

CONTRACT DOCUMENTS

FOR

CITY OF PAGE

Lake Powell National Clubhouse Addition

City of Page Department of Public Works

> PO Box 1180 697 Vista Ave Page, Arizona 86040

> > April 6, 2023

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1 BID DOCUMENTS

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1-1 NOTICE OF INVITATION FOR BID

NOTICE IS HEREBY GIVEN that sealed bids will be received by the City Clerk for the City of Page, Page City Hall, 697 Vista Avenue, Page, Arizona, until **4:30 PM May 11, 2023**. At that time, bids will be opened and publicly read aloud and recorded by the City Clerk. Bidders are invited but not required to be present at the bid opening. Bids must be in the actual possession of the City Clerk's Office on or prior to the exact time and date indicated above. Late bids shall not be considered and will be returned unopened. The prevailing clock shall be the City Clerk's clock.

Bids must be submitted on the forms furnished and in a sealed envelope. The Invitation for bid's <u>project name and bidder's name and address</u> should be clearly indicated on the outside of the envelope. Bids sent through Federal Express or other express mail agencies must have the bid documents sealed within an additional envelope inside the outer mailer.

The City of Page, Arizona is seeking bids from qualified contractors for the complete turn-key construction of the patio addition to the Lake Powell National Golf course clubhouse. The clubhouse is located at 400 Clubhouse drive in Page, Arizona.

Questions and requests for additional specifications and/or bid documents shall be directed to: Kyle Christiansen, Director of Public Works, City of Page, PO BOX 1180, Page, Arizona 86040, 928-645-4302. RFB packages may also be accessed on the City of Page website at <u>www.cityofpage.org</u>. Persons with disabilities may call the City's Human Resources Director at (928) 645-4231 or text telephone (TDD) (928) 645-4216 regarding availability of information in alternative formats.

All bid must be accompanied by a bond or a cashier's check of the company, drawn on a national bank, in an amount equal to ten percent (10%) of the Bid amount, as a guarantee on the part of the Bidder that it will, if called upon to do so, accept and enter into a contract based on the obligations and conditions set forth in the Bid Documents.

The successful Bidder, prior to entering into the contract, shall file with the City a Payment Bond in the amount equal to one hundred percent (100%) of the Contract Price, a Performance Bond in an amount equal to one hundred percent (100%) of the Contract price, and a certificate of Insurance. Bids may not be withdrawn for a period of sixty (60) days after the bid opening.

The City of Page reserves the right to reject any or all bids or parts thereto and to waive any informality in the bids received.

City Clerk

Publish each week for two consecutive weeks in the Lake Powell Chronicle. See publications dated *April 19th and April 26th, 2023.*

1-2 INSTRUCTIONS TO BIDDERS

1. <u>PREPARATION OF BID</u>. All BIDs shall be on the forms provided in this Invitation for Bid package. It is the responsibility of all BIDDERs to examine the entire BID DOCUMENTS package and seek clarification of any requirement that may not be clear and to check all responses for accuracy before submitting a BID.

The Bid Form shall be submitted with an original ink signature by the person authorized to sign the BID. Erasures, interlineations, or other modifications in the BID shall be initialed in original ink by the authorized person signing the BID. CITY shall not reimburse the cost of developing, presenting, or submitting any response to this solicitation. BIDs submitted should be prepared simply and economically, providing adequate information in the straightforward and concise manner.

2. <u>MANDATORY PRE-BID MEETING.</u> NONE SCHEDULED.

3. <u>SUBMISSION OF BID</u>. Submission of a BID shall be considered prima-facie evidence that the Contractor is familiar with and understands all the conditions under which the BID and subsequent CONTRACT is to be awarded, performed, and administered. The CONTRACTOR, if awarded the CONTRACT, shall not be allowed extra compensation by reason of any matter or thing which such CONTRACTOR might have more fully explored or been informed prior to submitting a BID. After the submission of the BID, no complaint or claim that there was any misunderstanding as to the conditions or nature of the work will be entertained.

Submission of additional terms, conditions, or agreements with the BID DOCUMENTS may result in rejection of the BID. BIDDER shall return all BID DOCUMENTS, with the exception of CONSTRUCTION DOCUMENTS, intact and completed as directed.

4. <u>METHOD OF DELIVERY</u>. There are five (5) methods by which BIDDERs can forward this bid package to CITY: Regular U.S. Postal Service (No delivery to CITY Hall-Use P.O. Box); U.S. Postal Express Mail (No delivery to CITY Hall-Use P.O. Box); Federal Express; United Parcel Service; hand delivery. Facsimile BIDs shall not be accepted.

The mailing address for CITY is:	City of Page Office of the CITY Clerk P.O. Box 1180 Page, AZ 86040-1180
The physical address for CITY is:	City of Page Office of the CITY Clerk 697 Vista Avenue

City of Page LPN CLUBHOIUSE ADDITION APRIL 6TH, 2023 Bidder's Initials _____ Page, AZ 86040

5. <u>QUESTIONS, OMMISSIONS, DISCREPANCIES, INTERPRETATIONS AND</u> <u>ADDENDA</u>. All questions regarding discrepancies in, or omissions from, the Scope of Services, or other BID DOCUMENTS, or doubts as to their meaning should be submitted in writing to the Department Director specified in the Notice of Invitation for Bid.

No oral interpretations shall be made to any BIDDER as to the meaning of any of the BID DOCUMENTS, and CITY shall not be bound by any oral interpretation of the BID DOCUMENTS. Oral interpretations or clarifications will be without legal effect.

Any amendment or addendum issued will be forwarded within 5 days to any known recipient of the original IFB. For purposes of receiving any addendum issued, it shall be the sole responsibility of each potential bidder to notify CITY that they have obtained a copy of the original IFB and intend to submit a BID and provide contact information for the receipt of amendments or addendum. The City of Page hereby reserves the right to extend the period of time in which to submit bids.

6. <u>WITHDRAWL OF BID</u>. At any time prior to the specified Bid submission deadline, a BIDDER may withdraw or revise the BID. Any withdrawal or revision request must be received in writing prior to said deadline. All revisions must be submitted in the same form and manner as the original BID. No BIDDER may withdraw his BID for Sixty (60) days after the time established for receiving BIDs. The award of the CONTRACT to another party does not constitute a waiver of this condition.

7. <u>LATE BIDS</u>. Late BIDs shall not be considered. Page is considered a rural area by most express delivery carriers and thus, they do not guarantee priority or next day delivery. BIDDERs are encouraged to keep this in mind when arranging delivery of their BIDs and are advised herein that late BIDs shall be rejected and returned to the BIDDER regardless of reason for being late.

8. <u>PRICES</u>. In the event of discrepancy or conflict between the prices quoted in the BID in words and those quoted in figures, the words shall control. The price quoted shall be the total cost the CITY will pay for the project, including furnishing of all materials, equipment, tools, and all other facilities, all applicable taxes, and the performance of all labor and services necessary or proper for completion of the work. Prices quoted shall also include any and all payment incentives available to the CITY.

9. <u>REFERENCES</u>. The BIDDER shall provide a list of five (5) current and five (5) former clients. References should have similar scope and requirements to those outlined in these BID DOCUMENTS. Unacceptable references, as determined by the CITY of Page, may be sufficient reason to deny award of this project to BIDDER.

10. <u>STATEMENT OF QUALIFICATIONS</u>. As evidence of his competency to perform THE WORK, BIDDER shall complete and submit with his BID the Statement of Bidder Qualifications. Low bidders may be asked to furnish additional data to demonstrate competency. By submitting a BID, BIDDER certifies that he is skilled and regularly engaged in the general class and type of work called for in the BID DOCUMENTS.

Additionally, BIDDER shall comply with all provisions of Arizona Revised Statutes, Title 32, Chapter 10.

11. <u>SUBCONTRACTORS</u>. The CONTRACTOR may subcontract any part of the work to be performed under this CONTRACT as long as resulting charges to CITY do not exceed the Lump Sum BID quoted in the Bid Form and the subcontractor(s) is/are licensed to perform the work required by the CONTRACT. The BIDDER shall submit the List of Subcontractors and Supplier form, listing all of the subcontractors and major suppliers it intends to use in the performance of THE WORK. CITY reserves the right to reject any BID based on submission of an incomplete list of subcontractors and major material suppliers as non-responsive. CITY reserves the right to reject, prior to award of the CONTRACT, the bidder's request for substitution of subcontractors or major material suppliers provided, however, substitute subcontractors may be considered as long as they comply with the requirements of these CONTRACT DOCUMENTS.

12. <u>DETERMINATION OF SUCCESSFUL BIDDER</u>. Except where CITY exercises the reserved right herein, the CONTRACT shall be awarded by CITY to the RESPONSIVE and RESPONSIBLE BIDDER who has submitted the lowest lump sum BID.

CITY may conduct such investigation as CITY deems necessary to assist in the evaluation of any BID and to establish the responsibility, qualifications, and financial ability of BIDDERs, proposed subcontractors and other persons and organizations to do THE WORK in accordance with the BID DOCUMENTS.

13. <u>AWARD OF CONTRACT</u>. Notwithstanding any other provision in these BID DOCUMENTS, CITY reserves the right to (a) waive any immaterial defect or informality; or (b) reject any or all BIDs, or portions thereof; (c) withdraw, cancel, or reissue this IFB; (d) issue addenda or amend the IFB, including extending deadlines; (e) request additional information and/or clarification from BIDDER; (f) accept any part/portion of any bid with exclusion to other parts/portions; (g) negotiate and/or award a contract only when it is in the best interest of the CITY; and/or (h) take other actions the CITY deems is in the best interest of the CITY. Within Sixty (60) days after opening of the bids, CITY shall act upon them. The acceptance of a BID shall be a written NOTICE OF AWARD and no other act shall constitute acceptance.

14. <u>BID SECURITY AND BONDING</u>. Each bid must be accompanied by a bond or a cashier's check of the Company, drawn on a national bank, in an amount equal to ten percent (10%) of the Bid, as a guarantee on the part of the Contractor that it will, if called upon to do so, accept and enter into a contract based on the obligations and conditions set forth herein to perform the work covered by such Bid and at the cost stated therein. Checks and bonds will be returned promptly after the City and the selected contractor have executed the contract, or, if no contractor's bid has been selected within sixty (60) days after the date of the opening of the bids, upon demand of the contractor at any time thereafter, so long as he has not been notified of the acceptance of his proposal. Failure to execute the Contract within ten (10) business days will, at the option of the City, constitute a breach and the City will be entitled to forfeiture of the required bond accompanying the Bid, not as a penalty, but as liquidated damages.

City of Page LPN CLUBHOIUSE ADDITION APRIL 6TH, 2023 Bidder's Initials _____ Pursuant to A.R.S. § 34-222, the Contractor shall post a 100% Performance Bond and 100% Labor and Material Payment Bond with the City before the Contract is executed and Notice to Proceed issued.

15. <u>TIME FOR EXECUTING CONTRACT</u>. Any BIDDER whose BID has been accepted shall be required to execute the CONTRACT and return it to CITY within ten (10) days after receipt of the NOTICE OF AWARD, complete with required bond forms and insurance certificates. Failure or neglect to do so shall constitute a breach of the agreement effected by the NOTICE OF AWARD. The rights and obligations provided for in the CONTRACT shall become effective and binding upon the parties only with its formal execution by the CITY.

The damages to CITY for such breach shall include loss from interference with its construction program and other items whose accurate amount shall be difficult or impossible to compute. The amount of the Bid Bond, if any, accompanying the BID of such BIDDER shall be retained by CITY as liquidated damages for such breach.

16. <u>SUSPENSION & DEBARMENT</u>. CITY reserves the right to reject the BID of any person or corporation that has previously defaulted on any contract with CITY or has engaged in conduct that constitutes a cause for debarment or suspension.

17. <u>PROTEST PROCEDURE</u>. The award determination of the Page City Council shall be final.

18. <u>PUBLIC RECORD</u>. All BIDS submitted in response to this invitation shall become the property of CITY and shall become a matter of public record; provided, however, that the BIDDER shall clearly identify information that he considers to be confidential. To the extent that CITY agrees, and current Arizona law supports such designation, such information will be held in confidence whenever possible.

1-3 BID FORM

PROJECT LAKE POWELL NATIONAL CLUBHOUSE ADDITION

CITY OF PAGE 697 VISTA AVENUE PAGE, ARIZONA 86040

Bidder's Company Name:

The undersigned bidder has carefully examined the BID DOCUMENTS and the site of the work for the [title of project] for the City of Page, and shall provide all necessary machinery, tools, apparatus, and other means of construction and do all THE WORK and furnish all materials called for in the BID DOCUMENTS.

THE BIDDER AGREES TO PERFORM ALL OF THE NECESSARY WORK DESCRIBED IN THE BID DOCUMENTS FOR THE TOTAL BID PRICE OF:

_____ Dollars (\$______)

Accompanying this BID is a Bid Bond for Ten Percent (10%) of the lump sum bid payable to CITY, which is to be forfeited as liquidated damages, if, in the event that this bid is accepted, the undersigned fails to execute the CONTRACT and furnish satisfactory performance and payment bonds under the conditions and within the time specified in the BID DOCUMENTS; otherwise said Bid Bond is to be returned to the undersigned.

Date	
Name of Bidder	
Signature of Bidder	
Title of Bidder	
Address	
Telephone Number	
Fax Number	

BIDDER shall have the following License(s) to perform THE WORK specified herein:

Arizona General Contractor's License No.

Federal Tax ID No.

City of Page LPN CLUBHOIUSE ADDITION APRIL 6TH, 2023 Bidder's Initials

1-4 BID SCHEDULES

PROJECT LAKE POWELL NATIONAL CLUBHOUSE ADDITION

CITY OF PAGE 697 VISTA AVENUE PAGE, ARIZONA 86040

BIDDER shall complete the unit prices in the Bid Schedules, below. The BIDDER agrees to perform all of the services necessary to accomplish the work described in the specifications and shown on the plans for the unit prices listed in each Bid Schedule. The CITY shall pay BIDDER for completion of the Work in accordance with the Contract Documents in current funds based on the Bid Schedule unit prices and actual quantities of work installed.

The quantities appearing in the Bid Schedule are approximate only. In the event the total amount of the lowest acceptable bid exceeds the amount of funds available for the project, the scope of work will be modified as determined by the CITY and the ENGINEER. The right is reserved to increase or decrease the quantities listed in each Bid Schedule or to entirely eliminate certain Bid Items or Bid Schedules if found desirable or expedient. The BIDDER is cautioned against unbalancing his Bid by prorating his overhead into one or two bid items. The overhead and indirect charges should be prorated on all items in the Bid Schedule.

City of Page LPN CLUBHOIUSE ADDITION APRIL 6TH, 2023 Bidder's Initials _____

1-5 CONTRACTOR'S REFERENCE PAGE

To Submit with Bid. ALL REFERENCES WILL BE TREATED AS THE CONTRACTOR'S CONFIDENTIAL BUSINESS INFORMATION. CITY may contact some or all of the references provided in order to determine Bidder's RESPONSIBILITY and performance record on work of similar scope. CITY reserves the right to contact references other than those provided in the response and to utilize the information gained from them in the evaluation process.

Previous work for CITY may be used as references. Complete each item for all 10 references (5 Current and 5 Former):

Current References:

	Owner/Agency	
	Address	
	City, State, Zip	
1	Phone	
	Contact Person	
	Project Name and	
	Scope of Work	

	Owner/Agency	
	Address	
	City, State, Zip	
2	Phone	
	Contact Person	
	Project Name and Scope of Work	
	Scope of Work	

	Owner/Agency	
	Address	
	City, State, Zip	
2	Phone	
3	Contact Person	
	Project Name and Scope of Work	
	Scope of Work	

City of Page LPN CLUBHOIUSE ADDITION APRIL 6TH, 2023 Bidder's Initials_____

Former References:

	Owner/Agency	
	Address	
	City, State, Zip	
1	Phone	
1	Contact Person	
	Project Name and	
	Scope of Work	

	Owner/Agency	
	Address	
	City, State, Zip	
2	Phone	
2	Contact Person	
	Project Name and Scope of Work	
	Scope of Work	

3	Owner/Agency	
	Address	
	City, State, Zip	
	Phone	
	Contact Person	
	Project Name and Scope of Work	
	Scope of Work	

1-6 LIST OF SUBCONTRACTORS AND MATERIAL VENDORS

PROJECT LAKE POWELL NATIONAL CLUBHOUSE ADDITION

CITY OF PAGE 697 VISTA AVENUE PAGE, ARIZONA 86040

To Submit with Bid. In compliance with the Instructions to Bidders, the undersigned submits the following names of subcontractors and material vendors to be used in performing the work for this project. Where subcontractor or material vendor does not apply, write "N/A."

Subcontractor's or Material Vendor's Trade	Subcontractor's Name	Vendor's Name
Demolition		
Earthwork		
Soil Treatment		
Paving and Surfacing		
Site Improvements		
Concrete Reinforcing		
Cast-in-Place Concrete		
Masonry		
Structural Steel		
Steel Joists		
Steel Decking		
Light Gage Metal Framing		
Metal Fabrication		
Rough Carpentry		
Architectural Woodwork		
Damp Proofing		
Insulation		
Roofing		
Flashing and Sheet Metal		
Sealants		

City of Page LPN CLUBHOIUSE ADDITION APRIL 6TH, 2023 Bidder's Initials_____

Subcontractor's or Material Vendor's Trade	Subcontractor's Name	Vendor's Name
Sheet Metal Roofing		
Metal Doors and Frames		
Wood Doors		
Special Doors		
Metal Windows		
Hardware		
Glazing		
Lath and Plaster		
Gypsum Wallboard		
Ceramic Tile		
Acoustical Panel Ceilings		
Resilient Flooring		
Carpeting		
Painting		
Signage		
Plumbing		
Fire Protection System		
HVAC		
Electrical		
Irrigation		
Landscape		
Other (specify)		
	· · · ·	

1-7 STATEMENT OF BIDDER QUALIFICATION

If bidder is a corporation, answer the following:

Date of Incorporation		
State of Incorporation		
President's Name		
Vice President's Name		
Secretary/Clerk's Name		
Treasurer's Name		
If bidder is a partnership, answ	er the following:	
Date of Organization General or Limited Partnership		
Name and Address of All Part	ners:	
If other than a corporation or pa	artnership, describe the organization and name principals:	

Major types of work done by the organization:

How many years has your organization been in business as a contractor under your present business name?

How many years' experience in the proposed type and scale of construction work has your organization had?

- A. As a general contractor:
- B. As a subcontractor:

What is the construction experience of the principal individuals of your organization?

Individual's Name	Present Position or Office	Years Construction Experience	Magnitude and Type of Work	In What Capacity

1-8 ARIZONA STATUTORY BID BOND

PROJECT LAKE POWELL NATIONAL CLUBHOUSE ADDITION

CITY CITY OF PAGE 697 VISTA AVENUE PAGE, ARIZONA 86040

PURSUANT TO TITLE 34, ARIZONA REVISED STATUTES, (Penalty of this bond must not be less than 10% of bid amount), KNOW ALL MEN BY THESE PRESENTS THAT:

_________(hereinafter "Principal"), as Principal, and _____________(hereinafter "Surety"), a corporation organized and existing under the laws of the State of _______, with its principal offices in the City of ________, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto the City of Page, Arizona (hereinafter "Obligee"), in the sum of Ten Percent (10%) of the amount of the bid of Principal, submitted by Principal to Obligee for the work described below, for payment of which sum, the Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for the work titled above.

NOW, THEREFORE, if the oblige shall accept the proposal of the Principal and the Principal shall enter into a contract with the Obligee in accordance with the terms of the proposal and give the bonds and insurance as specified in the standard specifications with good and sufficient surety for the faithful performance of this contract and for prompt payment of labor and materials furnished in the prosecution of this contract, or in the event of the failure of the Principal to enter into this contract and give the bonds and certificates of insurance, if the Principal pays to the Obligee the difference not to exceed the penalty of the bond between the amount specified in the proposal and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by the proposal then this obligation is void. Otherwise, it remains in full force and effect provided, however, that this bond is executed pursuant to the provisions of Section 34-201, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of that section to the extent as if it were copied at length herein.

