center


UTRGV Fieldhouse


Fort Wayne Hilliard Gates Sports Center

CSUN Matadome


Gillette College Pronghorn Center


Lee College Sports Arena

NW Florida Emerald Coast Classic Arena

PROJECT PROGRAM

Program Summary

Competition and practice gym	21,600 sf
Team areas	7,215 sf
Coaches' spaces	4,000 sf
Strength and Conditioning	13,000 sf
Sports medicine	8,920 sf
Nutrition	4,050 sf
Academic support	5,560 sf
Public spaces	4,610 sf
TOTAL NET AREA	**68,955** sf

TOTAL GROSS AREA **77,400 sf**

PROJECT PROGRAM

Competition and Practice Gym

Overview:

- Basketball and Volleyball programs will share a gym
- Serve as a practice and day-of-game facility
- Dedicated competition venue will elevate the quality and profile of the Basketball and Volleyball programs

Space:

A clearance of at least 25' to the bottom of any obstruction, and ample safety clearances from sidelines and baseline

Configuration:

Will accommodate portable professional goals

Overall Look and Feel:

- Main gym will feel like an intense, collegiate competition venue when the retractable seating is deployed
- Wall surfaces will be durable, with NAU branding
- Accommodations will be made for broadcast and coaching cameras

Features:

- Accommodate 2,000-3,000 spectators on retractable seating
- Locate spectators and fans behind the baselines, if possible
- Maximize the number of courts (basketball and volleyball)
- Tight pitch LED video board and distributed sound system
- Branding will be bold and reflective of the caliber of teams competing on the court

COMPETITION AND PRACTICE GYM	
Gym (2,300 seats <2,200 retractable seats+100 floor seats>)	20,000 sf
Gym - Large equipment storage	700 sf
Gym - Small equipment storage	400 sf
A/V Control Room	200 sf
Officials Locker Room 1	150 sf
Officials Locker Room 1	150 sf
SUBTOTAL - BASKETBALL/VOLLEYBALL COURTS	**21,600 sf**

PROJECT PROGRAM

Team Areas

Overview:

- High quality, energetic and inviting locker rooms, bathroom areas, and lounges
- Organized to promote togetherness and community
- Strong branding presence for recruiting and team messaging
- Encourage activities such as social connection, nutrition and rest/recovery

TEAM AREAS		
Women's Basketball		
Locker Room	625 sf	
Toilets / Showers / Grooming	385 sf	
Women's Volleyball		
Locker Room	625 sf	
Toilets / Showers / Grooming	385 sf	
Women's Lounge		
Lounge Area	1,500 sf	
Rest and recovery area	500 sf	
Men's Basketball (practice)		
Locker Room	625 sf	
Toilets / Showers / Grooming	385 sf	
Lounge	400 sf	
Film classroom (shared)	450 sf	
Equipment / Laundry	450 sf	
Visitor's Locker Room		
Locker Room	500 sf	
Toilets / Showers / Grooming	385 sf	
SUBTOTAL - TEAM AREA		**7,215 sf**

PROJECT PROGRAM

Coaches' Spaces

Overview:

- Must accommodate meetings and recruiting activities
- Open feel to encourage collaborative exchange of ideas and impromptu interactions with Student-Athletes
- Design will be clean and straightforward
- Film rooms should be located proximate to the gym to enable immediate walk-throughs following film study and game planning

COACHES SPACES		
Women's basketball		
Office - Head Coach	150 sf	
Office - Assistant Coach 1	100 sf	
Office - Assistant Coach 2	100 sf	
Office - Assistant Coach 3	100 sf	
Director of operations	100 sf	
Conference Room	200 sf	
Women's volleyball		
Office - Head Coach	150 sf	
Office - Assistant Coach 1	100 sf	
Office - Assistant Coach 2	100 sf	
Conference Room	200 sf	
Men's basketball		
Office - Head Coach	150 sf	
Office - Assistant Coach 1	100 sf	
Office - Assistant Coach 2	100 sf	
Office - Assistant Coach 3	100 sf	
Director of operations	100 sf	
Conference Room	200 sf	
Coaches Changing rooms		
Changing Room - W	450 sf	
Changing Room - M	450 sf	
Staff Changing rooms		
Changing Room - W	300 sf	
Changing Room - M	300 sf	
Video Suite	450 sf	
SUBTOTAL - COACHES SPACES		**4,000 sf**

PROJECT PROGRAM

Strength and Conditioning

Overview:
The weight room is the primary space for the strength and conditioning program.

- House weight racks supported by inlayed drop zones, maximizing the flexibility of the valuable floor space
- Place a premium on flexibility
- Have a large connection with either outdoor exercise space or the practice gym
- Environment will be bright, durable, highly branded, and focused on the work

STRENGTH AND CONDITIONING		
Weight Room	10,000 sf	
Weight room storage	800 sf	
Exercise classroom	1,200 sf	
Nutrition area	250 sf	
Office - Head strength coach	150 sf	
Open Office area - (6 positions)	600 sf	
SUBTOTAL - STRENGTH AND CONDITIONING		**13,000 sf**

PROJECT PROGRAM

Sports Medicine

Overview:
A hub for a multi-faceted approach for Student-Athlete wellness, including injury prevention, injury treatment, active recovery and mental health counseling.

- Planned around an open work area, containing zones for treatment, rehab, and taping
- Visual connectivity between as many areas as possible to ensure Student-Athlete safety and efficient staffing
- Working areas will be bright, relaxing and appropriately branded
- Finishes will be durable but not appear institutional
- Lighting will be generally indirect with bright direct lighting where necessary
- Hydrotherapy area will be a well-functioning, safe and attractive space
- Must be able to accommodate the football team after practice
- Office space for assistant trainers will be designed to reinforce each of their roles as specialists in fields such as brain injuries, bio-mechanics, rest and recovery, etc.

Once within the Sports Medicine suite, Student-Athletes should feel they are in an inner sanctum, where their health and privacy are deeply valued.

SPORTS MEDICINE	
Treatment area	1,200 sf
Taping	350 sf
Hydro therapy	1,800 sf
Hydro lobby	200 sf
Hydro Equipment	400 sf
Rehab area	1,500 sf
Storage - medical supplies	500 sf
Wet work room (Gatorade/ice machine)	500 sf
X-ray room	120 sf
Exam room / Doctors office	120 sf
Restroom	80 sf
Reception and Billing	250 sf
Conference room	300 sf
Office - Head Trainer	150 sf
Offices - Assistant trainers and specialists (9)	900 sf
Counseling	200 sf
Open office area	200 sf
Staff breakroom	150 sf
SUBTOTAL - SPORTS MEDICINE	**8,920 sf**

PROJECT PROGRAM

Nutrition

Overview:
The food preparation area is the backbone for the Nutrition department.

Features:

- Cold storage, loading and trash accommodations, and industrial-grade cooking equipment
- Suitable for preparing meals for 400+ student-athletes and staff
- Durable, easily cleanable surfaces

The kitchen must be located proximate to areas where student-athletes will eat. It should be located adjacent to a place where a future training table space can be envisioned.

The Nutrition department will have satellite stations in the weight room for immediate recovery nutrition.

The kitchen can also be the main preparation space for concessions during competitions.

NUTRITION		
Kitchen	1,000 sf	
Cold storage	150 sf	
Dry storage	200 sf	
Service area	200 sf	
Dinning Area (seats about 200)	2,500	
SUBTOTAL - NUTRITION		**4,050 sf**

PROJECT PROGRAM

Academic Support

Overview:
Academics is a central part of a Student-Athlete's life at NAU. A diverse variety of spaces must exist to support different needs and learning styles.

- Scale of spaces will range from a private office for a Learning Specialist, to meeting rooms for 4-6 people, larger quiet study areas, and the auditorium for 160 people
- Auditorium will be suitable for everything from lecture reviews to Football team meetings to All-Staff meetings

Features:
- Glass walls to allow for ease of monitoring (academic integrity)
- Small percentage of more private spaces
- Quiet study area that is acoustically controlled
- Other open study areas will be more social and planned for group work

ACADEMIC CENTER		
Auditorium (160 seats)	2,000 sf	
Computer Lab (20)	400 sf	
Open study area (20)	600 sf	
Classroom - large	600 sf	
Offices (8)	960 sf	
Tutorial rooms - 6 person (5)	1,000 sf	
Outdoor study area	0	
SUBTOTAL - ACADEMIC SUPPORT		**5,560 sf**

PROJECT PROGRAM

Public Spaces

Overview:

The front door and entry lobby for the Performance Center will create a sense of excitement everyone visiting the facility. It will convey the NAU brand and focus on the Student-Athletes who work, engage and develop within the building.

Features:

- Entry lobby will be suitable for hosting pre-game and recruiting events, and will be ideally located to provide visibility for the program
- Restrooms and food + beverage will be located off the lobby in order to provide amenities for all those attending games

SUPPORT AREAS		
Public areas		
Entry Lobby / Hall of fame	1,200 sf	
Restrooms - M	500 sf	
Restrooms - W	400 sf	
Concessions	600 sf	
Back of house		
Main electrical room	800 sf	
Main IT room	500 sf	
Plumbing - Domestic water	300 sf	
Plumbing - Fire	200 sf	
Security	110 sf	
SUBTOTAL - PUBLIC SUPPORT AREAS		**4,610 sf**

PROJECT PROGRAM

Research Partnership

Overview:
The partnership with the College of Health and Human Services will be guided by the best interests of the Student-Athlete and provide varied collaborative opportunities between Athletics and academics. The Athletics staff and researchers will be integrated as appropriate to promote scientific progress and the privacy of Student-Athletes.

Future Program

COLLEGE OF HEALTH AND HUMAN SERVICES - PHASE 2		
Movement lab	1,500 sf	
Open office touchdown space	600 sf	
Conference / work room	300 sf	
Conference / work room	200 sf	
Exam room	150 sf	
Exam room	150 sf	
Research suite 1	800 sf	
Research suite 2	800 sf	
Lobby - subject waiting area	600 sf	
Restroom	100 sf	
Restroom	100 sf	
Storage	1,000 sf	
Parking	0	
SUBTOTAL - H&HS		**6,300 sf**

PROJECT PROGRAM

Oxygen-Related Altitude Training and Recovery

Human Performance

Sports physiologists have long known the benefits of training at altitude – improved endurance, faster recovery and increased anaerobic capacity. ACT technology allows athletes to train and acclimate to high altitude in a controlled environment in any location.

Benefits of Altitude Training

ACT altitude simulation systems are uniquely suited to athletic training. ACT's control technology allows for precise control of altitude while the system intelligently manages CO2 and air quality.

- Increased endurance and speed
- Less fatigue
- Improved recovery time

Live High, Train Low

- **2,000 square-foot exercise room**
  14' ceilings
  Emphasis on explosive movements for 20 people

- **1,000 square-foot exercise room**
  14' ceilings
  Emphasis on resistance/machine movements for 12 people
  Olympic weight racks, treadmills, etc.

Recovery and Focus:

- **2,000 square-foot quiet study area**
- **1,200 square-foot Student-Athlete lounge**

These rooms are to allow the methodology of "Live High, Train Low" to be practiced by resident and visiting athletes at a 7000' location. This would be in-keeping with the findings on Drs. Ben Levine and Jim Stray Gunderson in their landmark study (www.physiology.org/doi/full/10.1152/jappl.1997.83.1.102). For fire-safety reasons, guided by the National Fire Protection Association, the highest level of oxygenation which can be targeted is 25.66%, creating an effective simulated altitude of 1200'. Furthermore, as the partial pressure of oxygen in the space is less than that which occurs naturally at sea-level, any enclosure used would be considered a class-D enclosure.

The amount of Oxygen separation equipment that is required for a given room depends on three factors:

#1) Expected outside air-infiltration into that room and the target degree of oxygenation
#2) Volume of the room and any desired time-to-target altitude
#3) Total activity within the room, and upper limit of CO2

For rooms where exercise is being performed, #3 is almost certainly to be the limiting factor. Since creating modified rooms for exercise, our standard maximum CO2 limit has been 1.0%. Reducing this to 0.5% would likely double the cost.

For rest and recovery for extended periods, CO2 levels should preferably be limited to 0.5%. CO2 between 0.5% and 1.0% can result in a modest hyperventilation. During exercise this is not a problem as the breathing rate is elevated anyway, but that is not so during rest or recovery. When exercising at close to sea-level (eg, 1200'), typical sustainable CO2 production for a serious athlete is 4.0 l/minute. A short-term high-intensity effort may be double that CO2 production rate, but requires a period of recovery, so the average CO2 production is likely similar. Resistance training is also performed intermittently, but with far less CO2 production. A typical average production for an athlete lifting weights is 2.0 l/minute. When not exercising, a typical person produces approximately 0.55 l/minute of CO2.

COMPETITIVE VENUE ANALYSIS

ADVANTAGES OF COMPETITIVE VENUE CREATION

- Home court advantage in 2020-21 school year
- New income streams
- Progress shown to donors and community
- Recruiting advantage
- Free up other University space
- Premium seats and space created for donors
- Revenues to offset operational costs
- Eliminates the need to address the Rolle Activity Center

COMPETITIVE VENUE REVENUE POTENTIAL/POSSIBLE INVENTORY

- Naming rights (sponsorship)
- Video and ribbon board (sponsorship)
- Premium seating (donation required)
- Club space for pre-game and in-game functions (donations required)
- Rental income from flat banquets
- Learfield contract bonus and expansion of inventory
- Concessions
- Rental income from club/high school competitions

COMPETITIVE VENUE COSTS INCREASES

Seating	$1.9M
Video	$250K
Sound	$120K
Upgraded restrooms	$300K
Concessions	$250K
Life safety (assembly space)	$100K
	$2.9M

(Note: gym size is already incorporated into base costs)

PROJECT BUDGET

Land Acquisition	
Land	-
Closing Costs	-
Brokerage Commissions	-
Total	**-**

Design & Professional Fees	
Architectural Design *(9% fee includes all specialty consultants)*	2,041,020
Professional Services Expense Reimbursement	136,068
Specialty Graphics Design (Branding)	150,000
Owner's Representation Fee	1,055,485
Owner's Representation Expense Reimbursement	65,000
Administration and Legal	50,000
Civil Design	226,780
Traffic Engineer	25,000
Site Survey	30,000
Geotechnical Engineering	22,500
Environmental Assessment	10,000
Hazardous Material Survey	10,000
Pre-Construction Services *(outside of CMAR contract)*	56,695
Construction Materials Testing	100,000
Builders Risk Insurance	76,198
Systems Commissioning	85,000
Total Design & Professional Fees	**$4,139,746**

Hard Construction Costs	
Demolition	75,000
Abatement	25,000
Miscellaneous Costs	25,000
New Construction	25,399,360
(CMAR contract includes Fee & General Conditions of ~10%-12%)	
Building Permits	110,000
Specialty Graphics (Branding)	750,000
Impact Fees	-
Utility Expenses	150,000
Water Meter, Tap, and Other Utility Fees	150,000
Total Hard Construction Costs	**$26,684,360**

Furniture, Fixtures and Equipment Costs	
FF&E	1,700,850
Audio/Video/Communications/Low Voltage	453,560
Owner Expenses	25,000
Pre-Opening / Moving Expense	25,000
Total FF&E	**$2,204,410**

Subtotal: Project Costs	**$33,028,516**
Project Contingency	**2,642,281**
Project Total	$35,670,797

PROJECT SCHEDULE

Tasks

2

Name	Begin date	End date
Athletic Performance Center	10/3/18	8/29/20
DESIGN PROCUREMENT	10/3/18	10/29/18
Soilicit for Architectural Services	10/3/18	10/12/18
Contract Negotiation	10/13/18	10/26/18
Contract Execution	10/29/18	10/29/18
DESIGN PHASE	11/1/18	7/29/19
Schematic Design	11/1/18	12/15/18
SD Price Check	12/16/18	1/2/19
Design Development Documents	12/16/18	3/30/19
DD Price Check	3/31/19	4/29/19
Bond I GMP	3/24/19	3/28/19
Construction Documents	4/5/19	7/8/19
GMP 1 - Site, Utilities & Foundations	4/30/19	5/20/19
GMP 2 - Building & Systems	7/9/19	7/29/19
PERMITS + APPROVALS	3/31/19	10/16/19
Civil, Site & Foundation Permit Review	3/31/19	5/3/19
Building Permit Review	6/19/19	10/16/19
FF & E	9/7/19	3/25/20
Identification	9/7/19	10/6/19
Review & Analysis	10/21/19	1/18/20
Procurement	1/26/20	3/25/20
CONSTRUCTION	5/6/19	7/5/20
Commencement of Construction	5/6/19	5/6/19
Build Duration	5/7/19	6/26/20
Substantial Completion	6/20/20	6/20/20
Temporary Certificate of Occupancy	7/5/20	7/5/20
CLOSE OUT	6/6/20	8/29/20
FF&E Installation	6/6/20	8/20/20
Certificate of Occupancy	8/25/20	8/29/20

PROJECT SCHEDULE

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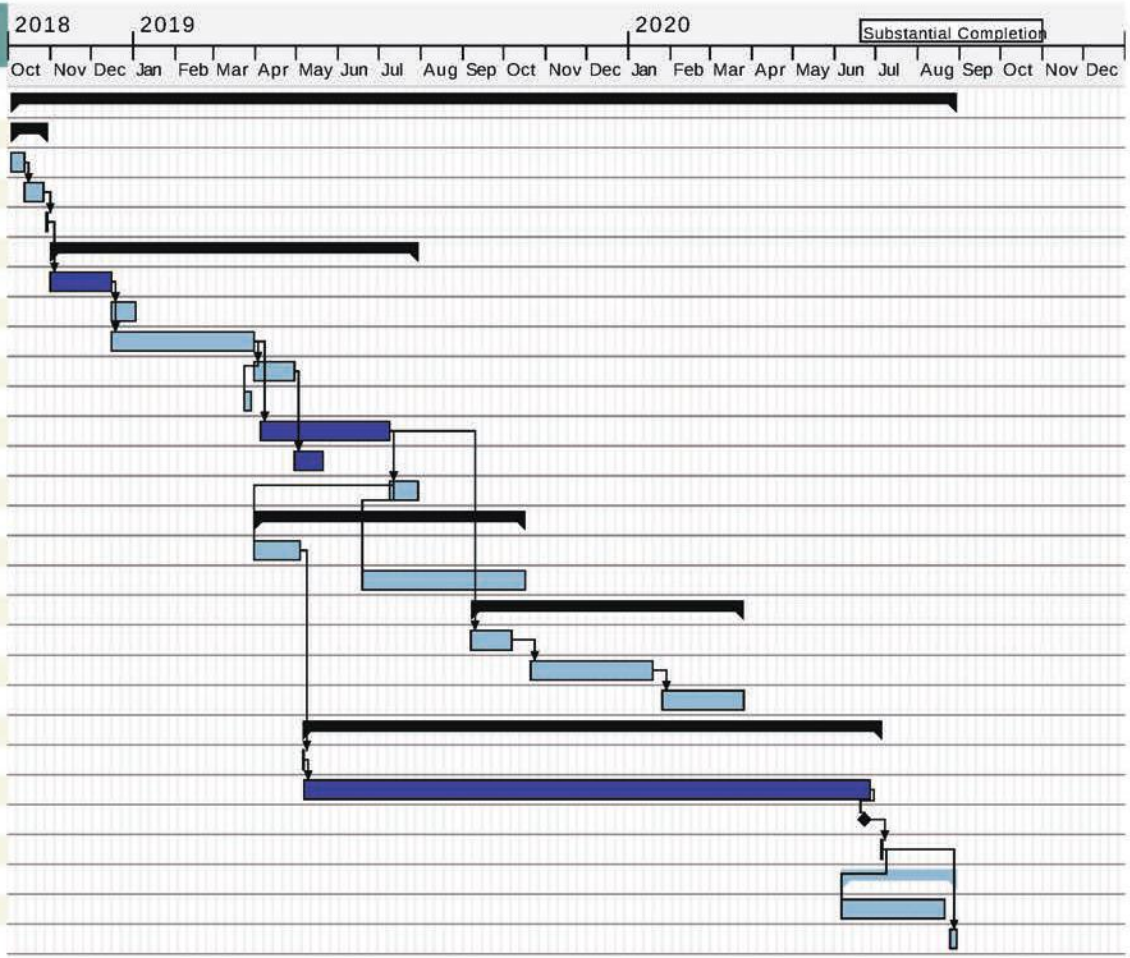
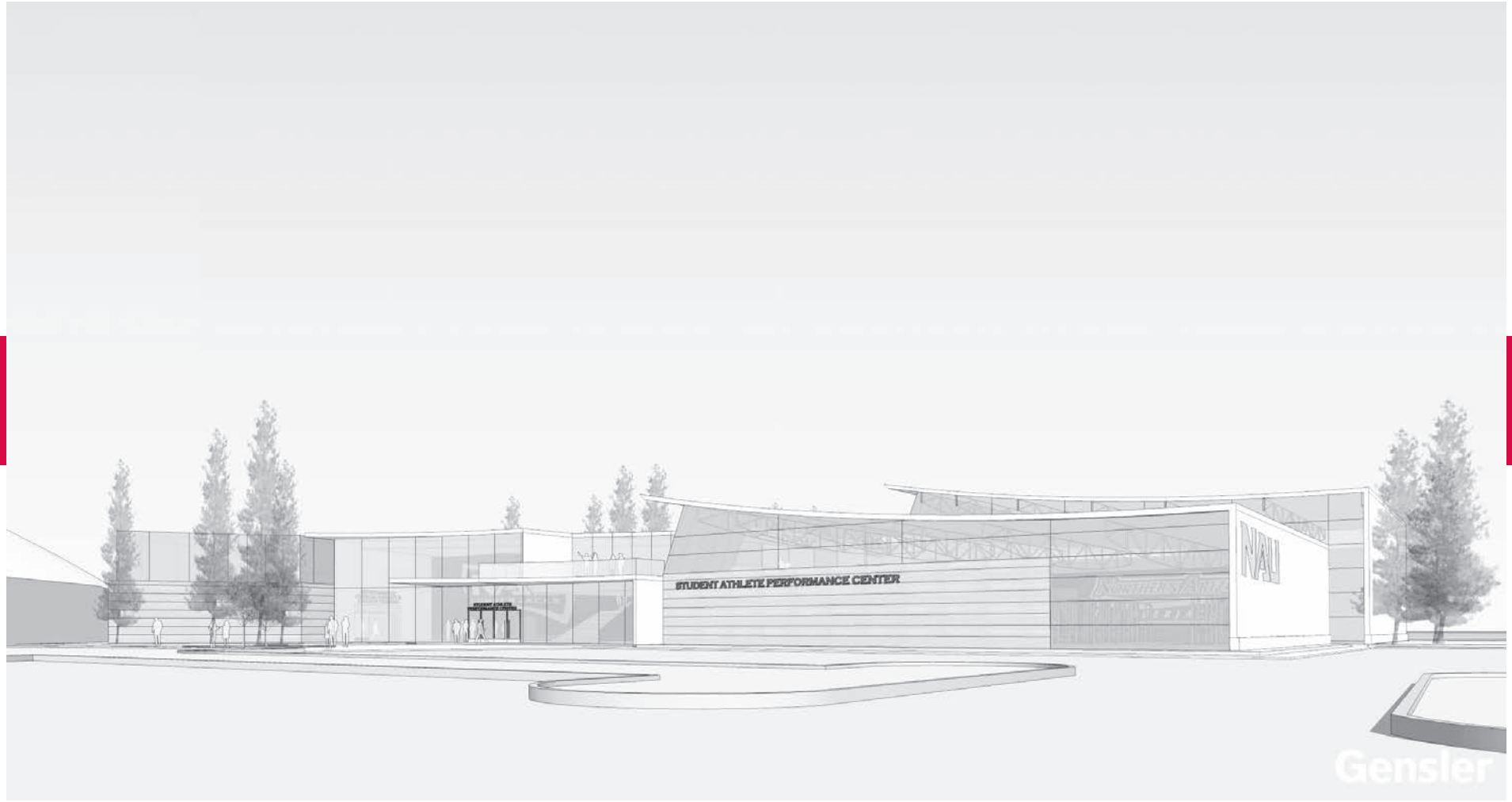


PARTNERSHIPS



NATIONS | GROUP

NAU NORTHERN ARIZONA UNIVERSITY

COLLEGE OF HEALTH AND HUMAN SERVICES

Nutrition

The food preparation area is the backbone for the Nutrition department. Including cold storage, loading and trash accommodations, and industrial-grade cooking equipment, suitable for preparing meals for 400+ student-athletes and staff.

The kitchen must be located proximate to areas where student-athletes will eat. It should be located adjacent to a place where a future training table space can be envisioned.

The Nutrition department will have satellite stations in the weight room for immediate recovery nutrition. The kitchen can also be the main preparation space for concessions during competitions.

NUTRITION		
Kitchen	1,000 sf	
Cold storage	150 sf	
Dry storage	200 sf	
Service area	200 sf	
Dinning Area (seats about 200)	2,500	
SUBTOTAL - NUTRITION		**4,050 sf**

Research

The partnership with the College of Health and Human Services will be guided by the best interests of the Student-Athlete. The Athletics staff and researchers will be integrated as appropriate to promote scientific progress and the privacy of Student-Athletes.

COLLEGE OF HEALTH AND HUMAN SERVICES - PHASE 2		
Movement lab	1,500 sf	
Open office touchdown space	600 sf	
Conference / work room	300 sf	
Conference / work room	200 sf	
Exam room	150 sf	
Exam room	150 sf	
Research suite 1	800 sf	
Research suite 2	800 sf	
Lobby - subject waiting area	600 sf	
Restroom	100 sf	
Restroom	100 sf	
Storage	1,000 sf	
Parking	0	
SUBTOTAL - H&HS		**6,300 sf**

SPORTS ATHLETICS TICKETS MULTIMEDIA FAN ZONE RECRUITS SHOP

FOOTBALL

News Schedule/Results Roster & Bios Tickets Statistics Coaches More +

OFFICIAL ATHLETICS SITE OF WEBER STATE UNIVERSITY BUY TICKETS DONATE SUPPORT WSU ATHLETICS

General | 8/17/2018 10:43:00 AM | Paul Grua - Weber State Athletic Communications

Weber State to begin construction on complex at Stewart Stadium

OGDEN - Weber State University Athletics is excited to announce the construction of a state-of-the-art athletic complex at the north end of Stewart Stadium.

The building will include the Barbara and Rory Youngberg Football Center, the Sark's Boy's Gateway, the Stromberg Strength and Conditioning Complex, the Marquardt-Kimball Plaza and the Behnken Plaza.

The 27,000-square foot building will surround the Chick Hislop track on the north side and will serve as the main entrance to the stadium.

The facility will include a new state-of-the-art strength and conditioning facility for all Wildcat student-athletes. It will also feature new football team locker rooms and a new expanded football equipment room, in addition to football coaches offices and position group meeting rooms.

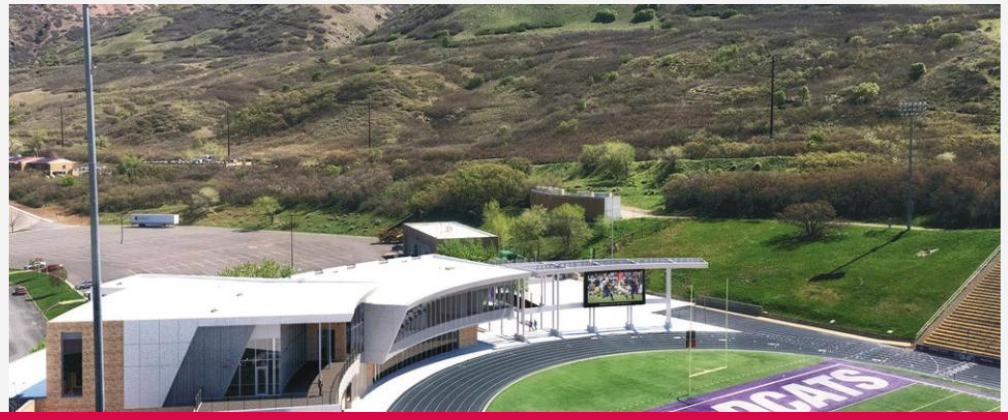
The building will also include a 125-seat team room that will benefit all student-athletes. A new plaza, ticket office, and souvenir shop will also be part of the project.

"This building is transformational to our program," said Weber State Athletic Director *Jerry Bovee*. "Over the last 10 years we have made great strides in improving the athletic and academic facilities for our student-athletes and this is a capstone project that will assist in the development of not only the football program but all of our 16 sports. It also allows for an expanded space for our training and nutrition needs, which will benefit all student-athletes. This is made possible through the generous donations of community members and former student-athletes."

"This building demonstrates to recruits, players, coaches, and staff the commitment Weber State University has to its student-athletes," said Weber State head coach *Jay Hill*. "This new facility is critical for our program's progress moving forward. It will enable us to have an expanded locker room and weight room and state-of-the-art meeting rooms. It is fundamental for recruiting and the future development of our players."

Construction will begin on Aug. 28. A groundbreaking ceremony for the building will take place prior to kickoff of the season-opening game on Sept. 15 against South Dakota. All fans are encouraged to participate in the groundbreaking ceremony, beginning at 5 p.m., prior to the 6 p.m. kickoff.

