AGENDA

Planning & Evaluation Committee
Thursday, May 11, 2023
1:30pm – 3:00pm MST
West Center-Rm 2 / Zoom

GVR's Mission Statement: "To provide excellent facilities and services that create opportunities for recreation, social activities, and leisure education to enhance the quality of our members' lives."

Committee: Kathi Bachelor (Chair), Beth Dingman, Christine Gallegos, Ed Knop, Robert Quast, Lanny Smith, Kathy Zollinger, Marge Garneau (ex officio), Scott Somers (CEO), David Jund (Facilities Director/Liaison)

Agenda Topic

1. **Call to Order / Roll Call - Establish Quorum**

2. **Approve Meeting Minutes**: March 9, 2023

3. **Chair Comments**

4. **Staff Reports**
   a. Projects In-progress update
   b. 2024 Club Capital Funding Request applications
   c. 2024 Long-term Capital Plan projects
   d. Capital Project Policy & Process

5. **Business**
   a. 2023 Long-term Capital Plan projects
      1. Ceramics Expansion
      2. Lapidary Consolidation & Woodshop Expansion

6. **Member Comments**

7. **Adjournment**

   Next Meeting: Thursday, June 8, 2023, 1:30-3:00pm, WC-Rm 2/Zoom

MINUTES

Planning & Evaluation Committee
Thursday, March 9, 2023
1:30pm – 3:00pm MST
West Center Room 2 / Zoom

Committee: Bart Hillyer (Chair), Robert Quast, Tom Sadowski, Stewart Tagg, Keith Skytta, Diane West, Kathy Zollinger, Kathi Bachelor (ex officio), Scott Somers (CEO), David Jund (Facilities Director/Liaison)

Absent: Chair Hillyer, CEO Somers absent

Agenda Topic

1. **Call to Order / Roll Call - Establish Quorum**

2. Approve January 12, 2023, Meeting Minutes
   Motion: Quast moved, seconded to adopt the 1/12/2023 minutes with change of the redacted motion being reinstated that would eliminate the rewritten motion. Passes: unanimous

   Approve February 9, 2023 meeting minutes
   No objections to adoption. Adopted.

3. **Chair Comments**
   No comments

4. **Staff Reports**
   a. Jund gave an overview of the Projects in Progress.

5. **Member Comments:** No comments

6. **Adjournment**
   No objections to adjourn. Meeting adjourned at 2:30PM MST

   Next Meeting: Thursday, May 11, 2023, 1:30-3:00pm, WC-Rm 2/Zoom

P&E 2024 GVR CLUB CAPITAL FUNDING REQUESTS

Summary by GVR Staff

Rev. 3/31/23

P&E EVALUATION
CLUB RESPONSIBILITY PER CPM/CLUB AGREEMENT
FUNDED IN ALTERNATE BUDGET
NO ACTION - CRITICAL PATH / FUTURE / COMPLETE

	CLUB	CONTACT	AMOUNT	BRIEF DESCRIPTION	COMMENTS
LIST OF REQUESTS					
1	GVR Artisans Shop	Priscilla Spurgeon	TBD	Shop space Expansion	
2	GVR Lapidary Club (1 of 2)	Suzy Russell	$5,000	Lighting - Install ceiling LED	
3	GVR Lapidary Club (2 of 2)	Suzy Russell	$5,000	Stainless steel lapidary trough liners	
4	GVR Metalworking Craft Club	Bill Bachmann	TBD	New space for club for expansion and equipment	
5	GVR Photography Club	Danny Valenzuela	$36,000	Funding to complete redesign of club to better utilize space	
6	GVR Pickleball Club	Patrick Furumoto	$16,000	Shade screens and fencing to enclose PBC	
7	GVR Santa Rita Art League	Arlene Szypulski & Jeani Gustafson	$500,000-$750,000	New 3000sf structure on upper level at SRS with improved functionality, lighting, ventilation and accessbility.	
8	Tennis club (carry forward from '23)	Tom Ransburg	$149,000	Installation of new court at LC (w/fence, bleacher, canopies)	P&E sent back to staff in '23. Long-term capital plan placeholder for FY2026
P&E EVALUATION					
CLUB RESPONSIBILITY PER CPM/CLUB AGREEMENT					
FUNDED IN ALTERNATE BUDGET					
NO ACTION - CRITICAL PATH / FUTURE / COMPLETE					

GVR Long-term Capital Project Plan

Project	2023	2024	2025	2026	2027
West Center Arts Center					
Del Sol Clubhouse					
Glass Artists TI					
Desert Hills Fitness					
Expand Ceramics					
Abrego South Field House					
Woodworking Expansion					
Las Campanas 3rd Tennis Courts					

1 PARKING SCHEMATIC
SCALE: 1/16" = 1'-0"

NORTH

22'-0"
22'-0"
22'-0"
22'-0"

GVR DEL SOL CLUBHOUSE
3355 S. CAMINO DEL SOL
TUCSON, ARIZONA 85747

SEAVER FRANKS
ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON, AZ 85712 / FAX 795-9434 / 795-4000

TENANT IMPROVEMENT
PARKING SCHEMATIC

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING
EXPIRES: 12-31-23

REVISIONS
NO. DATE

SHEET A1.0

ISSUE DATE 03-30-2023
PROJ. NO. 3709.6
DRG. SCALE AS NOTED

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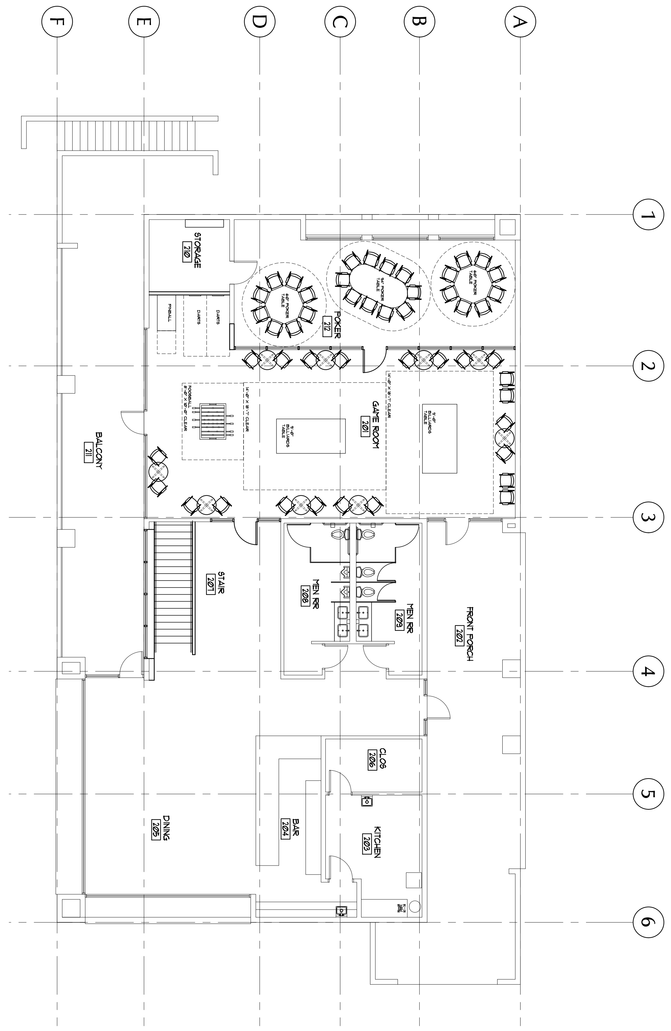
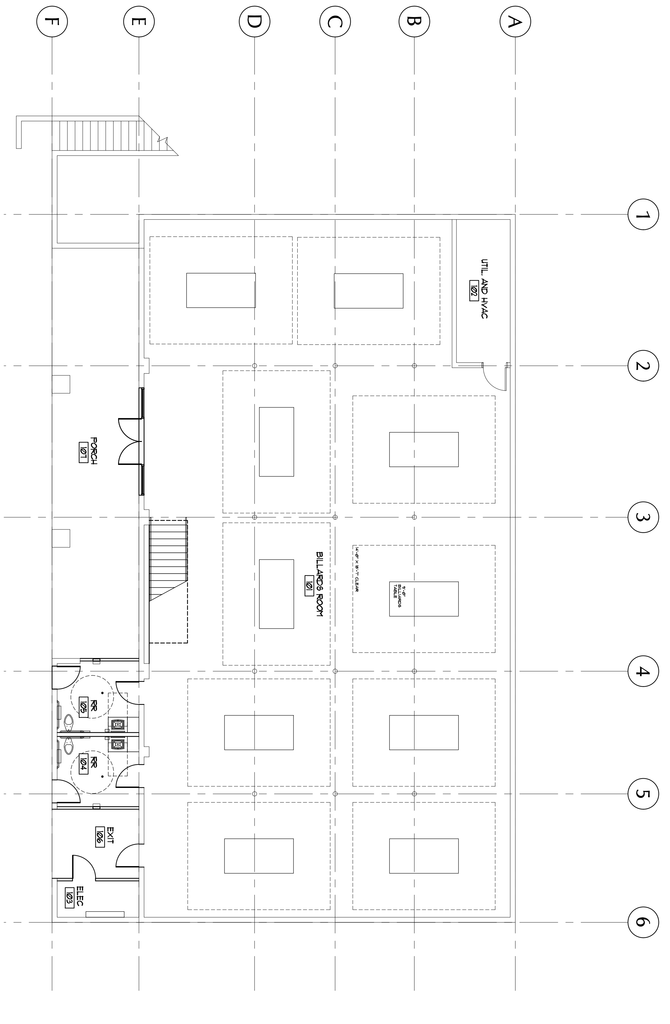
Layout Name: A2.0
Plot Time: Mar 30, 2023 - 4:49pm marcberard
Saved By: marcberard
Mar 30, 2023 - 1:05pm
Images: J:\3722 Arcadia Custom 2-Story T.I\2 Design & Documentation\Photos\Aerial.jpg
./DEL SOL CLUBHOUSE SITE IMAGE.png
XREFs: J:/Canoa Hills Clubhouse MLDfor client_112320

1 FLOOR PLAN SCHEMATIC
SECOND FLOOR
SCALE: 1/8" = 1'-0"



2 FLOOR PLAN SCHEMATIC
FIRST FLOOR
SCALE: 1/8" = 1'-0"



NORTH

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING
EXPIRES: 12-31-23

REVISIONS
NO. DATE

TENANT IMPROVEMENT
FLOOR PLAN SCHEMATIC

SEAVER FRANKS
ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON, AZ 85712 / FAX 795-9831 / 795-4000

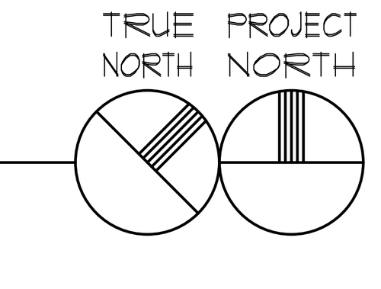
GVR DEL SOL CLUBHOUSE
3355 S. CAMINO DEL SOL
TUCSON, ARIZONA 85747

ISSUE DATE 03-30-2023
PROJ. NO. 3709.6
DRG. SCALE AS NOTED

SHEET
A2.0

1 DEMOLITION FLOOR PLAN

SCALE: 1/4" = 1'-0"



PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

REVISIONS
NO. DATE

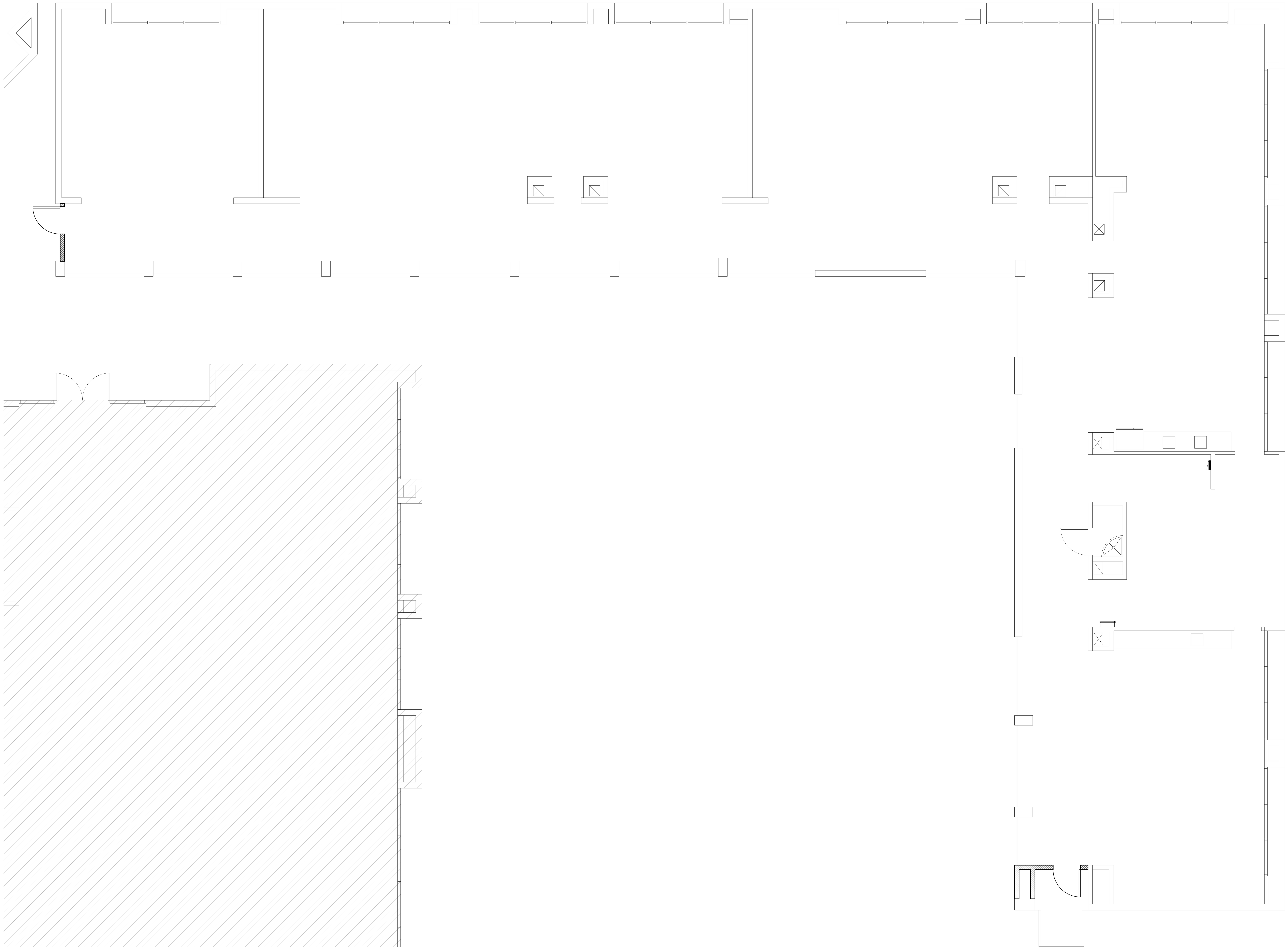
CERAMICS CLUB - TENANT IMPROVEMENT
DEMOLITION FLOOR PLAN

SEAVER FRANKS ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON AZ 85712 / FAX 795-9431 / 795-4000

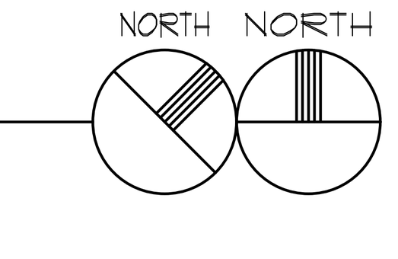
GREEN VALLEY RECREATION CENTER
2980 SOUTH CAMINO DEL SOL
GREEN VALLEY, ARIZONA 85622

ISSUE DATE 04-26-2023
PROJ. NO. 3709.8
DRG. SCALE AS NOTED

SHEET
D2.0



1 REFERENCE FLOOR PLAN
SCALE: 1/4" = 1'-0"



PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

REVISIONS
NO. DATE

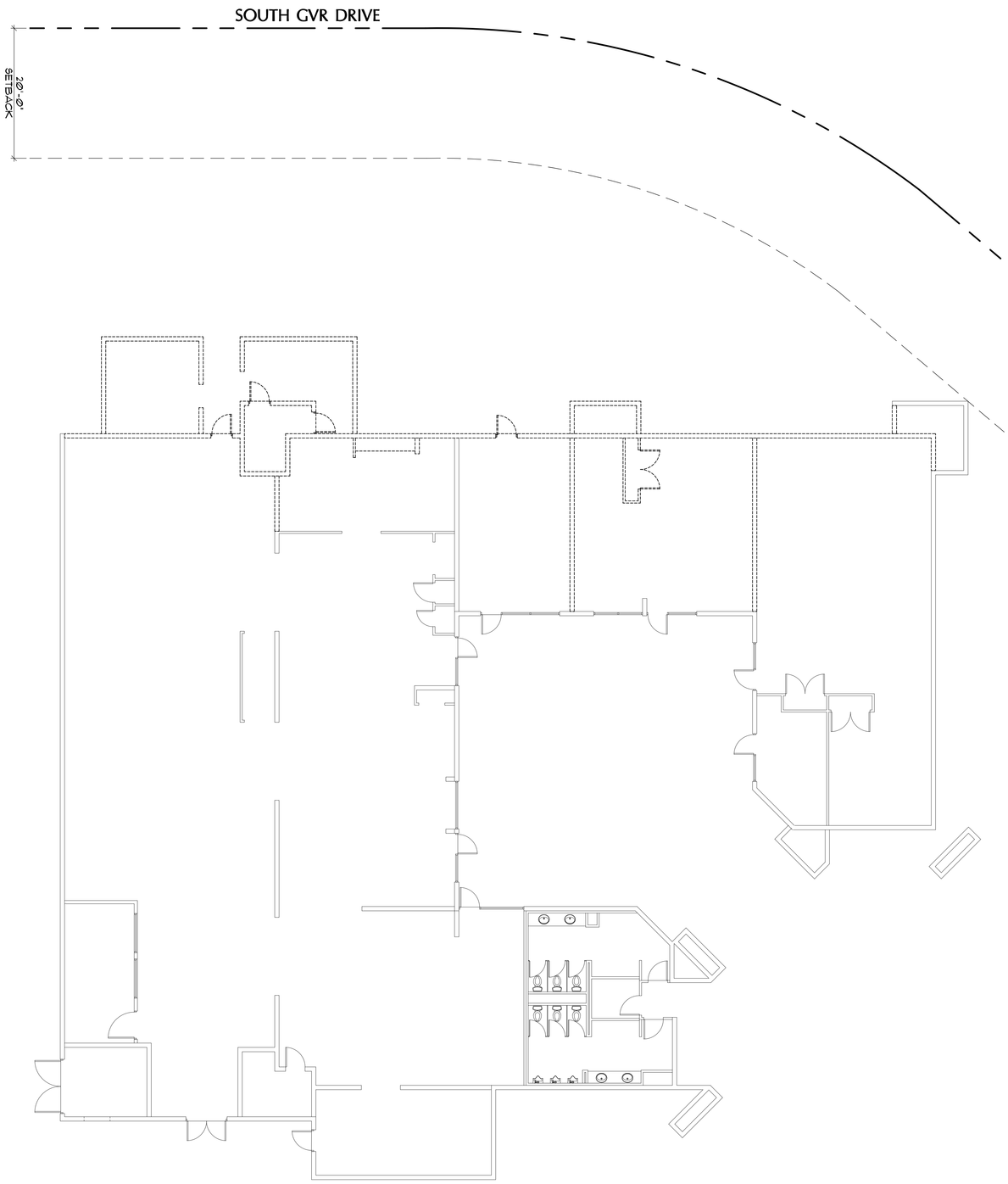
CERAMICS CLUB · TENANT IMPROVEMENT
REFERENCE FLOOR PLAN

SEAVER FRANKS
ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON, AZ 85712 / FAX 795-9431 / 795-4000

GREEN VALLEY RECREATION CENTER
2980 SOUTH CAMINO DEL SOL
GREEN VALLEY, ARIZONA 85622

ISSUE DATE 04-26-2023
PROJ. NO. 3709.8
DRG. SCALE AS NOTED

SHEET
A2.0



1 DEMOLITION FLOOR PLAN
SCALE: 1/8" = 1'-0"

NORTH

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

REVISIONS
NO. DATE

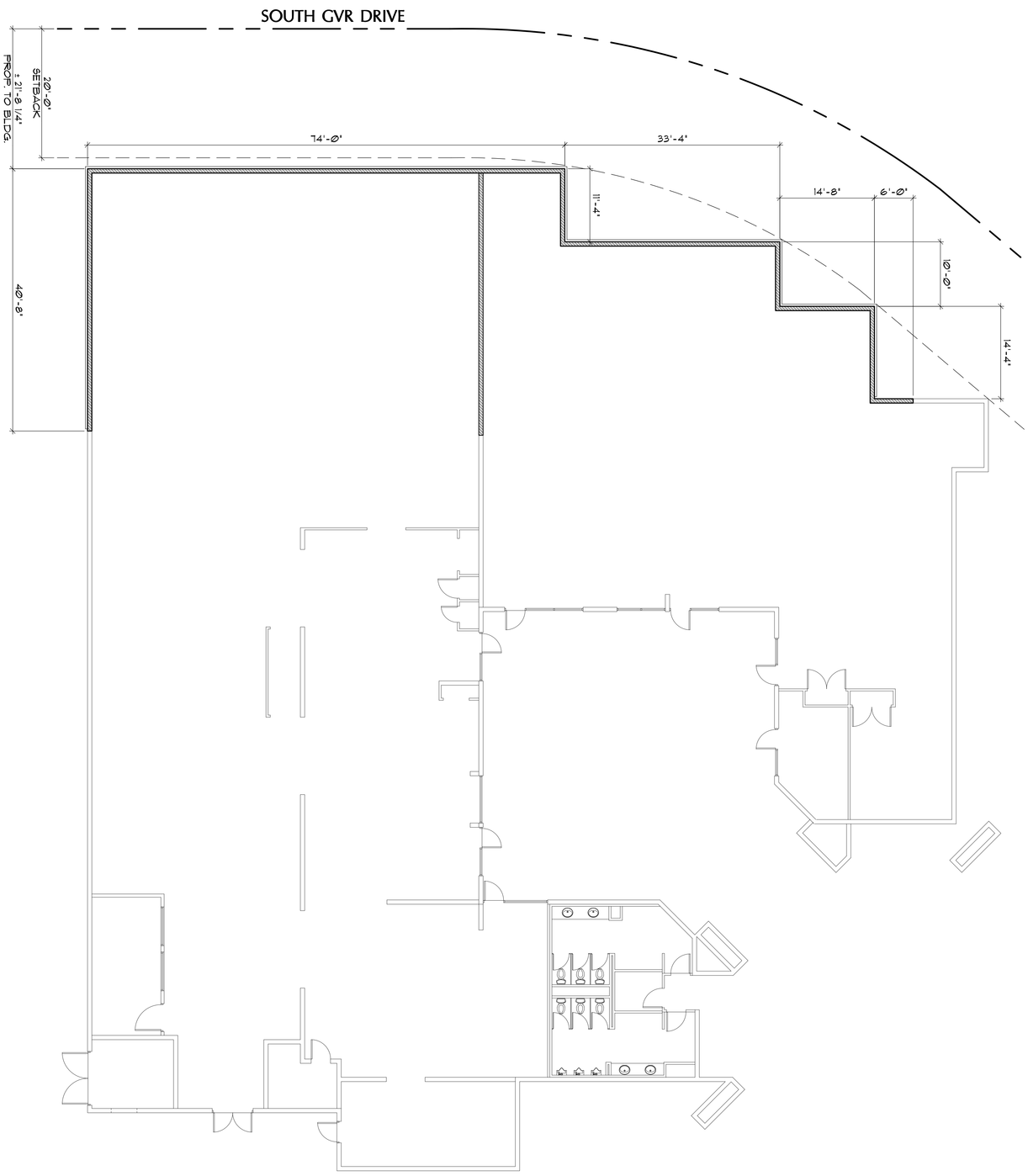
WEST CENTER'S EXPANSION
DEMOLITION FLOOR PLAN

GREEN VALLEY RECREATION CENTER
1111 SOUTH GVR DRIVE
GREEN VALLEY, ARIZONA 85614

SEAVER FRANKS
ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON AZ 85712 / FAX 795-9831 / 795-4000

ISSUE DATE 04-26-2023
PROJ. NO. 3109.9
DRG. SCALE AS NOTED

SHEET
D2.0



1 **REFERENCE FLOOR PLAN**
SCALE: 1/8" = 1'-0"

GREEN VALLEY RECREATION CENTER
1111 SOUTH GVR DRIVE
GREEN VALLEY, ARIZONA 85614

SEAVER FRANKS
ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON, AZ 85712 / FAX 795-9434 / 795-4000

WEST CENTER'S EXPANSION
REFERENCE FLOOR PLAN

PRELIMINARY
NOT FOR CONSTRUCTION
OR RECORDING

REVISIONS
NO. DATE

ISSUE DATE 04-26-2023
PROJ. NO. 3709.3
DRG. SCALE AS NOTED

SHEET A2.0

Photography Club Tenant Improvement Summary

In August of 2022, GVR Photography Club leadership reached out to staff to discuss a proposal to redesign the interior footprint of their dedicated space. Staff recommended that this project would be best submitted as a Club Capital Funding Request. The Club indicated that they did not wish to wait for the Club Funding Request timeline and that they could raise money on their own to fund the proposed project.

On September 6, staff replied that they understood that the club is anticipating taking on the costs of the project if it were to move forward. Based on the project's scope supplied by the Club, it became apparent that permitting would be required. To help prepare the Club for potential costs, staff gave the Club the following breakdown on estimated architect, contractor and permitting costs:

- Construction Documents: $9400 - $9800
- Construction Administration: $1800 - $2000
- Permit: $1000 - $1200
- Build out: $130,000 – $150,000

On September 8, staff met with the Club to discuss the project. At that meeting, the Club expressed their desire to move forward with having the project formally designed by an architect. Staff sent the design concept drawings furnished by the Club to Seaver Franks Architects to develop.

Architects from Seaver Franks met with the club and staff and, based on the scope of work provided by the club, began drafting the designs for the project. Staff asked Barker Construction to provide a cost estimate on the project once initial mechanical, electrical and structural designs were completed. They estimated that the build out would be $123,700.

This number was considerably more that the club had for the project. Staff met with the Camera Club to work on ways to value engineer the project and cut costs.

Following several revisions to the original design, the architect was able to trim down the scope of the project and staff received the building permit and Pima County approved Plans on March 8. A new cost estimate was sought by staff and Barker provided an estimate of $77,257.

Once Canyon Builders was awarded the Glass Artists project, staff sought a second proposal. Being that the Photography Club and the Glass Artists are on the same campus, it was felt that there may be cost saving potential by way of sharing construction administration and reduced trade mobilizations with the one general contractor.

Canyon Builders submitted a proposal of $35,832 to build the Photography Club project, if the two projects are coordinated.

As the club has expended some of their funds allocated for this project on architectural fees and does not have enough to perform the final permitted construction, staff recommended to the club that they submit a 2024 Club Capital Funding Request to seek the needed funds.