Witness our hands this	day of	, 20	. By
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_____ (Principal)

By_____(Surety)

2 CONTRACT AGREEMENT DOCUMENTS

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2-1 NOTICE OF AWARD

PROJECT LAKE POWELL NATIONAL CLUBHOUSE ADDITION

CITY CITY OF PAGE 697 VISTA AVENUE PAGE, ARIZONA 86040

CONTRACTOR

DATE _____, 2023

The City of Page, having duly considered the bid submitted on MAY 11, 2023 for the City of Page **LAKE POWELL NATIONAL CLUBHOUSE ADDITION** as outlined in the CONTRACT DOCUMENTS, and it appearing that your BID for performing the work is fair, equitable, and in the City's best interest, said BID is hereby accepted at the lump sum price contained therein, and in accordance with all terms, conditions, covenants, and provisions set forth in the CONTRACT DOCUMENTS.

In accordance with the terms of the CONTRACT DOCUMENTS, you are required to execute the formal CONTRACT and furnish the required Payment and Performance Bonds within ten (10) consecutive calendar days from and including the date of receipt of this Notice.

In addition, you are requested to furnish at the same time, the required certificates of insurance evidencing compliance with the requirements for insurance stated in the CONTRACT DOCUMENTS.

The Bid Bond submitted with your bid will be retained until the CONTRACT has been executed and the required Payment and Performance Bonds have been furnished and approved.

Kyle Christiansen Director of Public Works

RECEIVED AND ACCEPTED BY CONTRACTOR:

Ву		
Name		
Date		

2-2 CONTRACT

PROJECT LAKE POWELL NATIONAL CLUBHOUSE ADDITION

CITY

CITY OF PAGE 697 VISTA AVENUE PAGE, ARIZONA 86040

CONTRACTOR

The following Agreement contains terms and conditions which CONTRACTOR must be prepared to accept upon receipt of a NOTICE OF AWARD.

This Contract ("CONTRACT") is made and entered into by and between the City of Page, an Arizona municipal corporation, (hereinafter "CITY"), and __________(hereinafter "CONTRACTOR").

IN CONSIDERATION of the mutual promises and agreements set forth herein, it is agreed by and between the CITY and CONTRACTOR, as follows:

1. <u>CONTRACT DOCUMENTS</u>. The following documents are hereby incorporated by reference into this CONTRACT, and shall be referred to as the CONTRACT DOCUMENTS:

A. Bid Documents to include the (1) Notice of Invitation for Bid; (2) Instructions to Bidders; (3) Bid Form; (4) Bid Schedules; (5) Contractor's Reference Page; (6) List of Subcontractors and Material Vendors; (7) Statement of Bidder Qualification; and (8) Arizona Statutory Bid Bond.

B. Contract Agreement Documents to include the (1) Notice of Award; (2) Contract; (3) Arizona Statutory Payment Bond; (4) Arizona Statutory Performance Bond; and (5) Notice to Proceed.

- C. General Conditions
- D. Technical Specifications
- E. Addenda to the Plans and Specifications, if any
- F. Project Construction Plans

G. <u>Uniform Standard Specifications for Public Works Construction</u>, latest edition as administered by the Maricopa Association of Governments.

The above-named documents are essential parts of this CONTRACT, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complimentary and to describe and provide for a complete work. CONTRACTOR agrees to be bound by all terms, conditions, covenants, and obligations in the CONTRACT DOCUMENTS as if each were again fully set forth verbatim herein. In the event any document conflicts or contradicts this instrument, this instrument shall be controlling.

2. The date of commencement of the project shall be the date fixed in the "Notice to Proceed" issued by the City of Page. The Contract Time shall be measured from the date of commencement.

The CONTRACTOR shall achieve substantial completion of the entire project not later than SEPTEMBER 30, 2023, subject to adjustments of this contract time with approval of the CITY. The Parties acknowledge that time is of the essence and that completion of this project within the monetary and time constraints placed on the project is of utmost importance and CITY has considered and relied on CONTRACTOR'S representations as to its quality of service commitment in entering into this CONTRACT. The Parties further recognize that quantified standards of performance are necessary and appropriate to ensure that the project is completed competently within budget and on time. The Parties further recognize that if CONTRACTOR fails to achieve the performance standards, CITY and its residents will suffer damages and that it is and will be impracticable and extremely difficult to ascertain and determine the exact amount of damages that CITY will suffer. Therefore, the Parties agree that in the event the CONTRACTOR fails to complete this CONTRACT on or before the completion date as specified herein, liquidated damage shall be assessed in the amount of \$250.00 per day that the CONTRACT remains unfinished. This amount represents a reasonable estimate of the amount of such damages considering all of the circumstances existing on the date of this CONTRACT, including the relationship of the sums to the range of harm to CITY and its residents that reasonably could be anticipated and recognition that proof of actual damages would be costly or inconvenient.

3. PAYMENT. In consideration of the services specified in this CONTRACT, CITY agrees to pay CONTRACTOR in the manner hereinafter specified.

CONTRACTOR shall provide detailed documentation in support of requested progress payments in accordance with A.R.S. § 34-221. CITY shall then make payments in accordance with its obligation as provided by A.R.S. § 34-221. Any payments made shall not prevent the Owner from subsequently objecting to charges after payment therefore in appropriate cases, or from seeking reimbursement for any such charges. Retention will be in accordance with A.R.S. § 34-221.

In no event shall the total payment(s) paid to the CONTRACTOR under this CONTRACT exceed \$_____

Nothing in this CONTRACT shall create any obligation on the part of CITY to pay or see to the payment of any money due any subcontractor, except as may be required by law.

4. SCOPE OF SERVICES. CONTRACTOR shall provide for CITY all labor, materials and equipment necessary to perform THE WORK provided for in the CONTRACT DOCUMENTS. All

work shall be done in a skillful and workmanlike manner per specifications called for in the CONTRACT DOCUMENTS.

5. CONTRACTOR/SUBCONTRACTOR PERFORMANCE. CONTRACTOR shall perform the work in accordance with the terms of this CONTRACT and to the best of CONTRACTOR'S ability. CONTRACTOR agrees to exercise the skill and care, which would be exercised by comparable professional Contractors performing similar services at the time and in the locality such services are performed. Furthermore, CONTRACTOR shall perform the work or services in accordance with generally accepted methods and standards.

CONTRACTOR shall employ suitably trained and skilled personnel to perform all work or services under this CONTRACT. If failure to meet acceptable standards results in faulty work, CONTRACTOR shall undertake, at CONTRACTORS own expense, corrective adjustments, modifications, or repair.

CONTRACTOR shall be fully responsible for all acts and omissions of its subcontractor(s) and of persons directly or indirectly employed by subcontractor(s).

6. INSURANCE. CONTRACTOR, at his own expense, shall purchase and maintain the herein stipulated minimum insurance with companies duly licensed and subject to legal process within the State of Arizona, possessing a current A.M. Best, Inc. Rating of A- or better.

All insurance required herein shall be maintained in full force and effect until all work or services required to be performed under the terms of this CONTRACT is satisfactorily completed; failure to do so may, at the sole discretion of CITY, constitute a material breach of this CONTRACT.

CONTRACTOR's insurance shall be primary insurance in regard to the CITY, and any insurance or self-insurance maintained by CITY shall not contribute to it. The insurance policies shall contain a waiver of transfer rights of recovery (subrogation) against CITY, its agents, officers, officials and employees for any claims arising out of CONTRACTOR's acts, errors, mistakes, omissions, work or services. The City shall be named as an additional insured.

Prior to commencing work or services under this CONTRACT, CONTRACTOR shall furnish the CITY with Certificates of insurance, or formal endorsements as required by this CONTRACT, issued by CONTRACTOR's insurer(s), as evidence that policies providing the required coverage, conditions and limits required herein are in full force and effect. All Certificates of Insurance shall be identified with the bid number and title.

If a policy does expire during the life of this CONTRACT, a renewal certificate must be sent to CITY fifteen days prior to the expiration date. Insurance required herein shall not expire, be cancelled, or materially changed without thirty (30) days written notice to CITY.

The CONTRACTOR shall carry at all times the following insurance coverage:

Comprehensive Commercial General Liability: Limits: Combined single Limit Bodily Injury/Property damage- not less than \$1,000,000.

Automobile Liability:

Limits: Bodily Injury-	\$250,000 each person
	\$500,000 each occurrence
Property Damage-	\$100,000 each occurrence

Workers' Compensation:

The CONTRACTOR shall carry Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction over the Contractor's employees engaged in the performance of the work or services; and Employer's Liability insurance of not less than \$100,000 for each accident, \$100,000 disease for each employee, and \$500,000 disease policy limit.

In case any work is subcontracted, this CONTRACT will require the Subcontractor to provide Workers' Compensation and Employer's Liability to at least the same extent as required of this CONTRACTOR.

7. INDEMNIFICATION. To the fullest extent permitted by law, CONTRACTOR shall indemnify, defend and hold harmless CITY, its agents, officers, officials and employees from and against any and all claims, demands, suits, actions, proceedings, loss, cost and damages of every kind and description, including any reasonable attorney fees, which may be brought or made against or incurred by CITY on account of (1) loss or damage to any property or interest of CITY, its officers, employees and agents, or any damages, injury to person or property, or death of any person arising out of, relating to, or alleged to have resulted from any acts, errors, omissions, work, or services of CONTRACTOR, its employees, agents, representatives, or subcontractors, their employees, agents, or representatives, (2) any workers' compensation claims, unemployment compensation claims or unemployment disability claims of employees of CONTRACTOR or claims under similar such laws or obligations. This indemnification shall not extend to any loss, damage, injury, or death to the extent caused by the negligence or willful misconduct of CITY, or its employees.

The amount and type of insurance coverage requirements set forth within this CONTRACT shall in no way be construed as limiting the scope of the indemnity as set forth herein.

8. INDEPENDENT CONTRACTOR STATUS. Both parties agree that: (a) the work contracted for in this CONTRACT falls within the distinct nature of CONTRACTOR'S business; (b) the nature of the work contained within this CONTRACT is specialized, and CITY has elected to contract out the work rather than attempt to perform the work with its current workforce; (c) CONTRACTOR is an incorporated business that possesses the personnel and materials necessary to perform the work; (d) the relationship of the work provided by CONTRACTOR has no relationship to the regular business conducted by CITY; (e) it is understood and agreed that CONTRACTOR is an independent contractor, and nothing herein contained shall constitute, create, give rise to, or otherwise recognize an employment relationship, joint venture, partnership, or formal business association or organization of any kind between the parties hereto, other than as contracting parties, nor shall CONTRACTOR or any subcontractor, or any employee of CONTRACTOR or any subcontractor be deemed to be employed by CITY or entitled to any remuneration or other benefits from the CITY, other than as set forth in this CONTRACT.

9. ASSIGNMENT. CONTRACTOR shall not assign its rights to this CONTRACT, in whole or in part, without prior written approval of CITY. Approval may be withheld at the sole discretion of CITY, provided that such approval shall not be unreasonably withheld.

10. AUTHORITY TO CONTRACT. CONTRACTOR warrants its right and power to enter into this CONTRACT. If any court or administrative agency determines that CITY does not have authority to enter into this CONTRACT, CITY shall not be liable to CONTRACTOR or any third party by reason of such determination or by reason of this CONTRACT.

11. CANCELLATION FOR CONFLICT OF INTEREST. This CONTRACT is subject to cancellation for conflict of interest pursuant to A.R.S. § 38-511, the pertinent provisions of which are incorporated into this CONTRACT by reference.

12. TERMINATION OF CONTRACT FOR CAUSE. If, through any cause, CONTRACTOR shall fail to fulfill in timely and proper manner its obligations under this CONTRACT, or if CONTRACTOR shall violate any of the covenants, provisions, or stipulations of this CONTRACT, CITY shall thereupon have the right to terminate this CONTRACT by giving written notice to CONTRACTOR of such termination and specifying the effective date thereof, at least ten (10) days before the effective date of such termination.

In such event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports prepared by CONTRACTOR shall, at the option of CITY, become its property and CONTRACTOR shall be paid an amount based on time and expenses incurred by CONTRACTOR prior to the termination date; however, no payment shall be allowed for anticipated profits on unperformed work or services. Notwithstanding the above, CONTRACTOR shall not be relieved of liability to CITY for damages sustained by CITY by virtue of any breach of this CONTRACT by CONTRACTOR and CITY may withhold payments to CONTRACTOR for purpose of set-off until such time as the exact amount of damages due the CITY from CONTRACTOR are determined.

13. TERMINATION FOR CONVENIENCE. CITY may terminate this CONTRACT at any time by giving written notice to CONTRACTOR of such termination and specifying the effective date thereof, at least thirty (30) days before the effective date of such termination. If this CONTRACT is terminated by CITY as provided herein, CONTRACTOR shall be paid an amount based on the time and expense incurred by CONTRACTOR prior to the termination date, however, no payment shall be allowed for anticipated profit on unperformed work or services.

14. NON-APPROPRIATION OF FUNDS. Notwithstanding any other provision of this CONTRACT, this CONTRACT may be terminated without penalty to the CITY, if for any reason there are not sufficient appropriated and available monies for the purpose of maintaining CITY or other public entity obligations under this CONTRACT. CITY shall have no further obligation to CONTRACTOR, other than to pay for services rendered prior to termination.

15. WARRANTY. CONTRACTOR warrants that work performed will conform to the CONTRACT DOCUMENTS and is free of any defect in equipment, material or design furnished, or workmanship performed by the CONTRACTOR or any of its subcontractors or suppliers at any tier. This warranty shall continue for a period of one (1) year from the date of final acceptance of the WORK. CONTRACTOR shall remedy at CONTRACTOR'S expense any failure to conform, or any defective work.

16. REMEDIES. Either party may pursue any remedies provided by law for breach of this CONTRACT. No right or remedy is intended to be exclusive of any other right or remedy and each shall be cumulative and in addition to any other right or remedy existing at law or at equity or by virtue of this CONTRACT.

17. WAIVER. Failure of either party to insist on one or more instances upon the full and complete compliance with any of the terms or provisions of this CONTRACT to be performed on the part of the other, or to take any action permitted as a result thereof, shall not be construed as a waiver or relinquishment of the right to insist upon full and complete performance of the same, or any other covenant or condition, either in the past or in the future. The Acceptance by either party of sums less than may be due and owing it at any time shall not be construed as an accord and satisfaction.

18. CHOICE OF LAW/VENUE. Any dispute, controversy, claim or cause of action arising out of or related to this CONTRACT shall be governed by Arizona law. The venue for any such dispute shall be in Coconino County, Arizona. Each party waives the right to object to venue in Coconino County for any reason.

19. ENTIRE AGREEMENT. This CONTRACT constitutes the entire agreement between the parties pertaining to the subject matter hereof, and all prior or contemporaneous agreements and understandings, oral or written, are hereby superseded and merged herein. This CONTRACT may be modified, amended, altered or extended only by a written amendment signed by the parties. Additionally, nothing in the CONTRACT shall be deemed to guarantee CONTRACTOR a minimum amount of rentals, services, or business to the CITY.

20. A.R.S. § 41-4401. The contractor warrants compliance with all Federal immigration laws and regulations relating to employees and subcontractors and warrants its compliance with A.R.S. § 41-4401 including the E-verify program. A breach of this section shall be deemed a material breach of the CONTRACT that is subject to penalties up to and including termination of the CONTRACT. CITY retains the legal right to inspect the papers of CONTRACTOR or any subcontractor employee who works on the CONTRACT to ensure compliance with this provision.

21. CONSTRUCTION OF THIS CONTRACT. This CONTRACT shall be construed and interpreted according to its plain meaning, and no presumption shall be deemed to apply in favor of, or against the party drafting this CONTRACT. The parties acknowledge and agree that each has had the opportunity to seek and utilize legal counsel in the review of and entry into this CONTRACT.

22. NOTICES. All notices, requests, demands, payments and other communications hereunder shall be in writing and shall be deemed given if personally delivered or mailed, certified mail, return receipt requested, or sent by overnight carrier to the following address on the date received:

City of Page

Contractor:

697 Vista Avenue P.O. Box 1180 Page, Arizona 86040

23. Pursuant to A.R.S. § 35-393 et seq., Contractor certifies that it is not currently engaged in, and agrees for the duration of this Contract not to engage in, a boycott of Israel.

IN WITNESS WHEREOF, the parties have executed this CONTRACT on the dates set forth below.

City of Page

Contractor:

Attested By:	Approved as to Form:
Date	Date:
·	·
Ву:	Ву:

Kim Larson, City Clerk

An Arizona municipal corporation

City Attorney

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2-3 ARIZONA STATUTORY PAYMENT BOND

PROJECT LAKE POWELL NATIONAL CLUBHOUSE ADDITION

CITY CITY OF PAGE 697 VISTA AVENUE PAGE, ARIZONA 86040

PURSUANT TO TITLE 34, ARIZONA REVISED STATUTES, (Penalty of this bond must be 100% of this CONTRACT amount), KNOW ALL MEN BY THESE PRESENTS THAT:

______(hereinafter "Principal"), as Principal, and _______(hereinafter "Surety"), a corporation organized and existing under the laws of the State of ______, with its principal offices in the City of _______, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto the City of Page, Arizona (hereinafter "Obligee"), in the amount of \$______, for the payment whereof, Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written CONTRACT with Obligee, dated the ______ day of _______, 2023, for the work titled above, which contract is hereby referred to and made part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THE OBLIGATION IS SUCH, that if the Principal promptly pays all monies due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in the contract, this obligation is void. Otherwise, it remains in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bind shall be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as part of the judgment reasonable attorney fees that may be fixed by the court.

Witness our hands this	day of	, 20
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By_____(Surety)

2-4 ARIZONA STATUTORY PERFORMANCE BOND

PROJECT LAKE POWELL NATIONAL CLUBHOUSE ADDITION

CITY

CITY OF PAGE 697 VISTA AVENUE PAGE, ARIZONA 86040

PURSUANT TO TITLE 34, ARIZONA REVISED STATUTES, (Penalty of this bond must be 100% of this CONTRACT amount), KNOW ALL MEN BY THESE PRESENTS THAT:

______(hereinafter "Principal"), as Principal, and _______(hereinafter "Surety"), a corporation organized and existing under the laws of the State of ______, with its principal offices in the City of _______, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto the City of Page, Arizona (hereinafter "Obligee"), in the amount of \$______, for the payment whereof, Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written CONTRACT with the Obligee, dated the __day of______, 2023, for the work titled above, which contract is hereby referred to and made part hereof as fully and to the same extent as if copied at length herein.

WHEREAS, payment shall be made by Surety to Obligee upon failure of Principal to faithfully perform and fulfill all the undertakings, covenants, terms, conditions and agreements of the Contract regarding the performance of the contract and presentation of such to Surety by a claim, which has been prepared and signed by the Obligee's representative and witnessed by a notary, stating that: "The Principal is in default, such condition has existed for over 90 days, and the Obligee is hereby exercising its rights under bond no.____."

NOW, THEREFORE, THE CONDITION OF THE OBLIGATION IS SUCH, that if the Principal faithfully performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of the contract during the original term of the contract and any extension of the contract, with or without notice to the Surety, and during the life of any guaranty required under the contract, and also performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of all duly authorized modifications of the contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, the above obligation is void. Otherwise, it remains in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as part of the judgment reasonable attorney fees that may be fixed by the court.

Witness our hands this ______day of _____, 20____.

By _____(Principal)

By_____(Surety)

2-5 NOTICE TO PROCEED

PROJECT LAKE POWELL NATIONAL CLUBHOUSE ADDITION

CITY CITY OF PAGE 697 VISTA AVENUE PAGE, ARIZONA 86040

CONTRACTOR

DATE

You are hereby authorized to proceed with work effective ______, 2023 and fully complete all work for this Project on August 30, 2023. Liquidated damages of \$ One Hundred Twenty Five Dollars (\$250.00) per day are applicable for each day past August 30, 2023, for which work on this Project is not complete, unless otherwise provided.

