ADDENDUM No. 2

February 1, 2019

REQUEST FOR PROPOSALS
(BID DOCUMENTS)

FOR

STUDENT SUCCESS CENTER
PROJECT NO. 950512

The following changes, additions, or deletions shall be made to the following documents as indicated for this Project; and all other terms and conditions shall remain the same. Each Proposer (Design Builder) is responsible for transmitting this information to all affected subcontractors and suppliers before the Proposal Deadline.

1. REQUEST FOR PROPOSALS

A. Proposal Schedule

Delete the "Proposal Schedule" issued in the Request for Proposal documents and **replace** with the one issued in this Addendum.

[Note: The room location for the 4th 1-on-1 meeting has been changed and minor edits were made to the schedule.]

B. Technical Proposal

Delete the "Technical Proposal" issued in the Request for Proposal documents and **replace** with the one issued in this Addendum.

[Note: Study Model dimensions were changed on page 1, paragraph 1. Technical Proposal Submittal]

C. Lump Sum Base Price Proposal Spreadsheet

Delete the "Lump Sum Base Price Proposal Spreadsheet" issued in the Request for Proposal documents and **replace** with the one issued in this Addendum.

[Note:
- Lump Sum Base Price Proposal Spreadsheet is being issued in Excel format.
- Section 21 0500, Basic Fire Protection Materials and Methods and Section 21 1000, Fire Protection Piping, Heads and Specialties have been added to the Lump Sum Base Price Proposal Spreadsheet]

D. Project Program & Design Criteria (January 11, 2019)

Delete the "Existing Landscape Exhibit" on page 4.51 issued in the Request for Proposal documents and **replace** with the one issued in this Addendum.

E. General Requirements (Division 01)

Delete "Section 01 7300, Execution Requirements" issued in the Request for Proposal and **replace** with the one issued in this Addendum.

F. Specifications (Division 02-33)

1. Table of Contents

Delete the "Outline Performance Specification Table of Contents" issued in the Request for Proposal and **replace** with the one issued in this Addendum.

[Note: Div. 21 Fire Suppression sections have been added to the Table of Contents.]

2. **Add** new "Section 21 0500, Basic Fire Protection Materials and Methods" issued in this Addendum to the Specifications (Divisions 02-33) folder.

3. **Add** new Section 21 1000, Fire Protection Piping, Heads and Specialties" issued in this Addendum to the Specifications (Divisions 02-33) folder.

G. University Furnished Information

1. Table of Contents

   Delete the University Furnished Information Table of Contents, issued in Addendum No. 1 dated January 18, 2019 and **replace** with the one issued in this Addendum.

2. **Revise** the name of Item 26 to "UCR Campus Context" in the Table of Contents and change the name of the file to "26, UCR Campus Context"

3. **Add** Item 27, "WEPA Low Print Station Specifications" to the Table of Contents and place document in University Furnished Information folder.

4. **Add** Item 28, "Laptop Kiosk Configuration" to the Table of Contents and place document in University Furnished Information folder

5. **Add** Item 29, "UCR Campus v2018 Updates CADD Drawings and Survey Information" to the Table of Contents and place documents in the University Furnished Information folder.

26.	**UCR CAMPUS ~~IMAGERY V3~~CONTEXT**		
	UCR Campus ~~Imagery V3~~Context Exemplary Examples / Non-Exemplary Examples	UCR Planning Design & Construction	2019
27.	***WEPA LOW PRINT STATION SPECIFICATIONS***		
	WEPA Low Profile Print Station Specifications	*WEPA*	
28.	***LAPTOP KIOSK CONFIGURATION***		
	Laptop Kiosk Configuration	*Laptops Anytime*	
29.	***UCR CAMPUS V2018 UPDATES CADD DRAWINGS AND SURVEY INFORMATION***		
A.	*UCR Campus v2018 Update Auto CADD Drawings*		
B.	*University California, Riverside Aerial Target Ground Control Survey Report Job #2011018.003*		*March 2015*
C.	*UCR Campus Control Survey – Sheet 1 of 2*	*Hillwig – Goodrow, Inc.*	*December 2013*
D.	*UCR Campus Control Survey – Sheet 2 of 2*	*Hillwig – Goodrow, Inc.*	*December 2013*

E.	*UCR Data Delivery Standards for UCR Planning, & Design Projects Capital Programs*		*March 13, 2015*
F.	*UCR Horizontal and Vertical Accuracy of Campus Spatial Data (GIS) (Memorandum)*		*May 22, 2013*
G.	*UC Riverside Campus Control Points*	*Hillwig – Goodrow, Inc.*	*December 2013*

2. DESIGN BUILDER QUESTIONS & ANSWERS

NO.	QUESTION AND ANSWERS
Q1	After thoroughly reviewing the RFP and University furnished information, we do not see any CAD files were included. We would like to request any available CAD files or survey information for the campus and/or project site.
A1	**The UCR Campus Updates CAD Drawings and Survey Information are being issued as University's Furnished Information in Addendum No. 2**
Q2	On page 3.5 of the Project Program the multipurpose room is listed as 1,200 SF each (page 168 of the PDF); the diagrams on page 3.11 list the multipurpose rooms at 2,000 SF each (on page 174 of the PDF) and on the BOD compliance Matrix (page 433 of the PDF) the multipurpose room is listed at 1,150 each. Please confirm 1,150 SF is an acceptable square footage to provide and is in compliance with the RFP or provide a confirmed minimum SF.
A2	**The Multipurpose room to be 1200 ASF per Section 3.5 in the Project Program & Design Criteria and in the BOD Compliance Matrix issued in Addendum No.1 dated January 18, 2019.**
Q3	On page 3.5 of the Project Program the testing center is listed as 1,800 SF (page 168 of the PDF) and on BOD Compliance Matrix (page 433 of the PDF) it is listed as 1,600 SF. Please confirm 1,600 SF is the minimum required and is in compliance with the RFP or provide a confirmed minimum SF.
A3	**The testing center is to be 1800 ASF per Section 3.5 in the Project Program & Design Criteria and in the BOD Compliance Matrix issued in Addendum No.1 dated January 18, 2019.**
Q4	On page 2 of the technical proposal submittal indicates that the study model should be 30" L x 30" W x 24" H (illustrate integration with existing buildings and site); page 4 of the technical proposal indicates 36" L x 36" W x 24" high. Please confirm which size is desired for the study model.
A4	**The study model to be within the confines of 36" L x 36" W x 24" H. Revised Technical Proposal with the study model dimensions will be issued in Addendum No. 2.**

Q5	On page 3.17 the lobby room criteria call for a laptop kiosk and a mobile printing kiosk. Please confirm if these are placeholders for third party vendors like the WEPA Printing service, or confirm if the intention is for the Design Builder to purchase the equipment kiosks and stock the laptops. Also note that the storage room criteria call for an additional laptop / rental storage kiosk. If this is a placeholder not intended for the Design Builder to furnish/install, please provide cutsheets so we can incorporate into the design layout.
A5	**The Laptop rental Kiosks and the WEPA Printing Stations are to be University Furnished and University Installed (OF/OI). Product Specifications for the Laptop rental kiosks and the WEPA Printing stations are to be issued in Addendum No. 2. It is the Design-Builder's responsibility to provide the appropriate spatial configuration to be able to accommodate this equipment and to have the required power and data outlets required to service them.** **Laptop Kiosk: Host + Add-On Stations = 60"w x 29"d x 60"h (this is total width for both units)** **WEPA Print: Printer x 2 = 60" w x 30" d x 43" h (this width accounts for 10" spacing between printers)** **If these units are placed together- there is to be a 12" spacing between them**
Q6	On page 3.62 the equipment and furnishings indicate to provide a sit to stand desk, a mobile demonstration table, instructor station, mobile chairs, and privacy cubicle screens for testing center. The room diagram includes (2) mobile demonstration tables and appears to include laptops. The quantity of privacy screens is unclear, please confirm if quantity is one for each person. Please also confirm if laptops are to be furnished by the Design builder, along with the workstations.
A6	**The Workstations and Laptops in the testing center are University Furnished, and University Installed (OF/OI). Privacy screens to be part of the movable furniture configuration for each workstation.**
Q7	If available, please provide the EXCEL FILE for the 10-page "Lump Sum Price Proposal Spreadsheet" (reference Trade-by-Trade breakdown on Pages 49 through 58 of the RFP).
A7	**The Lump Sum Base Price Proposal Spreadsheet will be reissued in Excel format in Addendum No. 2.**
Q8	Space Program indicates Multipurpose Rooms are to be 1,200 SF (reference Page 168 of RFP PDF). Adjacency Diagram indicates Multipurpose Rooms are to be 2,000 SF (reference Page 169 of RFP PDF). Please advise on desired/correct SF for Multipurpose Rooms.
A8	**The Multipurpose room to be 1200 ASF per the Project Program & Design Criteria and in the BOD Compliance Matrix issued in Addendum No.1 dated January 18, 2019**
Q9	Section 4.51 of the BOD design criteria indicates that a tree that is south of the proposed Student Success Center footprint is to be removed (see exhibit). On our site walk we

	noticed that this is a large oak that gives the space a unique and welcoming collegial character. Is it a requirement of the University that this tree be removed?
A9	**The University is not averse to designs that call for the removal of above-mentioned tree provided that if the tree is removed, it will be replaced with a tree species or landscape that is integrated with the architectural solution and creates a beautiful and memorable outdoor space that contributes to the greater Carillon Mall environment.** **If the design-build entity chooses to protect the tree in place, the design-build entity is to ensure that the construction of the adjacent emergency access lane is code compliant, and construction activities near the tree (and its roots) do not jeopardize the long-term health of the tree.** **Refer to revised Landscape Exhibit, page 4.51 in the Project Program & Design Criteria being issued in Addendum No. 2.**

END OF ADDENDUM

PROPOSAL SCHEDULE

	ACTIVITY	DATE	TIME
A	The RFP will be available to Prequalified Proposers, subcontractors and design consultants.	**1/11/19**	**2:00 PM**
B	**Pre-Proposal Conference & Site Visit – Mandatory for all Prequalified Proposers.** Participants must arrive at University of California, Riverside, Glen Mor, Building K, Room K106/K108, Riverside, CA 92507 at or before the established time.	**1/14/19**	**1:30 PM**
C	The University will hold confidential One-on-One meetings with each Proposer prior to the Technical Proposal Submittal for the purpose of answering questions, clarifying RFP and program requirements, reviewing and validating preliminary designs etc. Meeting location: University of California, Riverside, Pentland Hills Bear Cave B107/C101, Riverside, CA 92507.	**2/7/19**	**8:30 AM (SB)** **11:00 AM (HP)** **1:30 PM (MB)**
		2/22/19	**8:30 AM (HP)** **11:00 AM (MB)** **1:30 PM (SB)**
		3/7/19	**8:30 AM (MB)** **11:00 AM (SB)** **1:30 PM (HP)**
	The University will hold confidential One-on-One meetings with each Proposer prior to the Technical Proposal Submittal for the purpose of answering questions, clarifying RFP and program requirements, reviewing and validating preliminary designs etc. Meeting location: University of California, Riverside, Alumni & Visitor Center, ***Alumni Johnson Board Room***~~Dining Room~~, 3701 Canyon Crest Drive, Riverside, CA 92521.	**3/21/19**	**8:30 AM (SB)** **11:00 AM (HP)** **1:30 PM (~~MP~~*MB*)**
D	**Technical Proposal Submittal is due from Proposers and will be received only at University of California, Riverside, Planning, Design & Construction, 1223 University Avenue, Suite 240, Riverside, CA 92507. The Technical Proposal Submittal is defined in the *Technical Proposal*.**	**04/11/19**	**2:00 PM**
E	**Lump Sum Base Price Proposal Submittal is due from Proposers and will be received only at University of California, Riverside, Planning, Design & Construction, 1223 University Avenue, Suite 240, Riverside, CA 92507. The Lump Sum Base Price Proposal Submittal is defined in the *Lump Sum Base Price Proposal*.**	**04/12/19**	**2:00 PM**
F	The University's Technical Review Committee will meet to review timely submitted Technical Proposals as described in the Proposal Evaluation Process document.	**4/18/19-4/19/19**	**8:00 AM – 5:00 PM**
G	Proposers shall make an Oral Presentation and describe the best value aspects of their proposals. Cost shall not be discussed during the Oral Presentation.	**4/22/19**	**8:00 – 5:00 PM**

H	Timely submitted Lump Sum Base Price Proposals shall be publicly opened at University of California, Riverside, Planning, Design & Construction, 1223 University Avenue, Conference Room Suite 210-16, Riverside, CA 92507. The University will acknowledge the timely receipt of submittals and whether or not the submittals appear to be responsive. No cost or point scoring information will be disclosed to the public at this time.	**4/23/19**	**11:00 AM**
<u>Late Proposals:</u> Any proposal, modification, or revision that is received at the designated University of California, Riverside, Planning, Design & Construction location after the exact time specified for receipt of proposals is "late" and will not be considered unless it was the only proposal received. Late proposals and modifications that are not considered will be held unopened, unless opened for identification, and then returned to the Proposer after award.			

TECHNICAL PROPOSAL

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TECHNICAL PROPOSAL SUBMITTAL CHECKLIST

☐ Submittal in a separate sealed container identifies the: Project Name & Number, Submittal Date, Technical Proposal Submittal, and Identification Number. Submittal is properly addressed and delivered.

☐ One (1) original and ten (10) copies of the written portion of the TECHNICAL PROPOSAL. Include:

- ☐ Electronic copy in PDF format on a Memory Stick

☐ One (1) set of up to no more than fifteen (15) PRESENTATION BOARDS, not larger than 30” x 42”. Include:

- ☐ Copies of boards within the technical proposal binder as 11" x 17" sheets
- ☐ Electronic copy in PDF format on a Memory Stick

☐ One (1) bound set of the SCHEMATIC DESIGN SUBMITTAL shall be submitted not smaller than 30” x 42”. Include:

- ☐ Within the technical proposal binder as 11” x 17” sheets
- ☐ Electronic copy in PDF format on a Memory Stick

☐ One (1) study model

1. TECHNICAL PROPOSAL SUBMITTAL

Proposers shall submit a Technical Proposal conforming to the format outlined herein and shall provide all requested information. **FAILURE TO COMPLY WITH THE REQUIRED FORMAT AND/OR PROVIDE THE INFORMATION REQUESTED MAY RESULT IN A NON-RESPONSIVE SUBMITTAL**.

Technical Proposals may be comprised of design narratives, drawings (no larger than 30" x 42"), presentation boards, study model to illustrate integration with existing buildings and site (no larger than ~~***30***~~ ***36"L x*** ~~***30***~~ ***36"***W x 24"H), outline specifications, preliminary sizing calculations, catalog cut sheets, and other information as required and appropriate. **ALL REFERENCES THAT MAY IDENTIFY THE DESIGN BUILD TEAM SHALL BE REMOVED.**

1.1 Technical Proposal Delivery

.1 Proposal Delivery Date:

Refer to the Proposal Schedule for the Technical Proposal Submittal due date and time.

.2 Marking and Identification of Submittals

Proposer shall clearly mark the outside of each package to identify the following:

Project Name: **Student Success Center**
Project Number: 950512
Marked: "Technical Proposal Submittal"
Date of Submittal:
Design Builder Identification Number:

If the Proposals are sent by mail, courier or delivery service, the sealed package shall be marked with the notation "SEALED PROPOSAL ENCLOSED" on the face thereof.

.3 Designated Location for Receipt of Technical Proposals

Proposer shall assume full responsibility for timely delivery of proposals. Proposals shall be properly addressed to be received at:

University of California, Riverside
Planning, Design & Construction Department – **BID BOX**
1223 University Ave, Suite 240
Riverside, CA 92521
Attention Lynn Javier

LATE PROPOSALS: ANY PROPOSAL, MODIFICATION, OR REVISION, THAT IS RECEIVED AT THE DESIGNATED UCR PLANNING, DESIGN & CONSTRUCTION LOCATION AFTER THE EXACT TIME SPECIFIED FOR RECEIPT OF PROPOSALS IS "LATE" AND WILL NOT BE CONSIDERED UNLESS IT WAS THE ONLY PROPOSAL RECEIVED. LATE PROPOSALS AND MODIFICATIONS THAT ARE NOT CONSIDERED WILL BE HELD UNOPENED, UNLESS OPENED FOR IDENTIFICATION, AND THEN RETURNED TO THE PROPOSER AFTER AWARD.

.4 Technical Proposal Delivery Methods (*See marking instructions in 1.1.2 above*)

a. Mail
b. Courier (Hand Delivery)
c. Delivery service

.5 Unacceptable Delivery Methods

a. Oral
b. Telephonic
c. Facsimile

d. Email or other electronic means

1.2 Technical Proposal Submittal Instructions

.1 Required Copies

One (1) original and ten (10) copies of the written portion of the Technical Proposal shall be submitted in sealed boxes, envelopes, or other appropriate sealed containers. Include **one (1) electronic copy** of the written portion of the Technical Proposal and presentation boards **(in PDF format).**

.2 Technical Proposal Format

All Technical Proposals shall be submitted in 8.5" x 11" or 11" x 17" 3-ring or spiral bound binders. Items not physically suitable for inclusion may be submitted separately with a clear proposal reference to the separately furnished items.

ALL NARRATIVES WITHIN THE TECHNICAL PROPOSAL SHALL BE TYPED IN TIMES NEW ROMAN OR A COMPARABLE FONT THAT IS EASY TO READ UTILIZING 11 POINT FONT OR LARGER.

.3 Design Builder Identification Number

Prior to the Technical Proposal submittal, the University will assign a Design Builder Identification Number to each Proposer. The Design Builder Identification Number shall be used by each Proposer to identify its Technical Proposal submittal.

Blind Evaluation: To provide an impartial review of each Proposer's Technical Proposal submittal, the Technical Evaluation Committee will conduct a Blind Evaluation. Therefore, **the entire contents of the Technical Proposal submittal shall have all references to the Proposer's identity removed**. All references that may identify the Design Build team including, but not limited to, firm or team names, staff identification, consultant identification, addresses, telephone numbers, logos, letterhead, stationary, binders, or business cards or specifics about the firm or its size and history shall be removed.

1.3 Presentation Boards Submittal Requirements

.1 Submit **one (1)** set of up to, but **no more than fifteen (15)** presentation boards, not larger than 30" x 42" with the following:

a. Construction Site Logistics – Indicate staging, colocation, tree protection, fencing, parking, fire access, vehicular and pedestrian access/patterns, pedestrian safety accommodations, acoustic barriers and camera locations during all phases of construction.

b. Vicinity Plan - Color rendered showing proposed building in relation adjacent campus spaces.

c. Site Plan – Color rendered indicating landscape/hardscape around building and showing:

i. Landscape features shall include trees, shrubs, ground covers, special fill areas and lawns, if any.

ii. Hardscape features shall include roadway, service and loading dock parking, plazas, retaining and landscape walls, and site lighting. Include access/patterns for ADA, pedestrian circulation, bike paths, public transportation, emergency vehicle access, and fire hydrants.

iii. Include all above-grade utilities, if any.

d. Perspectives:

i. Two (2) color rendered perspectives of building exterior to demonstrate the relationship between surrounding buildings.

ii. One (1) color rendered perspective of main entrance lobby interior.

iii. Two (2) color rendered perspective to demonstrate key academic program spaces.

e. Floor Plans, Sections and Elevations – Color rendered plans indicating program elements such as circulation, spatial relationships.

f. Materials – Provide samples of actual interior and exterior materials.

.2 Include copies of boards not smaller than ½ size scale drawings within the technical proposal binder **AND ELECTRONICALLY ON A MEMORY STICK (in PDF format).**

1.4 Study Model

Each Proposer shall provide a study model of their proposed project design with the content and format as described:

.1 Study Model

a. Approximate Size = 36"L x 36"W x 24"H
b. Model to illustrate integration and relationships with existing buildings with spaces. All buildings and spaces within this area shall be included.

1.5 Technical Proposal Scoring

The Technical Proposal will be scored as follows:

Description	Points Available
Executive Summary	0
TAB 1 – Architectural Design	65
TAB 2 – Program Functionality	30
TAB 3 – Project Program Compliance	Pass/Fail
TAB 4 – Site, Civil, and Circulation Design	25
TAB 5 – Mechanical, Electrical, and Plumbing Systems Design	30
TAB 6 – Sustainability Features Incorporated into Design and LEED Gold Scorecard	20
TAB 7 – Structural Design	Pass/Fail
TAB 8 – Enhancements and Added Value	40
TAB 9 - Alternates	10
TAB 10 – Project Schedule & Work Plan	15
TAB 11 – Mitigation of Subsurface Conditions and Negative Construction Impacts	10
TAB 12 – Quality Control Plan	10
TAB 13 – Deviations from Request for Proposal	Pass/Fail
Design Builder Prequalification Level II Interview	10
Oral Presentation	15
Subtotal:	**280**
Best and Final Offer (if necessary)	20
Total:	**300**

2. TECHNICAL PROPOSAL SUBMITTAL

Each Proposer shall provide the following information in the content and format as described. Proposal shall be indexed with tabs numbered and labeled in bold type denoting the sections. Narratives may incorporate graphic information and/or presentation boards.

EXECUTIVE SUMMARY	***0 POINTS***

Suggested Text Length: 1 – 2 pages

The Executive Summary should stand on its own to convey the primary design, program and technical elements of your proposal that clearly and collectively demonstrate why your project approach represents the overall **best value** to the University.