The building is expected to be completed in time for the 2019 football season, which marks 100 years of football at Weber State University.



WEBER STATE UNIVERSITY

Learfield SIDEARMSPORTS A LEARFIELD COMPANY

MONTANA GRIZZLIES

SPORTS / INSIDE ATHLETICS / FAN ZONE / DONATE / TICKETS / GRIZ SHOP / #GOGRIZ

The University of Montana officially opened the $14 million, 51,000 square foot Washington-Grizzly Champions Center on October 13, 2017, providing Grizzly student-athletes one of the premiere training and locker facilities in the nation.

The WGCC houses a state-of-the-art Athletic Performance Center, nutrition/refueling station and five team meeting rooms for the use of all student-athletes.

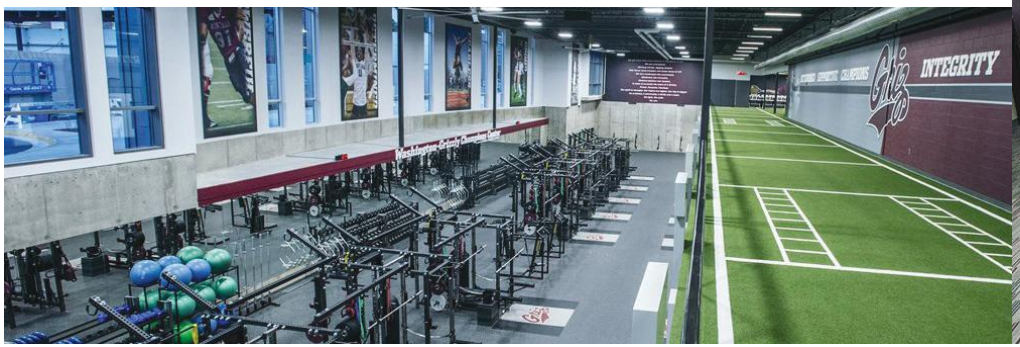
The Champions Center also includes a 7,100 square foot football locker room with 118 lockers, and a professional athlete/coaches locker room.

The WGCC was 100% privately funded with a lead gift of $7 million from Kevin and Kyle Washington on behalf of the Dennis and Phyllis Washington Foundation.

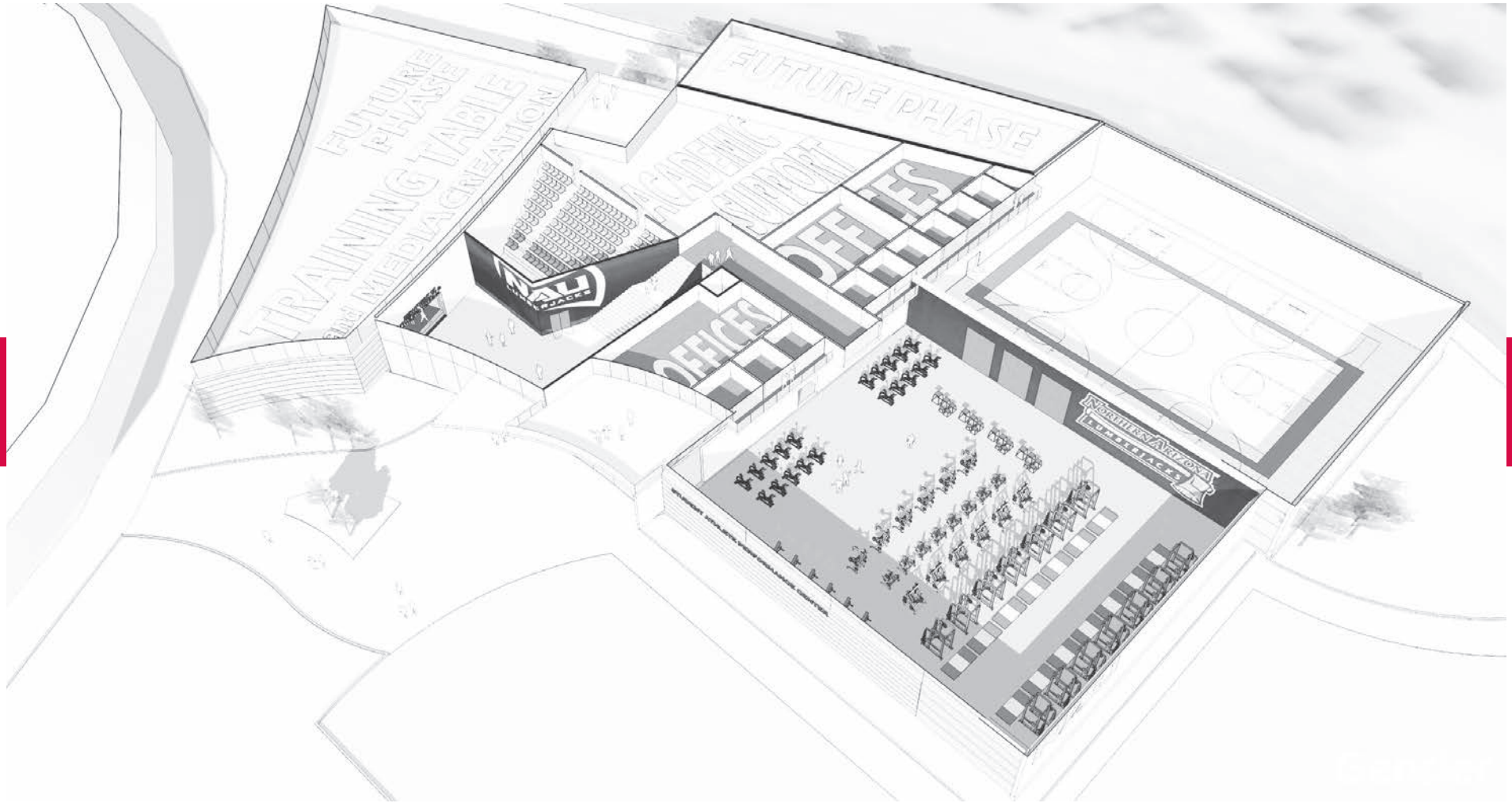
Washington-Grizzly Champions Center quick facts:

BUILDING SPECIFICATIONS

- 51,000+ square foot Washington-Grizzly Champions Center
- 19,400+ square foot Athletic Performance Center for all student-athletes
- Jared and Maile Losing Nutrition/Refueling Station
- 7,100+ square foot football locker room featuring 118 lockers
  - Produced by Longhorn Lockers of Venus, TX
- The Markovich Family Professional Athlete and Coaches' Locker Room
- 2,000 square foot team room for football
  - Gift of $300,000 presented by the 1995 Grizzly National Championship Team
- Five meeting rooms for use by all student-athletes named after
  - John Hoyt
  - Mike and Gloria Tilleman
  - Mick Delaney
  - The Tabish Family
- Additional restrooms and concession stands along the southwest stadium concourse



APPENDIX B



NATIONS | GROUP

NAU NORTHERN ARIZONA UNIVERSITY

SIMILAR ENROLLMENT

Similar Enrollment College Facilities

College	Enrollment	Facility	SF	Conference	Opened	Information
UCLA	30,874	Acosta Athletic Complex	15k Weight Room 8k Rehab/Training Center	PAC 12	-	15k SF Weight Room/ 8k SF Athletic Training, Rehab Facility/ 25 Person Meeting Room/ Player, Coaches Locker Room
		JD Morgan Center	-		-	Offices for all Coaches, Admin/ Student Athlete Academic Learning Center/ Video Viewing rooms/ Conference Rooms/ more found on : https://uclabruins.com/facilities/?id=8
University of Georgia	28,848	Butts-Mehre Heritage Hall	-	SEC EAST	-	players' headquarters, including the locker room, the weight room, the sports medicine training room and meeting rooms, football coaches' offices and meeting rooms, historical displays for all UGA athletic teams
		William Porter Payne and Porter Otis Payne Indoor Athletic Facility	102,300		-	Football field/ Track and field/ Gym
University of Washington	30,000	Football Operations Center	84,912	PAC 12	2013	Weight Room/ Locker Room/ Meeting Rooms/ Lobby/ Viewing Rooms/ Coaches Office
		Marv Harshman Court			2008	Basketball Practice Gym
		Dempsey Indoor	80,000		2001	Indoor Track/ Physical Training/Football, soccer, softball, and baseball practice field
University of California Irvine	27,331	Crawford Gym		Big West		Indoor practice facility for Basketball and Volleyball/800 Gym Seats
		Santora Elite Training Center	8,500			Gym with all kinds of work out equipment
UC San Diego	28,587	Alex G. Spanos Athletic Performance Center	12,000	Big West	2015	Training Facility, Rehab, Outdoor conditioning plaza, office, conference room/ Hydrotub
UC Santa Barbara	22,186	Rob Gym	-	Big West	1959	Multiple Auxiliary Spaces/ Intercollegiate Volleyball Team/ Exercise & Sports Studies/ Intramural Leagues/ Main Court used for volleyball, basketball, badminton, large dances, gym competitions, lecture, concerts. 1500 Seating Capacity
		MAC (multi activity court)	-		-	Most versatile facility at UCSB/ Adventure Program office/ workout facility, roller hockey rink, indoor soccer, lacrosse, basketball, volleyball/ Open for recreational use.
New York University	28,799	Jerome S Coles Sports Center	-	UAA	-	CLOSED Main athletic facility/ 3,000 member use facility daily/ 1,900 Seating in fieldhouse/ 230 seating in natatorium bleachers/ Weight Training/ Rook with 1/6 mile three lane track/ five bball courts. SCHOOL HAS FILED PLANS TO BUILD 23 STORY TOWER WITH 587k SF OF COMMUNITY FACILITY AND ATHLETICS.
University of Michigan-Ann Arbor	29,821	Cliff Keen Arena	-	Big Ten	1988	Gymnastics, Swim arena, volleyball, wrestling/ 1800 Seating Capacity
		U-M Lacross Stadium	-		2017	2,000 Seating Capacity/ Turf field/ Concessions/ Video Board. Locker room
		Competition and Performance Project	280,000		2018	FUTURE Athletic facility containing track and field, lacrosse, rowing, performance and team center. 2000 seating capacity/ shared resources for all teams including strength and conditioning, athletic medicine, meeting space and locker rooms.
University of California Berkeley	30,574	Haas Pavillion	11,877	PAC 12	1999 (TI)	Gym for all sports/ Locker Rooms/ Administrative and Coaches Offices/ Weight Room/ Concessions

SAME CONFERENCE

College Facilities in Same Conference

College	Enrollment	Facility	SF	Conference	Opened	Information
Eastern Washington	11,473	University Recreation Center (URC)	117,699	Big Sky	-	Three level Rec Facility for students, faculty, staff and the community/ Lower level: 19,455 SF contains 850 Capacity Seating, Lobby Area, M & W locker rooms 335 Multi lockers, 195 day use, 140 rental, 4 Arena Use Locker rooms/ Second Level: 17,000 SF fitness center, Gym, Dining Area, URC Tenant Offices/ Third Level: Cardio Area, 2 lane 200 meter track.
		Sports and Recreation Center (SRC)	150,000		-	41,000 SF Fieldhouse, Dance Studio, (2) Gyms, Reese Court Attached, Raquetball Courts, Strength and Conditioning, Wrestling Room
Idaho State	10,536	Reed Gym	100,000	Big Sky	2002	3,040 Seating Capacity/Womens basketball, tennis, and volleyball/ Weight facilities, Classrooms, Teaching Facilities, Viewing Areas, Racquetball Courts, Auxiliary Gym, Track, MPR, Locker Rooms
		Jared Allen Strength and Conditioning Center	-		-	Gym and Training Center
University of Idaho	9,885	Kibbie Dome	-	Big Sky	1975	14 Stories serves as training and competition facility for football, basketball, track and tennis. Capacity of more than 16,000. Includes Athletic Department Offices, 14k SF Locker Rooms, training Rooms, 7k SF Weight Rooms
University of Montana	10,077	Champions Center	51,000	Big Sky	2017	Athletic performance center that contains training and locker facilities, meeting rooms, nutrition stations/ BUILDING SPEC: 51k SF Champions center, 19,400 SF Athletic Performance Center, 7100 SF football locker room (118 Lockers), Athlete and Coaches Locker Room, 2k SF Football team room, (5) meeting rooms
Montana State	15,496	Shroyer Gymnasium	14,500	Big Sky	-	1900 Seat Capacity connected to Brick Breeden Fieldhouse/ Volleyball and Physical Education
Northern Colorado	9,503	Butler-Hancock Athletic Center	-	Big Sky	-	Athletic Offices, Strength & Conditioning, Athletic Training Room, SES Classrooms, Hydrotherapy pool, Locker Rooms
Portland State	21,725	Viking Pavillion	-	Big Sky	-	3,000 Seating Capacity, (2) Videoboards, Lobby, Weight Room, Swimming pool/ Will host Basketball and Volleyball
Sacramento State	28,064	Eli & Edythe Broad Fieldhouse	26,235	Big Sky	2008	Weight Room, Athletic Training, Football & Track Locker Rooms, and Meeting Rooms
		The Nest	1,012		1955	1,012 Seating capacity for Men & Women Basketball, Gymnastics, & Volleyball
Southern Utah	8,550	George S. Eccles Sports Performance Center	9,000	Big Sky	2017	Weight room, agility training, Coaches offices and Locker Rooms
		Multi-Purpose Center	-		-	Practice facility for Men & Women Basketball and Volleyball, Softball, Track.
Weber State	24,000	Swenson Gym	1,200	Big Sky	1962	Walking Track, Basketball/Volleyball Courts, Racquetball Courts, Stress Relief Center, Locker Rooms, and multiple Classrooms
		Wildcat Arena	-		-	Basketball/Volleyball Courts, Weight/Cardio Machines, Free Weights, Varsity Indoor Track, Elevated Indoor Track, University Wellness, and Equipment Checkout desk, Locker Rooms

SIMILAR VISION

Similar to NAU Vision						
College	Enrollment	Facility	Capacity	Conference	Built	Informaiton
UC Santa Barbara	22,186	Rob Gym	1,500	Big Sky	1959	Multiple Auxiliary Spaces/ Intercollegiate Volleyball Team/ Exercise & Sports Studies/ Intramural Leagues/ Main Court used for volleyball, basketball, badminton, large dances, gym competitions, lecture, concerts. 1500 Seating Capacity
UCLA	30,874	Acosta Athletic Complex	-	PAC 12	-	15k SF Weight Room/ 8k SF Athletic Training, Rehab Facility/ 25 Person Meeting Room/ Player, Coaches Locker Room
University of Georgia	28,848	Butts-Mehre Heritage Hall	-	SEC East	-	Players' headquarters, including the locker room, the weight room, the sports medicine training room and meeting rooms, football coaches' offices and meeting rooms, historical displays for all UGA athletic teams
Montana State	15,496	Shroyer Gymnasium	1,900	Big Sky	-	1900 Seat Capacity connected to Brick Breeden Fieldhouse/ Volleyball and Physical Education
Southern Utah	8,550	George S. Eccles Sports Perfomance Center	-	Big Sky	2017	Weight room, agility training, Coaches offices and Locker Rooms
Weber State	24,000	Wildcat Arena	-	Big Sky	-	Basketball/Volleyball Courts, Weight/Cardio Machines, Free Weights, Varsity Indoor Track, Elevated Indoor Track, University Wellness, and Equipment Checkout desk, Locker Rooms
University of Kansas	28,447	Horejsi Family Athletics Center	1,300	Big 12	1999	Volleyball and Basketball practice and competition/ 16,500 SF, Locker Rooms, Concession Stands, Meeting Rooms, Coaches office
		Anderson Family Football Complex	-		2008	80,000 SF/ Lower Level: Football training area, weight room, locker rooms and facilities/ Upper Level: Coaches and administrative offices and academic support services/ Two 100-yard practice fields
University of Miami	10,832	Schwartz Center	-	ACC	2013	North Side of Hecht Athletic center, Schwartz Center sits at 30,000 SF/ Players lounge, Locker Rooms, 100+ Seat Auditorium, Student-Athlete academic center, academic & compliance offices, Coahces offices.

RECENT FACILITY IMPROVEMENTS

Recent College Facility Improvements				
Project	Facility	Design	SF	Other Info & Amenities
Penn State Locker Room	Louis and Mildred Lasch Football Building	Advent	89,000	Weight room, training facility, whirlpool therapy, meeting rooms, video production suite, coaches and staff office, players lounger, academic support center and computer room
Florida Gators Indoor Practice Facility	Sanders Football Practice Fields	-	-	120 Yard turf football field, (2) natrual grass firleds video work room, equipment storage and restrooms,
South Carolina Indoor Practice Facility	Jerri & Steve Spurrier Indoor Facility	Advent	-	locker rooms, field improvements
Michigan State Spartans locker room	Davis Wade Stadium	LPK	11,000 (Locker Room)	custom-built lockers and additional locker rooms for coaches and staff, updated athletic training room and an equipment room
Kentucky Wildcats Football training facility	Joe Craft Football Training Center	-	100,000 (Total) 15,000 (Weight Room)	162-seat team meeting room, giant screens, 120 additional lockers, player and coaches retina scanners, plunge pool, two outdoor fields, steam rooms, game rooms
Washington Huskies locker room upgrade	Husky Stadium	Gallagher	83,000 (Football operations center)	$10,500 on each players locker, 118 custom fabricated lockers, Powder coated metal exterior including faceted doors and a custom perforation pattern, Light box header with personalized name and number graphic
Michigan Football Performance Center	Glenn E. Schembechler Football Center	-	24,000 (Renovation)	training, recovery, and nutrition, as well as team meeting rooms, administrative space, and support staff locker areas
Florida State locker upgrade	-	-	-	Remodeled lounge areas and locker rooms featuring iPads for each player to watch game film, communicate with coaches and check email and lounge areas.
USC John McKay center	John McKay Center	Advent	110,000	The building houses the football teams locker rooms, offices, meeting rooms, an underground practice facility, weight room, and a training room.
University of Oklahoma	Memorial Stadium	Populous	-	The upgrades will include added seats in the south end zone, 43 additional restrooms, 69 additional points of sale for concessions, a 46,000-sqaure foot fan plaza, a covered upper concourse, redevelopment of the Barry Switzer Center that will add nearly 50,000 square feet of space for student-athletes. Weight room and training facilities adding an additional 30,852-square feet for a conditioning and speed enhancement center
Texas A&M locker room	Bright Complex	-	36,000 (Renovaiton)	locker rooms, hallways, meeting rooms, sports medicine facility and hydrotherapy pool
Clemson Tigers - Football Facility	Allen N Reeves Football Complex	HOK	-	23,000 square foot weight room, dining area, meeting rooms , outdoor players' village that includes a basketball court, wood-burning fireplaces, grills and a miniature golf course

CAPACITY/CONFERENCE/ENROLLMENT

College Arenas with 1000-2500 Capacity

College	Enrollment	Arena	City	Conference	Capacity	Opened
Houston Baptist University	3,325	Sharp Gymnasium	Houston	Southland	1,000	1963
CSU	33,413	Hornets Nest	Sacramento	Big Sky	1,021	1955
St. Francis College	2,563	Generoso Pope Athletic Complex	Brooklyn	Northeast	1,200	1971
Jacksonville University	2,889	Swisher Gymnasium	Jacksonville	ASUN	1,500	1953
High Point University	4,546	Millis Athletic Convocation Center	High Point	Big South	1,750	1959
Colgate University	2,882	Cotterell Court	Hamilton	Patriot	1,750	1959
Longwood University	4,386	Willett Hall	Farmville	Big South	1,807	1980
Rider University	4,060	Alumni Gymnasium	Lawrenceville	MAAC	1,950	1958
Portland State University	21,633	Peter Stott Center (Renovated)	Portland	Big Sky	3,400	1966
University of the Incarnate Word	6,423	Mcdermott Center	San Antonio	Southland	2,000	1989
Sacred Heart University	5,428	William H. Pitt Center	Fairfield	Northeast	2,062	1997
University of Massachusetts	23,373	Costello Athletic Center	Lowell	America East	2,100	1964
Dartmouth College	4,310	Leede Arena	Hanover	Ivy	2,100	1986
Warner College	2,200	Spiro Sports Center	Staten Island	Northeast	2,100	1999
Canisius College	2,595	Koessler Athletic Center	Buffalo	MAAC	2,176	1968
Harvard	6,710	Lavietes Pavilion	Aliston	Ivy	2,195	1982
Presbyterian College	1,063	Templeton Phsical Education Center	Clinton	Big South	2,300	1975
Purdue University	31,006	Hilliard Gates Sports Center	Fort Wayne	Summit	2,300	1981
Manhattan University	3,637	Draddy Gymnasium	Bronx	MAAC	2,345	1978
CSUN	41,548	Matadome	Northridge	Big West	2,400	1962
Niagra University	3,136	Gallagher Center	Lewiston	MAAC	2,400	1949
Long Island University	6,273	Wellness, Rec & Athletic Center	Brooklyn	Northeast	2,500	2006
UTRGV	26,000	UTRGV Fieldhouse	Edinburg	WAC	2,500	1969

Arenas in Same Conference

College	Enrollment	Arena	City	Conference	Capacity	Opened
Eastern Washington	11,473	Reece Court	Cheney	Big Sky	6,000	1975
Idaho State	10,536	Holt Arena	Pocatello	Big Sky	12,000	1951
Idaho	9,885	Idaho Central Credit Union		Big Sky	4,200	NOT BUILT
Montana	10,077	Dahlberg Arena	Missoula	Big Sky	7,321	1953
Monatana State	15,496	Brick Breeden Fieldhouse	Bozeman	Big Sky	8,455	1957
Northern Arizona	26,506		Flagstaff	Big Sky		
Northern Colorado	9,503	Bank of Colorado	Greeley	Big Sky	2,992	1975
Portland State	21,725	Peter W. Stott Athletic Center	Portland	Big Sky	3,000	1966
Sacramento State	28,064	Hornets Nest	Sacremento	Big Sky	1,012	1955
Southern Utah	8,550	America First Events Center	Cedar City	Big Sky	5,300	1985
Weber State	24,000	Dee Events Center	Ogden	Big Sky	11,592	1977

20k-30k Enrollment Colleges

College	Enrollment	Arena	City	Conference	Capacity	Opened
University of Georgia	28,848	Stegeman Coliseum	Athens	SEC East	10,523	1964
University of Washington	30,000	Hec Edmundson Pavilion	Seattle	PAC 12	10,000	1927
University of California Irvine	27,331	Bren Events Center	Irvine	Big West	6,000	1987
UC San Diego	28,587	RIMAC Arena	La Jolla	Big West	5,000	1995
UC Santa Barbara	22,186	UCSB Conference Services	Santa Barbara	Big West	5,600	1979
New York University	28,799	Carnesecca Arena	Queens	UAA	5,602	1961
University of California LA	30,874	Pauley Pavillion	LA	PAC 12	13,800	1964
University of Michigan-Ann Arbor	29,821	Crisler Center	Ann Arbor	Big Ten	12,707	1967
University of California Berkeley	30,574	Haas Pavillion	Berkeley	PAC 12	11,858	1933

ATTACHMENT F: PROGRAM DEVELOPMENT & CONCEPTUAL DESIGN DEVELOPMENT

July 11, 2016 – DWL/HOK

Please note the below items of Attachment F **are not applicable** to this Request for Qualifications:

- The Arena (Convocation Center) is no longer part of the program.
- The location of the Student Athlete Performance Center (Health Research Sport Performance Center) will be changed to that shown in the 2018 Economic Feasibility Report by NATIONS GROUP (Attachment E). I.e. South of the Skydome instead of North of the Skydome

The following components of Attachment F **shall remain relevant and applicable** to this Request for Qualifications:

- Certain program elements.
- Parking concerns.
- Exterior Finish options.
- Interior view ideas.
- Structural and Systems Narratives. However, Owner is considering local plant service instead of central plant service.

DWL ARCHITECTS + PLANNERS, INC.

HOK

NORTHERN ARIZONA UNIVERSITY

HEALTH RESEARCH SPORT PERFORMANCE AND CONVOCATION CENTER

PROJECT NO. 09.731.151 | JULY 11, 2016
PROGRAM DEVELOPMENT + CONCEPTUAL DESIGN REPORT

VOLUME I

DESIGN NARRATIVE

The proposed Northern Arizona University Health Research Sport Performance and Convocation Center is a collection of structures that are integrated with the existing Skydome. The Health Research Center and the Sport Performance Center are located in a three story building at the intersection of South San Francisco Street and East McConnell Drive which extends south and up the slope along South San Francisco Street to interface with the Skydome. The Health Research Center's building program is comprised of approximately 32,000 sf of Athletic Training, Physical Therapy, and Biomechanics. The Sports Performance Center occupies 44,000 sf of this building and the program includes Athletic Academics, Strength and Conditioning and Training/Sports Medicine. The building has a direct connection to the event level of the Skydome. A 15,000 sf Storage Facility structure is located adjacent to the service access doors at the event level of the Skydome as well. The Health Research Center and the Sport Performance Center are connected to a Convocation Center, another component in this collection of structures, at the concourse level of the Skydome. This connection is made via a covered pedestrian walkway that hugs the curved façade of the Skydome and enters into a shared concourse and entrance lobby atrium between the Convocation Center and the existing Skydome.

The Convocation Center is a 4,000 to 5,000 seat, 148,000 sf, multi-purpose facility, that will be the home for Northern Arizona University Men's and Women's Basketball. The building program includes the full complement of lockers and support spaces for game day and practice at the event level but also auxiliary and visiting team spaces that can be swing spaces for other multi-purpose functions. A full service kitchen will serve the club and suites located at the concourse level, an athlete training table and banquets of up to 250 people. The seating bowl will have telescopic seating that will allow the event level floor space to expand to accommodate additional courts for practice and floor seating for concerts, convocations, trade shows, etc., greatly increasing the flexibility of the facility. Ticketing and Administrative areas are also located at the event level of the Convocation Center which corresponds to the concourse level of the Skydome. A grand stair and escalators will rise from the shared lobby between the Skydome and the Convocation Center to the main concourse of the facility. Spectator amenities are distributed throughout the building.

The exterior design of the Health Research Sport Performance Center and Convocation Center takes its cues from the established architectural language of the adjacent campus context as well as the surrounding mountains, forests and natural setting which give Northern Arizona University its unique sense of place. Specifically the building housing the Health Research Center and Sport Performance Center is tucked into the slope of the topography as it curves south along South San Francisco Street responding to the site. The grey color of the fibre cement panels of the upper level of the building, the natural medium brown brick base, the blending of glass and metal panels and the use of wood as louvers and sun-shading fins echoes the architecture of the existing campus buildings to the north. The color and materiality of the building connects the new structure to its natural environment. The location of the building at the intersection of South San Francisco Street and East McConnell Drive makes it a "gateway" to the southern portion of the campus.

In a similar way, the Convocation Center which is located on the south side of the existing Skydome enables the creation of a new entrance identity for the Skydome. The exterior design of the Convocation Center responds to its context as well. The new structure sits tight against the Skydome separated only by their shared entrance lobby which is like an architectural "zipper" holding the two together. The size and volume of the Convocation Center makes it a partner to the Skydome in the landscape and on the horizon. The angularity of the new building is a foil to the spherical form of the Skydome but at the same time the curvilinear roof form recalls the shape of the dome. The angled jointing of the Convocation Center's metal cladding is reminiscent of the ridges on the mountains in the distance and is in contrast to the smooth surface of the Skydome' s skin. The grey fibre cement panels of the base of the Convocation Center is the same material as the upper level of the Health Research Sports Performance Center which ties the two structures together compositionally and visually.