GVR 2024 Club Capital Funding Request
Application
Application must be received by 4pm on Friday, March 31, 2023

GVR Photography Club Club Name	3/28/23 Date
Santa Rita Springs 921 W Via Rio Fuerte, Club Location	Club Redesign Name of Project
Danny Valenzuela Club Contact (Primary)	Tom Parker Club Contact (Secondary)
Danny Valenzuela Club President Name	dvsundevil@gmail.com Club President Email

Amount of Request: $36,000

Is the requested project designed to address concerns related to health, safety, or accessibility needs for members with disabilities? Yes ___ No _X_ If yes, please be sure to include details of the concern/s in your responses below.

Important Notes:

1. All questions must be answered in full.
2. Attach additional sheets as needed.
3. Please attach the past three years of year-end bank statements to show your Club Finances.

Project Description

We are requesting funding to complete the redesign of the GVR Photography Club which will allow the club to better utilize existing club space. We are now one wall away from completing the project but required infrastructure requirements have put the cost of the wall beyond our financial capabilities.

See Attachment One to explain challenges and accomplishments to date.

Club Impact

1. What benefit will this project have to your club members?

   Due to the nature of our club, it is necessary to use large TV's during our Special Interest Group meetings and workshops. Our current classroom is an open space without a wall and door to keep noise and other distractions from interfering with class presentations and Special Interest Group meetings. This project will allow us to install a wall and double door entry to the classroom, thus eliminating noise from interfering with classroom activities.

2. How many paying/active Club members do you currently have in your club? 586 current members

3. How much has your Club grown over the past three years?

   Despite the impact from Covid our club maintains a strong membership base.

   3/1/21: 712Members 3/1/22: 560 Members 3/1/23: 582 Members

   - If there has been a significant increase or decrease, or do you expect a significant increase, please explain.

     We are experiencing growth. Since January, we have added 102 members. Our redesign efforts have permitted us to realign our club in a way that we can better utilize our facilities to allow for more club activities. Our Photo Lab was downsized, and we added one large classroom space (without a wall) with a capacity for approximately 50 people, we have restarted our matting and framing program, and added one smaller meeting space with a capacity for 12-15 people.

4. How will this project maintain or increase club membership.

   It will help increase membership and membership participation. We have had six longstanding fun and educational Special Interest Groups: Multimedia, Black & White, Studio & Fine Art, Lightroom, Photoshop Elements, and Wildlife Photography. In the past 60 days we have added an Astrophotography and some Drone Photography classes. We have adequate space to schedule these sessions due to the larger classroom we have redesigned. From time to time we conduct classes our members express an interest in, such as iMovie classes, printing classes, and drone classes.

Community Impact

1. Will the benefit of this improvement be limited to the Club only or will the improvement be accessible to the wider GVR Membership? Please Explain.

Our Special Interest Groups are offered to Club members, this is their enticement to join the club. Our Travelogue, Showtime, and Speaker Series are open to the general GVR membership, all at no cost.

2. Could this project help attract new GVR members to Green Valley. Please Explain.

   Many people move to Green Valley because of the varied activities and clubs that are available to them. Having a state-of-the-art facility, with adequate space for classes, computer software to enhance their photographs, matting classes, and a variety of field trips and presentations will add to the draw that can attract new members to GVR. Our recently expanded marketing efforts will also capture the attention of new potential residents. Improvement to the HVAC systems will benefit the general membership who use the Springs facilities.

Finances

Clubs are expected to contribute 10% of all direct costs for the project. The 10% will be billed to the Club at the end of the project based on actual costs.

1. What are the current dues per member?

   $30 annually for a single person household
   $40 annually for a two-person household

2. On what items are Club dues typically spent?

   Computer equipment, software, field trips, studio equipment, matting supplies and materials, name tags, office supplies, photo printing paper, Zoom subscription, website fees, and a volunteer luncheon.

3. If you have been awarded Club request funds in the past 3 years, please outline the amount, how the money was spent, and any impact this has had on your Club (e. g. membership growth/retention, reduced incidents/injuries, expanded hobby pursuit, etc.)

   We have not requested any funds in the past.

Project Management

1. What research has been done to determine the cost of your project:

   We were required to use the architect designated by GVR Facilities to obtain architect drawings for construction and design for the total redesign project. The initial construction estimate was $123,700. The Design Review Committee made major changes to the initial plan and with some members doing some of the work, and with the help of GVR Facilities, the non-load bearing wall construction is the only item remaining to be completed. The GVR architect firm redesigned the wall and estimated the reduced estimate to $77,257. A current request for quote lowered the estimated cost to $36,000. This quote includes HVAC, electrical and wall construction. The Glass Arts project and the Photography Club project will be completed by the same General Contractor, thus lowering costs. For this project, the Photography Club has spent $11,359.81 of its own funds for architect fees, storage cabinets for the Studio and Fine Arts equipment, and Sconce lights for the Photo Lab and Ansel Adams meeting rooms.

2. What is your desired timeline for starting and ending your project?
   30 days from approval of funding.

Additional Considerations (attached additional sheets as needed)

See Attachment One, and Exhibits.

Checklist:

- [X] All questions are answered in full/
- [X] Three years of Club year-end bank statements are attached.

Danny Valenzuela
Prepared by

Danny Valenzuela
Club President Name

Danny Valenzuela — 3/28/23
Club President Signature — Date

For Official Use Only

3/28/23 — Date received by GVR

3/28/23 — Date Acknowledgment sent to requestor

Estimated Cost to GVR

Estimated timeline for completion

Project **Approved/Declined** (circle one) Reasoning _____

Date final response sent to requesting Club

GVR Club Capital Funding Request Project Description

In the summer of 2022, the club was notified that the Kino Room at Santa Rita Springs would no longer be available to reserve due to the Computer Club being relocated there. In addition, clubs' requests for meeting space are increasing and room reservations are becoming more difficult. These two factors prompted the need to redesign our current club space to better serve our members. No new square footage was requested by the Photography Club. It was all to be completed within existing space.

A club Redesign Committee was established to advise the board on how the club space could be better utilized.

The recommendations from the redesign committee were as follows:

1. Downsize the Photo Lab area and move it to the smaller Ansel Adams room.
2. Utilize the former Photo Lab room as a classroom, which can seat approximately 50 people.
3. Build a wall with double door entry into the classroom. This was needed to mitigate noise from activities in the rest of the club space.
4. Build a storage room in the north end of the new classroom to store the Studio and Fine Art Special Interest Group equipment. The equipment was previously stored in the back 1/3 of the Matting and Framing room.
5. Build a wall separating the area where the Studio and Fine Arts equipment was stored and make that a storage room.
6. Repurpose the current storage room as a smaller meeting room to replace the Ansel Adams Room, for smaller Special Interest Group meetings.
7. Repaint and recarpet the club. Paint and carpet were over 13 years old.

See Exhibit 1

The club had funds in reserve which were donated in the past which could be used for such a purpose. It was our belief that the redesign could be completed for less than $30,000. Perhaps painting and carpet could come later if the amount was insufficient.

Architects, paid with Photography Club funds, were hired by GVR Facilities and a cost estimate of $123,700 was received in October 2022. We were told that the floor to ceiling walls for the storage area and the Studio equipment impacted the HVAC and electrical systems and are the reason for the high cost. The Design Committee went back to work to make changes so that HVAC and electrical changes would not be necessary.

The changes made to the redesign plan eliminated the floor to ceiling storage room and wall in the Mat Room. Instead of a storage room for the Studio

equipment, two cabinets were built at club expense. Instead of a floor to ceiling wall to separate the mat room from the storage area, an 8-foot wall was built by club members for only the cost of materials. Instead of moving the double doors into the new photo lab area, one half of the door was proposed to be closed off with sheet rock, leaving a single door entry to the Photo Lab. This eliminated any need for electrical work.

See Exhibit 2

Exhibit 2 shows the updated redesign request submitted to GVR in November 2022. This new request was submitted to the architects by GVR Facilities. In February 2023 we received a revised estimate of $77,247 to complete the wall enclosing the classroom. In the meantime, GVR Facilities has painted and carpeted the club and completed minor electrical work. All that is left to be done is too build the wall with a double entry for enclosing the classroom, plus sheet rock the left side of the double door into the Photo Lab, leaving a one door entry.

A more recent bid from the General Contractor constructing the Glass Arts space came in at just under $36,000.

To date the club has spent $11,359.81 of its own funds for the redesign, most of it for architectural fees. However, the revised cost estimate to complete the redesign is beyond the financial capabilities of the club.

We understand that prior to the club occupying its current space, HVAC and electrical systems were inadequately installed. to complete the one remaining item; the wall enclosing the classroom space. This wall affects the air circulation and requires extensive HVAC and electrical systems upgrades or replacements.

We do not believe the Photography Club is responsible for upgrades to bring the mentioned systems up to code because of inadequate installation prior to our occupying the club space. We believe it is the responsibility of GVR.

For this reason, we are requesting this Capital Funding Request. We are one wall away from completing the redesign and having a state-of-the-art Photography Club GVR can be proud of.

See Exhibit 2

Exhibit 3 is the rendering of the proposed project wall, which includes HVAC and electrical requirements. The County has approved the work permit. All that is lacking is the necessary funding to complete the redesign project.

GENERAL REQUIREMENTS

- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE, AS LOCALLY AMENDED, AND ALL APPLICABLE CODES & ORDINANCES.
- OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE DRAWING, NOTES, AND DETAILS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND RESOLVED BEFORE PROCEEDING WITH THE WORK.
- DO NOT USE SCALED DIMENSIONS. USE WRITTEN DIMENSIONS. WHERE NO DIMENSION IS PROVIDED, CONSULT THE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- ALL DIMENSIONS ARE TO FACE OF STUD UNLESS OTHERWISE NOTED.
- REMOVE ALL MATERIALS RESULTING FROM DEMOLITION WORK FROM THE SITE IN SUCH A MANNER AS TO AVOID CREATING A NUISANCE. STOCKPILE ANY SALVAGED ITEMS PEER OUNER'S REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE OR DISPOSE OF ALL SALVAGED ITEMS TO AN OFF SITE PROPERTY LOCATION.
- THE CONTRACTOR OR SUBCONTRACTOR SHALL INSPECT THE PREMISES PRIOR TO COMMENCING WORK TO CHECK EXISTING WORKING CONDITIONS. SHOULD CONTRACTOR OR SUBCONTRACTOR FIND CONDITIONS WHICH HE BELIEVES WOULD IMPEDE HIS WORK, THEN SUCH CONDITIONS MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT. FAILURE TO SO ADVISE WILL CONSTITUTE NOTICE THAT THE CONTRACTOR IS FULLY SATISFIED AND THAT HE INTENDS TO PERFORM HIS OBLIGATIONS WITH NO ALLOWANCE EITHER IN TIME OR MONEY FOR ANY IMPEDIMENTS TO HIS WORK.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN FIELD. IF DIMENSIONAL ERRORS OCCUR, OR CONDITIONS NOT COVERED ON THE DRAWINGS IS ENCOUNTERED, CONTRACTOR SHALL NOTIFY THE ARCHITECT BEFORE COMMENCING THAT PORTION OF THE WORK.
- DETAILS, NOTES AND FINISHES SHALL BE APPLICABLE TO ALL TYPICAL CONDITIONS, WHETHER OR NOT REFERENCED AT ALL PLACES. WHEN WORK NOT SPECIFICALLY CALLED OUT IS REQUIRED TO COMPLETE THE PROJECT, IT SHALL BE PROVIDED AND BE OF THE BEST MATERIALS AND WORKMANSHIP.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONARY MEASURES TO PROTECT THE PUBLIC AND ADJACENT PROPERTIES FROM DAMAGES THROUGHOUT CONSTRUCTION. HE SHALL MEET THE LATEST REQUIREMENTS OF THE UNITED STATES DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH STANDARDS AND COMPLY WITH: THE MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION, ALL APPLICABLE SAFETY AND SANITARY LAWS, REGULATIONS AND ORDINANCES, AND ANY SAFETY RULES OR PROCEDURES ESTABLISHED BY THE ARCHITECT AND/OR THE OUNER FOR THE PROJECT.
- THE CONTRACTOR IS EXCLUSIVELY RESPONSIBLE FOR LOSS OR EXPENSE RESULTING FROM INJURY ON THE PROJECT SITE. HE ASSUMES ALL RISKS IN THE PERFORMANCE OF THE WORK AND IS RESPONSIBLE FOR SUPERVISION, MATERIALS, EQUIPMENT AND LABOR REQUIRED TO IMPLEMENT THE PLANS AND SPECIFICATIONS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SUPERVISION, SAFETY, ADMINISTRATION AND ALL PHASES OF ITS CONTRACT. HE IS ALSO RESPONSIBLE FOR SCHEDULING, COORDINATING, MANAGEMENT AND ADMINISTRATION OF SUB-CONSULTANTS.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES AND PROTECT THEM.
- ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED AND CONDITIONED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS OR INSTRUCTIONS UNLESS HEREINAFTER SPECIFIED TO THE CONTRARY.
- ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER, ACCEPTABLE TO THE ARCHITECT.
- UNLESS OTHERWISE SPECIFICALLY NOTED, THE CONTRACTOR SHALL PROVIDE AND PAY FOR ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, CONSTRUCTION EQUIPMENT AND MACHINERY, TRANSPORTATION, AND OTHER FACILITIES AND SERVICES NECESSARY FOR PROPER EXECUTION AND COMPLETION OF THE WORK.
- THE CONTRACTOR SHALL PAY FOR ALL FEES, PERMITS, ETC. NECESSARY FOR PROPER COMPLETION OF WORK (U.N.O.). THE CONTRACTOR SHALL FILE ALL APPLICATIONS REQUIRED AND PROCURE ALL PERMITS.
- THE CONTRACTOR WARRANTS TO THE OWNER THAT ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT WILL BE NEW UNLESS OTHERWISE SPECIFIED, AND THAT ALL WORK WILL BE GOOD QUALITY, FREE FROM FAULTS AND DEFECTS, AND IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. ALL WORK NOT CONFORMING TO THESE STANDARDS MAY BE CONSIDERED DEFECTIVE. IT IS UNDERSTOOD THAT NO INFERIOR OR NON-CONFORMING WORK OR MATERIALS WILL BE ACCEPTED WHETHER DISCOVERED AT THE TIME THEY ARE INCORPORATED IN THE WORK OR AT ANY TIME BEFORE OR AFTER FINAL ACCEPTANCE. IF REQUIRED BY THE OWNER OR ARCHITECT, THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND EQUIPMENT.
- THE WARRANTIES AND GUARANTEES PROVIDED IN THE CONSTRUCTION DOCUMENTS SHALL BE IN ADDITION TO AND NOT IN LIMITATION OF ANY OTHER WARRANTY OR GUARANTY OR REMEDY REQUIRED BY LAW OR BY THE CONSTRUCTION DOCUMENTS.
- THE ARCHITECT'S AND ENGINEER'S OBSERVATION FOR COMPLIANCE WITH THE PLANS AND SPECIFICATIONS SHALL NOT BE DEEMED SUPERVISION OR CONTROL OF CONSTRUCTION MEANS OR METHODS EMPLOYED BY THE CONTRACTOR OR ANY SUBCONTRACTOR.
- PROVIDE WOOD BLOCKING SUPPORT AT ALL SURFACE MOUNTED ITEMS MOUNTED TO FACE OF GYPSUM WALLBOARD WALLS.
- CAULK ALL JUNCTURES BETWEEN DIFFERENT MATERIALS.

GREEN VALLEY RECREATION CENTER
CAMERA CLUB

921 WEST VIA RIO FUERTE

GREEN VALLEY, ARIZONA 85614

TENANT IMPROVEMENT

CODE REVIEW

SUMMARY OF GOVERNING REGULATIONS

CODE	TITLE	EDITION	LOCAL AMENDMENTS
BUILDING CODE	IBC	2018	YES
EXISTING BUILDING CODE	IEBC	2018	YES
ACCESSIBILITY CODE	ICC/ ANSI A117.1	2017	
MECHANICAL CODE	IMC	2018	YES
ELECTRICAL CODE	NEC	2017	YES
PLUMBING CODE	IPC	2018	YES
FIRE CODE	IFC	2018	YES
ENERGY CONSERVATION CODE	IECC	2018	YES

GENERAL BUILDING SUMMARY (FOR REFERENCE)

BUILDING	OCCUPANCY GROUP(S)	TYPE OF CONSTRUCTION	SPRINKLER SYSTEM	BUILDING AREA/HEIGHT/ NO. OF STORIES	BUILDING AREA/HEIGHT/ NO. OF STORIES
				REQUIRED	ACTUAL
EXISTING BLDG.	B BUSINESS	IIB	YES	69,000 SQ. FT. 75'-0" HIGH 4 STORIES	± 9,800 SQ. FT. ± 35'-0" 2 STORIES

PROJECT DIRECTORY

ARCHITECT

SEAVER / FRANKS ARCHITECTS INC, A.I.A.
2552 NORTH ALVERNON WAY
TUCSON, ARIZONA 85712
(520) 795-4000 CONTACT: RICHARD HUCH

MECHANICAL ENGINEER

KC MECHANICAL ENGINEERING, LLC
5447 EAST FIFTH STREET - SUITE 112
TUCSON, ARIZONA 85711
(520) 327-7611 CONTACT: MIGUEL GASTELUM

ELECTRICAL ENGINEER

CC ELECTRICAL CONSULTING, LLC
5551 SOUTH WHITE MOUNTAIN ROAD - SUITE 2538
SHOW LOW, ARIZONA 85901
(602) 400-1792 CONTACT: JEFFREY CLARK

SCOPE OF WORK

THE SCOPE OF WORK FOR THIS PROJECT INVOLVES THE TENANT IMPROVEMENT OF THE GREEN VALLEY RECREATION CENTER'S CAMERA CLUB (APPROXIMATELY 2,350 SQUARE FEET). CONSTRUCTION WILL CONSIST OF NEW STEEL STUD WALLS/PARTITIONS AS REQUIRED. INCLUDED IN THE SCOPE OF THIS WORK WILL BE ALL MECHANICAL, AND ELECTRICAL WORK AS REQUIRED.

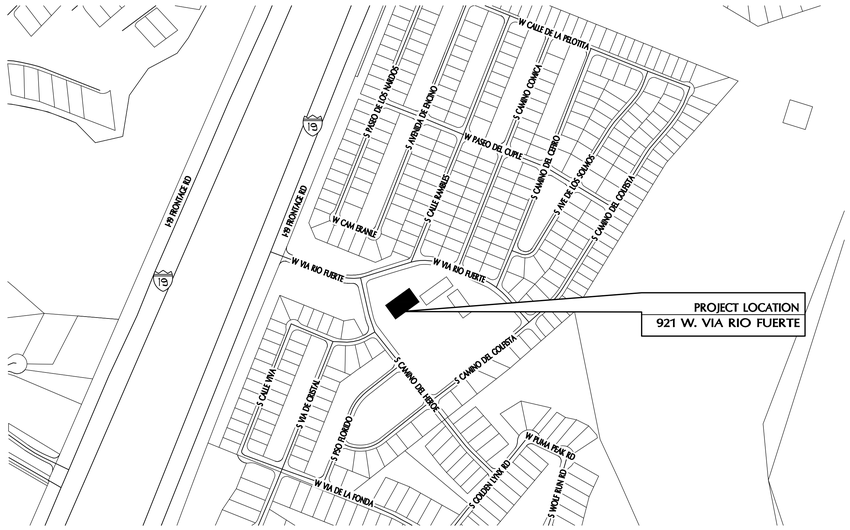
DEFERRED SUBMITTALS

1. FIRE SPRINKLERS

SPECIAL INSPECTIONS

a. NONE

SHEET INDEX



LOCATION MAP

SCALE: NTS

TRUE NORTH

REVISIONS
NO. DATE

CAMERA CLUB - TENANT IMPROVEMENT
GENERAL INFORMATION

SEAVER / FRANKS ARCHITECTS INC A.I.A.
2552 N. ALVERNON WAY / TUCSON, AZ 85712 / PH 520-795-4000

GREEN VALLEY RECREATION CENTER
921 WEST VIA RIO FUERTE
GREEN VALLEY, ARIZONA 85614

ISSUE DATE 01-03-2023
PROJ. NO. 3704
DRG. SCALE AS NOTED

SHEET
A0.0

REVIEWED for CODE COMPLIANCE
P23BP01236 D1
02/28/2023
WS9415

GENERAL NOTES

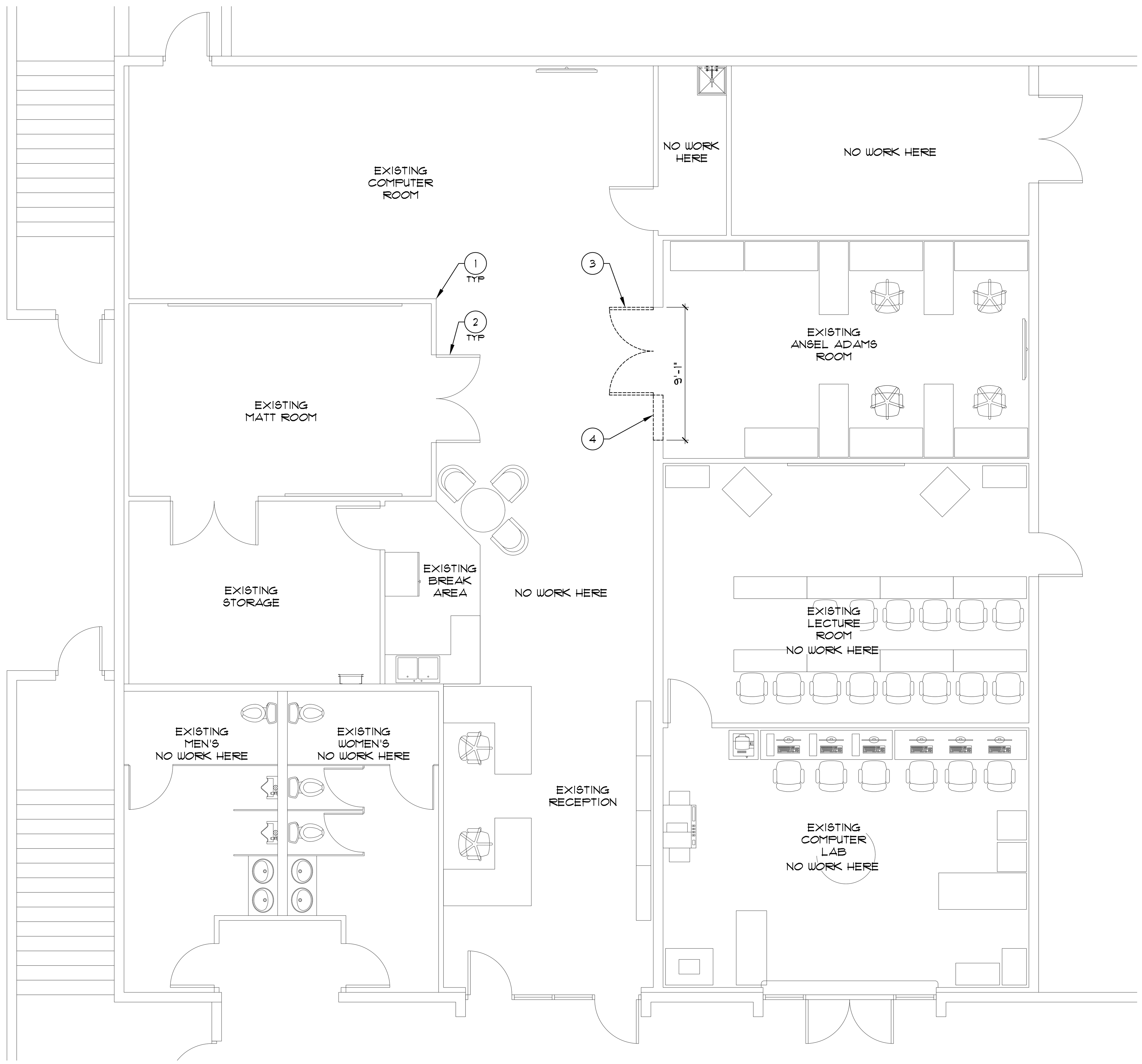
A. FIELD VERIFY ALL CONDITIONS PRIOR TO CONSTRUCTION.

DEMOLITION PLAN KEYNOTES

1. EXISTING WALL TO REMAIN.
2. EXISTING DOOR TO REMAIN.
3. EXISTING DOOR TO BE REMOVED.
4. EXISTING WALL TO BE REMOVED.

NOTES TO BUILDING INSPECTOR:

• PDEQ asbestos (NESHAP) permit is required if building is commercial & demolition includes load-bearing members.



1 DEMOLITION FLOOR PLAN
SCALE: 1/4" = 1'-0"

TRUE NORTH PROJECT NORTH

EXPIRES 12-31-23

REVISIONS
NO. DATE

CAMERA CLUB - TENANT IMPROVEMENT
DEMOLITION FLOOR PLAN

SEAVER FRANKS ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON AZ 85712 / FAX 795-9431 / 795-4000

GREEN VALLEY RECREATION CENTER
921 WEST VIA RIO FUERTE
GREEN VALLEY, ARIZONA 85614

ISSUE DATE 01-03-2023
PROJ. NO. 3704
DRG. SCALE AS NOTED

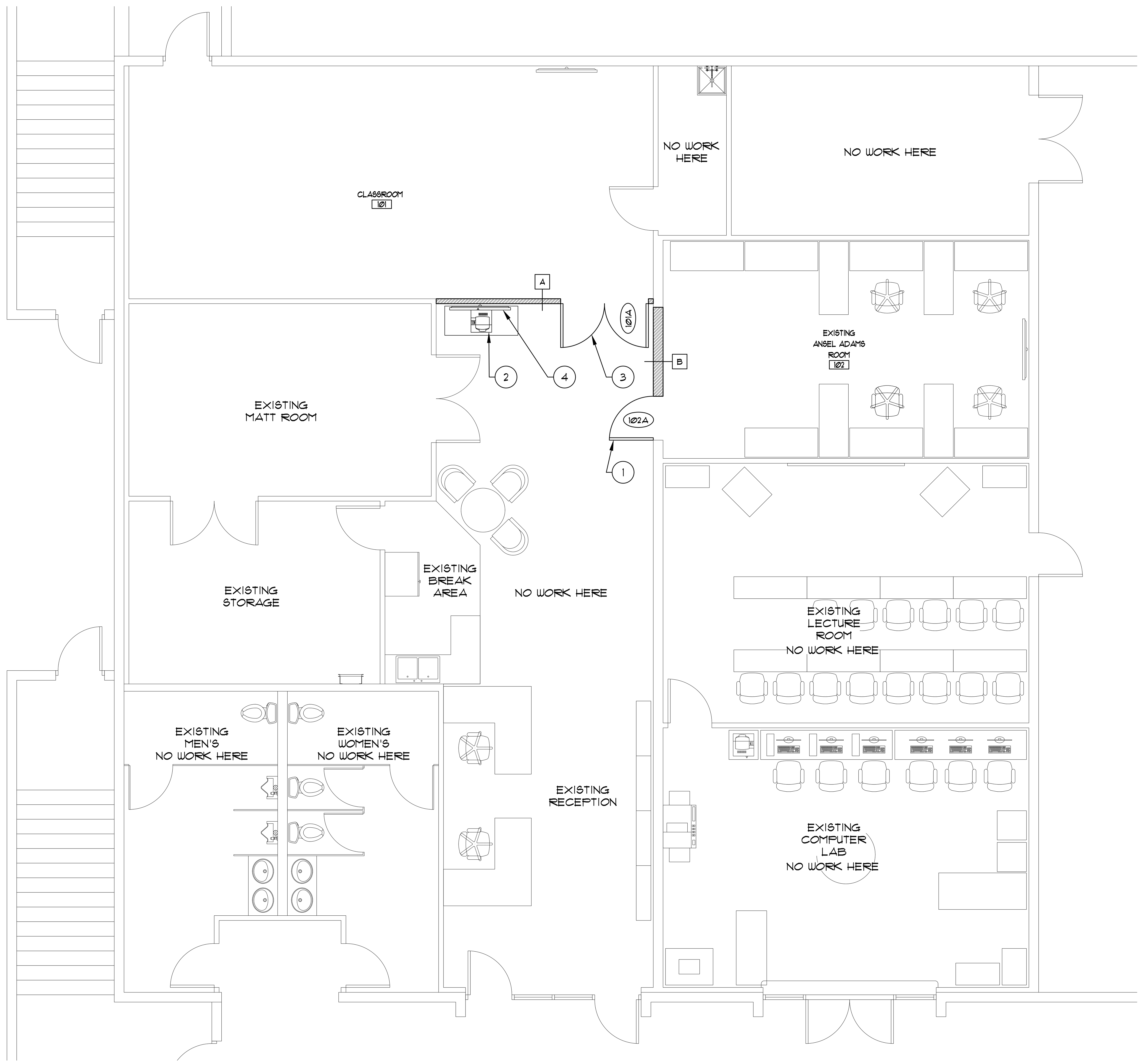
SHEET
D2.0

GENERAL NOTES

A. FIELD VERIFY ALL CONDITIONS PRIOR TO CONSTRUCTION.
B. PROVIDE BACKING AS REQUIRED FOR ALL WALL MOUNTED EQUIPMENT - SEE DETAIL 11/A4.0.
C. ALL FURNITURE TO BE FURNISHED AND INSTALLED BY OWNER.
D. REFER TO THE FINISH MATERIAL DESCRIPTION TABLE ON SHEET A3.0 FOR FINISHES SPECIFICATIONS.