TAB 1	***65 POINTS***

Suggested Text Length: 1 – 7 pages

ARCHITECTURAL DESIGN

Proposer shall:

A. Identify the design context and philosophical design intent.

B. Demonstrate how the proposed design:

1. Achieves the architectural goals outlined in the Basis of Design and is consistent with the *UC Riverside Physical Design Framework.*
2. Achieves or facilitates the desired space, performance and outcomes referenced in the basis of design.
3. Provides building spaces that fosters interaction; including spaces for collaboration and opportunities for casual conversation.
4. Incorporates the following elements:
   i. Architectural themes and materials consistent with the contextual design principles of the campus.
   ii. A clear and identifiable building entrance with a usable entry/lobby space to create a distinctive presence for student activities.
   iii. The use of architectural elements and space to create way finding in and around the building without complete dependence on signage.
   iv. The use of architectural planning to create integrated accessways and wayfinding cues with the building's surroundings.
   v. Building siting and design that will integrate with the design of the adjacent buildings and campus surroundings.
   vi. Incorporate architectural and design ingenuity that creates unique spaces for instruction, scholarly activities and learning.
   vii. Incorporate indoor- outdoor connections that provide human comfort for the Riverside climate conditions and add value to the student experience.
   viii. The use of natural light for building occupant comfort and connection with the environment.
   ix. Functional and inviting exterior public spaces, plazas, courtyards, (solar orientation, wind, and engagement with adjacent buildings.
   x. Development of an architectural vocabulary that will unite the existing elements of the Carillon Mall & the Arts Mall and the campus.
   xi. Durability and extended deferred maintenance with quality construction.
   xii. Building facades that are an expression of basic structure with evident organizing principles and a lack of gratuitous ornament.

xiii. Other architectural design and aesthetic considerations.

TAB 2	***30 POINTS***

Suggested Text Length: 1 – 5 pages

PROGRAM FUNCTIONALITY

Proposer shall demonstrate how space and functional configurations, adjacencies, and room layouts:

A. Enable the school to create new educational pathways and partnerships, demonstrate new teaching technologies, and adapt for evolving pedagogies.

B. Foster an environment of scholarly interaction and peer to peer learning that supports small group interactions and informal interactions between students and faculty.

C. Allow for an environment that provides a flexible framework for future programmatic adjustments.

D. Facilitate high quality lifelong learning for the changing professional and meets the needs of local and international students.

E. Optimize building circulation and paths of travel to minimize congestion between lecture hall and classroom usage.

F. Enhance considerations for acoustical, audio/visual, and other technical challenges.

TAB 3	***PASS/FAIL***

Suggested Text Length: 1 page (excluding matrix)

PROJECT PROGRAM COMPLIANCE

Proposer shall demonstrate compliance with the *Student Success Center Program* by submitting the required Basis of Design Compliance Matrix and specifying the assignable square footage for each space and unit.

A REDUCTION GREATER THAN 5% OF THE ASSIGNABLE SQUARE FOOTAGE FOR EACH SPACE WILL RENDER THE PROPOSAL NON-RESPONSIVE

TAB 4	***25 POINTS***

Suggested Text Length: 1 – 5 pages

SITE, CIVIL AND CIRCULATION DESIGN

Proposer shall:

A. Demonstrate how the proposed site, civil and circulation designs are responsive to the Project Site Analysis and consistent with the Site Plan Concept.

B. Demonstrate that the proposed **site design** includes:

1. Innovative and cost-effective solutions to design and construct the site, building, and systems.
2. Optimum use of outdoor spaces to take advantage of the southern California climate.
3. Enhance campus connections with adjacent buildings, campus malls, adjacent courts & open spaces and campus surroundings.
4. Accommodates loading and back-of-house access for auxiliary facilities that are screened from view with minimal visual impact to adjacent public walkways and spaces.
5. Promotes an environment of health and well-being for the campus community.
6. Creates a collegial and professional interaction space for faculty and students.
7. Other design and aesthetic considerations.

C. Demonstrate that the proposed **civil design** includes:

1. Innovative use of the existing topography, drainage, and soil.
2. An efficient site utility design that includes considerations to mitigate negative impacts on existing utilities, campus grounds, adjacent buildings, and communities.

D. Demonstrate that the proposed **circulation design** is consistent with the UC Riverside Physical Design Framework and includes:

1. Efficient interface with existing campus circulation pathways (pedestrian and bicycle), vehicular access, building services and emergency access
2. Compliance with all accessibility codes and other applicable documents referenced in the RFP.

TAB 5	*30 POINTS*

Suggested Text Length: 1 – 3 pages

MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS DESIGN

Proposer shall include a description of the proposed mechanical, electrical, and plumbing designs and identify their features and system advantages; and demonstrate that they will:

A. Meet or exceed the requirements of the Project Planning Guidelines and Basis of Design, Specifications, campus energy goals, and project planning guidelines and campus Building Energy Efficiency Standards.

B. Provide durability, ease of maintenance, aesthetic, and energy efficiency/conservation considerations.

C. Support the acoustic and sustainable requirements of the project.

D. Provide future flexibility of systems as the building program requirements and needs changes.

TAB 6	*20 POINTS*

Suggested Text Length: 1 – 5 pages (excluding scorecard)

SUSTAINABILITY FEATURES INCORPORATED INTO DESIGN AND LEED GOLD SCORECARD

Proposer shall:

A. Demonstrate how the proposed design incorporates sustainability features outlined in the RFP, including:

1. Reduction of the carbon footprint.
2. Achievement of LEED Gold certification or higher.
3. Alternative means and methods to provide the required building(s) energy performance.

B. Submit LEED scorecards indicating which credits would be pursued for LEED Gold, or higher certification.

TAB 7	*PASS/FAIL*

Suggested Text Length: 1 – 4 pages

STRUCTURAL DESIGN

Proposer shall:

A. Include a description of the proposed structural design and identify proposed materials and system advantages.

B. Demonstrate that the proposed structural design:

1. Will meet or exceed the requirements of the RFP requirements, including, but not limited to the California Building Code and University of California Seismic Safety Policy.
2. Includes considerations for wind, vibration, and deflection control.

TAB 8

40 POINTS

Suggested Text Length: 1 – 2 pages *(excluding matrix)*

ENHANCEMENTS AND ADDED VALUE

Proposer shall:

A. Submit the *Enhancements and Added Value Matrix.*

1. List enhancements and added value with appropriate descriptions. Enhancements provide the University with added value to the base bid requirements.
2. Provides the desired space, performance and outcomes referenced in the basis of design.

B. Demonstrate that the proposed design, materials, and construction quality exceed the requirements of the base bid.

ENHANCEMENTS AND ADDED VALUE	
ITEMIZED LIST OF ENHANCEMENTS	**DESCRIPTION**
ADDITIONAL INSTRUCTIONAL SPACE	Provide any additional space that meet the requirements for instructional space or scholarly activity space. The additional space provided to meet the program and performance criteria; set forth in the space program and room criteria.
ENHANCED OPEN AREAS AND STUDY SEATS	Enhanced open areas throughout the building for scholarly activity and classroom support and an additional 80-student study seats through increased quantities of indoor and outdoor open break-out study spaces throughout the building
ADDITIONAL LECTURE HALL SEATS	Provide an additional 30-lecture hall seats by increasing the number of seats in the lecture halls.

TAB 9

10 POINTS

Suggested Text Length: 1 – 2 pages *(excluding matrix)*

ALTERNATES

Proposer shall:

A. Submit the *Alternates.*

1. Indicate whether project Alternates are included in the base bid *at no additional cost*.
2. Provides the desired space, performance and outcomes referenced in the basis of design.

B. Demonstrate that the proposed design, materials, and construction quality exceed the requirements of the base bid.

PROJECT ALTERNATES MATRIX[1] (TAB 9)		
ALTERNATES		
ALTERNATE NO.	**ALTERNATE DESCRIPTION**	**INCLUDED IN BASE BID?**
1	Site Development: Student Services Court	YES ☐ NO ☐
2	Site Development: Athletics/ Dance Court	YES ☐ NO ☐

[1] Suggested Format

TAB 10	*15 POINTS*

Suggested Text Length: 1 – 2 pages *(excluding schedule)*

PROJECT SCHEDULE & WORK PLAN

Proposer shall:

A. Submit a **Work Plan** demonstrating how it intends to staff and manage tasks and resources necessary to accomplish the work, commencing with the Notice to Proceed and ending with the completion of Construction by May 1, 2021.

1. Identify the project approach and address:
    i. Key elements of project management and administration (staffing plan).
    ii. Strategies for addressing and overcoming potential project constraints and challenges associated with each project phase including mobilization, parking, sequencing of activities with other concurrent campus projects and the university calendar.
    iii. Strategy to minimize construction impact on the surrounding site. Sequence of work with minimal interruption for the surrounding community, specifically the occupied facilities immediately adjacent to the site.
    iv. Maintaining security of spaces during construction.
    v. Adopting safety precautions throughout the project duration for building and construction staff safety.
    vi. Adopting a safety strategy and precautions for pedestrian traffic to the occupied surrounding buildings.
    vii. Environmental mitigation measures around laydown area.

B. Submit a **Preliminary Schedule** that is consistent with the Work Plan and identifies:

1. The approach to the fast-track design and construction of the project
2. Significant contract activities including shoulder to shoulder sessions, and procurement activities and durations, including the activities required to complete the Construction Documents and obtain required approvals
3. The division of work by construction drawing packages (limited to no more than six (6) Construction Document Packages) with a breakdown of drawings and specification sections to be included in each package. Specify how the design package strategy contributes to successful schedule implementation.

TAB 11	*10 POINTS*

Suggested Text Length: 1 – 2 pages

MITIGATION OF SUBSURFACE CONDITIONS AND NEGATIVE CONSTRUCTION IMPACTS

Proposer shall demonstrate that it will minimize or eliminate the risk of increased costs or adjustments to the Contract Time with consideration of the following:

A. Excavation and grading requirements including proposed shoring and monitoring of existing structures.

B. Underground utility identification, relocation, and/or removal.

C. Existing groundwater conditions. Description includes discussion of potential mitigation of shallow groundwater conditions including the need for dewatering and the potential use of excavated soils as backfill.

D. Existing geotechnical conditions including the presence of groundwater, rock, or fill.

E. Subsurface contamination.

F. Mitigation of construction noise, vibration, dust, etc. affecting surrounding community.

G. Minimize or mitigate site impacts (access and visual impacts) to surrounding campus, and to occupied adjacent facilities.

TAB 12	*10 POINTS*

Suggested Text Length: 1 – 2 pages

QUALITY CONTROL PLAN

The Proposer shall:

A. Demonstrate compliance with Division 01 General Requirements, Section 01 4000, Quality Requirements and include descriptions of:

1. The organizational and reporting relationships of the project team members responsible for quality control. Submit a table indicating quality control resource loading through completion of the project.
2. Quality control procedures during design and construction document development (include internal QC and CDA processes) to assure compliance with program requirements and avoid scope expansion.
3. Quality control procedures for mock-ups used by the University to make final materials selections and establish the quality of construction that will be incorporated into the work.

B. Submit a Tracking and Compliance Log that includes the incorporation of University comments during the review and approval process.

TAB 13	*PASS/FAIL*

DEVIATIONS FROM REQUEST FOR PROPOSAL

Proposers shall submit the Deviations Matrix, (located at the end of this document), to summarize each instance where the Lump Sum Base Price Proposal, or Alternate Pricing deviates from the requirements established in the Proposal Documents. Absent an appropriate reference in the Deviations Matrix, the University will assume that the Design Builder will comply with all the specific requirements of the Proposal Documents during both the design and construction phases of the project.

The Lump Sum Base Price Proposal and Alternate Prices shall include the cost of all proposed deviations from the Proposal Documents. Deviations from the Proposal Documents will not be allowed without prior written approval from Design and Construction Services. After the Award of Contract, proposed product substitutions shall be made according to Specification Section 01 6000, *Product Requirements*.

DEVIATIONS MATRIX[2] (TAB 13)

(Deviations from Master Specifications and/or RFP)

SPECIFICATION SECTION/CAMPUS STANDARDS AND BASIS OF DESIGN		
ITEM DESCRIPTION	DESCRIPTIVE DETAILS	IMPACT OR EFFECT ON PROJECT DESIGN

[2] Suggested format

DESIGN BUILDER PREQUALIFICATION - LEVEL II INTERVIEW		***10 POINTS***

University will add the Design Builder Prequalification - Level II Interview score to the Technical Proposal Score.

ORAL PRESENTATION	***15 POINTS***

Proposer shall make an oral presentation of its proposal following the University's evaluation of Technical Proposals and prior to the public opening of the Lump Sum Base Price Proposals. However, if at the conclusion of the evaluation of Technical Proposals, the University determines that requesting a BAFO would be in its best interests, the University will defer the oral presentation and proceed directly to a BAFO process. The University may elect to request written proposal clarifications from the Proposers prior to holding BAFO discussions.

During the oral presentation, Proposers will be allowed 30 minutes to present the most important aspects of their proposals and 1 hour and 30 minutes to answer questions and provide clarifications requested by the Technical Evaluation Committee. Discussions may cover any of the requirements described in the RFP.

Proposed cost shall not be discussed during the oral presentation. The University's summation of Proposal Clarifications shall be accepted by signature of selected Proposer and incorporated into their Proposal by reference.

BEST AND FINAL OFFER (BAFO)	***20 POINTS***

The University may determine that clarifications to the initial proposals and additional discussions with the Proposers are necessary to obtain proposals that are responsive with respect to program and cost requirements, and to optimize the ability to obtain best value for this project. In this case, the University will conduct discussions with each Proposer following the technical evaluation with the intent of allowing the Proposers to submit a BAFO. The University will request BAFO submittals from the Proposers to clarify and document understandings reached during discussions. Instructions for the BAFO submittals including the deadline, format, and content requirements will be issued in writing by the University.

The BAFO submittal will consist of two components:

A. A revised technical proposal or technical proposal supplement covering all additions, changes, or clarifications to the original technical submittal. Revised drawings, presentation boards and other supplements may also be submitted as appropriate and in accordance with the University's written instructions for the BAFO submittal.

B. A revised Lump Sum Base Price Proposal, Lump Sum Base Price Proposal Spreadsheet, and a new Proposal Security, in accordance with the University's written instructions for the BAFO submittal.

3. SCHEMATIC DESIGN SUBMITTAL REQUIREMENTS

The following drawings shall be submitted; 1) as **one (1)** bound set not smaller than 30" x 42", 2) within the technical proposal binder as 11" x 17" sheets, and 3) **ELECTRONICALLY ON A Memory Stick (in PDF format):**

SHEET		**SCALE**
.1	Demolition Plan	None
.2	Grading and Drainage Plan	None
.3	Site Plan	1" = 20'
.4	Landscape and Hardscape Construction Plan	1" = 20'
.5	Conceptual Structural Plan	1/16" = 1'

.6	Architectural	
	1) Code Information Plans (All Levels and Roof)	1/16” = 1’
	2) Floor Plans (All Levels and Roof)	1/8” = 1’
	3) Roof Plan	1/8” = 1’
	4) Conceptual Reflected Ceiling Plans	1/16” = 1’
	5) Exterior Elevations	1/8” = 1’
	6) Building Sections	1/8” = 1’
	7) Enlarged Partial Exterior Building Elevations	1/4” = 1’
	8) Typical Exterior Details	1/2” = 1’
.7	Mechanical Conceptual Floor Plans and Roof Plans	1/8” = 1’
.8	Electrical Conceptual Floor Plans, Roof Plans, and Single Line Diagrams	1/8” = 1’

.1 Demolition Plans:

a. Sequence for demolition; including locating, identifying, disconnecting, sealing / capping / safeing-off, and protecting utility services.

b. Locations of temporary dust and noise control partitions and means of egress relative to adjacent communities.

c. Path of hazardous and non-hazardous waste removal.

.2 Grading and Drainage Plan:

Storm Water Pollution Prevention Plan (SWPPP) compliance and other environmental mitigation measures, including:

a. Locations of drain inlets used to capture sheet flows. Include inlet protection measures, if required.

b. Finished ground contours and spot grade elevations as required for ridge lines, flow lines, or grade breaks.

c. Best Management Practices required for limiting erosion of graded slopes and controlling sediment entering storm drain inlets. Show gravel bags, straw waddles, silt fencing, or other devices, if any.

.3 Site Plan

Illustrate relationships with existing site elements and buildings, and include:

a. Location of proposed building and pedestrian bridge in relation to adjacent buildings

b. Location and descriptions of proposed hardscape design elements in relation to existing facilities and site amenities

c. Location of proposed surface parking, roads, service areas, walks, plaza(s), tree groupings, landscape screening, retaining walls, and other various site/building features, including appropriate descriptions

d. Building(s) and site (ADA) accessibility

e. Location of existing and proposed site lighting

f. Location of existing and proposed site electrical equipment

.4 Landscape and Hardscape Construction Plan

Show all new and existing landscape and hardscape features, including plaza and/or courtyard elements:

a. Landscape features shall include trees, tree-protection, shrubs, planters, ground covers, special fill areas, and other amenities, if any.

b. Hardscape features shall include paving; ramps; retaining, landscape, and seat walls; stairs; and site/integral lighting. Include access/patterns for ADA, pedestrian circulation, bike paths, emergency vehicle access, fire hydrants, if any.

.5 Conceptual Structural Plan

All levels, typical floor plan shall include:

a. Conceptual foundation plans illustrating structural design concept

b. Dimensioned structural grid

c. Conceptual Structural Floor/Roof Framing Plan illustrating structural design concept:

1) Dimensioned and structural grid

2) Concept and location of lateral bracing system

3) Location and size of structural columns.

.6 Architectural (All Levels and Roof)

1) Code Information Plans to include the following:

a. Identification of fire and smoke rated walls and openings

b. Identification of all exits

c. Identification of all room names

d. Identification, location and fire rating of building(s) or occupancy separations

e. Identification and limits of building(s) occupancies

f. Description of summarized code review, including exit calculations

2) Floor Plans shall include:

a. Dimensioned structural grid

b. Exterior walls, doors, frames, and openings

c. Interior walls, doors, frames, and openings

d. Room names

e. Applicable equipment and furnishings

f. Fixture locations

g. Appropriate descriptions

3) Roof Plan(s) shall include:

a. Dimensioned structural grid

b. Screen walls, roof system and openings

c. Roof top equipment

d. Appropriate descriptions

4) Conceptual Reflected Ceiling Plans shall include:

a. Exterior and interior walls, doors, and openings

b. Ceiling height designations

c. Room names

d. Reflected ceiling grids

e. Interior and exterior soffits and bulkheads
f. Light fixtures
g. Item and material designations
h. Ceiling mounted equipment
i. Appropriate descriptions

5) Architectural Exterior Elevations
   a. All major building elevations
   b. Structural grid designations
   c. Vertical floor elevation designations
   d. perspectives
   e. Material designations
   f. Include appropriate descriptions
6) Architectural Building Sections
   a. Longitudinal (Minimum 2)
   b. Latitudinal (Minimum 2)
7) Architectural Enlarged Partial Exterior Building Elevations (All Elevations)
   a. Building(s) entrances
   b. Structural grid designations
   c. Vertical floor elevation designations
   d. Material designations
   e. Include appropriate descriptions
8) Architectural Typical Exterior Details (All Exterior Details)
   a. Illustration of building systems relationship
   b. Typical exterior details
   c. Structural grid designations
   d. Vertical floor elevation designations
   e. Grid to exterior wall dimensions
   f. Item and material designations
   g. Include appropriate descriptions

.7 Mechanical Conceptual Floor Plans and Roof Plans (All Levels and Roof)

a. Place over architectural background.
b. HVAC and plumbing information may be combined for all levels.
c. Conceptual HVAC and plumbing floor plans shall include:
   1) Single line HVAC main ducts and risers
   2) Single line exhaust ducts and risers