PROGRAM

CONVOCATION CENTER - PROGRAM

	NORTHERN ARIZONA UNIVERSITY CONVOCATION CENTER							
	EVENT AREA	QUANTITY	MP SF	RFP SF	OPTIMUM	RECOMMENDED			DESCRIPTION
	Seating Capacity					**4,200**	**4,600**	**5,000**	
1.1	Event Space	1	10,000	10,000	10,000	10,000	10,000	10,000	Court, Event Area
	SEATING AREA								
2.1	Fixed Seating	3,900	31,000	31,000	42,000	20,160	23,360	26,560	At 8SF/Seat, the fixed seats = 2,520 fixed seats for 4,200 total seats 2,920 fixed seats for 4,600 total seats 3,320 fixed seats for 5,000 total seats
2.2	Retractable Seats/Bleachers	800	4,000	4,000	4,000	8,400	8,400	8,400	1,680 seats retract on multiple sides, 5 SF/seat
2.3	Floor Seats	170		-	-				170 seats (sf in 1.1)
2.4	Suites	6	1,950	1,950	1,950	2,000	2,000	2,000	120 seats; 6 suites x +/- 325sf each
2.5	Club		875	875	875	925	1,000	1,075	Size increases with seat count of arena
	Sub Total	5,000 Seats	**47,825**	**47,825**	**58,825**	**41,485**	**44,760**	**48,035**	
	SPECTATOR FACILITIES								
3.1	Men + Women Restrooms	8	5,000	5,000	5,000	4,200	4,600	5,000	1:50 Ratio (1 fixture : 50 people) at 50SF/ Fixture
3.2	Family Toilet	2	160	160	160	160	160	160	2 locations @ 80sf each (sink, toilet, changing station)
3.3	First Aid	1	200	200	200	200	200	200	Locate central to facility (cots, restroom, cabinets)
	Sub Total		**5,360**	**5,360**	**5,360**	**4,560**	**4,960**	**5,360**	
	FOOD SERVICE / MERCHANDISING								
4.1	Prep/Warming Kitchen	1	1,200	1,200	1,200	1,200	1,200	1,200	Event level, near dock, serve Sky Dome
4.2	Concession Stands	7	3,040	3,040	3,040	1,700	1,900	2,000	17POS = 4,200 seats 19POS = 4,600 seats 20POS = 5,000 seats 100sf/POS, POS = 1/250 seats
4.3	Team Store/Kiosks	1	1,200	1,200	1,200	1,200	1,200	1,200	Main lobby, could share space with ticketing program
4.4	Staging Kitchen/ Pantry	1	-	-	-	1,000	1,000	1,000	Locate near hospitality suites
4.5	Supply Storage	1	-	-	-	200	200	200	Locate near club area/ hospitality suites
	Sub Total		**5,440**	**5,440**	**5,440**	**5,300**	**5,500**	**5,600**	
	NUTRITION - KITCHEN / DINING								
5.1	Full Service Kitchen	1	-	-	-	2,600	2,600	2,600	
5.2	Dry Storage	1	-	-	-	1,200	1,200	1,200	
5.3	Cold Storage	1	-	-	-	1,200	1,200	1,200	
5.4	Dining Room	1	-	-	-	1,000	1,000	1,000	
5.5	Buffet / Serving / Storage	1	-	-	-	300	300	300	
	Sub Total		**-**	**-**	**-**	**6,300**	**6,300**	**6,300**	

CONVOCATION CENTER - PROGRAM CONT'D

	CIRCULATION (HORIZ / VERT)	QUANTITY	MP SF	RFP SF	OPTIMUM	RECOMMENDED			DESCRIPTION
6.1	Lobby	1	2,000	2,000	3,000	2,000	2,000	2,000	Includes stairs, elevator, escalator, shared w/ Sky Dome
6.2	Main Concourse	1	21,000	21,000	22,500	16,800	18,400	20,000	Concourse circulation: +/- 4SF/Person
6.3	Concourse Trophy/Display Area	1	-	-	-				SF included in Lobby
6.4	Vertical Transportation	2	350	350	350	350	350	350	2 Escalators, 2 Passenger elevators, 1 Freight Elevator
6.5	Suite Level	2	350	350	350	350	350	350	Suite corridor/ lobby
	Sub Total		**23,700**	**23,700**	**26,200**	**19,500**	**21,100**	**22,700**	
	PRESS FACILITIES / BROADCAST								
7.1	Workroom	1	300	300	300	300	300	300	Data access, copiers, storage, internet stream hookup
7.2	Control Areas	2	600	600	600	500	500	500	2 x 250sf each; access control
7.3	TV Support/Cameras	2	100	100	100	80	80	80	Broadcast Camera platform locations with connection
	Sub Total		**1,000**	**1,000**	**1,000**	**880**	**880**	**880**	
	BUILDING OPS/SUPPORT								**DESCRIPTION**
8.1	Offices	6	720	720	720	720	720	720	120sf each, building operations + management
8.2	Meeting Rooms	3	1,400	1,400	1,400	1,400	1,400	1,400	Arrangement for sharing with other programs
8.3	Security	1	200	200	200	200	200	200	Locate near dock entrance, includes office/ receiving
8.4	Loading/Staging/Marshalling	1	3,400	3,400	3,400	3,400	3,400	3,400	Back of house facility access
8.5	Loading Docks	3	1,600	1,600	1,600	1,600	1,600	1,600	2 General service docks, 1 Drive-in dock
8.6	Building Storage	4	3,000	3,000	3,000	2,500	2,500	2,500	Includes event level and concourse general storage
8.7	Employee Lockers/Support	1	1,400	1,400	1,400	1,400	1,400	1,400	Men's + Women's areas with changing/ shower facilites
8.8	Building Maintenance	1	1,000	1,000	1,000	1,000	1,000	1,000	Shop/Storage Area/Janitor's Closet
	Sub Total		**12,720**	**12,720**	**12,720**	**12,220**	**12,220**	**12,220**	
	TICKETING / ADMINISTRATION								**DESCRIPTION**
9.1	Ticket Office	1	1,200	1,200	1,200	800	800	800	Location at lobby
9.2	Admin Suite	1	1,200	1,200	1,200	800	800	800	Location at lobby
	Sub Total		**2,400**	**2,400**	**2,400**	**1,600**	**1,600**	**1,600**	

CONVOCATION CENTER - *PROGRAM CONT'D*

	LOCKERS / TEAM SUPPORT	QUANTITY	MP SF	RFP SF	OPTIMUM	RECOMMENDED			DESCRIPTION
10.1	Men's Home Basketball Locker	1	2,500	2,500	2,500	1,800	1,800	1,800	Locker Room, Lounge, Toilet/Shower
10.2	Women's Home Basketball Locker	1	2,500	2,500	2,500	1,800	1,800	1,800	Locker Room, Lounge, Toilet/Shower
10.3	Men's Coaches' Locker	1	500	500	500	500	500	500	Adjacent but separate from team area
10.4	Women's Coaches' Locker	1	500	500	500	500	500	500	Adjacent but separate from team area
10.5	Visiting Team Locker Rooms/Auxiliary Lockers	2	2,400	2,400	2,400	2,400	2,400	2,400	2 @ 1,200sf each
10.6	Treatment/Training	1	600	600	600	600	600	600	
10.7	Officials' Locker Rooms	2	400	400	400	400	400	400	2 @ 200sf each
10.8	Private Study Room	1	-	-	-				Separate from lockers
10.9	Video Room/ Film Storage	1	-	-	-				
10.10	Service room	1	-	-	-	250	250	250	Office w/ Laundry and Equipment issue area
10.11	Equipment Storage	1	-	-	-	200	200	200	
10.12	Band Storage	1	-	-	700	700	700	700	25' x 25' storage room with 4' wide door; w/ separate coat/ jacket storage closet
	Sub Total		**9,400**	**9,400**	**10,100**	**9,150**	**9,150**	**9,150**	
	PRODUCTION/PERFORMER AREAS								**DESCRIPTION**
11.1	Promoter Office	1	150	150	150	150	150	150	Shared room with other program functions
11.2	Stagehands Room/Storage	1	400	400	400	300	300	300	Confirm location and need
11.3	Green Rooms/Dressing Rooms	3	600	600	600	750	750	750	Shared rooms with other program functions
	Sub Total		**1,150**	**1,150**	**1,150**	**1,200**	**1,200**	**1,200**	
	TECH / SPECIAL / SUPPORT								**DESCRIPTION**
12.1	Videoboard	1	-	-	1,000	1,000	1,000	1,000	
12.2	AV	1	-	-	1,000	800	800	800	
12.3	Mech Support	1	-	-	8,000	8,000	8,000	8,000	Mechanical 6,400 sf; Electrical 1,600 sf; Vary with size
	Sub Total		**-**	**-**	**10,000**	**9,800**	**9,800**	**9,800**	
		NSF	**108,995**	**108,995**	**133,195**	**111,995**	**117,470**	**122,845**	
			136,000	**136,000**	**159,834**	**134,394**	**140,964**	**147,414**	Includes: Circulation/Wall Thickness/Mech.
			GSF (x1.25)	*GSF (x1.25)*	*GSF (x1.2)*	*GSF (x1.2)*	*GSF (x1.2)*	*GSF (x1.2)*	

SPORT PERFORMANCE CENTER - PROGRAM

	NORTHERN ARIZONA UNIVERSITY SPORT PERFORMANCE CENTER ATHLETIC ACADEMICS	QUANTITY	MP SF	RFP SF	OPTIMUM	RECOMND	DESCRIPTION
1.1	Computer Lab for 50 people	1	1,700	1,700	1,700	1,360	40 Students
1.2	Tutor Rooms	6	960	960	700	720	4-5 people each; 6 rooms at 120sf each.
1.3	Classroom	1	600	600	600	-	Share with AT Academic
1.4	Quiet Reading Area	1	500	500	500	500	For 30 people
1.5	Multi-Purpose Room	1	2,000	2,000	2,000	1,500	For 70 people
1.6	Auditorium	1	2,500	2,500	2,500	2,000	For 150 people, Shared with other programs
1.7	Offices	8	600	600	1,360	830	1 @ 150sf, 5 @ 120sf, 2 @ 40sf
1.8	Conference Room	2	300	300	600	600	2 conference rooms for 15 people
1.9	Academic Support Work Room / [Tech Room]	1	300	300	300	300	Includes storage
1.10	Academic Reception/Lobby	1	800	800	800	800	Lobby at Levels 2+3
1.11	Kitchen/ Breakroom	1	-	-	150	150	
1.12	Advising Room	1	-	-	100	-	
	Sub Total		**10,260**	**10,260**	**11,310**	**8,760**	
	STRENGTH AND CONDITIONING						
2.1	Platform Area	1	3,000	3,000	22,000	6,000	*22,000 sf includes platform, agility, cardio, equipment, and exercise areas
2.2	Agility Area	1	2,000	2,000	-	1,000	* Cody indicated he could use court for agility too.
2.3	Cardio Area	1	700	700	-	700	*
2.4	Dumbell/Kettlebell/Heavy bag area	1	700	700	-	700	*
2.5	Individual exercise area	1	700	700	-	700	*
2.6	Offices	2	510	510	990	550	1 @ 150SF, 400SF Bullpen
2.7	Nutrition area	1	200	200	200	200	
2.8	Storage	1	300	300	300	300	
	Sub Total		**8,110**	**8,110**	**23,490**	**10,150**	

SPORT PERFORMANCE CENTER - PROGRAM CONT'D

	TRAINING/SPORTS MEDICINE	QUANTITY	MP SF	RFP SF	OPTIMUM	RECOMND	DESCRIPTION
3.1	Offices	6	510	510	1,275	800	5 offices x 120 sf; 1 office x 195 sf
3.2	Exam Room	2	120	120	440	240	1 exam @ 120sf; 1 consult room @ 120sf
3.3	Restroom w/shower	1	150	150	720	500	1 restroom for drug testing x 60sf; 2 locker rooms w/ 2 showers & 2 stalls x 200sf
3.4	Taping area	1	900	900	350	450	
3.5	Rehab equipment area/Treatment	1	900	900	2,800	1,500	Rehab x 1,200sf; Reconditioning x 1600sf layout tbd
3.6	Hydrotherapy area	1	1,300	1,300	1,000	1,000	
3.7	Storage	2	300	300	1,000	750	Per court; 2 storage rooms x 375 sf
3.8	Garage/ vehicle storage	1	-	-	500	500	2 state vehicles; 2 Deere gators; 1 trailer
3.9	Rest Area/ Sleep Pod	1	-	-	250	250	
3.10	Kitchen/ common area	1	-	-	200	200	
3.11	Conference room	1	-	-	320	-	
3.12	Reception/ Billing and Medical area	2	-	-	200	200	1 Reception 120 sf; 1 secure storage x 80 sf
	Sub Total		**4,180**	**4,180**	**9,055**	**6,390**	
	BUILDING SUPPORT						
4.1	Entry Lobby/Vertical Circulation	1	1,000	1,000	1,000	800	
4.2	Building Storage	1	600	600	600	500	
4.3	MEP Support	1	-	-	6,000	6,000	
4.4	IT Support	1	-	-	650	650	
	Sub Total		**1,600**	**1,600**	**8,250**	**7,950**	
	TOTAL	**NSF**	**24,150**	**24,150**	**52,105**	**33,250**	
		GSF (x1.32)	**32,000**	**31,878**	**68,779**	**43,890**	Includes: Circ./Wall Thickness/Mech.

HEALTH RESEARCH CENTER - PROGRAM

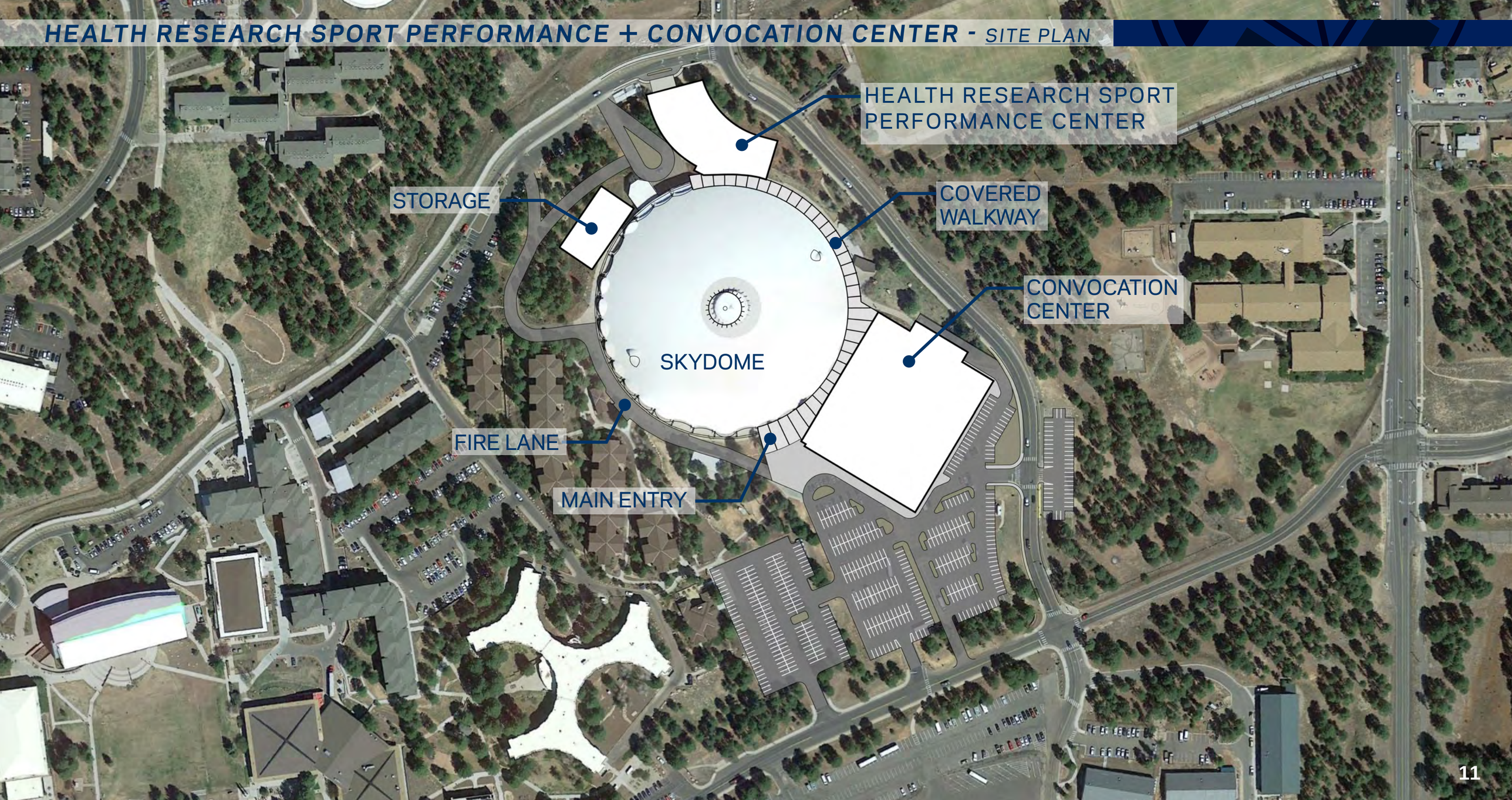
	NORTHERN ARIZONA UNIVERSITY HEALTH RESEARCH CENTER ATHLETIC TRAINING	QUANTITY	MP SF	RFP SF	OPTIMUM	RECOMND	DESCRIPTION
1.1	Classroom	1	-	1,400	1,750	1,750	50 students x 35sf
1.2	Teaching Lab	1	-	1,400	3,500	3,500	50 students x 70sf
1.3	Offices	6	-	900	1,500	720	6 offices @ 120sf
1.4	Research Lab - shared with PT	1	-	4,000	4,000	4,000	Barometric Chamber/ Movement/ Biomechanics/ concussions
1.5	Storage	1	-	-	192	1,000	12' x 16' storage space
	Sub Total		**-**	**7,700**	**10,942**	**10,970**	
	PHYSICAL THERAPY						
2.1	Classrooms	2	-	3,600	3,600	3,600	60 students x 30sf
2.2	Teaching Lab	1	-	2,800	2,800	2,800	40 students x 70sf
2.3	Offices	19	-	2,100	2,460	2,460	1 director office x 160sf; 16 faculty offices x 120sf; 1 office for GA students; 1 Admin office (shared w/ AT)
2.4	Research Lab - shared with AT	1	-	500	500	500	Shared 4,000 sf w/ AT + 500 sf
2.5	PT Community Office	1	-	-	300	300	clinic space for pro-bono w/ private reception & waiting
	Sub Total		**-**	**9,000**	**9,660**	**9,660**	
	BIOMECHANICS						
3.1	Labs	3	-	-	-	900	3 labs @ 300sf; (2) Biology, (1) ME
3.2	Labs (Shared)	2	-	-	-	1,200	2 shared labs @ 600sf
3.3	Offices	7	-	-	-	700	7 offices @ 100sf; (3) PT (1) Nursing, (2) Biology, (1) ME
	Sub Total		**-**	**-**	-	**2,800**	
	BUILDING SUPPORT						
4.1	MEP Support	1	-	-	1,000	1,000	
4.2	IT Support	1	-	-	300	300	
	Sub Total		**-**	**-**	**1,300**	**1,300**	
		NSF	**0**	**16,700**	**21,902**	**24,730**	
		GSF (x 1.3)	**0**	**21,700**	**28,473**	**32,149**	Includes: Circulation/Wall Thickness/Mech.

SKYDOME STORAGE - PROGRAM

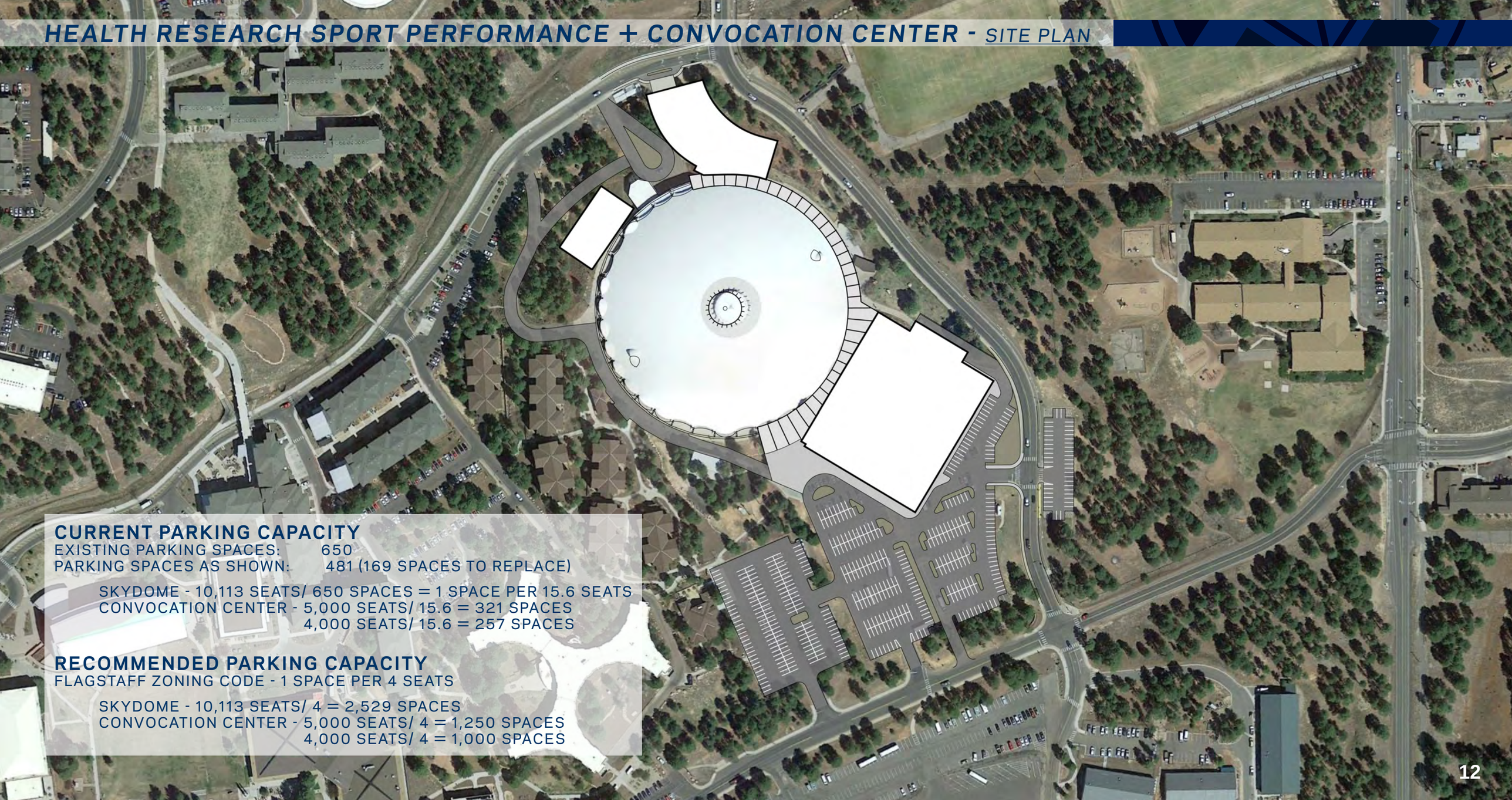
	NORTHERN ARIZONA UNIVERSITY						
	SKYDOME STORAGE						
	SKYDOME STORAGE	QUANTITY	MP SF	RFP SF	OPTIMUM	RECOMND	DESCRIPTION
1.1	New Storage Facility	1	15,000	15,000	15,000	15,000	12,000 sf building footprint w/ 3,000 sf Mezzanine
	Sub Total		**15,000**	**15,000**	**15,000**	**15,000**	
	TOTAL	**NSF**	**15,000**	**15,000**	**15,000**	**15,000**	
		GSF (x1)	**15,000**	**15,000**	**15,000**	**15,000**	Total above is GSF

PLANS + RENDERINGS

HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER - *SITE PLAN*



HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER - SITE PLAN



CURRENT PARKING CAPACITY

EXISTING PARKING SPACES: 650
PARKING SPACES AS SHOWN: 481 (169 SPACES TO REPLACE)

SKYDOME - 10,113 SEATS/ 650 SPACES = 1 SPACE PER 15.6 SEATS
CONVOCATION CENTER - 5,000 SEATS/ 15.6 = 321 SPACES
4,000 SEATS/ 15.6 = 257 SPACES

RECOMMENDED PARKING CAPACITY

FLAGSTAFF ZONING CODE - 1 SPACE PER 4 SEATS

SKYDOME - 10,113 SEATS/ 4 = 2,529 SPACES
CONVOCATION CENTER - 5,000 SEATS/ 4 = 1,250 SPACES
4,000 SEATS/ 4 = 1,000 SPACES

HEALTH RESEARCH SPORT PERFORMANCE CENTER - AUDITORIUM

HEALTH RESEARCH SPORT PERFORMANCE CENTER - STRENGTH & CONDITIONING

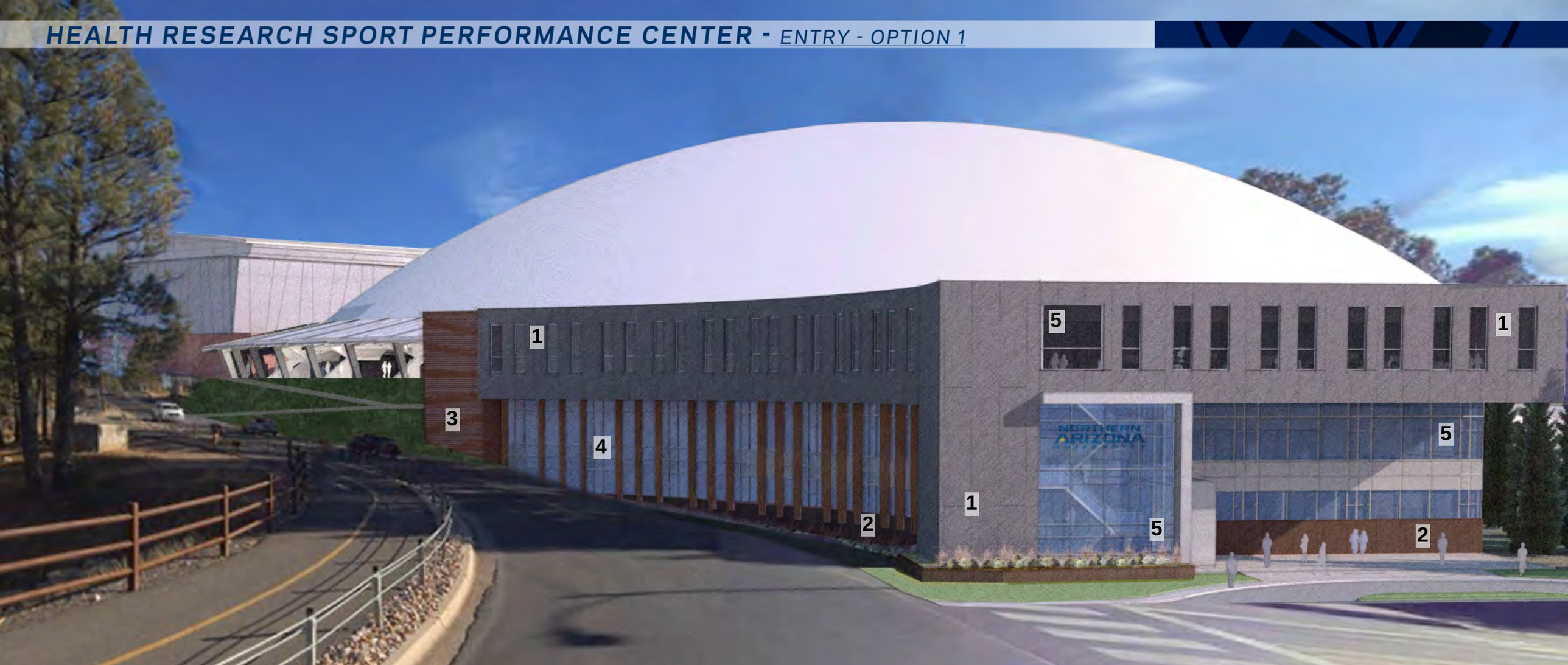

NAU
LUMBERJACKS
SPORTS MEDICINE
NAU
LUMBERJACKS


DETERMINED
INSPIRED
HARD-WORKING
PROUD

HEALTH RESEARCH SPORT PERFORMANCE CENTER - *PROGRAM VIEW*

HEALTH RESEARCH SPORT PERFORMANCE CENTER - ENTRY - OPTION 1

HEALTH RESEARCH SPORT PERFORMANCE CENTER - ENTRY - OPTION 1

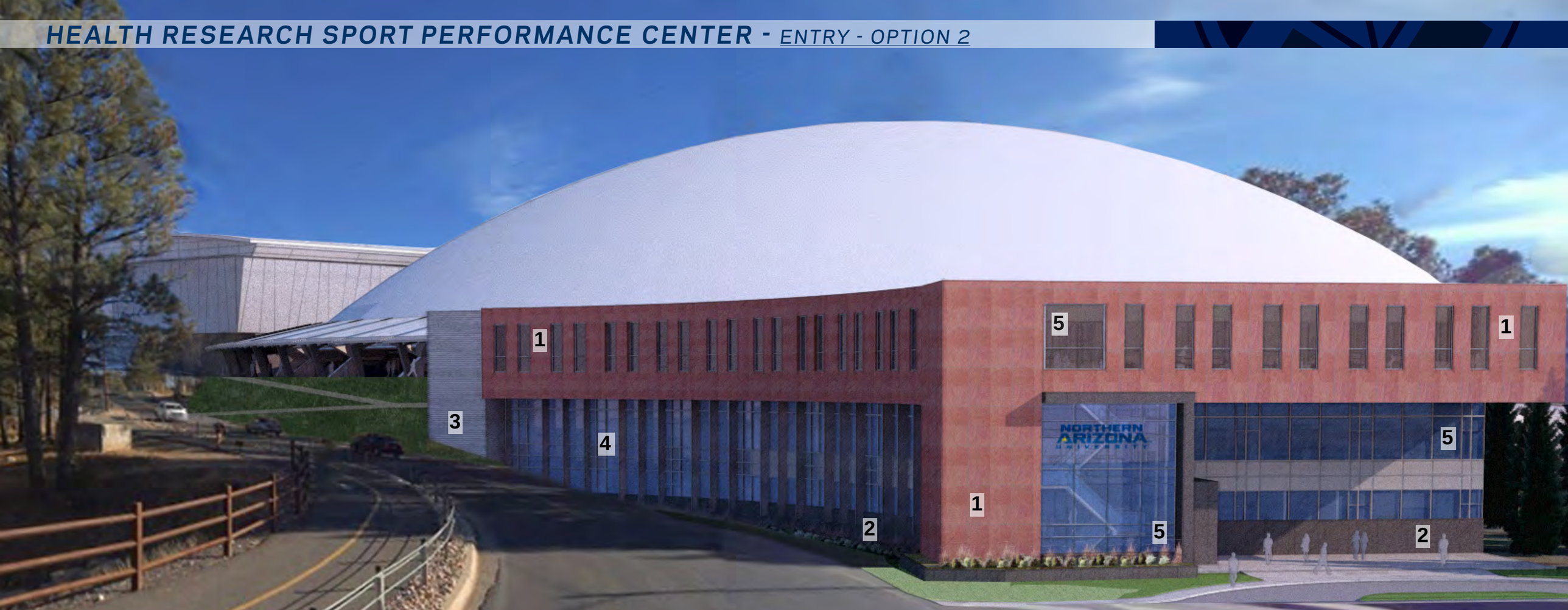


EXTERIOR FINISHES

(1) Modular cement fiber wall panels on the exterior of stair and the third floor level
(2) Brick masonry veneer on base of walls below all windows at the ground floor level
(3) Metal rain panels & louvers with metallic paint finish at southeast corner on all levels
(4) Earth-tone anodized aluminum curtain-wall with dark gray tinted low-e glass
(5) Clear anodized aluminum storefront window with dark gray tinted low-e glass