FLOOR PLAN KEYNOTES

1. NEW DOOR TO MATCH EXISTING.
2. NEW DESK WITH PRINTER/COPIER BY OWNER.
3. EXISTING RELOCATED DOUBLE DOOR.
4. EXISTING RELOCATED WALL MOUNTED TELEVISION - SEE ELECTRICAL DRAWINGS.

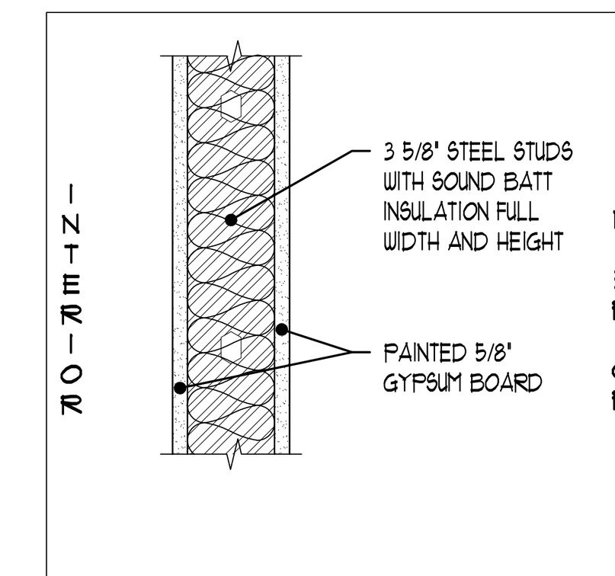


1 REFERENCE FLOOR PLAN
SCALE: 1/4" = 1'-0"

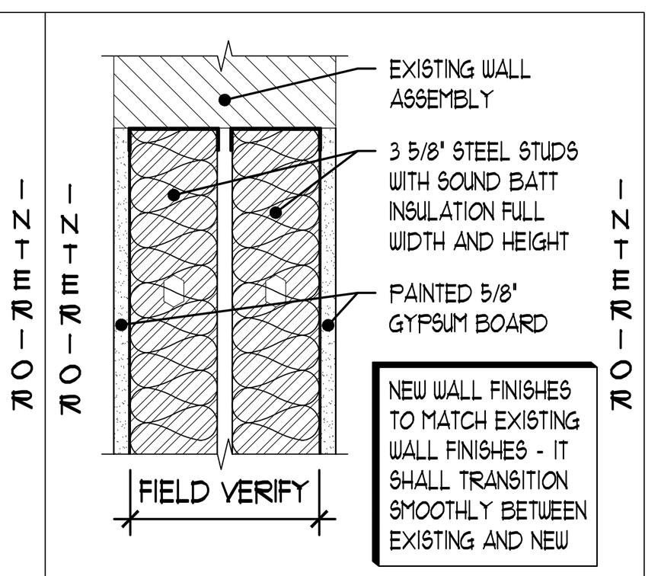
TRUE NORTH PROJECT NORTH

WALL TYPES

SCALE: 1-1/2" = 1'-0"



A WALL HEIGHT: 6" ABOVE THE CEILING



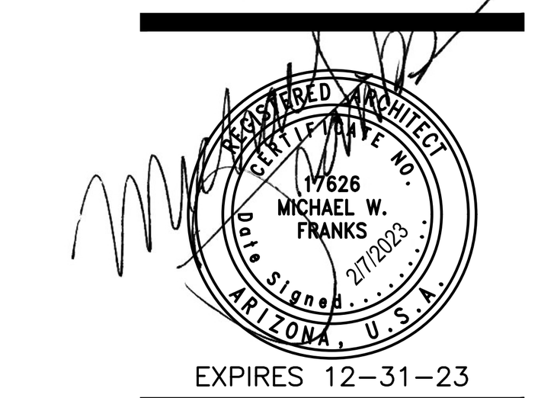
B WALL HEIGHT: T.O. EXISTING OPENING

PARTITION SIZE TABLE

STEEL STUD PARTITION SIZE TABLE

MAXIMUM UNBRACED PARTITION HEIGHT	STUD DEPTH	FLANGE WIDTH	STUD GA	STUD SPACING
10'-10"	3 5/8"	1 1/4"	25	24" O.C.
12'-5"	3 5/8"	1 1/4"	25	16" O.C.
13'-0"	3 5/8"	1 1/4"	20	24" O.C.
15'-0"	3 5/8"	1 1/4"	20	16" O.C.
20'-0"	6"	1 1/4"	20	24" O.C.

NOTES:
1. HEIGHT LIMITATIONS AND STUD PROPERTIES BASED ON INFORMATION PROVIDED IN THE STEEL STUD MANUFACTURERS ASSOCIATION HANDBOOK. VALUES ARE FOR INTERIOR NON-STRUCTURAL NON-COMPOSITE PARTITIONS WITH A 5 PSF LOAD AND L/240 DEFLECTION FACTOR.
2. PROVIDE 4" STUDS AT PARTITIONS WITH 4" COLUMNS.
3. PROVIDE SLIP TRACK AT ALL INTERIOR FULL HEIGHT WALLS, ESPECIALLY AT THE PRE-ENGINEERED METAL BUILDING AREAS.
4. PROVIDE TYPE 'X' GYPSUM BOARD AT ALL RATED PARTITIONS.
5. PROVIDE DRYWALL CONTROL JOINTS (AMICO DEEP 'V' WITH REMOVABLE TAPE OR SIMILAR). JOINTS ARE TO BE PLACED AT DRYWALL EXPANSES EXCEEDING 30'-0" IN LENGTH. PROVIDE CONTROL JOINTS IN CEILINGS TO LIMIT AREAS TO 2,500 SQUARE FEET AND IN ORDER TO LIMIT DIMENSIONS IN EITHER DIRECTION TO 50'-0".



EXPIRES 12-31-23

REVISIONS
NO. DATE

CAMERA CLUB - TENANT IMPROVEMENT
REFERENCE FLOOR PLAN

SEAVER FRANKS ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON, AZ 85712 / FAX 795-9431 / 795-4000

GREEN VALLEY RECREATION CENTER
921 WEST VIA RIO FUERTE
GREEN VALLEY, ARIZONA 85614

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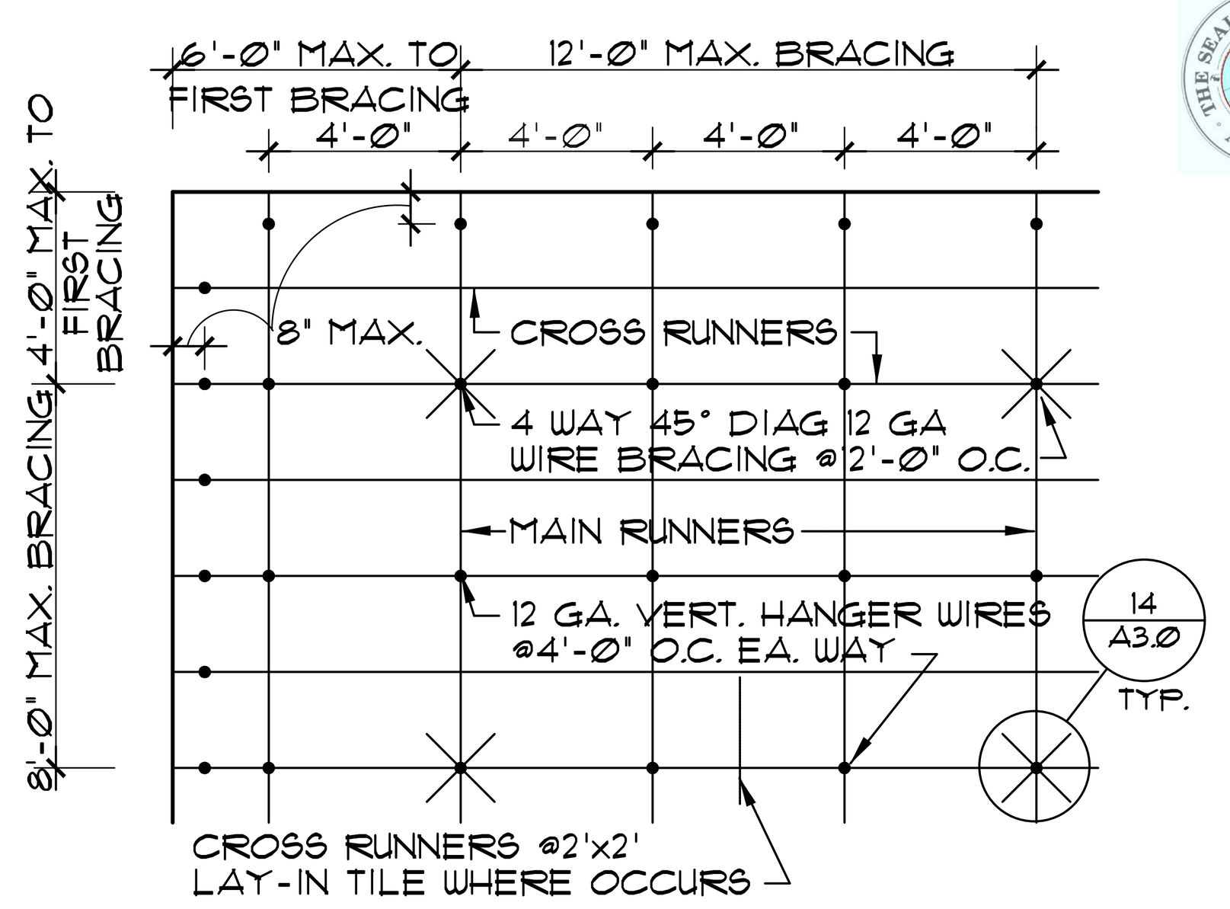
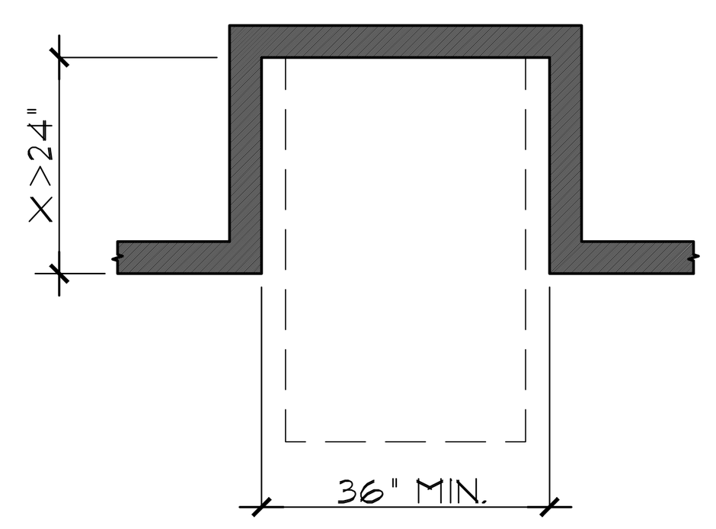
DRG. SCALE AS NOTED

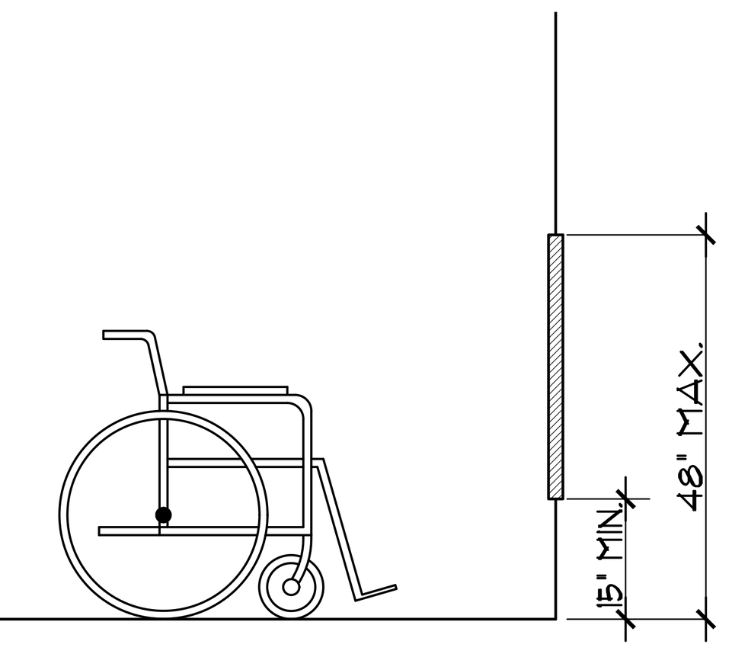
SHEET
A2.0



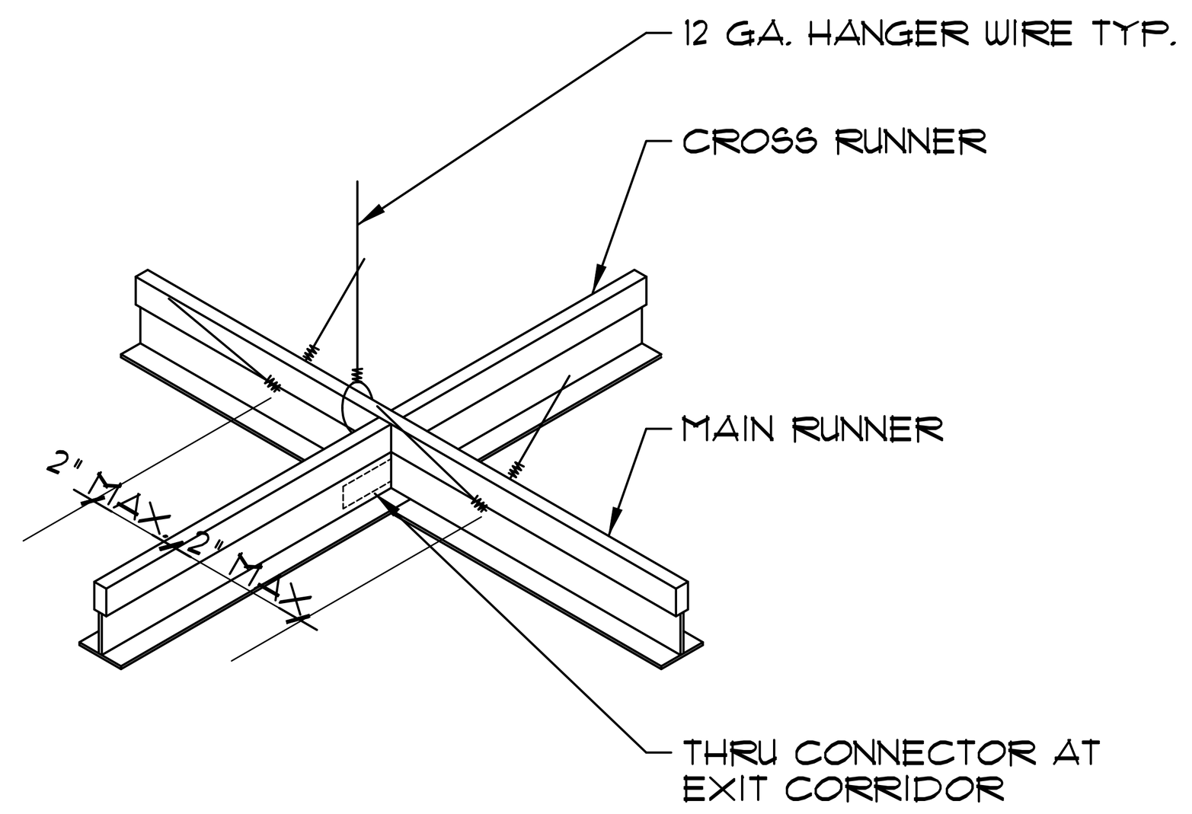
13 **DIAGRAMMATIC 2x4 LAY-IN CEILING PLAN**
SCALE: 1/4" = 1'-0"



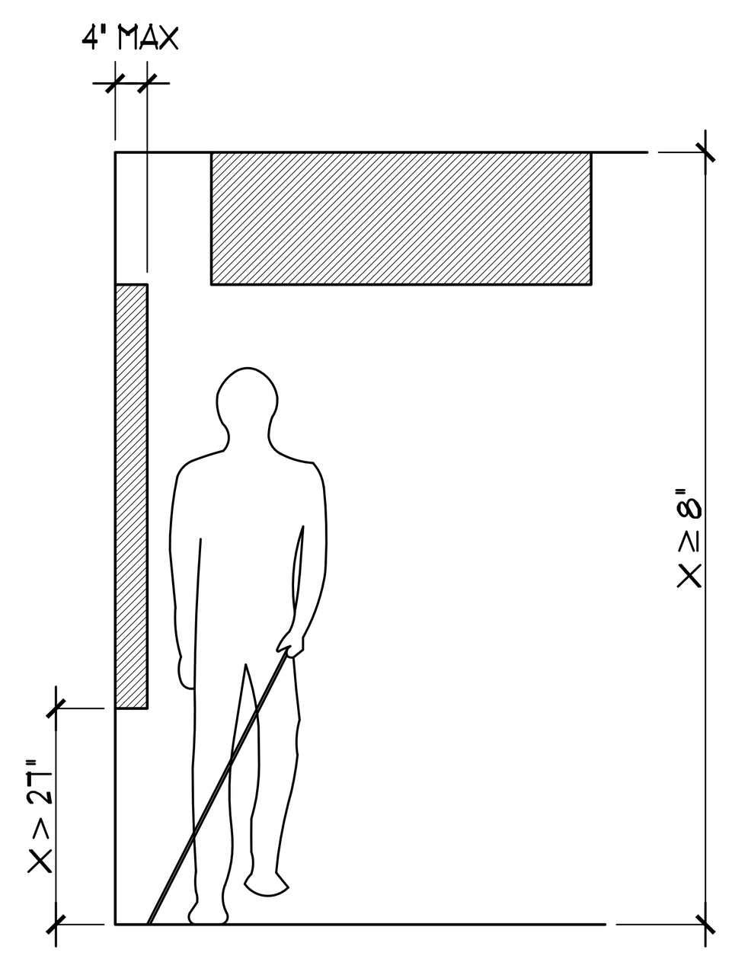
9 **ADA FORWARD APPROACH**
SCALE: 1/2" = 1'-0"



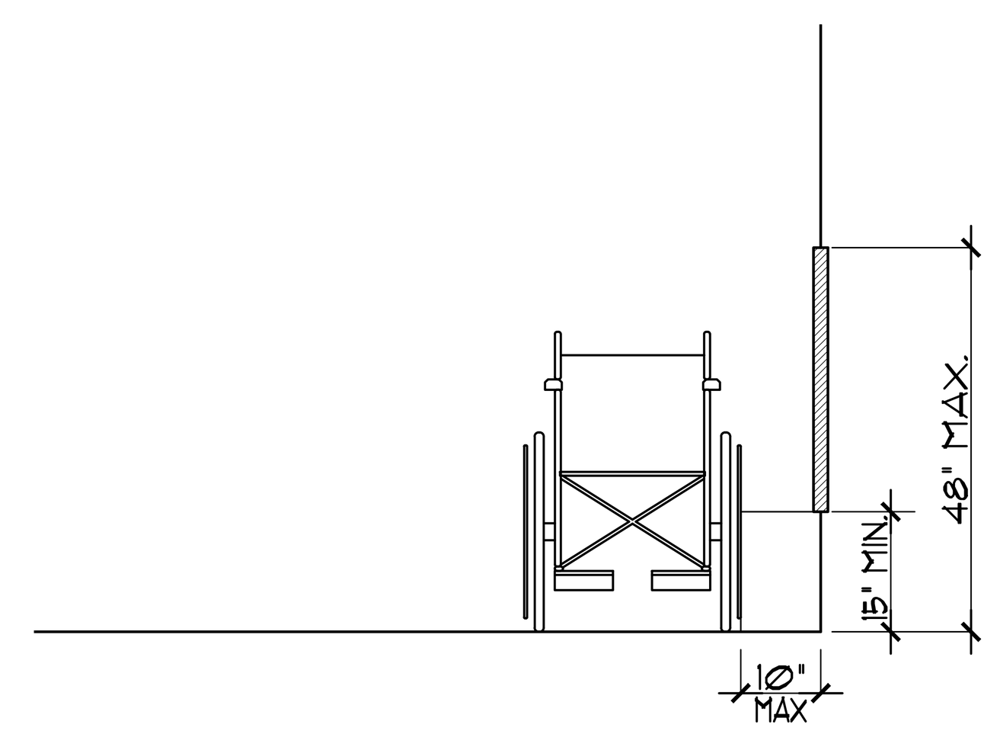
5 **UNOBSTRUCTED FORWARD REACH**
SCALE: 1/2" = 1'-0"



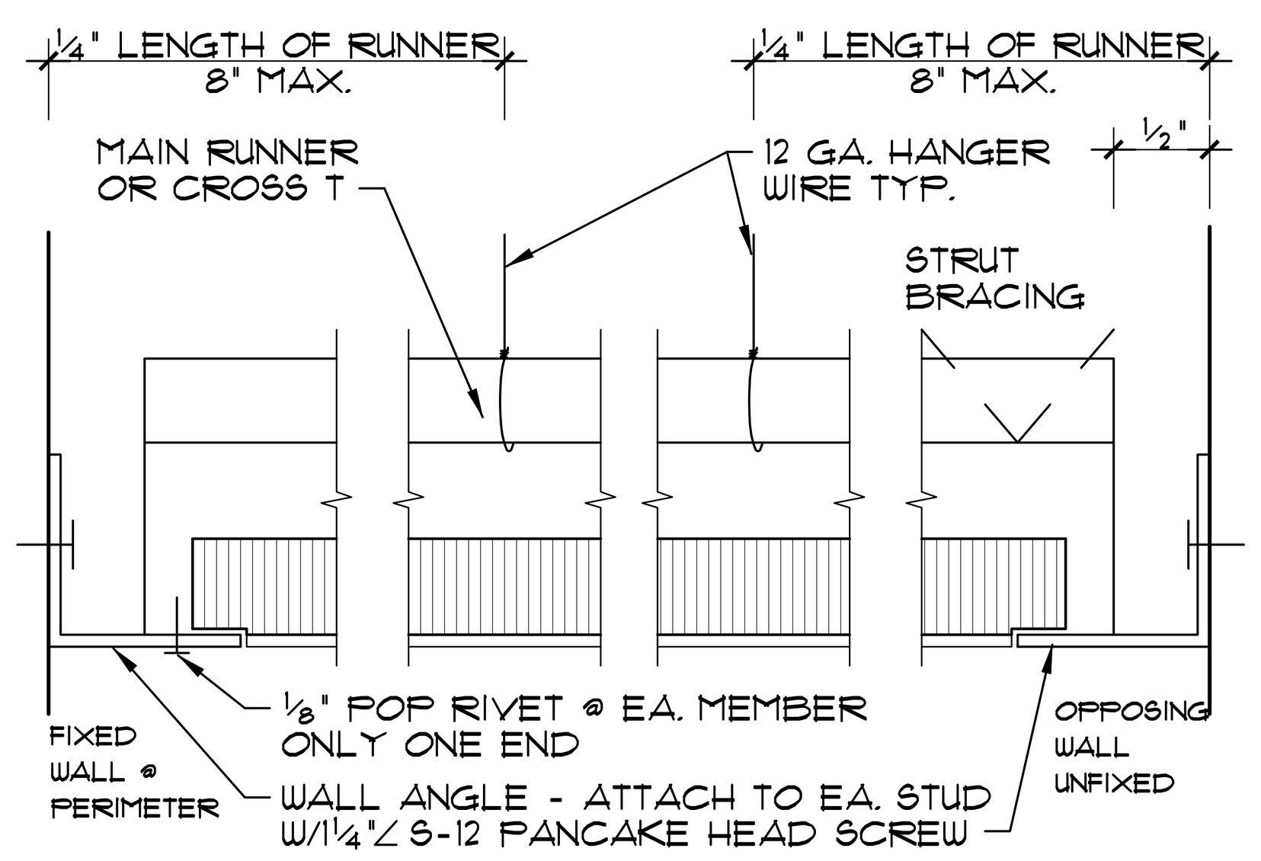
14 **ACOUSTIC CEILING CROSS CONNECTION**
SCALE: 3" = 1'-0"