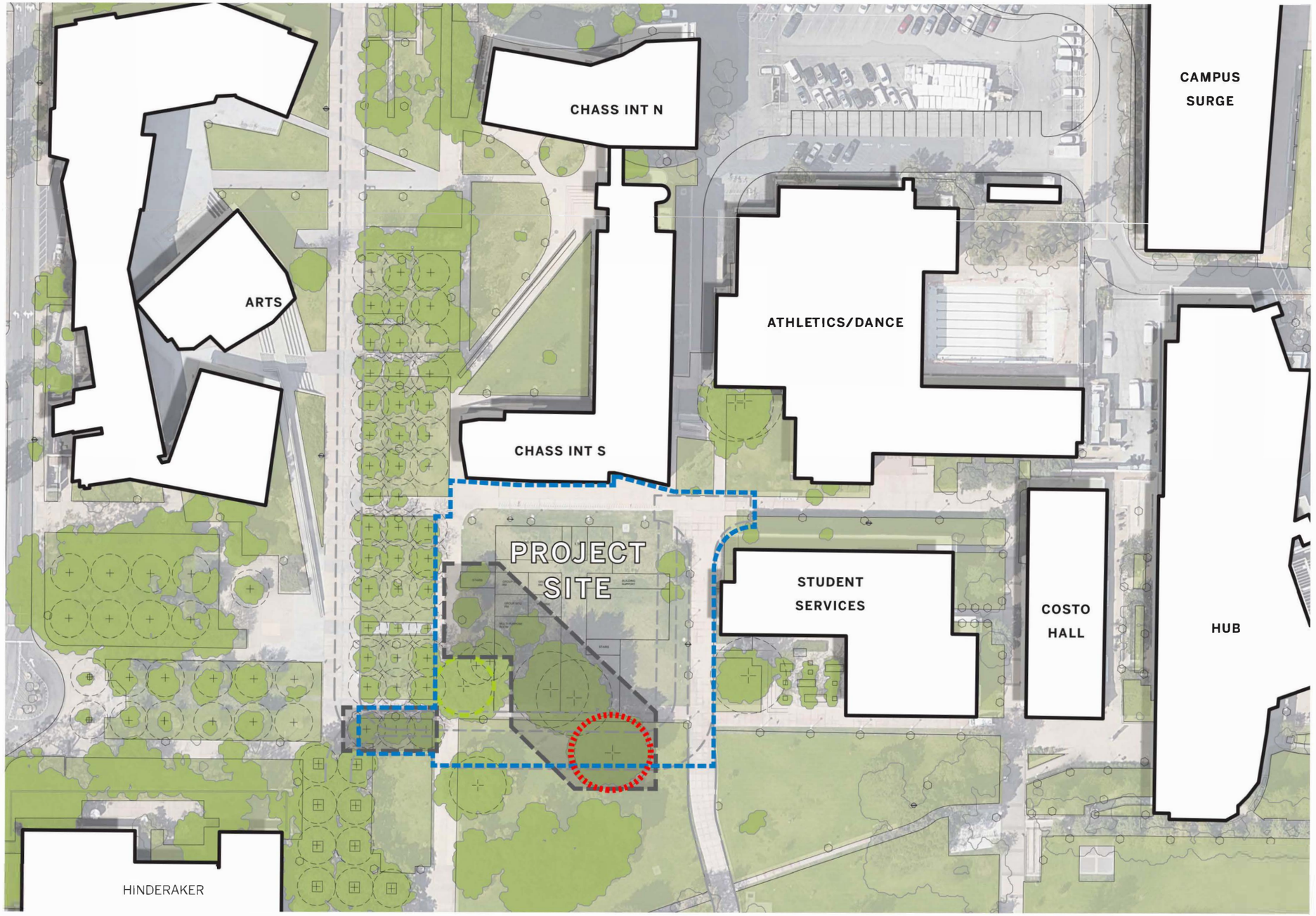
3) HVAC and exhaust equipment and associated system components layout in mechanical room and/or on roof
4) Identification and location of main plumbing lines, equipment and valves
5) Identification of plumbing fixtures
6) Identification and location of floor drains and sinks
7) Location and identification of mechanical equipment and HVAC temperature control zones
8) Overall dimensions of mechanical equipment and service clearance dimensions to be provided

.8 Electrical Conceptual Floor Plans, Roof Plans, and Single Line Diagrams (All Levels and Roof)

a. Place over architectural background.
b. Lighting and power information may be combined for all levels. Typical spaces do not need to be repeated.
c. Conceptual floor plans shall include:
   1) Location and identification of light fixtures
   2) Location and identification of exit lighting
   3) Location and identification of emergency lighting
   4) Location and identification of electrical panels
   5) Location and identification of electrical equipment
   6) Location of transformers and generators
   7) Conceptual single line power diagram

END OF SECTION

EXISTING LANDSCAPE EXHIBIT



LEGEND

Existing trees to be removed

Project Base Site Area of Improvement (BSAI)

N
NTS

landLAB environmental design

UCRIVERSIDE

SECTION 01 7300 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Utility Shutdown Requirements
2. Construction layout.
3. Field engineering and surveying.
4. General installation of products.
5. Coordination of University-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

B. Related Sections include the following:

1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 01 Section "Submittal Procedures" for submitting surveys.
3. Division 01 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
4. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of University-accepted deviations from indicated lines and levels, and final cleaning.

1.2 DEFINITIONS

A. ***Contingency Plan: Based upon the findings identified in the Impact Analysis, a contingency plan may be required by the university. This plan will identify those actions necessary to mitigate and/ or minimize disruptions in the utility service and to maintain operational readiness during utility shutdown. The design builder shall provide all necessary management, personnel, equipment and material resources needed to execute the plan at the time of the utility shutdown event, and such shall be included in this Contingency plan.***

B. ***Design Builder: As used herein, the Design Builder is the entity with overall responsibility for executing the scope of work necessitating the utility shutdown.***

C. ***Impact Analysis: The Impact Analysis identifies all systems, operations, parties and other utilities that will be affected by the proposed shutdown of the utility and specifically what that impact is. It shall include sufficient field investigations to verify***

as-built conditions and that all systems and parties affected by the shutdown have been identified. Drawings and workplans shall be developed to convey actual field conditions and affected physical areas and infrastructure of the facility. This research shall also identify the affected stakeholders and the resulting impacts to their operations. This Impact Analysis will be used by the University to determine the need for development of a contingency plan.

D. ***Utility Shutdown: A utility shutdown is any disruption or disconnect of continuity (including abandonment) of any and all utility systems for any length of time. This includes, but is not limited to: electrical, water, natural gas, fuel, fire alarm, security/ automatic security cameras, sewer communications, HVAC, automatic fire sprinkler system etc.***

E. ***Utility Shutdown Plan (USP): The overall plan, which includes Utility Shutdown Request, Impact Analysis, Shutdown Calendar, and all other details relating to the shutdown of a utility. The USP shall be submitted and included in the Construction Document and Project Specifications Manual for each specific project.***

F. ***Utility Shutdown Request (USR): The Utility Shutdown Request (USR) form identifies the time and date of the proposed shutdown, the type of shutdown, specific location, work area affected buildings/ systems, point of contact for the Design-Builder, etc. It also includes a required Impact Analysis. A checklist is attached to the form to assist in contractor addressing the Impact Analysis.***

1.3 ***UTILITY SHUTDOWN REQUIREMENTS***

A. General:

1. The coordination of Utility Shutdowns has become increasingly complex at UCR due to the increase and complexity of construction activity and the effect utility shutdowns have on surrounding people, buildings and facilities. By nature, utility shutdowns affect a variety of stakeholders, including students, faculty, researchers, administration, pedestrians, security and law enforcement personnel, and various departments ***within UCR*** (Communications, Information Technology, Operations and Maintenance of Plant (OMP), Building Maintenance and Custodial Services, etc.), as well as the surrounding general public. Impacts to life safety and security systems, as well as automatically and mechanically controlled climate systems on campus, are particularly critical when considering utility shutdowns. To minimize negative impacts, UCR has developed procedures and guidelines for design builders, design professionals and contractors to use when planning for and requesting a utility shutdown on all construction projects.
2. Contractor requested Utility shutdowns are discretionary on UCR's part. Not until UCR has reviewed the utility shutdown request application, and has been fully apprised of the potential risks and impacts, and any necessary contingency plans, will the Utility Shutdown Request (USR) be granted. It shall be the sole responsibility of the contractor to provide the above information, in accordance with the provisions in this section. This procedure and protocol, as well as all associated forms and schedules, in addition to the information requested herein, shall be included in the Division 1 section of the project specifications manual for each project ***so that preliminary approval can be obtained prior to the***

project commencement. A copy of the final approved Utility Shutdown Plan shall be included in the 100% Construction record documents ***and project specifications manual.***

3. The procedures and guidelines provided herein may be changed at any time by UCR for security,-safety ***and other operational*** reasons ***and needs.***

B. Protocols for tenant improvement projects within an existing building

1. Utility Shutdowns are defined as a singular event; one turn-off/one turn-on.
2. Generally speaking, shutdowns should occur during a maximum of a four-hour window on weekends and/or during the hours of 12 am and 5 am within a 24-hour period, unless otherwise approved by UCR.
3. One USR is required for each 24-hour period, even if the preceding shutdown is being duplicated.
4. Contractors shall follow UCR "Lockout/Tagout" procedures. An approved "Lock Out/Tag Out" program and confined space program, reviewed by UCR EHS, shall be detailed and included for all Electric Panels and circuitry, and/or any other utility service which is being worked on or any confined space and included in a project. This program information shall be included in all USR related documentation provided by the Design Builder ***and it shall also be included in the contract documents submittal and project specification manual.*** All parties involved in the lockout/tagout process, such as, contractor, subcontractors, UCR Operations and Maintenance of Plant, should apply their own locks and tags. No shared lock is allowed at any time.
5. A single USR form is required for the physical shutdown of a single utility. If, by shutting down one utility, this causes loss of other systems or utilities, those other systems and utilities are identified and addressed in the Impact Analysis. For example; a shutdown of electrical may cause the loss of the Fire Alarm. The loss of the Fire Alarm is addressed as an impact.
6. A USR is required for the physical shutdown of each utility even when occurring during the same time period. For example, if both electrical and water are proposed to be shut down during a given period, two URS Forms are required. Each utility shutdown will result in different impacts, likely independent of the other, and therefore will undergo independent evaluations and approvals.
7. Utility Shutdown Request (USR) must be submitted 30 calendar days prior to the proposed utility shutdown, unless otherwise required or authorized by UCR. In the event that there is an "immediate" or "emergency" utility shutdown which must occur with less than a 30-day notice, then UCR Project Manager shall be notified with as much time as possible with all required details and impacts included in the request. UCR Staff will assist in this request as quickly as possible however no shutdown will be approved until all documents and review are completed.
8. USR's are submitted electronically or manually, including all required documentation, and they are to be included in the project specifications for each specific Capital Programs project.
9. Status of each USR review is available from the Project Manager (PM) for each project.
10. Only UCR Operations and Maintenance of Plant (OMP) personnel are permitted to disrupt or disconnect any utility system.

11. Personnel required to be at all shutdowns include the Operations and Maintenance of Plant (OMP) personnel, who will be conducting the actual shutdown; the Design Builder ~~UCR Contractor of Record;~~ as well as Planning, Design and Construction (PD&C) inspectors. In addition, shutdowns may require other PD&C Staff, UCR Environmental Health & Safety, UCR Police Department, and UCR subcontractors. All other resources necessary for the successful shutdowns and restoration are provided by the Contractor at the time of the Shutdown and turn-on of utilities.
12. Only one primary switchboard is to be shutdown at any given time.
13. Electrical shutdowns may be required to be scheduled at a minimum of three days apart.
14. A utility shutdown may be canceled the night of the shutdown for any of the following reasons:

    a. All elements identified in contingency plan are not in place;
    b. Contractor is not ready within 30 minutes of scheduled shutdown;
    c. Security and operational readiness issues identified by UCR Staff.,

15. If a shutdown is canceled for any reason, the Project Manager (PM) and Construction Inspector of Record (CIOR) shall be contacted immediately, by the person or entity cancelling the shutdown. The Project Manager and Construction Inspector of Record will then notify all stakeholders of the cancelation.

C. Protocols for new building construction projects

1. Utility Shutdowns are defined as a singular event; one turn-off/one turn-on.
2. Generally speaking, shutdowns affecting adjacent facilities should occur during a maximum of a four- hour window on weekends and/or during the hours of 12 am and 5 am within a 24-hour period, unless otherwise approved by UCR.
3. One USR is required for each service being disrupted.
4. Contractors shall follow UCR “Lockout/Tagout” procedures for any utility affecting facilities “downstream” of the service. An approved “Lock Out/Tag Out” program, reviewed by UCR EHS, shall be detailed and include all Electric Panels and circuitry, and/or any other utility service which is being worked on, included in a project This program information shall be included in all USR related documentation provided by the Design Builder ***and it shall also be included in the contract documents submittal and project specification manual***. All parties involved in the lockout/tagout process, such as, contractor, subcontractors, UCR Operations and Maintenance of Plant, should apply their own locks and tags. No shared lock is allowed at any time.
5. A single USR form is required for the physical shutdown of a single utility. If, by shutting down one utility, this causes loss of other systems or utilities, those other systems and utilities are identified and addressed in the Impact Analysis.
6. A USR is required for the physical shutdown of each utility even when occurring during the same time period. For example, if both electrical and water are proposed to be shut down during a given period, two URS Forms are required. Each utility shutdown will result in different impacts, likely independent of the other, and therefore will undergo independent evaluations and approvals.
7. Utility Shutdown Request (USR) must be submitted ***30*** ~~14~~ calendar days prior to the proposed utility shutdown, unless otherwise required or authorized by UCR.

In the event that there is an "immediate" or "emergency" utility shutdown which must occur with less than a ***30*** ~~14~~ day notice, then UCR Project Manager shall be notified with as much time as possible with all required details and impacts included in the request. UCR Staff will assist in this request as quickly as possible however no shutdown will be approved until all documents and review are completed.

8. USR's are submitted electronically or manually, including all required documentation to the project's University's Representative.
9. Status of each USR review is available from the Project Manager (PM) for each project.
10. Only UCR Operations and Maintenance of Plant (OMP) personnel are permitted to disrupt or disconnect any utility system.
11. Personnel required to be at all shutdowns include the Operations and Maintenance of Plant (OMP) personnel, who will be conducting the actual shutdown; the Design-build Contractor; as well as Planning, Design and Construction (PD&C) inspectors. In addition, shutdowns may require other PD&C Staff, UCR Environmental Health & Safety, UCR Police Department, and UCR subcontractors. All other resources necessary for the successful shutdowns and restoration are provided by the Design-build Contractor at the time of the Shutdown and turn-on of utilities.
12. ***Only one primary switchboard is to be shutdown at any given time.***
13. Electrical shutdowns may be required to be scheduled at a minimum of three days apart.
14. A utility shutdown may be canceled the night of the shutdown for any of the following reasons:
    a. All elements identified in contingency plan are not in place;
    b. Contractor is not ready within 30 minutes of scheduled shutdown;
    c. Security and operational readiness issues identified by UCR Staff;
15. If a shutdown is canceled for any reason, the Project Manager (PM) and Construction Inspector of Record (CIOR) shall be contacted immediately, by the person or entity cancelling the shutdown. The Project Manager and Construction Inspector of Record will then notify all stakeholders of the cancelation.

D. UCR Roles and Responsibility

1. UCR Operations and Maintenance of Plant (OMP) (performs ALL shutdowns): (OMP) is a division within the ~~Business and Administrative Services (BAS)~~ ***Research and Development unit (RED)*** and is the ONLY party allowed to physically disrupt or disconnect any utility system. The role of (OMP) is to provide maintenance of the overall University facility. Utility shutdowns ***are therefore resource constrained and*** will be scheduled based on availability of those resources, while recognizing that it will be necessary to schedule those required resources, and calculate all fees for the service as early as is possible.
2. UCR PD&C, Construction Inspector of Record (CIOR) (participant on ALL shutdowns ***and will provide oversight*** of the Utility Shutdown event): UCR Inspectors will be present at the beginning, periodically during and at the end of all utility shutdowns and turn-on events. Inspections shall certify that the utility has been re-established satisfactorily and (CIOR) will document the same. UCR EH&S shall communicate UCR lockout/tagout procedures with the Contractor.

3. UCR PD&C, Project Manager (PM) (participant in ALL shutdowns): The designated Project Manager is the single point of contact for the Contractor for all utility shutdowns. The PM has the initial responsibility to approve and/or reject the USR and, with others, will review ***the Schedule for the utility shutdown,*** the Contractors implementation of the Contingency Plan and proposed execution of the utility shutdown and may be at the site at the time of shutdown and/or turn-on.

E. Design Builder Roles and Responsibilities

1. Design Builder shall submit ***and include in the project documents and specifications manual,*** the detailed Utility Shut Down Plan which ***upon a necessary shutdown of any utilities*** shall identify all of the utilities affected, how the utility is to be isolated, maximum allowable duration of interruption (if applicable) and the affected facilities and systems, and lockout/tagout procedures for all shut downs. The Design Builder is responsible for submitting a Utility Shutdown Request (USR) for each and every proposed utility shutdown event, ***each with a minimum 30-day lead time prior to each requested shutdown event date.***
2. Design Builder is responsible for developing the Impact Analysis to be included with the USR. The Impact Analysis must include the specific location of the utility shutdown, documentation of field forensic investigations to verify as-built conditions and ***identification of*** all systems and parties affected by the shutdown, lockout/tagout procedures, and the specific impact to each system and party affected. Documentation can include written narrative, diagrams, sketches, photos as appropriate, ***as well as all other required or requested data or information needed to substantiate, organize and schedule the proposed shutdown of utilities.*** The Impact Analysis shall include a specific work plan for providing contractor personnel and equipment to support the shutdown, including requirements generated by the impacts to other systems and parties. The Impact Analysis must also identify the need for support from other entities such as UCR Communication and Computer Systems Services, UCR OMP, UCR EH&S, UCR Police Department, UCR Subcontractors, and others. Early notice is imperative for proper coordination.
3. Emergency Shutdown events will be handled on a case by case basis, however as much prior notice as possible shall be provided to the ***University's Representative*** Project Manager. Immediately notify the Project Manager if/when this occurs. Only UCR PD&C team members in conjunction with OMP shall decide if the event is an "emergency".
4. In communication with the Project Manager for the specific project, the Design Builder shall meet with all Shutdown Stakeholders in order to address/mitigate fully, all comments or concerns raised by the utility shutdown activity. The Project Manager will coordinate this meeting.
5. Once all comments and issues are discussed and addressed, and/or the initial Utility Shutdown Plan is approved, the Design Builder will correct and re-submit all Utility Shutdown Plan documents to the Project Manager for inclusion in the Construction Documents and Project Specifications Manual.
6. Design Builder shall prepare all Utility Shutdown forms.
7. Design Builder shall ensure that all Construction Documents are updated so that final "As-Built" documents reflect all Utility Shutdown activity for this project.

8. The Design Builders design professional may be involved further at the time of the Utility Shutdown event.
9. Design Builder is responsible for developing and implementing a contingency plan, if requested by UCR, to mitigate specific impacts during the shutdown. Any and all resources, including equipment, manpower and supervision required for the execution of the contingency plan are the responsibility of the Design Builder. This includes, but is not limited to, temporary signage, temporary power, clean-up of collateral damage, operational workarounds, etc. This may include all areas and systems impacted by the shutdown.
10. The Design Builder is responsible for issuing a monthly 30-day or ***45-day*** look-ahead calendar that includes the identification of all projected USR's. The calendar shall be updated ~~as necessary~~ ***weekly and submitted to the University's representative Project Manager*** and shall identify the contractor's utility shutdown identification/number (CUSR) and the date and type of the proposed shutdown. ***If modifications are required, the schedule shall be submitted to the University's representative Project Manger within 24 hours of identification of the change. Upon notification the Project Manager will immediately notify UCR OMP and Environmental, Health and Safety (EH&S).***
11. The Design Builder is responsible for implementation of the approved USR including all supporting elements and required contingencies within the designated schedule, as initially approved.
12. During the utility shutdown, the Design Builder is responsible for documenting previously unknown conditions found at the shutdown location, and for including them within the official project construction documents for permanent archiving with the Planning, Design and Construction Office.
13. The Design Builder ~~Contractor~~ is responsible for contacting the Project Manager, ***Physical plant (OMP), Environmental, Health and Safety (EH&S), and the Construction Inspector of Record (CIOR)*** at least 2 hours prior to the actual utility shutdown and prior to the utility restart. If there is any delay in the shutdown or restart from the approved schedule, the Contractor is responsible for notifying the PM as soon as that information is known.

F. Process and Procedure for submitting USP and USR's

1. The Design Builder shall submit the initial detailed Utility Shutdown Plan (USP) ***and include this in the project documents and specifications manual,*** which includes and identifies all utilities affected, how the utility is to be isolated, maximum allowable duration of interruption (if applicable) and the affected facilities, and lockout/tagout procedures for all major shut downs. Design Builder shall also specify by-pass or temporary service if required to minimize disruption to the University. A copy of the approved plan, which includes the prepared Utility Shutdown Request (USR), ***Impact Analysis and Shutdown Calendar, will*** be included in the ***project specifications manual*** and record documentation, ***once the request is approved.***
2. The ~~Contractor~~ Design Builder submits the project USR, in electronic or hard copy format, including the Impact Analysis (mandatory), to the University's Representative Project Manager. This starts the required 30 calendar days review period necessary for processing the USR. Any revisions or additions to the

submitted USR, necessitating the re-submittal of the USR, will result in the restart of the required 30 calendar day review period.

3. The University's Representative Project Manager will review the submitted USR ***(including the mandatory impact analysis)*** for need, completeness, and compliance with the required notification period. Any required changes to the USR or Impact Analysis along with any requirement for a contingency plan will be transmitted by the University's Representative Project Manager to the Design Builder. The University's Representative Project Manager will provide the initial approval of the USR.
4. Following the initial approval by the PM the USR, Impact Analysis, and Contingency Plan (if required) will be reviewed by Physical Plant (OMP), Environmental Health & Safety (EH&S) and other stakeholders. This review will include a technical review of the Impact Analysis, by impacted stakeholders, and coordination of schedule for the utility shutdown.
5. Upon a satisfactory review of the USR, including the Impact Analysis and Contingency Plan, the PM will schedule a Stakeholder Coordination Meeting, if needed. This meeting is chaired by the PM and includes the Contractor and all applicable stakeholders identified in the USR or as part of the review process. The purpose of the meeting is to review all elements of the utility shutdown including the review of impacts and applicable contingencies to assure all known elements have been addressed. The USR and applicable Contingency Plan can be modified in this meeting provided all stakeholders are in agreement, the modification does not impact any additional stakeholder not in attendance, and the resulting shutdown in the field can be fully supported.
6. Upon satisfactory completion of the Stakeholder Coordination Meeting, the PM will obtain final approval signatures.
7. The PM will return the approved (USR) to the Contractor with copies to all stakeholders identified in the (USR) as well as other parties identified by the UCR Staff.
8. Following approval of a (USR), if the (USR) is cancelled for any reason, the PM ***will immediately notify all stakeholders of the cancellation.***

G. Forms and Checklists

1. Utility Shutdown Request Application (USR)
2. Utility Shutdown Request (USR) Impact Analysis
3. Utility Shutdown Request (USR) Impact Analysis Checklist
4. Utility Shutdown request for Assistance
5. Utility Shutdown process flow diagram

1.4 SUBMITTALS

A. Qualification Data: For land surveyor or professional engineer.

B. Certificates: Submit certificate signed by land surveyor or professional engineer certifying that location and elevation of improvements comply with requirements.