Kyle Christiansen Director of public works

RECEIVED AND ACCEPTED BY CONTRACTOR:

By _____ Name _____ Date _____

3 GENERAL CONDITIONS

3-1 GENERAL CONDITIONS

The following Provisions are general in scope and may refer to conditions which will not be encountered in the performance of THE WORK included in this CONTRACT and which are not applicable thereto. Any requirements, provisions or other stipulation of these General Conditions which pertain to a non-applicable condition shall be excluded from the scope of this CONTRACT.

1. <u>DEFINITIONS</u>. Whenever in these Bid Documents, or in any document of instruction where these Bid Documents govern, the following terms or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

Bid: The offer of the BIDDER for the work when properly made out on forms containing the Bid Form supplied by CITY and properly submitted signed and guaranteed.

Bid Documents: Consists of all CONTRACT DOCUMENTS and may be used interchangeably with said term.

Bidder: Any individual, firm or corporation, qualified as herein provided, legally submitting a Bid for the work contemplated, acting directly or through an authorized representative.

City: The CITY of Page, an Arizona municipal corporation.

Construction Documents: The drawings, technical plans, and specifications, supplementary general and/or special conditions for THE WORK.

Contract: The written agreement covering the performance of THE WORK and the furnishing of labor, equipment, and materials in the construction for THE WORK.

Contract Documents: Includes the Notice of Invitation for Bid, Definitions, Scope of Work and/or Plans, Drawings, and Technical Specifications, Instructions to Bidders, General Conditions, Special Conditions (if any), Arizona Statutory Bid Bond, Arizona Statutory Performance Bond, Arizona Statutory Payment Bond, Contract, Contractor's Reference List, List of Subcontractors & Material Vendors, Statement of Bidder Qualifications, Bid Form, Notice of Award, and Notice to Proceed.

Contractor: The successful BIDDER selected by the Council that enters into the CONTRACT to perform THE WORK.

Extra Work: Work, including materials, for which no price agreement is contained in the CONTRACT and which is deemed necessary for the proper completion of the work.

Notice of Award: The official written notice from CITY to the BIDDER selected by CITY to perform THE WORK.

Notice to Proceed: The official written notice from CITY to CONTRACTOR to begin performance of THE WORK.

Responsible Bidder: A BIDDER determined by CITY:

- A. To have the ability, capability, experience and skill to provide the goods and/or services in accordance with the bid specifications;
- B. To have the ability to provide the goods and/or services promptly, or within the time specified, without delay or interference;
- C. To have equipment, facilities and resources of such capacity and location to enable the BIDDER to provide the goods and/or services;
- D. To be able to provide future maintenance, repair, parts and service for the use of the goods purchased, when applicable;
- E. To have the quality and adaptability of the materials, supplies or services required or necessary to the particular use; and
- F. To possess the financial resources to perform the CONTRACT.

Responsive Bidder: A BIDDER determined by CITY to have submitted a bid that conforms in all material respects to the requirements of the BID DOCUMENTS.

Special Conditions: Additional conditions to the General Conditions, which are conditions or requirements peculiar to the project under consideration. In the event Special Conditions are in conflict with the General Conditions, the Special Conditions shall be controlling.

Surety: The corporate body, who is primarily liable, that agrees to be responsible for the payment of all debts pertaining to the acceptable performance of the work for which the CONTRACTOR has contracted.

The Work: All of the work or services, including the labor and materials, specified in the CONTRACT DOCUMENTS.

2. <u>CERTIFICATION</u>. By signature of the Bid Form, BIDDER certifies:

A. The submission of the BID did not involve collusion or other anti-competitive practices.

B. The BIDDER shall not discriminate against any employee, or applicant for employment in violation of Federal Executive Order 11246, or A.R.S. § 31-1461 et seq.

C. The BIDDER has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted BID.

D. The BIDDER submitting the offer hereby certifies that the individual signing the BID is an authorized agent for the BIDDER and has authority to bind the BIDDER to the CONTRACT.

E. That no person has been employed or retained to solicit or secure this CONTRACT upon an agreement or understanding for a commission, percentage, brokerage or contingency fee, and that no member of the CITY Council or CITY employee has any interest, financial or otherwise, in the Contracting firm. 3. <u>COMPLIANCE WITH LAW</u>. The CONTRACTOR, in the execution of THE WORK, shall conform to all applicable Federal, State, and local laws, rules and regulations. If CONTRACTOR observes that the CONTRUCTION DOCUMENTS are at variance therewith, it shall promptly notify CITY in writing, and any necessary changes shall be made as provided in this CONTRACT for changes in work. CONTRACTOR shall bear all costs arising from work performed contrary to such laws, rules and regulations, and without such notice to CITY.

4. <u>LICENSES</u>. THE WORK to be performed under the CONTRACT will be subject to the provisions on Title 34 of the Arizona Revised Statutes (A.R.S. § 34-101 through 34-461, as amended), if applicable. All BIDDERs and their subcontractors shall be duly licensed to perform THE WORK at the time the BID is submitted pursuant to all applicable laws, rules and regulations. At all times thereafter, while performing THE WORK, CONTRACTOR shall maintain in current status all licenses, permits, certifications, approvals and authorizations necessary to perform all obligations as set forth in the BID DOCUMENTS. It shall be the CONTRACTOR's responsibility to verify that its subcontractors have all appropriate licenses, permits, certifications, approvals and authorizations prior to their performing CITY of Page work on behalf of the CONTRACTOR.

5. <u>PROVISIONS REQUIRED BY LAW</u>. All applicable Federal, State and local laws, rules and regulations of all authorities having jurisdiction over construction for the project shall apply to the CONTRACT throughout, and they shall be deemed to be included in the CONTRACT the same as if each were fully set forth verbatim herein. Contractor shall be familiar with and at all times shall observe said laws, rules and regulations.

6. <u>CHANGE ORDERS FOR CHANGED OR EXTRA WORK</u>. The CITY reserves the right at any time during the progress of THE WORK to make necessary alterations of, deviations from, additions to, or deletions from the CONTRACT, or may require the performance of EXTRA WORK neither covered by the specifications nor included in the BID, but forming a part of THE WORK contracted for; provided however, the CONTRACTOR shall not proceed with any such change or EXTRA WORK without a written CHANGE ORDER approved by the CITY. Adjustments, if any, in the amount to be paid to the CONTRACTOR by reason of any such change shall be agreed upon by the Parties prior to issuance of the CHANGE ORDER.

No claim for any changed or EXTRA WORK of any kind shall be allowed unless the work is ordered and approved in writing by the CITY in the form of a CHANGE ORDER. No anticipated profits shall be allowed for work deleted.

In the event any written instructions appear to the CONTRACTOR to involve a change or EXTRA WORK for which, in his opinion, he should receive extra compensation, he shall make a written request to the Department Director named herein, or his properly authorized agent, for a written CHANGE ORDER. The matter shall then be submitted to the CITY for final determination as to whether or not a change or EXTRA WORK was involved, and if so, the amount due to the CONTRACTOR. Any claim for extra cost pursuant to this provision, together with supporting documents and receipts must be filed within ten (10) consecutive calendar days after performing the work for which the extra cost is claimed.

If CONTRACTOR, in the course of THE WORK, finds any discrepancy between the CONSTRUCTION DOCUMENTS and the physical conditions of the locality, or any errors or

omissions in the CONSTRUCTION DOCUMENTS or in the layout as given by points and instructions, it shall be CONTRACTOR's duty to immediately inform CITY, in writing, and CITY shall promptly verify the same. Any work done after such discovery, until authorized in writing, shall be done at CONTRACTOR's risk.

7. <u>PROTECTION OF WORK/PROPERTY</u>. The CONTRACTOR, at no additional expense to CITY, shall at all times safely guard and protect Contractor's own work; provide, erect, and maintain suitable barriers around all excavations or obstructions to prevent accidents; and provide, place and maintain during the night sufficient lights, signals, and signs for this purpose on or near the work. The CONTRACTOR shall at all times, until its completion and final acceptance, protect his work apparatus, equipment, and material from accidental or other damage; and make good any damages thus occurring at no additional cost to CITY.

The CONTRACTOR, at no additional expense to the CITY, shall at all times be responsible for the preservation of all public and private property on the surface and subsurface, along and adjacent to the work and shall conduct its operations so as to insure the prevention of injury or damage thereto. In the event damage or injury is done to public or private property on account of any act, omission, neglect, or misconduct in the execution of THE WORK, such property shall be restored by CONTRACTOR.

CONTRACTOR shall exercise care to protect from injury all water lines, sanitary sewer lines, gas mains, telephone cables, electric cables, services pipes, and all other utilities and fixtures which may be encountered during the progress of work. All utilities and other service facilities or fixtures if damaged, shall be repaired by CONTRACTOR without additional compensation.

Until written final acceptance of the work by CITY, CONTRACTOR shall be responsible for and take every precaution against injury or damage to any part of THE WORK from any cause, whether arising from the execution or non- execution of THE WORK. CONTRACTOR shall rebuild, repair, restore, and make good all injuries or damages of any portion of THE WORK occasioned by any cause, with the exception of negligence or willful misconduct of the CITY, before final acceptance and shall bear the expense thereof.

8. <u>SUBCONTRACTS</u>. CONTRACTOR agrees that it is as fully responsible to CITY for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

9. <u>CLEAN UP</u>. CONTRACTOR shall, as directed by CITY, remove from CITY's property and from all public and private property, at its own expense, all temporary structures, rubbish, and waste materials resulting from its operation. All surplus materials and all materials and equipment removed and not reused as a condition of this CONTRACT shall remain or become the property of the CONTRACTOR, unless otherwise so stated in writing.

10. <u>CITY'S RIGHT TO DO WORK</u>. If CONTRACTOR should neglect to prosecute THE WORK properly or fail to perform any provision of this CONTRACT, CITY, after notice to CONTRACTOR, may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due CONTRACTOR.

11. <u>SCHEDULES</u>. CONTRACTOR shall submit at such times as may be requested by CITY, schedules which shall show the order in which CONTRACTOR proposes to carry on THE WORK with dates at which CONTRACTOR shall start the several parts of THE WORK and estimated dates of completion of the several parts.

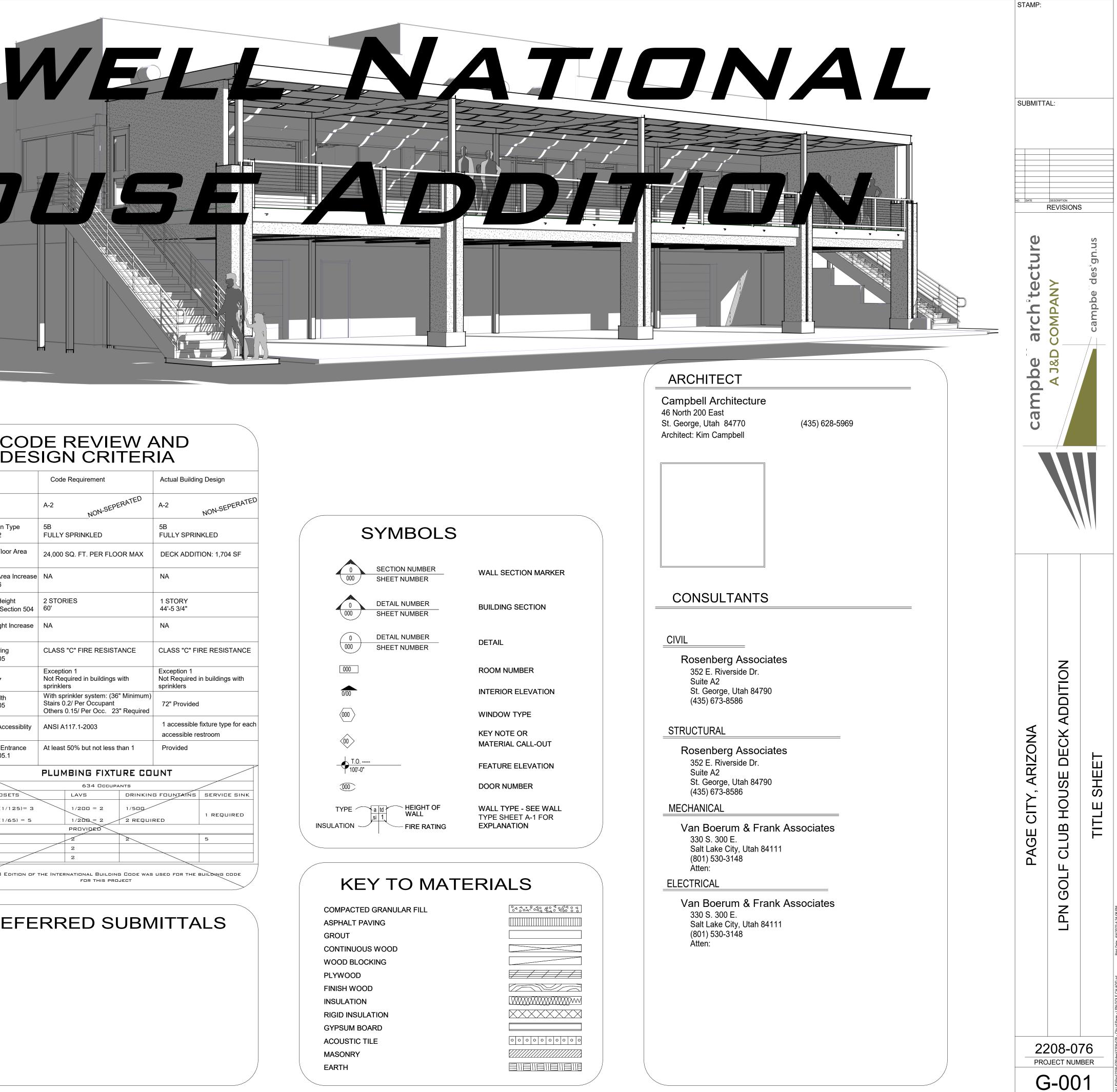
12. <u>OWNERSHIP OF DOCUMENTS</u>. All original drawings, boring logs, field data, estimates, field notes, plans, specifications, documents, reports, calculations, maps and models, and other information developed by CONTRACTOR under this CONTRACT shall vest in and become the property of CITY and shall be delivered to CITY upon completion or termination of the services, but CONTRACTOR may retain record copies thereof.

13. <u>INSPECTION OF WORK</u>. CITY representatives shall at all times have access to THE WORK wherever it is in preparation or progress. If the specifications, CITY's instructions, laws, ordinances, or any public authority, require any work be specifically tested or approved, CONTRACTOR shall give CITY timely notice of its readiness for inspection and if the inspection is by an authority other than CITY, of the date fixed for such inspection. Inspections by CITY shall be promptly made, and where practicable at the source of the supply. If any work should be covered up without approval or consent of CITY, it must, if required by CITY, be uncovered for inspection at CONTRACTOR's expense.

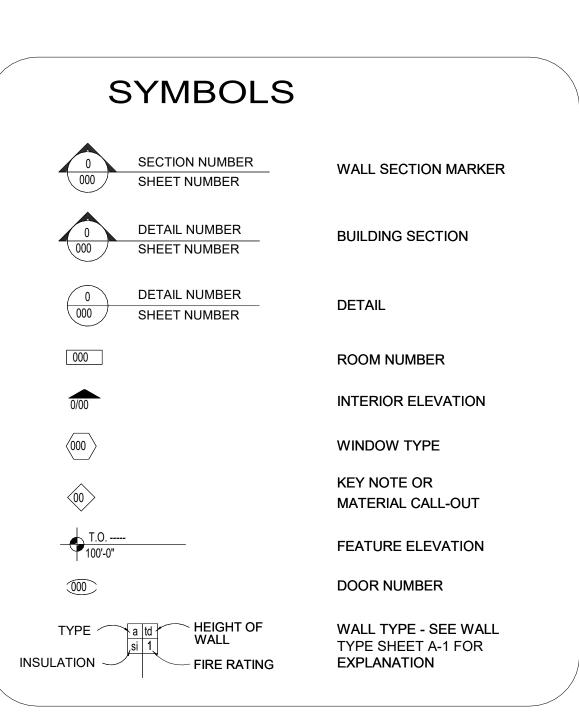
Re-examination of questioned work may be ordered by CITY, and if so ordered the work must be uncovered by CONTRACTOR. If such work is found to be in accordance with the BID DOCUMENTS, CITY shall pay the costs of re-examination and replacement. If such work is found not to be in accordance with the BID DOCUMENTS, CONTRACTOR shall pay such.