HEALTH RESEARCH SPORT PERFORMANCE CENTER - ENTRY - OPTION 2

HEALTH RESEARCH SPORT PERFORMANCE CENTER - ENTRY - OPTION 2

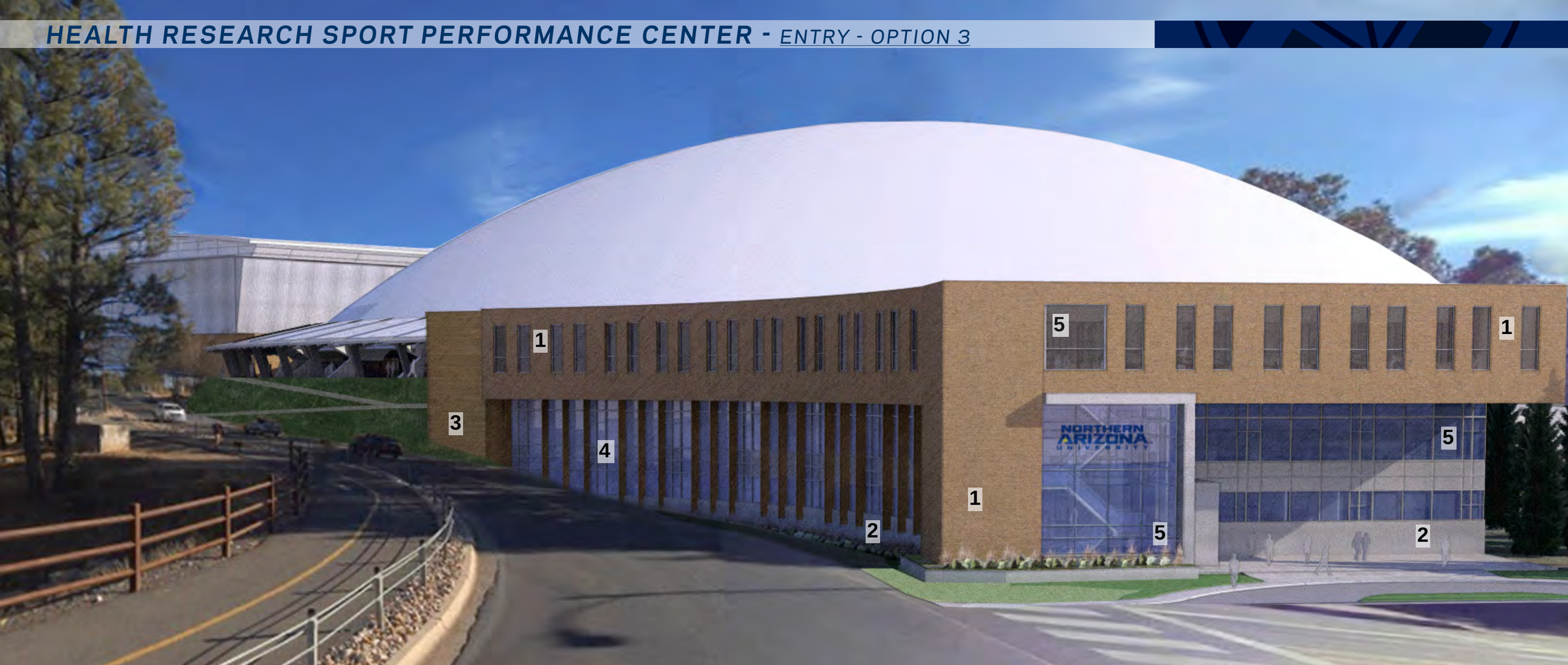


EXTERIOR FINISHES

(1) Sandstone wall cladding on the exterior of the stair and the third floor level
(2) Brick masonry veneer on base of walls below all windows at the ground floor level
(3) Metal rain panels & louvers with metallic paint finish at southeast corner on all levels
(4) Dark gray-tone anodized aluminum curtain-wall with dark gray tinted low-e glass
(5) Light gray anodized aluminum storefront window with dark gray tinted low-e glass

HEALTH RESEARCH SPORT PERFORMANCE CENTER - ENTRY - OPTION 3

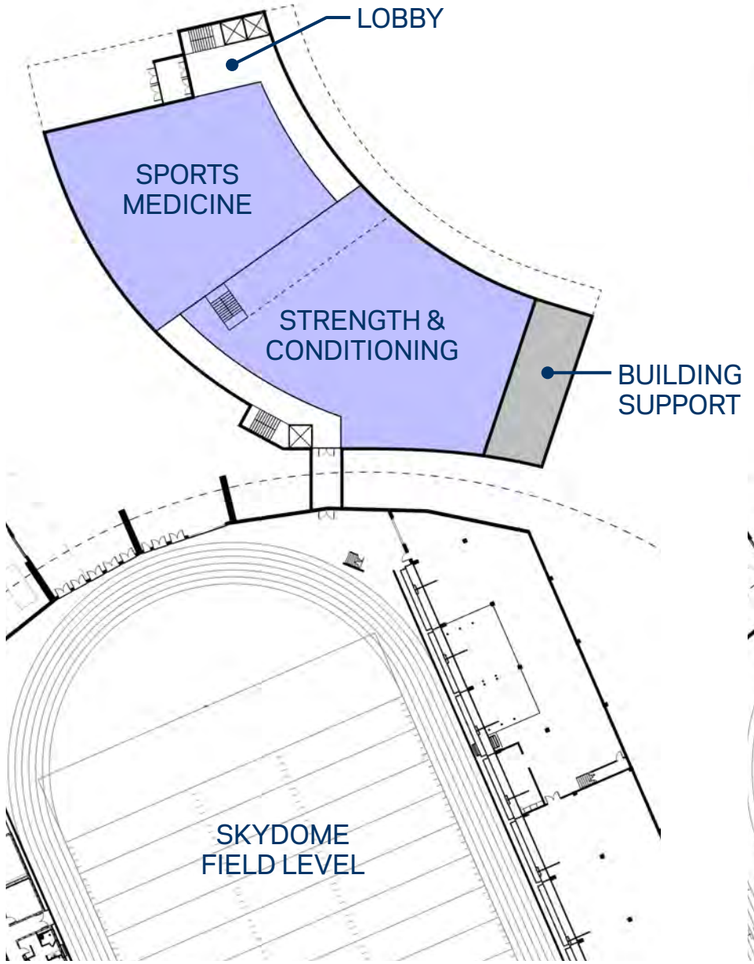
HEALTH RESEARCH SPORT PERFORMANCE CENTER - ENTRY - OPTION 3



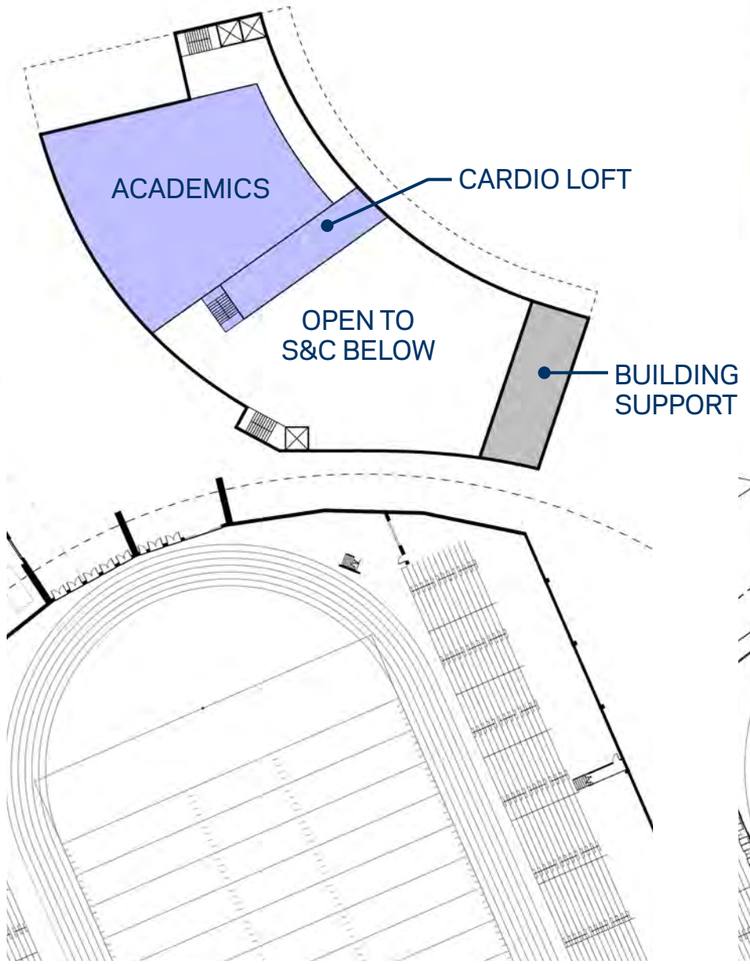
EXTERIOR FINISHES

(1) Earth-tone brick veneer on the exterior of the stair and the third floor level
(2) Metal rain panels on base of walls below all windows at the ground floor level
(3) Metal rain panels & louvers with metallic paint finish at southeast corner on all levels
(4) Earth-tone anodized aluminum curtain-wall with dark gray tinted low-e glass
(5) Clear anodized aluminum storefront window with dark gray tinted low-e glass

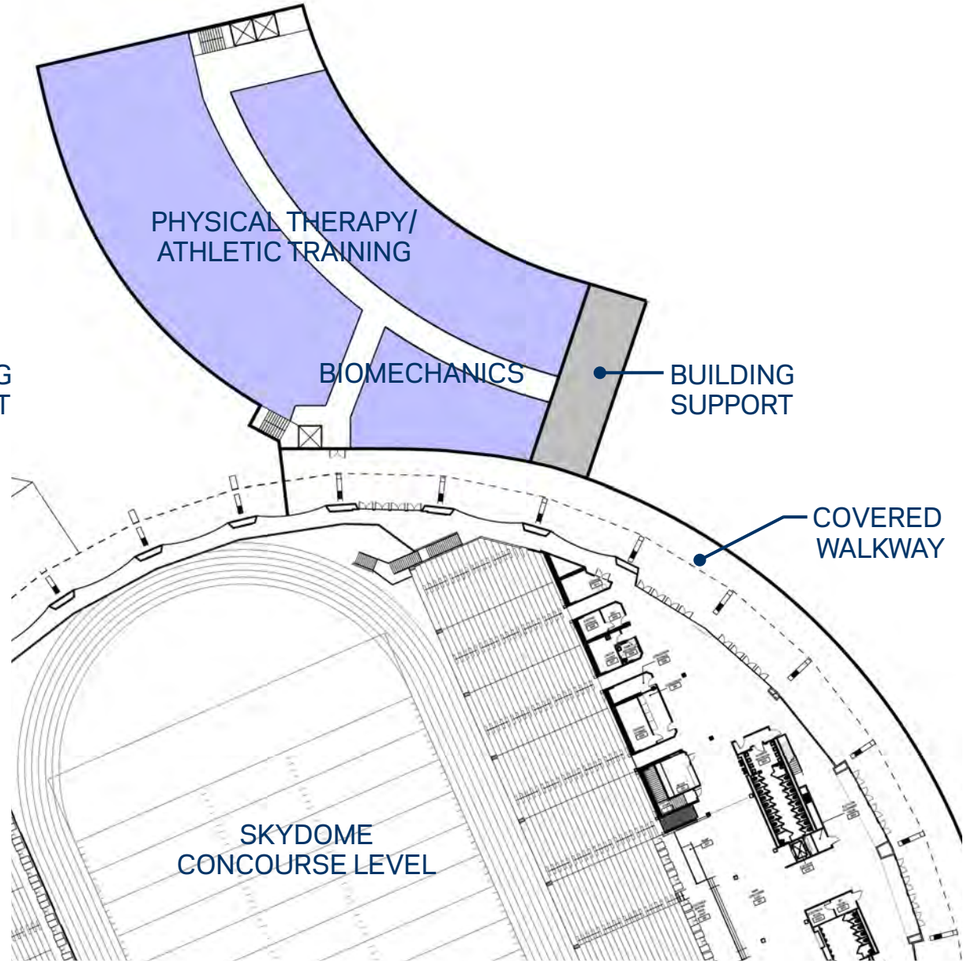
HEALTH RESEARCH SPORT PERFORMANCE CENTER - FLOOR PLANS



LEVEL 1



LEVEL 2

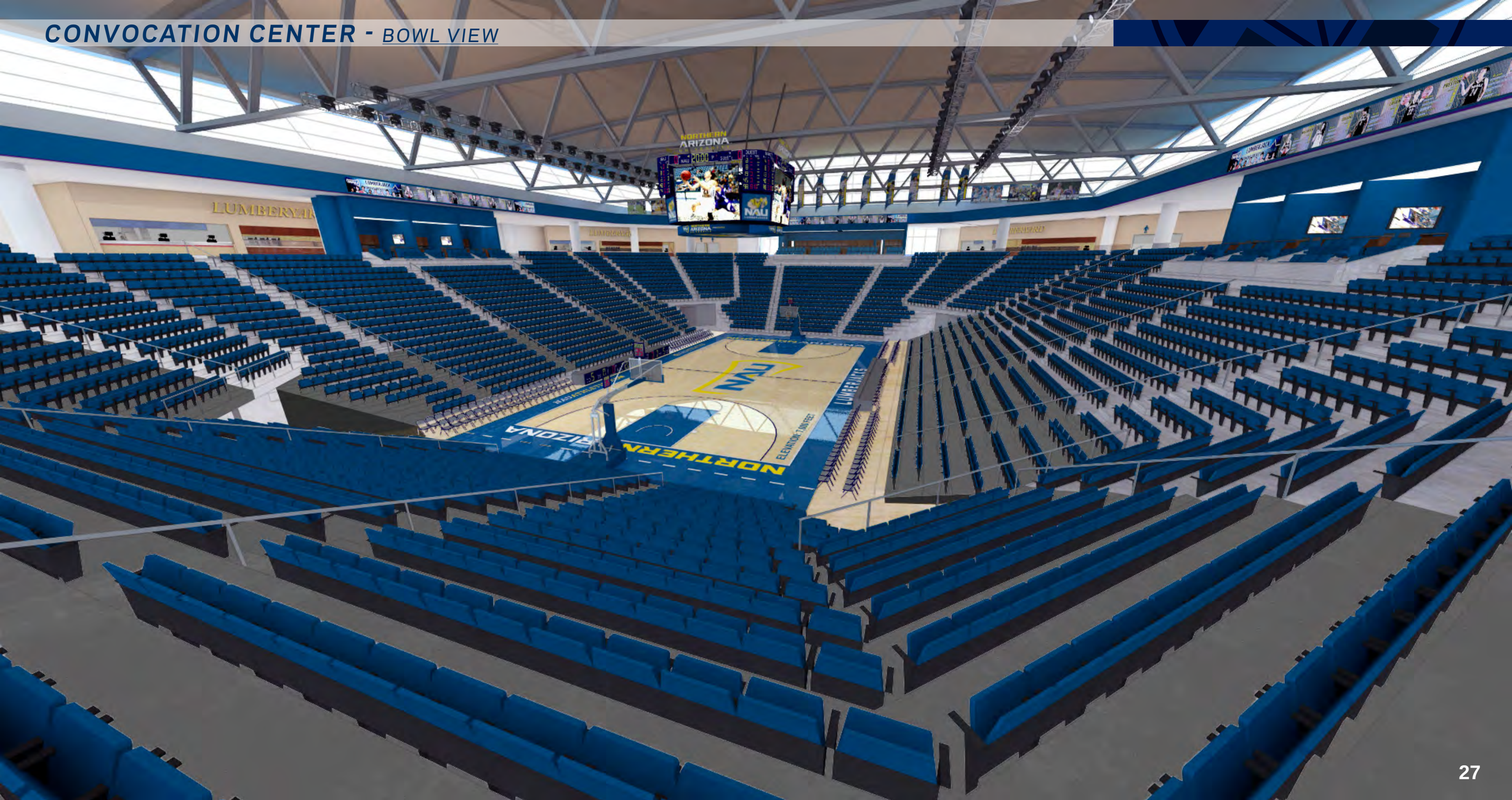


LEVEL 3

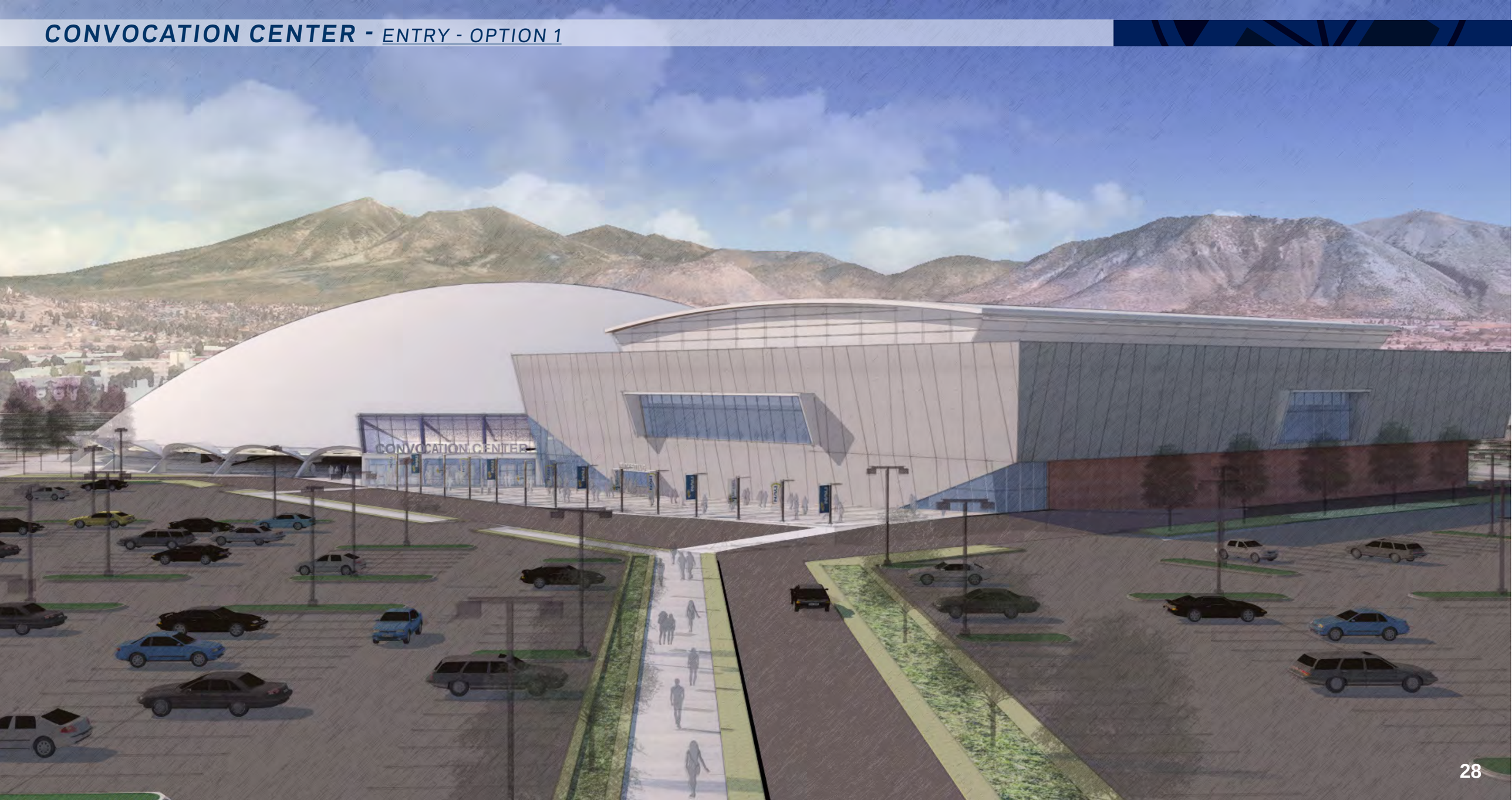
CONVOCATION CENTER - *TEAM MEETING ROOM*

CONVOCATION CENTER - *LOBBY VIEW*

CONVOCATION CENTER - *BOWL VIEW*



CONVOCATION CENTER - *ENTRY - OPTION 1*

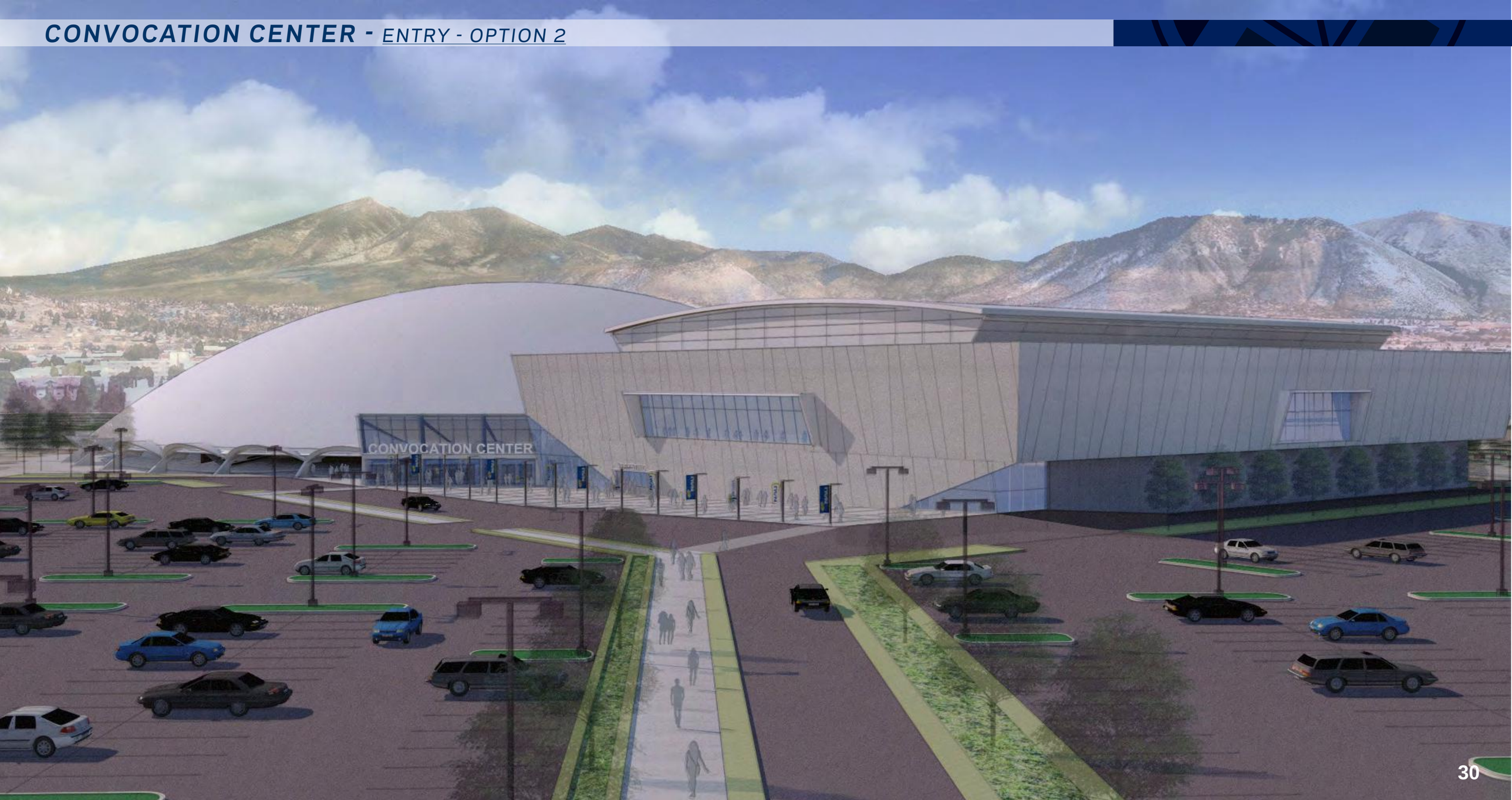


CONVOCATION CENTER - *ENTRY - OPTION 1*

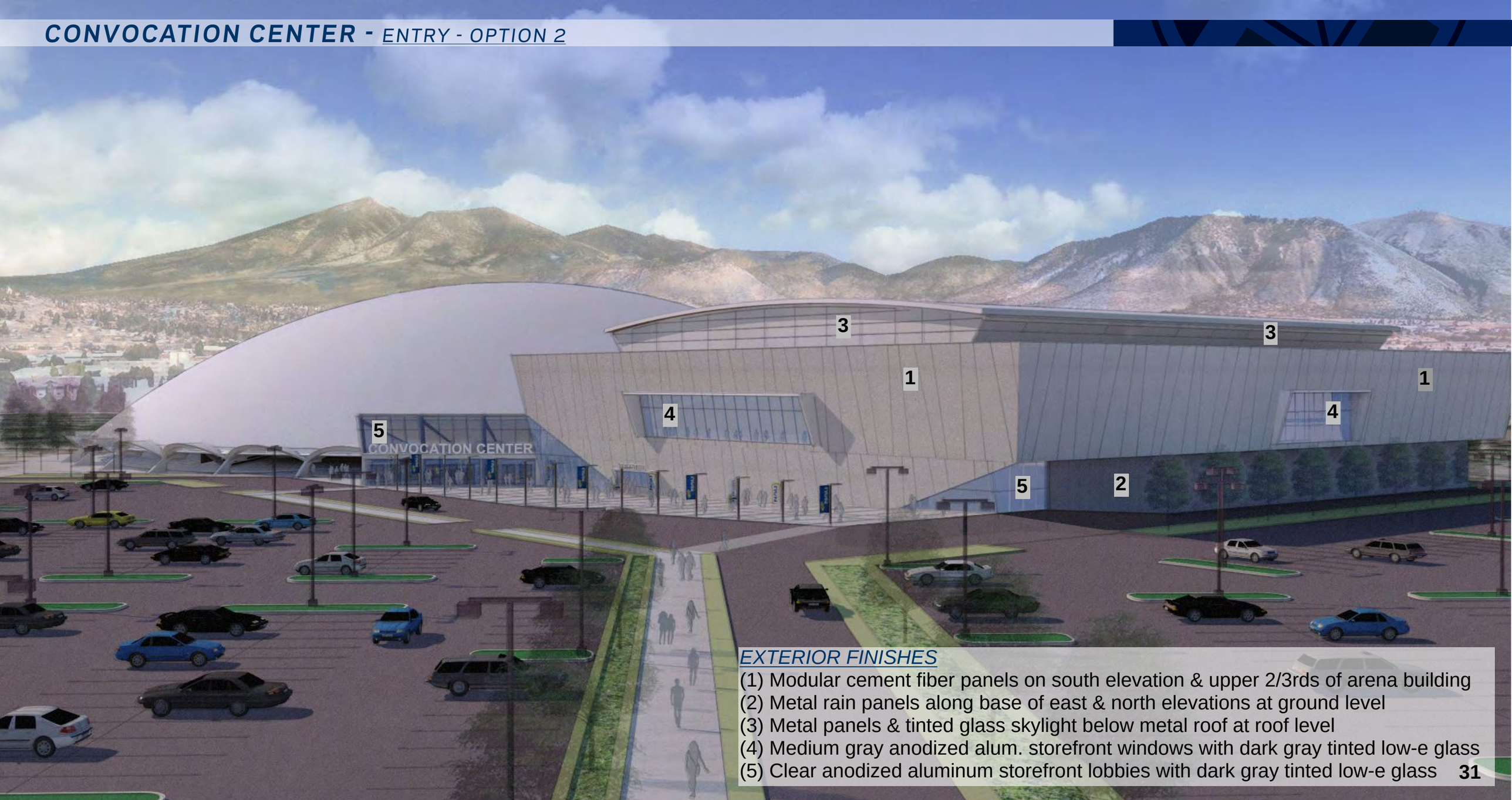
EXTERIOR FINISHES

(1) Modular cement fiber panels on south elevation & upper 2/3rds of arena building
(2) Sandstone wall veneer along base of east & north elevations at ground level
(3) Metal panels & tinted glass skylight below metal roof at roof level
(4) Medium gray anodized alum. storefront windows with dark gray tinted low-e glass
(5) Clear anodized aluminum storefront lobbies with dark gray tinted low-e glass