C. Certified Surveys: Submit three copies signed by land surveyor or professional engineer and one AutoCad electronic file of survey on CD-R.

D. Final Property Survey: Submit three copies showing the Work performed and record survey data and one AutoCad electronic file of survey on CD-R.

E. Contingency Plan: Submit six copies within 60 days of Notice to Procedure for emergency plan(s) should an existing utility be damaged.

1.5 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in California and who is experienced in providing land-surveying services of the kind indicated.

B. If cleaning and protection is not performed to the satisfaction of the University's Representative, the University reserves the right to have cleaning performed by others at the Design Builder's expense.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
3. Locate all known existing utilities and shut-off devices before proceeding with construction operations which may cause damage to such installations. Existing utilities shall be kept in service where possible and damage to them shall be repaired with no adjustment of Contract Sum.
4. If any other structures or utilities are encountered, request University's Representative to provide direction on how to proceed with the Work.
5. If any structure or utility is damaged, take appropriate action to ensure the safety of persons and property.
6. Submit a contingency plan for emergency repair of all utilities to University’s Representative for approval prior to commencing Work.

B. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

    a. Description of the Work.
    b. List of detrimental conditions, including substrates.
    c. List of unacceptable installation tolerances.
    d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with University's Representative.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to University's Representative. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on Form, "Request for Interpretation."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify University's Representative promptly.

B. General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify University's Representative when deviations from required lines and levels exceed allowable tolerances.
6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by University's Representative.

3.4 FIELD ENGINEERING

A. Identification: University will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of University's Representative. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to University's Representative before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

E. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor or professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation.

1. Make vertical work plumb and make horizontal work level.
2. Install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
4. Doors and access panels shall be kept clear.
5. Before beginning any installation, make provisions to avoid interference.
6. Relocate installed work that does not provide adequate accessibility.
7. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.
8. Do not obstruct spaces and installations that are required to be clear by California Building Codes requirements.

B. Precedence of Installation Requirements:

1. Descriptive specification.
2. Product listing, classification or certification.
3. Manufacturer’s installation instructions.
4. Trade association or referenced standards.
5. Most common trade practice.

C. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated unless more explicit or stringent requirements are contained in contract documents.

D. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

E. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

1. Maximum noise level for trenchers, graders, and trucks shall not exceed 90 dBA at 50 feet as measured under the noisiest operating conditions. For other equipment, noise levels shall not exceed 85 dBA at 50 feet.
2. Jack hammers shall be equipped with exhaust mufflers and steel muffing sleeves. Air compressors should be of a quiet type such as a “wisperized” compressor.
3. Machines and equipment shall not be left idling.
4. Electric power shall be used in lieu of internal combustion engine power wherever possible.
5. Schedule noisy operations so as to minimize their duration at any given location
6. Equipment shall be properly maintained to reduce noise from excessive vibration, faulty mufflers, or other sources.
7. Provide noise barriers to comply with above criteria.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

1. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application and as required by Applicable Code Requirements for accessibility. Refer questionable mounting height decisions to the University's Representative for final decision.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
4. Comply with the California Building Code requirements for earthquake Seismic Zone 4.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, produce sketch to arrange joints for the best visual effect and submit to the University’s Representative for review. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

K. Isolate each part of the completed construction from incompatible material to prevent deterioration.

3.6 UNIVERSITY-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for University's construction forces.

B. Coordination: Coordinate construction and operations of the Work with work performed by University's construction forces.

1. Contract Schedule: Inform University of Design Builder's preferred contract Schedule for University's portion of the Work. Adjust contract Schedule based on a mutually agreeable timetable. Notify University if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include University's construction forces at preinstallation conferences covering portions of the Work that are to receive University's work. Attend preinstallation conferences conducted by University's construction forces if portions of the Work depend on University's construction.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas at frequent intervals, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in CFC Article 87 for removal of combustible waste materials and debris.
2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading.
2. Excessive internal or external pressures.
3. Excessively high or low temperatures.
4. Thermal shock.
5. Excessively high or low humidity.
6. Air contamination or pollution.
7. Water or ice.
8. Solvents.
9. Chemicals.
10. Light.
11. Puncture.
12. Abrasion.
13. Heavy traffic.
14. Soiling, staining and corrosion.
15. Bacteria.
16. Rodent and insect infestation.
17. Combustion.
18. Electrical current.
19. High speed operation.
20. Improper lubrication.
21. Unusual wear or other misuse.
22. Contact between incompatible materials.
23. Destructive testing.
24. Misalignment.
25. Excessive weathering.
26. Unprotected storage.
27. Improper shipping or handling.
28. Theft.
29. Vandalism.

3.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

C. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

3.10 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

EXHIBIT A – UTILITY SHUTDOWN REQUEST (USR)

UNIVERSITY OF CALIFORNIA
UC RIVERSIDE

Planning, Design and Construction
1223 University Ave, Suite 240
Riverside, CA 92521-0101

APPLICATION (USR) #2019USR-_____
CAMPUS BUILDING PERMIT NUMBER B19-

UTILITY SHUTDOWN REQUEST (USR)

Project Number: 950512 **Contractor USR Tracking Number:** 2019USR-_____

Project Description: _____ **Project Manager:** MIHAI GAVAN

1. E-mail/submit one (1) form for each utility being requested for shutdown. You must fill out separate forms for each shutdown request.
2. Shutdown information times shall be in half-hour increments.
3. E-mail completed form to the Physical Plant and A&E Project Manager.
4. Requests must be received a minimum of 30 days prior to the utility shutdown event time-NO EXCEPTIONS
5. Utilities shall be shutdown and restored by OMP personnel ONLY.
6. The shutdown will not occur unless the Contractor is present at the shutdown location and work area.
7. Please complete the form in its entirety including attached Impact Analysis and Impact Analysis Checklist.

INCOMPLETE FORMS WILL NOT BE PROCESSED.
NOTICE: All forms received on Saturday, Sunday or after 1:00 p.m. (Weekdays) will be marked as "RECEIVED" on the following business day.

SHUTDOWN TIMES MAY CHANGE WITHOUT NOTICE DUE TO UNIVERSITY OPERATIONAL PRIORITIES

(Select ONE utility per form)

☐ Water ☐ Electrical ☐ Gas ☐ Fire Alarm ☐ Security System ☐ HVAC ☐ Sewer ☐ Chilled Water

☐ Automatic Fire Sprinklers ☐ Communications ☐ Lab Vacuum ☐ Lab Air ☐ Steam ☐ Other

LOCATION INFORMATION:

Specific Location: _____ **Work Areas Adjacent To:** _____

Affected Buildings/Systems: _____

Purpose: _____

Floor Level: _____ **Landside Area:** _____

Building to Remain Occupied? ☐ Yes ☐ No **Is this a Laboratory?** ☐ Yes ☐ No

CONTACT INFORMATION:

Subcontractor: _____ **Contact Name:** _____

Phone Number: (760) ____ - _____ **FAX:** (760) ___ - _____ **E-MAIL:** _____

PROPOSED SHUTDOWN INFORMATION: **PROPOSED RESTORE INFORMATION:**

Day: Select Day **Date:** _____ **Time:** _____ **Day:** Select Day **Date:** 01/23/2019 **Time:** 1/23/19 8:38 am

Comments: _____

Contractor Requestor's Name: _____ **Position/Title:** _____

Phone: (760) _____ **E-MAIL:** _____ **Submitted:** 1/23/2019 08:38

DO NOT WRITE BELOW THIS LINE FOR UNIVERSITY OF CALIFORNIA, RIVERSIDE USE ONLY

Date (USR) Received: 04/25/2017 **Time:** 1/23/19 8:38 am ☐ APPROVED ☐ DENIED (NOT APPROVED)

Comments: _____

_____ 04/25/2017

Executive Director-Signature **Date** **Project Manager-Signature** **Date**

UC RIVERSIDE UNIVERSITY OF CALIFORNIA

Planning, Design and Construction
1223 University Ave, Suite 240
Riverside, CA 92521-0101

APPLICATION (USR) #2019USR-_____
CAMPUS BUILDING PERMIT NUMBER B19-

UTILITY SHUTDOWN REQUEST (USR)

IMPACT ANALYSIS (1 of 3)

Project No. 950512 **Project Manager:** MHAI GAVAN

Construction Project Description: _____

Detailed Description of Utility to be Shutdown:

Specific Location:

Lock Out/Tag Out Plan:

Affected Systems/Equipment:

Impact of Work on Systems/Equipment/Stakeholders:

Plan to Mitigate Impacts:

Proposed Work Plan for Implementing the Shutdown:

ATTACH DOCUMENTATION FO FIELD FORENSIC INVESTIGATION, SKETCHES, DIAGRAMS, PHOTOS, AND ADDITIONAL NARRATIVE EXPLANATION AS APPROPRIATE. PROVIDE NAME OF SPECIFIC STAKEHOLDERS IMPACTED

UNIVERSITY OF CALIFORNIA
UC RIVERSIDE

Planning, Design and Construction
1223 University Ave, Suite 240
Riverside, CA. 92521-0101

APPLICATION (USR) #2019USR-_____

CAMPUS BUILDING PERMIT NUMBER B19-

UTILITY SHUTDOWN REQUEST

IMPACT ANALYSIS CHECKLIST (2 of 3)

UCR Project Number: 950512 **A & E Project Manager:** MIHAI GAVAN

Construction Project Description: _____

Utilities to be shut down: SELECT UTILITY TO BE SHUT DOWN **Locations:** _____

☐ **Field Forensics Investigations and Documentation Complete** **Date of Completion:** _____

NOTE: *CONTRACTOR IS REQUIRED TO COMPLETE AND DOCUMENT FIELD FORENSIC INVESTIGATIONS TO VERIFY AS-BUILT CONDITIONS*

Impacted Facilities	Yes	No	Description
Parking Structure	☐	☐	
Sports Field	☐	☐	
Student Recreation Center	☐	☐	
Laboratory	☐	☐	
Administration Building	☐	☐	
Class Rooms	☐	☐	
Streets	☐	☐	
Physical Plant (OMP)	☐	☐	
Central Plant/Steam Plant	☐	☐	
Sports Facility	☐	☐	
Other	☐	☐	

Impacted Parties (Stakeholders)	Yes	No	Description
Students	☐	☐	
Faculty	☐	☐	
Administration	☐	☐	
Vendors	☐	☐	
Other Contractors/Projects	☐	☐	
UCR Department	☐	☐	
IT/Communications	☐	☐	
Fire and Life Safety	☐	☐	
Police/Security	☐	☐	
Physical/Central Plan (OMP)	☐	☐	

Impacted Systems	Yes	No	Description
Water	☐	☐	
Sewer	☐	☐	
Electrical	☐	☐	
Fire Sprinklers	☐	☐	
Fire Alarms	☐	☐	
Gas	☐	☐	
Landscape/Water	☐	☐	
Security	☐	☐	
HVAC	☐	☐	
IT/Communications	☐	☐	
Other	☐	☐	

UNIVERSITY OF CALIFORNIA
UC RIVERSIDE

Planning, Design and Construction
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APPLICATION (USR) #2019USR-_____
CAMPUS BUILDING PERMIT NUMBER B19-

UTILITY SHUTDOWN REQUEST

IMPACT ANALYSIS CHECKLIST (3 of 3)

Project Number: 950512 **A & E Project Manager:** MIHAI GAVAN
Construction Project Description: _____
Utility to be shutdown: Automatic Fire Sprinkler System **Locations:** _____
☐ **Field Forensics Investigations and Documentation Complete** **Date of Completion:** _____

NOTE: *CONTRACTOR IS REQUIRED TO COMPLETE AND DOCUMENT FIELD FORENSIC INVESTIGATIONS TO VERIFY AS-BUILT CONDITIONS*

Work Plan Requirements	Yes	No	Description
Parking Structure	☐	☐	
Sports Field	☐	☐	
Student Recreation Center	☐	☐	
Laboratory	☐	☐	
Administration Building	☐	☐	
Class Rooms	☐	☐	
Streets	☐	☐	
Physical Plant (OMP)	☐	☐	
Central Plant/Steam Plant	☐	☐	
Sports Facility	☐	☐	
Other	☐	☐	

Work Plan Reviewers	Yes	No	Description-(Specific Persons who will review this Work Plan)
Students	☐	☐	
Faculty	☐	☐	
Administration	☐	☐	
Vendors	☐	☐	
Other Contractors/Projects	☐	☐	
UCR Departments	☐	☐	
IT/Communications	☐	☐	
Fire and Life Safety	☐	☐	
Police/Security	☐	☐	
Physical/Central Plan (OMP)	☐	☐	

Impacted Systems	Yes	No	Description
Water	☐	☐	
Sewer	☐	☐	
Electrical	☐	☐	
Fire Sprinklers	☐	☐	
Fire Alarms	☐	☐	
Gas	☐	☐	
Landscape/Water	☐	☐	

OUTLINE PERFORMANCE SPECIFICATIONS

FOR

UCR Student Success Center

University of California - Riverside
Riverside, California

Steinberg Hart Project #17138.00

DOCUMENT 000110
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08 1414 Molded Hardboard and Medium Density Fiberboard Faced Wood Doors
08 1416 Flush Wood Doors
08 1700 Integrated Door Opening Assemblies
08 3100 Access Doors and Panels
08 3323 Overhead Coiling Doors
08 3481 Elevator Door Smoke Containment System
08 4124 Steel-Framed Entrances and Storefront
08 4126 All-Glass Entrances and Storefronts
08 4313 Aluminum-Framed Storefronts
08 4413 Glazed Aluminum Curtain Walls
08 4613 Glazed Aluminum Window Walls
08 5113 Aluminum Windows
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08 5123 Steel Windows
08 5413 Fiberglass Windows
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08 6223 Tubular Skylights
08 6300 Metal-Framed Skylights
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08 8300 Mirrors
08 9100 Louvers

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09 2116 Gypsum Board Assemblies
09 2236.23 Metal Lath
09 2300 Gypsum Plastering
09 2400 Cement Plastering
09 3000 Tiling
09 5100 Acoustical Ceilings
09 5133 Acoustical Metal Pan Ceilings
09 5423 Linear Metal Ceilings
09 5426 Linear Wood Ceilings
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09 6513 Resilient Base and Accessories
09 6521 Resilient Plank Flooring
09 6623 Resinous Matrix Terrazzo Flooring
09 6813 Tile Carpeting
09 7200 Wall Coverings
09 8100 Acoustic Insulation
09 8134 Sound Control Underlayment
09 8414 Acoustic Stretched-Fabric Wall and Ceiling Systems
09 8430 Sound-Absorbing Wall and Ceiling Units
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10 2113.16 Plastic Laminate-Clad Toilet Compartments
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10 2113.19 Solid Plastic Toilet Compartments
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10 2239.13 Folding Glass-Panel Partitions
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10 2800 Toilet, Bath, And Laundry Accessories
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22 0549 Seismic Restraint for Plumbing Piping and Equipment
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23 0593 Testing Adjusting and Balancing
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23 0902 Variable Frequency Drives (VFD)
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23 2300 Refrigerant Piping Systems
23 2500 HVAC Water Treatment

23 2613 Water Filtration for Open-Loop Hydronic Systems
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23 3413 Fans and Vents
23 4100 Air Filtration
23 5100 Breechings, Chimneys, And Stacks
23 5200 Heat Generation
23 6500 Cooling Towers
23 7312 Custom Factory Air Handling Units
23 7314 Dedicated Outside Air Handling Units
23 7315 Packaged HVAC Units (1-1/2-25 Tons)
23 7434 Large Semi-Custom Packaged HVAC Units (25 - 150 Tons)
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DIVISION 21 – FIRE PROTECTION

SECTION 21 0500 - BASIC FIRE PROTECTION MATERIALS AND METHODS

APPLICABLE REQUIREMENTS

All work under this Section shall comply with the requirements of General Conditions, Supplemental Conditions, Special Conditions and Division 01 - General Requirements, and shall include all Fire Protection Sections specified herein.

SCOPE OF THIS SECTION

All work to be furnished and installed under this Section shall comply with all the requirements of Division 01, and shall include, but not necessarily be limited to, the following:

Compliance with all codes and standards applicable to this jurisdiction.
Shop Drawings for Equipment
Coordination Documents
Record Drawings
Start-up Service and Building Commissioning
Instruction, Maintenance, and O & M Manuals
Work associated with Delivery, Storage, and Handling of products
Work associated with provision of Temporary Facilities
Preparation of Posted Operating Instructions
Meeting Project Safety and Indemnity requirements
Proper Cleaning and Closing
Supplying proper Warranty information
Supply specified Guarantee documentation
Design and provision of Supports and Anchors
Pipe Portals
Access Panels and Doors
Identification Markers
Coordination of Electrical requirements for equipment provided.

DESCRIPTION OF WORK

The Contract Documents, including Specifications and Construction Drawings, are intended to provide all material and labor to install complete fire protection systems for the building and shall interface with all existing building systems affected by new construction.

The Contractor shall refer to the architectural interior details, floor plans, elevations, and the structural and other Contract Drawings and he shall coordinate his work with that of the other trades to avoid interference. The plans are diagrammatic and show generally the locations of the equipment, and risers and are not to be scaled; all dimensions and existing conditions shall be checked at the building.

The Contractor shall comply with the project closeout requirements as detailed in General Requirements of Division 01.

Where project involves interface with existing building and site systems, effort has been made to note existing utilities and services. However, the Contractor should thoroughly familiarize themselves with existing conditions and be aware that in some cases information is not available as to concealed conditions, which exist in portions of the existing building affected by this work.

Heat tracing shall not be used in lieu of heated valve enclosures to protect the valves and supply piping from freezing. Where used to protect branch lines, the heat tracing system shall be specifically listed for use on branch lines. Electric supervision of the heat tracing system shall provide positive confirmation that the circuit is energized. Where any portion of a system is subject to freezing and temperatures cannot be reliably maintained at or above 40°F (4°C), the system shall be installed as a dry pipe or preaction system. Comply with NFPA-13.

DESCRIPTION OF BID DOCUMENTS

Specifications in general, describe quality and character of materials and equipment.

DEFINITIONS

"Above Grade": Not buried in the ground and not embedded in concrete slab on ground.

"Actuating" or "Control" Devices: Automatic sensing and switching devices such as thermostats, pressure, float, electro-pneumatic switches and electrodes controlling operation of equipment.

"Below Grade": Buried in the ground or embedded in concrete slab on ground.

"Concealed": Embedded in masonry or other construction, installed in furred spaces, within double partitions or hung ceilings, in trenches, in crawl spaces, or in enclosures. In general, any item not visible or directly accessible.

"Connect": Complete hook-up of item with required service.

"Exposed": Not installed underground or "concealed."

"Furnish": To supply equipment and products as specified.

"Indicated," "Shown" or " "Noted": As indicated, shown or noted on Drawings or Specifications.

"Install": To erect, mount and connect complete with related accessories.

"Motor Controllers": Manual or magnetic starters (with or without switches), individual push buttons or hand-off-automatic (HOA) switches controlling the operation of motors.

"Must": A desire to complete the specified task. Allows some flexibility in application as opposed to "Shall."

“NRTL”: Nationally Recognized Testing Laboratory, including UL and/or ETL.

"Piping": Pipe, tube, fittings, flanges, valves, controls, strainers, hangers, supports, unions, traps, drains, insulation, and related items.

"Provide": To supply, install and connect as specified for a complete, safe and operationally ready system.

"Reviewed," "Satisfactory" or "Directed": As reviewed, satisfactory, or directed by or to Architect/Engineer/Owner.

"Rough-In": Provide all indicated services in the necessary arrangement suitable for making final connections to fixture or equipment.

"Shall": An exhortation or command to complete the specified task.

"Similar" or "Equal": Of base bid manufacture, equal in materials, weight, size, design, and efficiency of specified products.

"Supply": To purchase, procure, acquire and deliver complete with related accessories.

"Typical" or "Typ": Exhibiting the qualities, traits, or characteristics that identify a kind, class, number, group or category. Of or relating to a representative specimen. Application shall apply to all other similarly identified on plan or detail.

"Will": A desire to complete the specified task. Allows some flexibility in application as opposed to "Shall."

"Wiring": Raceway, fittings, wire, boxes and related items.

"Work": Labor, materials, equipment, apparatus, controls, accessories, and other items required for proper and complete installation.

RELATED WORK SPECIFIED ELSEWHERE

All Division 21 Fire Suppression sections included herein.

Division 02: Existing Conditions.
Coordination of excavation of trenches and the installation of piping on site.