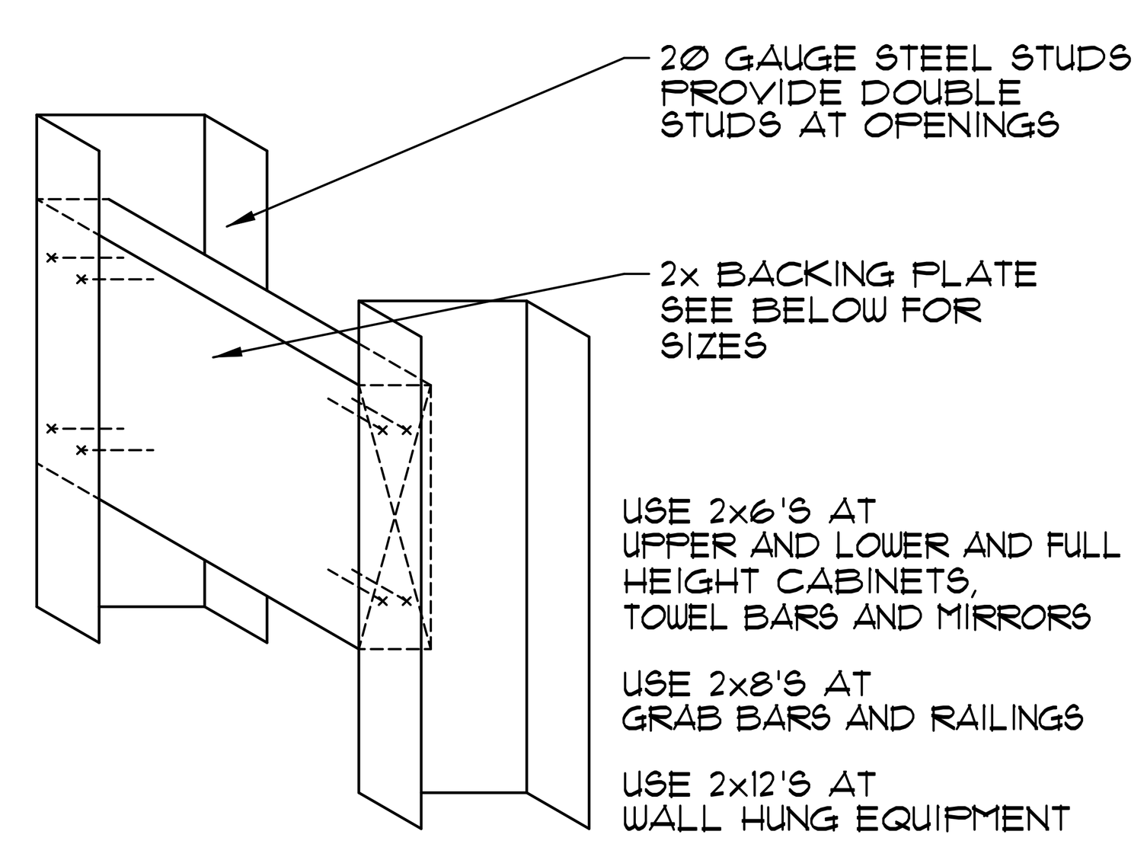
10 **LIMITS OF PROTRUDING OBJECTS**
SCALE: 1/2" = 1'-0"



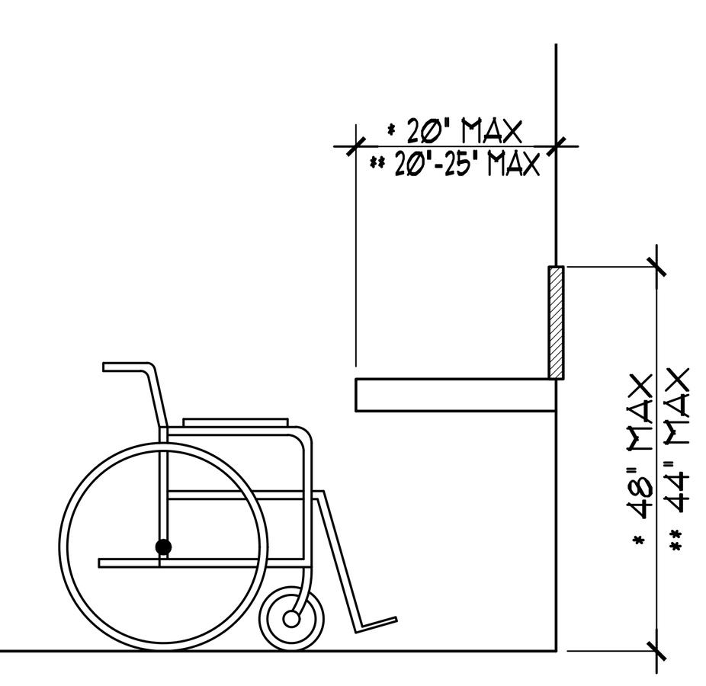
6 **UNOBSTRUCTED SIDE REACH**
SCALE: 1/2" = 1'-0"



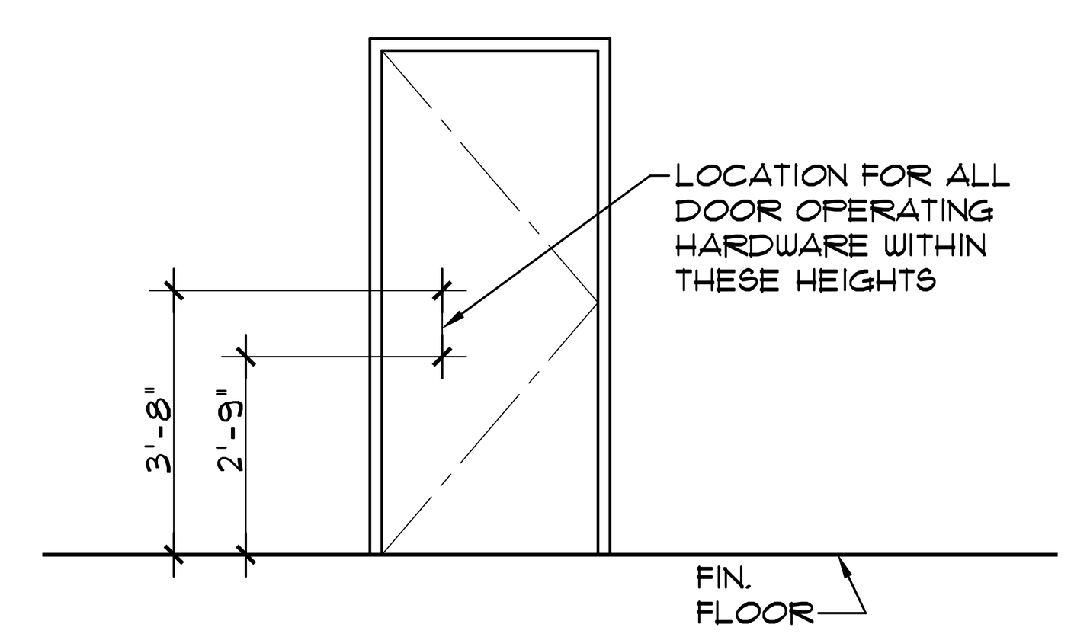
15 **ACOUSTIC CEILING WALL CONNECTION**
SCALE: FULL SCALE



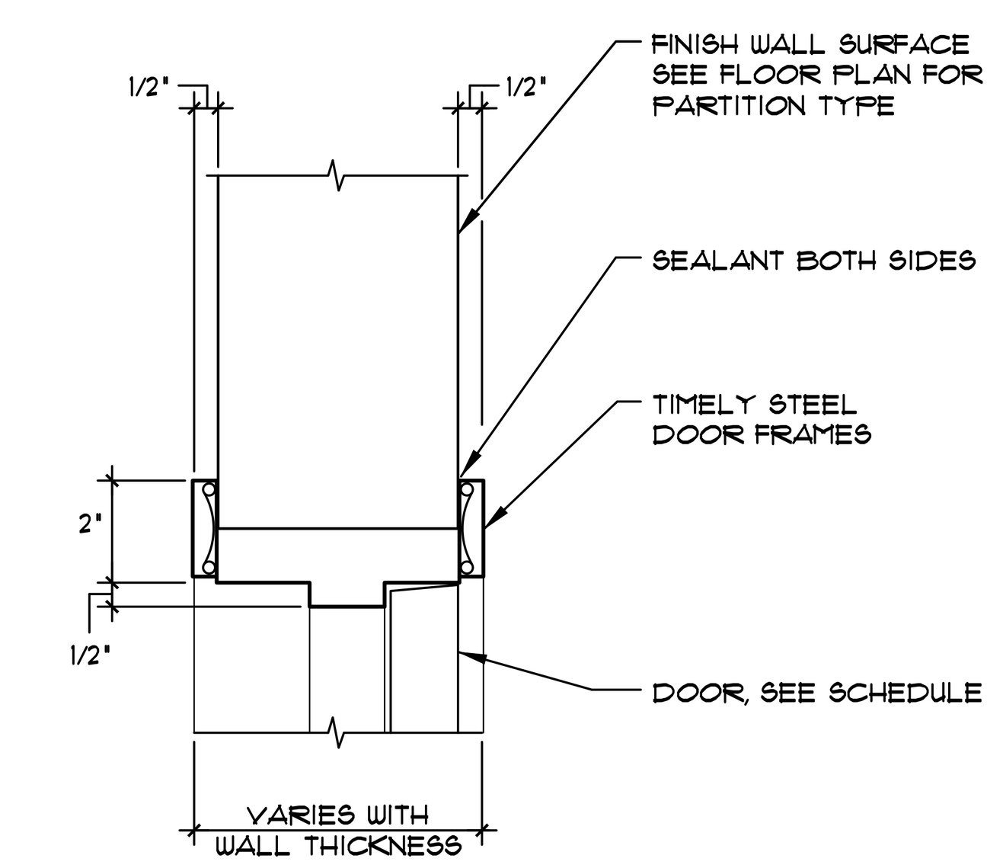
11 **BACKING PLATE**
SCALE: 3" = 1'-0"



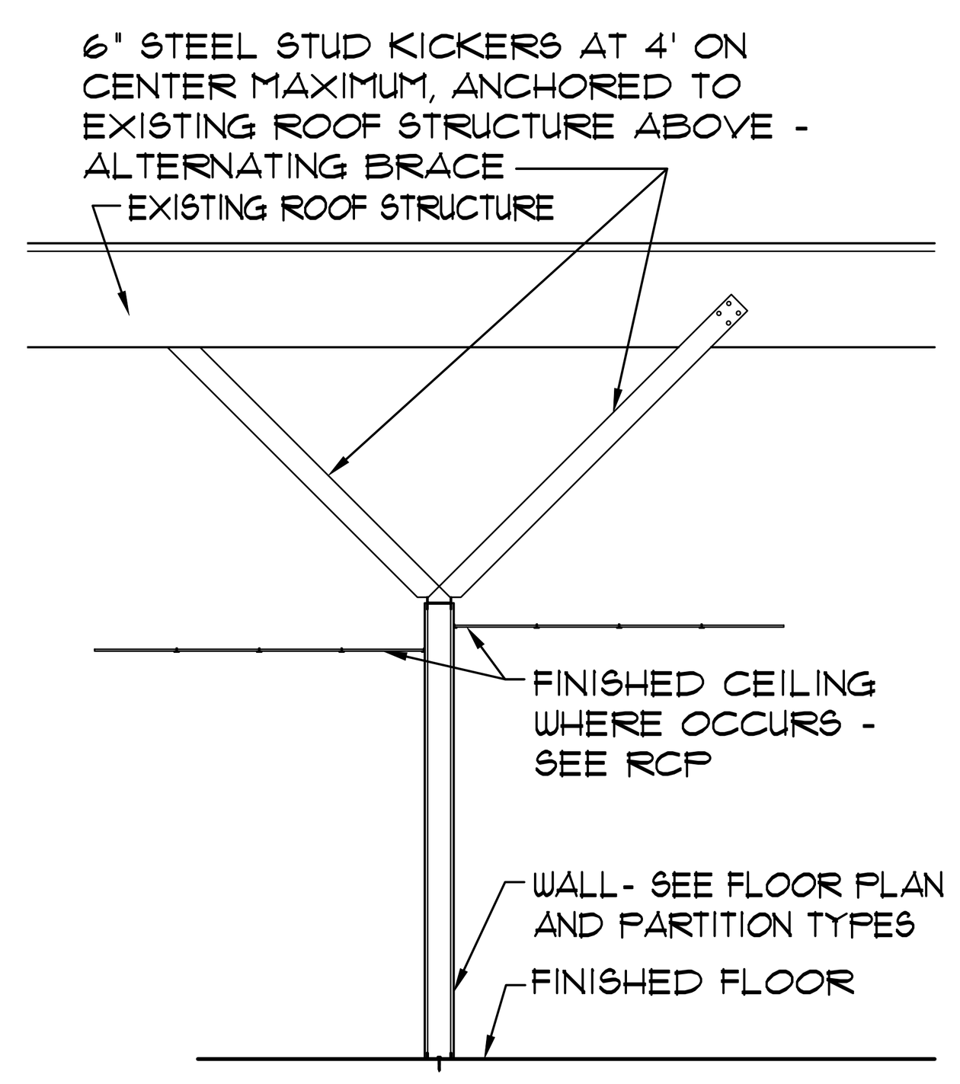
7 **OBSTRUCTED HIGH FORWARD REACH**
SCALE: 1/2" = 1'-0"



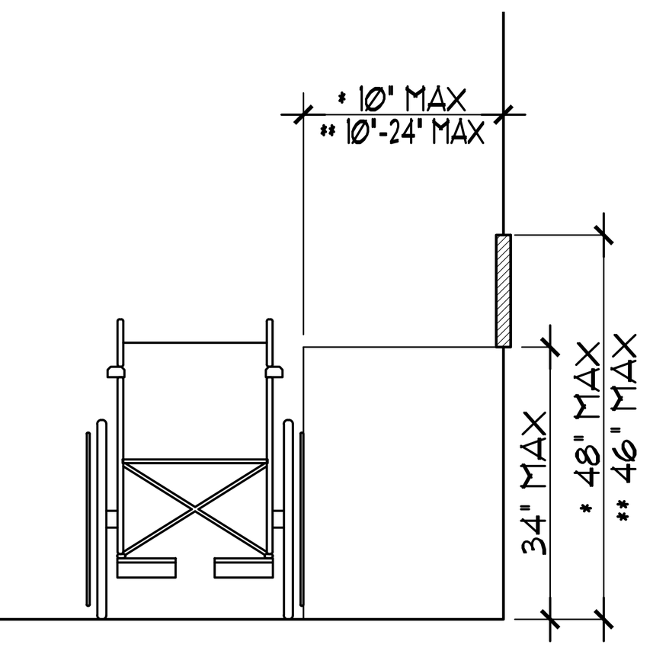
3 **DOOR OPERATING HARDWARE MOUNTING HEIGHT**
SCALE: 3/8" = 1'-0"



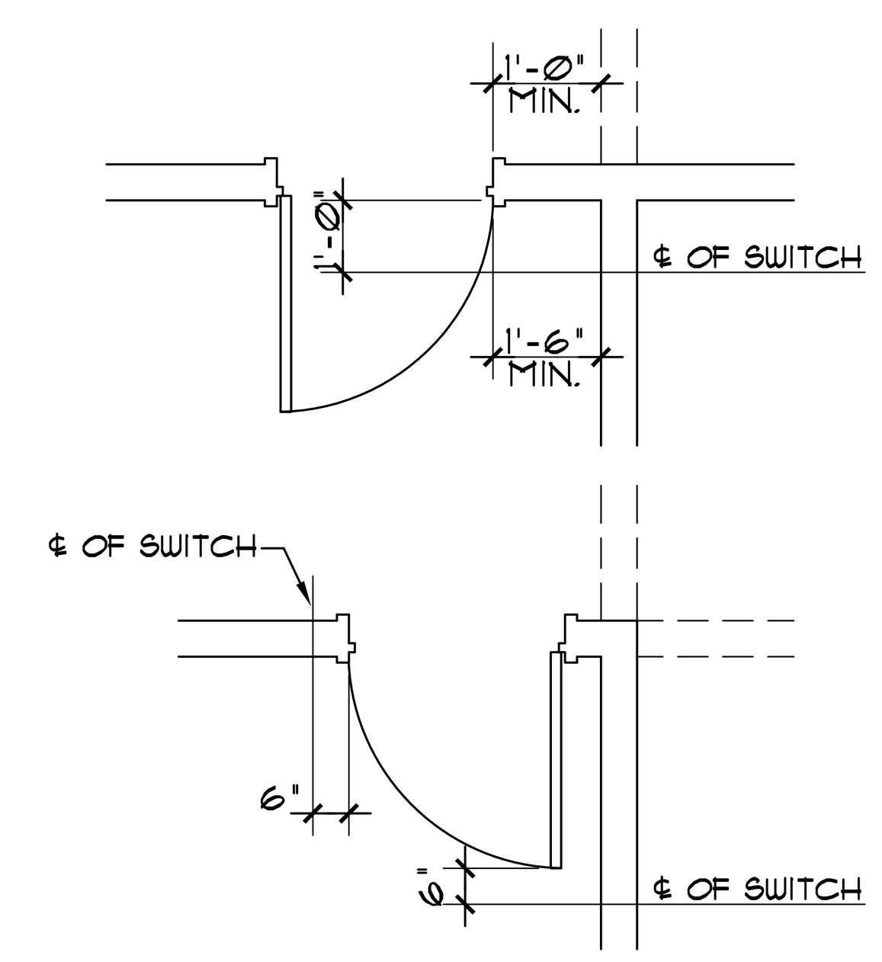
1 **DOOR HEAD (JAMB SIM)**
SCALE: 3" = 1'-0"



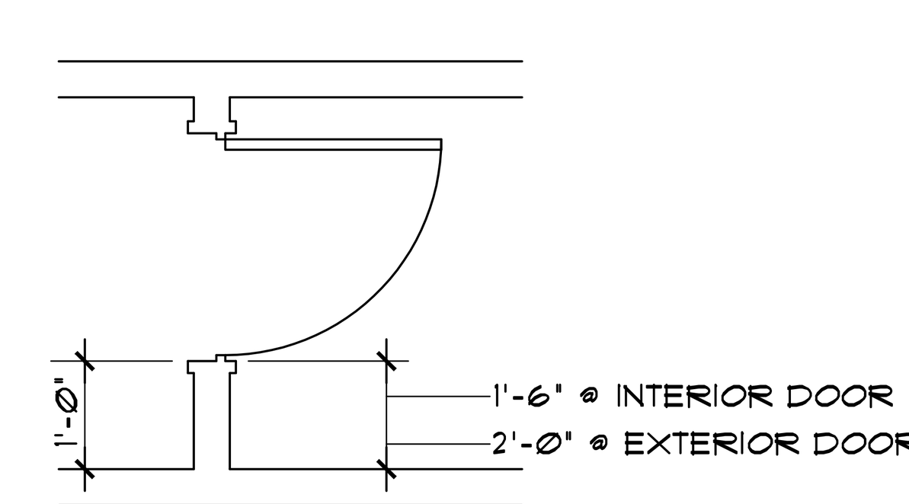
12 **WALL BRACE**
SCALE: 1/4" = 1'-0"



8 **OBSTRUCTED HIGH SIDE REACH**
SCALE: 1/2" = 1'-0"



4 **LIGHT SWITCH LOCATIONS**
SCALE: 3/8" = 1'-0"



2 **DOOR CLEARANCE REQUIREMENT**
SCALE: 3/8" = 1'-0"

DOOR SCHEDULE

DOOR NO.	ROOM NAME	OPENING SIZE (W X H)	DOOR				FRAME			HDWR	NOTES
			TYPE	MATERIAL	FINISH	GLASS	TYPE	MATERIAL	FINISH		
101A	CLASSROOM	(2) 3'-0" X 7'-0"	1	WD/GL	ST	T	A	KD	PT	EXISTING	EXISTING DOOR TO BE RE-USED
102A	ANSEL ADAMS ROOM	3'-0" X 7'-0"	2	WD/GL	ST	T	B	KD	PT	OFFICE[m]	DOOR SHALL MATCH EXISTING

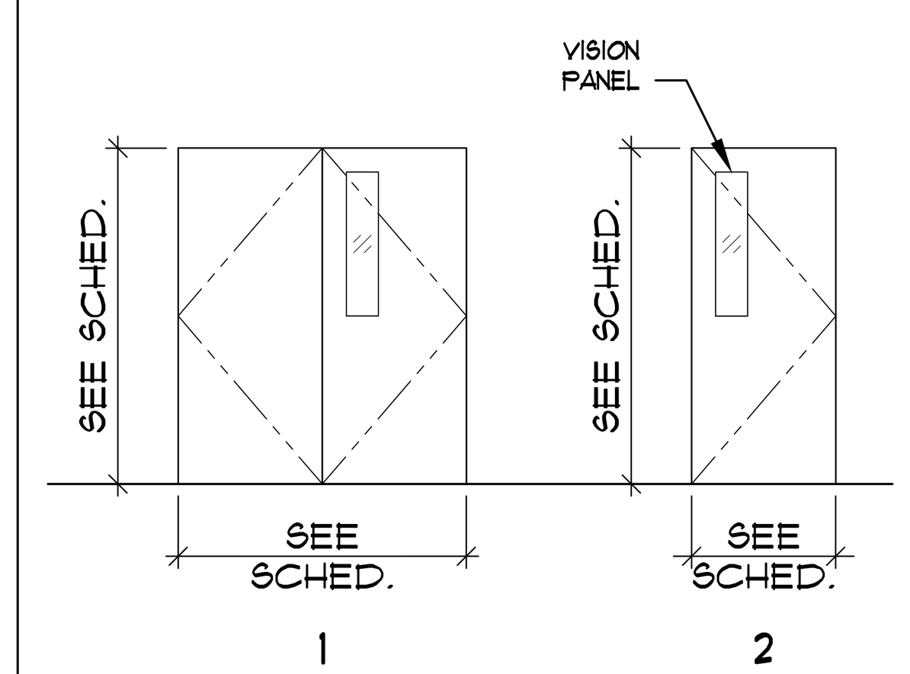
KEY TO ABBREVIATIONS

GL	=	GLAZING	PT	=	PAINTED	T	=	TEMPERED GLAZING
KD	=	KNOCKED DOWN HOLLOW METAL	ST	=	STAINED / PRE-FINISHED	WD	=	WOOD

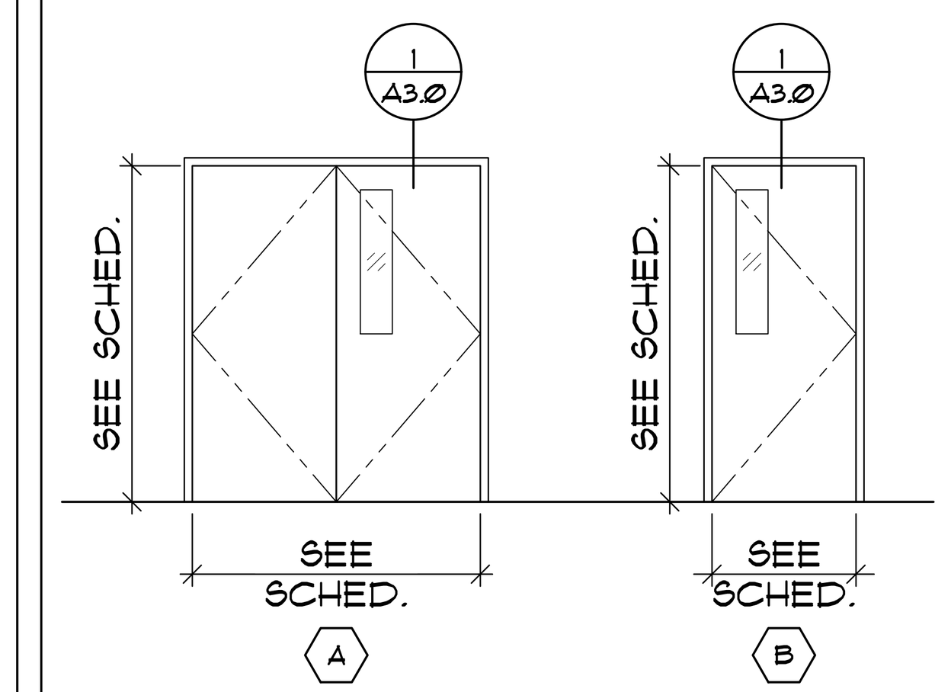
GENERAL DOOR NOTES

a. REQUIRED HARDWARE TO COMPLY W/ ACCESSIBILITY REQUIREMENTS PER ANSI 117.1 404.2.6.
b. EGRESS DOORS SHALL BE READILY OPERABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
c. EGRESS DOOR H.W. (INCLUDING HANDLES, PULLS, LATCHES, LOCKS, ETC) SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF WRIST TO OPERATE.
d. EGRESS DOOR H.W. SHALL BE INSTALLED NO LOWER THAN 34" A.F.F. AND NO HIGHER THAN 38" A.F.F.
e. EGRESS DOORS SHALL NOT HAVE MANUALLY OPERATED FLUSH BOLTS OR SURFACE BOLTS.
f. EGRESS DOORS SHALL BE CAPABLE OF BEING UNLATCHED IN NO MORE THAN A SINGLE OPERATION.
g. OWNER SHALL WORK WITH CONTRACTOR'S DOOR HARDWARE SUPPLIER TO GENERATE A DOOR HARDWARE SCHEDULE. SECURITY ACCESS CONTROL MAY BE REQUIRED AT CERTAIN DOORS. ONCE CRITERIA IS SET, CONTRACTOR SHALL SUBMIT HARDWARE SCHEDULE FOR FINAL OWNER APPROVAL.
h. INCLUDES DEADBOLT AND SIGN READING "DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED.
j. INCLUDES EXIT HARDWARE ALWAYS LOCKED ON OUTSIDE, AND SECURITY MEASURES ABOVE.
k. PROVIDE DOUBLE GLASS PANE AT DOOR, ONE PANE SHALL BE LAMINATED.
m. OFFICE: PUSH-BUTTON LOCKING, PUSH-BUTTON LOCK OUTSIDE LEVER UNTIL IT IS UNLOCKED WITH A KEY OR BY TURNING INSIDE LEVER, INSIDE LEVER ALWAYS FREE FOR IMMEDIATE EGREES.

DOOR TYPE



DOOR (FRAME) TYPE



FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR		WALLS				CEILING		REMARKS
		MATERIAL AND FINISHES	BASE	N	S	E	W	MATERIAL AND FINISHES	HGT.	
101	COMPUTER LAB	F1	B1	W1	EXG	EXG	EXG	EXG/C1	± 11'-10"	-
102	LECTURE ROOM	F1	B1	W1	W1	EXG	EXG	EXG/C1	± 11'-10"	-

ROOM FINISH SCHEDULE KEY

FLOOR	BASE	WALL / WAINSCOT	CEILING
F1 - CARPET	B1 - 4" RUBBER BASE	EXG - EXISTING WALL TO BE PAINTED (EGGSHELL ENAMEL)	EXG - EXISTING CEILING
		W1 - WALL FINISH TO MATCH EXISTING AND PAINTED (EGGSHELL ENAMEL)	C1 - 2x4 LAY-IN CEILING TO MATCH EXISTING (REFER TO THE REFLECTED CEILING PLAN FOR LOCATIONS)

FINISH MATERIAL GENERAL NOTES

- PATCH EXISTING FLOORING AS REQUIRED.
- ALL INTERIOR FINISHES TO COMPLY WITH ALL STATE AND LOCAL BUILDING CODES.
- SAMPLES OF ALL FINISHES ARE REQUIRED TO BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.
- ALL WALLS SHALL BE PAINTED AND RECEIVE 1 COAT OF PRIMER AND 2 FINISH COATS OF PAINT.
- PAINT FINISHES AT THE CEILING SHALL BE FLAT.
- PAINT FINISHES AT WALLS SHALL BE SHERWIN WILLIAMS SUPERPAINT VELVET.