CONVOCATION CENTER - *ENTRY - OPTION 2*



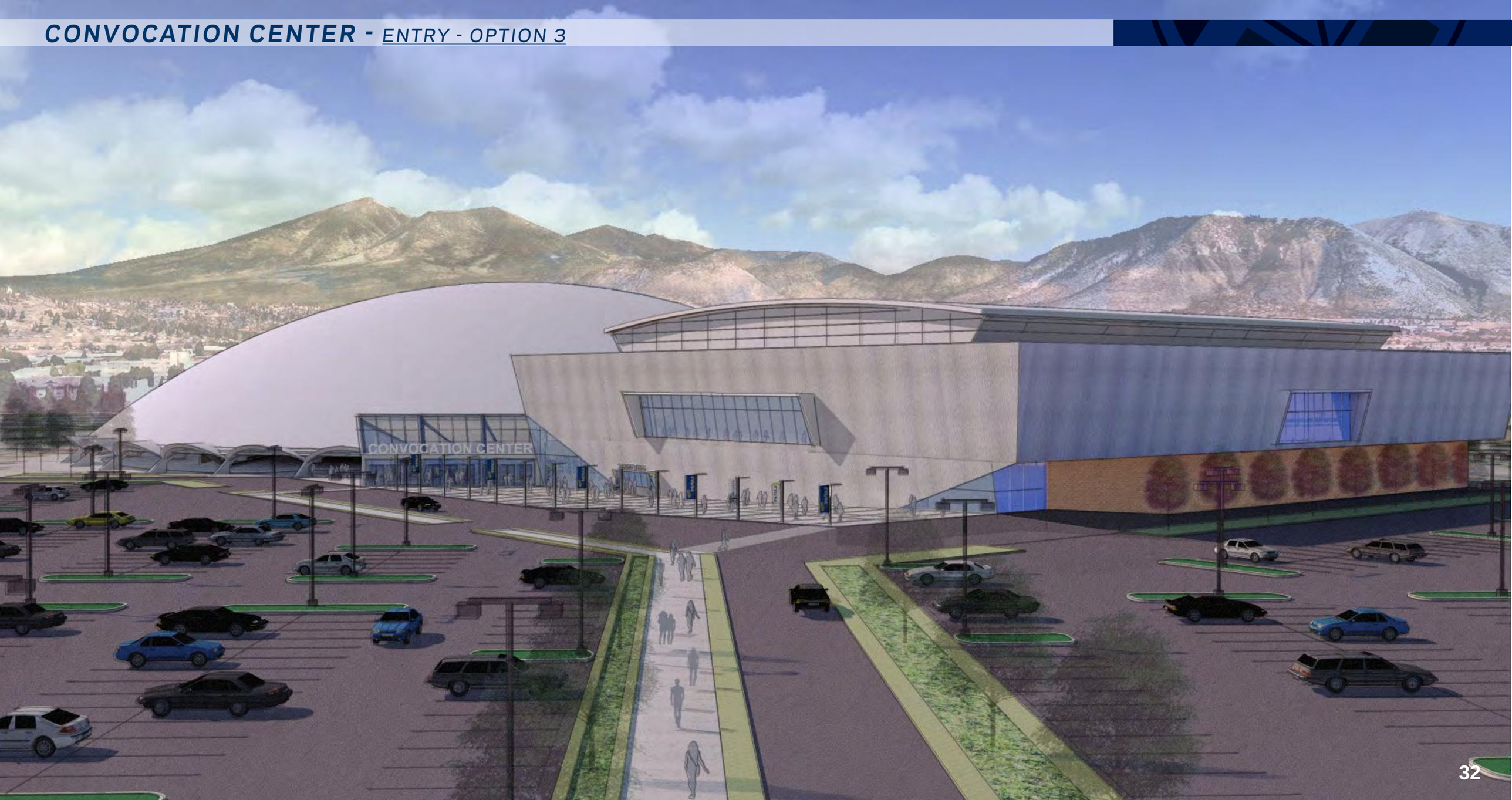
CONVOCATION CENTER - ENTRY - OPTION 2



EXTERIOR FINISHES

(1) Modular cement fiber panels on south elevation & upper 2/3rds of arena building
(2) Metal rain panels along base of east & north elevations at ground level
(3) Metal panels & tinted glass skylight below metal roof at roof level
(4) Medium gray anodized alum. storefront windows with dark gray tinted low-e glass
(5) Clear anodized aluminum storefront lobbies with dark gray tinted low-e glass

CONVOCATION CENTER - *ENTRY - OPTION 3*

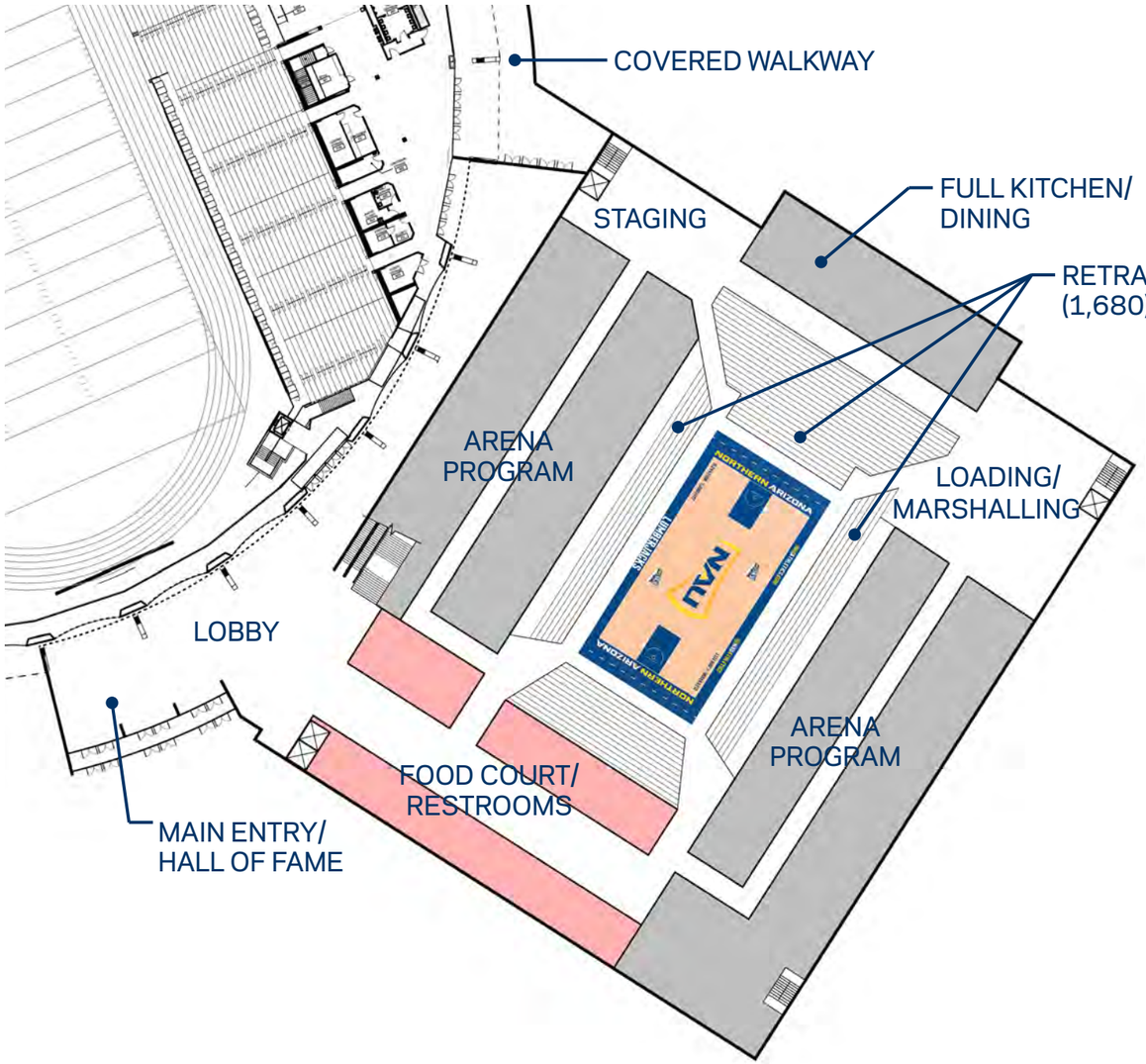


CONVOCATION CENTER - ENTRY - OPTION 3

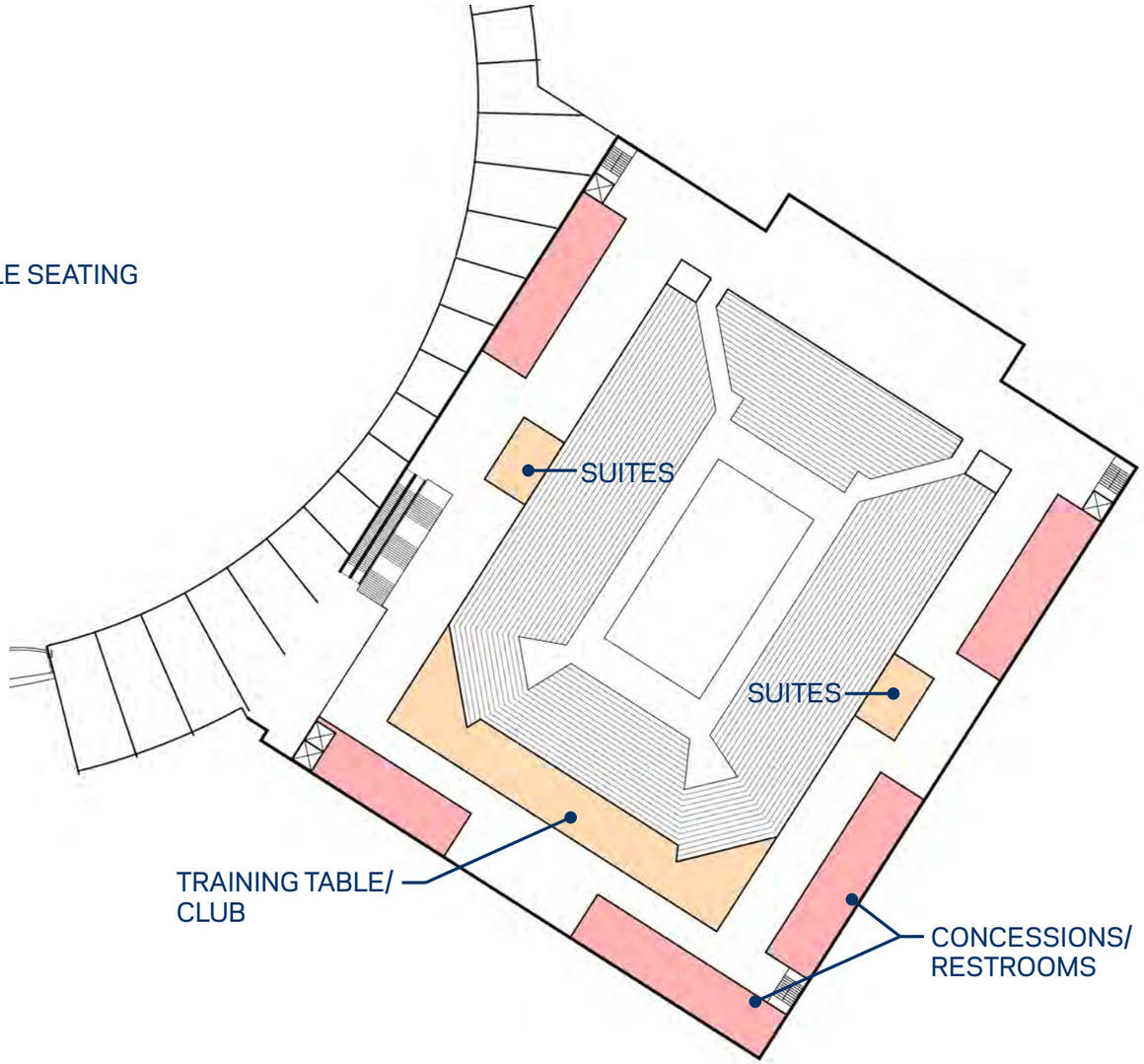
EXTERIOR FINISHES

(1) Modular cement fiber panels on south elevation & upper 2/3rds of arena building
(2) Earth-tone brick veneer along base of east & north elevations at ground level
(3) Metal panels & tinted glass skylight below metal roof at roof level
(4) Dark gray anodized alum. storefront windows with dark gray tinted low-e glass
(5) Clear anodized aluminum storefront lobbies with dark gray tinted low-e glass

CONVOCATION CENTER - *FLOOR PLANS*



LEVEL 1 - EVENT LEVEL/ SKYDOME CONCOURSE



LEVEL 2 - CONCOURSE LEVEL

DWL ARCHITECTS + PLANNERS, INC.

HOK

NORTHERN ARIZONA UNIVERSITY

HEALTH RESEARCH SPORT PERFORMANCE AND CONVOCATION CENTER

PROJECT NO. 09.731.151 | JULY 11, 2016
COST ESTIMATE + SYSTEMS NARRATIVES

VOLUME II

COST ESTIMATE

NAU Health Research Sport Performance and Convocation Center
Updated Program Cost Estimate 07.11.16

Project Details

Description

Basis of Estimate

This estimate has been prepared at the request of DWL and is to provide a program estimate of construction cost for the NAU Health Research Sport Performance and Convocation Center project, located at Flagstaff, Arizona.

The estimate is based upon program space information prepared by DWL/HOK.

Where information was insufficient, assumptions and allowances were made based wherever possible on discussions with the architect and engineers.

It is assumed that the project will be procured using a CMAR procurement arrangement where the CMAR will be required to receive a minimum of three subcontract bids for each trade. It has been assumed that the CMAR will only be allowed to self-perform work for the project under competitive bidding circumstances.

The estimate is based on the assumption that the CMAR and all subcontractors will be required to pay market wage rates.

This estimate is for the sole use of providing budgets based on the program documents design. The estimate is not to be used for comparison with actual bids received at any time. An updated estimate based on final construction documents will need to be provided for comparison with bids.

Unit pricing is based on August 2015 costs. Construction cost escalation has been carried through October 2018. A design/estimating and construction contingency has been included at 10%.

Items Specifically Included

Site mechanical estimate as provided by HEI.

Site electrical estimate as provided by HEI.

Site civil estimate as provided by SWI.

Items Specifically Excluded

. Hazardous materials abatement
. Costs associated with phasing the construction work
. Out of hours working
. Photovoltaics and other renewable energy resources
. Furniture, Fittings and Equipment (FF&E)
. Audio / Visual systems
. Telecom / Data systems
. Murals and works of art
. Mock-ups
. Work outside the site boundaries unless noted otherwise
. Special testing & inspections
. Utility tap fees and charges
. Permits & plan review fees
. CMAR Preconstruction Services

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Project Details

Description

. Owner's contingency
. Land and legal costs
. Architectural, Engineering and other professional fees
. Geotechnical, traffic and all other studies
. Items marked as "Excl." in the estimate
. Escalation beyond October 2018

Documents

Please refer to Basis of Estimate.

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Cost Summary

GFA: Gross Floor Area
Rates Current At July 2016

- CONSTRUCTION COST SUMMARY -

NAU Health Research Sports Performance + Convocation Center
Program Cost Estimate - Total *Construction* Cost
Location Summary

Program Options	Recommended		
	GSF	$/GSF	Total
Option # 1 Full Scope and a Warming Kitchen			
- Convocation Center (5000 seats)	139,854	$ 237	$ 33,136,764
- Student Performance	43,890	$ 319	$ 13,986,646
- Academics (PT/AT/Support)	28,509	$ 355	$ 10,119,605
- Sitework (in 2015 dollars)	-	-	$ 13,163,910
- Storage	15,000	$ 132	$ 1,982,866
- Parking stalls replacement	*169 stalls*		$ 1,833,650
- Biomechanics	3,640	$ 285	$ 1,037,400
- Warming Kitchen	1,560	$ 326	$ 508,560
• (OFOI) F.S. Equipment (before 20% design/management/owner contingency)	-	-	$ 99,500
Total Construction Costs =	**232,453**	**$ 326**	**$ 75,868,901**
Total Construction Cost including escalation thru 2016:			**$ 79,396,983** 3.570%
Total Construction Cost including escalation thru 2017:			**$ 82,175,878** 3.500%
Total Construction Cost including escalation thru October 2018:			**$ 84,332,994** 2.625%
Option # 2 Full Scope and a Full Kitchen			
- Convocation Center (5000 seats)	139,854	$ 237	$ 33,136,764
- Student Performance	43,890	$ 319	$ 13,986,646
- Academics (PT/AT/Support)	28,509	$ 355	$ 10,119,605
- Sitework (in 2015 dollars)	-	$ -	$ 13,163,910
- Storage	15,000	$ 132	$ 1,982,866
- Parking stalls replacement	*169 stalls*		$ 1,833,650
- Biomechanics	3,640	$ 285	$ 1,037,400
- Full Kitchen	7,560	$ 321	$ 2,424,515
• (OFOI) F.S. Equipment (before 20% design/management/owner contingency)	-	-	$ 348,700
Total Construction Costs =	**238,453**	**$ 327**	**$ 78,034,056**
Total Construction Cost including escalation thru 2016:			**$ 81,662,823** 3.570%
Total Construction Cost including escalation thru 2017:			**$ 84,521,022** 3.500%
Total Construction Cost including escalation thru October 2018:			**$ 86,739,699** 2.625%
Option # 3 Reduced Seating (4,000) and a Warming Kitchen			
- Convocation Center (4000 seats)	111,854	$ 258	$ 28,824,488
- Student Performance	43,890	$ 319	$ 13,986,646
- Academics (PT/AT/Support)	28,509	$ 355	$ 10,119,605
- Sitework (in 2015 dollars)	-	$ -	$ 13,163,910
- Storage	15,000	$ 132	$ 1,982,866
- Parking stalls replacement	*169 stalls*		$ 1,833,650
- Biomechanics	3,640	$ 285	$ 1,037,400
- Staging Kitchen	1,560	$ 326	$ 508,560
• (OFOI) F.S. Equipment (before 20% design/management/owner contingency)	-	$ -	$ 99,500
Total Construction Costs =	**204,453**	**$ 350**	**$ 71,556,625**
Total Construction Cost including escalation thru 2016:			**$ 74,884,176** 3.570%
Total Construction Cost including escalation thru 2017:			**$ 77,505,122** 3.500%
Total Construction Cost including escalation thru October 2018:			**$ 79,539,632** 2.625%
Option # 4 Reduced Seating (4,000) and a Full Kitchen			
- Convocation Center (4000 seats)	111,854	$ 258	$ 28,824,488
- Student Performance	43,890	$ 319	$ 13,986,646
- Academics (PT/AT/Support)	28,509	$ 355	$ 10,119,605
- Sitework (in 2015 dollars)	-	$ -	$ 13,163,910
- Storage	15,000	$ 132	$ 1,982,866
- Parking stalls replacement	*169 stalls*		$ 1,833,650
- Biomechanics	3,640	$ 285	$ 1,037,400
- Full Kitchen	7,560	$ 321	$ 2,424,515
• (OFOI) F.S. Equipment (before 20% design/management/owner contingency)	-	-	$ 348,700
Total Construction Costs =	**210,453**	**$ 350**	**$ 73,721,780**
Total Construction Cost including escalation thru 2016:			**$ 77,150,016** 3.570%
Total Construction Cost including escalation thru 2017:			**$ 79,850,267** 3.500%
Total Construction Cost including escalation thru October 2018:			**$ 81,946,336** 2.625%

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Cost Summary

GFA: Gross Floor Area
Rates Current At July 2016

- PROJECT COST SUMMARY -

NAU Health Research Sports Performance + Convocation Center
Program Cost Estimate - Total *Project* Cost
Location Summary

Program Options	Recommended GSF	$/GSF	Total	
Option # 1 Full Scope and a Warming Kitchen				
- Convocation Center (5000 seats)	139,854	$ 332	$ 46,391,861	
- Student Performance	43,890	$ 446	$ 19,581,304	
- Academics (PT/AT/Support)	28,509	$ 497	$ 14,167,447	
- Sitework (in 2015 dollars)	-	$ -	$ 18,429,474	
- Storage	15,000	$ 185	$ 2,776,012	
- Parking stalls replacement	*169 stalls*		$ 2,292,063	
- Biomechanics	3,640	$ 399	$ 1,452,360	
- Warming Kitchen	1,560	$ 456	$ 711,984	
• (OFOI) F.S. Equipment (incl 20% design/management/owner contingency)	-	-	$ 119,400	
Total Project Costs =	**232,453**	**$ 456**	**$ 105,921,905**	
Total Construction Cost including escalation thru 2016:			**$ 110,847,523**	3.570%
Total Construction Cost including escalation thru 2017:			**$ 114,727,186**	3.500%
Total Construction Cost including escalation thru October 2018:			**$ 117,738,775**	2.625%
Option # 2 Full Scope and a Full Kitchen				
- Convocation Center (5000 seats)	139,854	$ 332	$ 46,391,861	
- Student Performance	43,890	$ 446	$ 19,581,304	
- Academics (PT/AT/Support)	28,509	$ 497	$ 14,167,447	
- Sitework (in 2015 dollars)	-	$ -	$ 18,429,474	
- Storage	15,000	$ 185	$ 2,776,012	
- Parking stalls replacement	*169 stalls*		$ 2,292,063	
- Biomechanics	3,640	$ 399	$ 1,452,360	
- Full Kitchen	7,560	$ 449	$ 3,394,321	
• (OFOI) F.S. Equipment (incl 20% design/management/owner contingency)	-	-	$ 418,440	
Total Project Costs =	**238,453**	**$ 457**	**$ 108,903,282**	
Total Construction Cost including escalation thru 2016:			**$ 113,967,541**	3.570%
Total Construction Cost including escalation thru 2017:			**$ 117,956,405**	3.500%
Total Construction Cost including escalation thru October 2018:			**$ 121,052,761**	2.625%
Option # 3 Reduced Seating (4,000) and a Warming Kitchen				
- Convocation Center (4000 seats)	111,854	$ 361	$ 40,354,623	
- Student Performance	43,890	$ 446	$ 19,581,304	
- Academics (PT/AT/Support)	28,509	$ 497	$ 14,167,447	
- Sitework (in 2015 dollars)	-	$ -	$ 18,429,474	
- Storage	15,000	$ 185	$ 2,776,012	
- Parking stalls replacement	*169 stalls*		$ 2,292,063	
- Biomechanics	3,640	$ 399	$ 1,452,360	
- Staging Kitchen	1,560	$ 456	$ 711,984	
• (OFOI) F.S. Equipment (incl 20% design/management/owner contingency)	-	$ -	$ 119,400	
Total Project Costs =	**204,453**	**$ 489**	**$ 99,884,667**	
Total Construction Cost including escalation thru 2016:			**$ 104,529,539**	3.570%
Total Construction Cost including escalation thru 2017:			**$ 108,188,073**	3.500%
Total Construction Cost including escalation thru October 2018:			**$ 111,028,010**	2.625%
Option # 4 Reduced Seating (4,000) and a Full Kitchen				
- Convocation Center (4000 seats)	111,854	$ 361	$ 40,354,623	
- Student Performance	43,890	$ 446	$ 19,581,304	
- Academics (PT/AT/Support)	28,509	$ 497	$ 14,167,447	
- Sitework (in 2015 dollars)	-	$ -	$ 18,429,474	
- Storage	15,000	$ 185	$ 2,776,012	
- Parking stalls replacement	*169 stalls*		$ 2,292,063	
- Biomechanics	3,640	$ 399	$ 1,452,360	
- Full Kitchen	7,560	$ 449	$ 3,394,321	
• (OFOI) F.S. Equipment (incl 20% design/management/owner contingency)	-	$ -	$ 418,440	
Total Project Costs =	**210,453**	**$ 489**	**$ 102,866,044**	
Total Construction Cost including escalation thru 2016:			**$ 107,649,557**	3.570%
Total Construction Cost including escalation thru 2017:			**$ 111,417,292**	3.500%
Total Construction Cost including escalation thru October 2018:			**$ 114,341,996**	2.625%

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Summary - Option 1 Non-Distributed

GFA: Gross Floor Area
Rates Current At July 2016

Location	GFA SF	Cost/SF	Total Cost
C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER			
C1 CONVOCATION CENTER (5,000 SEAT)	139,854	170	23,814,240
C2 STUDENT ATHLETE PERFORMANCE	43,890	229	10,051,600
C3 ACADEMICS	28,509	255	7,272,525
C4 SITEWORK			9,460,365
C5 PREFABRICATED METAL STORAGE BUILDING	15,000	95	1,425,000
C6 PARKING STALLS REPLACEMENT (Gross Cost)			1,833,650
C8 BIOMECHANICS	3,640	205	746,200
C9 NUTRITION (KITCHEN EQUIP COSTS PROVIDED)			
C9A Nutrition at 1560sf Gross, Warming Kitchen (Kitchen Equip Excluded)	1,560	234	365,040
C9C Kitchen Equipment for Warming Kitchen (Cost Provided to RLB)			99,500
C - HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER	***232,453***	***$237***	***$55,068,120***
ESTIMATED NET COST	**232,453**	**$237**	**$55,068,120**
GENERAL CONTRACTOR'S BURDEN			
Design/Estimating & Construction Contingency (10%)			$5,313,497
General Conditions including Jobsite Management Costs, General Requirements & Temporary Requirements (10%)			$5,844,847
Payment & Performance Bonds, Builders Risk Insurance, General Liability Insurance & Subcontractor Default Insurance (3.5%)			$2,250,266
General Contractor's Overhead & Profit (Fee) (5.0%)			$3,327,178
Arizona Sales & Use Tax (5.82%)			$4,065,146
ROUGH ORDER-OF-MAGNITUDE TOTAL CONSTRUCTION COST	**232,453**	**$326**	**$75,868,901**
Project Related Soft Costs (Allowance, 40% - does not apply to Parking Stalls or Kitchen Equipment)			$29,574,362

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Summary

GFA: Gross Floor Area
Rates Current At July 2016

Location	GFA SF	Cost/SF	Total Cost
MARGINS & ADJUSTMENTS (continued)			
Project Related Soft Costs (Allowance, 25% at Parking Stall Replacement per NAU)			$458,413
ESTIMATED TOTAL PROJECT COST	**232,453**	**$456**	**$105,921,905**

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER GFA: 139,854 SF Cost/SF: $170

C1 CONVOCATION CENTER (5,000 SEAT) Rates Current At July 2016

Description		Unit	Qty	Rate	Total
F Special Construction & Demolition					
F10 Special Construction					
F1010 Special Structures					
541	Arena Event Area	SF	12,000	275.00	3,300,000
542	Arena Seating Area	SF	45,642	120.00	5,477,040
543	Arena Spectator Facilities	SF	6,432	225.00	1,447,200
544	Arena Food Service/Merchandising	SF	6,720	275.00	1,848,000
545	Arena Circulation	SF	27,240	125.00	3,405,000
546	Arena Press Facilities/Broadcast	SF	1,056	250.00	264,000
547	Arena Ops/Support	SF	14,664	150.00	2,199,600
548	Arena Ticketing/Administration	SF	1,920	200.00	384,000
549	Arena Lockers/Team Support Facilities	SF	10,980	330.00	3,623,400
550	Arena Training/Sports Medicine	SF	1,440	275.00	396,000
551	Arena Tech/Special Support	SF	11,760	125.00	1,470,000
	Special Construction & Demolition			***$170/SF***	***$23,814,240***
	CONVOCATION CENTER (5,000 SEAT)			***$170/SF***	***$23,814,240***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER GFA: 43,890 SF Cost/SF: $229

C2 STUDENT ATHLETE PERFORMANCE Rates Current At July 2016

Description		Unit	Qty	Rate	Total
F Special Construction & Demolition					
F10 Special Construction					
F1010 Special Structures					
495	SPC Athletic Academics	SF	11,564	175.00	2,023,700
496	SPC Strength & Conditioning	SF	13,398	325.00	4,354,350
497	SPC Training / Sports Medicine	SF	8,435	280.00	2,361,800
498	SPC Building Support	SF	10,494	125.00	1,311,750
Special Construction & Demolition				***$229/SF***	***$10,051,600***
STUDENT ATHLETE PERFORMANCE				***$229/SF***	***$10,051,600***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER GFA: 28,509 SF Cost/SF: $255

C3 ACADEMICS Rates Current At July 2016

Description	Unit	Qty	Rate	Total
F Special Construction & Demolition				
F10 Special Construction				
F1010 Special Structures				
499 Academics Athletic Training	SF	14,261	275.00	3,921,775
500 Academics Physical Therapy	SF	12,558	250.00	3,139,500
501 Academics Building Support	SF	1,690	125.00	211,250
Special Construction & Demolition			***$255/SF***	***$7,272,525***
ACADEMICS			***$255/SF***	***$7,272,525***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER

C4 SITEWORK

Rates Current At July 2016

Description		Unit	Qty	Rate	Total
G	**Building Sitework**				
	G10 Site Preparation				
624	**SWI Civil Estimate detail**	Note			
597	Sawcut and Remove AC Pavement	SY	20,000	5.00	100,000
598	Remove & Dispose of Concrete Curb & Gutter	LF	4,864	7.00	34,048
599	Remove & Dispose of Concrete Sidewalk	SF	9,500	5.00	47,500
600	Remove & Dispose of Catch Basin	EA	18	1,167.00	21,006
601	Obliterate Existing Asphalt Striping	LF	7,100	3.00	21,300
602	Remove & Dispose of Existing Fire Hydrant Assembly	EA	3	1,458.00	4,374
603	Remove & Dispose of Existing Sewer Line	LF	340	19.00	6,460
604	Remove & Dispose of Existing Overhead Electric Line (included in HEI electrical estimate)	LF	1,000		Incl.
605	Remove & Dispose of Existing Storm Drain	LF	725	15.00	10,875
606	Remove & Dispose of Existing Water Line	LF	1,325	19.00	25,175
	G1010 Site Clearing				
552	Excavation & Backfill, Fine Grading	LS	1	776,700.00	776,700
	G20 Site Improvements				
607	Asphaltic Pavement Section (4" AC/6" ABC)	SY	17,200	43.00	739,600
608	Construct 10" Reinforced Concrete	SY	1,900	63.00	119,700
609	Construct Vertical Curb & Gutter	LF	4,500	21.00	94,500
610	Construct Sidewalk	SF	6,480	5.00	32,400
611	Install 4" White Striping COF Dtl. 10-06-010	LF	7,300	4.00	29,200
	G2040 Site Development				
553	Site Landscaping allowance	LS	1	600,000.00	600,000
	G30 Site Mechanical Utilities				
612	Install 8" Water Line (C-900/CL 305 PVC)	LF	1,105	43.00	47,515
613	Install Fire Hydrant Assembly per COF Dtl. 13-03-011	EA	4	3,889.00	15,556
614	Install 8" Fire line (C-900/CL 305 PVC)	LF	1,000	43.00	43,000
615	Install 8" Sewer Line (SDR-35 PVC)	LF	890	44.00	39,160
616	Connect 8" Sewer Line to Existing Manhole	EA	1	1,945.00	1,945
617	Install 48" Pre-Cast Sewer Manhole per MAG Dtl. 420-1	EA	3	4,375.00	13,125
618	Install 60" Pre-Cast Sewer Manhole per MAG Dtl. 420-1 (Sealed)	EA	1	5,348.00	5,348
619	Construct Catch Basin, per M.A.G. Std. Dtl. 535	EA	8	4,375.00	35,000
620	Install 24" HDPE ADS (N-12) Dual Wall Storm Drain	LF	1,150	78.00	89,700
621	Install 36" HDPE ADS (N-12) Dual Wall Storm Drain	LF	100	97.00	9,700
622	10% Contingency (contingency carried below the line)	LS	1		Excl.