Division 03: Concrete.
All concrete work for Fire Suppression Division shall be included in Division 21 under the appropriate Sections and shall include:
Concrete curbs and housekeeping pads for the equipment.
Thrust blocks for piping.

Division 07: Thermal and Moisture Protection.
Sealants and caulking.
Firestopping.

Division 09: Finishes:
Division 21 installers shall perform all painting, except where specifically stated otherwise in Division 09.

Division 26: Electrical is related to work of:
Fire protection alarms and relays.
Detectors and monitoring.
Power connections to all equipment.
Life safety provisions.

CODES AND STANDARDS

The Contractor is cautioned that code requirements not explicitly detailed in these specifications or drawings, but which may be reasonably inferred or implied from the nature of the project, must be provided as part of the contract.

Perform all tests required by governing authorities and required under all Division 21 Sections. Provide written reports on all tests.

Electrical devices and wiring shall conform to the latest standards of NEC; all devices shall be UL listed and labeled.

All excavation work must comply with all provisions of state laws including notification to all owners of underground utilities at least 48 business day hours, but not more than 10 business days, before commencing an excavation.

Provide in accordance with rules and regulations of the following:
NFPA Standards:
NFPA 13: Standard for Installation of Sprinkler Systems (latest adopted version)
NFPA 14: Standard for the Installation of Standpipe and Hose Systems (latest adopted version)

NFPA 17: Standard for Dry Chemical Extinguishing Systems (latest adopted version)
NFPA 17A: Standard for Wet Chemical Extinguishing Systems (latest adopted version)
NFPA 20: Standard for the Installation of Stationary Pumps for Fire Protection (latest adopted version)
NFPA 22: Standard for Water Tanks for Private Fire Protection (latest adopted version)
NFPA 24: Standard for the Installation of Private Fire Service Mains and Their Appurtenances (latest adopted version)
NFPA 25: Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems (latest adopted version)
NFPA 70: National Electrical Code (latest adopted version)
NFPA 72: National Fire Alarm and Signaling Code (latest adopted version)
NFPA 80: Standard for Fire Doors and Other Opening Protectives (latest adopted version)
NFPA 101: Life Safety Code (latest adopted version)
NFPA 2001: Standard on Clean Agent Fire Extinguishing Systems (latest adopted version)

Factory Mutual Global insurance company if declared by building Owner, including, but not limited to the following Data Sheets:

Data Sheet 3-26: Fire Protection Water Demand for Nonstorage Sprinklered Properties.
Data Sheet 2-0: Installation Guidelines for Automatic Sprinklers
Data Sheet 2-8: Earthquake Protection for Water-Based Fire Protection Systems
Data Sheet 8-9: Storage of Class 1, 2, 3, 4 and Plastic Commodities
Data Sheet 2-10R: Dry-Pipe, Deluge, Preaction Valves & Accessories
Data Sheet 3-0: Hydraulics of Fire Protection Systems
Data Sheet 4-4N: Standpipe and Hose Systems

Building Codes enforced by the Authority Having Jurisdiction in California:

2016 Building Standards Administrative Code, Part 1, Title 24 CCR.
2016 California Building Code (CBC), Part 2, Title 24 CCR (2015 International Building Code with California Amendments)
2016 California Electrical Code (CEC), Part 3, Title 24 CCR (2014 National Electrical Code with California Amendments)
2016 California Mechanical Code (CMC) Part 4, Title 24 CCR (2015 Uniform Mechanical Code with California Amendments)
2016 California Plumbing Code (CPC), Part 5, Title 24 CCR (2015 Uniform Plumbing Code with California Amendments)
2016 California Nonresidential Energy Code (CEC), Part 6, Title 24 CCR
2016 California Fire Code, Part 9, Title 24 CCR (2015 International Fire Code with California Amendments
2016 California Green Building Standards Code (CALGreen), Part 11, Title 24 CCR.
2016 California Referenced Standards, Part 12, Title 24 CCR.
Title 19 CCR Public Safety, State Fire Marshal Regulations.

Local, city, county and state codes and ordinances
Local and State Fire Prevention Districts.
Other applicable standards and references:

UL and FM Compliance: Provide products, which are UL listed and FM approved.
ASCE/SEI 7-10: Minimum Design Loads for Buildings and Other Structures.
MSS Standard Compliance: Manufacturer's Standardization Society (MSS).
SMACNA: Seismic Restraint Manual-Guidelines for Mechanical Systems.
Factory Mutual Approval Guide (Product listing, only).
Factory Mutual Approval Guide and FM Pamphlet #20 “Rules for Installing Sprinklers” (Product listing and project review).
Underwriters Laboratories, Inc.
Industrial Risk Insurance Underwriters.
Owner’s insurance agency.

Provide in accordance with appropriate referenced standards of the following:

NFPA - National Fire Protection Association.
CSA - Canadian Standards Association.
ANSI - American National Standards Institute.
ASME - American Society of Mechanical Engineers.
ASTM - American Society for Testing Materials.
AWS - American Welding Society.
AWWA - American Water Works Association.
FM - Factory Mutual.
MSS - Manufacturer's Standardization Society.
NEMA - National Electrical Manufacturer's Association.
UL - Underwriter's Laboratories.
ADA - Americans with Disabilities Act.
ETL - Electrical Testing Laboratories.
IAPMO - International Association of Plumbing and Mechanical Officials.

CONFLICTING REQUIREMENTS

Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to the Owner's Representative for a decision before proceeding.

Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to the Owner's Representative for a decision before proceeding.

QUALITY ASSURANCE

Manufacturer's Nameplates: Nameplates on manufactured items shall be aluminum or Type 304 stainless steel sheet, not less than 20 USG (0.0375"), riveted or bolted to the manufactured item, with nameplate data engraved or punched to form a non-erasable record of equipment data.

Current Models. All work shall be as follows:

Manufactured items furnished shall be the current, cataloged product of the manufacturer. Replacement parts shall be readily available and stocked in the USA.

Experience: Unless more stringent requirements are specified in other sections of Division 21, manufactured items shall have been installed and used, without modification, renovation or repair, on other projects for not less than one year prior to the date of bidding for this project.

Furnish and install all new material, equipment, and apparatus hereinafter specified unless specifically noted otherwise. All material, equipment, and apparatus shall be identified by the manufacturer's name, nameplate, and pertinent data.

All pipe, pipe fittings and valves shall be manufactured in North America. Alternatives may be acceptable, but must be submitted and approved by the Owner's Representative prior to bidding.

OR

Upon request, the Owner's Representative shall be furnished certification by the manufacturer, stating samples representing each lot have been tested and inspected as indicated in governing ASTM specifications have been met. Certification shall be accompanied by test reports as prepared in accordance with relevant ASTM sections governing Test Methods and Inspection. Tension Tests reports shall include breaking load, machined diameter of the test bars, and calculated tensile strength. Certification shall include the legal name and address of the manufacturer.

Each product and/or equipment type shall be provided by one manufacturer. Mixtures of manufacturers for each product and/or equipment type are not acceptable. Example – all wet system sprinkler piping shall be supplied by one manufacturer while different piping systems may be provided by other manufacturers.

Special Inspections: Provide structural design and Special Inspections as required by Chapter 17 of the IBC, the Authority Having Jurisdiction, and as defined in the manufacturer installation instructions for each anchorage system. Per IBC Section 1705 all anchors post-installed in hardened concrete members shall have periodic Special Inspections. Special inspection agencies shall be independent of the design and construction companies and shall act as agents for the AHJ, but contracted directly with the Owner or Owner's Representative.

Welding Standards:

Welding Qualifications:

Certification: Each welder shall have a current AWS QC7 welding certification with successful completion of written test and welding samples in compliance with AWS D1.1. The Owner's Representative reserves the right to request sample coupon test welds of each welder to validate quality of welding work.

Welding Procedures:

Steel Support Welding: All work shall be performed to meet or exceed the requirements of the American Welding Society AWS D1.1/D1.1M-Structural Welding Code-Steel.
Pipe Welding: All work shall be performed to meet or exceed the requirements of the American Welding Society AWS B2.1 Specification for Welding Procedure and Performance Qualification and ASME Boiler & Pressure Vessel Code: Section IX "Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators."

GENERAL REQUIREMENTS

Examine all existing conditions at building site.

Review contract documents and technical specifications for extent of new work to be provided.

Provide and pay for all permits, licenses, fees and inspections.

Install equipment and materials to provide required access for servicing and maintenance. Coordinate the final location of concealed equipment and devices requiring access with final location of required access panels and doors. Allow ample space for removal of all parts that require replacement or servicing. This work shall include furnishing and installing all access doors required for mechanical access.

Coordinate equipment and materials installation with other building components.

Verify all dimensions by field measurements.

Arrange for chases, slots, and openings in other building components to allow for installations.

Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.

Sequence, coordinate, and integrate installations of materials and equipment for efficient flow of the work.

Coordinate the cutting and patching of building components to accommodate the installation of equipment and materials. Contractor to provide for all cutting and patching required for installation of his work unless otherwise noted.

Install fire protection services and overhead equipment to provide the maximum headroom possible.

Install equipment to facilitate maintenance and repair or replacement of equipment components. Connect equipment for ease of disconnecting, without interference with other installations.

Coordinate the installation of materials and equipment above ceilings with ductwork, piping, conduits, suspension system, light fixtures, cable trays, and other installations.

Coordinate connection of systems with exterior underground utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.

Coordinate with Owner's Representative in advance to schedule shutdown of existing systems to make new connections. Provide valves in new piping to allow existing system to be put back in service with minimum down time.

All materials (such as insulation, piping, wiring, controls, etc.) located within air plenum spaces, air shafts, and occupied spaces shall have a flame-spread index of 25 or less, and smoke-developed index of 50 or less, as tested by ASTM E84 (NFPA 255) Method. In addition, the products, when tested, shall not drip flame particles, and flame shall not be progressive. Provide Underwriters Laboratories, Inc., label or listing, or satisfactory certified test report from an approved testing laboratory to prove the fire hazard ratings for materials proposed for use do not exceed those specified.

Products made of or containing lead, asbestos, mercury or other known toxic or hazardous materials are not acceptable for installation under this Division. Any such products installed as part of the work of the Division shall be removed and replaced and all costs for removal and replacement shall be borne solely by the installing Contractor.

MINOR DEVIATIONS

The Contractor shall review the structural and architectural conditions and drawings affecting his work. It is the specific intention of this section that the contractor's scope of work shall include

Proper code complying support systems for all equipment whether or not scheduled or detailed on drawings or in these specifications

The Contractor shall study the operational requirements of each system, and shall arrange his work accordingly, and shall furnish such fittings, offsets, supports, accessories, as are required for the proper and efficient installation of all systems from the physical space available for use by this section. This requirement extends to the Contractor's coordination of this section's work with the "Electrical Work." Should conflicts occur due to lack of coordination, the time delay, cost of rectification, demolition, labor and materials, shall be borne by the Contractor and shall not be at a cost to the Owner.

Advice the Owner's Representative, in writing, in the event a conflict occurs in the location or connection of equipment. Bear all costs for relocation of equipment, resulting from failure to properly coordinate the installation or failure to advise the Owner's Representative of conflict.

PRODUCT SUBSTITUTIONS

The Contractor shall certify the following items are correct when using substituted products other than those scheduled or shown on the drawings as a basis of design:

The proposed substitution does not affect dimensions shown on drawings.
The Contractor shall pay for changes to building design, including engineering design, detailing, structural supports, and construction costs caused by proposed substitution.
The proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
Maintenance and service parts available locally are readily obtainable for the proposed substitute.

The Contractor further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

The Contractor agrees that the terms and conditions for the substituted product that are found in the contract documents apply to this proposed substitution.

SHOP DRAWINGS AND EQUIPMENT SUBMITTALS

Prior to construction submit for review all materials and equipment in accordance with Division 01 requirements.

After approval of preliminary list of materials, the Contractor shall submit Shop Drawings and manufacturer's Certified Drawings to the Owner's Representative for approval.

The Contractor shall submit approved Shop Drawings and manufacturer's equipment cuts, of all equipment requiring connection by Division 26, to the Electrical Contractor for final coordination of electrical requirements. Contractor shall bear all additional costs for failure to coordinate with Division 26.

Submittals and Shop Drawings:

Submit electronic copies of manufacturer's submittal sheets in one (1) coordinated package per Division. Multiple submissions will not be accepted without prior approval of the Owner's Representative. Organize submittal sheets in sequential order aligned with matching specification section numbers.

Provide electronic copies of shop drawings prepared to show details of the proposed installation. Copies of contract design drawings submitted to demonstrate shop drawing compliance will not be accepted.

Paper submittals will only be acceptable if specifically required by Division 01.

The approved submittals shall be converted into Operations & Maintenance Manuals at the completion of the project. Refer to Division 01 for additional requirements.

COORDINATION DOCUMENTS/SHOP DRAWINGS

The Contractor shall prepare coordinated Shop Drawings using the same electronic format as the contract documents.

The shop drawings shall serve to record the coordination of the installation and location of all fire sprinkler heads, piping, HVAC equipment, ductwork, grilles, diffusers, lights, audio/video systems, electrical services and all system appurtenances.

The Drawings shall include all mechanical rooms and floor plans.

The Drawings shall be keyed to the structural column identification system, and shall be progressively numbered. Prior to completion of the Drawings, the Contractor shall coordinate the proposed installation with the Owner's Representative and the structural requirements, and all other trades (including HVAC, Plumbing, Fire Protection, Electrical, Ceiling Suspension, and Tile Systems), and provide maintenance access clearance as required by manufacturer installation instructions and as required to meet minimum code clearances. When conflicts are identified, modify system layout as necessary to resolve. Do not fabricate, order or install any equipment or materials until coordination documents are approved by the General Contractor and Owner's Representative.

Within thirty (30) days after award of Contract, submit proposed coordination document Shop Drawing schedule, allowing adequate time for review and approval by parties mentioned above. Drawings or electronic coordination should be prepared and submitted for approval on a floor-by-floor basis to phase with building construction.

The coordination work shall be prepared as follows:

Two dimensional AutoCAD / Revit based documents:

Contractor shall prepare AutoCAD/Revit coordination drawings to an accurate scale of 1/4" = 1'-0" or larger. Drawings are to be same size as Contract Drawings and shall indicate locations, sizes and elevations above finished floor, of all systems. Lettering shall be minimum 1/8" high.

Contractor shall obtain AutoCAD/Revit drawings from all other trades as required to fully coordinate the installation with architectural, structural, HVAC, plumbing, electrical,

fire alarm devices, low voltage devices, and other systems that interface with and/or impact the HVAC work.
Fire protection drawings shall indicate locations of all sprinkler heads and piping, including valves and fittings, dimensions from column lines, and bottom of pipe elevations above finished floor.
Provide maintenance access clearance as required by manufacturer installation instructions and as required to meet minimum code clearances.
Drawings shall incorporate all addenda items and change orders.
Distribute drawings to all other trades and provide additional coordination as needed to assure adequate space for piping, equipment and routing to avoid conflicts. When conflicts are identified, modify system layout as necessary to resolve.

Three dimensional Revit / BIM based documents (if required for project):

Provide three dimensional Revit model and BIM input information locating all equipment and piping, including valves and fittings, dimensions from column lines, and bottom of pipe elevations above finished floor.
Contractor shall obtain Revit model and BIM input from all other trades as required to fully coordinate the installation with architectural, structural, HVAC, plumbing, electrical, fire alarm devices, low voltage devices, and other systems that interface with and/or impact the fire protection work.
Model shall indicate locations of all equipment and piping, including valves and fittings, dimensions from column lines, and bottom of pipe elevations above finished floor.
Provide maintenance access clearance as required by manufacturer installation instructions and as required to meet minimum code clearances.
Model shall incorporate all addenda items and change orders.
Distribute Revit model and BIM input information to all other trades and provide additional coordination as needed to assure adequate space for equipment and piping and routing to avoid conflicts. When conflicts are identified, modify system layout as necessary to resolve.

Advise the Owner's Representative in the event a conflict occurs in the location or connection of equipment. Bear all costs for relocation of equipment, resulting from failure to properly coordinate the installation or failure to advise the Owner's Representative of conflict.

Verify in field exact size, location, invert, and clearances regarding all existing material, equipment and apparatus, and advise the Owner's Representative of any discrepancies between those indicated on the Drawings and those existing in the field prior to any installation related thereto.

Final Coordination Drawings with all appropriate information added are to be submitted as Record Drawings at completion of project.

REQUESTS FOR INFORMATION (rfis).

General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified (refer to Division 01).

Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
RFIs shall address single questions and related issues only.
All RFIs shall be thoroughly reviewed and approved by the General Contractor and/or Construction Manager for accuracy and need for information required before submittal to the Owner's Design Representative.

Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

Project name.
Project number.
Date.

Name of Contractor.
Name of Architect and Construction Manager.
RFI number, numbered sequentially and unique.
RFI subject.
Specification section number and title and related paragraphs, as appropriate.
Drawing number and detail references, as appropriate.
Field dimensions and conditions, as appropriate.
Contractor's suggested resolution. If Contractor's suggested resolution impacts the contract time or the contract sum, Contractor shall state impact in the RFI.
Contractor's signature.
Attachments: Include sketches, descriptions, measurements, photos, product data, shop drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow a minimum three business days for Engineer's response for each RFI, plus additional time for Architect and General Contractor to review and forward. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.

The following Contractor-generated RFIs will be returned without action:
Incomplete RFIs or inaccurately prepared RFIs.
RFIs submitted without indication of review and approval for submission by General Contractor or Construction Manager.
RFIs addressing multiple unrelated issues.
Requests for approval of submittals.
Requests for approval of substitutions.
Requests for approval of Contractor's means and methods.
Requests for information already indicated in the Contract Documents.
Requests for adjustments in the Contract Time or the Contract Sum.
Requests for interpretation of Engineer's actions on submittals.

Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt of additional information.

RECORD DOCUMENTS

Maintain set of Coordination Documents (drawings and specifications) marked "Record Set" at the job site at all times and use it for no other purpose but to record on it all the changes and revisions during construction.

Record Drawings shall indicate revisions to piping, size and location both exterior and interior; including control devices, and similar units requiring periodic maintenance or repair; actual equipment locations, dimensioned from column lines; actual inverts and locations of underground piping; concealed equipment, dimensioned to column lines; mains and branches of piping systems, with valves and control devices located and numbered, concealed unions located, and with items requiring maintenance.

Record Specifications shall indicate approved substitutions; Change Orders; and actual equipment and materials provided.

At the completion of the construction transfer all "Record Set" notations to a clean set of drawings and specifications in a neat and orderly fashion that incorporates all site markups to clearly show all changes and revisions to the Contract Documents. Submit copies of Record Documents and electronic media (DVD disks) labeled with all drawings and specifications and other supporting documentation.

Refer also to Division 01 for full scope of requirements.

START-UP SERVICE AND BUILDING COMMISSIONING

Prior to start-up, be assured that systems are ready, including checking the following: Proper equipment rotation, proper wiring, auxiliary connections, lubrication, venting, controls, and installed and properly set relief and safety valves.

Provide services of factory-trained technicians for start-up of pumps, and other major pieces of equipment. Certify in writing compliance with this Paragraph, stating names of personnel involved and the date work was performed.

Refer to other Division 21 Sections for additional requirements.

INSTRUCTION, MAINTENANCE, AND O&M MANUALS

O&M Manuals: Upon completion of the work, the Contractor shall submit to the Owner's Representative complete set of operating instructions, maintenance instructions, part lists, and all other bulletins and brochures pertinent to the operation and maintenance for equipment furnished and installed as specified in this section, bound in a durable binder. Refer to Division 01.

The Contractor shall be responsible for proper instruction of Owner's personnel for operation and maintenance of equipment, and apparatus installed as specified in Division 21 to be no less than 2 hours for each piece of equipment.

DELIVERY, STORAGE AND HANDLING

Deliver products to project properly identified with names, model numbers, types, grades, compliance labels, and similar information needed for distinct identifications; adequately packaged and protected to prevent damage during shipment, storage, and handling.

Store equipment and materials in an environmentally controlled area at the site, unless off-site storage is authorized in writing. Protect stored equipment and materials from damage. Piping and equipment showing signs of rust shall be removed from site and replaced with new.

POSTED OPERATING INSTRUCTIONS

Furnish approved operating instructions for systems and equipment indicated in the technical sections for use by operation personnel. The operating instructions shall include wiring diagrams, control diagrams, and control sequence for each principal system and equipment. Print or engrave operating instructions and frame under glass or in approved laminated plastic. Post instructions where directed. Attach or post operating instructions adjacent to each principal system and equipment including start-up, operating, shutdown, safety precautions and procedure in the event of equipment failure. Provide weather-resistant materials or weatherproof enclosures for operating instructions exposed to the weather. Operating instructions shall not fade when exposed to sunlight and shall be secured to prevent easy removal.

SAFETY AND INDEMNITY

The Contractor shall be solely and completely responsible for conditions of the job site including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal hours of work.

No act, service, Drawing, review, or Construction Review by the Owner, Architect, the Engineers or their consultants, is intended to include the review of the adequacy of the Contractor's safety measures, in, on, or near the construction site.

The Contractor performing work under this Division of the Specifications shall hold harmless, indemnify and defend the Owner, the Architect, the Engineers and their consultants, and each of their officers, employees and agents from any and all liability claim, losses or damage arising, or alleged to arise from bodily injury, sickness, or death of a person or persons, and for all damages arising out of injury to or destruction of property arising directly or indirectly out of, or in connection with, the performance of the work under the Division of the Specifications, and from

the Contractor's negligence in the performance of the work described in the Construction Contract Documents; but not including the sole negligence of the Owner, the Architect, the Engineers, and their consultants or their officers, employees and agents.