EXPIRES 12-31-23

REVISIONS
NO. DATE

CAMERA CLUB - TENANT IMPROVEMENT
DOOR TYPE/SCHEDULE, FINISH SCHEDULE, AND DETAILS

SEAVER FRANKS ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON, AZ 85712 / FAX 795-9431 / 795-4000

GREEN VALLEY RECREATION CENTER
921 WEST VIA RIO FUERTE
GREEN VALLEY, ARIZONA 85614

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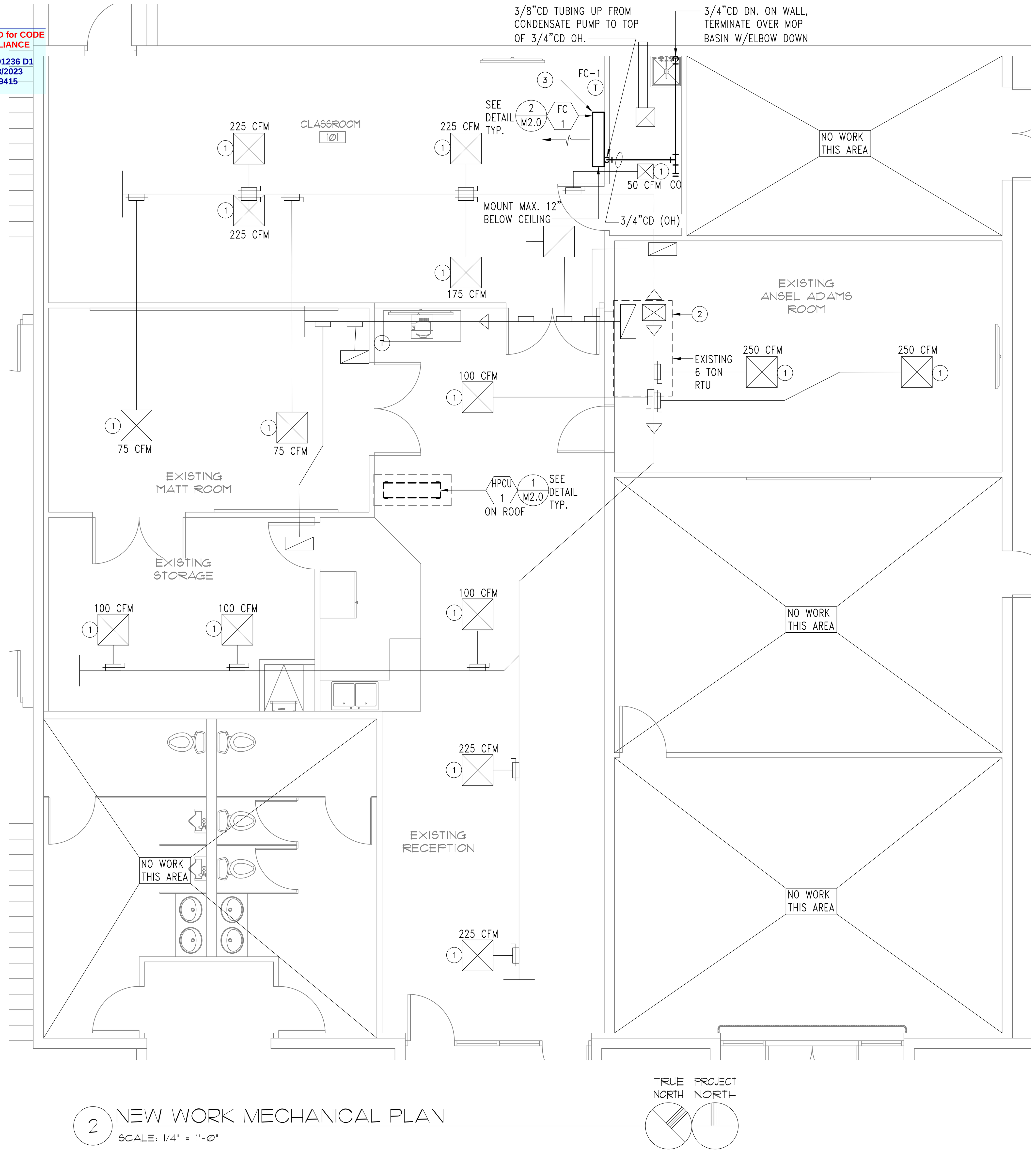
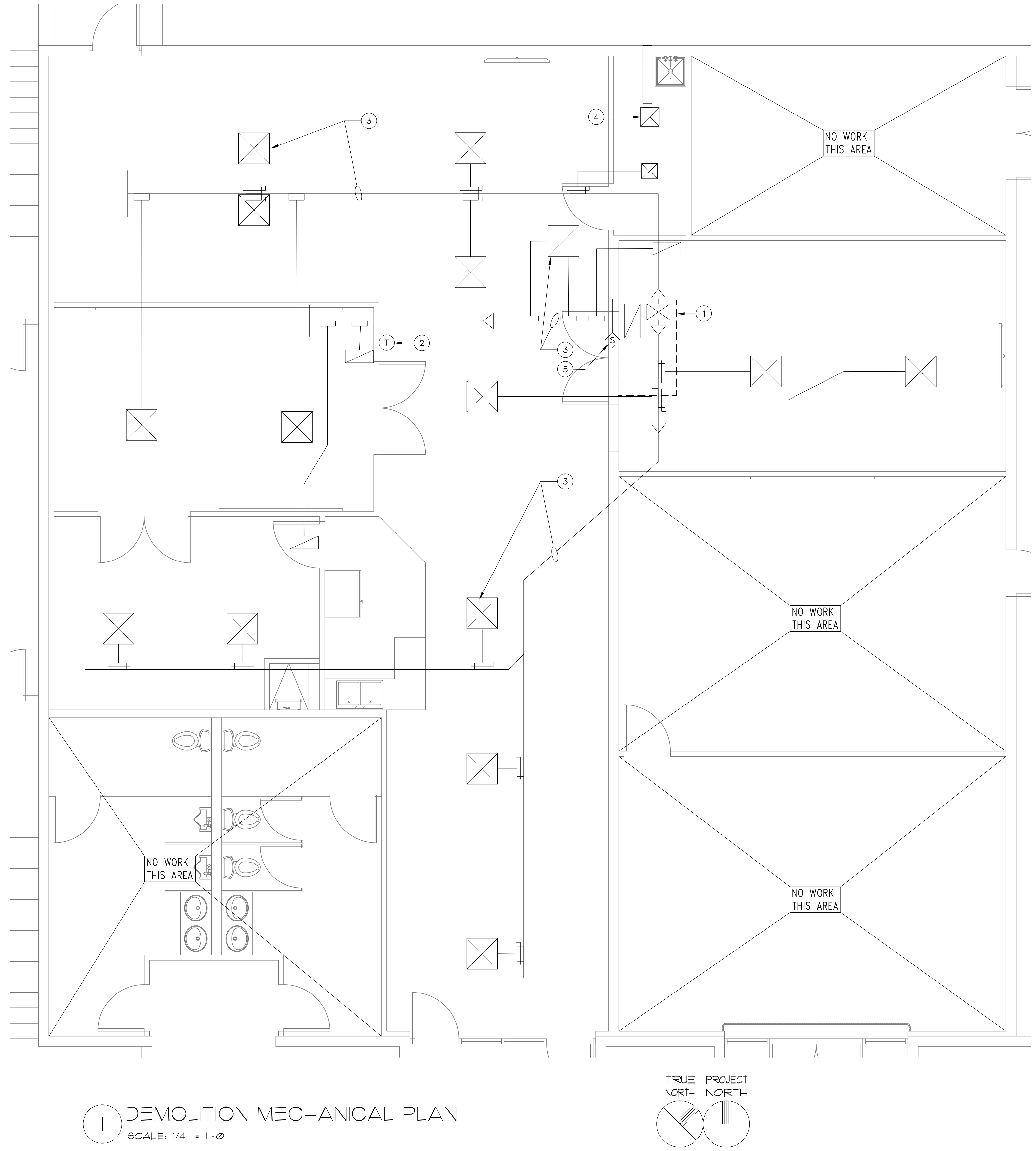


2 NEW WORK MECHANICAL PLAN

SCALE: 1/4" = 1'-0"



1 DEMOLITION MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

MECHANICAL NEW WORK PLAN-KEYNOTES

1. RE-BALANCE AIR DEVICE TO AIR FLOW SHOWN ON PLAN.
2. REBALANCE EXISTING 6 TON UNIT TO 2400 CFM AND 610 O.A.
3. NEW REFRIGERANT LINE SET DOWN FROM NEW FAN COIL FC-1.

MECHANICAL GENERAL NOTES

1. COORDINATE ALL MECHANICAL WORK WITH ALL OTHER TRADES. VERIFY ALL EXISTING CONDITIONS BEFORE THE START OF WORK.
2. PROVIDE ALL REQUIRED DEMOLITION OF EXISTING MECHANICAL EQUIPMENT, MATERIALS AND OTHER ITEMS WHICH ARE NOT TO BE REUSED IN NEW DESIGN. ALL ITEMS WHICH THE OWNER DOES NOT WISH TO SALVAGE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
3. COORDINATE EXACT LOCATION OF ALL AIR DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLAN.
4. ROUTE CONDENSATE DRAIN LINES AS INDICATED ON DRAWING. PROVIDE MINIMUM SLOPE OF 1/8" PER 1'-0".
5. SUPPORT HEAT PUMP CONDENSING UNITS ON PLATFORM. EXACT LOCATION SHALL INSURE ADEQUATE CLEARANCE FOR SERVICING AND FOR AIR CIRCULATION.
6. ROUTE REFRIGERANT PIPING BETWEEN FAN COIL UNIT AND HEAT PUMP CONDENSING UNIT CONCEALED IN FINISHED SPACES. SEAL ALL ROOF OR WALL PENETRATIONS WEATHERTIGHT. PROVIDE PVC PIPE SLEEVE FOR UNDERGROUND REFRIGERANT PIPING. REFRIGERANT PIPING SIZES SHALL BE FOR MANUFACTURER'S INSTALLATION INSTRUCTIONS (BASED ON THE ACTUAL LOCATIONS AND ELEVATIONS OF EQUIPMENT).
7. ALL LOW VOLTAGE CONTROL WIRING AND ITS INSTALLATION TO BE BY MECHANICAL CONTRACTOR.INSTALL PER ELECTRICAL SPECIFICATIONS. MOUNTING HEIGHT OF THERMOSTATS SHALL BE PER ADA REQUIREMENTS.
8. PROVIDE 3/4" WAFFLE STYLE VIBRATION ISOLATORS EQUAL TO MASON INDUSTRIES "SUPER W" AT ALL ROOF MOUNTED, MOTOR DRIVEN EQUIPMENT.
9. MECHANICAL CONTRACTOR SHALL REVIEW ALL ELECTRICAL DRAWINGS BEFORE PURCHASING EQUIPMENT TO INSURE THAT PROPER ELECTRICAL SERVICE IS TO BE PROVIDED FOR ALL NEW EQUIPMENT.

MECHANICAL DEMO PLAN-KEYNOTES

1. EXISTING ROOFTOP 6 TON UNIT
2. EXISTING T'STAT TO REMAIN
3. EXISTING DUCTWORK AND AIR DEVICES TO REMAIN IN PLACE, TYPICAL
4. EXISTING EXHAUST FAN TO REMAIN
5. EXISTING SMOKE DETECTOR

PRIOR TO START OF ANY DEMOLITION; MEASURE SUPPLY AND RETURN AIRFLOWS AT EXISTING CEILING DIFFUSERS AND RETURN GRILLES WITHIN AREA OF CONSTRUCTION. MEASURE ROOFTOP UNIT TOTAL SUPPLY AIR, OUTSIDE AIR, STATIC PRESSURE, FAN RPM, AND FAN MOTOR DATA. THIS DATA SHALL BE SUBMITTED FOR REVIEW AND USED FOR BALANCING AFTER NEW WORK IS COMPLETE.

CONTRACTOR TO REFURBISH ALL EXISTING EQUIPMENT BEING REBALANCED AND ENSURE IT IS IN GOOD WORKING ORDER AND REPORT ANY DEFICIENCIES. CLEAN COIL/CONDENSATE PAN AND PROVIDE NEW FILTERS

KC MECHANICAL ENGINEERING, L.L.C.
5447 East Fifth Street # 112
Tucson, Arizona 85711
520/327-7611
520/327-0432
Designers Mech: MG Plumb:
Project #: 22276

25035 KENNETH M. CAWTHORNE
Expires 6/30/2023

REVISIONS NO. DATE

CAMERA CLUB - TENANT IMPROVEMENT
MECHANICAL DEMOLITION AND NEW WORK PLANS AND NOTES

SEAVER FRANKS ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON AZ 85712 / FAX 795-9431 / 795-4000

GREEN VALLEY RECREATION CENTER
921 WEST VIA RIO FUERTE
GREEN VALLEY, ARIZONA 85614

ISSUE DATE 01-03-2023
PROJ. NO. 3704
DRG. SCALE AS NOTED

SHEET
M1.0

Drawing Name: K:\Projects\2022\22370\22370_MECHANICAL.dwg
Layout Name: M1.0
Plot Time: Jan 31, 2023 - 10:54am eros

Chvac - Full Commercial HVAC Loads Calculation Program	Elite Software Development, Inc.
KC Mechanical Engineering	Green Valley Rec Camera Club
Tucson, AZ 85711	[redacted]

[redacted] **Exist 6 Ton** [redacted]

Air Handler Description:	Exist 6 Ton Constant Volume - Sum of Peaks		
Sensible Heat Ratio:	0.82	--- This system occurs 1 time(s) in the building. ---	
Air System Peak Time:	2pm in September.		
Outdoor Conditions:	Clg: 105° DB, 69° WB, 58.81 grains, Htg: 28° DB		
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 75° DB		

Summer: Ventilation controls outside air, ----- Winter: Ventilation controls outside air.

Room Space sensible loss:	14,861 Btuh		
Infiltration sensible loss:	0 Btuh	0 CFM	
Outside Air sensible loss:	26,588 Btuh	575 CFM	
Supply Duct sensible loss:	782 Btuh		
Return Duct sensible loss:	0 Btuh		
Return Plenum sensible loss:	0 Btuh		
Total System sensible loss:			42,232 Btuh
Heating Supply Air: 15,643 / (.911 X 1.08 X 20) =		795 CFM	
Winter Vent Outside Air (72.3% of supply) =		575 CFM	
Room space sensible gain:	45,168 Btuh		
Infiltration sensible gain:	0 Btuh		
Draw-thru fan sensible gain:	0 Btuh		
Supply duct sensible gain:	2,748 Btuh		
Reserve sensible gain:	1,540 Btuh		
Total sensible gain on supply side of coil:			49,455 Btuh
Cooling Supply Air: 49,455 / (.911 X 1.1 X 18) =		2,742 CFM	
Summer Vent Outside Air (21.0% of supply) =		575 CFM	
Return duct sensible gain:	0 Btuh		
Return plenum sensible gain:	0 Btuh		
Outside air sensible gain:	17,286 Btuh	575 CFM	
Blow-thru fan sensible gain:	0 Btuh		
Total sensible gain on return side of coil:			17,286 Btuh
Total sensible gain on air handling system:			66,740 Btuh
Room space latent gain:	11,220 Btuh		
Infiltration latent gain:	0 Btuh		
Outside air latent gain:	-4,273 Btuh		
Total latent gain on air handling system:			6,947 Btuh
Total system sensible and latent gain:			73,687 Btuh

Check Figures

Total Air Handler Supply Air (based on a 18° TD):	2,742 CFM
Total Air Handler Vent. Air (20.97% of Supply):	575 CFM
Total Conditioned Air Space:	2,155 Sq.ft
Supply Air Per Unit Area:	1.2723 CFM/Sq.ft
Area Per Cooling Capacity:	350.9 Sq.ft/Ton
Cooling Capacity Per Area:	0.0028 Tons/Sq.ft
Heating Capacity Per Area:	19.60 Btuh/Sq.ft
Total Heating Required With Outside Air:	42,232 Btuh
Total Cooling Required With Outside Air:	6.14 Tons

[redacted]

COM*check* Software Version 4.1.1.0
Mechanical Compliance Certificate

Project Information

Energy Code:	2018 IECC
Project Title:	Green Valley Camera Club
Location:	Green Valley, Arizona
Climate Zone:	2b
Project Type:	Alteration

Construction Site:	Owner/Agent:	Designer/Contractor:
921 W. Via Rio Fuerte Tucson, AZ 85614		Seaver Franks Architects 2552 N. Alvernon Way Tucson, AZ 85712 520-795-4000

Mechanical Systems List

Quantity	System Type & Description
1	HVAC System 1 (Single Zone): Split System Heat Pump Heating Mode: Capacity = 22 kBtu/h, Proposed Efficiency = 8.20 HSPF, Required Efficiency = 8.20 HSPF Cooling Mode: Capacity = 24 kBtu/h, Proposed Efficiency = 21.00 SEER, Required Efficiency: 14.00 SEER Fan System: None

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COM*check* Version 4.1.1.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

[redacted]

Project Title: Green Valley Camera Club — Report date: 01/29/23

[redacted]

MECHANICAL GENERAL REQUIREMENTS

CODES: CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE FOLLOWING CODES: INTERNATIONAL BUILDING CODE (2018 EDITION), INTERNATIONAL MECHANICAL CODE (2018 EDITION), INTERNATIONAL PLUMBING CODE (2018 EDITION), INTERNATIONAL FUEL GAS CODE (2018 EDITION), INTERNATIONAL ENERGY CONSERVATION CODE (2018 EDITION) AND THE INTERNATIONAL FIRE CODE (2018 EDITION) AS AMENDED BY THE LOCAL GOVERNING AGENCY.

GENERAL: THE WORK COVERED BY THIS SPECIFICATION SHALL INCLUDE THE FURNISHING OF ALL MATERIALS, LABOR, TRANSPORTATION, TOOLS, PERMITS, FEES, INSPECTIONS, UTILITIES AND INCIDENTALS NECESSARY FOR THE COMPLETE INSTALLATION OF ALL WORK REQUIRED BY THE CONTRACT DRAWINGS.

DRAWINGS: THE DRAWINGS ARE DIAGRAMMATIC IN CHARACTER AND CANNOT SHOW EVERY CONNECTION IN DETAIL OR EVERY PIPE OR DUCT IN ITS EXACT LOCATION. THESE DETAILS ARE SUBJECT TO THE REQUIREMENTS OF ORDINANCES AND ALSO STRUCTURAL AND ARCHITECTURAL CONDITIONS. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE STRUCTURAL AND FINISH CONDITIONS AND SHALL COORDINATE WITH THE SEPARATE TRADES IN ORDER TO AVOID INTERFERENCE BETWEEN THE VARIOUS PHASES OF WORK. WORK SHALL BE LAID OUT SO THAT IT WILL BE CONCEALED IN FURRED CHASES OR ABOVE CEILINGS, ETC., IN FINISHED PORTIONS OF THE BUILDING, UNLESS SPECIFICALLY NOTED OR INDICATED TO BE EXPOSED. WORK SHALL BE INSTALLED TO AVOID CRIPPLING OF STRUCTURAL MEMBERS. ALL WORK SHALL BE RUN PARALLEL OR PERPENDICULAR TO THE LINES OF THE BUILDING UNLESS OTHERWISE NOTED. THE APPROXIMATE LOCATION OF EACH ITEM IS INDICATED ON THE DRAWINGS. THESE DRAWINGS ARE NOT INTENDED TO GIVE COMPLETE AND EXACT DETAILS IN REGARD TO LOCATION. EXACT LOCATIONS ARE TO BE DETERMINED BY ACTUAL MEASUREMENTS OF THE BUILDING.

EQUIPMENT INSTALLATION: PROVIDE AND INSTALL UNIONS AT PROPER POINTS TO PERMIT REMOVAL OF PIPE AND EQUIPMENT WITHOUT DAMAGE TO OTHER PARTS OF THE SYSTEM. ALL EQUIPMENT SHALL BE INSTALLED IN A MANNER TO PERMIT ACCESS TO PARTS REQUIRING SERVICE WITHOUT DISASSEMBLY OF OTHER EQUIPMENT.

EXCAVATION AND BACKFILL: THE CONTRACTOR SHALL PROVIDE ALL EXCAVATION REQUIRED FOR THE INSTALLATION OF THE WORK. CONTRACTOR SHALL BACKFILL, COMPACT AND REPAIR CONCRETE OR PAVING TO MATCH EXISTING FINISH AS CLOSELY AS POSSIBLE.

EXISTING FACILITIES: LOSS OR DAMAGE TO EXISTING FACILITY CAUSED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO THE OWNER'S SATISFACTION AT NO COST TO THE OWNER. THE CONTRACTOR SHALL COORDINATE ALL WORK REQUIRED IN EXISTING AREAS WITH THE OWNER AND SHALL ARRANGE FOR ALL TEMPORARY UTILITY SERVICES, PROTECTION OF THE FACILITY AND ITS CONTENTS, BARRICADES, SAFETY DEVICES, ETC., REQUIRED TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL REMOVE AND REINSTALL EXISTING CONSTRUCTION IF REQUIRED TO ACCOMPLISH THE WORK. NOTIFY THE OWNER AT LEAST TWO DAYS IN ADVANCE OF ALL REQUIRED SERVICE OUTAGES.

SUBSTITUTIONS: EQUIPMENT OF EQUAL QUALITY TO THAT SPECIFIED MAY BE SUBSTITUTED PROVIDED IT MEETS OR EXCEEDS THE CAPACITY SCHEDULED, IS OF SIMILAR CONSTRUCTION, AND WILL FIT IN THE SPACE ALLOTTED WITH AMPLE SERVICE CLEARANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION WITH ALL OTHER TRADES (SUCH AS ELECTRICAL AND STRUCTURAL) OF ANY PRODUCT REQUIRING A CHANGE IN THE WORK OF THAT TRADE. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ANY ADDITIONAL COSTS ASSOCIATED WITH SUCH A CHANGE. MATERIALS OF CONSTRUCTION SHALL BE AS SPECIFIED.

SUPPORTS, ANCHORS AND SLEEVES: SUPPORT HORIZONTAL PIPING WITH STEEL CLEVIS HANGERS AND VERTICAL PIPING WITH RISER CLAMPS. PROVIDE COPPER PLATED HANGERS AND CLAMPS FOR COPPER PIPING OR WRAP THE COPPER PIPE AT HANGERS WITH TWO LAYERS OF PVC TAPE OR EQUIVALENT. HANGER SPACING AND ROD SIZE SHALL BE IN ACCORDANCE WITH THE LOCAL CODE AND/OR ASHRAE STANDARDS. SUPPORT DUCTWORK IN ACCORDANCE WITH SMACNA STANDARDS. DUCTWORK SHALL BE SUPPORTED INDEPENDENT FROM OTHER DUCTWORK AND EQUIPMENT. PROVIDE MINIMUM 18 GAUGE GALVANIZED STEEL SLEEVES FOR DUCTWORK, FLASHINGS, AND ESCUTCHEONS. SEAL ALL WALL, ROOF, AND FLOOR PENETRATIONS. THROUGH PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE PER MANUFACTURER'S UL LISTED DETAILS AND INSTRUCTIONS, EQUAL OF HILTI. PIPING SHALL BE PROVIDED WITH STANDARD WEIGHT STEEL PIPE OF SIZE TO PASS PIPE AND INSULATION. PIPE SLEEVES ARE NOT REQUIRED IF PENETRATIONS ARE CORE DRILLED. PIPING SHALL NOT BE SUPPORTED FROM PENETRATION.

SHOP DRAWINGS: PROVIDE SHOP DRAWINGS AND MANUFACTURER'S DATA ON ALL PLUMBING FIXTURES AND TRIM, EQUIPMENT, MECHANICAL DEVICES AND FIRE PROTECTION SYSTEM FOR APPROVAL.

WARRANTY: PROVIDE TWO YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE ON ALL LABOR AND MATERIALS PROVIDED UNDER THIS CONTRACT. PROVIDE AN ADDITIONAL FIVE YEAR WARRANTY ON THE MOTOR_COMPRESSOR UNITS FOR ALL AIR CONDITIONING OR HEAT PUMP EQUIPMENT AND WATER HEATERS.

OPERATION AND MAINTENANCE MANUAL: PROVIDE A COMPLETE INDEXED, BOUND MANUAL OF ALL EQUIPMENT REQUIRING MAINTENANCE.

TRAINING: CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO HOURS TRAINING TO THE OWNER ON THE OPERATION OF ALL EQUIPMENT.

CLEAN_UP: CONTRACTOR SHALL MAINTAIN PREMISES IN CLEAN CONDITION AT END OF EACH DAY AND THOROUGHLY CLEAN_UP AT END OF CONSTRUCTION.

FIRE PROTECTION:

GENERAL: THE FIRE PROTECTION SYSTEM SHALL BE A WET PIPE AUTOMATIC SPRINKLER SYSTEM.

QUALITY ASSURANCE: DESIGN INSTALLATION SHALL MEET THE REQUIREMENTS OF NFPA 13, INSURANCE UNDERWRITERS, THE REQUIREMENTS SPECIFIED HEREINAFTER AND THE LOCAL FIRE CODE. THE SYSTEM SHALL BE DESIGNED AND INSTALLED BY A FIRE PROTECTION CONTRACTOR LICENSED IN THE STATE OF ARIZONA AND EXPERIENCED IN THIS TYPE OF SPRINKLER SYSTEM DESIGN AND INSTALLATION WITH A MINIMUM OF FIVE YEARS EXPERIENCE. EVIDENCE TO SUPPORT THE ABOVE REQUIREMENTS MAY BE REQUESTED, AND ANY PROPOSED INSTALLER WHO CANNOT SHOW SUITABLE EXPERIENCE WILL BE REJECTED.

SUBMITTALS: SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH THE GENERAL REQUIREMENT.

SHOP DRAWINGS: SHOP DRAWINGS SHALL BE SUBMITTED PRIOR TO FABRICATION TO THE ARCHITECT FOR REVIEW AND APPROVAL AND/OR ACCEPTANCE.

THE SHOP DRAWINGS SHALL INCLUDE DETAIL PLANS OF SPRINKLER SYSTEMS INCLUDING CALCULATIONS, SECTIONS AND PLOT PLAN INDICATING THE LOCATIONS OF UNDERGROUND SUPPLY CONNECTIONS, CONTROL VALVES, FIRE DEPARTMENT CONNECTIONS AND OTHER EQUIPMENT TO BE USED.

ACCEPTABLE MANUFACTURERS: PRODUCTS MANUFACTURED BY AUTOMATIC SPRINKLER, VICTAULIC, GRINNELL, VIKING, CENTRAL, OR APPROVED EQUAL MEETING THESE SPECIFICATIONS ARE ACCEPTABLE.

ALL MATERIALS AND EQUIPMENT USED IN THE INSTALLATION OF THE FIRE PROTECTION SYSTEM SHALL BE LISTED AS APPROVED BY THE UNDERWRITERS LABORATORIES, INC., LIST OF INSPECTED FIRE PROTECTION EQUIPMENT AND MATERIALS, AND THE FACTORY MUTUAL TESTING LABORATORIES LIST OF APPROVED EQUIPMENT. FIRE PROTECTION DEVICES AND DEVICES INVOLVING FIRE HAZARD SHALL BE THE LATEST DESIGN OF THE MANUFACTURER.

SPRINKLER PIPING AND PIPE FITTING:

PIPING: PIPING, FITTINGS, JOINTS, AND INSTALLATION SHALL BE AS SPECIFIED IN NFPA 13.