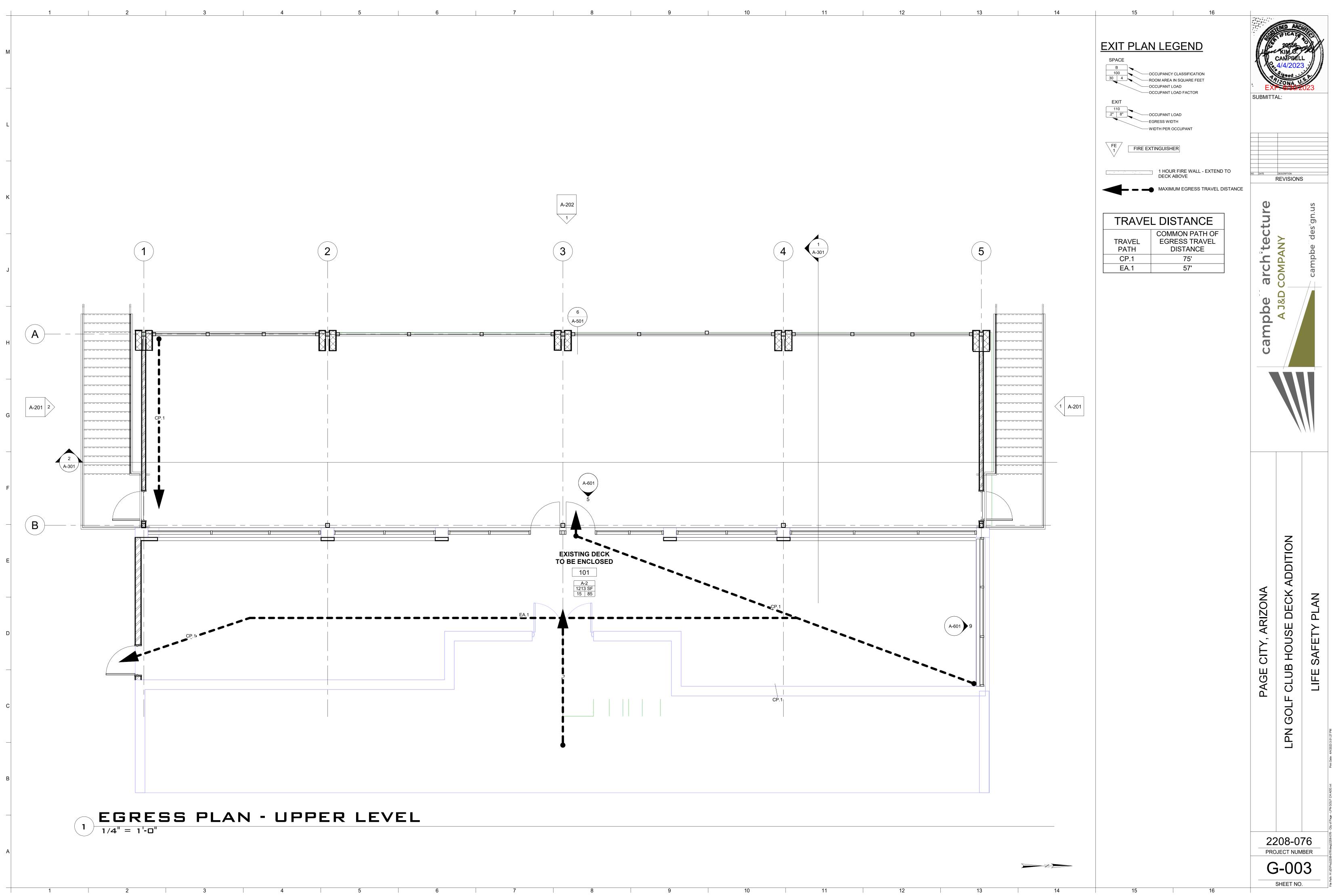
4 CONSTRUCTION PLANS

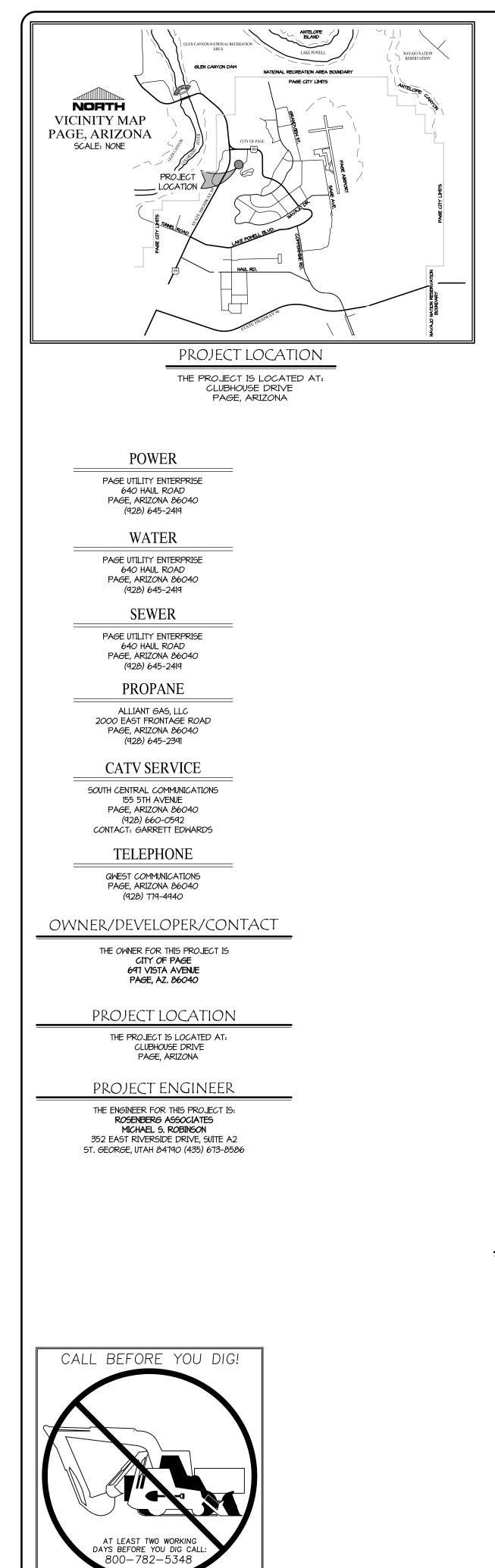
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E702 ELECTRICAL SPECIFICATIONS 1 accessible fixture type accessible fixture type accessible restroom Accessible Entrance At least 50% but not less than 1 Provided Accessible Entrance At least 50% but not less than 1 Provided Section 1105.1 At least 50% but not less than 1 Provided Variable Entrance Section 1105.1 At least 50% but not less than 1 Provided Variable Entrance Section 1105.1 At least 50% but not less than 1 Provided Variable Entrance Section 1105.1 At least 50% but not less than 1 Provided Variable Entrance Section 1105.1 At least 50% but not less than 1 Provided Variable Entrance Lave Derivers Interpretention of Provided Variable Entrance Section 1105.1 Interpretention of Provided Interpretention of Provided Variable Entrance Section 11/251 = 3 Interpretention of Provided Interpretention of Provided Variable Entrance Z Section 11/251 = 3 Section 11/250 = 2 Z Reput Variable Entrance Z Section 11/250 = 3 Section 11/250 = 2 Section 11/250 = 3 Section 11/250 = 2 Section 11/250 = 3 <td>E113ELECTRICAL POWER PLAN-ROOF LEVELE501ELECTRICAL DIAGRAMSE601ELECTRICAL SCHEDULES</td> <td>Egress Width</td> <td>With sprinkler system: (36" Minimum) Stairs 0.2/ Per Occupant</td> <td></td>	E113ELECTRICAL POWER PLAN-ROOF LEVELE501ELECTRICAL DIAGRAMSE601ELECTRICAL SCHEDULES	Egress Width	With sprinkler system: (36" Minimum) Stairs 0.2/ Per Occupant	
Accessible Entrance Section 1105.1 At least 50% but not less than 1 Provided PLUMBING FIXTURE COUNT G34 Occupants WATER CLOSETS MEN 317 Occ. (1/125)= 3 WOMEN 317 Occ. (1/65) = 5 1/200 = 2 1/500 TREQUIRED MEN 4 VALUE 1 WOMEN 317 Occ. (1/65) = 5 1/200 = 2 1/500 WOMEN 4 2 WOMEN 4 2 UNISEX 2 2 LAVS PROVIDEO		Restroom Accessiblity	•	1 accessible fixture type accessible restroom
634 DOCUPANTS WATER CLOSETS LAVS DRINKING FOUNTAINS SERVICE MEN 317 DCC. (1/125)= 3 1/200 = 2 1/500 1 REQUIRED WOMEN 1 317 DCC. (1/65) = 5 1/208 = 2 2 REQUIRED 1 REQUIRED MEN 4 2 2 5 1 1 NOTEN 1 MEN 4 2 2 5 1 1 1 1 MEN 4 2 2 1 1 1 1 1 1 MEN 4 2 2 1 1 1 1 1 1 MEN 4 2 2 1 <td></td> <td></td> <td>At least 50% but not less than 1</td> <td></td>			At least 50% but not less than 1	
MEN 317 DCC. (1/125)= 3 1/200 = 2 1/500 1 REQL WDMEN 317 DCC. (1/65) = 5 1/208 = 2 2 REQUIRED 1 REQL MEN 4 2 2 5 5 WOMEN 4 2 2 5 UNISEX 2 2 2 1				UNT
317 ODC. (1/65) = 5 1/2DB = 2 2 REQUIRED PROVIDED MEN 4 2 5 WOMEN 4 2 5 UNISEX 2 2 1 THE 2018 Edition of the International Building Code was used for the Building Code was use		<u>MEN</u> 317 Dcc. (1/125)= 3		G FOUNTAINS SERVICE
UNISEX 2 2 THE 2018 Edition of the International Building Code was used for the Building of		317 Occ. (1/65) = 5	PROVIDED	
				S USED FOR THE BUILDING CO
DEFERRED SUBMITTALS				





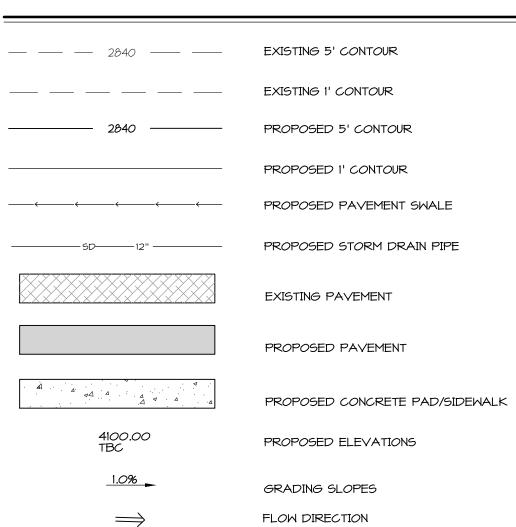






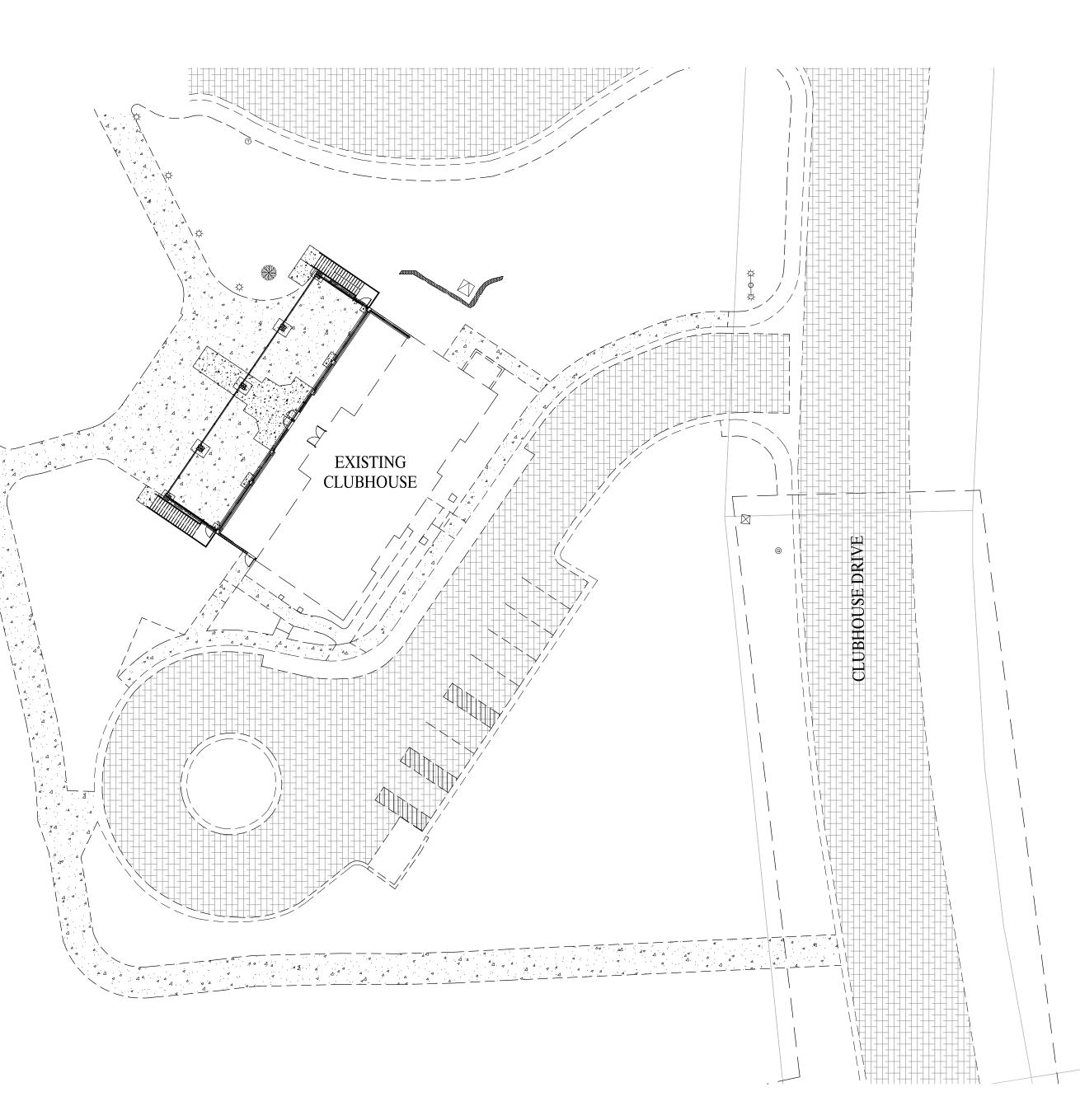
NOTICE!

EXISTING UTILITIES ARE SHOWN ON PLANS FOR TH CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITIES. THE ENCINEER BEARS NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR SHOWN INCORRECTLY.





GOLF COURSE CLUBHOUSE - ADDITION



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GENERAL LEGEND

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	 A	∖BC—		- ABC		_
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EXISTING EASEMENT
PROPOSED SEWER LATERAL (SIZE INDICATED ON PLAN)
EXISTING SEWER MAIN
PROPOSED WATER LINE (SIZE INDICATED ON PLAN)
EXISTING WATER MAIN
PROPOSED GAS LINE (SIZE INDICATED ON PLAN)
EXISTING GAS LINE
TELEPHONE LINE
CATV LINE
PROPOSED 3 PHASE POWER

- PROPOSED SECONDARY POWER

EXISTING WATER METER
PROPOSED WATER METER
EXISTING SEWER MANHOLE
EXISTING STORM DRAIN MANHOLE
PROPOSED TELEPHONE PEDESTAL
EXISTING CATV PEDESTAL
PROPOSED WATER VALVE
EXISTING WATER VALVE
PROPOSED FIRE HYDRANT
EXISTING FIRE HYDRANT

THE CITY APPROVES THESE PLANS FOR CONCEPT ONLY. THE CITY SHALL NOT BE LIABLE FOR ERRORS OR

APPROVALS

PLANNING & ZONING

BUILDING & SAFETY

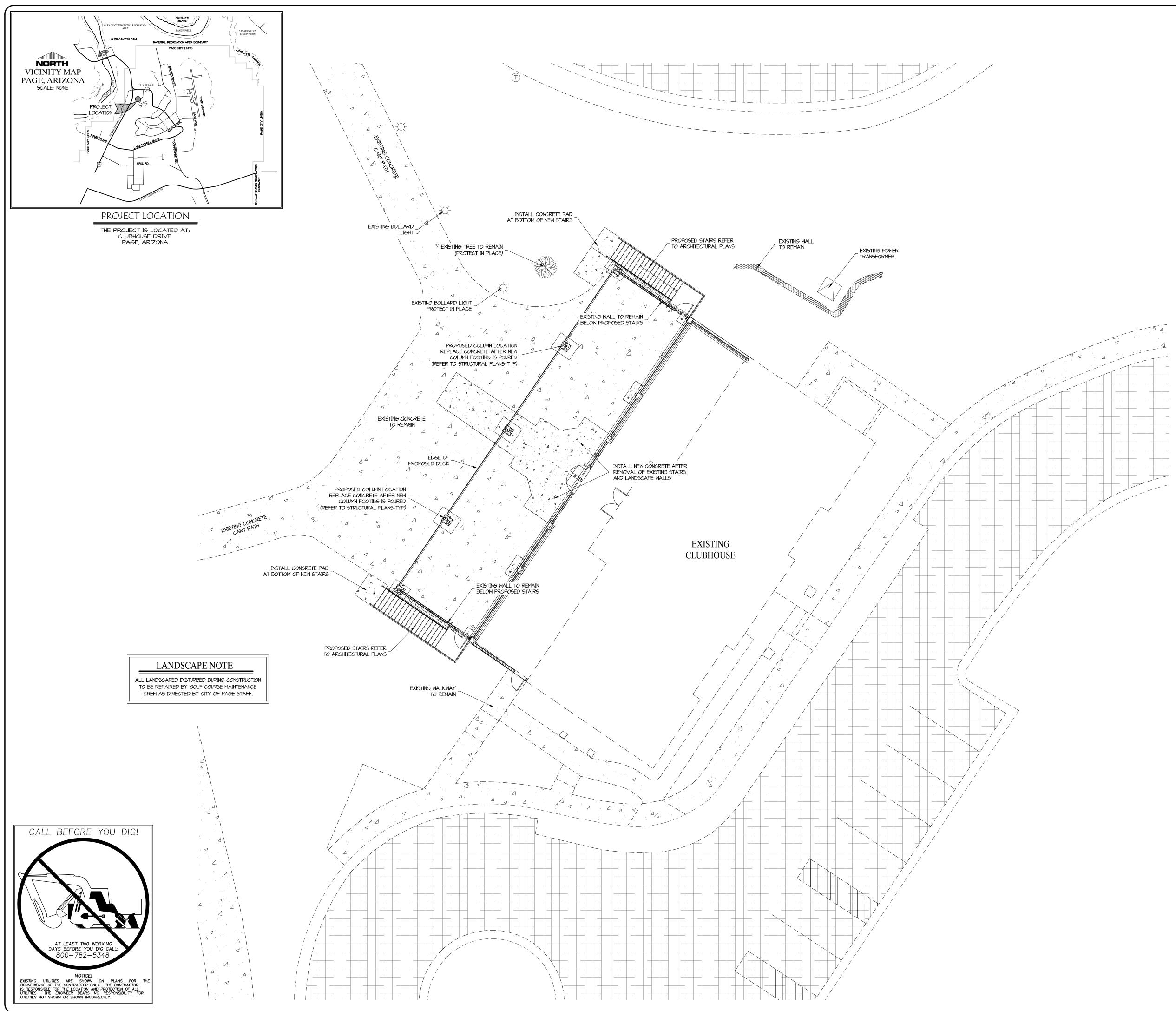
1. ALL PROPERTY CORNERS SHALL BE STAKED/PINNED IF REQUIRED BY CITY.	JO	BNO.: 12448-22-00
2. THE CONTRACTOR IS REQUIRED TO CALL THE CITY FOR INSPECTION OF ALL IMPROVEMENTS RELATED TO THIS PROJECT.		ESIGNED BY: PM IECKED BY: MS
3. THE CONTRACTOR IS REQUIRED TO OBTAIN AN ENCROACHMENT PERMIT FOR ANY WORK PERFORMED IN A PUBLIC RIGHT-OF-WAY.	D	VG: CONST DOC
4. ANY NECESSARY MODIFICATIONS SHALL BE APPROVED BY THE DESIGN ENGINEER AND CITY PRIOR TO CONSTRUCTION.	DATE	
5. ALL WORK SHALL BE CONTAINED ON THE SUBJECT SITE ONLY. NO STOCKPILING OR CONSTRUCTION ACTIVITY SHALL OCCUR OFF OF THE APPROVED LOT AREA, WITHOUT PRIOR		
WRITTEN CONSENT. 6. CONTRACTOR IS RESPONSIBLE FOR ALL ON-SITE DRAINAGE AND DETENTION.		
7. THE CONTRACTOR SHALL PROVIDE A TEMPORARY TRASH ENCLOSURE ON SITE DURING ALL CONSTRUCTION ACTIVITIES TO CONTAIN DEBRIS AND PREVENT AIRBORNE LITTERING OFF		
SITE. 8. A WATER TRUCK SHALL BE USED ON SITE TO WET DOWN ALL EARTHWORK AND TO CONTROL AIRBORNE PARTICLES.		
9. UNLESS SHOWN OTHERWISE ON THESE PLANS, ALL CONSTRUCTION SHALL CONFORM TO "THE INTERNATIONAL PLUMBING CODE", AND THE "INTERNATIONAL BUILDING CODE" LATEST	REVISIONS	
EDITIONS AS ADMINISTERED BY THE CITY OF PAGE. 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF AND PROTECTION OF	REVIS	
ALL EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION. 11. ALL EXCAVATIONS AND GRADING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF PAGE, AND APPENDIX "J" OF THE "INTERNATIONAL BUILDING CODE", LATEST		
12. OWNER/CONTRACTOR SHALL INSTALL AN INFORMATIONAL SIGN ON SITE BEFORE CONSTRUCTION BEGINS. THIS SIGN WILL HAVE A MINIMUM SIZE, PLACEMENT LOCATION AND CONTENT INFORMATION WITH THE COMPANY NAME, PHONE CONTACT & GRADING PERMIT		RVEYO
NUMBER. 13. OWNER/CONTRACTOR SHALL SUBMIT A DUST CONTROL PLAN WITH DETAILS ON		
EQUIPMENT, SCHEDULING AND REPORTING OF DUST CONTROL ACTIVITIES. 14. A MANDATORY PRE-CONSTRUCTION MEETING WILL BE REQUIRED ON ALL PROJECTS DEVICE THE DEPICE OF LETTER OF LETTER ACTIVITIES.		
PRIOR TO ANY GRUBBING, GRADING, OR CONSTRUCTION ACTIVITIES. THE PERMIT HOLDER WILL BE REQUIRED TO NOTIFY ALL DEVELOPMENT SERVICES INSPECTORS. 15. ALL WORK AND MATERIALS SHALL MEET CITY OF PAGE STANDARDS		\mathbf{Z}_{0}
AND/OR M.A.G. STANDARDS. 16. ALL OBJECTS SHALL BE KEPT OUT OF THE SIGHT DISTANCE CORRIDORS THAT MAY		
OBSTRUCT THE DRIVER'S VIEW.		
		NIL S
		2 East Riverside Drive, Suite A St. George, Utah 84790
	Pi	a (435) 673-8586 Fx (435) 673-83 www.racivil.com
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		DDITION
		E ADDITION
ENGINEER'S ACKNOWLEDGMENT:		ET USE ADDITION
I, Michael S. Robinson, Santa Clara, Utah do hereby certify that I am a Registered Professional Engineer as prescribed by the laws of the State of Arizona and that I hold Certificate of Registration (License) Number 49894. I further certify that the design of this site plan was made		HEET HOUSE ADDITION
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I, Michael S. Robinson, Sonta Clara, Utch do hereby certily that I am a Registered Professional Engineer as prescribed by the laws of the State of Arizona and that I hold Certificate of Registration (License) Number 48844. I further certify that the design of this site plan was made under my direction and supervision and is accurately represented on these plans. Date: <u>02/28/2023</u> Michael S. Robinson Certificate No. 49894 SHEET LAYOUT SHEET SHEET SHEET DESCRIPTION CI.0 COVER SHEET C2.0 SITE PLAN C3.0 DEMOLITION PLAN C4.0 GRADING & DRAINAGE PLAN		COVER SHI FOR GOLF COURSE CLUB H(A8894 WICHAEL S. MICHAEL S. MICHAEL S. MICHAEL S. MICHAEL S. MICHAEL S.
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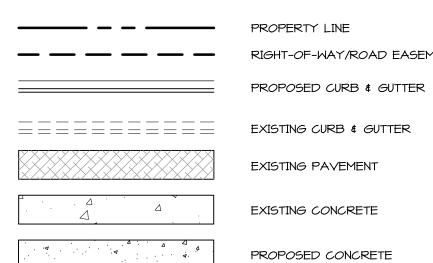
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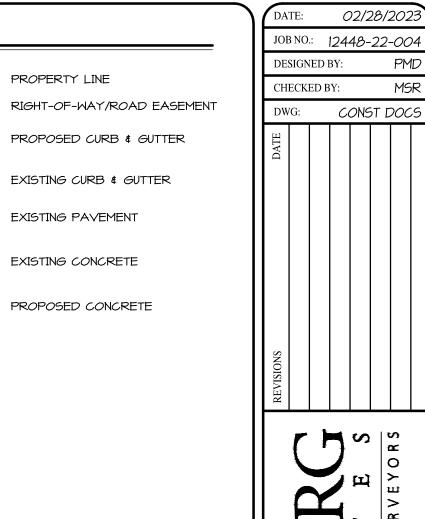
OMISSIONS OF THE DESIGN ENGINEER.