CLEANING AND CLOSING

All work shall be inspected, tested, and approved before being concealed or placed in operation.

Upon completion of the work, all equipment installed as specified in this section, and all areas where work was performed, shall be cleaned to provide operating conditions satisfactory to the Owner’s Representative.

WARRANTIES

Refer to general terms and conditions, as well as warranties and obligations defined in Division 1 of the specifications that provide basic warranty requirements for the entire project.

The warranties and corrective obligations provided under this section (i) are in addition to, and not in lieu of, any other warranty, representation, covenant, duty or other obligation (including any corrective obligation) of the Contractor or Manufacturer, (ii) have no relationship to the time when any warranty, representation, duty, covenant or other obligation of Contractor or Manufacturer may be enforced or any dispute resolution proceeding commenced and (iii) are made by the Manufacturer to both the Contractor and the Owner and by the Contractor to Owner.

All equipment and systems shall be provided with a minimum one-year warranty, or longer, as defined in each subsequent specification section. Warranty shall include all parts, material, labor and travel.

Warranty Start Date: The start date for all warranty periods shall be defined as starting from the date of Substantial Completion which shall include the Certificate of Occupancy from the Authority Having Jurisdiction.

Refer to individual Specification sections for additional extended warranty requirements.

Provide complete warranty information for each item, to include product or equipment, date of beginning of warranty or bond; duration of warranty or bond; and names, addresses, telephone numbers and procedures for filing a claim and obtaining warranty services.

Nothing in any separate warranty or other document provided by Contractor or Manufacturer, or both, will apply to limit their liability or responsibility for damages arising out of or related to a breach of any warranty or corrective obligation.

Service during warranty period: Contractor shall provide maintenance as specified elsewhere during the 12-month warranty period.

GENERAL

Furnish and install all new material, equipment, and apparatus hereinafter specified unless specifically noted otherwise. All material, equipment, and apparatus shall be identified by the manufacturer's name, nameplate, and pertinent data.

All materials, equipment, and apparatus are mentioned as standards unless noted otherwise. The words "or approved equal" shall be considered to be subsequent to all manufacturers’ names used herein, unless specifically noted that substitutes are not allowed.

SUPPORTS AND ANCHORS

General: Comply with applicable codes pertaining to product materials and installation of supports and anchors, including, but not limited to, the following:

Provide copper plated or plastic coated supports and attachment for copper piping systems. Field applied coatings or tape is unacceptable.

Manufacturers: Hilti Inc., B-Line, Anvil International, Tolco, Kin-Line, Simpson, Erico or Superstrut.

Horizontal Piping Hangers and Supports: Except as otherwise indicated, provide factory-fabricated hangers and supports of one of the following MSS types listed.

Adjustable Steel Clevis Hangers: MSS Type 1.
Adjustable Steel Swivel Band Hangers: MSS Type 10.
U-Bolts: MSS Type 24.
Pipe Slides and Slide Plates: MSS Type 35, including one of the following plate types:
Plate: Unguided type.
Plate: Guided type.
Plate: Hold-down clamp type.
Pipe Saddle Supports: MSS Type 36, including steel pipe base support and cast iron floor flange.
Pipe Saddle Supports with U-Bolt: MSS Type 37, including steel pipe base support and cast iron floor flange.
Adjustable Pipe Saddle Supports: MSS Type 38, including steel pipe base support and cast iron floor flange.
Single Pipe Roller with Malleable Sockets: MSS Type 41.
Adjustable Roller Hangers: MSS Type 43.
Pipe Roll Stands: MSS Type 44.
Pipe Guides: Provide factory-fabricated guides of cast semi-steel or heavy fabricated steel, consisting of a bolted two-section outer cylinder and base with a two-section guiding spider bolted tight to pipe. Size guide and spiders to clear pipe and insulation (if any), and cylinder. Provide guides of length recommended by manufacturer to allow indicated travel.

Horizontal Cushioned Pipe Clamp: Where pipe hangers are called out to absorb vibration or shock install a piping clamp with thermoplastic elastomer insert. Cush-A-Clamp or equal.

Vertical Piping Clamps: Provide factory-fabricated two-bolt vertical piping riser clamps, MSS Type 8.

Hanger-Rod Attachments: Except as otherwise indicated, provide factory-fabricated hanger-rod attachments of one of the following MSS types listed.

Steel Turnbuckles: MSS Type 13.
Steel Clevises: MSS Type 14.
Swivel Turnbuckles: MSS Type 15.
Malleable Iron Eye Sockets: MSS Type 16.
Steel Weldless Eye Nuts: MSS Type 17.

Building Attachments: Except as otherwise indicated, provide factory-fabricated building attachments of one of the following types listed.

Concrete Inserts: HCI-MD (for metal deck) or HCI-WF (for wood forms) cast-in anchors by Hilti Inc. or MSS Type 18 or Blue Banger Hanger by Simpson
Steel Brackets: One of the following for indicated loading:
Light Duty: MSS Type 31.
Medium Duty: MSS Type 32.
Heavy Duty: MSS Type 33.
Horizontal Travelers: MSS Type 58.
Concrete Screw Anchors: Hilti Kwik HUS EZ or equal.
Torque-Controlled Expansion Anchor: Hilti Kwik Bolt TZ or equal.

Saddles and Shields (for heat traced pipe): Except as otherwise indicated, provide saddles or shields under piping hangers and supports, factory-fabricated, for all insulated piping. Size saddles and shields for exact fit to mate with pipe insulation.

Pipe Covering Protection Saddles: MSS Type 39; fill interior voids with segments of insulation matching adjoining insulation.

Insulation Protection Shields: MSS Type 40, 18” minimum, or of the length recommended by manufacturer to prevent crushing of insulation. High-density insulation insert lengths shall match or exceed shield length.
Thermal Hanger Shields: Constructed of 360° insert of waterproofed calcium silicate (60 psi flexural strength minimum) encased in 360° sheet metal shield. Provide assembly of same thickness as adjoining insulation. Shield length shall match or exceed length of calcium silicate insert.
Thermal Hanger Couplings: Constructed of high strength plastic coupling to retain tubing and join insulation at clevis hangers and strut-mounted clamps. Klo-Shure Insulation Coupling or equal.

Miscellaneous Materials:
Metal Framing: Provide products complying with NEMA STD ML1.
Steel Plates, Shapes, and Bars: Provide products complying with ASTM A36.
Cement Grout: Portland Cement (ASTM C150, Type I or Type III) and clean uniformly graded, natural sand (ASTM C404, Size No. 2). Mix at a ratio of 1.0 part cement to 3.0 parts sand by volume, with minimum amount of water required for placement and hydration.
Heavy-Duty Steel Trapezes: Fabricate from steel shapes selected for loads required. Weld steel in accordance with AWS standards.
Pipe Brackets: "HoldRite" copper plated brackets. Insulate brackets attached to metal studs with felt.

SEISMIC RESTRAINT and vibration isolation REQUIREMENTS

Equipment, piping, and all system appurtenances (including weight of normal operating contents) shall be adequately restrained to resist seismic forces. Restraint devices shall be designed and selected to meet seismic requirements as defined in the latest code editions with State Amendments, applicable local codes, and applicable Importance Factors and Soil Factors. Refer to Section 210548 Vibration Isolation for Fire Protection Equipment or Section 210549 Seismic Restraint for Fire Protection Piping and Equipment, as applicable.

ACCESS PANELS AND ACCESS DOORS

Provide all access doors and panels to serve equipment under this work, including those which must be installed, in finished architectural surfaces. Frame of 16-gauge steel, door of 20-gauge steel, 1” flange width, continuous piano hinge, key operated, prime coated. Refer to Architectural Specifications for the required product Specification for each surface. Contractor is to submit schedule of access panels for approval. Exact size, number and location of access panels are not shown on Plans. Access doors shall be of a size to permit removal of equipment for servicing. Access door shall have same rating as the wall or ceiling in which it is mounted. Provide access panel for each concealed valve. Use no panel smaller than 12" x 12” for simple manual access, or smaller than 24" x 24" where personnel must pass through. Provide cylinder lock for access door serving mixing or critical valves in public areas.

Included under this work is the responsibility for verifying the exact location and type of each access panel or door required to serve equipment under this work and in the proper sequence to keep in tune with construction and with prior approval of the Owner’s Representative. Access doors in fire rated partitions and ceilings shall carry all label ratings as required to maintain the rating of the rated assembly.

Acceptable Manufacturers: Milcor, Karp, Nystrom, Elmdor/Stoneman, or equal.

Submit markup of architectural plans showing size and location of access panels required for equipment access for approval by Owner’s Representative.

IDENTIFICATION MARKERS

Mechanical Identification Materials: Provide products of categories and types required for each application as referenced in other Division 21 Sections. Where more than a single type is

specified for application, selection is at installer's option, but provide single selection for each product category. Stencils are not acceptable.

Plastic Pipe Markers:

Snap-On Type: Provide pre-printed, semi-rigid snap-on, color coded pipe markers, complying with ANSI A13.1.

Pressure Sensitive Type: Provide pre-printed, permanent adhesive, color coded, pressure sensitive vinyl pipe markers, complying with ANSI A13.1. Secure both ends of markers with color coded adhesive vinyl tape.

Arrows: Print each pipe marker with arrows indicating direction of flow, either integrally with piping system service lettering (to accommodate both directions), or as separate unit of plastic.

Underground-Type Plastic Line Markers: Provide 6” wide x 4 mils thick multi-ply tape, consisting of solid metallic foil core between 2 layers of plastic tape. Markers to be permanent, bright colored, continuous printed, intended for direct burial service.

Valve Tags:

Brass Valve Tags: Provide 1-1/2" diameter 19-gauge polished brass valve tags with stamp-engraved piping system abbreviation in 1/4” high letters and sequenced valve numbers 1/2” high, and with 5/32” hole for fastener. Fill tag engraving with black enamel.

Plastic Laminate Valve Tags: Provide 3/32” thick engraved plastic laminate valve tags, with piping system abbreviations in 1/4" high letters and sequenced valve number 1/2" high, and with 5/32” hole for fasteners.

Valve Tag Fasteners: Provide solid brass chain (wire link or beaded type), or solid brass S-hooks of the sizes required for proper attachment of tags to valves, and manufactured specifically for that purpose.

Access Panel Markers: Provide 1/16” thick engraved plastic laminate access panel markers, with abbreviations and numbers corresponding to concealed valve. Include 1/8” center hole to allow attachment.

Plastic Equipment Signs:

Provide 4-1/2” x 6” plastic laminate sign, ANSI A.13 color coded with engraved white core lettering.

Fasteners: Self-tapping stainless steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate the substrate.

Nomenclature: Include the following, matching terminology on schedules as closely as possible:

Name and plan number.

Equipment service.

Design capacity.

Other design parameters, such as pressure, rpm, etc.

Acceptable Manufacturers: Craftmark, Seton, Brady, Marking Services, Inc., Brimar or equal.

ELECTRICAL

General:

All electrical material, equipment, and apparatus specified herein shall conform to the requirements of Division 26.

Provide all motors for equipment specified herein. Provide motor starters, controllers, transfer switches, and other electrical apparatus and wiring which are required for the operation of the equipment specified herein.

Set and align all motors and drives in equipment specified herein.

Provide expanded metal or solid sheet metal guards on all V-belt drives to totally enclose the drive on all sides. Provide holes for tachometer readings. Support guards separately from rotating equipment.

Provide for all rotating shafts, couplings, etc., a solid sheet metal, inverted "U" cover over the entire length of the exposed shaft and support separately from rotating equipment. Cover shall extend to below the bottom of the shaft and coupling, and shall meet the requirements of the State Industrial Safety Regulations.
Specific electrical requirements (i.e., horsepower and electrical characteristics) for mechanical equipment are scheduled on the Drawings.

Quality Assurance:
Electrical components and materials shall be UL or ETL listed/labeled as suitable for location and use - no exceptions.

Low Voltage Control Wiring:
General: 14-gauge, Type THHN, color coded, installed in conduit.
Manufacturer: General Cable Corp., Alcan Cable, American Insulated Wire Corp., Senator Wire and Cable Co., Southwire Co, or equal.

SECTION 21 1000 - FIRE PROTECTION PIPING, HEADS AND SPECIALTIES

APPLICABLE REQUIREMENTS

All work to be furnished and installed under this section shall comply with all the requirements of General Conditions, Supplemental Conditions, Division 01 - General Requirements, Section 210500 - Basic Fire Protection Materials and Methods, and other Sections in Division 21 specified herein.

DEFINITIONS

Pipe sizes used in this Section are nominal pipe size (NPS) specified in inches.

Working plans as used in this Section refer to documents (including drawings and calculations) prepared pursuant to requirements in NFPA-13 for obtaining approval of AHJ (Authority Having Jurisdiction).

NICET - National Institute for Certification in Engineering Technologies.

Other definitions for fire protection systems are included in referenced NFPA Standards.

FM – Factory Mutual Global insurance company.

DESCRIPTION OF WORK

The work includes designing, providing and installing a complete and fully operable automatic sprinkler system as described in this Section of the Specification and as shown on the contract construction drawings and shall be in accordance with rules, regulations and standards as required by the authorities having jurisdiction.
State.
City.
Building Department.
Fire Prevention Division, Fire Marshal’s Office.
Factory Mutual Global insurance if declared by Owner.

Work includes but is not limited to the following:
Automatic Wet Type Sprinkler System.
Standpipes.
Piping
Sprinkler heads.
Remodeling of existing systems.
All cutting and patching.

Provide all pipe, fittings, sprinklers, valves, signs, flow switches, tamper switches, protective painting, test connections, drains and tests necessary to make the entire system complete and operative.
Coordinate with plumbing contractor for capacity of all sprinkler main, test, and auxiliary drain connections.
Valve tags and instruction plates shall be mounted and/or hung per local fire department requirements.
All required fire extinguishers.
All sleeves and inserts.
Drain riser, minimum 3" diameter, shall be provided adjacent to each standpipe riser for testing and draining.
Provide hose valve with cap downstream of sprinkler system pressure reducing valves for the purpose of testing. Hose valve shall be sized to provide full flow through pressure reducing valve.
All trenching and backfilling, including culverts under rails and guard posts where required.

RELATED WORK SPECIFIED ELSEWHERE

Division 09: Finishes of exposed materials.

Section 210500: Basic Materials and Methods.

Section 210548: Vibration Isolation for Fire Protection Equipment.

Section 210549: Seismic Restraint for Fire Protection Piping and Equipment.

Section 211316: Dry-Pipe Sprinkler Systems.

Section 213100: Fire Pumps.

Division 22: Coordination with Plumbing design for location and sizes of indirect sanitary sewage drainage termination, floor sinks and/or hub drains. Fire protection designer shall provide required locations of drain locations prior to installation of plumbing work.

Division 26: Electrical. Coordinate for electrical wiring of detectors, flow alarm switches, tamper switches, connection to VESDA system, fire alarm bell, connection by life safety section for remote monitoring and starting of fire pump, and power to fire pumps. All electrical devices used for this system shall be compatible with the fire alarm system. Coordinate with electrical for electric fire pump motor size and emergency generator sizing.

DESIGN DESCRIPTION

This section of the specification combined with any of the contract drawings are intended as a guide to establish a basis of design for the systems required.

Contractor shall examine the existing conditions, the Architectural, Interior Design, Structural, Mechanical, Plumbing, and Electrical drawings, layout and install a complete hydraulically sized sprinkler system for all areas. Access and maintenance space shall be provided for all valves and equipment to be used.

System shall start 5'-0" from perimeter wall and extend throughout the building. Fire main beyond 5'-0" perimeter is provided under Division 02 work. System shall start at connection to utility main, with double detector check backflow prevention assembly, and extend throughout the building.
Contractor shall contact Owner's insurance agency to incorporate insurer's design requirements in this layout document. Factory Mutual may review layout drawings and calculations. Incorporate all of their design criteria into documents.

Office Areas: The main building shall be served with a wet type sprinkler system. A main riser shall be located in the stairwells with sprinkler zone valves on each floor.

All areas shall be sprinklered as the construction progresses, including accessible pipe chases, elevator hoistways, etc. Provide shutoff valve with tamper switch for elevator hoistways. Provide shutoff valve with tamper switch for elevator machine room. Comply with NFPA 13 and Building Code.

Base Building construction shall include upright heads with tees with 1" outlets for future drop in areas with no ceiling. Areas with ceilings, including finished core areas, lobbies, corridors or as noted herein shall have concealed or recessed pendant heads installed as part of the base building construction. Unfinished areas shall be provided with upright type heads. Heads will be relocated to the finished ceiling tile under the tenant improvement contract.

Install standpipe risers in each of the stairwells with fire department valves on each floor level. Provide allowance for 500 gpm at 100 psig at most remote fire department valves. Fire department valves not in stairwell shall be housed in cabinets. Provide roof manifold at top of each standpipe.

Pressure restricting devices shall be installed on any branch outlet exceeding 100 psi.

All electrical devices used for this system shall be compatible with the fire alarm system as referred in Division 26 work.

HYDRAULIC DESIGN

System shall be a straight line or gridded system per NFPA-13 with the following exceptions:
For all systems the design area shall be the hydraulically most demanding rectangular area.
Minimum pressure for any sprinkler head shall not be less than 7 psi.
Velocity in fire pump suction piping shall not exceed 15 feet per second.

Fire Standpipes: Pipe schedule per IBC, Chapter 9 or hydraulically calculated at 500 GPM for first standpipe and 250 GPM for each additional standpipe.

Total Combined Inside & Outside Hose Allowances: Hydraulic calculations shall include an allowance for hose streams, added at the point of connection to the water supply.

Safety Factor: 10 psi, or 10 percent of static and residual pressure, whichever is greater.

Sprinkler system Occupancy Hazard Classifications shall be approved by authorities having jurisdiction:
Air Distribution Plenums: Light Hazard (FM HC-1)
Automobile Parking Areas: Ordinary Hazard, Group 1 (FM HC-2)
Building Service Areas: Ordinary Hazard, Group 1 (FM HC-2)
Churches: Light Hazard (FM HC-1)
Corridors: Light Hazard (FM HC-1)
Dry Cleaners: Ordinary Hazard, Group 2 (FM HC-2)
Electrical Equipment Rooms: Ordinary Hazard, Group 1 (FM HC-2)
Fire Riser Room: Ordinary Hazard, Group 1 (FM HC-2)
General Storage Areas: Ordinary Hazard, Group 1 (FM HC-2)
Healthcare: Light Hazard (FM HC-1)
Kitchens (Non-Residential): Ordinary Hazard, Group 1 (FM HC-2)
Laundries: Ordinary Hazard, Group 1 (FM HC-2)
Libraries except Stack Areas: Light Hazard (FM HC-1)
Library Stack Areas: Ordinary Hazard, Group 2 (FM HC-2)
Loading Docks with Tractor Trailers: Ordinary Hazard, Group 2 (FM HC-3)
Machine Shops: Ordinary Hazard, Group 2 (FM HC-2
MDF/IDF/Electronic Data Hall: Ordinary Hazard, Group 1 (FM HC-2)
Mechanical Equipment Rooms: Ordinary Hazard, Group 1 (FM HC-2)
Office and Public Areas: Light Hazard (FM HC-1)
Pump Room: Ordinary Hazard, Group 1 (FM HC-2)
Repair Garages: Ordinary Hazard, Group 2 (FM HC-3)
Residential Living Areas: Light Hazard (FM HC-1)

Restaurant Seating Areas: Light Hazard (FM HC-1)
Restaurant Service Areas: Ordinary Hazard, Group 1 (FM HC-2)

Minimum Density for Automatic-Sprinkler Piping Design shall comply with the following:
Light Hazard Areas: Water density of 0.10 GPM per square foot calculated for an area of 1500 square feet in the most remote location.
Ordinary Group I Hazard Areas: Water density of 0.15 GPM per square foot calculated for an area of 1500 square feet in the most remote locations.
Ordinary Group II Hazard Areas: Water density of 0.20 GPM per square foot calculated for an area of 1500 square feet in the most remote locations.
Extra Group I Hazard Areas: Water density of 0.30 GPM per square foot calculated for an area of 2500 square feet in the most remote locations.
Extra Group II Hazard Areas: Water density of 0.40 GPM per square foot calculated for an area of 2500 square feet in the most remote locations.

Head spacing shall not exceed the limits described in NFPA-13.
Light Hazard: 225 sq.ft. (for smooth ceiling).
Ordinary Hazard: 130 sq.ft.
Extra Hazard: 100 sq.ft.

Maximum floor areas protected by any one sprinkler system riser:
Light Hazard: 52,000 sq.ft.
Ordinary Hazard: 52,000 sq.ft.
Extra Hazard: 40,000 sq.ft.

Flow Data: Contractor is to verify flow data (static pressure, residual pressure and GPM flowing) available at site and provide design for available pressure and flow.

Other spacing requirements:
Maximum spacing between heads for Light Hazard and Ordinary Hazard shall not exceed 15 feet (4.6 m).
Maximum spacing between heads for Extra Hazard shall not exceed 12 feet (3.7 m).
The distance from sprinklers to walls shall not exceed 7.5 feet (2.3 m) for Light and Ordinary Hazard.
Sprinkler heads shall not be located closer than 4 inches (100 mm) from a wall.
Sprinklers shall not be spaced closer than 6 feet (1.8 m) on center.