SPRINKLER HEADS: UNLESS OTHERWISE SPECIFIED OR INDICATED ON THE DRAWINGS, SPRINKLER HEADS SHALL BE UPRIGHT OR PENDANT, QUICK RESPONSE HEADS EXCEPT THAT SPRINKLER HEADS TO BE INSTALLED IN THE VICINITY OF HEATING EQUIPMENT AND LIGHTS, SHALL BE OF THE TEMPERATURE RATINGS REQUIRED FOR SUCH LOCATIONS BY NFPA 13.

INSTALLATION: THE SPRINKLER SYSTEM SHALL BE DESIGNED AND SIZED BASED ON NFPA 13 REQUIREMENTS.

ACTUAL NUMBER OF SPRINKLER HEADS, HEAD SPACING, PIPE ROUTING, COVERAGE, ETC., AS REQUIRED BY THE APPLICABLE AUTHORITIES AND/OR ARCHITECTURAL AND STRUCTURAL CONDITIONS, SHALL BE THE CONTRACTORS RESPONSIBILITY.

HEADS SHALL BE LOCATED IN A SYMMETRICAL PATTERN RELATED TO CEILING FEATURES SUCH AS BEAMS, LIGHT FIXTURES, DIFFUSERS, ETC., AND WHERE APPLICABLE, HEADS SHALL BE LOCATED SYMMETRICAL WITH THE GRID CEILING. HEADS SHALL BE ARRANGED IN A MANNER ACCEPTABLE TO THE ARCHITECT.

THE CONTRACTOR SHALL PROVIDE SPARE HEADS EQUAL TO ONE PERCENT OF THE TOTAL NUMBER OF HEADS INSTALLED UNDER THE CONTRACT, BUT NOT LESS THAN 10.

TESTS: UPON COMPLETION AND PRIOR TO ACCEPTANCE OF THE INSTALLATION, THE CONTRACTOR SHALL SUBJECT THE SYSTEM TO THE TESTS REQUIRED BY THE NFPA 13 AND THE LOCAL FIRE DEPARTMENT.

WET PIPE SPRINKLER SYSTEM

THE BUILDING CONTAINS AN EXISTING WET PIPE SPRINKLER SYSTEM. THE CONTRACTOR SHALL MODIFY THIS SYSTEM TO CONFORM WITH THE NEW ARCHITECTURAL FLOOR PLAN. LOCATION OF SPRINKLER HEADS SHALL BE COORDINATED WITH ARCHITECTURAL REFLECTIVE CEILING PLAN (SPECIFICALLY THE LOCATION OF ALL LIGHT FIXTURES AND CEILING AIR DEVICES). THE SYSTEM PROVIDED SHALL COMPLY WITH ALL REQUIREMENTS OF NFPA, LOCAL AND FEDERAL CODES WHICH GOVERN SUCH WORK AND THE SPECIFICATION NOTES ON THESE DRAWINGS. CONTRACTOR SHALL SUBMIT DETAILED CALCULATIONS AND SHOP DRAWINGS FOR APPROVAL BY THE GOVERNING AGENCY.

STANDARD FOR CONSTRUCTION: NFPA 13

IDENTIFICATION OF HAZARD:
LIGHT HAZARD, ORDINARY HAZARD GROUP II (LABORATORY AREA)

DESIGN DENSITY: 0.10GPM/S.F. OVER 1500 S.F. & 0.15GPM/S.F. OVER 1500 S.F.

NOTE: 1. FIRE PROTECTION CONTRACTOR SHALL CONDUCT FLOW TEST PRIOR TO THE START OF WORK.

HEATING, VENTILATING AND AIR CONDITIONING:

EQUIPMENT: EQUIPMENT CAPACITIES AND CHARACTERISTICS SHALL BE AS SCHEDULED ON THE DRAWINGS. INSTALL AS INDICATED ON DRAWINGS AND AS PER MANUFACTURER'S PRINTED INSTRUCTIONS. DUCTLESS SPLIT EQUIPMENT MANUFACTURED BY CARRIER (TOSHIBA), TRANE, LENNOX, DAIKIN, LG, MITSUBISHI, SANYO, FUJITSU, OR TOSHIBA IS ACCEPTABLE.

EQUIPMENT IDENTIFICATION: CONTRACTOR SHALL PROVIDE EQUIPMENT TAGS ON ALL MAJOR EQUIPMENT, I.E., AIR CONDITIONERS, EXHAUST FANS, ETC. TAGS SHALL BE BLACK WITH A MINIMUM OF 1" HIGH WHITE LETTERS PERMANENTLY AFFIXED TO THE UNITS. HAND WRITTEN TAGS ARE NOT ACCEPTABLE.

DUCTWORK:

FLEXIBLE DUCTS: FLEXIBLE DUCTS SHALL BE INSULATED (MINIMUM 1" THICK, WITH MINIMUM THERMAL RESISTANCE OF R4.2) AND HAVE A FOIL SCRIM VAPOR BARRIER. FLEXIBLE DUCTWORK SHALL BE LISTED AS UL 181 CLASS 1 FLEXIBLE AIR DUCT AND SHALL COMPLY WITH NFPA STANDARDS. PROVIDE FLEXIBLE DUCTWORK AS MANUFACTURED BY MANVILLE, OWEN CORNING, THERMOFLEX, OR EQUIVALENT.

FILTERS: FILTERS SHALL BE 2" THICK PLEATED TYPE, DISPOSABLE, MEDIUM EFFICIENCY, MERV 8, CAMFIL FARR 30/30 OR EQUIVALENT. FILTERS SHALL BE IN PLACE WHENEVER SYSTEMS ARE IN OPERATION. CONTRACTOR SHALL PROVIDE AND INSTALL AN ADDITIONAL SET OF FILTERS FOR EACH UNIT AT THE COMPLETION OF PROJECT.

REFRIGERANT PIPING: REFRIGERANT PIPING SHALL BE cleaned and capped TYPE ACR or TYPE "L" HARD TEMPER COPPER TUBING with wrought copper fittings. joints shall be silver brazed with internal continuous nitrogen purge. INSULATE ALL REFRIGERANT SUCTION PIPING 1-1/2" and smaller WITH 1/2" THICK ARMSTRONG "ARMAFLEX" INSULATION OR EQUAL. FOR DUCTLESS SPLIT AND VRF SYSTEMS, INSULATE BOTH SUCTION AND LIQUID LINES WITH 1/2" THICK ARMAFLEX OR PER MANUFACTURER MINIMUM REQUIREMENTS. for kitchen equipment suction lines 1" and larger, provide 1" thick insulation. ARMAFLEX EXPOSED TO WEATHER SHALL BE COATED WITH TWO COATS OF ARMAFLEX UV PROTECTIVE COATING OR SHALL BE PROVIDED WITH A 0.16" THICK CORRUGATED ALUMINUM JACKET. ALL JOINTS AND SEAMS IN ALUMINUM JACKETING SHALL BE SEALED.

TESTING AND BALANCING: AIR SYSTEMS SHALL BE BALANCED BY CERTIFIED TESTING & BALANCING CONTRACTOR IN ACCORDANCE WITH AABC STANDARDS AND METHODS. SUBMIT AIR BALANCE REPORT ON AABC STANDARD FORMS FOR APPROVAL.

CONDENSATE DRAIN PIPING: CONDENSATE DRAIN PIPING SHALL BE TYPE M, HARD DRAWN COPPER WITH WROUGHT COPPER FITTINGS. PROVIDE DIELECTRIC UNION, TRAP AND OPEN BREATHER TEE ON DISCHARGE SIDE OF TRAP AT THE CONNECTION TO EACH UNIT. INSULATE ALL CONDENSATE DRAIN LINES ABOVE CEILINGS AND IN STUD SPACES WITH 1/2" THICK ARMSTRONG "ARMAFLEX" OR EQUAL.

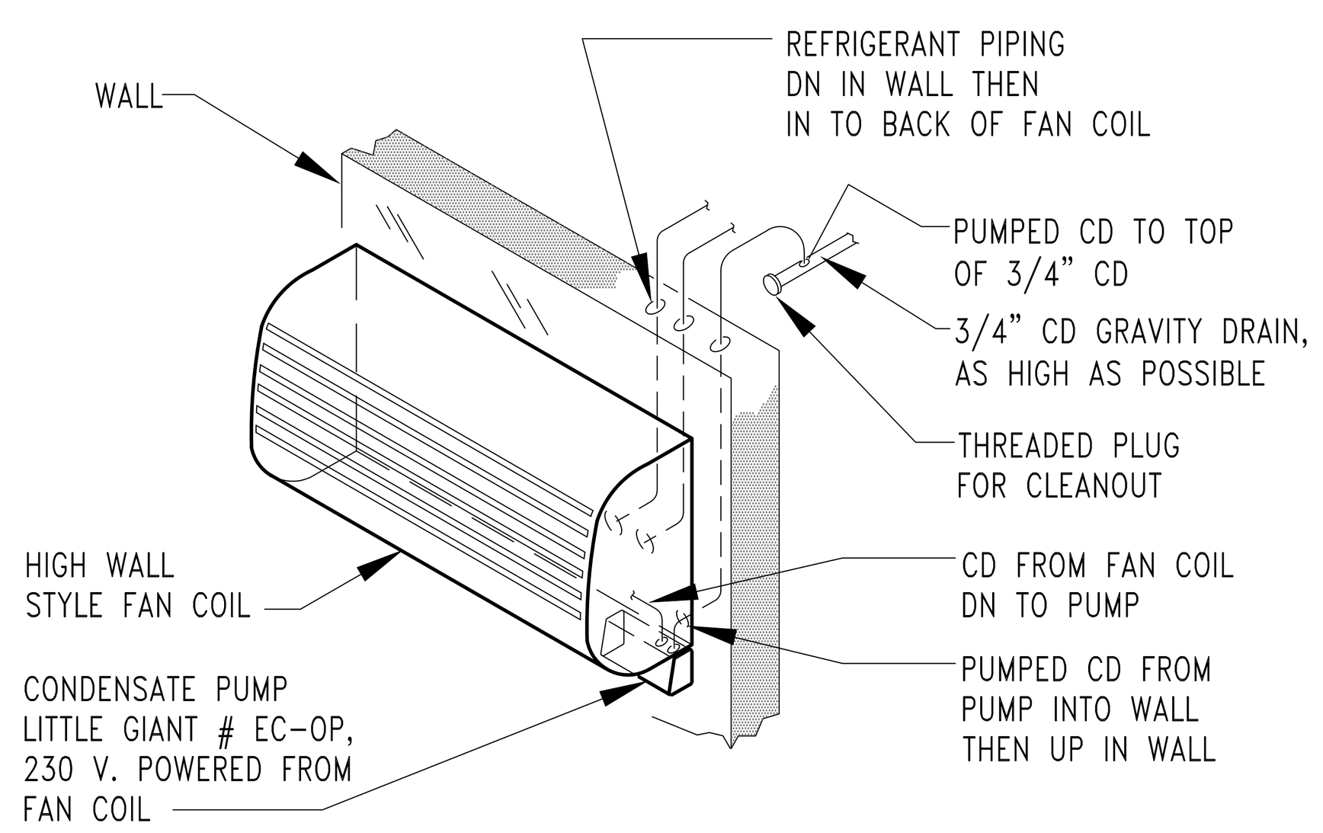
DUCTLESS FAN COIL UNIT SCHEDULE	
MARK	FC-1
MATCHING CONDENSING UNIT MARK	HPCU-1
MINIMUM TOTAL COOING CAPACITY (MBH)	24
ENTERING AIR TEMPERATURE (DEG DB/WB)	75/63
TOTAL SUPPLY AIR (CFM LOW-HIGH)	570-700
DRIVE TYPE	DIRECT
VOLTS/PHASE/HZ	230/1/60
MOTOR FLA	0.36
UNIT MCA	1
MAxIMUM OPERATING WEIGHT (LBS.)	55
REFERENCE	MITSUBISHI TPKA-24
NOTES	1 THRU 5

1. SCHEDULE CAPACITY SHALL BE FOR 2500 FT. ELEVATION.
2. PROVIDE ALL NECESSARY INTERCONNECTING PIPING (& REFRIGERANT ACCESSORIES), AND CONTROL WIRING BETWEEN FAN COIL UNIT & MATCHING CONDENSING UNIT.
3. FAN COIL UNIT SHALL HAVE SINGLE POINT POWER CONNECTION.
4. PROVIDE CONDENSATE PUMP EQUAL TO LITTLE GIANT #EC-OP,230V POWERED FROM FAN COIL.
5. PROVIDE WIRED WALL MOUNTED CONTROLLER.

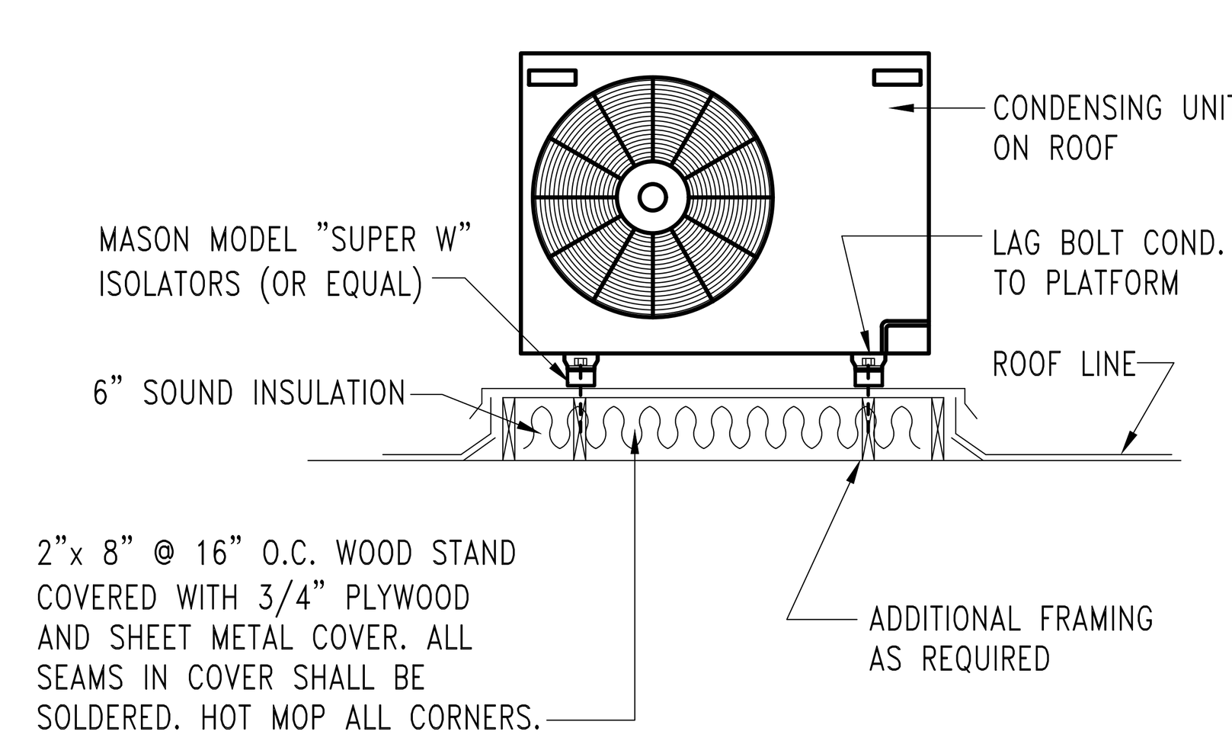
OUTDOOR AIR CALCULATION													
BUILDING UNIT	ROOM NUM.	ROOM NAME	ZONE FLOOR AREA, Az (SQ.FT.)	CODE	OCCUPANCY CATEGORY, Ra, Rp	ZONE POPULATION Pz	ZONE AIR DISTRIBUTION EFFECTIVENESS, Ez	ZONE SUPPLY AIR FLOW Vpz (CFM)	SYSTEM POPULATION Ps	OUTDOOR AIR INTAKE Vot (CFM)	UNIT (WC OR URINAL) UNIT	REQUIRED EXHAUST VENTILATION (CFM)	NOTES
EXIST.	101	CLASSROOM	570	19	LECTURE CLASSROOM	33.7		850				0	
6 TON		EXIST STORAGE	60	50	STORAGE ROOMS	0.1		50				0	
		EXIST MATT STORAGE	270	50	STORAGE ROOMS	0.5		150				0	
		EXIST STORAGE	215	50	STORAGE ROOMS	0.3		200				0	
		ANSAL ADAMS RM	370	51	OFFICE SPACE	1.9		500				0	
		EXIST ENTRY LOBBY	730	49	ENTRY LOBBIES	7.3		650				0	
			2,215			43.8	CSCR	2,400	44	574		0	

CONDENSING UNIT SCHEDULE	
MARK	HPCU-1
MATCHING FAN COIL UNIT MARK	FC-1
COOLING AMBIENT TEMPERATURE (DEG. DB)	110
MINIMUM SEASONAL ENERGY EFFICIENCY RATIO (SEER)	21.4
UNIT MCA	19
UNIT MOCP	26
VOLTAGE	230/1/60
MAXIMUM OPERATING WEIGHT (LBS.)	180
REFERENCE	MITSUBISHI TRUZ-24
NOTES	1, 2 ,3, 4

1. CAPACITY OF UNIT SHALL BE AS SCHEDULED FOR MATCHING FAN COIL UNIT.
2. PROVIDE ALL FEATURES STANDARD TO THE UNIT SCHEDULED INCLUDING LOW VOLTAGE CONTROL POWER TRANSFORMER, PROGRAMMABLE WIRED / THERMOSTAT, LOW AMBIENT CONTROL TO 0 DEG. F., SINGLE POINT POWER CONNECTION WITH INTERCONNECTING POWER AND CONTROL WIRING FROM OUTDOOR UNIT TO INDOOR UNIT.
3. PROVIDE LINE LONG SET KIT CAPABILITY.
4. ALL ROOF PENETRATIONS THRU ROOF PENETRATION HOUSING. REFER TO ARCHITECTURAL DWGS.



WALL MOUNT FAN COIL DETAIL (2/M2.0)
NO SCALE



CONDENSING UNIT PLATFORM DETAIL (1/M2.0)
NO SCALE

KC MECHANICAL ENGINEERING, L.L.C.
5447 East Fifth Street # 112, Tucson, Arizona 85711
520/327-7611, 520/327-0432
Designers Mech: MG Plumb: — Project #: 22276

25035 KENNETH M. CAWTHORNE — Expires 6/30/2023

SEAVER FRANKS ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON, AZ 85712 / FAX 795-9433 / 795-4000

REVISIONS — NO. — DATE

CAMERA CLUB - TENANT IMPROVEMENT
DIVISION 15 - SPECIFICATIONS, DETAILS, SCHEDULES AND CALCS.

GREEN VALLEY RECREATION CENTER
921 WEST VIA RIO FUERTE
GREEN VALLEY, ARIZONA 85614

ISSUE DATE 01-03-2023
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DRG. SCALE AS NOTED

SHEET
M2.0

REVIEWED for CODE COMPLIANCE
P23BP01236 D1
02/28/2023
WS9415

GENERAL NOTES:

ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH 2017 (OR LATEST ADOPTED) NATIONAL ELECTRICAL CODES AND ALL APPLICABLE LOCAL CODES, ORDINANCES AND TOWN OF GREEN VALLEY AMENDMENTS TO N.E.C.

ALL WIRING SHALL BE COPPER UNLESS OTHERWISE NOTED OTHERWISE. INSULATION SHALL BE TYPE XHHW OR THHN/THWN. MINIMUM CONDUCTOR SIZE IS #12 AWG. LARGER CONDUCTORS TO BE USED WHEN INDICATED. #10 AWG. NEUTRAL CONDUCTOR WHEN COMMON WITH 2 OR 3 (208Y/120) VOLT CIRCUITS.

PROVIDE BOND WIRE IN ALL RACEWAYS, SIZED PER N.E.C. ART. #250.

INSTALL ALL WIRING IN APPROVED METALLIC RACEWAY. WIRING METHODS (AC, MC, NM, SE, UF OR SIMILAR CABLES) ARE NOT APPROVED.

ALL PENETRATIONS OF FIRE RESISTIVE FLOORS OR SHAFT WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DETAILS THAT CONFORM TO UNDERWRITERS LABORATORY LISTINGS FOR THROUGH PENETRATIONS FIRESTOP SYSTEMS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING DETAILS WHICH SHOW COMPLETE CONFORMANCE TO THE U.L. LISTING TO THE INSPECTORS. THE DRAWINGS SHALL BE SPECIFIC FOR EACH PENETRATION WITH ALL VARIABLES DEFINED.

CONTRACTOR IS TO VERIFY CONDITION OF EXISTING INSTALLATIONS BY FIELD INSPECTION. CONTRACTOR IS TO PROVIDE NEW WIRE, CONDUIT, AND BOXES AS REQUIRED WITH NO ADDITIONAL COST.

CONTRACTOR IS TO COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATIONS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN.

ALL GENERAL USE RECEPTACLES MOUNTED WITHIN 6' OF A BASIN OR SINK SHALL BE G.F.C.I.

ALL RECEPTACLES, LIGHTING AND DATA/TELEPHONE COVER PLATE TYPES, COLORS AND FINISHES SHALL MATCH EXISTING. ALL WIRING DEVICES SHALL BE COMMERCIAL SPECIFICATION GRADE.

CONTRACTOR IS TO PROVIDE BOND WIRE IN ALL RACEWAYS, SIZED PER N.E.C. ART. #250.

CONTRACTOR IS TO VERIFY EXACT LOCATIONS, MOUNTING HEIGHTS AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PROVIDED BY OTHERS PRIOR TO ROUGH-IN. CONTRACTOR IS TO PROVIDE DISCONNECT SWITCHES AND TRANSFORMERS AS REQUIRED, AND FINAL CONNECTIONS TO EQUIPMENT PER OWNER.

CONTRACTOR IS TO PROVIDE AND INSTALL ADDITIONAL EXIT SIGNS, EMERGENCY LIGHTS AND NIGHT LIGHTS IF REQUIRED BY GOVERNING INSPECTOR. ALL LIGHTING FIXTURES TO BE INDEPENDENT LABORATORY LISTED.

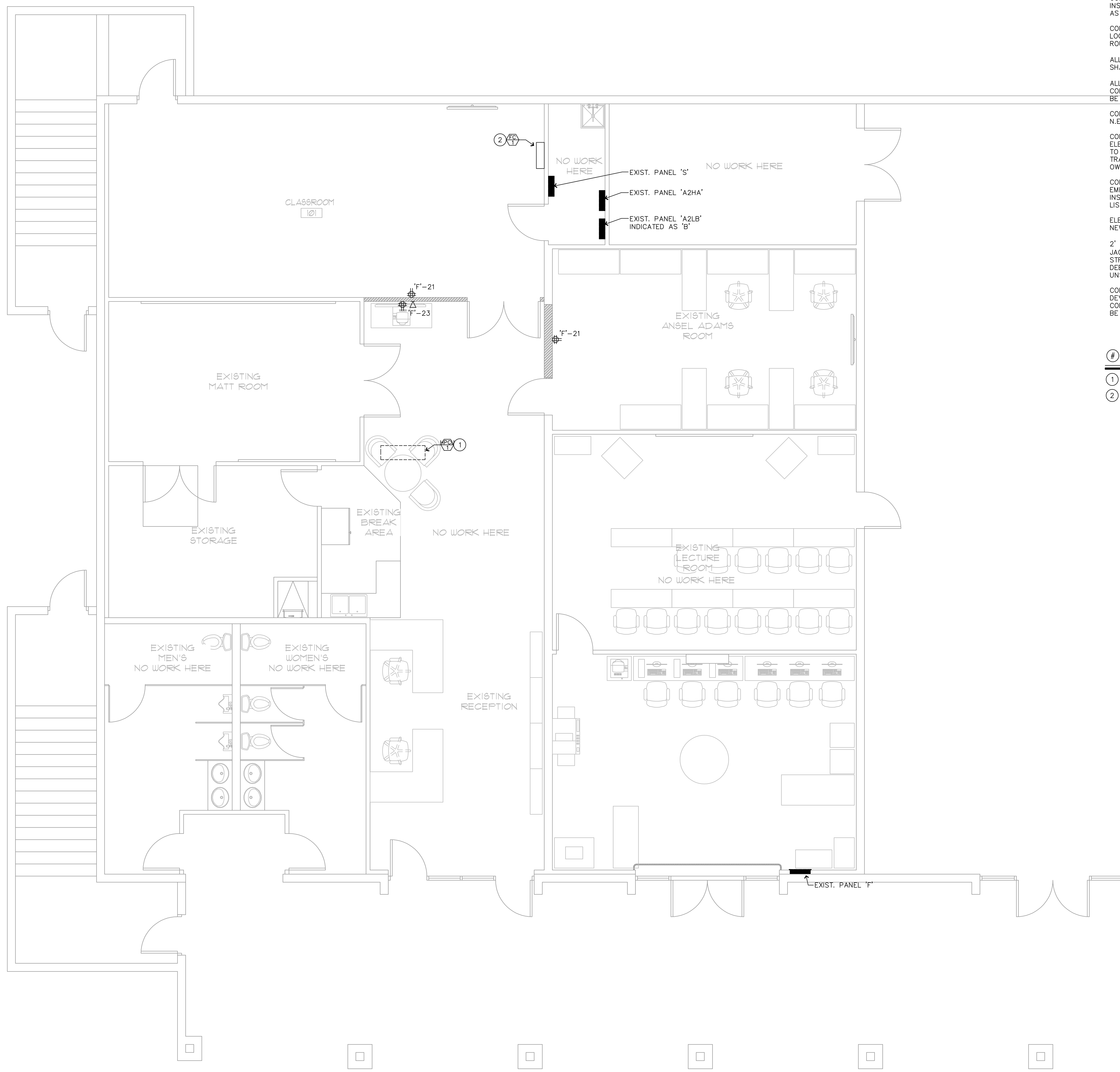
ELECTRICAL CONTRACTOR SHALL PROPERLY SUPPORT ALL EXISTING AND NEW CONDUIT FROM NEW SUPPORTS PER NEC ART. 300-11.

2' X 4' FIXTURES SHALL BE SUPPORTED BY GALVANIZED CADMIUM PLATED JACK CHAINS AND SAFETY "S" HOOKS ATTACHED TO THE BUILDING STRUCTURE. LEAVE FIXTURES CLEAN OF DIRT, DUST, GREASE SPOTS, DEBRIS. ALL GLASS, PLASTIC AND OTHER COMPONENTS ARE TO BE UNSCRATCHED AND UNBROKEN PRIOR TO ACCEPTANCE.

CONTRACTOR MAY REUSE THE EXISTING CONDUIT, BRANCH CIRCUITS, DEVICES AND BACK BOXES TO THE EXTENT POSSIBLE. ALL REUSED CONDUCTORS SHALL MATCH DESIGNED CONDUCTOR SIZES OR THEY SHALL BE REPLACED.

(#) KEYED NOTES:

1. EXISTING HEAT PUMP UNIT TO REMAIN "AS-IS".
2. NEW FAN COIL UNIT TO TIE INTO EXISTING HPCU-1. NO NEW LOAD ADDED TO PANEL.