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER

C4 SITEWORK (continued)

Rates Current At July 2016

	Description	Unit	Qty	Rate	Total
660	**HEI Site Mechanical Estimate Detail**	Note			
625	CH-5 Water Cooled Chiller (1000 tons)	T	1,000.00	1,211.00	1,211,000
626	CT-1,2 Cooling Tower	EA	2	63,201.00	126,402
627	Basin Sweeper System	EA	1	43,754.00	43,754
628	CHWP Primary Chilled Water Pump	EA	2	11,668.00	23,336
629	CWP Condenser Water Pump (50 HP)	EA	2	17,502.00	35,004
630	HHWP Heating Hot Water Pumps	EA	2	11,668.00	23,336
631	Expansion Tank	EA	2	7,292.00	14,584
632	Air Separator	EA	2	7,292.00	14,584
633	CS-1 Water Filtration System	LS	1	7,292.00	7,292
634	Chemical Pot Feeder	EA	1	3,403.00	3,403
635	VFD's	LS	1	14,585.00	14,585
636	Central Plant Condensing Water Piping	LS	1	136,125.00	136,125
637	Central Plant Chilled Water	LS	1	184,741.00	184,741
638	Central Plant Heating Hot Water	LS	1	136,125.00	136,125
639	Paint Piping	LS	1	7,292.00	7,292
640	Independent Testing & Balancing	LS	1	8,265.00	8,265
641	DDC Controls	LS	1	126,402.00	126,402
642	UG 8" CHWS/R Piping	LF	3,100	170.00	527,000
643	UG 8" HHW Piping	LF	3,100	292.00	905,200
644	Piping Valve Vault	EA	1	34,031.00	34,031
645	Pipe Anchors	EA	8	194.00	1,552
646	Traffic Control (included below the line)	LF	4,650		Incl.
647	Plating	LF	4,650	29.00	134,850
648	Asphalt Demo	LF	4,650	15.00	69,750
649	Asphalt Patching	LF	4,650	49.00	227,850
650	Barricades (included below the line)	LF	4,650		Incl.
651	Concrete Pads	LS	1	11,668.00	11,668
652	Circuit Breaker in Existing Main Switchboard	EA	2	7,292.00	14,584
653	Distribution Feeders	LF	200	243.00	48,600
654	Hydronic Pump Connection & VFD Install	EA	6	875.00	5,250
655	Cooling Tower Connection & VFD Install	EA	2	1,458.00	2,916
656	Water Treatment Connection & VFD Install	EA	1	486.00	486
657	Temporary Construction Power & Lighting	LS	1	2,431.00	2,431
658	Testing/Coordination Study	LS	1	2,431.00	2,431

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER

C4 SITEWORK (continued) Rates Current At July 2016

	Description	Unit	Qty	Rate	Total
659	Fire Caulking	LS	1	1,458.00	1,458
G40	**Site Electrical Utilities**				
594	**HEI Electrical Estimate Detail**	Note			
580	PME-9 Switching cabinet	EA	3	72,924.00	218,772
581	3#2/0, 1#2, 4" C	LF	5,600	58.00	324,800
582	4" Spare conduit	LF	5,600	19.00	106,400
583	1" Spare conduit	LF	5,600	5.00	28,000
584	Trench and backfill site work	LF	5,600	4.00	22,400
585	1500 kVA Transformer	LS	2	40,838.00	81,676
586	750kVA Transformer	LS	1	31,114.00	31,114
587	Removal and reconnection of Skydome 1000kVA transformer	LS	1	20,419.00	20,419
588	800 kW generator	LS	1	213,911.00	213,911
589	ATS	LS	2	13,613.00	27,226
590	Emergency distribution panelboard	LS	1	14,585.00	14,585
591	Parking lot lighting fixtures	LS	10	2,917.00	29,170
592	Feeders for parking lot lighting fixtures	LS	300	29.00	8,700
593	APS Cost for removal of (3) existing power poles and associated overhead power lines back to poles located on east side of San Francisco Street	LS	1	194,464.00	194,464
G9090	**Other Site Systems & Equipment**				
577	HEI Telecom estimate	LS	1	1,069,554.00	1,069,554
	Building Sitework				***$9,460,365***
	SITEWORK				***$9,460,365***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER GFA: 15,000 SF Cost/SF: $95

C5 PREFABRICATED METAL STORAGE BUILDING Rates Current At July 2016

Description	Unit	Qty	Rate	Total
F Special Construction & Demolition				
F10 Special Construction				
F1010 Special Structures				
528 Pre-fabricated steel storage building (includes fdns, slab, insulation, doors, ext finish, minimal MEP)	SF	15,000	95.00	1,425,000
Special Construction & Demolition			***$95/SF***	***$1,425,000***
PREFABRICATED METAL STORAGE BUILDING			***$95/SF***	***$1,425,000***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER
C6 PARKING STALLS REPLACEMENT

Rates Current At July 2016

Description	Unit	Qty	Rate	Total
G Building Sitework				
G20 Site Improvements				
G2020 Parking Lots				
529 Parking Stalls Replacement (construction cost before 25% project costs added as per NAU)	EA	169	10,850.00	1,833,650
Building Sitework				***$1,833,650***
PARKING STALLS REPLACEMENT				***$1,833,650***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER GFA: 3,640 SF Cost/SF: $205

C8 BIOMECHANICS Rates Current At July 2016

Description	Unit	Qty	Rate	Total
F Special Construction & Demolition				
F10 Special Construction				
F1010 Special Structures				
556 Biomechanics Offices/Dry Research Labs	SF	3,640	205.00	746,200
Special Construction & Demolition			***$205/SF***	***$746,200***
BIOMECHANICS			***$205/SF***	***$746,200***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER

C9 NUTRITION (KITCHEN EQUIP COSTS PROVIDED) GFA: 1,560 SF Cost/SF: $234

C9A Nutrition at 1560sf Gross, Warming Kitchen (Kitchen Equip Excluded) Rates Current At July 2016

Description	Unit	Qty	Rate	Total
F Special Construction & Demolition				
F10 Special Construction				
F1010 Special Structures				
578 Warm up kitchen (no training tables or kitchen equipment)	SF	1,560	234.00	365,040
Special Construction & Demolition			***$234/SF***	***$365,040***
NUTRITION AT 1560SF GROSS, WARMING KITCHEN (KITCHEN EQUIP EXCLUDED)			***$234/SF***	***$365,040***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER

C9 NUTRITION (KITCHEN EQUIP COSTS PROVIDED)

C9C Kitchen Equipment for Warming Kitchen (Cost Provided to RLB) Rates Current At July 2016

Description	Unit	Qty	Rate	Total
F Special Construction & Demolition				
F10 Special Construction				
F1010 Special Structures				
579 Kitchen equipment for warming kitchen	LS	1	99,500.00	99,500
Special Construction & Demolition				***$99,500***
KITCHEN EQUIPMENT FOR WARMING KITCHEN (COST PROVIDED TO RLB)				***$99,500***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Summary - Option 2 Non-Distributed

GFA: Gross Floor Area
Rates Current At July 2016

Location			GFA SF	Cost/SF	Total Cost
C	**HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER**				
C1	CONVOCATION CENTER (5,000 SEAT)		139,854	170	23,814,240
C2	STUDENT ATHLETE PERFORMANCE		43,890	229	10,051,600
C3	ACADEMICS		28,509	255	7,272,525
C4	SITEWORK				9,460,365
C5	PREFABRICATED METAL STORAGE BUILDING		15,000	95	1,425,000
C6	PARKING STALLS REPLACEMENT (Gross Cost)				1,833,650
C8	BIOMECHANICS		3,640	205	746,200
C9	NUTRITION (KITCHEN EQUIP COSTS PROVIDED)				
	C9B	Nutrition Kitchen/Dining at 7560 sf Gross, Full Kitchen (Kitchen Equipment Excluded)	7,560	230	1,742,400
	C9D	Kitchen Equipment for Full Kitchen (Cost Provided to RLB)			348,700
		C - HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER	***238,453***	***$238***	***$56,694,680***
		ESTIMATED NET COST	**238,453**	**$238**	**$56,694,680**
GENERAL CONTRACTOR'S BURDEN					
Design/Estimating & Construction Contingency (10%)					$5,451,233
General Conditions including Jobsite Management Costs, General Requirements & Temporary Requirements (10%)					$5,996,357
Payment & Performance Bonds, Builders Risk Insurance, General Liability Insurance & Subcontractor Default Insurance (3.5%)					$2,308,598
General Contractor's Overhead & Profit (Fee) (5.0%)					$3,413,425
Arizona Sales & Use Tax (5.82%)					$4,170,522
ROUGH ORDER-OF-MAGNITUDE TOTAL CONSTRUCTION COST			**238,453**	**$327**	**$78,034,056**
Project Related Soft Costs (Allowance, 40%)					$30,340,987

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Summary

GFA: Gross Floor Area
Rates Current At July 2016

Location	GFA SF	Cost/SF	Total Cost
MARGINS & ADJUSTMENTS (continued)			
Project Related Soft Costs (Allowance, 25% at Parking Stall Replacement per NAU)			$458,413
ESTIMATED TOTAL PROJECT COST	**238,453**	**$457**	**$108,903,282**

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER

C9 NUTRITION (KITCHEN EQUIP COSTS PROVIDED)

C9B Nutrition Kitchen/Dining at 7560 sf Gross, Full Kitchen (Kitchen Equipment Excluded)

GFA: 7,560 SF Cost/SF: $230
Rates Current At July 2016

Description		Unit	Qty	Rate	Total
F Special Construction & Demolition					
F10 Special Construction					
F1010 Special Structures					
559	Dry storage area of full kitchen	SF	1,440	170.00	244,800
560	Cold storage area of full kitchen (cold storage cases not included)	SF	1,440	170.00	244,800
561	Full kitchen (with training tables, no kitchen equipment or hot/cold storage cases)	SF	3,120	275.00	858,000
572	Dining room	SF	1,200	275.00	330,000
573	Buffet / serving / storage	SF	360	180.00	64,800
	Special Construction & Demolition			***$230/SF***	***$1,742,400***
	NUTRITION KITCHEN/DINING AT 7560 SF GROSS, FULL KITCHEN (KITCHEN EQUIPMENT EXCLUDED)			***$230/SF***	***$1,742,400***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Major Group Elements/Group Elements/Individual Elements Item

C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER

C9 NUTRITION (KITCHEN EQUIP COSTS PROVIDED)

C9D Kitchen Equipment for Full Kitchen (Cost Provided to RLB) Rates Current At July 2016

Description	Unit	Qty	Rate	Total
F Special Construction & Demolition				
F10 Special Construction				
F1010 Special Structures				
565 Kitchen equipment for warming kitchen (before 20% design/management/owner contingency)	LS	1	348,700.00	348,700
Special Construction & Demolition				***$348,700***
KITCHEN EQUIPMENT FOR FULL KITCHEN (COST PROVIDED TO RLB)				***$348,700***

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Summary - Option 3 Non-Distributed

GFA: Gross Floor Area
Rates Current At July 2016

Location	GFA SF	Cost/SF	Total Cost
C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER			
C1 CONVOCATION CENTER (4,000 SEAT)	111,854	185	20,706,240
C - HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER	***111,854***	***$185***	***$20,706,240***
ESTIMATED NET COST	**111,854**	**$185**	**$20,706,240**
GENERAL CONTRACTOR'S BURDEN			
Design/Estimating & Construction Contingency (10%)			$2,070,623
General Conditions including Jobsite Management Costs, General Requirements & Temporary Requirements (10%)			$2,277,687
Payment & Performance Bonds, Builders Risk Insurance, General Liability Insurance & Subcontractor Default Insurance (3.5%)			$876,910
General Contractor's Overhead & Profit (Fee) (5.0%)			$1,296,573
Arizona Sales & Use Tax (5.82%)			$1,584,148
ROUGH ORDER-OF-MAGNITUDE TOTAL CONSTRUCTION COST	**111,854**	**$258**	**$28,824,488**
Project Related Soft Costs (Allowance, 40%)			$11,530,135
ESTIMATED TOTAL PROJECT COST	**111,854**	**$361**	**$40,354,623**

NAU Health Research Sport Performance and Convocation Center

Updated Program Cost Estimate 07.11.16

Location Summary - Option 4 Non-Distributed

GFA: Gross Floor Area
Rates Current At July 2016

Location	GFA SF	Cost/SF	Total Cost
C HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER			
C1 CONVOCATION CENTER (4,000 SEAT)	111,854	185	20,706,240
C - HEALTH RESEARCH SPORT PERFORMANCE + CONVOCATION CENTER	***111,854***	***$185***	***$20,706,240***
ESTIMATED NET COST	**111,854**	**$185**	**$20,706,240**
GENERAL CONTRACTOR'S BURDEN			
Design/Estimating & Construction Contingency (10%)			$2,070,623
General Conditions including Jobsite Management Costs, General Requirements & Temporary Requirements (10%)			$2,277,687
Payment & Performance Bonds, Builders Risk Insurance, General Liability Insurance & Subcontractor Default Insurance (3.5%)			$876,910
General Contractor's Overhead & Profit (Fee) (5.0%)			$1,296,573
Arizona Sales & Use Tax (5.82%)			$1,584,148
ROUGH ORDER-OF-MAGNITUDE TOTAL CONSTRUCTION COST	**111,854**	**$258**	**$28,824,488**
Project Related Soft Costs (Allowance, 40%)			$11,530,135
ESTIMATED TOTAL PROJECT COST	**111,854**	**$361**	**$40,354,623**

SYSTEMS NARRATIVES

CIVIL ENGINEERING

DRAINAGE

Stormwater runoff in the area currently drains to the north. The existing storm drain system is located in the sidewalk that wraps around the circumference of the dome. The parking lot south of the dome drains into inlets on the southeast side of the dome, which are then routed around the dome and into Sinclair Wash. Prior to entrance into the inlets, the runoff flows into a large grassy depression which leads to the storm drain. Runoff from the parking lot will flow towards the southwest side of the proposed Convocation Center, which will block the runoff from entering the existing storm drain system. This area will require additional catch basins in the parking lot with accompanying storm drain. The additional storm drain will most likely be routed into the existing storm drain system on the south side of the dome. A portion of the existing asphalt parking lot will be impacted as a result of the storm drain construction.

The Storage and Health Research Sport Performance Center (HRSPC) additions can drain into an existing storm drain system on the north side of the dome with some minor improvements to the existing infrastructure. The additional storm drain will be routed to discharge to the Sinclair Wash. Refer to the Civil Improvements Exhibit for the proposed storm drain routing.

UTILITIES

Water

An existing water line loop is located around the circumference of the dome which means this loop will need to be maintained with the proposed expansion. There is an existing water line on the west and south sides of the dome. The same water line is also routed through the Pine Ridge apartment complex. The domestic and fire service lines for the Convocation Center can connect to this water line. The same existing water line connects to McConnell Drive on the north side of the dome. The new Storage addition conflicts with the existing water line routing, so this will require a re-route of the water main. Both the Storage and HRSPC buildings can be serviced from this water line. Fire hydrants will need to be relocated at the HRSPC and the Convocation Center.

The existing water line sizes are not known at this time. It is highly unlikely that there will be a large event in the dome and the Convocation Center at the same time; therefore, the existing water line will most likely not need to be upsized. Refer to the Civil Improvements Exhibit for the proposed water line routing.

Sewer

There is an existing sewer line on the north side of the dome that connects to the main sewer interceptor within Sinclair wash. There appears to be too many existing utilities along the south and west sides of the dome to route a new sewer service line for the Convocation Center. In order to service the proposed building a new sewer line will need to be constructed within San Francisco Street. The new line will be routed on the west side of the road, turn onto McConnell Drive, then connect to the existing sewer line on the north side of the dome. The Storage and HRSPC buildings can connect to the

new sewer line or the existing sewer line. The existing sewer line sizes are not known at this time. It is highly unlikely that there will be a large event in the dome and the Convocation Center at the same time; therefore, the existing sewer line will most likely not need to be upsized. Refer to the Civil Improvements Exhibit for the proposed sewer line routing.

Dry Utilities

Several dry utilities are located in the area of the proposed buildings. Overhead electric lines for lighting will need to be rerouted and light poles will need to be relocated for the construction of all the proposed buildings. Overhead power lines will also need to be rerouted at the proposed site of the Convocation Center.

SURFACE IMPROVEMENTS

Parking Lot Replacement

Based on the proposed parking lot layout, a large portion of the existing parking lot near the proposed Convocation Center and the parking lot to the west will need to be reconstructed. The parking lot will need to be re-graded in order for the proposed layout to work with both drainage and to minimize cross slopes of the drive aisles. This is accounted for in the Civil Cost Estimate.

Fire Access

There is an existing fire access drive on the north side of the dome. The proposed HRSPC building will impact the fire truck turning movements in this area. A new fire access loop has been added in this area based on coordination with the NAU Fire Marshall.

There is an additional existing fire access drive on the northwest side of the dome. The drive access McConnell Drive and heads up the hill to the west side of the dome. The NAU Fire Marshall has asked that the access road be widened to 26’ wide and connect to the parking lot on the southwest side of the dome. This will give fire access between McConnell Drive and Pine Knoll Drive. The new fire access loop and improved access drive on the northwest side of the dome will be connected by a new fire access connection as shown on the Civil Improvements Exhibit. The Civil Cost Estimate reflects the fire access improvements.

MECHANICAL, PLUMBING, + ELECTRICAL ENGINEERING

HENDERSON ENGINEERS INC

lenexa bentonville dallas houston kansas city las vegas
los angeles new york philadelphia phoenix tampa

NAU Health Research Sport Performance & Convocation Center (HRSPCC)
HEI Pre-Concept Narrative

GENERAL INFORMATION

This section will describe any existing conditions in the Walkup Skydome and also typical design considerations for all buildings.

MECHANICAL

- Walkup Skydome
  - The existing chilled water for the facility is provided via a 120 Ton air cooled chiller that was installed as part of the 2010 facility renovation. This system and associated components will be existing to remain.
  - The existing heating water for the facility is provided via a 5" supply and return pipe from the campus loop at 250 degrees entering, 210 degrees leaving and 160 psi. The heat exchanger and associated components installed as part of the 2010 facility renovations will be existing to remain.
  - Conditions existing to remain that may need altered depending on final configuration of adjacent spaces
    - Mechanical Equipment and associated ductwork, etc.
      - AH-12 thru AH-28 from the 1975 documents
      - AH-6 thru AH-8 from the 1975 documents
  - All other mechanical equipment and associated ductwork, piping, controls, etc. are existing to remain
  - Below are charts that represent our understanding of the existing capacities of the existing facility for chilled water and heating hot water. These are based off the original building drawings from 1975 and the renovation drawings from 2010.

• EXISTING CHWS&R LOAD *	
Area Served	**Tons**
Skydome	70

* The chilled water for the facility is from an air cooled chiller at the north side of the Skydome with a 120 Ton capacity.

EXISTING HEATING WATER	
Area Served	MBH
Skydome	15,084

* The heating water for the facility is from the high temperature campus loop at 250 EWT, 210 LWT and 160 PSI.

- General design conditions
  - Outside Design Conditions:
    - Summer: 90°F dry-bulb/ 65°F wet-bulb (University Standard)
    - Winter: 0°F dry-bulb/ -0.7°F dew point (University Standard)
  - Inside Design Conditions:
    - Summer:
      - Offices: 72°F (+ 2°F) dry-bulb / 50% (+ 5%) relative humidity (not controlled)
      - Gyms: 76°F (+ 2°F) dry-bulb / 50% (+ 5%) relative humidity (not controlled)
      - Weight Room: 72°F (+ 2°F) dry-bulb / 50% (+ 5%) relative humidity (not controlled)
      - Aquatic Therapy: 78°F (+ 2°F) dry-bulb / 60% (+ 5%) relative humidity (high limit controlled)

        - Physical Therapy: 72°F (+ 2°F) dry-bulb / 50% (+ 5%) relative humidity (not controlled)
    - Winter:
        - Offices: 68°F (+ 2°F) dry-bulb
        - Gyms: 72°F (+ 2°F) dry-bulb
        - Weight Room: 68°F (+ 2°F) dry-bulb
        - Aquatic Therapy: 78°F (+ 2°F) dry-bulb
        - Physical Therapy: 68°F (+ 2°F) dry-bulb
- Chilled water system within facility
    - Pipe shall be sized for 20 degree delta T (42 EWT, 62 LWT)
    - System can be reset for 48 EWT in winter operation associated with waterside economizer
    - All coils shall be controlled with two way modulating control valves
- Heating water system within facility
    - Pipe shall be sized for 40 degree delta T (200 EWT, 160 LWT)
    - All coils shall be controlled with two way modulating control valve
- Air Handling Units – Unit Components
    - Pre-heat coil – Heating hot water
    - Cooling coil – Chilled water
    - Heating coil – Heating hot water
    - Energy Recovery – Heat wheel
        - Units requiring heat wheel will be determined at a later stage of the project but is described for means of energy recovery in unit
- Below are charts that represent our estimate of the capacities for new facilities along with the existing Walkup Skydome for chilled water and heating hot water. These are based off of rule of thumb calculation from past project experience. These estimates are not final but this is the starting point for the University to understand the impact to their cooling/heating plants.

RENOVATED CHWS&R LOAD	
Area Served	**Tons**
Skydome*	70
Convocation Center	825
Health Research Sport Performance Center	200
Storage*	25

* The chilled water for the facilities noted will be served from the existing air cooled chiller within the Skydome..

RENOVATED HEATING WATER LOAD	
Area Served	**MBH**
Skydome*	15,084
Convocation Center	16,000
Health Research Sport Performance Center	6,100
Storage*	1,700

* The heating water for the facilities noted will be served from the existing heat exchangers within the Skydome.

ELECTRICAL

- Conditions existing to remain
    - Electrical Service equipment for the Walkup Skydome
        - Existing 1000 kVA transformer #73 fed from existing switching cabinet #73 with existing 3#1, 1#2 ground, 4" underground conduit from building 67.
        - 2000A SES-SD and all downstream equipment and panelboards within the Skydome
        - 100 KW emergency generator serving the Skydome

- Existing equipment at the Walkup Skydome is not of adequate capacity to support the new HRSPCC. The following sections provide details of new electrical systems to be provided for the proposed new buildings.

- Below are charts that represent our understanding of the existing Electrical capacities of the existing facility. These are based off the original building drawings from 1975 and the renovation drawings from 2010.

EXISTING ELECTRICAL LOAD	
Area Served	**kVA**
Skydome	1,000

EXISTING EMERGENCY ELECTRICAL LOAD	
Area Served	**kVA**
Skydome	74

- Below are charts that represent our estimate of the Electrical capacities for new facilities along with the existing Walkup Skydome. These are based off of rule of thumb calculations from past project experience. These estimates are not final but this is the starting point for the University to understand the impact to their Electrical Service and Utility Transformer.

RENOVATED ELECTRICAL LOAD	
Area Served	**kVA**
Skydome (Existing)	1,000
Convocation Center	2,659
Health Research Sport Performance Center	1,064
Skydome Storage	133

RENOVATED EMERGENCY ELECTRICAL LOAD	
Area Served	**kVA**
Skydome (Existing)	74
Convocation Center + Health Research Sport Performance Center + Skydome Storage	1,000

FIRE

- Information regarding existing information and equipment is limited and was taken from engineered drawings on previous Walkup Skydome renovations.

Convocation Center

MECHANICAL

- Anticipated load of facility
  - Cooling - 825 Tons
  - Heating – 16,000 MBH
- New items to be provided
  - Building 67 – South Campus Central Plant
    - Cooling –NAU Facilities indicates that the existing chilled water system does not have sufficient capacity to support the estimated cooling loads of the proposed facility. The central plant has space for 2 new chillers with concrete equipment pads for future chillers. Provide the following:

- ❖ (2) – 500 Ton premium efficiency, water cooled, centrifugal chillers mounted on the existing pads and tied into the existing header
- ❖ (2) – 500 Ton cooling towers
- ❖ (2) – 625 GPM base mounted chilled water pumps with VFD
- ❖ (2) – 1500 GPM base mounted condenser water pumps
- ❖ Hydronic Specialties as required for condenser water and chilled water systems

- Heating – NAU Facilities indicates that the existing heating plant can support the additional 23,800 MBH of heating required for the facility. Provide the following:
  - ❖ (2) – 600 GPM based mounted heating hot water pumps with VFD
  - ❖ Hydronic Specialties as required for the heating hot water system

- Site Infrastructure - Campus chilled and heating water to be extended to facility from building 67 (refer to included drawing HVAC Site Piping Concept)to a mechanical room located on the southwest portion of the new convocation center. The anticipated load and pipe sizes required are indicated below. Components associated with campus heating water system shall be designed per ASME piping code standards, rated for 600 psig pressure and 400 degree temperature.
  - Cooling – 1,025 Tons (8" Pipe)
  - Heating – 22,100 MBH (8" Pipe)
- New water to water heat exchanger(s) for heating hot water, pumps, hydronic specialties, etc. sized for 22,100 MBH serving the new HRSPCC. Heat exchanger and components upstream of heat exchanger connected to campus system shall be designed per ASME piping code standards, rated for 600 psig pressure and 400 degree temperature.
- New chilled water pumps, hydronic specialties, etc. sized for 1,250 GPM serving the new HRSPCC.
- Air Handling Units
  - Air handling units to be sized for a maximum of 25 tons per AHU unless noted otherwise.
  - Two (2) bowl air handling units will be provided with an approximate capacity of 60,000 CFM and 300 tons each.
- Smoke Control System:
  - The convocation center will be provided with a smoke control system consisting of two smoke zones, the Bowl zone and Concourse zone. Each smoke zone will have a dedicated control mode to provide code required exhaust, make-up air, and component control as required to evacuate smoke from the building.
  - IBC Section 909 and NFPA 92B are the controlling code documents for Smoke Control Systems.
  - A fire fighter smoke control panel (FSCP) will be required for monitoring and control of all components of the smoke control systems. The FSCP will include graphics, identification, lights, and control as required by code. The FSCP will be integrated with the building BMS system.
  - The FSCP will be located in the Fire Command room. The space shall be 2-hour rated per code. The Fire Command room shall be served by a dedicated HVAC unit on emergency power.
  - The building BMS system will be utilized to control the smoke control system components and equipment. The BMS system shall be UL listed for smoke control applications. All control devices associated with the control of the smoke control system will be required to be UL listed for smoke control applications and provided with UPS power source.
  - All smoke control dampers shall be UL555S listed and provided with end switches for monitoring damper position.
  - All smoke exhaust fans are required to be provided with 1.5 times belts.
  - All smoke exhaust ductwork shall be tested to 1.5 times the maximum design pressure. Duct leakage shall not exceed 5% of design airflow.
  - All ducts and equipment shall be supported from fire-resistance-rated structural elements.
  - All equipment used as part of the smoke control system shall be on emergency power as required by code.
  - A 3rd Party inspector will be required to test the smoke control system per code requirements.
  - All HVAC air-handling equipment not used during a smoke mode event shall be shutdown.