QUALITY ASSURANCE

The Contractor for the fire protection installation shall be duly qualified Fire Protection Contractor, experienced and regularly engaged in the installation of fire protection systems with a license classification of C-16. Where local authorities require additional licensing of the Fire Protection Contractor, and/or workmen, such a license shall be mandatory for a prospective Contractor.
Contractor is to verify flow data (static pressure, residual pressure and GPM flowing) available at site and provide design for available pressure and flow.
The Fire Protection contractor shall be the Engineer of Record for the automatic sprinkler and standpipe system.
Permits - The Fire Protection Contractor shall obtain permits for the installation or construction as required for approval and installation of the fire protection system. The Fire Protection Contractor shall submit working plans to the authorities having jurisdiction to obtain approval.

Welding Standards:
Welding Qualifications:
Certification: Each welder shall have a current AWS QC7 welding certification with successful completion of written test and welding samples in compliance with AWS D1.1. The Owner's Representative reserves the right to request sample coupon test welds of each welder to validate quality of welding work.
Welding Procedures:

Steel Support Welding: All work shall be performed to meet or exceed the requirements of the American Welding Society AWS D1.1/D1.1M-Structural Welding Code-Steel. Pipe Welding: All work shall be performed to meet or exceed the requirements of the American Welding Society AWS B2.1 Specification for Welding Procedure and Performance Qualification and ASME Boiler & Pressure Vessel Code: Section IX "Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators."

SUBMITTALS

Product Data: Submit six copies of manufacturer's technical data and installation instructions for fire protection materials and products.

Thirty days after the awarding of contract, contractor shall submit list of manufacturer's names and model numbers for review and comment to Owner's Representative. This list shall identify any prior approved substituted items contractor wishes to use. Do not submit technical data until list has been approved.

Prior to construction submit for review and comment items including but not be limited to the following:

Coordinated layout drawings. Lettering shall be minimum 1/8" high.
Sprinklers and escutcheons - designating area of use.
Valves, valve boxes, flow switches, and tamper switches.
Provide Fire Marshal approval numbers for flow switches and tamper switches.
Pipe, fittings, sway bracing, inserts, anchors and hangers.
Inspector's test and drain station.
Fire department connections.
Hose valves, pressure relief valves, and pressure reducing valves.
Fire pumps with performance curve.

To assure uniformity and compatibility of piping components in grooved piping systems, all grooved products utilized shall be supplied by a single manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.

Working Plans: Prepare scaled working plans for fire protection pipe and fittings including, but not necessarily limited to, pipe and tube sizes, locations, and elevations and slopes of horizontal runs, wall and floor penetrations, and connections. Indicate interface between and spatial relationship to piping and adjacent equipment. Lettering shall be minimum 1/8" high.

Spacing of fire sprinklers shall be coordinated with lights, air conditioning outlets, sound speakers, architectural reflected ceiling plan; obstruction from light fixtures and other architectural features; and sprinkler piping shall be coordinated with HVAC ductwork & piping, plumbing, electrical conduit, cable trays and structure prior to the installation. Drawings shall be composite type including mechanical, plumbing and lighting equipment with sprinkler and sprinkler drain piping.

Submittal Drawings: Submit shop drawings to Agency having jurisdiction for approval bearing engineer of record stamp bearing preparer's NICET stamp. Submit six approved copies, bearing stamp and/or signature of Authority Having Jurisdiction to the Owner's Representative for review and comment.

Contractor shall submit sprinkler head locations to architect for approval.
Each calculation shall include legible schematic of system showing all hydraulic reference points.

Hydraulic Calculations: Prepare hydraulic calculations of fire protection systems. Submit to Authority Having Jurisdiction for approval. Submit six approved copies, bearing stamp, and/or signature of Agency having jurisdiction to Owner's Representative for review and comment.

Contractor shall submit published piping friction loss data from manufacturer with hydraulic calculations.

Certificate of Installation: Submit certificate upon completion of fire protection piping work, which indicates that work has been tested in accordance with NFPA-13, and also that system is operational, complete, and has no defects.

Maintenance Data: Submit maintenance data and parts lists for fire protection materials and products. Include this data, product data, shop drawings, approval drawings, approval calculation, certificate of installation, and record drawings in maintenance manual; in accordance with requirements of the General Conditions and of Division 01.

Operating and Maintenance Instructions: Provide the Owner with three sets of operating and maintenance instructions covering completely the operation and maintenance of sprinkler equipment and controls. Manual shall be assembled in a 3-ring binder and arranged in following sections:

Site Utilities: Drawings showing location, size, depth of all connections, valve boxes, manholes, etc., as installed.
A chart tabulating all types of pipe fittings, valves, and piping specialties installed in each system.
A chart tabulating all pressures, valve settings for fire department and sprinkler pressure reducing valves. Provide pressure reducing valve flow test documentation.
Manufacturer's brochures of all sprinkler heads.
Manufacturer's brochures of fire pumps, jockey pump and controllers.
Tamper switches and flow switches.
Fire Department connections.
Reproducible copies of approved working drawings prepared to facilitate the actual installation of ductwork and piping. Drawings shall indicate location of all concealed valves, and other apparatus.
Copy of NFPA-25 "Standard for Inspection, Testing and Maintenance of Water Based Fire Protection Systems."
Approval Calculations.
Certificate of Installation.
Guarantees.
The Contractor is responsible for proper instruction of Owner's personnel for operation and maintenance of all material, equipment and apparatus provided.

DELIVERY, STORAGE, AND HANDLING

Deliver products to site under provisions of Division 01. Handle components carefully to prevent damage, denting, and scoring. Do not install damaged components. Damaged components shall be replaced with new components.

Store/protect products under provisions of Division 01. Store components in clean, dry place. Protect from weather, dirt, water, construction debris, and physical damage.

WARRANTY

Provide minimum one-year warranty from date of Substantial Completion, including all parts, material, labor and travel.

Refer to Section 210500 for additional warranty and Substantial Completion requirements.

Contractor and Manufacturer warrant that, for a period of ten (10) years from the date of Substantial Completion, the entire system, including but not limited to the fittings and joints, will conform to the requirements of the Contract Documents, will be free from defects, and will not leak.

GENERAL

Furnish and install all new material, equipment, and apparatus hereinafter specified unless specifically noted otherwise. All products to be commercial grade, new and of the manufacturer's

latest design model. All material, equipment, and apparatus shall be identified by the manufacturer's name, nameplate, and pertinent data.

All pipe, pipe fittings and valves shall be manufactured in North America, or may be import products where manufacturers are specifically identified below. Alternatives may be acceptable, but must be submitted and approved by the Owner's Representative prior to bidding.

OR

Upon request, the Owner's Representative shall be furnished certification by the manufacturer, stating samples representing each lot have been tested and inspected as indicated in governing ASTM specifications have been met. Certification shall be accompanied by test reports as prepared in accordance with relevant ASTM sections governing Test Methods and Inspection. Tension Tests reports shall include breaking load, machined diameter of the test bars, and calculated tensile strength. Certification shall include the legal name and address of the manufacturer.

All products to be UL listed and/or FM approved, except for items, which are not required to be listed by code.

All products shall be delivered and stored in original containers. Containers shall be clearly marked or stamped with manufacturer's name and rating.

The following items to be included but specified under Section 210500: Basic Fire Protection Materials and Methods.

Hangers and supports.
Escutcheons plates, flashings and sleeves.
Access panel and doors.
Identification markers and signs.
Expansion compensators and flexible connectors.
Anchors, and seismic restraints.
Excavation and backfill.

SPRINKLER HEADS - GENERAL

Sprinkler heads shall be regular automatic closed-type heads of ordinary degree temperature rating except that sprinkler heads installed in the vicinity of heating equipment or in special occupancy areas shall be of the temperature rating as described in NFPA-13.

Provide quick response heads in all new light hazard occupancies.

For existing sprinkler systems, provide sprinkler heads with response type to match existing type unless otherwise noted.

Provide corrosion-resistant sprinkler heads where they are exposed to weather, moisture or corrosive vapors.

The Contractor shall furnish spare heads. The heads shall be packed in a suitable container and shall be representative of, and in proportion to, the number of each type and temperature rating head installed. In addition to the spare heads, the contractor shall furnish not less than two special sprinkler head wrenches. Refer to NFPA-13 section; "Stock of Spare Heads".

Provide escutcheon and minimum 1/4" clearance around penetrations through suspended ceilings per ASCE requirements.

Sprinkler heads installed shall be upright or pendent, as conditions require, and shall be of the following type and finish for the areas designated. Unless otherwise specified, sprinklers shall be small frame type, center bulb capsule for finished areas, fusible link for unfinished areas, and 1/2" orifice. Extended coverage heads not allowed in unfinished areas except garages.

Sprinkler heads shall have a standard or large orifice K-Factor of 5.6 or 8.0. Sprinkler heads shall be UL Listed and FM Approved.

Manufacturers: Viking, Tyco, Reliable, Globe, Victaulic, Venus or equal. Viking models shown as basis of design.

Sprinkler head requirements for each area as follows:

BUILDING AREA	SPRINKLER HEAD STYLE	SPRINKLER HEAD FINISH	ESCUTCHEON FINISH	TEMPERATURE RATING (°F)
Unfinished Space, Exposed Ceiling Retail, Exposed Ceiling Office, Parking Structure, Mechanical Rooms	Upright/Pendant	Brass	None	155°F
Electrical, Telephone & Switchgear Rooms	Upright	Brass	None	286°F
Finished Ceilings	Semi-recessed Pendant	White	White	155°F
Finished Ceilings in Conference Rooms and Lobbies	Concealed Pendant	Brass	White Cover Plate	155°F
Soffit & Sidewall	Flush Sidewall	White	White	155°F
Exterior Balconies & Overhangs	Dry Sidewall	Brass	Chrome	175°F
Grease Exhaust Duct	Standard Pendent	Electroless Nickel PTFE (ENT)	None	360°F

Quick response sprinkler heads for dry systems, preaction systems and areas subject to freezing:
Upright in exposed areas: Viking #VK184 (K Factor: 5.6)
Pendent in exposed areas with no ceilings. Viking #VK186 (K Factor: 5.6)
Pendent in exposed areas with ceilings. Viking #VK196 (K Factor: 5.6)
Sidewall: Viking #VK188 (K Factor: 5.6), #VK284 or #VK288 or #VK292 (K Factor: 8.0)
Sidewall for extra hazard Standard Coverage Viking #VK2923 (K Factor: 5.6)
Standard Coverage Pendent in exposed area with ceiling Standard Coverage Flush Pendent Viking #VK482 (K Factor: 5.6)

PIPE AND FITTINGS - ABOVE GROUND

General: The piping products listed below by manufacturer's name and model numbers are the only acceptable materials listed for this project. Substitutions of pipe must be submitted and approved in writing by the Owner's Representative prior to bid. No copper pipe shall be allowed in the wet fire sprinkler system.

Piping and fittings shall be new and clean prior to installation. Piping or fittings that show substantial rust or breaks in coating will be removed and replaced.

Steel Pipe and Fittings for wet systems:
All pipe material shall be corrosion-resistant with a black enamel coating or other corrosion-resistant coating with a corrosion resistance ratio (CRR) of 1 or more.
Schedule 40, Standard Weight, Black-Steel Pipe: ASTM A53/A53M. Pipe ends may be factory or field formed to match joining method.
Schedule 30, Black-Steel Pipe: ASTM A135/A135M; ASTM A795/A795M, or ASME B36.10M wrought steel, with wall thickness not less than Schedule 30. Pipe ends may be factory or field formed to match joining method.
Thinwall Black-Steel Pipe: ASTM A135/A135M or ASTM A795/A795M, threadable, with wall thickness less than Schedule 30 and equal to or greater than Schedule 10. Pipe ends may be factory or field formed to match joining method.
Schedule 10, Black-Steel Pipe: ASTM A135/A135M or ASTM A795/A795M, Schedule 10 for sizes NPS 5 (DN 125) and smaller; and NFPA-13 specified wall thickness for sizes NPS 6 to NPS 10 (DN 150 to DN 250), plain end.

Stainless Steel Pipe, Schedule 10S or 40S: Manufactured and installed per ASTM A312/312M.
Black-Steel Pipe Nipples: ASTM A733, made of ASTM A53/A53M, standard-weight, seamless steel pipe with threaded ends.
Uncoated-Steel Couplings: ASTM A865/A865M, threaded.
Uncoated, Gray-Iron Threaded Fittings: ASME B16.4, Class 125, standard pattern.
Malleable- or Ductile-Iron Unions: UL 860.
Cast-Iron Flanges: ASME 16.1, Class 125.
Steel Flanges and Flanged Fittings: ASME B16.5, Class 150.
Pipe-Flange Gasket Materials: AWWA C110, rubber, flat face, 1/8 inch (3.2 mm) thick, ASME B16.21, nonmetallic and asbestos free or EPDM rubber gasket.
Class 125 and Class 250, Cast-Iron, Flat-Face Flanges: Full-face gaskets.
Class 150 and Class 300, Ductile-Iron or -Steel, Raised-Face Flanges: Ring-type gaskets.
Metal, Pipe-Flange Bolts and Nuts: Carbon steel unless otherwise indicated.
Mechanical type flange fittings or joint restraint systems are not acceptable.
Steel Welded Fittings: Comply with ASTM A234/A234M, ASME B16.9, ASME B16.25, and ASME B16.11.
Welding Filler Metals: Comply with AWS D10.12M/D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
Shop fabricated Bonney Forge “Weldolet” or “Thredolet” type fittings may be used in lieu of tee fittings, but field (site) welding will not be permitted.
Grooved-Joint, Steel-Pipe Appurtenances:
Pressure Rating: 175-psig (1200-kPA) minimum, and as required by the design.
Painted or Uncoated Grooved-End Fittings for Steel Piping: ASTM A47/A47M, malleable-iron casting or ASTM A536, ductile-iron casting, with dimensions matching steel pipe.
Grooved-End-Pipe Couplings for Steel Piping: AWWA C606 and UL 213 rigid pattern, unless otherwise indicated, for steel-pipe dimensions. Include ferrous housing sections, EPDM-rubber gasket, and bolts and nuts.
Grooved joint couplings shall consist of two ASTM A 536 ductile iron housings, pressure-responsive, synthetic rubber gasket, and plated steel bolts and nuts.
1) Rigid Type: Housings shall be cast with offsetting, angle-pattern bolt pads to provide system rigidity and support and hanging in accordance with NFPA 13. Tongue and recess rigid type couplings shall only be permitted if the contractor uses a torque wrench for installation. Required torque shall be in accordance with the manufacturer’s latest recommendations.
Steel Pressure-Seal Fittings: UL 213, FM Global-approved, 175-psig (1200-kPa) pressure rating with steel housing, rubber O-rings, and pipe stop; for use with fitting manufacturers' pressure-seal tools.
Use rigid type couplings where installation flexibility is not required.
Mechanical Couplings: Victaulic grooved couplings style 07, 75 or 77, or equal by Gruvlok.
Mechanical Tees: Victaulic style 920, or equal by Gruvlok. U-bolt mechanical tees are not acceptable.

Dry Standpipe, Dry Sprinkler and Preaction Sprinkler Piping and Fittings:
All pipe material shall be corrosion-resistant with a black enamel coating or other corrosion-resistant coating with a corrosion resistance ratio (CRR) of 1 or more.
Schedule 40, Standard Weight Black-Steel Pipe: ASTM A53/A53M. Other pipe materials will not be accepted for these applications.
Pipe ends may be factory or field formed to match joining method.

Flexible sprinkler connector for ductwork sprinkler application: Factory Mutual approved system. Manufacturer: Flexhead or equal.

Piping and Fittings – Not Allowed:

Galvanized steel piping is not allowed due to corrosion potential.
Pipe that is lighter gauge than Schedule 30 steel with threaded fittings is not allowed.
Schedule 5 piping and fittings are not allowed.
Threadable lightwall pipe is not allowed.
Mechanical “gripping teeth” type fittings are not allowed.
Mechanical “clamping” type tee fittings are not allowed.
Quick disconnect, boltless, snap-joint, field drilling or welding of any main or branch lines, and any device specifically prohibited by the local authority having jurisdiction is not allowed.
Unions are not allowed for any size pipe.
Plain end fittings are not allowed.

PIPE AND FITTINGS - UNDERGROUND

Class 52 ductile iron pipe and fittings, white, cement lined, mechanical or Tyton joint fittings. Piping to be factory encased with 8 mil polyethylene tube or sheet. Fittings to be double field wrapped with 2" wide, 20 mil vinyl tape, 50% overlap.

Manufacturer: United States Pipe and Foundry, Griffin or Pacific States, only.

Polyvinyl Chloride (PVC) Plastic Pipe:

Pipe and fittings: Pipe shall conform to AWWA C900 and shall be plain end or gasket bell-end, pressure Class 150 with cast-iron-pipe-equivalent OD. Fittings shall be gray-iron or ductile-iron conforming to AWWA C110, and shall have cement lining conforming to AWWA C104, standard thickness.
Joints and Jointing Material: Joints for pipe shall be push on joints as specified in ASTM D3139. Joints between pipe and metal fittings, valves, and other accessories shall be push on joints as specified in ASTM D3139 or shall be compression type joints / mechanical joints as respectively specified in ASTM D3139 and AWWA C111. Provide each joint connection with an elastomeric gasket suitable for bell or coupling or push-on joints with which it is to be used.
Transition from PVC to ductile iron pipe shall occur a minimum of 5 feet from building.

All underground piping for fire mains shall be installed, clamped, anchored, flushed and hydrostatically pressure tested according to the requirements of the authorities and/or Agencies Having Jurisdiction, and NFPA-13, NFPA-24 and Factory Mutual Handbook of Industrial Loss Prevention.

Anchor underground riser stub to nearest underground connection by means of rodding. Retaining glands with setscrews above grade are not allowed.

UNDERGROUND PIPE COATING:

All underground ferrous piping shall be covered with:

Either two coats of 10 Mill Scotch Wrap No. 51, or with;
"XTRU-COAT" prefabricated extruded cover with joints sealed with two coats of 10 Mill Scotch Wrap #51.
Or approved equal

THRUST BLOCKS

Provide thrust blocks at changes in pipe direction, changes in pipe sizes, dead-end stops and at valves.

Calculate area of undisturbed earth of thrust block based on actual soil conditions and water test pressure of 200 psi.

Concrete and reinforcing steel shall be as specified in Division 03 and 05. All concrete shall be Class A, unless specified otherwise.

Miscellaneous nuts and bolts shall be stainless steel.

RODS AND CLAMPS

Socket clamps shall be stainless steel; four bolt type, equipped with stainless steel socket clamp washers and nuts Grinnell Fig. 595 and 594, Elcen Fig. 37 and 37X, or equal.

Rods shall be stainless steel, 3/4" diameter.

VALVING

2" or Smaller:

Control Valve: OS&Y rising stem type gate or globe valve, bronze body, bonnet and disc, copper alloy stem, threaded ends, 175 psig WOG min. Provide with tamper switch.
Check Valve: Swing check type with bronze body, cap and disc, threaded ends, 175 psig WOG min.
Drip Valve: 3/4", cast brass automatic ball drip type, threaded ends, 175 psig WOG min.
Testing Valve: 1-1/4", test and drain, sight glass, 1/2" test orifice, lever operated, 300 psi WOG. Drain to mop sink or drain riser.
Main Drain Valve: 2", angle gate valve, bronze body, copper alloy stem, threaded ends, 175 psi WOG. Drain to mop sink or drain riser.
Manufacturer: Grinnell, Victaulic, Stockham, Milwaukee, Mueller, Nibco, United Brass Works, Kennedy, Elkart or AGF.

2-1/2" or Larger:

Control Valve: Grooved butterfly valve with tamper switch, ductile iron body, aluminum bronze disc, stainless steel stem and EPDM Liner, 200 psig WOG min, Victaulic 700.
Control Valve: OS&Y rising stem type gate valve, cast iron body and bonnet, bronze stem, seat and disc, flanged ends, 175 psig WOG min. Provide with tamper switch.
Check Valve: Swing check type with cast iron body, bolted cap and disc, flanged or grooved ends, 175 psig WOG min.
Manufacturer: Grinnell, Victaulic, Stockham, Milwaukee, Mueller, Nibco, Kennedy, Elkart or AGF.

WET SPRINKLER ALARM CHECK VALVE

Contractor shall provide, where required, a completely engineered horizontal wet alarm check valve, retarding chamber, and trim assembly. Viking #H-2, Star or Reliable.

UNDERGROUND WATER VALVE

Resilient seated gate, valve, non-rising stem, 2" square valve nut, ductile iron construction with epoxy coated surfaces, both interior and exterior, 250 psi, mechanical joint ends. Provide yard box and cover.

Manufacture: American Darling, Clow, Dresser, or U.S. Pipe.

VALVE BOXES

Cast iron valve boxes for shutoff valves buried in ground shall be complete with bellbottoms, extension piece, top and cover. Boxes shall be suitable for the types of valves with which they are used. All valve boxes shall have a concrete collar flush with grade.

Lids shall have the applicable letters embossed upon the top surface. Tagging shall match existing lids.

Manufacturer: Tyler, ITT Grinnell, or equal.