1 POWER FLOOR PLAN
SCALE: 1/4" = 1'-0"

TRUE NORTH PROJECT NORTH

REVISIONS
NO. DATE

CAMERA CLUB - TENANT IMPROVEMENT
ELECTRICAL POWER PLAN

SEAVER FRANKS ARCHITECTS INC AIA

GREEN VALLEY RECREATION CENTER
921 WEST VIA RIO FUERTE
GREEN VALLEY, ARIZONA 85614

ISSUE DATE 11-04-2022
PROJ. NO. 3704
DRG. SCALE AS NOTED

Job No. 22061

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5551 White Mountain Road, #2-538, Show Low, AZ 85901

SHEET
E1.0

LOAD CALCULATION BASED FROM ENGINEERED DRAWINGS DATED 10/2020:

CONNECTED LOADS EXISTING PANEL 'DP-ALT':

(E) PANEL 'A1LA'	=	93.0 AMPS
(E) PANEL 'F1LA'	=	120.0 AMPS
(E) PANEL 'F1LB'	=	77.0 AMPS
(E) PANEL 'F1LC'	=	102.0 AMPS
(E) PANEL 'POOL'	=	36.0 AMPS
(E) PANEL 'S1LA'	=	123.0 AMPS
(E) PANEL 'F' (INCLUDING NEW LOAD ADDED)	=	84.0 AMPS
TOTAL LOAD ON EXISTING PANEL 'DP-ALT'	=	635.0 AMPS
635.0A X (208V X 1.73)	=	228.6 KVA
228.6 KVA / (480V X 1.73)	=	275.1 AMPS

CONNECTED LOADS EXISTING SES:

(E) PANEL 'ADF'	=	325.0 AMPS
(E) PANEL 'S1H1'	=	305.0 AMPS
(E) TRANSFORMER 'T-1' (225 KVA – INCLUDING PANEL 'F')	=	275.1 AMPS
(E) PANEL 'F1H1'	=	245.0 AMPS
TOTAL LOAD ON EXISTING SES	=	1150.1 AMPS

EXISTING FULLY RATED PANEL

PANEL F | 100 AMP | 120/208V., 3ø, 4W | MAIN MLO | NEMA 1 | SURF MTG
LOCATION SEE PLAN | TYPE SEE C.B. NOTE | BREAKER RATING 10,000 AIC

	USE/AREA SERVED	CB	No	LOAD A	LOAD B	LOAD C	No	CB	USE/AREA SERVED	
○	POTTER'S WHEEL 1	20/1	1	1800 / 540			2	20/1	REC – LECTURE RM. #102	○
○	POTTER'S WHEEL 2	20/1	3		1800 / 360		4	20/1	REC–COMPUTER RM. #101	○
○	POTTER'S WHEEL 3	20/1	5			1800 / 360	6	20/1	REC–COMPUTER RM. #101	○
○	POTTER'S WHEEL 4	20/1	7	1800 / 1200			8	20/1	REC–SCAN'R. TABLE RM.#101	○
○	POTTER'S WHEEL 5	20/1	9		1800 / 360		10	20/1	REC–MAINTENANCE RM#101	○
○	DEDICATED CIRCUIT	20/1	11			1800 / 200	12	20/1	REC – MONITOR RM#101	○
	SPARE	20/1	13	– / 1144			14	30/2	HPCU-1 /FCU-1	○
	SPARE	20/1	15		– / 1144		16		.	
○	REC–COMPUTER ACCESS PT.	20/1	17			300 / 180	18	20/1	REC–COMPUTER RM. #101	○
●	REC – ANSL ADAMS RM.	20/1	19	360 / 180			20	20/1	REC–COMPUTER RM. #101	○
●	REC – CLASSROM #101	20/1	21		360 / 600		22	20/1	REC – LECTURER RM TV	○
●	REC – PRINTER	20/1	23			1200 / –	24	20/1	SPARE	
	BUSSED SPACE		25	– / –			26		BUSSED SPACE	
	BUSSED SPACE		27		– / –		28		BUSSED SPACE	
	BUSSED SPACE		29			– / –	30		BUSSED SPACE	
	TOTAL (CONNECTED)			7024	6424	5840				
	25 % CONTINUOUS			–	–	–				
	TOTAL (NEW CONNECTED)			360	360	1200			1200 VA / 120V. = 10.0 A.	
	TOTAL (CODE)			10088	8888	6880			10088 VA / 120V. = 84.0 A.	

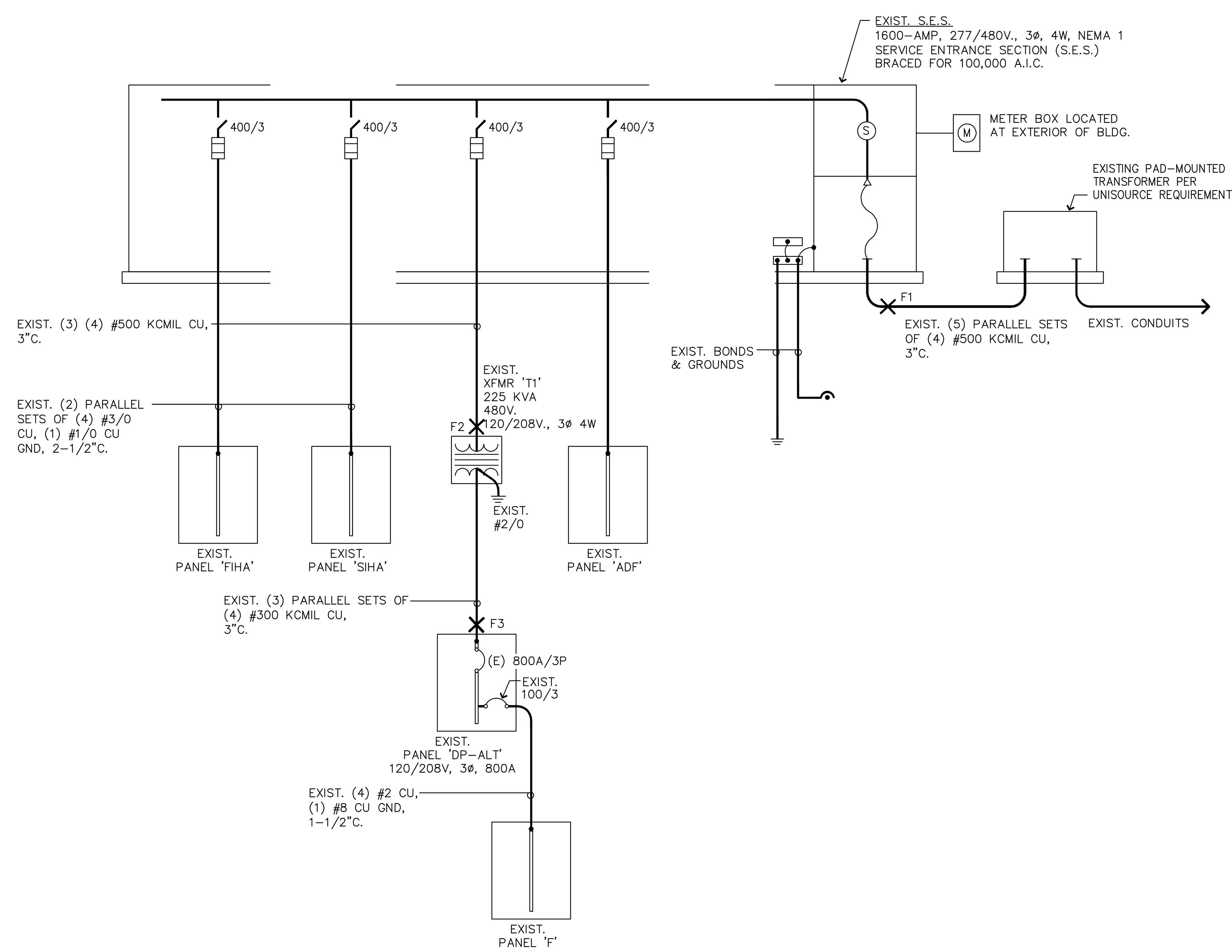
PANEL LEGEND:

- ○ INDICATES EXISTING CIRCUIT BREAKER & LOAD.
- ● INDICATES NEW CIRCUIT BREAKER & LOAD.
- □ INDICATES CIRCUIT BREAKER WITH 'LOCK-OFF' DEVICE.
- ■ INDICATES EXISTING CIRCUIT BREAKER W/CHANGED LOAD.
- △ INDICATES CIRCUIT THRU
- ▲ MISCELLANEOUS.
- ✳ INDICATES CONTINUOUS LOAD TAKEN @ 125% PER N.E.C.

SHORT CIRCUIT CALCULATIONS

FAULT DESIG.	PANEL	LOAD AMPS	LENGTH (FT.)	SOURCE SHORT CKT AMPS	"1" OR "3" PHASE?	# OF CDTRS/ PHASE	"CU" OR "AL"	CDR SIZE (awg/kcmil)	METAL CONDUIT? "Y" OR "N"	"C" VALUE	XFMR: XMFR KVA	XFMR: PRI VOLTS	XFMR: DEG. C RISE (115/150)	XFMR: % Z	V	f	m	SOURCE Isc (amps)	MOTOR CONTRIB.	TOTAL Isc (amps)
	SES	1600		32,600	3	1	CU								480			32600	0	**32,600**
F1	**EXISTING SES**	**1600**	**50**	32,600	3	5	CU	500 KCM	Y	22185					480	0.0530	0.9496	30,958	0	**30,958**
F2	**EXISITNG TRANSFORMER 'T-1'**		**6.2**	30,958	3	1	CU	500 KCM	Y	22185	225	480	150	6.4	208	6.8291	0.1277	8,512	0	**8,512**
F3	**EXISTING PANEL 'DP-ALT'**	**800**	**15**	8,512	3	3	CU	300 KCM	Y	18176					208	0.0195	0.9809	8,349	0	**8,349**

MAXIMUM AVAILABLE FAULT CURRENT = 32,600 A.I.C. PER UNISOURCE FAULT CURRENT TABLE



EXISTING ONE-LINE DIAGRAM

N.T.S.

NOTES:
1. ALL EQUIPMENT & INSTALLATIONS ARE EXISTING UNLESS NOTED AS 'NEW'.
2. ELECTRICAL CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS PRIOR TO ANY WORK.
3. ALL CONDUCTOR SIZES BASED ON TYPE 'XHHW-2' & 'THHN/THWN-2' COPPER.

REVISIONS
NO. DATE

CAMERA CLUB - TENANT IMPROVEMENT
ONE LINE DIAGRAM AND PANEL SCHEDULES

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ELECTRICAL SYMBOLS (NOTE: ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT)

- L.E.D. FIXTURE.
- L.E.D. EMERGENCY FIXTURE
  NL = NIGHT LIGHT – UNSWITCHED EM = LINE SENSITIVE – OPERATES ONLY ON POWER OUTAGE – SWITCHED.
- CEILING MOUNTED LIGHT FIXTURE.
- WALL MOUNTED LIGHT FIXTURE
- L.E.D. FIXTURE.
- EXIT SIGN – SEE LIGHT FIXTURE SCHEDULE.
- SURFACE–MOUNT EMERGENCY LIGHTING BATTERY PACK–SINGLE OR DOUBLE HEAD. SEE LIGHT FIXTURE SCHEDULE.
- RECESSED EMERGENCY LIGHTING BATTERY PACK–SINGLE OR DOUBLE HEAD. SEE LIGHT FIXTURE SCHEDULE.
- JUNCTION BOX IN ACCESSIBLE LOCATION ABOVE REMOVABLE CEILING WITH FLEXIBLE CONDUIT CONNECTION TO LIGHT FIXTURE.
- FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT.
- JUNCTION BOX IN ACCESSIBLE LOCATION.
- DUPLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED.
- DUPLEX CONVENIENCE RECEPTACLE, MTD. ABOVE COUNTER BACKSPLASH OR PER A.D.A. AND ARCHITECT.
- DUPLEX CONVENIENCE RECEPTACLE, HALF SWITCHED MTD. 18" A.F.F. UNLESS NOTED OTHERWISE.
- SIMPLEX RECEPTACLE, MTD. 18" A.F.F. UNLESS NOTED OTHERWISE.
- FOUR–PLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED.
- IG — ISOLATED GROUND RECEPTACLE AT + 15" A.F.F. TO BOTTOM OR AS NOTED.
- RECEPTACLE (TYPE AS SHOWN) AT + 42" A.F.F.
- SPECIAL USE RECEPTACLE. VERIFY NEMA NUMBER AND MOUNTING HEIGHT WITH EQUIPMENT.
- S S_3 S_4 — TOGGLE SWITCH – SINGLE POLE, 3–WAY, 4–WAY AT +42" OR AS NOTED ON PLANS.
- S_P — SINGLE–POLE, ILLUMINATED HANDEL OR PILOT LIGHT TOGGLE SWITCH AT +42" OR AS NOTED ON PLANS.
- OC — SWITCH – OCCUPANCY SENSOR TYPE. ADJUSTABLE SENSOR SENSITIVITY, THERMAL DETECTION AND MOTION. CEILING MOUNTED.
- S_{OC} — SWITCH – OCCUPANCY SENSOR TYPE. ADJUSTABLE SENSOR SENSITIVITY, THERMAL DETECTION AND MOTION. WALL MOUNTED.
- S_M — MOTOR RATED SWITCH WITH THERMAL PROTECTION.
- S_V — MOTOR SPEED CONTROL SWITCH. FURNISHED BY ELECTRICAL CONTRACTOR.
- PHOTOCELL – TORK #2100 – MOUNT ON ROOF AND AIM NORTH.
- TS — TIME–SWITCH: TORK 'W' SERIES OR EQUAL.
- CIRCUIT IN CONDUIT, CONCEALED. HASH MARKS INDICATE QUANTITY OF CONDUCTORS NO HASH MARKS INDICATE TWO CONDUCTORS, PLUS GROUND(S). (NOTE: WIRE AND OR CONDUIT SIZE SHOWN AT HOMERUN IS THE MINIMUM SIZE FOR THE ENTIRE CIRCUIT: #12 A.W.G. CU, 3/4"C. MINIMUM). LONG STROKE(S) INDICATE NEUTRAL CONDUCTOR(S), SHORT STROKES INDICATE PHASE OR SWITCHED CONDUCTORS AND LONG STROKES WITH DOT INDICATE GREEN INSULATED GROUNDING CONDUCTOR(S) TYPICAL. EACH ISOLATED GROUND CIRCUIT SHALL HAVE A SEPARATE NEUTRAL AND GROUND WIRE. BOND WIRES ARE NOT SHOWN ON DRAWINGS. BOND WIRES SHALL BE INSULATED CU. SIZED IN ACCORDANCE WITH N.E.C. #250.
- CIRCUIT IN CONDUIT CONCEALED IN FLOOR .
- CIRCUIT IN CONDUIT CONCEALED IN WALLS OR ABOVE CEILING.
- HOMERUN TO PANELBOARD OR AS NOTED.
- PANELBOARD, MOUNT TOP OF PANEL AT + 6'–8". STUB (2) 3/4" E.C. INTO ACCESSIBLE CEILING SPACE ON FLUSH MOUNTED PANELS.
- MOTOR: SIZE AND RATING AS SHOWN. EF INDICATES 55–WATT, 120 V. EXHAUST FAN.
- A.C. MAGNETIC STARTER BY ELECTRICAL CONTRACTOR. HORSEPOWER, VOLTAGE AND PHASE RATED, NUMBER OF POLES REQUIRED. FURNISH WITH (1) N.O. AUXILLIARY CONTACT (120 V. CONTROL) SINGLE SPEED NON–REVERSING UNLESS OTHERWISE SHOWN ON PLAN.
- DISCONNECT SWITCH – HORSEPOWER RATED, FUSED, NEMA 3R WHERE OUTSIDE. N.F. INDICATES NON–FUSED. (FUSE PER EQUIPMENT MANUFACTURERS' SPECIFICATIONS.).
- STRIP HEATER AND CONTROL.
- MOTOR CONTROLLER – FURNISHED WITH EQUIPMENT.
- TELEPHONE OUTLET AT +15" TO BOTTOM OR AS NOTED WITH 3/4"C. UP INTO ACCESSIBLE CEILING SPACE UNLESS SHOWN OTHERWISE.
- DATA OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4"C. INTO ACCESSIBLE CEILING SPACE.
- DATA/TELEPHONE OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4"C. INTO ACCESSIBLE CEILING SPACE.
- APPROVED TEMPERATURE SEAL–OFF AND EXPANSION JOINTS AS REQ'D BY N.E.C. ART. #300–7.
- FLUSH FLOOR FOURPLEX OUTLET AND DATA/TELPHONE OUTLET COMBO WITH BRASS DEVICE PLATE.
- FLUSH FLOOR DATA RECEPTACLE WITH BRASS COVER PLATE AND 3/4" C. STUBBED TO ABOVE ACCESSIBLE CEILING LOCATION.
- FLUSH FLOOR TELEPHONE RECEPTACLE WITH BRASS COVER PLATE AND 3/4" C. STUBBED TO ABOVE ACCESSIBLE CEILING LOCATION.
- FLUSH FLOOR DUPLEX OUTLET WTIH BRASS DEVICE PLATE.
- FLUSH FLOOR FOURPLEX OUTLET WITH BRASS DEVICE PLATE.
- IG — ISOLATED GROUND RECEPTACLE "HUBBELL" #IG5263, 20 A, 125 V, FLUSH FLOOR WITH BRASS DEVICE PLATE.
- TV — TELEVISION OUTLET AT +15" TO BOTTOM OR AS NOTED. STUB 3/4" C. INTO ACCESSIBLE CEILING SPACE.
- DIMMER SWITCH AT +42" A.F.F. "LUTRON" NP SERIES. SIZE DIMMER FOR LOAD. TRACK LIGHTING SHALL HAVE "LUTRON" NP2000 DIMMER.
- F — A.D.A. – APPROVED FIRE ALARM STROBE.
- F — A.D.A. – APPROVED FIRE ALARM HORN/STROBE.
- F — A.D.A. – APPROVED FIRE ALARM PULL STATION.
- SD — A.D.A. – APPROVED SMOKE DETECTOR MOUNTED IN CEILING OR AS INDICATED.
- DD — DUCT DETECTOR
- FLOW SWITCH. BY OTHERS
- TAMPER SWITCH. BY OTHERS
- CO2 — A.D.A. – APPROVED CARBON DIOXIDE DETECTOR MOUNTED IN CEILING. ALL DETECTORS TO BE 120VAC AND TIED TOGETHER FOR SIGNALING ABILITY.
- B — FIRE ALARM BELL
- WP — WEATHERPROOF.
- T.M.B. — TELEPHONE MOUNTING BOARD: 4' x 8' x 3/4" PLYWOOD WITH #6 CU. BOND WIRE TO GROUNDING ELECTRODE SYSTEM.

ELECTRICAL SYSTEM SPECIFICATIONS - DIVISION 16000 (SOME SECTIONS MAY NOT APPLY)

1. GENERAL CONDITIONS

THE GENERAL PROVISIONS OF THE CONTRACT, INCLUDING THE CONDITIONS OF THE CONTRACT (GENERAL, SUPPLEMENTARY AND OTHER CONDITIONS) AND DIVISION 1 – GENERAL REQUIREMENTS AS APPROPRIATE, APPLY TO THE WORK SPECIFIED IN THIS SECTION.

2. SCOPE OF WORK

THE WORK INCLUDED UNDER THIS SECTION CONSISTS OF FURNISHING ALL MATERIALS, EQUIPMENT, AND LABOR AND THE PERFORMING OF ALL FUNCTIONS, EXCEPT AS OTHERWISE SPECIFIED HEREIN OR SHOWN ON THE DRAWINGS TO BE PERFORMED BY OTHERS, FOR THE INSTALLATION AND PLACING INTO OPERATION OF A COMPLETE ELECTRICAL SYSTEM AS SPECIFIED AND SHOWN ON THE DRAWINGS.

3. GENERAL DESCRIPTION

3.1 THE WORK IN GENERAL SHALL CONSIST OF, BUT IS NOT NECESSARILY LIMITED TO THE FOLLOWING.

3.1.1 FURNISHING AND INSTALLING ALL FIXTURES WITH LAMPS AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN UNLESS NOTED.

3.1.2 FURNISHING AND INSTALLING ALL ELECTRICAL WORK, PANELS, SERVICE, CONDUIT, WIRING, ETC., FOR ALL OUTLETS AND EQUIPMENT.

3.1.3 FURNISHING AND INSTALLING ALL TELEPHONE OUTLETS, CONDUITS WITH PULL STRINGS AND TELEPHONE MOUNTING BOARDS INCLUDING CONDUIT FROM TELEPHONE MOUNTING BOARD TO THE BUILDING ENTRANCE AS INDICATED ON THE PLAN. 3.1.4 FURNISHING AND INSTALLING A COMPLETE FIRE ALARM SYSTEM AS INDICATED ON PLANS.

3.1.5 INCLUDE $ HUNDRED DOLLARS) ALLOWANCE FOR POWER AND TELEPHONE COMPANY UTILITY SERVICE CHARGES. DIFFERENCE BETWEEN ACTUAL COST AND ALLOWANCE TO BE CREDITED OR BILLED TO THE OWNER.

3.1.6 FURNISHING AND INSTALLING ALL MOTOR STARTERS AND CONTROL COMPONENTS, NOT SPECIFICALLY SPECIFIED TO BE FURNISHED IN ACCORDANCE WITH OTHER SECTIONS OF THE SPECIFICATIONS.

3.1.7 FURNISHING AND INSTALLING ALL POWER AND WIRING EXCEPT THAT WHICH IS PRE–WIRED IN FACTORY ASSEMBLED EQUIPMENT.

3.1.8 INSTALLING ALL LINE VOLTAGE MECHANICAL CONTROL WIRING AND ASSOCIATED CONTROLS WHICH ARE FURNISHED BY THE MECHANICAL CONTRACTOR (LOW VOLTAGE CONTROL WIRING AND CONTROLS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR).

3.1.9 PAINTING WORK AS DESCRIBED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS. CLEAN AND PREPARE ALL SURFACES READY FOR PAINTING.

3.1.10 PROVIDE TEMPORARY CONSTRUCTION POWER AS OUTLINED BELOW. THIS SERVICE SHALL BE MAINTAINED THROUGHOUT THE ENTIRE JOB AS THE WORK PROGRESSES. PROVIDE OUTLETS AT CONVENIENT POINTS AND IN SUFFICIENT NUMBERS SO THAT NO EXTENSION CORD OVER 50 FEET IN LENGTH IS REQUIRED TO REACH ANY WORK POINT. MAINTAIN GENERAL LIGHTING IN CORRIDORS, STAIRS, BASEMENT AND OTHER AREAS NOT RECEIVING SUFFICIENT DAYLIGHT REQUIRED FOR SAFETY. REMOVE TEMPORARY WORK AS RAPIDLY AS REQUIRED FOR OR ALLOWED BY INSTALLATION OF PERMANENT WORK.

3.1.11 CERTAIN ITEMS OF WORK BY OTHER TRADES WILL BE NECESSARY FOR THE COMPLETION OF WORK UNDER THIS DIVISION. COOPERATE WITH OTHER TRADES AND ARRANGE FOR THESE ITEMS TO BE PERFORMED IN ORDERLY COURSE.

3.1.12 THIS CONTRACTOR SHALL REVIEW THE MECHANICAL CONTROL REQUIREMENTS AS SPECIFIED AND SHOWN ON THE DRAWINGS AND SHALL FURNISH AND INSTALL ALL NECESSARY CONDUIT, WIRING, BOXES, PROTECTIVE DEVICES, SWITCHES, ETC., FOR THE COMPLETION AND PROPER OPERATION OF THE SYSTEM.

3.1.13 REVIEW ALL DRAWINGS AND ALL SPECIFICATIONS FOR EACH SECTION OF WORK. UNLESS SPECIFICALLY NOTED OTHERWISE, HEREIN OR ELSEWHERE, FURNISH AND INSTALL ITEMS OF ANY ELECTRICAL NATURE REQUIRED FOR COMPLETION OF WORK FOR OTHER TRADES, WHETHER OR NOT SAME IS SHOWN OR NOTED IN THIS OR OTHER SECTIONS.

4. REGULATIONS AND CODES

THE CONTRACTOR MUST COMPLY WITH ALL STATE, MUNICIPAL AND FEDERAL SAFETY LAWS, CONSTRUCTION CODES, ORDINANCES AND REGULATIONS RELATING TO BUILDING AND PUBLIC HEALTH AND SAFETY. IN ADDITION, COMPLY WITH RULES AND REGULATIONS OF THE STATE FIRE PROTECTION CODE. FIRE PROTECTION MATERIAL MUST BEAR THE FIRE UNDERWRITERS LABORATORIES LABEL.

5. GENERAL REQUIREMENTS

5.1 THE CONTRACTOR SHALL EXAMINE THE PREMISES AND SATISFY HIMSELF OF EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGATED TO OPERATE IN PERFORMING HIS PART OF THE WORK OR THAT WILL IN ANY MANNER AFFECT THE WORK UNDER THE CONTRACT. THE CONTRACTOR SHALL COOPERATE WITH OTHER TRADES SO THAT THE INSTALLATIONS OF ALL EQUIPMENT MAY BE PROPERLY COORDINATED.

5.2 ALL EQUIPMENT FURNISHED SHALL FIT THE SPACE AVAILABLE, WITH CONNECTION, ETC., IN THE REQUIRED LOCATIONS AND WITH ADEQUATE SPACE FOR OPERATING AND SERVICING. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE THE MANNER AND METHOD OF THE INSTALLATION, WHILE THE SPECIFICATIONS AND FIXTURE LIST DENOTE THE TYPE AND QUALITY OF MATERIAL AND WORKMANSHIP TO BE USED. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ARCHITECT/ENGINEER WHOSE DECISION SHALL BE FINAL. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS CONNECTION IN BEHALF OF THE CONTRACTOR AFTER AWARD OF THE CONTRACT.

6. EQUIPMENT AND MATERIAL

6.1 ALL MATERIALS FURNISHED UNDER THIS CONTRACT SHALL BE NEW (EXCEPT AS NOTED), FREE FROM DEFECTS OF ANY CHARACTER, SHALL CONFORM WITH THE STANDARDS OF THE UNDERWRITERS LABORATORIES, INC. (U.L.) (OR OTHER NATIONALLY RECOGNIZED LABORATORY), IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED AND SHALL BE SO LABELED. IT IS THE INTENTION OF THESE SPECIFICATIONS TO INDICATE A STANDARD OF QUALITY FOR ALL MATERIALS INCORPORATED IN THIS WORK, AND WHERE MATERIALS ARE NOT SPECIFIED HEREIN AND ARE REQUIRED TO COMPLETE THE ELECTRICAL INSTALLATION, THESE MATERIALS SHALL BE OF FIRST QUALITY FOR USE INTENDED. MANUFACTURERS OF SIMILAR QUALITY PRODUCTS WILL BE CONSIDERED UNLESS THE SPECIFICATIONS OR DRAWINGS INDICATE OTHERWISE.

6.2 MATERIALS SHALL BE SUITABLE FOR INTENDED USE AND LOCATION. UNLESS OTHERWISE SHOWN USE NEMA–1 FOR INTERIOR AREAS AND NEMA–3R FOR EXTERIOR AREAS.