ELECTRICAL

- Conditions existing to remain
    - Site and parking lot lighting outside footprint of the HRSPCC.
- Conditions to be relocated or demolished (including but not limited to)
    - Existing 15KV APS overhead electrical lines and power poles shall be removed outside the footprint of the new HRSPCC back to the APS power poles located on the east side of the San Francisco Street.
    - ALL parking lot lighting south of new HRSPCC shall be demolished (P66 & P66A). Existing overhead electric lighting feeders for all parking lot light fixtures shall be removed.
    - Site lighting fixtures within footprint of the new HRSPCC shall be demolished. Existing 480V underground electric lighting feeders will be interrupted by new HRSPCC footprint and rerouted as required for all remaining site lighting fixtures.
- New items to be provided
    - General power for the new HRSPCC will be provided by a feeder loop originated from existing 12,470 V., 3-phase switch 6A and ends at existing 12,470 V., 3-phase switch 6B located in the building 67.
    - (1) set of 3#2/0 Cu., 1#2Bare Cu. Ground., in a 4" conduit, (1) spare 1" conduit for future power monitoring, and (1) spare 4" conduit shall be extended approximately 1,700 feet to feed (1) pad-mounted, 4-switch type, switching cabinet, (2) step-down 12,470-480Y/277 V liquid-filled, pad-mounted transformers (one for each switchboard), and (2) 2,000 A, 480Y/277 V, 3-phase, 4-wire switchboards at the new Convocation Center.
    - From switching cabinet at the Convocation Center, (1) set of 3#2/0 Cu., 1#2Bare Cu. Ground., in a 4" conduit, (1) spare 1" conduit for future power monitoring, and (1) spare 4" conduit shall be extended approximately 800 feet to feed (1) pad-mounted, 4-switch type, switching cabinet and (1)step-down 12,470-480Y/277 V liquid-filled pad-mounted transformer, (1) 1,600 A, 480Y/277 V, 3-phase, 4-wire switchboard at the Health Research Sport Performance building, and the 1,000 kVA transformer at the Skydome. The existing 1,000 kVA transformer #73 located at the Skydome shall be disconnected from the existing switching cabinet #73 and connected to the new switching cabinet as mentioned above. (Please refer to the attached one-line diagram). (2) new 2,000 A switchboards at 480Y/277 V, 3-phase, 4-wire
    - (1) new 800 KW emergency generator at 480Y/277 V, 3-phase, 4-wire
        - Items to be connected to the generator may include (but are not limited to) egress lighting, convocation center sound system, a portion of the video boards, elevators and smoke control system.
    - Electrical distribution equipment
        - Distribution panelboards, branch panelboards and step-down, dry-type transformers as required to distribute power throughout the new convocation center.
    - Light Fixtures and Controls
        - New basketball sports lighting fixtures in the convocation center bowl. This system may use either metal halide or LED fixtures and will provide normal, emergency, work, house and aisle lighting within the bowl.
            - Light levels will be designed as recommended by NCAA Best Lighting Practices for Basketball.
        - New light fixtures throughout the new convocation center
            - Light levels will be designed as recommended by ASHRAE 90.1 or per IES standards of good practice.
        - Lighting systems for interior spaces shall be generally fluorescent or LED and powered at 277 volts.
            - Specialty lighting (either LED or incandescent) may be powered at 120V.
        - All lighting in public spaces shall be tied into a main building lighting control system to meet energy code requirements and to allow central control of lighting in public spaces.
            - Local override switches will be provided to meet the requirements of the energy code.
        - Lighting in non-public spaces shall use a combination of the main building lighting control system and local controls (occupancy sensors, switches, dimmers, etc., to be coordinated with the EMS) to meet the energy code.
        - Emergency lighting shall be provided as required to meet governing codes.
            - Emergency lighting shall be connected to panelboards served by the new emergency generator.

- Receptacles:
  - Convenience power and computer equipment shall be served at 208 volts or 120 volts as required.
  - Receptacles shall be provided in each new space per program requirements. At a minimum, each regularly occupied space shall have at least one receptacle per wall.
  - Receptacles to serve food service equipment shall be on dedicated circuits and be GFCI type or protected by a GFCI circuit breaker.
  - All receptacles in toilets, janitor closets and above counter tops with sinks shall be GFCI type.
  - All receptacles located outdoors will be weather resistant GFCI type with a weather proof in-use cover.
  - Receptacles for general service shall be 20-amp, heavy-duty, grounding type.
  - Receptacles for maintenance, special equipment, and near roof-mounted HVAC equipment (if applicable) shall be provided as required by Code.
- Equipment Connections:
  - Electrical power connections shall be made to all new elevators, electrically operated doors, etc., including furnishing of all electrically associated devices such as disconnect switches, lock-out switches, etc.
  - Electrical power connections shall be provided within the bowl for potential new ribbon boards to run the length of the sidelines.
  - Electrical power connections and disconnect switches shall be provided for new videoboards (approximately 1000 SF) within the bowl as required.
- Mechanical Equipment Connections:
  - Electrical power connections shall be made to any new mechanical equipment including furnishing of all electrically associated devices such as disconnect switches, contactors, magnetic or manual starters, lock-out switches, etc.

PLUMBING

- Natural Gas
  - There is no existing natural gas system supplying the existing Skydome. There is a natural gas service routed to adjacent on-campus facilities. Service will be required to be extended to the building to serve equipment requiring natural gas.
  - Natural gas equipment such as food service and laundry equipment is anticipated to be added.
  - Natural gas will be distributed within the building at 2 PSIG and then reduced at the required equipment operating pressure.
  - New aboveground piping to be ASTM A63 Grade B steel pipe with threaded or welded fittings.
  - New underground piping to be polyethylene with socket fusion fittings.
- Domestic Cold Water
  - A new 6” domestic water supply is anticipated to be required to supply the convocation center.
  - New underground piping to be Type K copper tube (2 inch or smaller) or cement lined ductile iron pipe (3 inch and larger). New aboveground piping to be insulated Type L copper tube.
  - To minimize the amount of replacement parts, valve manufacturers and model numbers will match the existing Skydome and university standards.
  - Heat tracing for freeze protection will be installed on exterior exposed aboveground piping.
- Domestic Hot Water
  - New heating hot water supply and return lines to be extended from campus utility loop to southwest portion of new convocation center. Campus heating hot water lines are rated at 250 degrees entering, 210 degrees leaving and 160 PSI. The anticipated domestic hot water capacity is 1,800 GPH, 4” heating hot water pipes to be provided.
  - New heating hot water to water heat exchanger(s), pumps, and hydronic specialties to serve hot water fixtures. The new hot water system to be sized to maintain 140 degrees. Heat exchanger and components upstream of heat exchanger connected to campus system shall be designed per ASME piping code standards, rated for 600 psig pressure and 400 degree temperature.
  - Water supplied to water heaters will be softened to acceptable levels.

  - The new domestic hot water systems shall be recirculated to within 25 feet of all points of use to minimize dead legs.
  - Aboveground piping to be insulated Type L copper tube.
  - To minimize the amount of replacement parts, equipment, valve manufacturers and model numbers will match the existing Skydome and university standards.
- Sanitary Sewer
  - A new 8“ sanitary sewer service to be routed from the new convocation center to the nearest sanitary main.
  - New gravity sanitary waste and vent piping to be installed to serve the new plumbing fixtures.
  - New underground piping to be Schedule 40 solid wall PVC pipe. New aboveground piping to be cast iron soil pipe with heavy duty hubless couplings.
  - To comply with local code requirements, grease traps should be installed for the new food service areas.
  - Heat tracing for freeze protection will be installed on all exterior exposed above-ground grease waste piping and sanitary p-traps.
  - Heat tracing for grease waste maintenance will be installed on grease waste lines to remote interceptors.
- Storm Sewer
  - Three (3) new 15” storm sewer lines to be extended from the new convocation center to the nearest storm main.
  - Heat trace to be installed on all roof drain systems.
  - Roof drains and secondary roof drains to be cast-iron with cast-metal dome strainers.
  - Secondary roof drain system(s) to be routed to an observable location.
  - New underground piping to be Schedule 40 solid wall PVC pipe. New aboveground piping to be cast iron soil pipe with heavy duty hubless couplings.
- Fixtures
  - Water closets will be wall-mounted with hard-wired sensor flush valves.
  - Urinals will be wall-mounted with hard-wired flush valves.
  - Public lavatories will be wall mounted with hard wired sensor faucets and point-of-use thermostatic mixing valves.
  - Private lavatories will be wall mounted with manual lever handle faucets and point-of-use thermostatic mixing valves.
  - To minimize the amount of replacement parts, the fixture manufacturers and model numbers will match the fixtures used in the existing Skydome.

FIRE

- Alarm
  - Provide a new fire alarm control panel with new fire alarm devices and appliances throughout.
  - The fire alarm control panel will be tied back to the Walkup Skydome fire alarm control panel.
  - Manual and automatic initiating devices will be installed as required by code.
  - Notification appliances (speaker/strobes) will be installed throughout the convocation center.
- Sprinkler
  - A new underground fire sprinkler will brought into the convocation center.
  - Sprinkler protection will be provided throughout the new convocation center.

COLLECTIVE TECH

- Security
  - Provide new electronic physical security systems per the University Standard. Assume that the convocation center end points (access card readers and cameras) will connect to existing head-end systems in the Walkup Skydome.
- Telecommunications Site infrastructure
  - Conduit (Primary Entrance)
    - HEI assumes that the existing telecommunications pathway into the Skydome and along E. Pine Knoll Dr. is not sufficient to support the cable plant required for the new convocation center. As such, HEI recommends (8) 4” underground conduits serving as the primary telecommunications entrance be extended from the new convocation center into a new 4’x8’x4’ precast handhole

north of Building 95 and then extended to a another new handhole near the existing parking lot entry along E. Pine Knoll Dr. From this handhole, a minimum of (4) 4" underground conduits shall be extended to a another new handhole located south of Building 62 (McConnell Hall). From this handhole, a minimum of (4) 4" underground conduits shall be extended to an existing handhole or maintenance hole south of Building 67 (South Heating & Cooling Plant) that has existing underground conduit capacity into the IT switching center in Building 64. See attached Telecomm Site Distribution Concept plan. Assume total conduit/cabling distance required is 3,000 feet.

- Cabling (Primary Entrance)
  - Provide wet-rated fiber optic cabling from a nearby campus distribution point (Building 64) into the convocation center. Anticipate a minimum of 288 OS2 singlemode fiber strands (final strand count is to be coordinated with University); the distance (~3,000 feet) is too great for OM3 or OM4 multimode fiber to support 1 Gb Ethernet.
  - Provide 600-pair (final count to be coordinated with University) copper UTP from a nearby campus distribution point (Building 64) into the convocation center.
- Conduit (Health Research Sport Performance Center connection)
  - HEI recommends (4) 4" underground conduits be extended from the new Convocation Center MDF to the new Health Research Sport Performance Center MDF. See attached Telecomm Site Distribution Concept plan. Provide a new handhole as noted on the plan.
- Cabling (Health Research Sport Performance Center connection)
  - Provide wet-rated 144 OS2 singlemode fiber and 48 OM4 multimode fiber strands between MDF to the new Health Research Sport Performance Center MDF. If conduits do not stub up directly into these rooms, cable shall be indoor/outdoor plenum-rated.
  - Provide 200-pair copper UTP between MDF to the new Health Research Sport Performance Center MDF. If underground conduits do not stub up directly into these rooms, wet-rated cable shall transition to plenum-rated cable within 50 feet of entering building.

- Telecommunications Convocation center infrastructure
  - Provide Telecommunications infrastructure – cabling and pathways – to support all voice and data requirements of the Convocation center per NAU Division 27 Technical Standards. Primary infrastructure includes:
    - Build-out of Telecommunications Rooms in quantity and locations so that every area of the Convocation center can be served with cabling ***240 feet*** or less in length (including 40 feet of slack).
    - Plenum-rated backbone cabling between Convocation center's Main Telecom Room (MDF) and all other Convocation center Telecom Rooms (IDFs):
      - A minimum of 25-pair Category 3
      - A minimum of (4) Category 6A UTP
      - A minimum of 48-strands of OS2 Singlemode fiber
      - A minimum of 48-strands of OM4 Multimode fiber
    - Redundant fiber connections between Convocation center MDF and Skydome MDF
      - To provide a secondary network connection (through the Skydome's existing fiber/network), Henderson recommends a minimum of 12-strand singlemode fiber and 12-strand OM4 multimode fiber be provided from the Skydome MDF to the Convocation center MDF.
    - Plenum-rated Category 6 horizontal cabling, connectors, and faceplates – a minimum of two cables to typical workstation outlets.
    - Two plenum-rated Category 6A horizontal cables (and associated connectors) to each Wireless Access Point location.
    - Telecommunications Grounding and Bonding System per the latest TIA-607 Standard.
- Distributed Antenna System (DAS)
  - Provide a new, vendor-neutral distributed antenna system.
- Wireless Access (Wi-Fi)

  - Provide Wireless Access points to provide general coverage for all convocation center seats. Coordinate with University on Access Point deployment. Assume one access point for every 60 seats, with two Category 6 cable/connectors for each.
- Television Distribution
  - Extend .750 P3 series copper clad, aluminum clad conductor coaxial cabling from nearby campus distribution to provide television service within the Convocation center.
  - Televisions will be located in the Lobby, Performance Center and Strength and Conditioning spaces and shall be cabled with (1) RG-6 and (1) Category 6 plenum cables.
  - Provide necessary amplifiers and splitters to extend Cable TV service to all Television locations.
- Scoreboards
  - New center-hung, four sided scoreboard utilizing LED videowall technology for video playback and scoring information to be displayed simultaneously or independently on the same surface.
  - Wireless controller will provide scoring information.
  - Video content will originate from an on-campus production room.
- Basketball Court Sound System
  - High-quality system using professional components capable of providing intelligible announcements over all but the loudest of crowd noise. Music reproduction will be full-range including adequate low frequency performance to match current popular music. The system will not be required to support touring productions.
  - The system will provide equal sound quality to all seating areas and the playing surface.
  - Loudspeakers shall be located near the scoreboard if sufficient sound-absorbing materials are located on the walls. Loudspeakers shall be located in a distributed arrangement if the sound-absorbing materials are insufficient.
- Truck Dock Location (this may be adjacent to the Convocation center or require site conduit to a location in the parking lot)
  - Provide a minimum of (3) 4" conduits from the Convocation center to a Truck Dock location to support broadcast trucks for televised events.
  - Provide the following broadcast pre-wire cabling with connections from the Convocation center to the Truck Dock Location:
    - (1) 36 strand singlemode fiber with ST Female connectors
    - (3) 12 pair DT12 audio cables with Female connectors
    - (24) audio tielines, 22 awg wires with Male+Female connectors
    - (36) coax RG6 with BNC Female
    - (24) Cat-6 cables with RJ45 female
    - (1) 50 pairs Cat-3 cable for telco

HEALTH RESEARCH SPORT PERFORMANCE CENTER MEPF

MECHANICAL

- Anticipated load of facility
  - Cooling - 200 Tons
  - Heating – 6,1000 MBH
- New items to be provided
  - Heating hot water will be provided to space from equipment located in the new convocation center. Pipe size extended to the space will be 6" pipe.
  - Chilled water will be provided to space from equipment located in the new convocation center. Pipe size extended to the space will be 6" pipe.
  - Air Handling Units
    - Air handling units to be sized for a maximum of 25 tons per AHU.

ELECTRICAL

- Conditions to be relocated or demolished (including but not limited to)
  - Overhead electrical lines serving existing street lighting shall be interrupted by the new Health Research Sport Performance Center. Existing street lighting fixtures shall remain and overhead lines shall be

rerouted as required by the new building footprint. If the existing street lighting fixtures are not the type that can accommodate the underground routed power lines, they shall be replaced with new street lighting fixtures compatible with underground power lines.

- Existing underground electrical line feeding the athletic field shall be interrupted by the new Health Research Sport Performance Center. Existing electrical line shall be rerouted around the building as required by the new building footprint.

- New items to be provided
  - General power for the New HRSPCC will be provided by a feeder loop originated from existing 12,470 V., 3-phase switch 6A and ends at existing 12,470 V., 3-phase switch 6B located in the building 67.
  - (1) set of 3#2/0 Cu., 1#2Bare Cu. Ground., in a 4" conduit, (1) spare 1" conduit for future power monitoring, and (1) spare 4" conduit shall be extended approximately 1,700 feet to feed (1) pad-mounted, 4-switch type, switching cabinet, (2) step-down 12,470-480Y/277 V liquid-filled, pad-mounted transformers (one for each switchboard), and (2) 2,000 A, 480Y/277 V, 3-phase, 4-wire switchboards at the new Convocation center.
  - From switching cabinet at the Convocation center, (1) set of 3#2/0 Cu., 1#2Bare Cu. Ground., in a 4" conduit, (1) spare 1" conduit for future power monitoring, and (1) spare 4" conduit shall be extended approximately 800 feet to feed (1) pad-mounted, 4-switch type, switching cabinet and (1)step-down 12,470-480Y/277 V liquid-filled pad-mounted transformer, (1) 1,600 A, 480Y/277 V, 3-phase, 4-wire switchboard at the Health Research Sport Performance Center, and the 1,000 kVA transformer at the Skydome. The existing 1,000 kVA transformer #73 located at the Skydome shall be disconnected from the existing switching cabinet #73 and connected to the new switching cabinet as mentioned above. (Please refer to the attached one-line diagram). (1) New 1,600 A, 480Y/277 V, 3-phase, 4-wire switchboard to feed the new Health Research Sport Performance Center and Skydome storage.
  - Electrical distribution equipment
    - Distribution panelboards, branch panelboards and step-down, dry-type transformers as required to distribute power throughout the new performance center.
  - Light Fixtures and Controls
    - New light fixtures throughout the new Health Research Sport Performance Center.
      - Light levels will be designed as recommended by ASHRAE 90.1 or per IES standards of good practice.
    - Lighting systems for interior spaces shall be generally fluorescent or LED and powered at 277 volts.
      - Specialty lighting (either LED or incandescent) may be powered at 120V
    - All lighting in public spaces shall be tied into a main building lighting control system to meet energy code requirements and to allow central control of lighting in public spaces.
      - Local override switches will be provided to meet the requirements of the energy code.
    - Lighting in non-public spaces shall use a combination of the main building lighting control system and local controls (occupancy sensors, switches, dimmers, etc., to be coordinated with the EMS) to meet the energy code.
    - Emergency lighting shall be provided as required to meet governing codes.
      - Emergency lighting shall be served by emergency ballasts or unitary battery equipment.
  - Receptacles:
    - Convenience power and computer equipment shall be served at 208 volts or 120 volts as required.
    - Receptacles shall be provided in each new space per program requirements. At a minimum, each regularly occupied space shall have at least one receptacle per wall.
    - All receptacles in toilets, janitor closets and above counter tops with sinks shall be GFCI type.
    - All receptacles located outdoors will be weather resistant GFCI type with a weather proof in-use cover.
    - Receptacles for general service shall be 20-amp, heavy-duty, grounding type.
    - Receptacles for maintenance, special equipment, and near roof-mounted HVAC equipment (if applicable) shall be provided as required by Code.
  - Equipment Connections:

        - Electrical power connections shall be made to all new elevators, electrically operated doors, etc., including furnishing of all electrically associated devices such as disconnect switches, lock-out switches, etc.
    - Mechanical Equipment Connections:
        - Electrical power connections shall be made to any new mechanical equipment including furnishing of all electrically associated devices such as disconnect switches, contactors, magnetic or manual starters, lock-out switches, etc.

PLUMBING

- Natural gas is not anticipated to be required for this facility.
- Domestic Cold Water
    - Domestic cold water to be served from the existing Walkup Skydome. The anticipated domestic cold water load is 120 GPM and the pipe size to be extended to the facility is 3 inch pipe.
    - New underground piping to be type K copper tube (2 inch or smaller) or cement lined ductile iron pipe (3 inch and larger). New aboveground piping to be insulated type L copper tube.
    - To minimize the amount of replacement parts, valve manufacturers and model numbers will match the existing.
- Domestic Hot Water
    - Domestic hot water to be served from the existing Walkup Skydome water heating system. The anticipated domestic hot water load is 400 GPH and the pipe size to be extended to the facility is 1-1/2 inch pipe. The Skydome domestic hot water system is served by softened cold water.
    - The new domestic hot water systems shall be recirculated to within 25 feet of all points of use to minimize dead legs.
    - New aboveground piping to be insulated type L copper tube.
    - To minimize the amount of replacement parts, valve manufacturers and model numbers will match the existing.
- Sanitary Sewer
    - A new 6 inch sanitary sewer service to be extended from the facility to the nearest campus sanitary sewer main.
    - New gravity sanitary waste and vent piping to be installed to serve the new plumbing fixtures.
    - New underground piping to be schedule 40 solid wall PVC pipe. New aboveground piping to be cast iron soil pipe with heavy duty hubless couplings.
    - Heat tracing for freeze protection will be installed on exterior exposed aboveground piping.
- Storm Sewer
    - Two (2) new 12” storm sewer lines to be extended from the new facility to the nearest storm main.
    - Heat trace to be installed on all roof drain systems.
    - Roof drains and secondary roof drains to be cast-iron with cast-metal dome strainers.
    - Secondary roof drain system(s) to be routed to an observable location.
    - New underground piping to be schedule 40 solid wall PVC pipe. New aboveground piping to be cast iron soil pipe with heavy duty hubless couplings.
- Fixtures
    - Water closets will be wall mounted, with hard-wired sensor flush valves.
    - Urinals will be wall mounted, with hard-wired sensor flush valves.
    - Public lavatories will be wall mounted with hard wired sensor faucets and point of use thermostatic mixing valves.
    - Private lavatories will be wall mounted with manual lever handle faucets and point of use thermostatic mixing valves.
    - To minimize the amount of replacement parts, the fixture manufacturers and model numbers will match the existing.

FIRE

- Alarm
    - A new fire alarm control panel with new fire alarm devices and appliances will be provided throughout the Health Research Sport Performance Center.

  - The fire alarm control panel will be tied back to the Walkup Skydome fire alarm control panel.
  - Manual and automatic initiating devices will be installed as required by code.
  - Notification appliances (speaker/strobes) will be installed throughout the Health Research Sport Performance Center.
- Sprinkler
  - A new fire sprinkler underground will brought into the Health Research Sport Performance Center.
  - Sprinkler protection will be provided throughout the new Health Research Sport Performance Center.

COLLECTIVE TECH

- Security
  - Provide new electronic physical security systems per the University Standard. Assume that the Health Research Sport Performance Center end points (access card readers and cameras) will connect to existing head-end systems in the Walkup Skydome.
- Telecommunications infrastructure
  - Site infrastructure: See Convocation center section
  - Provide Telecommunications infrastructure – cabling and pathways – to support all voice and data requirements of the addition per NAU Division 27 Technical Standards. Primary infrastructure includes:
    - Build-out of Telecommunications Rooms in quantity and locations so that every area of the addition can be served with cabling ***240 feet*** or less in length (including 40 feet of slack).
    - Backbone cabling: 48-strands of plenum-rated singlemode fiber, 48-strands of plenum-rated OM4 multimode fiber, and 200 pair of plenum-rated Category 3 backbone cabling from the Skydome's MDF to each IDF in the Health Research Sport Performance Center.
    - Redundant fiber connections between Health Research Sport Performance Center MDF and Skydome MDF.
      - To provide a secondary network connection (through the Skydome's existing fiber/network), Henderson recommends a minimum of 12-strand singlemode fiber and 12-strand OM4 multimode fiber be provided from the Skydome MDF to the Health Research Sport Performance Center MDF.
    - Plenum-rated Category 6 horizontal cabling, connectors, and faceplates – a minimum of two cables to typical workstation outlets.
    - Two plenum-rated Category 6A horizontal cables (and associated connectors) to each Wireless Access Point location.
  - Telecommunications Grounding and Bonding System per the latest TIA-607 Standard.
- Wireless Access (Wi-Fi)
  - Provide Wireless Access points to provide general coverage for the Health Research Sport Performance Center. Coordinate with University on Access Point deployment. Assume a grid of access points with approximately one access point every 70 feet on center.
- Television Distribution
  - Provide .500" coaxial cabling the Convocation center's MDF to the IDF in the Health Research Sport Performance Center to extend Cable TV service to the new building.
  - Televisions will be located throughout the Health Research Sport Performance Center and shall be cabled with (1) RG-6 and (1) Category 6 plenum cables.
  - Provide necessary amplifiers and splitters to extend Cable TV service to all Television locations.

STORAGE MEPF

MECHANICAL

- Anticipated load of facility
  - Cooling - 25 Tons
  - Heating – 1,700 MBH
- New items to be provided
  - Heating hot water will be provided to space from existing utilities located in the adjacent Skydome. Pipe size extended to the space will be 2-1/2" pipe.

- Chilled water will be provided to space from equipment located in the new convocation center. Pipe size extended to the space will be 3" pipe.
- A single air handling unit to be provided for the space based on heating and cooling capacities listed above.

ELECTRICAL

- Conditions to be relocated (including but not limited to)
  - Existing 15 KV underground electric lines shall be rerouted outside the footprint of the new Skydome storage building.
- New items to be provided
  - (1) New 200A panelboard at 480Y/277V, (1) 30 kVA dry-type transformer and (1) 100A 208Y/120V panelboard to serve loads within new storage space. Storage room electrical equipment will be served by the new 1,600 A, 480Y/277 V, 3-phase, 4-wire switchboard at the Health Research Sport Performance Center.
  - Light Fixtures and Controls
    - New light fixtures will be provided throughout the Storage space
      - Light levels will be designed as recommended by ASHRAE 90.1 or per IES standards of good practice.
    - Lighting systems for interior spaces shall be generally fluorescent or LED and powered at 277 volts.
    - Lighting shall be controlled via occupancy sensors and local override controls to meet the requirements of the energy code.
    - Emergency lighting shall be provided as required to meet governing codes.
      - Emergency lighting shall be served by emergency ballasts or unitary battery equipment.
  - Receptacles:
    - Convenience power and computer equipment shall be served at 208 volts or 120 volts as required.
    - Receptacles shall be provided in each new space per program requirements. At a minimum, each regularly occupied space shall have at least one receptacle per wall and each storage space shall have receptacles spaced at approximately 50'-0" on center.
    - All receptacles located outdoors will be weather resistant GFCI type with a weather proof in-use cover.
    - Receptacles for general service shall be 20-amp, heavy-duty, grounding type.
    - Receptacles for maintenance, special equipment, and near roof-mounted HVAC equipment (if applicable) shall be provided as required by Code.
  - Mechanical Equipment Connections:
    - Electrical power connections shall be made to any new mechanical equipment including furnishing of all electrically associated devices such as disconnect switches, contactors, magnetic or manual starters, lock-out switches, etc.

PLUMBING

- Piping specifications to match requirements for convocation center and Health Research Sport Performance Center.
- Natural Gas
  - Natural gas is not anticipated to be required for this facility.
- Domestic Cold Water
  - Domestic cold water to be served from the existing Walkup Skydome. The anticipated domestic cold water load is 40 GPM and the pipe size to be extended to the facility is 1-1/2 inch pipe.
- Domestic Hot Water
  - Domestic hot water is not anticipated to be required for this facility. If required, domestic hot water to be served from the existing Walkup Skydome water heating system.
- Sanitary Sewer
  - A new 4 inch sanitary sewer service to be extended from the facility to the nearest campus sanitary sewer main.

- Storm Sewer
    - One (1) new 10 inch storm sewer line to be extended from the new facility to the nearest storm main.
- Fixtures
    - Hose bibs, as required by university and applicable code, to be pipe-mounted.

FIRE

- Alarm
    - A new fire alarm control panel with new fire alarm devices and appliances will be provided throughout the Skydome Storage.
    - The fire alarm control panel will be tied back to the Walkup Skydome fire alarm control panel.
    - Manual and automatic initiating devices will be installed as required by code.
    - Notification appliances (speaker/strobes) will be installed throughout the Skydome Storage.
- Sprinkler
    - The sprinkler system for the Skydome Storage will be supplied from the existing sprinkler system serving the Walkup Skydome. The existing fire sprinkler riser for the Walkup Skydome is located in the same area as the new storage building and can be expanded.
    - Sprinkler protection will be provided throughout the new Health Research Sport Performance Center.