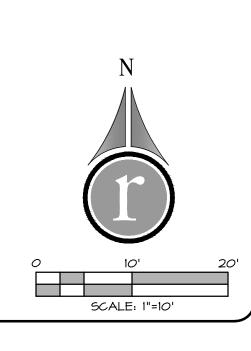
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LEGEND









MICHAEL S ROBINSON

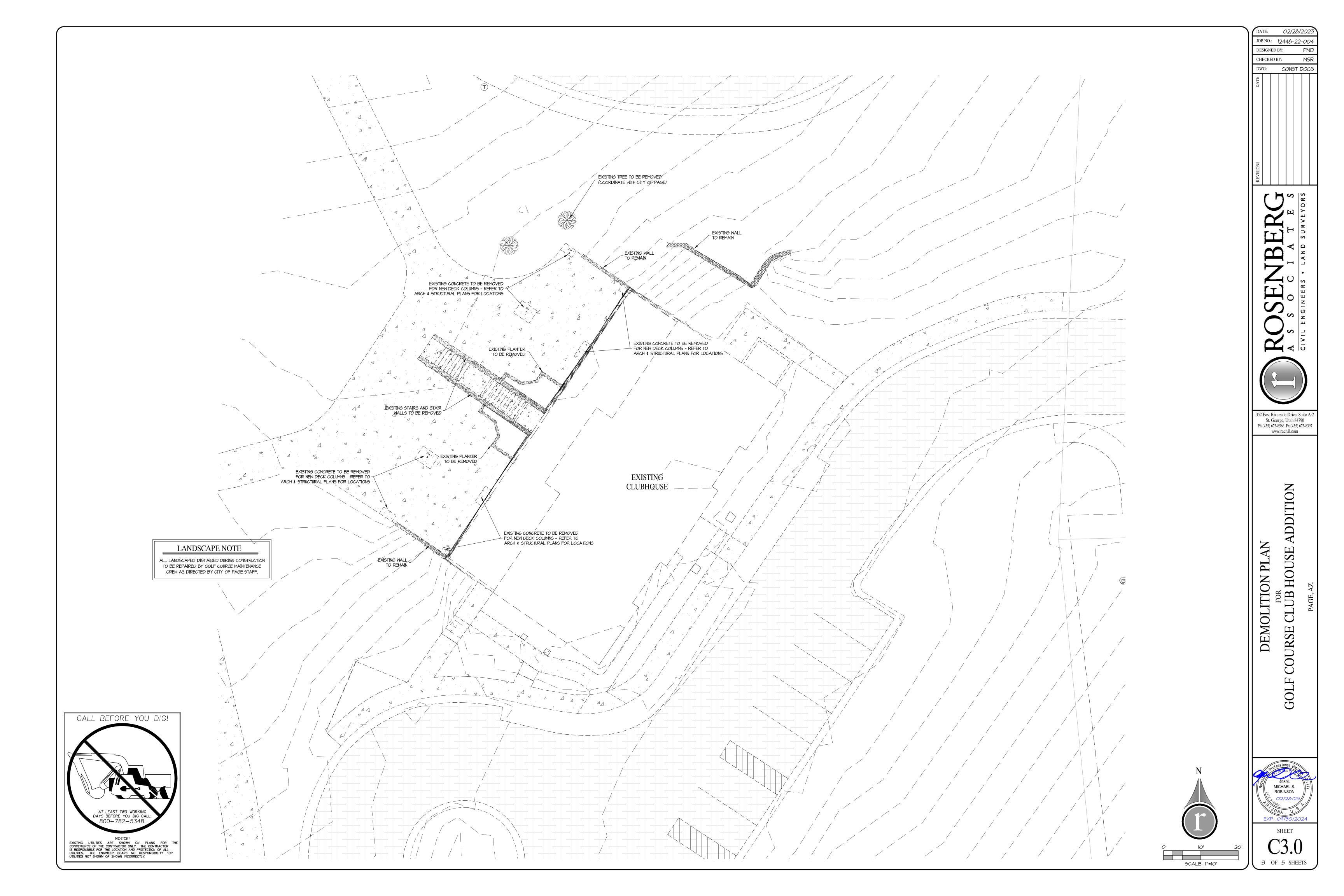
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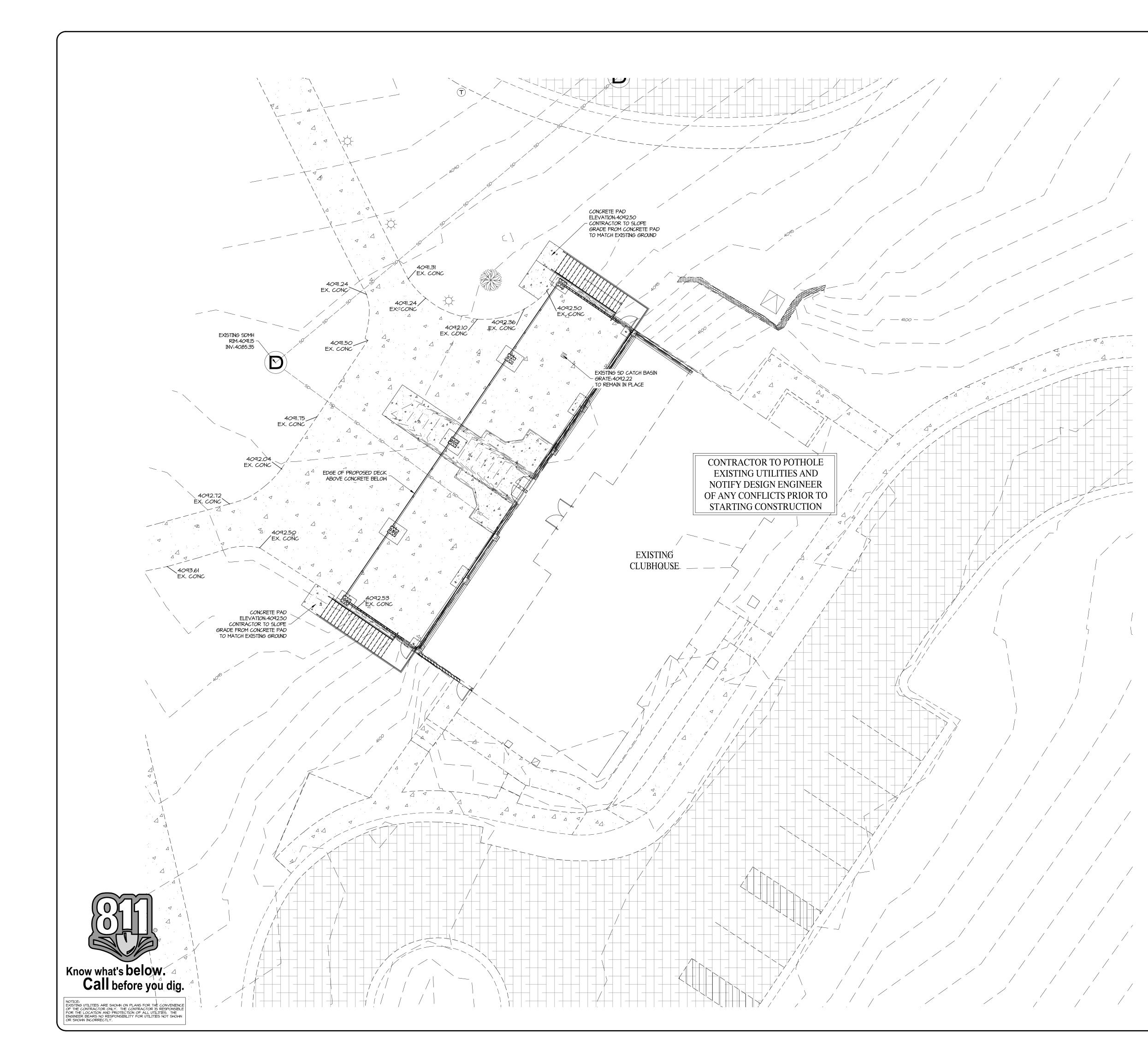
SHEET

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2 OF 5 SHEETS

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GRADING NOTES

1. ALL EXCAVATION AND GRADING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CITY OF PAGE, AND APPENDIX "J" OF THE "INTERNATIONAL BUILDING CODE," LATEST EDITION. 2. THE CONTRACTOR SHALL PROVIDE SUITABLE EQUIPMENT TO CONTROL DUST AND AIR POLLUTION CAUSED BY CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL ALSO PROVIDE SUITABLE MUD AND DIRT CONTAINMENT TO MAINTAIN THE WORK SITE, ACCESS ROADWAYS AND ADJACENT PROPERTIES IN A CLEAN CONDITION.

3. ALL IMPORTED STRUCTURAL FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO DELIVERY TO THE SITE. ALL STRUCTURAL FILL SHALL BE PLACED AND COMPACTED PER THE GEOTECHNICAL ENGINEERS RECOMMENDATIONS.

4. ALL EXCAVATIONS, GRADING AND FILL OPERATIONS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER TO VERIFY SUB-SOIL CONDITIONS AND DETERMINE ADEQUACY OF SITE PREPARATION, SUITABILITY OF FILL MATERIALS AND COMPLIANCE WITH COMPACTION REQUIREMENTS. 6. OWNER IS RESPONSIBLE FOR ALL ON-SITE DRAINAGE.

PERMISSION WILL NEED TO BE OBTAINED FROM ADJOINING PROPERTY OWNERS BEFORE GRADING ACROSS PROPERTY LINES.

PROPOSED CONCRETE

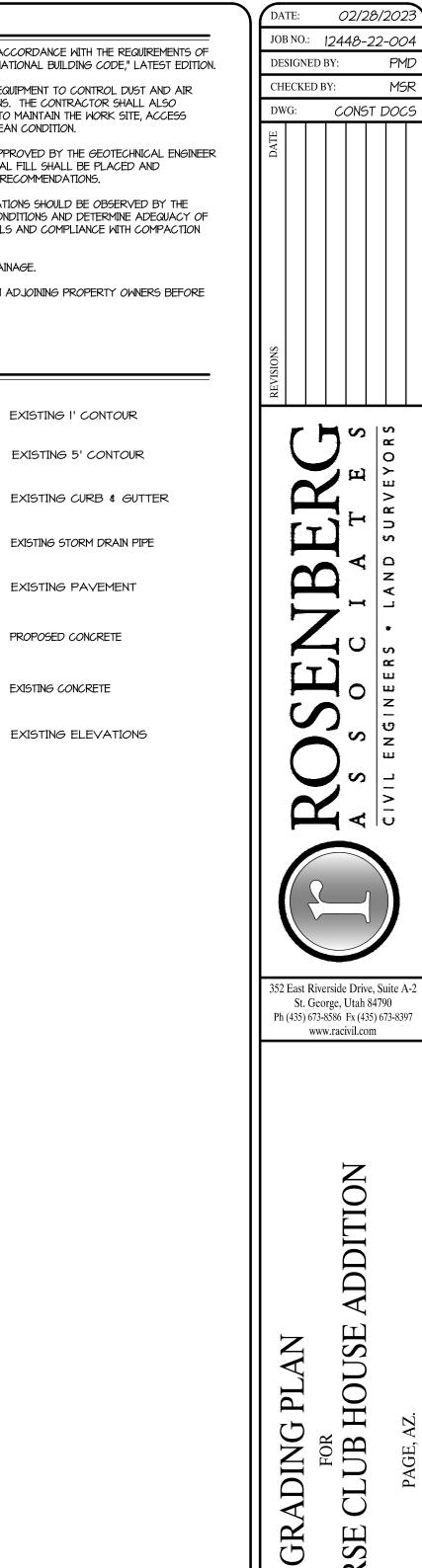
EXISTING CONCRETE

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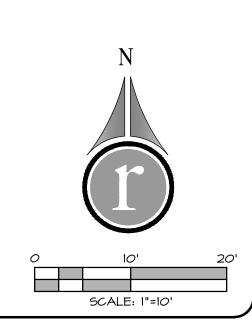
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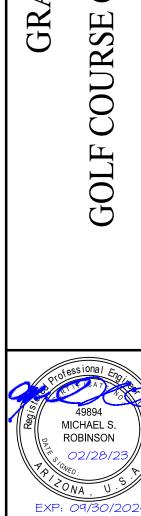
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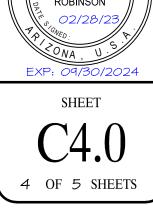
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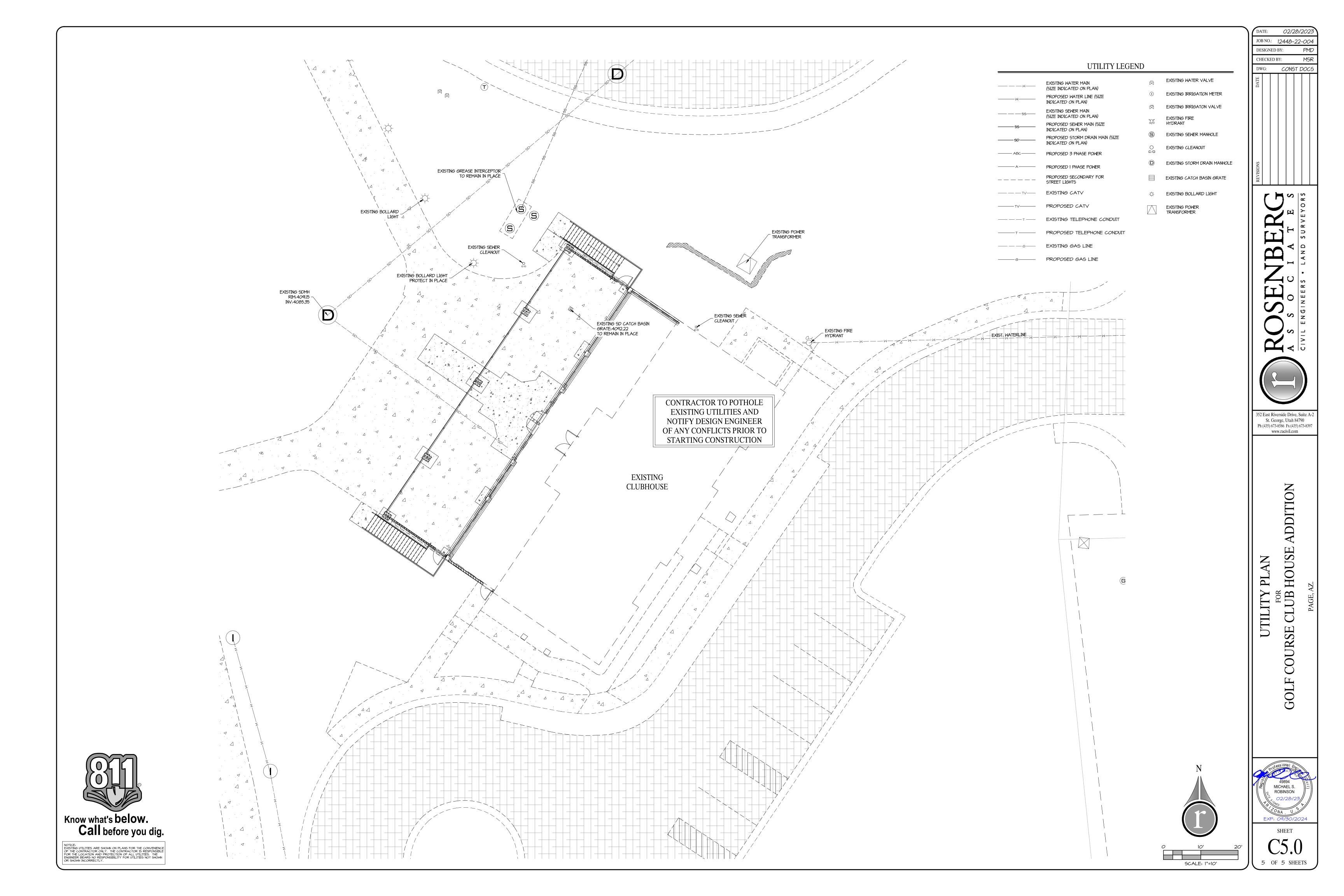