6.3 THE ARCHITECT/ENGINEER DECISION AS TO EQUAL IN GRADE AND QUALITY SHALL RULE AND BE FINAL FOR ALL ELECTRICAL MATERIALS INCORPORATED IN THIS WORK. WHERE TWO OR MORE SIMILAR TYPE ITEMS ARE FURNISHED, ALL SHALL BE OF THE SAME MANUFACTURER (E.G., ALL DISCONNECT SWITCHES SHALL BE OF THE SAME MANUFACTURER) UNLESS OTHERWISE NOTED HEREIN OR SHOWN ON THE DRAWINGS. ALL MATERIAL AND INSTALLATION METHODS USED SHALL BE IN ACCORDANCE WITH THE LATEST AND APPROVED ELECTRICAL AND MECHANICAL ENGINEERING PRACTICES.

7. SERVICE ENTRANCE EQUIPMENT

7.1 SERVICE ENTRANCE EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MUNICIPAL GOVERNING BODY AND SERVING UTILITY. SHOP DRAWINGS SHALL BE SUBMITTED TO THE SERVING UTILITY FOR WRITTEN APPROVAL BEFORE ORDERING EQUIPMENT.

7.2 LABEL EQUIPMENT AND EACH INDIVIDUAL OVERCURRENT DEVICE PER SECTION 16000.22.

7.3 APPROVED MANUFACTURERS ARE: SUN VALLEY, SQUARE D, CUTLER–HAMMER, SIEMENS/ITE.

8. PANELBOARDS

8.1 EACH PANEL SHALL BE PROVIDED WITH DOOR LOCK AND TWO KEYS, ALL KEYED ALIKE. EACH PANEL SHALL BE PROVIDED WITH TYPEWRITTEN SHEET INSTALLED ON DOOR IDENTIFYING THE USE OF EACH BRANCH CIRCUIT. PANELS SHALL HAVE BUSSING AS INDICATED ON THE DRAWINGS.

8.2 LABEL EQUIPMENT PER SECTION 16000.22 8.3 APPROVED MANUFACTURERS ARE: SQUARE D, CUTLER–HAMMER, SIEMENS/ITE.

8.3 ALL PANEL SCHEDULES WILL HAVE TYPED PANEL SCHEDULES AS PER I.B.C. SECTION 107.2.1.

9. STARTERS

9.1 ALL MOTOR STARTERS SHALL BE FURNISHED UNDER THIS SECTION OF THE SPECIFICATIONS UNLESS AN INTEGRAL PART OF EQUIPMENT OR NOTED AS FURNISHED WITH EQUIPMENT SPECIFIED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS.

9.2 SEPARATELY MOUNTED MOTOR STARTERS SHALL BE ACROSS– THE–LINE COMBINATION MAGNETIC WITH 120V COILS, FUSED DISCONNECT CONTACTORS, ADDITIONAL AUXILIARY CONTACT FOR INTERLOCKING OF CONTROLS. PROVIDE PUSHBUTTON OR SELECTOR SWITCH IN COVER. SWITCHBOARD MOUNTED STARTERS SHALL BE MAGNETIC WITH 120V COILS AND ADDITIONAL AUXILIARY CONTACTS AS REQUIRED FOR INTERLOCKING OF CONTROLS. STARTERS SHALL HAVE AN INTEGRAL CONTROL CIRCUIT TRANSFORMER OR SEPARATE 120V CONTROL WITH CONTROL CIRCUIT DISCONNECT SWITCH IN COVER.

9.3 MANUAL STARTERS SHALL BE HORSEPOWER, VOLTAGE AND PHASE RATED WITH OVERLOAD PROTECTION AND GREEN "ON" PILOT LIGHT. SURFACE MOUNTED UNLESS NOTED OTHERWISE.

9.4 ALL STARTERS SHALL HAVE OVERLOAD PROTECTION IN ALL PHASE LINES. FURNISH AND INSTALL THE PROPER SIZE OVERLOAD HEATER ELEMENTS DETERMINED FROM FULL LOAD NAMEPLATE READINGS ON MOTORS AND COMPENSATION FOR AMBIENT TEMPERATURE IN ALL STARTERS WHETHER THEY BE FURNISHED UNDER THIS SECTION OR OTHER SECTIONS.

9.5 LABEL PER SECTION 16000.22

9.6 APPROVED MANUFACTURERS ARE: SQUARE D

10. TRANSFORMERS

10.1 TRANSFORMERS SHALL BE DRY TYPE, WITH VOLTAGE RATINGS AS INDICATED ON PLANS. TRANSFORMERS SHALL BE RATED FOR FOR FULL LOAD OPERATION AT A MAXIMUM 150 DEGREE CENTIGRADE RISE ABOVE A 40 DEGREE CENTIGRADE AMBIENT OR AS OTHERWISE NOTED ON DRAWINGS. PROVIDE AT LEAST (4) 2 1/2 PERCENT TAPS, TWO ABOVE NORMAL AND TWO BELOW NORMAL AND HAVE A SOUND RATING NOT TO EXCEED NEMA STANDARDS. SPECIAL "K" FACTOR RATINGS AS NOTED.

10.2 SUBMIT COMPLETE TRANSFORMER DATA WITH SHOP DRAWINGS FOR APPROVAL. THE DATA SHALL INCLUDE EFFICIENCIES, CORE AND COPPER LOSSES, IMPEDANCE, REGULATION AND SOUND LEVEL.

10.3 INSTALLATION OF TRANSFORMERS SHALL BE ON VIBRATION ISOLATORS AND ALL WIRING CONNECTIONS WITH FLEXIBLE CONDUIT.

10.4 LABEL PER SECTION 16000.22

10.5 APPROVED MANUFACTURERS ARE: ACME, SQUARE D, JEFFERSON, CUTLER–HAMMER, WESTINGHOUSE, GENERAL ELECTRIC, OR SAME MANUFACTURER AS DISTRIBUTION EQUIPMENT.

11. CONDUIT

11.1 METALLIC CONDUITS SHALL BE HOT DIPPED GALVANIZED EQUAL TO LTV STEEL.

11.2 ELECTRIC METALLIC TUBING (EMT) IS PERMITTED FOR EXPOSED WORK ABOVE 6'–0" A.F.F. OR CONCEALED WORK ONLY. EMT IS NOT PERMITTED IN THE FOLLOWING: (1) IN OR UNDER CONCRETE, (2) IN EARTH, (3) IN GROUTED WALLS, (4) EXTERIOR OF BUILDING, (5) WITH DISSIMILAR METALS, (6) WHERE IT WILL BE SUBJECT TO SEVERE PHYSICAL DAMAGE (EITHER DURING OR AFTER INSTALLATION), (7) IN ANY HAZARDOUS (CLASSIFIED LOCATION) EXCEPT AS PERMITTED BY 502.10, 503.10 AND 504.20, (8) WITHOUT AN EQUIPMENT GROUNDING CONDUCTOR. SIZE AND PROVIDE EQUIPMENT GROUNDING CONDUCTOR PER ARTICLE 250 AND INCREASE CONDUIT SIZE IF REQUIRED.

11.3 RIGID PVC CONDUIT IS PERMITTED ONLY UNDERGROUND OR AS NOTED ON DRAWINGS. PROVIDE RIGID STEEL ELBOWS AND RISERS (NO MINIMUM SIZE). SIZE AND PROVIDE EQUIPMENT GROUNDING CONDUCTOR PER ARTICLE 250 AND INCREASE CONDUIT SIZE IF REQUIRED.

11.4 RIGID GALVANIZED OR SHERADIZED STEEL SHALL BE USED FOR ALL EXPOSED CONDUIT BELOW 6'–0" A.F.F. OR AS NOTED ON DRAWINGS. WHERE USED IN OR UNDER CONCRETE OR IN EARTH, SHALL BE CODE APPROVED PVC COATED OR HALF LAP WRAPPED WITH POLYKEN #900 TAPE OR EQUAL.

11.5 INSTALL EXPOSED RACEWAYS PARALLEL AND PERPENDICULAR TO NEARBY SURFACES OR STRUCTURAL MEMBERS AND FOLLOW THE SURFACE CONTOURS AS MUCH AS PRACTICAL.

11.6 RUN EXPOSED, PARALLEL, OR BANKED RACEWAYS TOGETHER. MAKE BENDS IN PARALLEL OR BANKED RUNS FROM THE SAME CENTER LINE SO THAT THE BENDS ARE PARALLEL. FACTORY ELBOWS MAY BE USED IN BANKED RUNS ONLY WHERE THEY CAN BE INSTALLED PARALLEL. THIS REQUIRES THAT THERE BE A CHANGE IN THE PLANE OF THE RUN SUCH AS FROM WALL TO CEILING AND THAT THE RACEWAYS BE OF THE SAME SIZE. IN OTHER CASES PROVIDE FIELD BENDS FOR PARALLEL RACEWAYS.

12. WIRE

12.1 SOFT DRAWN ANNEALED COPPER (UNLESS OTHERWISE NOTED ON PLANS) HAVING CONDUCTIVITY OF NOT LESS THAN 98% OF THAT OF PURE COPPER, UNIFORM IN CROSS SECTION, FREE FROM FLAWS, SCALES, AND OTHER IMPERFECTIONS. ALL WIRE LARGER THAN #10 SHALL BE STRANDED.

12.2 INSULATION: TYPE THHN/THWN, OR XHHW FOR ALL BRANCH CIRCUIT AND FEEDER WIRING.

12.3 SIZES: NO WIRE SMALLER THAN #12 UNLESS OTHERWISE NOTED ON DRAWINGS.

12.4 FEEDER CONDUCTORS #2 AWG AND LARGER MAY BE COPPER OR AA–8000 SERIES ALLUMINUM ALLOY. ALLUMINUM CONDUCTORS SHALL BE EQUAL OR LARGER AMPACITY TO COPPER. CONDUIT FILL SHALL NOT EXCEED 40% FACTOR AS DESCRIBED IN 2011 NEC, ANNEX C, TABLE C1 (COPPER) OR C1A (ALUMINUM). ALL GROUND (BOND) CONDUCTORS WILL BE COPPER.

13. MISCELLANEOUS MATERIALS:

13.1 SAFETY SWITCHES: HEAVY DUTY, FUSED REJECTION TYPE, MINIMUM 200,000 A.I.C. RATED. "NF" INDICATES NOT FUSED.

13.1.1 LABEL PER SECTION 16000.22

13.1.2 APPROVED MANUFACTURERS ARE: SQUARE D, SIEMENS, CUTLER–HAMMER, WESTINGHOUSE, GENERAL ELECTRIC OR SAME MANUFACTURERS AS DISTRIBUTION EQUIPMENT.

13.2 FUSES: "BUSSMANN" OR "GOULD SHAWMUT" MFG. NO SUBSTITUTIONS UNLESS BY PRIOR WRITTEN APPROVAL FROM ENGINEER, OR AS NOTED ON DRAWINGS.

13.3 CONDUIT STRAP: HEAVY GAUGE STEEL SNAP–ON TYPE.

13.4 ELECTRICAL METALLIC TUBING FITTINGS: EQUAL TO T&B COMPRESSION TYPE. CONNECTORS SHALL HAVE INSULATED BUSHINGS.

13.5 RIGID CONDUIT LOCKNUTS AND BUSHINGS: EQUAL TO T&B.

13.6 FLEXIBLE CONDUIT AND FITTINGS: EQUAL TO CALIFORNIA CONDUIT AND CABLE COMPANY, INC.

13.7 LIQUID TIGHT CONDUIT AND FITTINGS FOR ALL EXTERIOR AND EQUIPMENT CONNECTIONS.

13.8 OUTLET BOXES, PLASTER RINGS, PULL, AND JUNCTION BOXES, ETC: EQUAL TO RACO. ZINC COATED OR CADMIUM PLATED SHEET STEEL FOR INDOOR LOCATIONS, CAST ALUMINUM FOR OUTDOOR LOCATIONS.

13.8.1 FOR ALL LIGHT FIXTURES: OCTAGON OR 4" SQUARE BOXES.

13.8.2 FOR SWITCHES AND RECEPTACLES: 4" OR 4–11/16" SQUARE BOXES.

13.8.3 JUNCTION AND PULL BOXES: 4" SQUARE MINIMUM SIZE. PROVIDE WITH SCREWFASTENED COVERS LOCATED IN ACCESSIBLE LOCATIONS.

13.9 CONDULETS: EQUAL TO CROUSE–HINDS.

13.10 WIRE AND CABLE: EQUAL TO GENERAL CABLE AND/OR SIMPLEX.

13.11 DEVICES: "HUBBELL", "LEVITON", OR APPROVED EQUAL. RECEPTACLES: DUPLEX–20 AMP #5242, ISOLATED GROUND – 20 AMP #IG–16262–IG, GFCI– 20 AMP #GF–N7899. SWITCHES: 20 AMP #1221 SINGLE POLE, 1222 DOUBLE POLE, 1223 THREE WAY, 1224 FOUR WAY. COLORS TO BE SPECIFIED BY ARCHITECT/OWNER/TENANT.

13.12 DEVICE PLATES: "HUBBELL", "LEVITON", OR EQUAL. COLORS TO MATCH EXISTING OR AS NOTED ON DRAWINGS. ZINC DIE CAST FLIP LID MOUNTED HORIZONTALLY FOR EXTERIOR OR WEATHERPROOF LOCATIONS.

13.13 LIGHTING FIXTURES: EQUAL TO AS SHOWN ON FIXTURE SCHEDULE OR DESCRIBED ON DRAWINGS, COMPLETE WITH LAMPS IN ORIGINAL CARTONS AND ALL CANOPIES, STEMS, HANGERS AND ACCESSORIES INCLUDING ALL STRUCTURAL MEMBERS REQUIRED FOR PROPER MOUNTING. ALL FLUORESCENT FIXTURE BALLASTS SHALL BE ENERGY SAVING TYPE. SUBMIT SHOP DRAWINGS TO ARCHITECT/ENGINEER FOR APPROVAL BY THE SAME. MUST BE C.E.C. APPROVED IN CALIF.

13.14 LAMPS: G.E. OR EQUAL AND SHALL BE FOR THE MAXIMUM RATED WATTAGE OF FIXTURE UNLESS OTHERWISE SHOWN ON DRAWINGS.

14. SLEEVES, INSERTS, OPENINGS

14.1 CONTRACTOR SHALL LAYOUT AND INSTALL HIS WORK IN ADVANCE OF POURING CONCRETE FLOORS OR WALLS. PROVIDE ALL SLEEVES AND/OR OPENINGS THROUGH FLOORS OR WALLS REQUIRED FOR ELECTRICAL CONDUITS OR DUCTS.

14.2 SLEEVES SHALL BE OF RIGID CONDUIT OR GALVANIZED SHEET STEEL RIGIDLY SUPPORTED AND SUITABLY PACKED TO PREVENT ENTRANCE OF WET CONCRETE.

15. EXCAVATION/CUTTING/FITTING/REPAIRING/FINISHING

15.1 THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL EXCAVATION, COMPACTION, FILL, BACKFILL, CUTTING, FITTING, REPAIRING AND FINISHING OF ALL WORK NECESSARY FOR THE INSTALLATION OF ALL EQUIPMENT UNDER THIS SPECIFICATION BUT NO CUTTING OF THE WORK OF OTHER CONTRACTORS SHALL BE DONE WITHOUT THE CONSENT OF THE GENERAL CONTRACTOR.

15.2 EARTHWORK SHALL BE DONE IN ACCORDANCE WITH LATEST INDUSTRY STANDARDS.

16. CLEANUP OF PREMISES

CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES CLEAR OF WASTE MATERIALS AND DEBRIS CAUSED BY HIS EMPLOYEES AND OPERATION. EQUIPMENT NOT REQUIRED IN THE WORK SHALL BE REMOVED PRIOR TO THE TERMINATION OF THE CONTRACT.

17. TESTS AND INSPECTIONS

17.1 CONTRACTOR SHALL TEST WIRING AND DEVICES AS SECTIONS ARE COMPLETED AND SHALL CORRECT ALL DEFECTS IMMEDIATELY AT HIS OWN EXPENSE, INCLUDING ANY DAMAGE TO WALLS, CEILINGS, FLOOR OR OTHER PORTIONS OF THE BUILDING WHICH MAY RESULT FROM REPLACING DEFECTIVE EQUIPMENT.

17.2 FURNISH ALL METERS, CABLE, CONNECTIONS AND APPARATUS NECESSARY FOR MAKING TESTS.

17.3 TEST SYSTEM FOR SHORTS AND GROUNDS. FAULTY WIRING SHALL BE REMOVED AND REPLACED. ANY DEVICE, APPARATUS OR FIXTURE INSTALLED SHOWING SUBSTANDARD PERFORMANCE SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ARCHITECT/ENGINEER.

17.4 MEGGER ALL SYSTEMS NEUTRALS TO INSURE THE NEUTRAL IS NOT GROUNDED WITHIN THE SYSTEM.

17.5 ALL EQUIPMENT RATED AT 1,000 AMPS OR MORE , OR 480 VOLTS SHALL BE TESTED FOR INSULATION BREAKDOWN PRIOR TO ITS BEING ENERGIZED. SUCH EQUIPMENT SHALL WITHSTAND FOR A PERIOD OF ONE MINUTE WITHOUT BREAKDOWN, THE APPLICATION OF A 60HZ ALTERNATING POTENTIAL OF 1,000V PLUS TWICE THE RATED VOLTAGE OF THE DEVICE.

17.6 AFTER THE ELECTRICAL WIRING SYSTEM INSTALLATION IS COMPLETED AND AT SUCH TIME AS THE ARCHITECT/ENGINEER OR HIS AUTHORIZED REPRESENTATIVE MAY DIRECT, THE CONTRACTOR SHALL CONDUCT AN OPERATING TEST FOR APPROVAL. EQUIPMENT SHALL BE DEMONSTRATED TO OPERATE IN ACCORDANCE WITH REQUIREMENTS OF SPECIFICATIONS. TEST SHALL BE PERFORMED IN PRESENCE OF ARCHITECT/ENGINEER OR HIS REPRESENTATIVE.

18. SHOP DRAWINGS

18.1 ALL DATA SHALL BE SUBMITTED AT ONE TIME, BOUND AND INDEXED IN AN ORDERLY MANNER. PRIOR TO STARTING THE WORK, SUBMIT TO THE ARCHITECT/ENGINEER FOR APPROVAL, SIX (6) SETS OF SHOP DRAWINGS OF SERVICE (S.E.S.), PANELS, DISTRIBUTION SECTIONS, LIGHT FIXTURES, MOTOR CONTROL CENTERS, FIRE ALARM SYSTEM, DIMMERS, SOUND SYSTEM, EMERGENCY GENERATOR, DEVICES, TRANSFORMERS, LABELS AS REQUIRED BY 16000.22, AND ALL OTHER EQUIPMENT TO BE FABRICATED.

18.2 PROCURE SHOP DRAWINGS, WIRING DIAGRAMS, ETC., FROM OTHER TRADES INVOLVED WHERE SUCH DRAWINGS MAY FACILITATE AND EXPEDITE THE WORK. AIR CONDITIONING AND MECHANICAL EQUIPMENT SHALL BE WIRED COMPLETE AS PER MANUFACTURER'S WIRING DIAGRAMS FURNISHED BY THE AIR CONDITIONING AND MECHANICAL CONTRACTORS.

19. DRAWINGS OF RECORD (AS–BUILT)

19.1 AS–BUILT DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH AND IF REQUIRED BY DIVISION 1 – GENERAL REQUIREMENTS.

20. GUARANTEE

20.1 THE CONTRACTOR SHALL GUARANTEE ALL MATERIAL AND EQUIPMENT TO BE FREE FROM DEFECT OF MATERIAL AND WORKMANSHIP AND SHALL REPLACE OR REPAIR WITHOUT COST TO THE OWNER ALL DEFECTIVE MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE.

21. INSTRUCTIONS

21.1 CONTRACTOR SHALL INSTRUCT THE OWNER IN THE PROPER OPERATING AND MAINTENANCE OF THE EQUIPMENT.

21.2 CONTRACTOR SHALL PROVIDE TWO (2) SETS OF OPERATING AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT PROVIDED BY THIS DISCIPLINE, ONLY WHEN SUCH MANUALS ARE AVAILABLE FROM THE MANUFACTURER.

21.2.1 ALL MANUALS TO BE BOUND IN A 3–RING BINDER AND TABULATED IN AN ORDERLY MANNER.

22. LABELING

22.1 LABELS SHALL BE ENGRAVED, BLACK ON WHITE MELAMINE PLASTIC LAMINATE, 1/16" MINIMUM THICKNESS FOR SIGNS UP TO 20 SQUARE INCHES OR 8 INCHES LONG; 1/8" THICK FOR LARGER SIZES. ENGRAVED LEGEND SHALL BE IN WHITE LETTERS ON BLACK FACE WITH MINIMUM 3/16" HIGH LETTERS. LABELS SHALL BE PUNCHED AND FASTENED TO EQUIPMENT WITH ALUMINUM RIVETS OR SELF TAPPING STAINLESS STEEL SCREWS OR NUMBER 10/32 STAINLESS STEEL MACHINE SCREWS WITH NUTS, FLAT AND LOCK WASHERS.

22.2 LABEL EQUIPMENT WITH NAME, AMPERAGE, VOLTAGE, PHASE, AND WIRES (I.E. PANEL "A", 400A., 120/208V,30,4W). SUBMIT LIST OF ALL LABELS WITH WORDING FOR REVIEW AS PER 16000.18.

22.3 EQUIPMENT TO BE LABELED SHALL INCLUDE SERVICE (S.E.S.) AND ALL OVERCURRENT DEVICES, DISTRIBUTION SECTIONS AND ALL OVERCURRENT DEVICES, MOTOR CONTROL CENTERS (M.C.C.) AND ALL OVERCURRENT DEVICES, FUSIBLE PANELBOARDS AND ALL OVERCURRENT DEVICES, PANELS, STARTERS AND TRANSFORMERS. LABEL OTHER EQUIPMENT AS NOTED ON PLANS.

Job No. 22061

ccec CC ELECTRICAL CONSULTING
p: 602.400.1792 • jeff@ccecaz.com
5551 White Mountain Road, #2-538, Show Low, AZ 85901

Registered Professional Engineer (Electrical)
CERTIFICATE NO. 31172
DAVID G. WATSON
2/5/2023
ARIZONA, U.S.A.

REVISIONS
NO. DATE

CAMERA CLUB - TENANT IMPROVEMENT
ELECTRICAL SPECIFICATIONS

SEAVER FRANKS
ARCHITECTS INC AIA
2552 N. ALVERNON WAY / TUCSON AZ 85712 / FAX 795-9431 / 795-4000

GREEN VALLEY RECREATION CENTER
921 WEST VIA RIO FUERTE
GREEN VALLEY, ARIZONA 85614

ISSUE DATE 11-04-2022
PROJ. NO. 3704
DRG. SCALE AS NOTED

SHEET
E3.0

CANYON
BUILDING & DESIGN

Date:	3/17/2023	**Project SF:**	50
Project:	GVR - Camera Club TI	**Proposal Expires:**	4/1/2023
Revision:	0	**Estimator:**	B. Davis
Per Seaver/Franks Architect Plans 02.03.2023			bdavis@canyonbd.com

Canyon Building & Design is pleased to provide the enclosed proposal for your consideration and review. This proposal is for GVR - Camera Club T.I. We appreciate the opportunity, and look forward to working with you!

GVR

WE BUILD DIFFERENTLY!

AZ ROC #142441

	PROPOSAL TOTAL: $	**35,832.18**

Canyon Building Design
4750 N. La Cholla Tucson, AZ
Office: (520) 299-7927

CANYON
BUILDING & DESIGN

EXECUTIVE PRICING SUMMARY

Division	Description	Proposal Price	Selected Vendor
07-201	INSULATION	$ 590.00	
08-600	DOORS / FRAMES / HARDWARE	$ 6,600.00	
09-330	DRYWALL/LG METAL FRAMING	$ 3,810.00	
09-800	FLOORING	EXCLUDED - OWNER TO SUPPLY & INSTALL	
09-940	PAINT	$ 525.00	
15-500	HVAC	$ 12,112.00	
16-000	ELECTRICAL	$ 1,850.00	
	Direct Cost TOTALS	**$ 25,487.00**	
Total Direct Cost		$ 25,487.00	
GC's		$ 4,560.00	
Liability Insurance		$ 300.47	1%
Builders Risk		$ 107.50	0.30%
Bond		$ 376.24	1.05%
Fee		$ 3,083.12	10%
Taxes		$ 1,917.86	5.655%
	TOTAL CONTRACT VALUE:	**$ 35,832.18**	

Canyon Building Design
4750 N. La Cholla Tucson, AZ
Office: (520) 299-7927

Project Name:	GVR - Camera Club TI
Project SITE SF:	
Project BLDG SF:	50
Proposal Date:	3/17/2023
Estimator:	L. Marker
Plans & Specs:	2/3/2023
Plans Prepared By:	Seaver/Franks
Proposal Expiration:	4/1/2023

Division Clarifications

00-000 GENERAL CLARIFICATIONS

A. This proposal is good for 10 days.
B. Any repairs to existing equipment or infrastructure, to be performed on a T&M basis.
C. We are not responsible for delays & associated costs due to city, owner, architect, or weather.
E. Architectural and Engineering drawings and fees are excluded.
F. Permit and plan check fees are excluded except for permits to be obtained by sub trades for their scope of work.
G. Environmental remediation or testing.
H. Dumpsters, labor, warehousing, install, and protection for owner provided FF&E excluded
I. Owner breakout forms/proposal layouts cannot be utilized as billing SOV. Billing SOV to be discussed and agreed upon if awarded contract.
K. Material prices are in flux due to economic conditions. Any significant material increases that occur prior to contract award shall be reviewed & pricing adjusted prior to execution of contract.
L. Not responsible for unforeseen conditions or reviled after construction begins.
D. There will be an additional charge for paperwork if a funds control company is used.
J. Builders Risk Insurance is included.

02-235 DEMOLITION

A. Demo approx. 3 lf wall type B
B. Remove Timely frame double door. Door slabs to be stored on-site and re-used with new frame in new partion wall

07-100 ROOFING

A. Provide roof patch for roof penetration

07-201 INSULATION

A. Provide and install R11 Unfaced Fiberglass Batt Insulation at Interior Walls A to 6" above ceiling
B. Provide and install R11 Unfaced Fiberglass Batt Insulation at Interior Walls B to top of existing opening

08-600 DOORS / FRAMES / HARDWARE

A. Provide and install one (1) timely double door frame
B. Re-install exissting double door slabs into new timley frame in new partition location

09-330 DRYWALL/LG METAL FRAMING

A. Provide and install 3-5/8"-20GA (EQ-18mil) -16"o.c. metal studs for framing all new wall's per plan –to 6" above grid ceiling
B. Provide and install 5/8" Regular sheetrock - texture to match existing

09-800 FLOORING

A. EXCLUDEs any and all flooring/Patching or repairing
B. EXCLUDES any and all vinyl wall base

09-940 PAINT

A. Paint approx. 300 sf new partition wall

15-500 HVAC

A. Provide and install (1) 2-ton Ductless Split System HP AC Unit with roof mounted condensing unit set on platform with sheet metal cap
B. Provide and install refrigeration lines, condensate drain, and (1) wall mounted Programmable T-stat
C. Provide start-up and certified independent Pre & Post air balance

16-000 ELECTRICAL

A. All Panels are existing and to remain (no new load added to panels)
B. Existing Heat Pump Unit to remain.
C. Provide and install New Outlets as shown.
D. Provide and install back box with conduit and pull string stubbed above ceiling for Data Outlet.
E. Tie New Fan Coil Unit to Existing "HPCU-1".
F. Rework and reuse existing circuitry as needed.