COLLECTIVE TECH

- Security
    - Provide new electronic physical security systems per the University Standard. Assume that the storage facility end points (access card readers and cameras) will connect to existing head-end systems in the Walkup Skydome.
- Telecommunications infrastructure
    - Provide Telecommunications infrastructure – cabling and pathways – to support all voice and data requirements of the addition per NAU Division 27 Technical Standards. Primary infrastructure includes:
        - Build-out of Telecommunications Rooms in quantity and locations so that every area of the addition can be served with cabling ***240 feet*** or less in length (including 40 feet of slack).
        - As a less critical area, HEI recommends the Telecom Rooms be tied into the existing Skydome network. Under this scenario, backbone cabling between Storage area IDF(s) and the existing Skydome's MDF would be:
            - 12-strands of plenum-rated singlemode fiber,
            - 12-strands of plenum-rated OM4 multimode fiber
            - 25 pair of plenum-rated Category 3 backbone cabling
        - Plenum-rated Category 6 horizontal cabling, connectors, and faceplates – a minimum of two cables to typical workstation outlets.
        - Two plenum-rated Category 6A horizontal cables (and associated connectors) to each Wireless Access Point location.
        - Each IDF in the Storage addition shall be connected to the Skydome's existing Telecommunications Grounding and Bonding System per the appropriate TIA-607 Standard.
- Wireless Access (Wi-Fi)
    - Provide Wireless Access points to provide general coverage for the Storage addition. Coordinate with University on Access Point deployment. Assume a grid of access points with approximately one access point every 70 feet on center.

STRUCTURAL ENGINEERING

The three-story Health Research Sport Performance Center will be constructed directly north of the existing “skydome” arena. The training facility will be a steel frame structure with concrete cast-in-place elevator and stair cores. The facility will access the skydome through new openings in existing walls at the skydome event level. The covered walkway will wrap around the east side of the existing “skydome” providing access for the third level of the Health Research Sport Performance Center to the skydome main concourse and the main entry for the Convocation Center.

The Convocation Center will be constructed to the southeast of the existing “skydome” arena with the event level at ground level and the main concourse at the second level above the lower bowl.

The structural design will also consider performance issues such as vibration, sound transmission, and deflection limits. Refer to architectural drawings and narratives for elevations, grids and plan dimensions.

DESIGN LOADS (IBC 2012)

Dead Loads

• Structure	Self-weight
• Elevated Floors	Self-weight of structure plus 15 psf superimposed

Live Loads

• Roofs	20 psf plus mechanical equipment
• Snow Load	50 psf ground snow load
• Typical Floors*	80 psf plus 15 psf allowance for partitions
• First Floor	100 psf
• Corridors	80 psf
• Concourse Level	100 psf
• Lobbies	100 psf
• Mechanical Rooms	125 psf
• Stairs	100 psf
• Catwalks	25 psf

*Appropriate live load reductions permitted by the building code have been used.

Wind:	120 mph / Exposure C / I = 1.0
Seismic:	Risk Category III / I =1.25 / Site Class B or C / S_s = 0.36g / S_1= 0.103g Seismic Design Category B; Concentric Braced Frames and Concrete Shear Walls.

MATERIALS

Concrete:	2000 psi at 28 days: Masonry Grout 4000 psi at 56 days: Drilled piers 4000 psi at 28 days: Grade beams, foundation walls, misc. 4000 psi at 28 days: Exterior/interior slabs on grade 4000 psi at 28 days: Concrete over steel deck 4000 psi at 28 days: Topping slabs

Reinforcing Steel:	ASTM A615, Grade 60
Structural Steel:	ASTM A992, Grade 50 unless noted otherwise ASTM A500, HSS Grade B ASTM A36, Connection material and threaded rods ASTM F1554, Grade 36 ASTM F1554, Grade 55 anchor rods with supplement S1 at moment frames and braced frames ASTM F1852, Type 1, Twist-off tension control bolts
Foundation Support:	Geotechnical report will provide allowable loads for drilled concrete piers socketed into the limestone bedrock.

STRUCTURAL INSPECTIONS

The owner shall furnish the services of a qualified inspection firm or the EOR to provide all required special inspections in accordance with Chapter 17 of the International Building Code. The contractor shall provide timely notification for all required inspections and shall not proceed without approvals. Testing shall be provided by an independent testing agency.

STRUCTURAL SYSTEMS

Health Research Sport Performance Center

Roof

The roof shall consist of a traditional steel deck over wide flange steel beams or joists. Added framing members as required for roof top units.

Second and Third Floor

The second and third floor levels shall be composite steel beams supported on wide flange steel columns. The floor deck shall be concrete on composite steel deck with additional reinforcing bars placed transverse to the girders. Additional framing for support of therapy pools may also be required.

First Floor

The 1st floor slab shall be a 4”-6” slab-on-grade reinforced with #3 reinforcing bars at 16” o.c. over a subbase per the geotechnical report. Reinforcing bars at slab joints shall be wrapped or cut to prevent bond at joints.

Covered Exterior Walkway

The steel structure will be supported on a cantilevered steel structure supported on steel columns along the exterior of the walkway and cantilevered towards the skydome.

Convocation Center

Roof Structure

The roof structure will be custom long span steel trusses, spanning approximately 170 feet over the seating bowl at 30 ft spacing with steel beams spanning to the trusses at 10'-0"oc and 3" steel roof deck. The catwalk level at the bottom chord of the steel trusses will include steel beams at 10 ft spacing designed to support general access catwalks, theatrical lighting, sound systems and MEP loads. The trusses will support roof snow loads including drift as required by the building code.

Additional loads on the trusses can impact the weight of the trusses substantially. We will evaluate different options and the impact on the roof structure during design. Some items to consider include:

- Rigging capacity for stage position at one end of the seating bowl
- Rigging capacity for additional center stage position
- Suspended score board at center position

Concourse Level Two

The second level shall be composite steel beams supported on wide flange steel columns. The floor deck shall be concrete on composite steel deck with additional reinforcing bars placed transverse to the girders.

Event Level/Skydome Concourse Structure

The event level floor and Skydome concourse shall be concrete slab on grade 6" thick, reinforced with #3 reinforcing bars at 16" o.c. over a subbase per the geotechnical report. Reinforcing bars at slab joints shall be wrapped or cut to prevent bond at joints.

FOUNDATIONS (Health Research Sport Performance Center, Covered Walkway, Convocation Center)

Drilled pier foundations will be used throughout. Piers will bear on limestone bedrock a varying elevations due to significant variation in the elevation of sound bedrock. Pilot holes at the tip elevation to verify sound bedrock and temporary casings to maintain drilled shaft during concrete placement should be expected. Average pier depths at the Sport Performance Center and Convocation Center are expected to be 10' to 15' in length with 5 foot embedment into the bedrock. A small percentage of piers could be significantly longer. There may also be a small percentage that require additional grade beams/pier caps to transfer load to shallower bedrock locations.

LATERAL LOAD RESISTING SYSTEM (Health Research Sport Performance Center and Convocation Center)

The lateral system for both buildings will be a combination of concentric steel braced frames and concrete shear walls at the stair and elevator cores. We assume each brace to be W-shape members with bolted gusset connections. Brace locations will be placed to minimize interruption to flow and aesthetics.

The Site Class is expected to be B or C due to the bearing on bedrock. Based on this, we anticipate a Seismic Design Category B for all structures with concentric braced frames or reinforced concrete shear walls. Seismic bracing for MEP systems is not required per ASCE7-10 for buildings in Seismic Design Category B. This means we would not have additional costs for supporting MEP systems above a prototype based on a moderate seismic region.

STAIRS AND ELEVATORS

STAIRS

All stairs shall be designed by fabricator using traditional concrete filled pan slabs and channel stringers.

ELEVATORS

The elevator pits will be constructed of 8” cast-in-place concrete walls below grade and a 16” deep mat slab. The concrete shaft will extend above the highest stop as required for elevator equipment space and hoist requirements.

SITE STRUCTURES

New retaining and site walls shall be designed with continuous shallow spread footings refer to site plans for location.

APPENDIX

PLOTTED Jun 22, 2016-8:07am

CIVIL IMPROVEMENTS EXHIBIT

NAU STUDENT PERFORMANCE AND BASKETBALL FACILITY
FLAGSTAFF ARIZONA

HEALTH RESEARCH SPORT PERFORMANCE CENTER

CONVOCATION CENTER

SKY DOME

STORAGE

S. SAN FRANCISCO STREET

E. MCCONNELL DRIVE

DEMO EX. PARKING

DEMO EXISTING CURB AND GUTTTER

DEMO EXISTING CURB AND GUTTER

RELOCATE BUS STOP

PROPOSED UNDERGROUND ELECTRIC: REFER TO MEP EXHIBIT

OBLITERATE ALL EXISTING STRIPING

PROPOSED CURB AND GUTTER (TYP)

DEMO 1000' EXISTING ELECTRIC

DEMO EXISTING CURB AND GUTTER

DEMO EXISTING CURB AND GUTTER

790 LF PROPOSED 24" STORM DRAIN

PROPOSED ASPHALT PAVEMENT PARKING LOT

DEMO 80' EXISTING WATER LINE

REFER TO PLUMBING EXHIBIT FOR CHILLED WATER SUPPLY/RETURN AND HOT WATER INFORMATION

PROPOSED FIRE HYDRANT

EXISTING HOT WATER LINE

TO PLANT

REMOVE EXISTING FIRE HYDRANT

PROPOSED 1,000'-8"ø WATER

3' WIDE ASPHALT TRENCH (1140 SF)

785 LF PROPOSED 8" SEWER

740 LF PROPOSED 8" WATER

CONNECT TO EX. STORM DRAIN

360 LF PROPOSED 24" STORM DRAIN

EXISTING FIRE HYDRANT

EXISTING FIRE HYDRANT

100 LF PROPOSED 36" STORM DRAIN

REMOVE 680' OF EXISTING STORM DRAIN AND CATCH BASINS

REMOVE EXISTING FIRE HYDRANT

EX. OVERHEAD ELECTRIC TO BE RELOCATED

DEMO 1245' EXISTING WATER

PROPOSED FIRE HYDRANT

ASPHALT PAVED ASPHALT FIRE ACCESS PER FIRE MARSHALL COMMENTS

DEMO 240' EXISTING SEWER

EXISTING FIRE HYDRANT

EX. ELECTRIC TO BE RELOCATED

DEMO 45' OF EXISTING STORM DRAIN AND CATCH BASIN

180 LF PROPOSED 8" SEWER

EXISTING RECLAIMED FIRE HYDRANT

365 LF PROPOSED 8"WATER

DEMO 100' EXISTING SEWER

REMOVE EXISTING FIRE HYDRANT

PROPOSED FIRE HYDRANT

EXISTING FIRE HYDRANT

REINFORCED CONCRETE DRIVEWAY FOR FIRE ACCESS (17110 SF)

ASPHALT DRIVEWAY FOR FIRE ACCESS (15950 SF)

SCALE 1" : 50'
0 25 50

PRELIMINARY
NOT FOR CONSTRUCTION, BIDDING OR RECORDING

JOB NO:	15034
DATE:	JUN 16
SCALE:	1"=500'
DRAWN:	KMB
DESIGN:	SCI
CHECKED:	GEC

110 W. Dale Avenue
Flagstaff, AZ 86001
928.773.0354
928.774.8934 fax
www.swiaz.com

Shephard Wesnitzer, Inc.

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

Call at least two full working days before you begin excavation.
ARIZONA811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)

DRAWING NO.
EXH01

SHT NO. 1 OF 2

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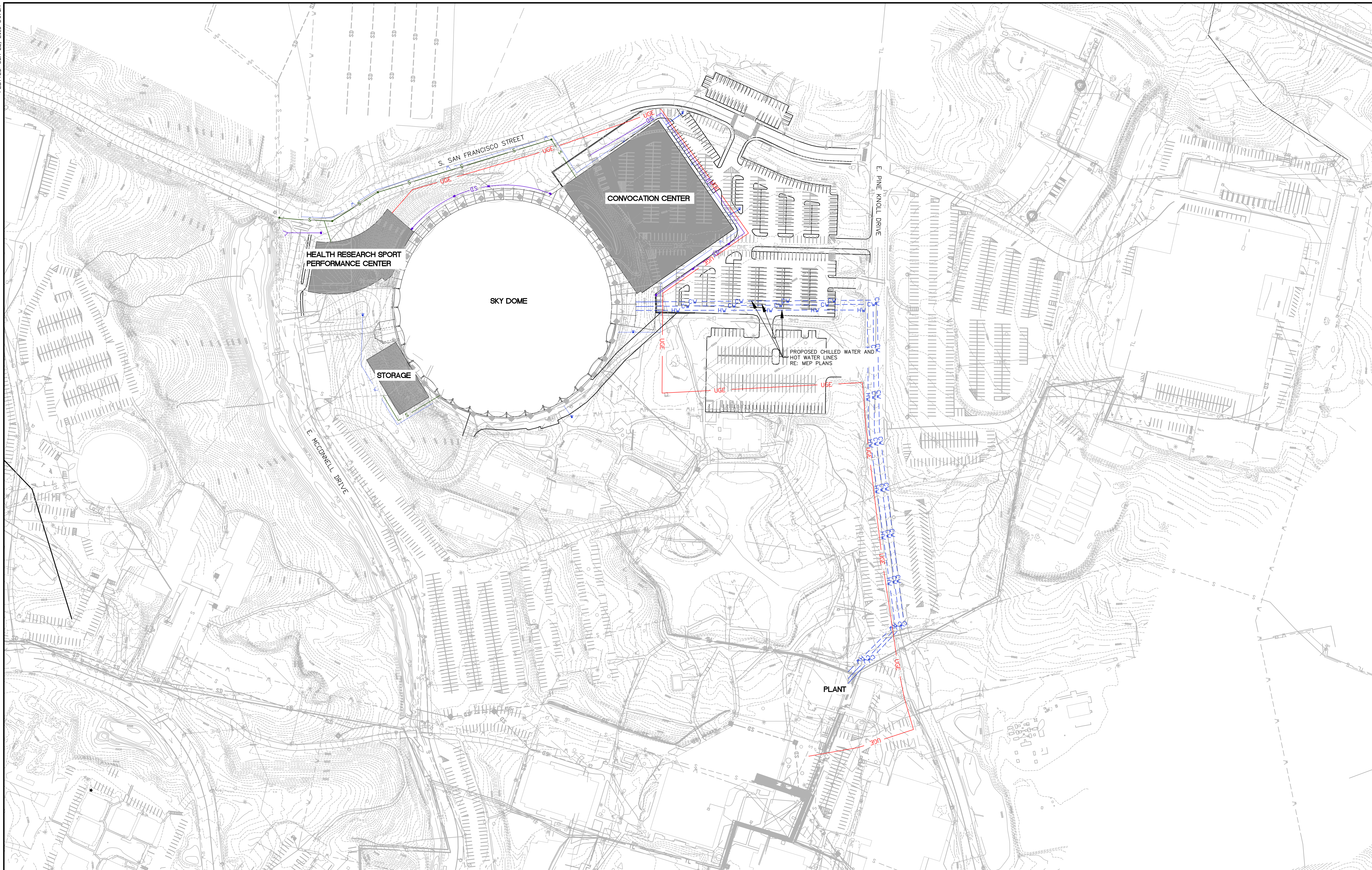
PLOTTED: Jun 22, 2016-8:07am



SCALE 1" : 1,000'

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PRELIMINARY

NOT FOR CONSTRUCTION, BIDDING OR RECORDING

FLAGSTAFF ARIZONA

NAU STUDENT PERFORMANCE AND BASKETBALL FACILITY

HOT + COLD WATER EXHIBIT

JOB NO:	15034
DATE:	JUN 16
SCALE:	1"=750'
DRAWN:	KMB
DESIGN:	SCI
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EXH02

SHT NO.	OF
2	2

FILE: P:\2015\15034\Drawings\Exhibits\15034-Civil Improvements Exhibit.dwg SWI-C3D-KMB

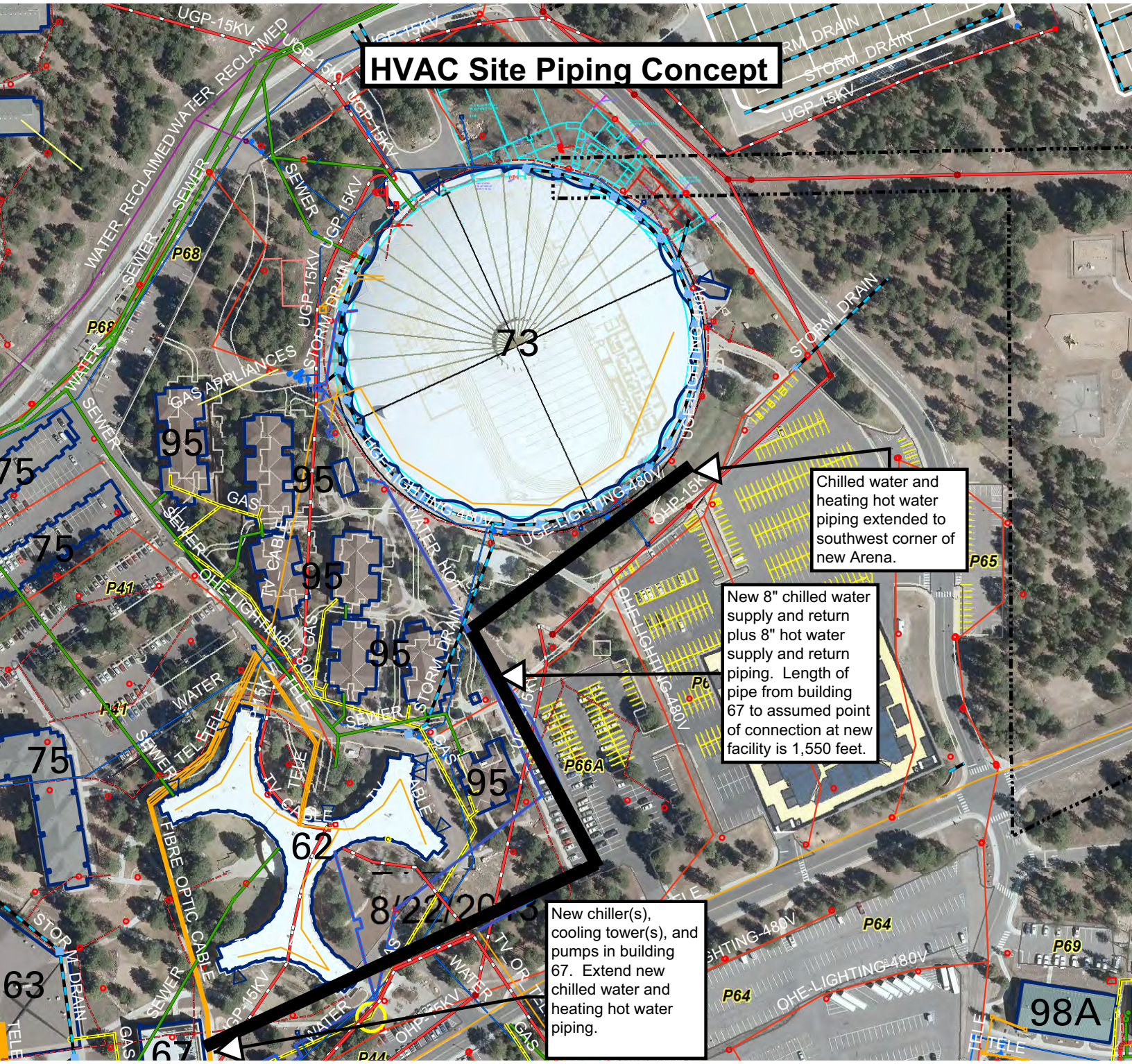
SOUTH CAMPUS POWER SINGLELINE

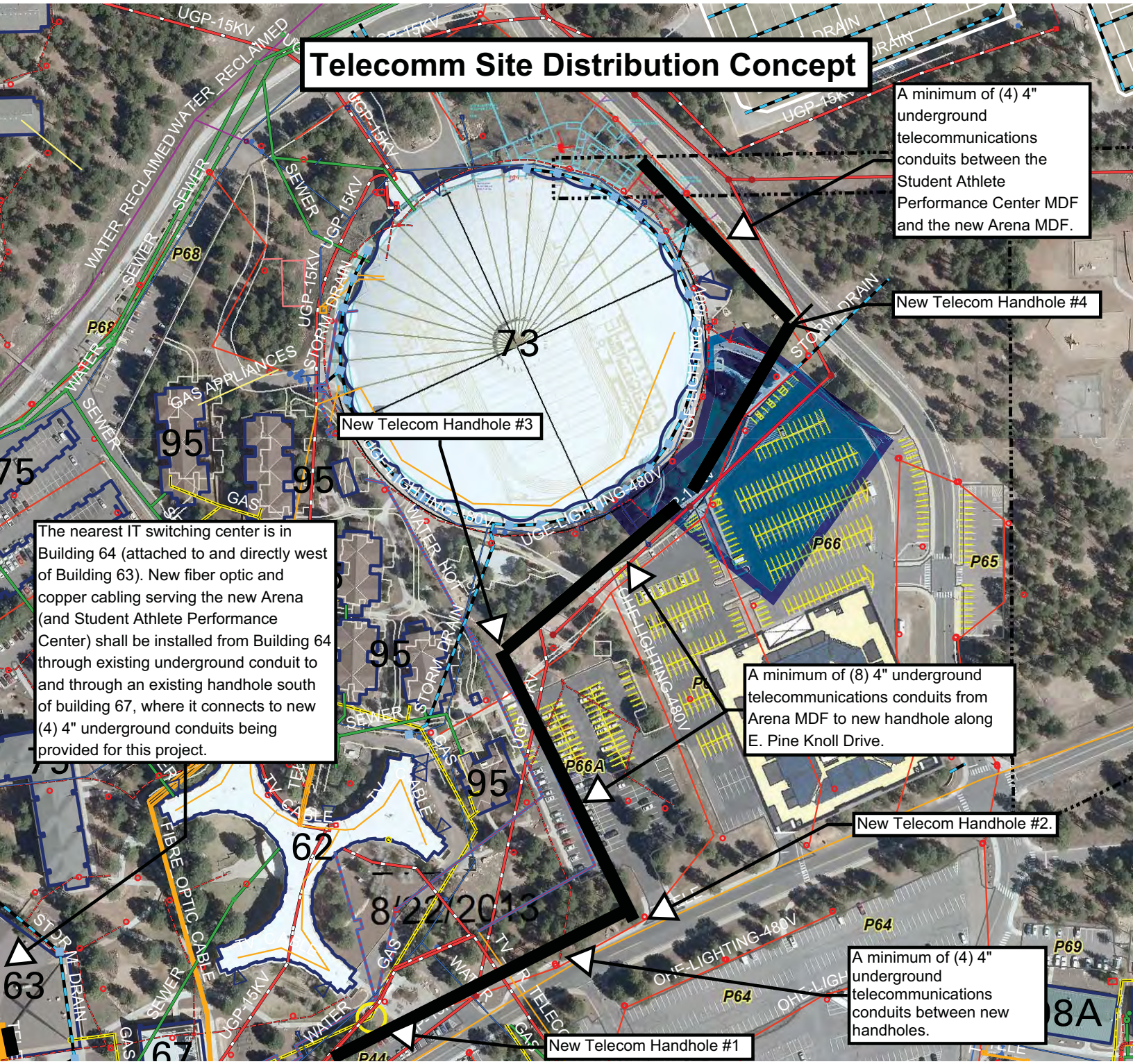
Sheet	Scale: NOT TO SCALE	Date: 1/25/16	Job No.:5128
Sheet 1 — 1	By: FP	Ck'd: FPJ	Drawing No.:

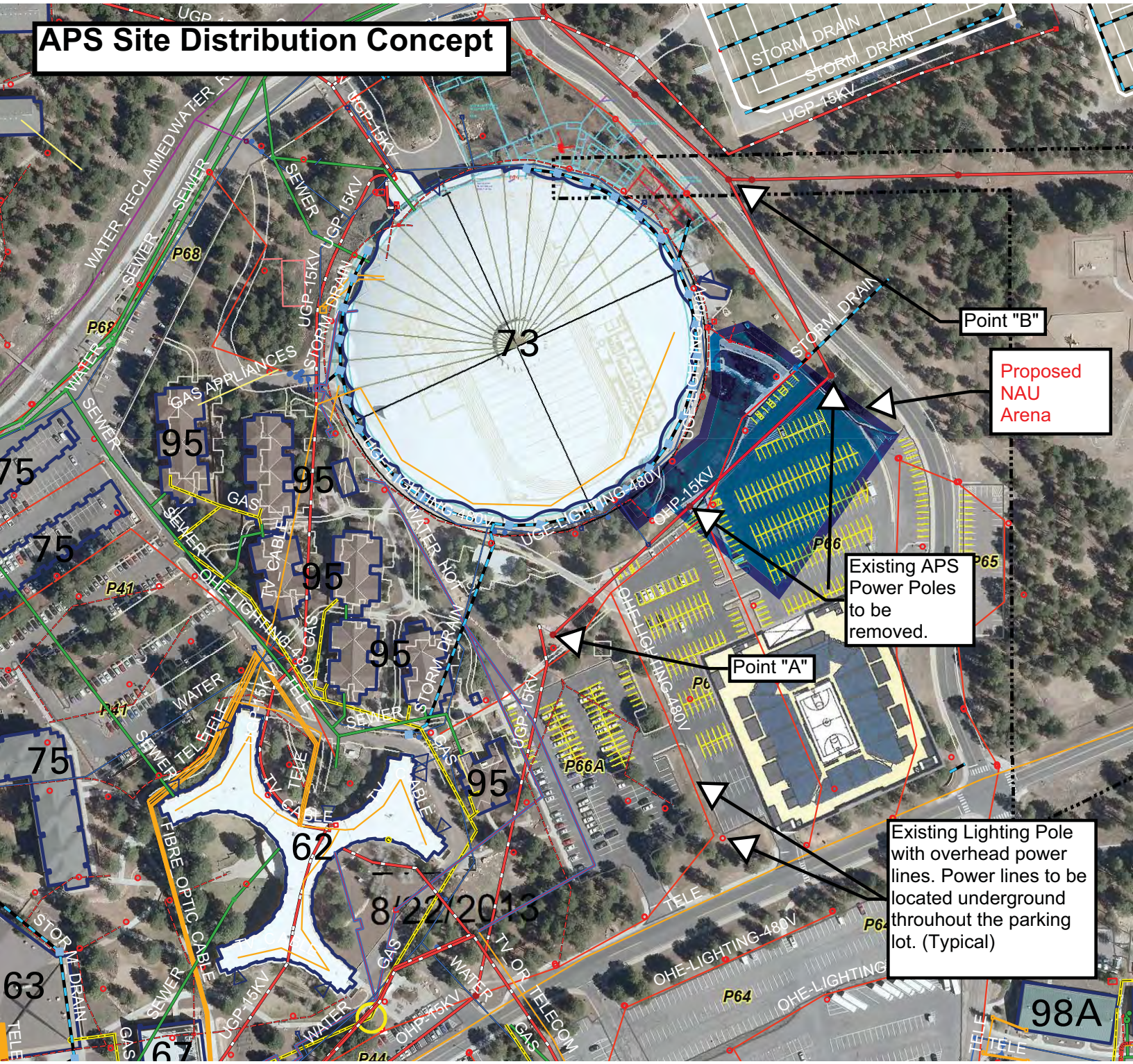
NAU SOUTH CAMPUS

Mountain High Engineering
Frank Patton Jr - Electrical Engineering
PO Box 819
Flagstaff, Arizona 86002
Telephone (928) 774-4564
Facsimile (928) 773-1134
mountainhighengineering@safeaccess.com

Revisions:	Date:	By:
NAU Markups	2/12/16	FP
NAU Markups	4/5/16	FP
Font Change	4/18/16	FP


HVAC Site Piping Concept
Chilled water and heating hot water piping extended to southwest corner of new Arena.
New 8" chilled water supply and return plus 8" hot water supply and return piping. Length of pipe from building 67 to assumed point of connection at new facility is 1,550 feet.
New chiller(s), cooling tower(s), and pumps in building 67. Extend new chilled water and heating hot water piping.
73
95
75
62
63
98A
P68
P41
P65
P66A
P64
P69
STORM DRAIN
SEWER
WATER
GAS
TELE
UGP-15KV
OHP-15KV
OHE-LIGHTING-480V
UGE-LIGHTING-480V
WATER RECLAIMED
GAS APPLIANCES
TV CABLE
FIBRE OPTIC CABLE


Telecomm Site Distribution Concept
A minimum of (4) 4" underground telecommunications conduits between the Student Athlete Performance Center MDF and the new Arena MDF.
New Telecom Handhole #4
New Telecom Handhole #3
The nearest IT switching center is in Building 64 (attached to and directly west of Building 63). New fiber optic and copper cabling serving the new Arena (and Student Athlete Performance Center) shall be installed from Building 64 through existing underground conduit to and through an existing handhole south of building 67, where it connects to new (4) 4" underground conduits being provided for this project.
A minimum of (8) 4" underground telecommunications conduits from Arena MDF to new handhole along E. Pine Knoll Drive.
New Telecom Handhole #2.
A minimum of (4) 4" underground telecommunications conduits between new handholes.
New Telecom Handhole #1
UGP-15KV
WATER_RECLAIMED
SEWER
STORM DRAIN
GAS APPLIANCES
UGE-LIGHTING-480V
OHE-LIGHTING-480V
FIBRE OPTIC CABLE
TV CABLE
P68
P66
P65
P66A
P64
P69
73
95
62
63
8/22/2013


APS Site Distribution Concept
Point "B"
Proposed NAU Arena
Existing APS Power Poles to be removed.
Point "A"
Existing Lighting Pole with overhead power lines. Power lines to be located underground throughout the parking lot. (Typical)
8/22/2013