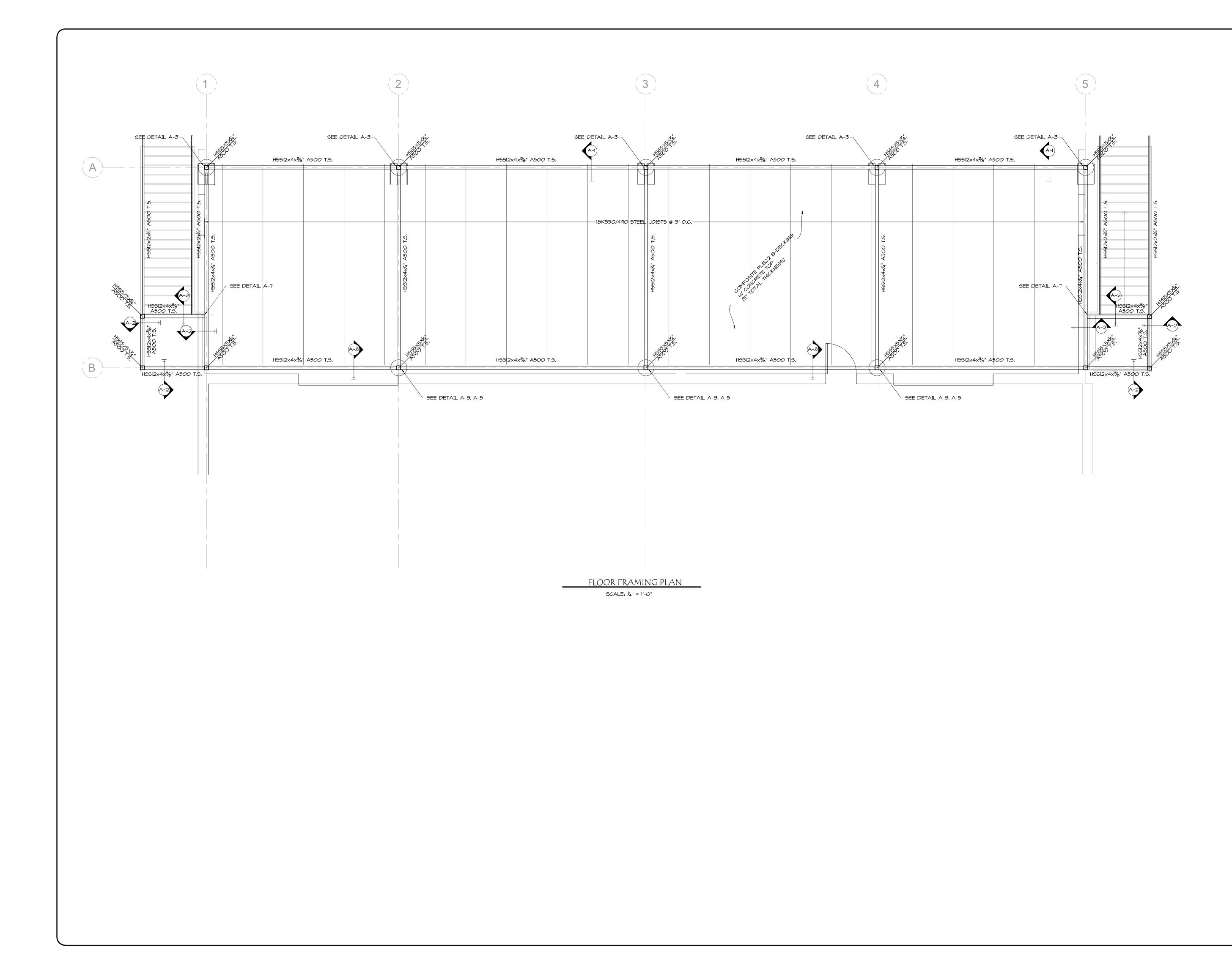
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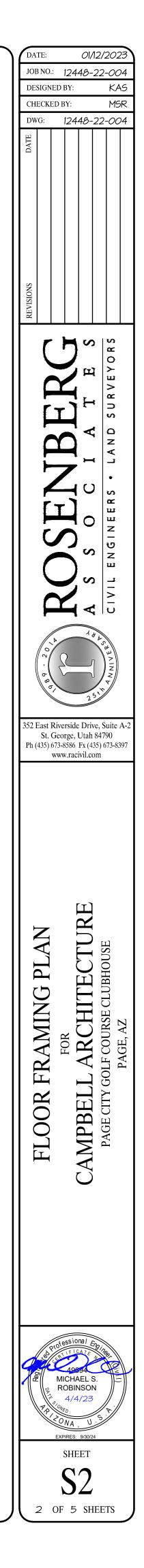


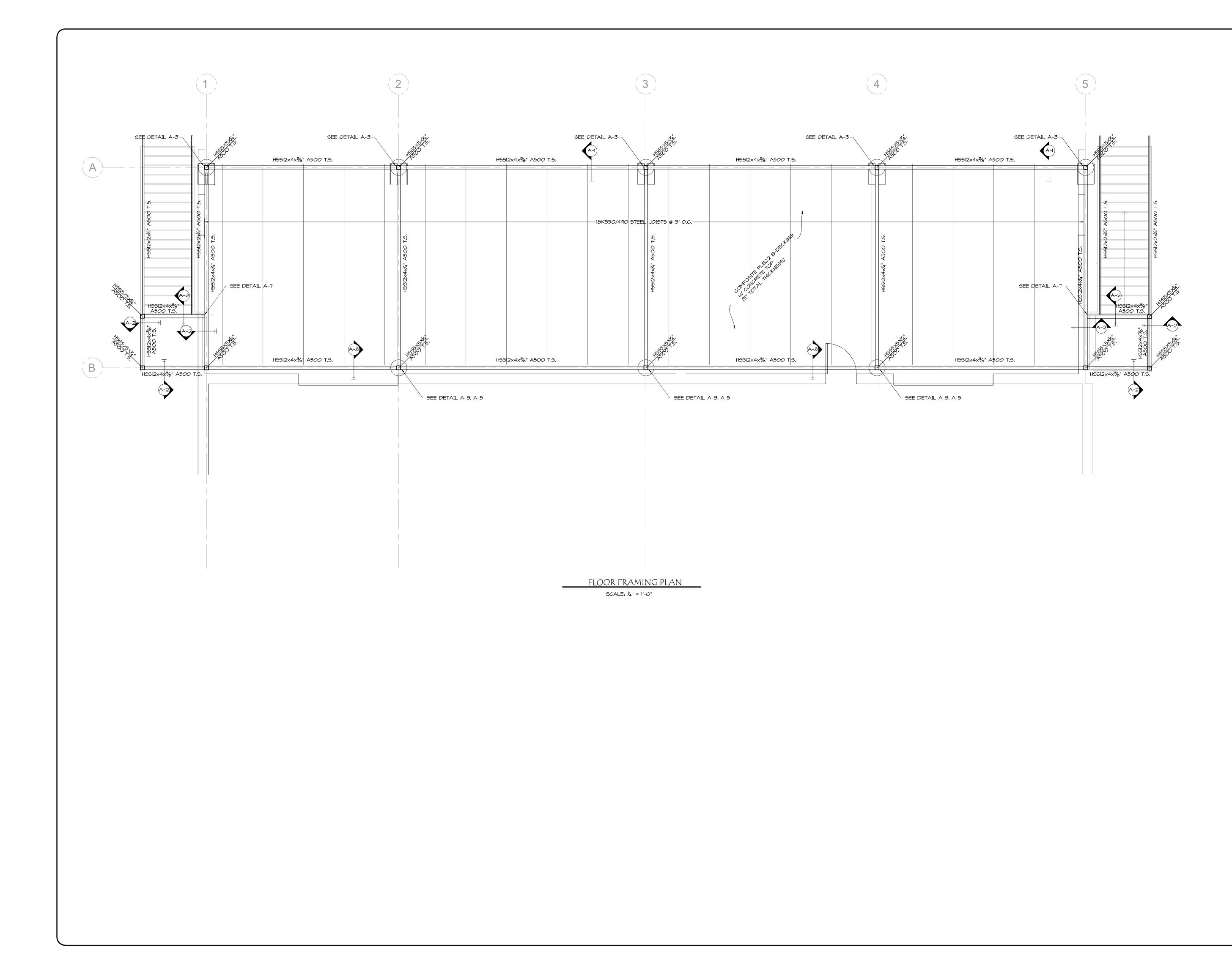


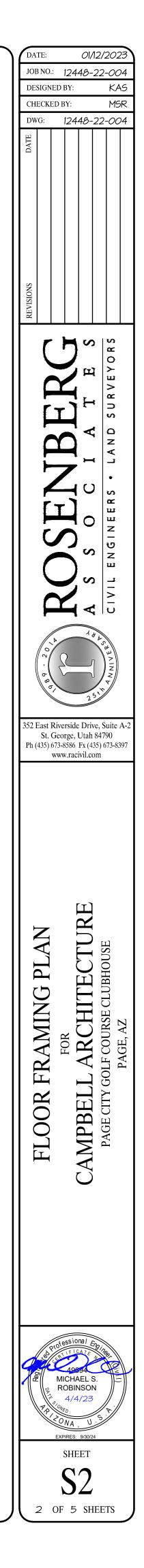


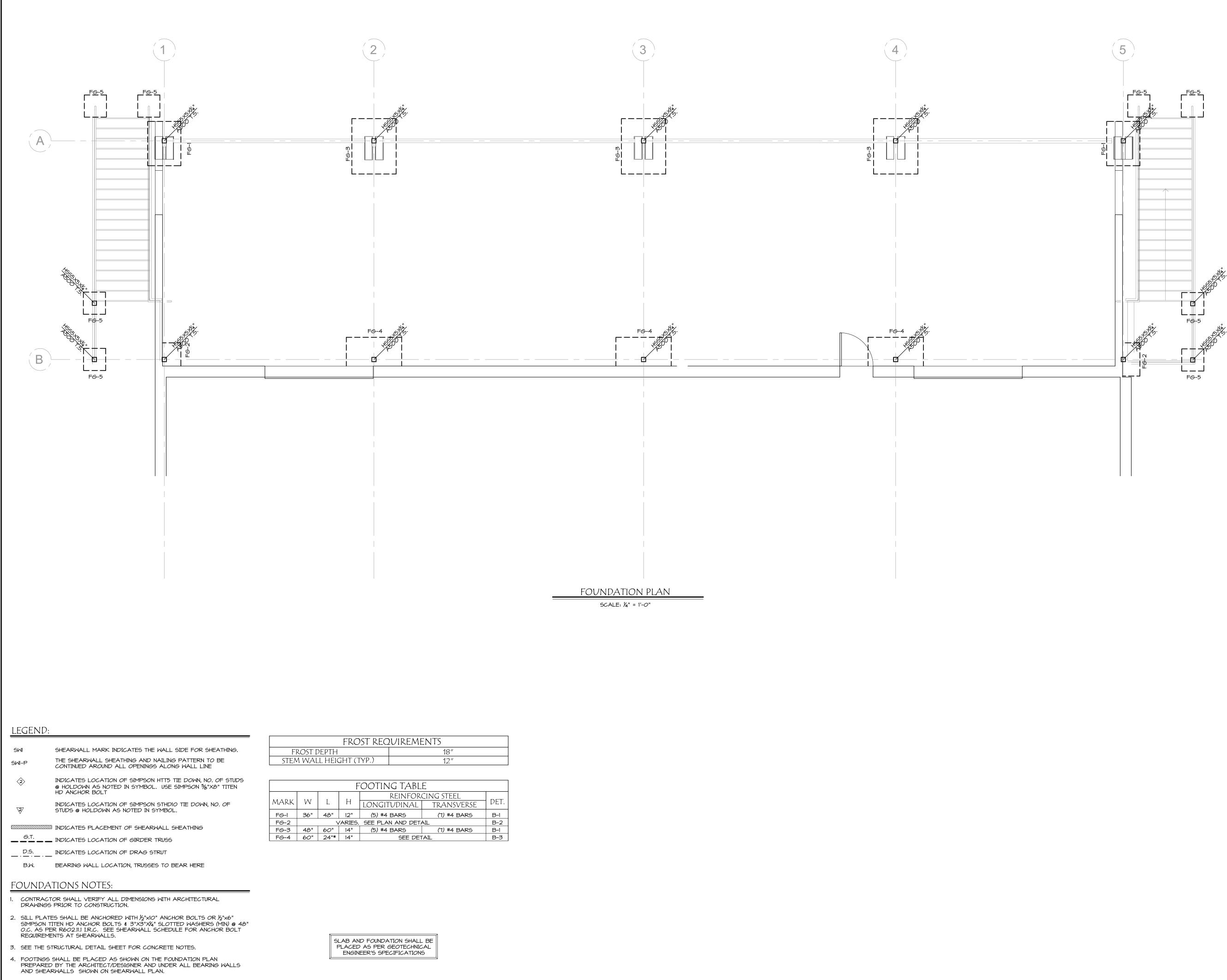


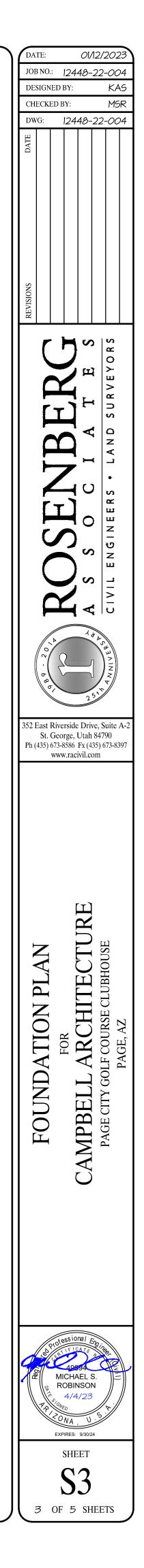


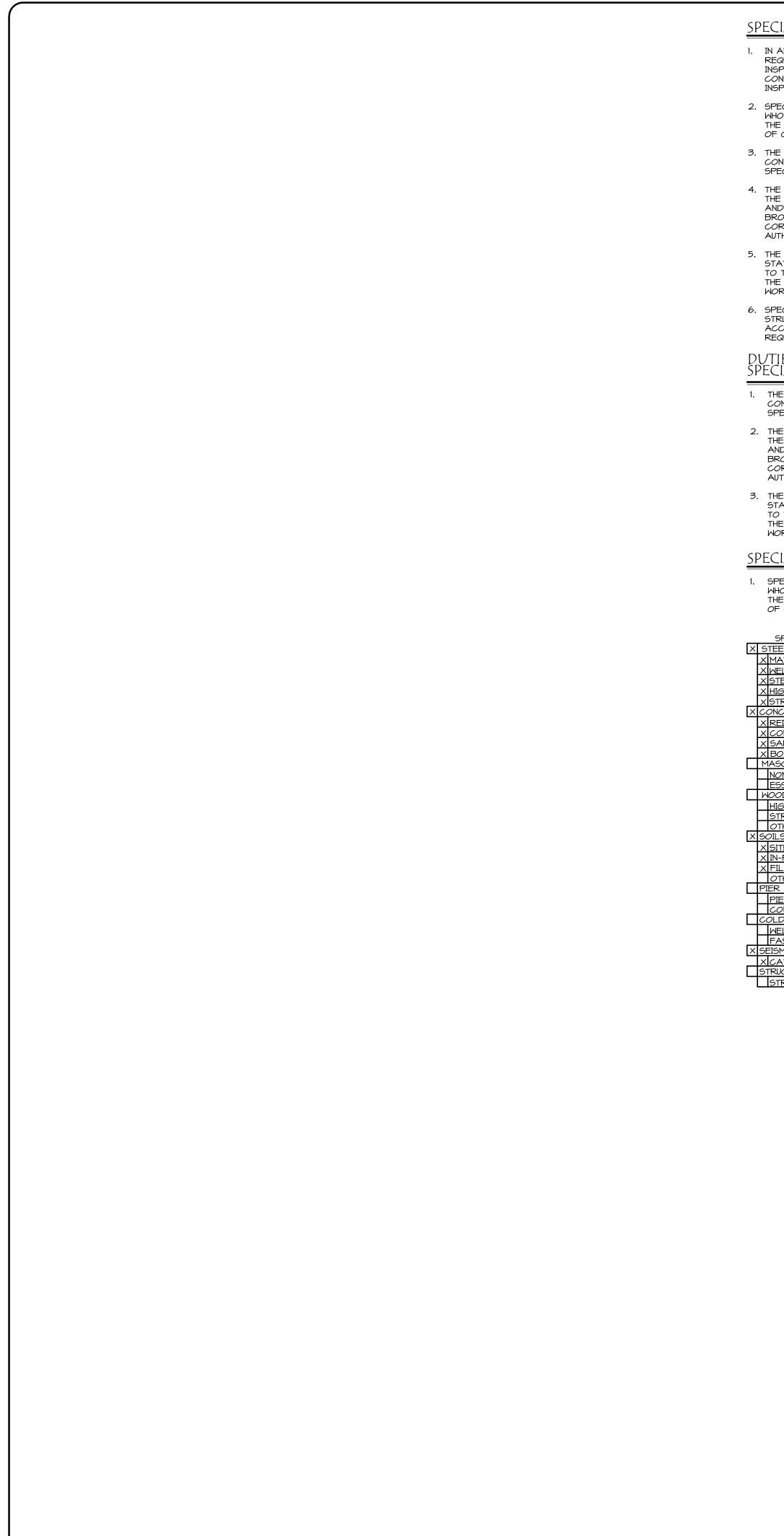












SPECIAL INSPECTION:

IN ADDITION TO STANDARD INSPECTIONS BY THE BUILDING OFFICIAL REQUIRED PER IBC, THE OWNER/BUILDER SHALL EMPLOY SPECIAL INSPECTORS WHO SHALL PROVIDE INSPECTIONS DURING CONSTRUCTION FOR THE TYPES OF WORK LISTED IN THE SPECIAL INSPECTION TABLE ON THIS PAGE.

2. SPECIAL INSPECTION SHALL BE PROVIDED BY A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

3. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.

4. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR ARCHITECT OF RECORD, AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL

5. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

6. SPECIAL INSPECTIONS AND NONDESTRUCTIVE TESTING OF STRUCTURAL STEEL ELEMENTS IN BUILDINGS, STRUCTURES SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360.

VTIES AND RESPONSIBILITIES OF THE PECIAL INSPECTOR:

1. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.

2. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR ARCHITECT OF RECORD, AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.

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SPECIAL INSPECTION REQUIREMENTS:

1. SPECIAL INSPECTION SHALL BE PROVIDED BY A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

SPECIAL INSPECTION	CONTINUOUS	PERIODIC
TEEL CONSTRUCTION (1704.3)		
MATERIALS		×
WELDING		Х
STEEL FRAME DETAILS		×
HIGH STRENGTH BOLTS		×
STRUCTURAL STEEL		×
DNCRETE CONSTRUCTION (1704.4 & 1708.3)		
REINFORCING STEEL		Х
CONCRETE PLACEMENT	X	
SAMPLING & STRENGTH TESTS		Х
BOLTS IN CONCRETE		X
ASONRY CONSTRUCTION (1704.5)		
NONESSENTIAL FACILITY - LEVEL 1		
ESSENTIAL FACILITY - LEVEL 2		
OOD CONSTRUCTION (1704.6)		
HIGH-LOAD DIAPHRAGMS (SW3) (SW5)		
STRUCTURAL WOOD		
OTHER		
DILS (1704.7)		
SITE PREPARATION		Х
IN-PLACE DENSITY	X	
FILL PLACEMENT		Х
OTHER		
ER FOUNDATIONS (1704.9 & 1707.5)		
PIER FOUNDATION		
CONCRETE GRADE BEAM		
DLD FORMED STEEL (1707.4)		
WELDING		
FASTENING		
ISMIC DESIGN CATEGORY		
CATEGORY (C)		Х
RUCTURAL OBSERVATION (1709)		
STRUCTURAL OBSERVATION		

WELDED CONNECTIONS:

- 1. WHERE SIZE OF WELD IS NOT INDICATED, IT SHALL DEVELOP FULL STRENGTH OF MEMBER AND CONNECTION.
- 2. NO SPLICES MAY BE MADE OTHER THAN THOSE DETAILED ON PLANS UNLESS SHOWN ON SHOP DRAWINGS AND APPROVED BY STRUCTURAL ENGINEER.
- 3. ALL BEVEL GROOVE WELDS SHALL BE COMPLETE PENETRATION WELDS.
- 4. ALL SHOP AND FIELD BEVEL GROOVE WELDS SHALL BE ULTRASONICALLY TESTED
- 5. TESTING SHALL BE CONDUCTED BY AN INDEPENDENT CERTIFIED TESTING LABORATORY AND REPORTS SHALL BE SUBMITTED.
- 6. THE COST INCURRED FOR TESTING SHALL BE BORNE BY THE
- 7. WELDS AT ALL CONNECTIONS SHALL BE CLEANED. SLAG AND WELD SPATTER SHALL BE REMOVED FROM ALL COMPLETED WELDS, AND THE WELD AND ADJACENT BASE METAL SHALL BE CLEANED BY BRUSHING OR OTHER SUITABLE MEANS AVAILABLE FOR INSPECTION.
- 8. PAINT ALL WELDS AFTER WELDING HAS BEEN COMPLETED AND THE WELD ACCEPTED.

STRUCTURAL STEEL BOLTS

FABRICATOR.