PRESSURE REDUCING VALVES

Sprinkler System: Rough bronze body with red enameled hand wheel with integral check valve of the pressure reducing type. Outlet pressure shall not exceed 165 psig at maximum system pressures. Pressure settings to be field adjustable.

Manufacturer: Zurn #Z-3004

Fire Service: 150 class pressure rating, cast iron body with brass main valve trim, control system cast bronze with stainless steel trim
Manufacturer: Cla-Val #90-21UL.

PRESSURE RELIEF VALVE

Provide 3/4" pressure relief valve on discharge side of Sprinkler system pressure reducing valve. Set to a maximum of 175 psi.
Manufacturer: Zurn #P1000A.

BACKFLOW PREVENTER

Provide listed backflow prevention device as required by local codes and ordinances. Backflow prevention devices installed in the vertical position shall be approved for that orientation.

Double check detector check valve assembly: Epoxy coated, ductile iron construction, 175 psig working pressure, complete with two spring loaded "Y" type check valves, "Y" strainer with hose bibb on suction side of assembly, two OS&Y gate valves, test cocks, bypass water meter and bypass doublecheck. Ames Model 3001SS, Febco #856-DCDA, Watts #709-DCDA-OSY, Wilkins #950DA or approved equal

Reduced pressure backflow preventer: Ductile iron construction, 150 psig working pressure, complete with two spring loaded "Y" type check valves, "Y" strainer with hose bibb on suction side of assembly, one differential relief valve, two OS&Y gate valves and test cocks. Unit shall be tapped on both sides to accommodate installation of test cocks. Febco #860 RPA, Wilkins #975DA, Watts #909-RPDA or approved equal.

Detector check valve assemblies: Ductile iron construction, 150 psig working pressure, complete with spring loaded check valve, two OS&Y gate valves and four test cocks. Febco #800 or approved equal.

INTEGRAL INSPECTORS ALARM TEST AND SYSTEM DRAIN

Combination system alarm test module with drain and visible orifice insert/sight glass for testing system alarm:
Threaded or grooved inlet and outlet connections.
Bronze body.
Malleable iron hand wheel.
EPDM valve seats.
Maximum working pressure 300 psi.
Test port orifice sizes: K5.6 or K8.0.
FM listed.
1/2” pressure relief valve, 175 psi rating.
Alarm test module manufacturer: Victaulic TestMaster II #Serie 720 or equal.
Pressure relief valve manufacturer: Watts Regulator #FP 53L or equal

Water pressure gauge, range 0-300, in 5 psig increments, brass case - 3-1/2" diameter, 1/4" NPT male pipe connection, UL listed. Locate pressure gage on riser per code. Manufacturer: Star Sprinkler, Ashcroft or equal.

Pressure gauge test valve, brass 1/4" screwed ends, 300 psig WOG. Manufacturer: United or equal.

All relief, main, auxiliary and equipment drain piping shall be routed separately to floor sink(s) or other approved locations. Coordinate with plumbing design for location of floor sinks or other approved drain locations.

TAMPER SWITCHES

Switch shall be mounted so as not to interfere with normal operation of the valve and be adjusted to operate when handle of valve has traveled more than one-fifth the distance of its normal operating position. Electrical Contractor shall provide conduit from switch to fire alarm panel.

Housing shall be of aluminum, acid-treated, primed and finished in baked red enamel. Removal of housing shall cause switch to operate. Inside shall be single pole, double throw micro switch with connection for electrical conduit.

Install on all control valves.

Manufacturer: Potter-Electric, Notifier, Ellenco, Simplex, or equal.

WATER FLOW ALARM - VANE TYPE

Indicator shall be for either vertical or horizontal installation. Indicator shall not be installed in a fitting that changes direction of water flow and shall have a sensitivity setting to signal any flow of water that equals or exceeds the discharge from one sprinkler head. Provide retarding device to prevent false alarms from line surges.

Whenever a water flow alarm is installed in the piping system, an approved floor control valve shall be provided upstream of the alarm indicator. In addition, a drain is required downstream of the alarm indicator.

Each water flow alarm shall be wired to a Fire System. All wiring and conduits as required will be provided under Division 26. An alarm will automatically activate the local fire alarm system.

Manufacturer: Potter Electric Signal Company, Notifier, Simplex, or equal.

AUTOMATIC MAIN LINE AIR VENT

Automatic in-line air vent with enlarged air collection chamber. A single automatic in-line air vent shall be located near a high point in the system to allow air to be removed automatically from the metallic pipe system. Install per requirements of NFPA-13 and as required by local AHJ.

Pressure Rating: 300 psig (2070 kPa) minimum.

Separation Chamber:
- Carbon steel body with threaded fitting for cast bronze air scoop attachment.
- Powder coated safety red color.
- Inlet and outlet size to match sprinkler pipe line sizes with grooved ends.

Automatic Air Vent Valve:
- Body Material: Forged brass body.
- Components: Integrated ball valve, stainless steel strainer, purge valve with hose connection, threaded cap with lanyard, automatic air vent.
- Inlet Size: 1 inch NPT.
- Outlet Size: 3/4 inch NPT.
- Drainage Piping: Field provided 3/4-inch copper tubing. Provide on the discharge of the automatic air vent valve and route to approved plumbing receptacle or to the exterior landscaping.

Manufacturer: AGF Manufacturing PURGEnVENT #7950ILV or equal.

MANUAL BRANCH LINE AIR VENT

Manual in-line air vent to be located at the end of each branch line, at the highest and furthest points of the system, and at the top of the supply risers to eliminate as much air as possible to minimize internal pipe corrosion. Install per requirements of NFPA-13 and as required by local AHJ.

Pressure Rating: 300 psig (2070 kPa) minimum.

Manual Air Vent Valve:
Body Material: Forged brass body.
Components: Integrated ball valve, stainless steel strainer, threaded cap with lanyard, polypropylene float.
Inlet Size: 1/2-inch NPT.
Outlet Size: 1/2-inch NPT.

Manufacturer: AGF Manufacturing PURGEnVENT #7910MAV or equal.

EXTERIOR ALARM

Electric bell, 10" diameter, UL listed, weather-proof back box housing, 120 VAC, 99 dB at 10 feet. Manufacturer: Potter Electric Signal Company #PBA12010, Notifier, Simplex, or equal.

Electric Horn: Weatherproof with backbox, indoor or outdoor use, horn and strobe, 120 VAC. Manufacturer: Potter Electric Signal Company, Notifier, Simplex, or equal.

FIRE HOSE CABINETS

Refer to Architectural and Mechanical Drawings for exact location and elevations.

Cabinets shall be recessed / semi-recessed / surface mounted, 20-gauge steel construction, 28" wide by 39" high by 8" deep overall dimensions with full glass door panel, identifying decal, and gray enamel factory prime finish. All components shall have a rough chrome finish. Provide with the following:
1-1/2" stamped valve escutcheon.
2-1/2" angle valve.
Baked enamel steel hose rack.
1-1/2" brass rack nipple.
1-1/2" x 100'-0" of single jacket polyethylene lined hose.
Cast brass couplings.
Fog nozzle.

Manufacturer: Croker, Larsen's J & L or Potter-Roemer.

FIRE DEPARTMENT VALVE CABINETS

Refer to Architectural and Mechanical drawings for exact location and elevation of each cabinet.

Cabinets shall be 18" x 18" inside box dimensions, recessed, 20-gauge steel with full glass door and 2-1/2" fire department valve with rough chrome finish. Cabinets shall have a factory prime finish.

Manufacturer: Crocker, Larsen's J & L or Potter-Roemer.

FIRE DEPARTMENT CONNECTIONS

Flush wall mounted unit or freestanding unit with individual clapper valves, plugs and chains, locations as indicated on drawings. Escutcheon plate to be lettered as follows; "AUTO SPRINKLER", "DRY STANDPIPE" or "AUTO SPRINKLER AND STANDPIPE". Unit shall be polished chrome or brass finish, mounted 36" above finished grade. Number of inlets required shall be in accordance with regulations of the Fire Marshal or local fire department.

FIRE DEPARTMENT HOSE VALVES

Fire Department Valves: 2-1/2" <<with 3" outlets>> brass construction female to male angle valve with cap and chain, rough chrome finish and mounted 48" above finished floor.

Pressure Reducing Fire Department Valves: 2-1/2" <<with 3" outlets>> tamper proof, automatic pressure reducing, all brass male to female angle, rated at 400 psig rough brass finish, mounted 48" above finished floor.

Manufacturer: Croker, Elkhart, Powhattan Brass, Potter-Roemer or Zurn.

ROOF MANIFOLD

6" x 2-1/2" x 2-1/2" straight pattern cast brass roof manifold, Croker Model No. 294 or approved equal.

6" x 2-1/2" x 2-1/2" 90-degree pattern cast brass roof manifold, Croker Model No. 296 or approved equal.

BYPASS METERS EQUIPPED WITH TOUCH READ REGISTER AND TOUCH PADS

All Double Check Detector Assemblies (DCDAs) and Reduced Pressure Detector Assemblies (RPDA's) installed on fire services must be equipped with a Water Bureau approved bypass meter and compatible touch-pad. The touch-pad must be accessible from the right-of-way.

Only 5/8" x 3/4" Neptune T-10 meters with PRO READ or AUTOREAD registers are to be used. Registers must read in cubic feet. Touch-pads must be compatible with these meters. Compatible touch-pads for the above meter are Neptune model #12081-000 (wall mount application) and Neptune model 12223-150 (vault door application, requires 1-3/4" hole).

All wiring from the touch-pad to the bypass meter shall be insulated 1 pair solid 22 AWG copper wires secured so as not to interfere with the operation and maintenance of the backflow assembly. The wiring shall not encumber the vault opening or ladder. Where the touch-pad wire follows the path of other electrical wiring, shielded wire as described above shall be used. Splices shall be made with 3M Scotchlok moisture resistant connectors part number UR or UY or equivalent. All splices shall be accessible.

Touch-pad mounting options:

On an outside building wall, at a height between 1' and 5' above the floor or finished grade and within 50' of the backflow assembly.

May be mounted on the vault door. The orientation should locate the touch-pad near the hinged portion of the door so as not to stress the wire between the touch-pad and meter when the door is fully opened.

May be installed in the concrete portion of the vault top, the touch-pad must be easily accessible for replacement.

If touch-pad wire must be run underground, the wire must be routed through PVC conduit from the meter to the touch-pad.

Touch-pads not installed in vault doors or on a building face shall be installed using the Brooks #07, 12" X 20" box with T&R lid.

The touch-pad must be rigidly mounted.

UNIVERSITY FURNISHED INFORMATION

The following information is made available for the convenience of Proposers and is not a part of the Contract. The information is provided subject to the provisions of subparagraph 3.1.1 of the General Conditions.

Issued electronically on the "Request for Proposals" CD
(Located behind the first tab of this binder)

PREVAILING WAGES

General Prevailing Wage Determinations and information can be accessed at www.dir.ca.gov or by contacting University's principal Facility office.

DESCRIPTION

No.	Title:	Prepared by:	Date:
1.	**AS-BUILTS**		
A.	Fine Arts Seismic Facility	Fields Devereaux Architects & Engineers	April 27, 1998
B.	Physical Education Building	Arthur Froehlich, AIA, Architect	April 28, 1952
C.	Physical Education Building Room 102 Alterations for Dance	Cashion Horie Cocke Gonzales Architects, Inc. (CHCG)	June 1986
D.	CHASS-Instruction & Research Facility	PEI Cobb Freed & Partners	March 20, 2008
E.	Administration Building (Hinderaker)	Allison and Rible Architects	January 27, 1961
F.	Humanities and Social Sciences Unit 1	Cesar Pelli & Associates	August 10, 1993
G.	Classroom and Office Unit 1 (Sproul)	Douglas Honnold FAIA, John Rex, FAIA, Architects and Associates	June 2, 1965
H.	Student Academic Support Services Building	Sasaki	March 2009
2.	**UCR MOBILITY HUB AND CENTRAL CAMPUS LINKAGES**		
A.	UCR Mobility Hub and Central Campus Linkages – Scope 1 Report	Gruen Associates	December 21, 2017
B.	UCR Mobility Hub and Central Campus Linkages – Appendices	Gruen Associates	December 21, 2017

3.	**STUDENT SUCCESS CENTER VISIONING WORKSHOP**		
A.	UCR Student Success Center Visioning Workshop Capital Asset Strategies	Capital Planning	April 20, 2017
B.	UCR Student Success Visioning Workshop – Site Selection Study Handout	UCR Capital Planning	April 20, 2017
4.	**UCR 2005 LRDP AND AMENDMENTS**		
A.	Long Range Development Plan 2005	UCR Office of Academic Planning & Budget; Capital & Physical Planning with the assistance of: BMS Design Group	November 2005
B.	2005 Long Range Development Plan Amendment 2	UCR Finance & Business Operations Capital Resource Management	November 2001
C.	2005 LRDP Amendment 3 Campus Infrastructure Overlay Land Use Designation		September 2013
5.	**TOPOGRAPHIC SURVEY**		
	University of California, Riverside Student Success Center Topographic Survey	IMEG	July 13, 2018
6.	**GEOTECHNICAL REPORTS**		
	Proposed Student Success Center UCR Project No. 958056	Twining	December 17, 2018
7.	**PHYSICAL DESIGN FRAMEWORK**		
	Physical Design Framework		2009/10 – 2018/2019
8.	**UC BOARD OF REGENTS**		
	Regents Policy 4400: Policy on University of California Diversity Statement	University of California Board of Regents	Adopted September 20, 2007 Amended September 16, 2010
9.	**STUDENT SUCCESS CENTER CLASSROOM COMPONENT SUMMARY OF FEEDBACK**		
	Student Success Center Classroom	UCR Office of the Provost and	May 2017

	Component Summary of Campus Feedback	Executive Vice Chancellor	

10.	**STUDENT SUCCESS CENTER SITE SELECTION STUDY**		
	Site Selection Study Student Success Center Building	UCR Capital Asset Strategies	June 16, 2017
11.	**UC SUSTAINABLE PRACTICES POLICY**		
	UC Policy on Sustainable Practices	University of California	Issuance Date: July 1, 2004 Effective Date: August 10, 2018
12.	**UCR CAMPUS PROCESS: GENDER INCLUSIVE FACILITIES 2015**		
	UCR Campus Process: Gender Inclusive Facilities 2015	Associate Vice Chancellor / Campus Architect Architect & Engineers	November 1, 2015
13.	**UCR CENTRAL CAMPUS NEIGHBORHOOD STUDY**		
	UCR Central Campus Neighborhood Study	HKS Spurlock	April 12, 2017
14.	**UCR PHYSICAL MASTER PLAN STUDY**		
	UCR Physical Master Plan Study		May 17, 2016
15.	**UCR PRINCIPLES OF COMMUNITY**		
	UCR Principles of Community		
16.	**UCR DINING SERVICES**		
	Warm Shell Tenant Improvement Space Guideline	UCR Dining Services	March 16, 2018
17.	**UCR RIVERSIDE SITE FEASIBILITY REPORT**		
	UCR Site Feasibility Report	Steinberg Hart	January 2018
18.	**UTILITY MAPS**		
A..	Student Success Center 100 PSI Air Controls Approximate Locations (Draft)		10/9/18

B.	Student Success Center 100 PSI Steam Controls Approximate Locations (Draft)	10/9/18
C.	Student Success Center Chilled Water Line Approximate Locations (Draft)	10/8/18
D.	Student Success Center Natural Gas Line Approximate Locations (Draft)	10/8/18
E.	Student Success Center Storm Drain Manholes (Surveyed – 2014) Storm Drain Line (Approximate Locations) (Draft)	10/8/18
F.	Student Success Center Existing Electric Distribution (Draft)	10/9/18

19. DAART ENGINEERING FLOW TEST

	Daart Engineering Flow Test UCR Student Success Center	6/7/18

20. UCR CAMPUS STANDARDS - DRAFT

	Div. 3 – Concrete	Revised April 17, 2018
	Div. 4 - Masonry	January 14, 2018
	Div. 5 – Metal	January 14, 2018
	Div. 6 – Wood, Plastics and Composite	January 18, 2018
	Div. 7 – Thermal and Moisture Protection	January 14, 2018
	Div. 8 – Openings	Revised March 21, 2018
	Div. 9 – Finishes	January 14, 2018
	Div. 10 - Specialties	March 12, 2018
	Div. 11 – Equipment	Revised April 15, 2018
	Div. 12 – Furnishings	November 30, 2015
	Div. 13 – Special Construction	January 14, 2018
	Div. 14 – Conveying Systems	January 14, 2018
	Div. 15 – Operation and Maintenance Manuals	
	Div. 21 – Fire Suppression	Revised April 25, 2018

	Div. 22 – Plumbing		Revised April 17, 2018
	Div. 23 – HVAC		March 28, 2018
	Div. 25 – Integrated Automation		Revised March 13, 2018
	Div. 26 - Electrical		January 24, 2018
	Div. 27 – Communications		January 24, 2018
	Div. 28 – Electronic Safety and Security		January 24, 2018
	Div. 31 – Site Work		January 2016
	Div. 32 – Exterior Improvements		March 2016
	Div. 33 – Site Utilities		January 2018
21.	**SEWER CAPACITY STUDY**		
	UC Riverside Physical Master Plan Study Appendix 6.8-A Sanitary Sewer Calculations		
22.	**UCR 2020 - FINAL**		
	UCR 2020 The Path to Preeminence		July 2010
23.	**UCR LANDSCAPE SERVICES DEPT. LANDSCAPE- IRRIGATION GUIDELINES 2012**		
	UCR Landscape Services Dept. Landscape-Irrigation Guidelines 2012		2012
24.	**TREE INVENTORY REPORT**		
	Tree Inventory Report University of California, Riverside Student Success Center Project	Tricia D. Thrasher University of California, Riverside Campus Planning Capital Asset Strategies Psomas	May 9, 2018
25.	**IMPLEMENTATION OF UC GENDER INCLUSIVE FACILITIES POLICY AT UC RIVERSIDE - MEMO**		
	Implementation of UC Gender Inclusive Facilities Policy at UC Riverside - Memo	To: Gerry Bomotti, Vice Chancellor, Planning and Budget From: Jacqueline Norman, Campus Architect & Robert Keith Williams, Certified Building Official	September 18, 2018
26.	**UCR CAMPUS ~~IMAGERY V3~~*CONTEXT***		
	UCR Campus ~~Imagery V3~~***Context*** (Exemplary Examples / Non-Exemplary Examples	UCR Planning Design & Construction	2019

27.	***WEPA LOW PRINT STATION SPECIFICATIONS***		
	WEPA Low Profile Print Station Specifications	***WEPA***	
28.	***LAPTOP KIOSK CONFIGURATION***		
	Laptop Kiosk Configuration	***Laptops Anytime***	
29.	***UCR CAMPUS V2018 UPDATES CADD DRAWINGS AND SUPPORTING DOUMENTATION***		
A.	***UCR Campus v2018 Update Auto CADD Drawings***		
B.	***University California, Riverside Aerial Target Ground Control Survey Report Job #2011018.003***		***March 2015***
C.	***UCR Campus Control Survey – Sheet 1 of 2***	***Hillwig – Goodrow, Inc.***	***December 2013***
D.	***UCR Campus Control Survey – Sheet 2 of 2***	***Hillwig – Goodrow, Inc.***	***December 2013***
E.	***UCR Data Delivery Standards for UCR Planning, & Design Projects Capital Programs***		***March 13, 2015***
F.	***UCR Horizontal and Vertical Accuracy of Campus Spatial Data (GIS) (Memorandum)***		***May 22, 2013***
G.	***UC Riverside Campus Control Points***	***Hillwig – Goodrow, Inc.***	***December 2013***

wēpa print away

Low Profile Print Station Specifications

SIZE AND WEIGHT OF UNIT

- Width: 24.70”
- Depth: 29.60”
- Height: 42.45”
- Weight: 250 lbs.

NETWORK REQUIREMENTS

- Wired Ethernet Access per print station
- DHCP or Static IP Address per print station
- Port 443 outbound
- Port 80 outbound

VOLTAGE REQUIREMENTS

- 110v AC, 50hz-60hz, grounded three-prong outlet
  - Wattage while the print station is idle: 256 watts idle*
  - Wattage while the print station is printing a document: 1,435 watts peak*

PRINTER INFORMATION

- Prints black & white and color pages
- Prints 50 pages per minute
- Holds 1,650 sheets
- Prints duplex

* These tests were performed using certified appliance load testing equipment measuring watts through an AMWatt Wattmeter.

This unit meets wheelchair accessibility standards.

wepanow.com
1.800.675.7639
sales@wepanow.com
P.O. Box 1569
Pelham, AL 35124

Maximize Space With Host & Companion

Up to 30 Devices in 5 Feet Wide

Most Common LaptopsAnytime Configurations

6-Bays (24"w or 30"w):[6-LH], [6-TH], [6-CH]

12-Bays (30"w]:[12-LH), [12-TH], [12-CH]

18-Bays (48"w or 54"w):[6-LH+12-TC], [6-TH+12-TC], [6-TH+12-LC]

24-Bays (54"w):[12-LH+12-LC], [12-LH+12-TC], [12-TH+12-LC]

30-Bays (60"w):[12-LH+18-TC], [12-TH+18-TC], [12-TH+18-LC]

LH= Laptop Host, TH=Tablet Host, CH=Combo Host, LC=Laptop Companion, TC=Tablet Companion

Note:Kiosk Host and Companion Cabinets are either 24"w or 30"w and 29"d X 60"h