STRUCTURAL STEEL BOLTS, ANCHORS, ETC. SHALL CONFOR THE FOLLOWIG STANDARS AND MATERIAL PROPERTIES U.N				
	COMPONENT:	STANDARD:	Fy:	
	BOLTS	ASTM A325		
	NUTS WASHERS ANCHOR RODS	ASTM A563 ASTM F436 ASTM F1554, <i>G</i> RADE 36	 36 KSI	

- 2. ALL BOLTS SHALL BE INSTALLED AS BEARING TYPE CONNECTIONS WITH THREADS EXCLUDED FROM SHEAR PLANE (TYPE X CONNECTION U.N.O. HIGH STRENGTH BOLT ASSEMBLIES SHALL BE IN ACCORDANCE WITH THE RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" AND SHALL BE SNUG TIGHTENED USING ANY AISC APPROVED METHOD UN.O. ALL BOLTS IN SLOTTED OR OVERSIZED HOLES AND ALL HIGH STRENGTH BOLTS SHALL BE INSTALLED WITH HARDENED WASHERS.
- 3. ALL CONNECTIONS INVOLVING WOOD MEMBERS, INCLUDING THOSE WITH THREADED ROD. THREADED STUDS. FOUNATION ANCHOR BLTS GHU BOLTS, ETC. SHALL USE ASTM A307 NATERIAL U.N.O. ALL BOLTS, ANCHOR BOLTS, EXPANSION BOLTS, ETC, SHALL BE INSTALLED WITH STEEL WAHERS AT FACE OF WOOD

PREFABRICATED WOOD TRUSS:

- 1. PREFABRICATED WOOD TRUSSES SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE TRUSS PLATE INSTITUTE "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION" AND SHALL BE PROVIDED BY AN APPROVED FABRICATOR.
- 2. MAX DEFLECTION LIMITS FOR TRUSSES SHALL BE AS FOLLOWS:

	LIVE LOAD	TOTAL LOAD
ROOF	SPAN/240	SPAN/180
FLOOR	SPAN/480	SPAN/360
TRUCCES SUN I		

- 3. TRUSSES SHALL BE DESIGNED TO SUPPORT THEIR SELF WEIGHT, LIVE LOAD, SUPERIMPOSED DEAD LOAD (INCLUDING MECHANICAL), ATTIC LOADS PER IBC, AND SHALL BE DESIGNED TO RESIST ALL DRAG FORCES, SHEAR WALL UPLIFT AND DOWNWARD LOADS, AND OTHER SPECIFIED LOADS ON THE PLANS.
- 4. ALL TRUSS-TO-TRUSS CONNECTIONS SHALL BE SPECIFIED BY THE TRUSS DESIGNER AND INCLUDED IN THE TRUSS DIAGRAMS.
- 5. TRUSS SHOP DRAWINGS, ERECTION DRAWINGS, AND DESIGN JULATIONS SEALED BT AN AT ENGINEER SHALL BE SUBMITTED FOR REVIEW PRIOR TO CONSTRUCTION.

WOOD/FRAMING

OTHERWISE.

- 1. ALL NAILING SHALL CONFORM TO THE 2015 IBC TABLE 2304.10.1 2. SILL PLATES SHALL BE ANCHORED WITH 5/" DIAMETER ANCHOR BOLTS & 1/4"X3"X3" SLOTTED WASHERS (MIN) @ 48" O.C. UNLESS NOTED
- 3. ALL TRUSS BEARING AT END OF TRUSS MUST BE FULL-BLOCKED AND ANCHORED WITH TIES AS REQUIRED BY THE 2015 IBC. NAIL ROOF SHEATHING TO BLOCKING.
- 4. ALL BEAMS, HEADERS, AND JOISTS SHALL BE INSTALLED TO MANUFACTURE SPECIFICATIONS AND A MSTI24 (MIN.) TOP STRAP PER CODE SHALL BE INSTALLED IF TOP PLATE IS NOT CONTINUOUS OVER HEADER.
- 5. ALL BEAM & GIRDER TRUSSES SHALL BE SET ON DOUBLE 2x TRIMMERS UNLESS SPECIFIED OTHERWISE.
- 6. ROOF SHEETING SHALL BE %" APA RATED SHEATHING UNBLOCKED WITH PANEL RATING OF 40/20. NAILING SHALL BE 8d AT 4" O.C. ALL BOUNDARIES, 6" O.C. SUPPORTED EDGES, AND 12" FIELD.
- 7. UNLESS NOTED OTHERWISE FLOOR SHEATHING SHALL BE $\frac{3}{4}$ " T&G APA RATED SHEATHING WITH PANEL SPAN RATING OF 48/24. NAILING SHALL BE IOd AT 6" O.C. ALL BOUNDARIES AND SUPPORTED EDGES, AND 12" FIELD.
- 8. UNLESS NOTED OTHERWISE, ALL EXTERIOR WALLS AND INTERIOR BEARING WALLS SHALL HAVE TRIMMERS AND KING STUDS A FOLLOWS: OPENINGS 5' & UNDER: (1) TRIMMER & (1) KING STUD EA. END OPENINGS OVER 5' WIDE: TRIMMERS AS INDICATED & (2) KING STUD EA. END
- 9. All BEARING WALL DOOR AND WINDOW HEADERS SHALL BE DOUBLE 2x10 HEADERS UNLESS SPECIFIED OTHERWISE.

10.	DIMENSIONAL SAWN LUMBER SHALL BE AS F 2x STUDS UP TO 10' TALL 2x STUDS UP TO 14' TALL BEAMS, HEADERS, RAFTERS, JOISTS COLUMNS	FOLLOWS: DFL STUD GRD DFL #2 DFL #2 DFL #2 DFL #2
11.	STRUCTURAL COMPOSITE LUMBER SHALL HA MINIMUM PROPERTIES:	VE THE FOLLOWING

- E = 1.9E6 PSI, Fb = 2,600 PSI, Fv = 285 PSI LVL: E = 2.0E6 PSI, Fb = 2,900 PSI, Fv = 290 PSI E = 1.3E3 PSI, Fb = 1,700 PSI, Fv = 400 PSI
- 12. GLULAM BEAMS (GLB) SHALL BE SERIES 24F-V4 DF/DF. GLB E = 1.8E6 PSI, Fb = 2,400 PSI, Fv = 240 PSI

CONCRETE:

SLAB

- CODES AND REFERENCES: ACI-318 LATEST ACI-301 LATEST ACI-302 LATEST
- 2. CRITERIA DESIGN STRESSES: FOR CONCRETE PLACEMENT. FOUNDATION
- WATER TO CEMENT RATION -REINFORCING STEEL:
- 3. PROVIDE COVER FOR REINFORCING AS SPECIFIED IN ACI-318-LATEST EXPOSURE CONDITION:

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH

EXPOSED TO EARTH OR WEATHER (INCLUDES SLABS ON GRADE) NO. 5 AND SMALLER NO. 6 AND LARGER

- SHALL MEET THE REQUIREMENTS OF A CLASS "B" SPLICE.
- CONCRETE); #3 BAR THROUGH #5 BAR: 28" OVERLAP. #6 BAR: 33" OVERLAP #7 BAR: 38" OVERLAP. #8 BAR: 44" OVERLAP (REF: ACI 318-02 SEC. 12.2)
- PROVIDE CORNER BARS.
- #5 BARS AND SHALL EXTEND TWO FEET BEYOND THE EDGES OF THE

OPENING.

- 8. CONCRETE MIX DESIGNS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
- 9. MIX DESIGNS SHALL BE SUBMITTED FOR EACH TYPE OF CONCRETE
- SPECIFIED CONCRETE STRENGTH.
- CONCRETE.
- RESPECTIVELY.
- SLABS-ON-GRADE SHALL BE VIBRATED ONLY AROUND ITEMS EMBEDDED IN THE SLAB.

REINFORCING STEEL: I. REINFORCING STEEL SHALL BE BE DETAILED AND PLACED IN

PRACTICE.

- DFTAILS.
- EXPOSURE CONDITION:
- CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH

EXPOSED TO EARTH OR WEATHER (INCLUDES SLABS ON GRADE) NO. 5 AND SMALLER NO. 6 AND LARGER

- SHALL MEET THE REQUIREMENTS OF A CLASS "B" SPLICE.
- CONCRETE): #3 BAR THROUGH #5 BAR: 28" OVERLAP. #6 BAR: 33" OVERLAP. #7 BAR: 38" OVERLAP. #8 BAR: 44" OVERLAP. (REF: ACI 318-02 SEC. 12.2)

STRUCTURAL STEEL:

- 1. CODES AND REFERENCES: -AISC SPECIFICATIONS WITH SUPPLEMENTS -AISC STEEL DESIGN MANUAL
- ASTM A992: ALL STEEL WIDE FLANGE BEAMS FY=50 (KSI)
- FY=36 (KSI)
- FY=42 (KSI)

FY=46 (KSI)

- ISSUE

-BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE: -SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS: -GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION:

-CONCRETE REINFORCING STEEL INSTITUTE HANDBOOK

-CONCRETE STRENGTH (28 DAY) NOTE: ALL CONCRETE IN CONTACT WITH SOIL TO BE TYPE V OR EQUIVALENT SULFATE-RESISTANT CEMENT. ALL CONCRETE FOUNDATIONS WHERE DESIGNED USING 2,500 PSI CONCRETE. THUS NO SPECIAL INSPECTION IS REQUIRED

> 4500 PSI 4,500 PSI 0.45 MAXIMUM

#3 BAR AND SMALLER (ASTM A615. GRADE 40) Fy = 40,000 PSI #4 BAR AND LARGER (ASTM A615. GRADE 60) $F_{y} = 60,000$ PSI ALL BARS WHICH REQUIRE WELDING (ASTM A706 GRADE 60)

COVER:

4. WHERE SPLICES IN REINFORCING ARE REQUIRED. THEY SHALL BE LAPPED AND STAGGERED SUCH THAT NO MORE THAN ONE-HALF OF THE BARS ARE LAP SPLICED WITHIN A REQUIRED LAP LENGTH, AND

5. MINIMUM SPLICE LENGTHS FOR CLASS "B" (GRADE 60. 4,500 PSI

6. MAKE HORIZONTAL BARS CONTINUOUS AROUND CORNERS OR

7. ALL SLAB AND/OR WALL OPENINGS SHALL BE REINFORCED WITH (2)

AND INCLUDE: MIX IDENTIFICATION, STATEMENT OF INTENDED USE, MIX PROPORTIONS, DESIGN STRENGTH, DESIGN SLUMP, WET AND DRY UNIT WEIGHT, AND OTHER SUPPORTING DATA PER SPECIFICATIONS.

10. ADMIXTURES MAY BE USED, HOWEVER, THEY SHALL NOT BE CONSIDERED AS REPLACING ANY PART OF THE CEMENT FOR A

11. NO ALUMINUM CONDUITS OR PIPES SHALL BE EMBEDDED IN

12. HOT WEATHER AND COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305 & ACI 306 RECOMMENDED PRACTICES

13. MECHANICALLY VIBRATE CONCRETE, EXCEPT THAT

ACCORDANCE WITH AC1318 AND CRSIS MANUAL OF STANDARD

2. REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR ASTM A706 AND SHALL BE GRADE 60 DEFORMED BARS U.N.O. REINFORCING IN SLABS ON GRADE MAY BE GRADE 40 DEFORMED BARS FOR ALL BARS #4 AND SMALLER U.N.O. ON PLANS OR

3. ALL DIMENSIONS SHOWING THE LOCATION OF REINFORCING STEEL NOT NOTED AS CLEAR ARE TO CENTER OF STEEL. CLEAR COVER FOR CONCRETE REINFORCING SHALL BE AS FOLLOWS, U.N.O. ON PLANS.

COVER:

REINFORCING BAR SPACING SHOWN ON PLANS ARE MAX ON CENTER DIMENSIONS, DOWEL ALL VERTICAL REINFORCING TO FOUNDATION. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.

WHERE SPLICES IN REINFORCING ARE REQUIRED, THEY SHALL BE LAPPED AND STAGGERED SUCH THAT NO MORE THAN ONE-HALF OF THE BARS ARE LAP SPLICED WITHIN A REQUIRED LAP LENGTH, AND

6. MINIMUM SPLICE LENGTHS FOR CLASS "B" (GRADE 60. 4,500 PSI

2. STRUCTURAL STEEL SHALL BE AS FOLLOWS:

ASTM 36: ALL STEEL PLATES, CHANNELS, & OTHER BEAMS

ASTM A53 GRD B: ALL STEEL PIPES

ASTM A500 GRD B: ALL RECTANGULAR TUBE STEEL

3. WELDED JOINTS OR CONNECTIONS SHALL BE MADE WITH FULL PENETRATION WELDS OR MAX. SIZE FILLET WELDS USING ETOXX ELECTRODES. ALL WELDS SHALL BE MADE IN ACCORDANCE WITH CURRENT STANDARDS OF THE AMERICAN WELDING SOCIETY AND PERFORMED BY WELDERS QUALIFIED BY AWS STANDARDS, CURRENT

4. CONNECTION BOLTS TO BE ASTM A307 UNLESS NOTED OTHERWISE.

GENERAL

1. THE CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS, EXISTING CONDITIONS, AND NOTED ASSUMPTIONS. ANY DISCREPANCIES SHALL BE COORDINATED WITH THE ACTING ENGINEER OF RECORD PRIOR TO PROCEEDING WITH ANY WORK RELATED TO THE DEVIATION.

- 2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE STRUCTURAL ENGINEERS IN THIS OR SIMILAR LOCALITIES. THEY NECESSARILY ASSUME THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKMEN WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE, AS NOT EVERY CONDITION OR ELEMENT IS OR CAN BY EXPLICITLY SHOWN ON THESE DRAWINGS, IT IS UNDERSTOOD THAT THE CONTRACTOR WILL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR ALL MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
- 3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE SHORING. BRACING, FORM-WORK, ETC. AS REQUIRED OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE STRUCTURAL ITEMS.
- 4. DESIGN OF ITEMS NOT PART OF THE PRIMARY STRUCTURAL SYSTEM (SUCH AS STAIRS, RAILINGS, NON-STRUCTURAL WALLS) AND PREFABRICATED STRUCTURAL ITEMS (SUCH AS FLOOR, ROOF TRUSSES) SHALL BE PROVIDED BY OTHERS UNLESS SPECIFICALLY NOTED ON THESE DRAWINGS.
- 5. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.
- 6. STRUCTURAL REQUIREMENTS SHOWN ON THE STRUCTURAL PLANS TAKE PRECEDENCE OVER STRUCTURAL CALLOUTS INDICATED ON THE ARCHITECTURAL PLANS. DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON DRAWINGS.
- INSPECTIONS REQUIRED BY THE BUILDING CODES, JURISDICTION, OR THESE PLANS SHALL BE PROVIDED BY AN INDEPENDENT INSPECTION COMPANY OR THE BUILDING DEPARTMENT SITE VISITS BY THE ENGINEER ARE CONSIDERED OBSERVATION ONLY AND DO NOT CONSTITUTE AN INSPECTION.

DESIGN CRITERIA

1. BUILDING CODE: INTERNATIONAL BUILDING CODE - 2018 EDITION 2. OCCUPANCY 3. ROOF LOADS: ROOF LOAD (LIVE): 20 PSF ROOF LOAD (DEAD): 15 PSF 4. FLOOR LOADS: FLOOR LOAD (LIVE): 100 PSF FLOOR LOAD (DEAD): 52 PSF 5. WIND LOADS: 100 MPH EXPOSURE C WIND LOAD: SEISMIC LOADS: SITE SOIL CLASS SEISMIC DESIGN CATEGORY 0.310 0.097 0.321 Sds

FOUNDATION

A.B.

ACI

AISC

ALT.

AWS

BOT.

BRG

CANT

C.J.

CL

C.J.P.

COL.

CONT

DIA.

DWG.

EQ.

E.M.

F.F.

FTG.

GLB

GA.

GT

HSS

IBC

I.D.

LSL

LVL MFR.

MAX

MIN.

MISC.

N.T.S.

0.D.

0.C.

PL PLF

PSF

PSI

PSL

SIM.

SPEC

STD.

THRU

TYP.

U.N.O.

THROUGH

UNLESS NOTED OTHERWISE

TYPICAL

SM

FT

Sdl

1. THIS DESIGN HAS BEEN IN ACCORDANCE WITH CODE MINIMUM REQUIREMENTS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THIS REPORT IN ITS ENTIRETY, PRIOR TO PROCEEDING WITH CONSTRUCTION.

0.155

ALLOWABLE SOIL BEARING: 1,500 PSF

SOIL SITE CLASS SULFATE EXPOSURE MODERATE

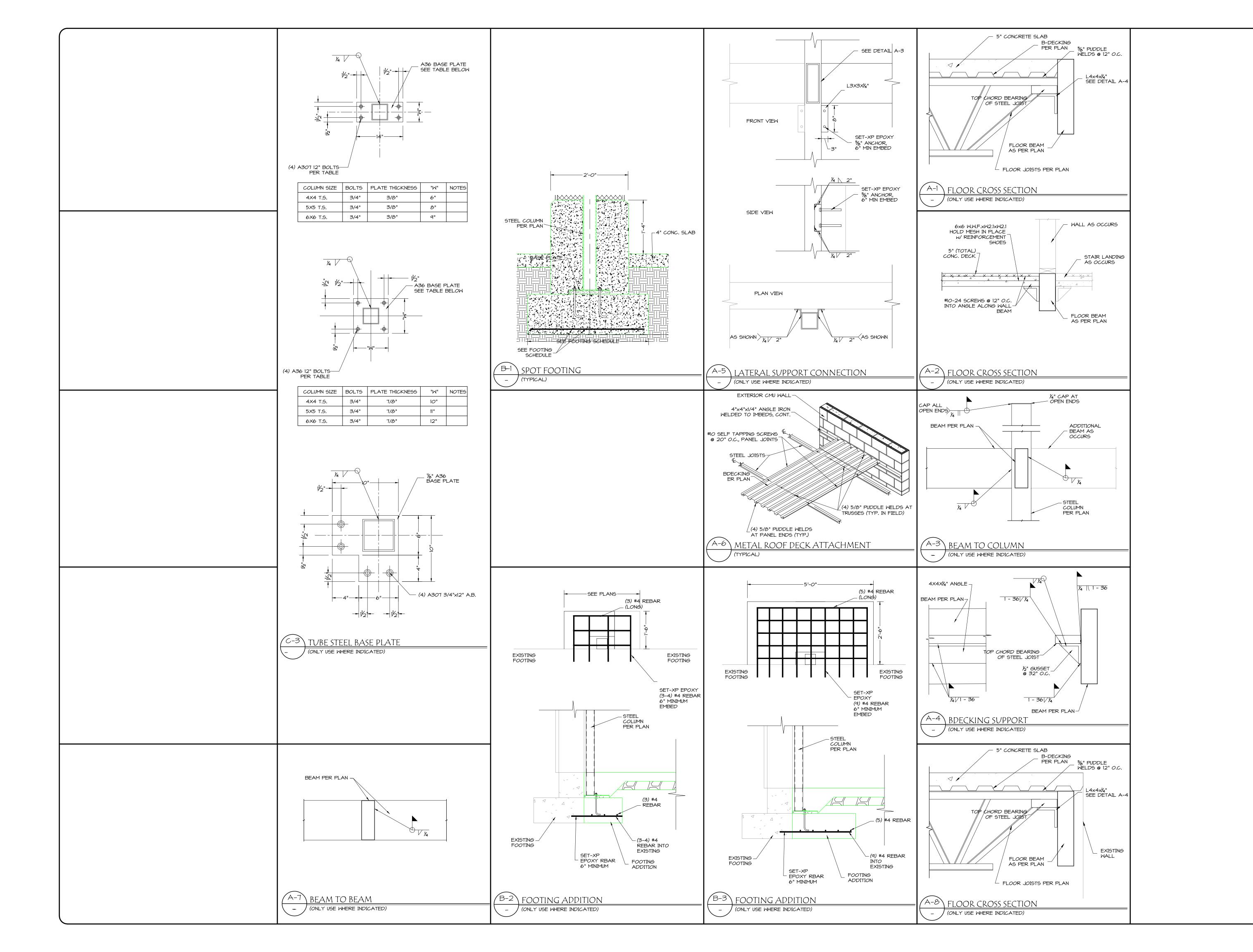
STANDARD ABBREVIATIONS:

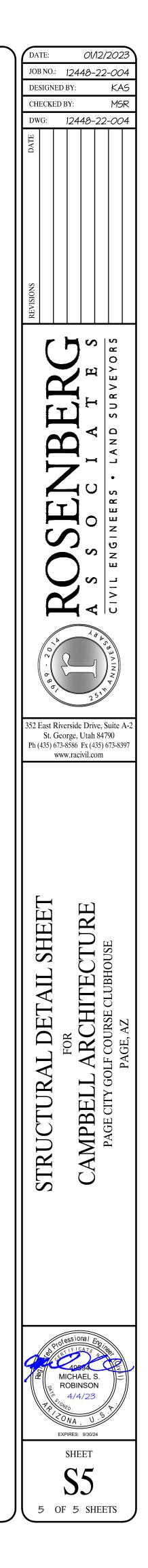
ANCHOR BOLT AMERICAN CONCRETE INSTITUTE AMERICAN INSTITUTE OF STEEL CONSTRUCTION ALTERNATE ANSI ANCHOR ROD ARCH. ARCHITECTURAL AMERICAN SOCIETY FOR TESTING AND MATERIALS ASTM AMERICAN WELDING SOCIETY BOTTOM BEARING CANTILEVERED CONTROL JOINT COMPLETE JOINT PENETRATION CENTER LINE COLUMN CONTINUOUS DIAMETER DRAWING EQUAL EACH WAY FINISH FLOOR FOOT FOOTING GAUGE GLULAM BEAM GIRDER TRUSS HOLLOW STRUCTURAL SECTION INTERNATIONAL BUILDING CODE INSIDE DIAMETER LAMINATED STRAND LUMBER LAMINATED VENEER LUMBER MANUFACTURER MAXIMUM MECH. MECHANICAL MINIMUM MISCELLANEOUS NOT TO SCALE OUTSIDE DIAMETER ON CENTER PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH PARALLEL STRAND LUMBER REQD. REQUIRED SIMI AR SPECIFICATION STANDARD SHEARWALL

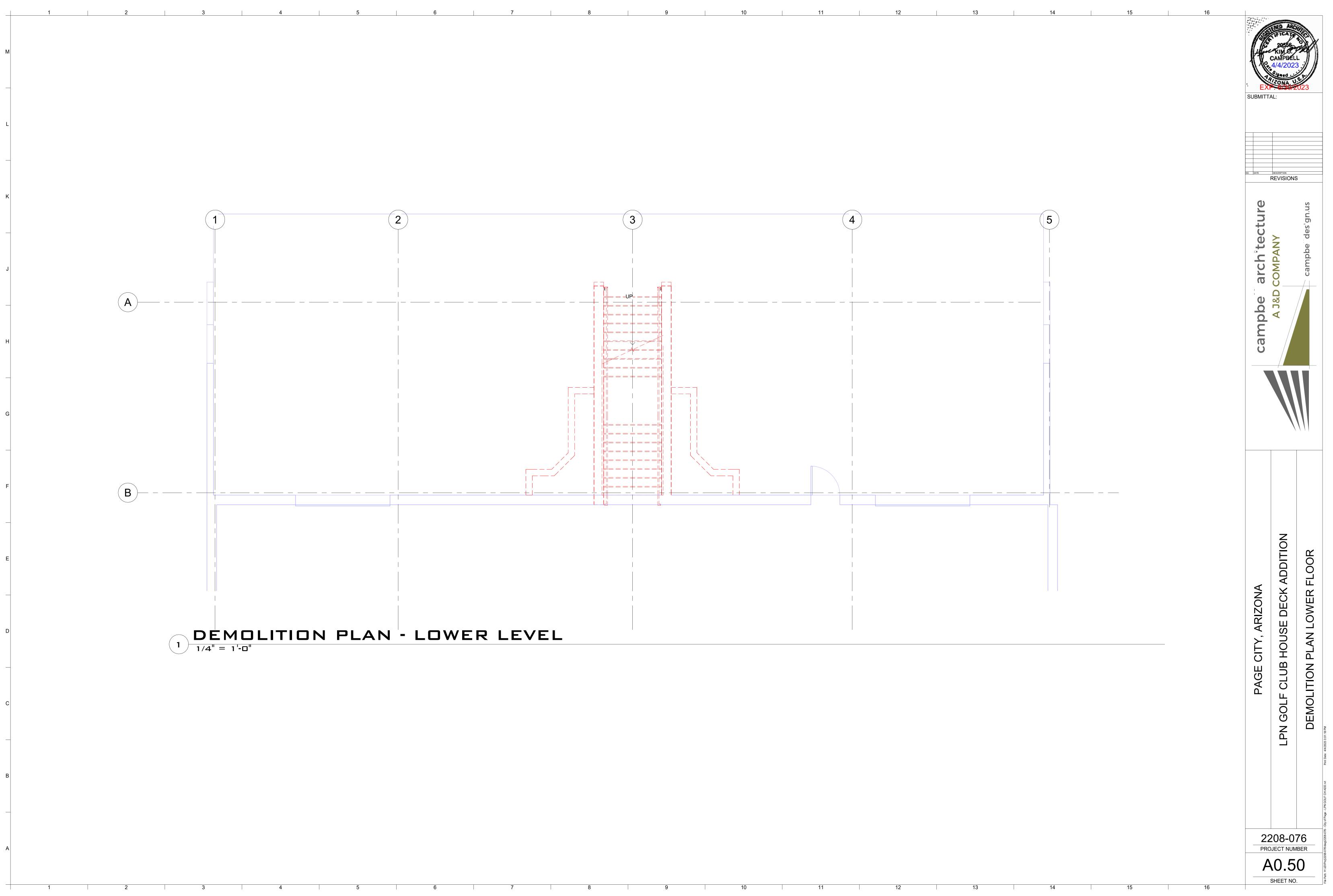


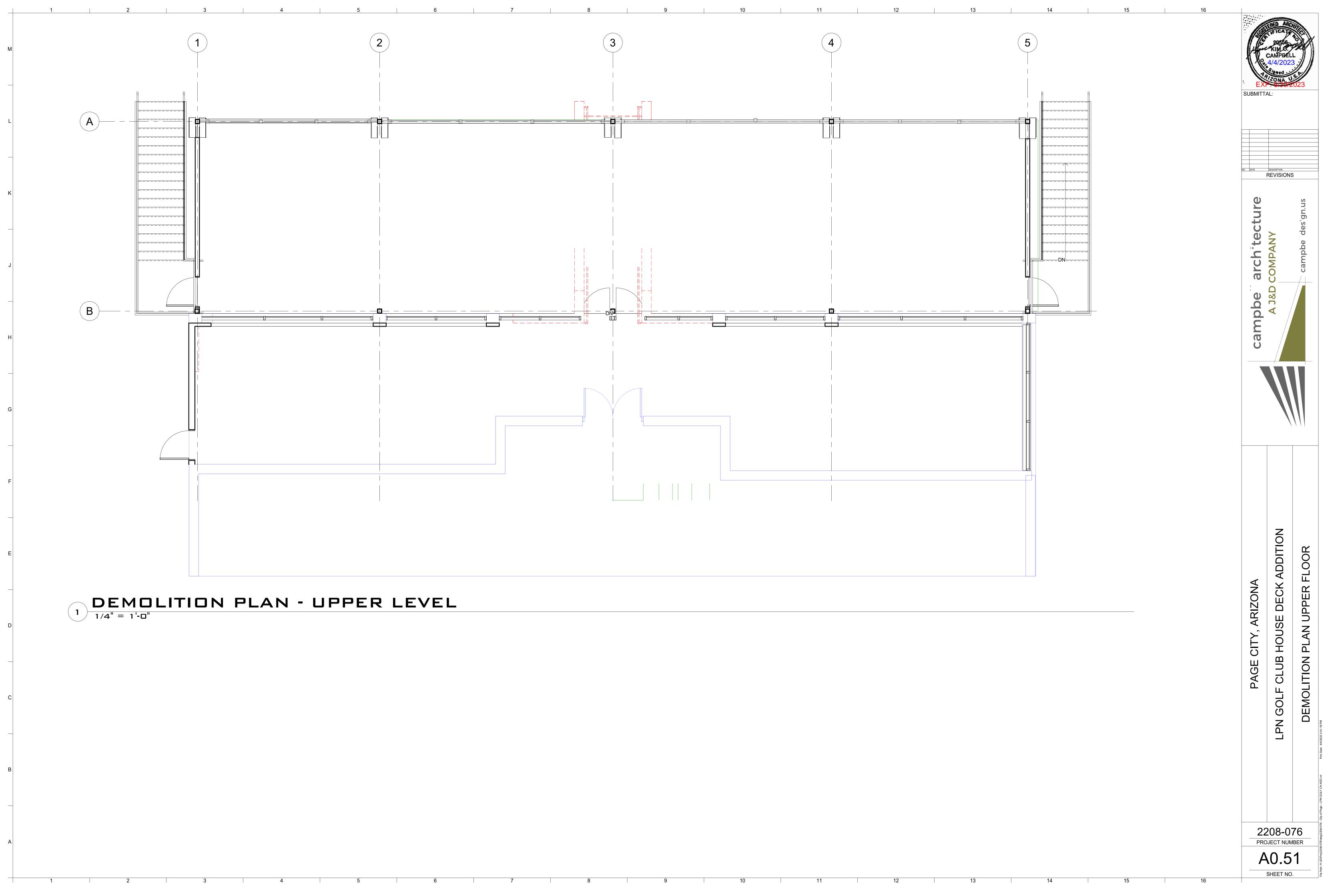
SHEET

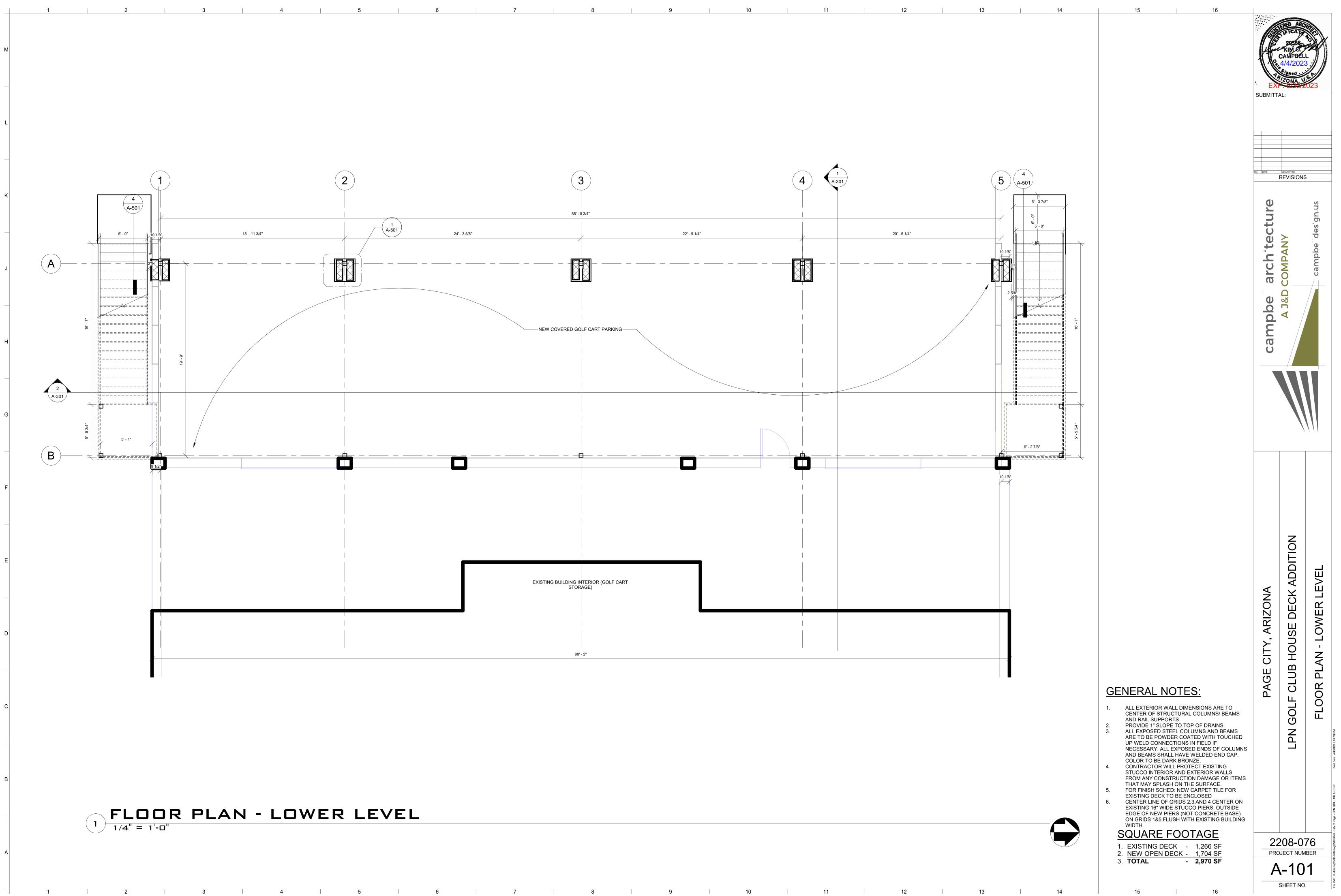
4 OF 5 SHEETS

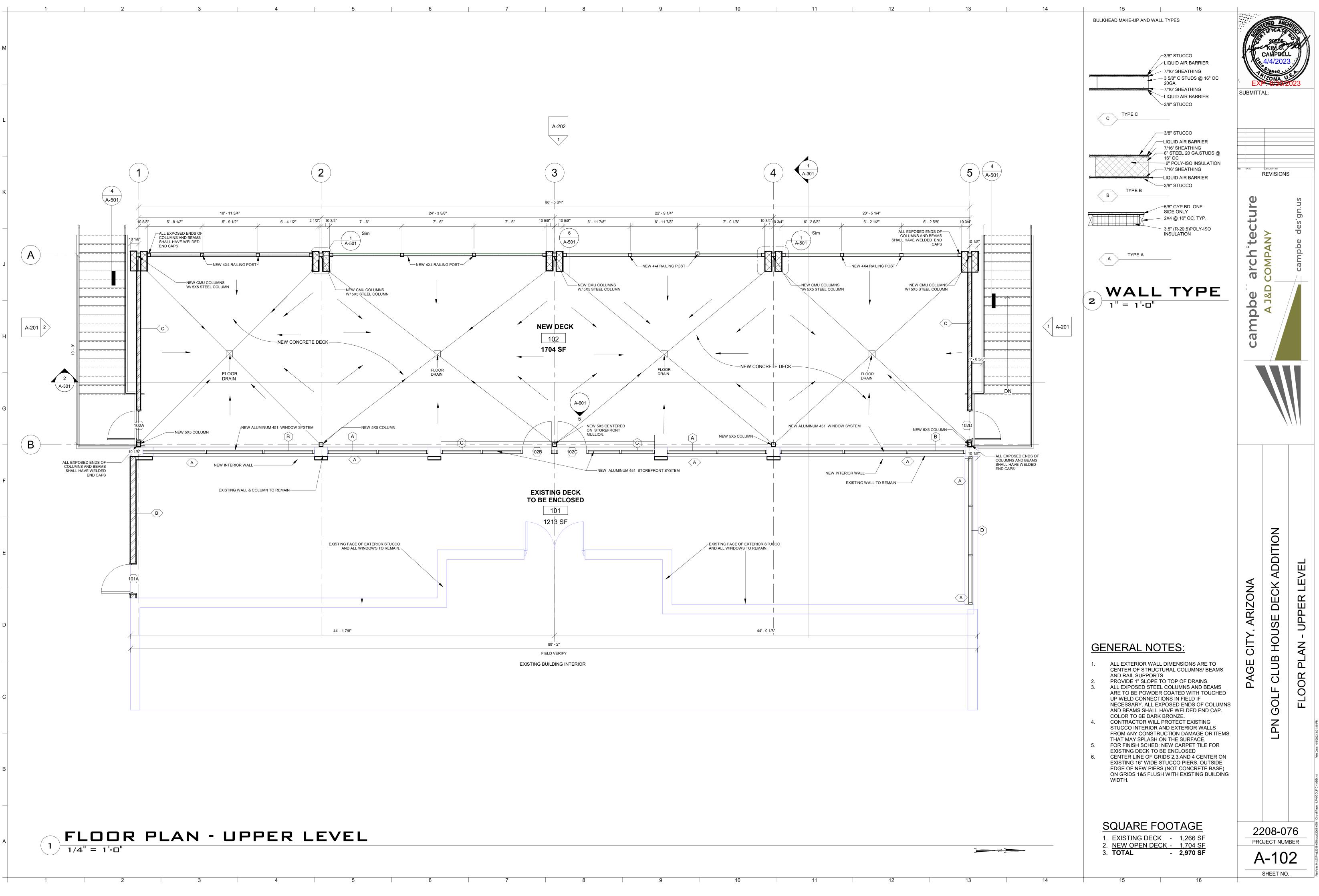


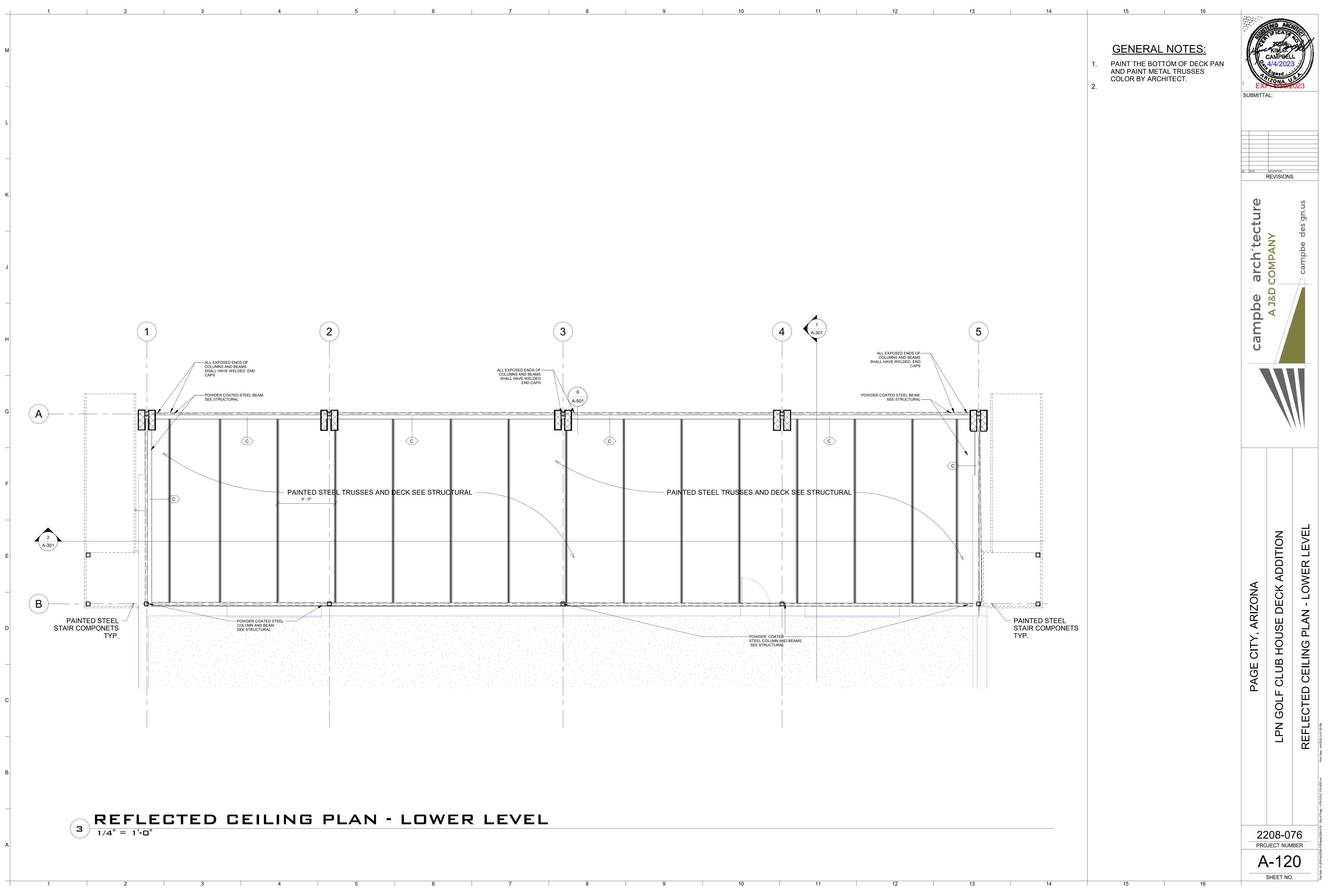


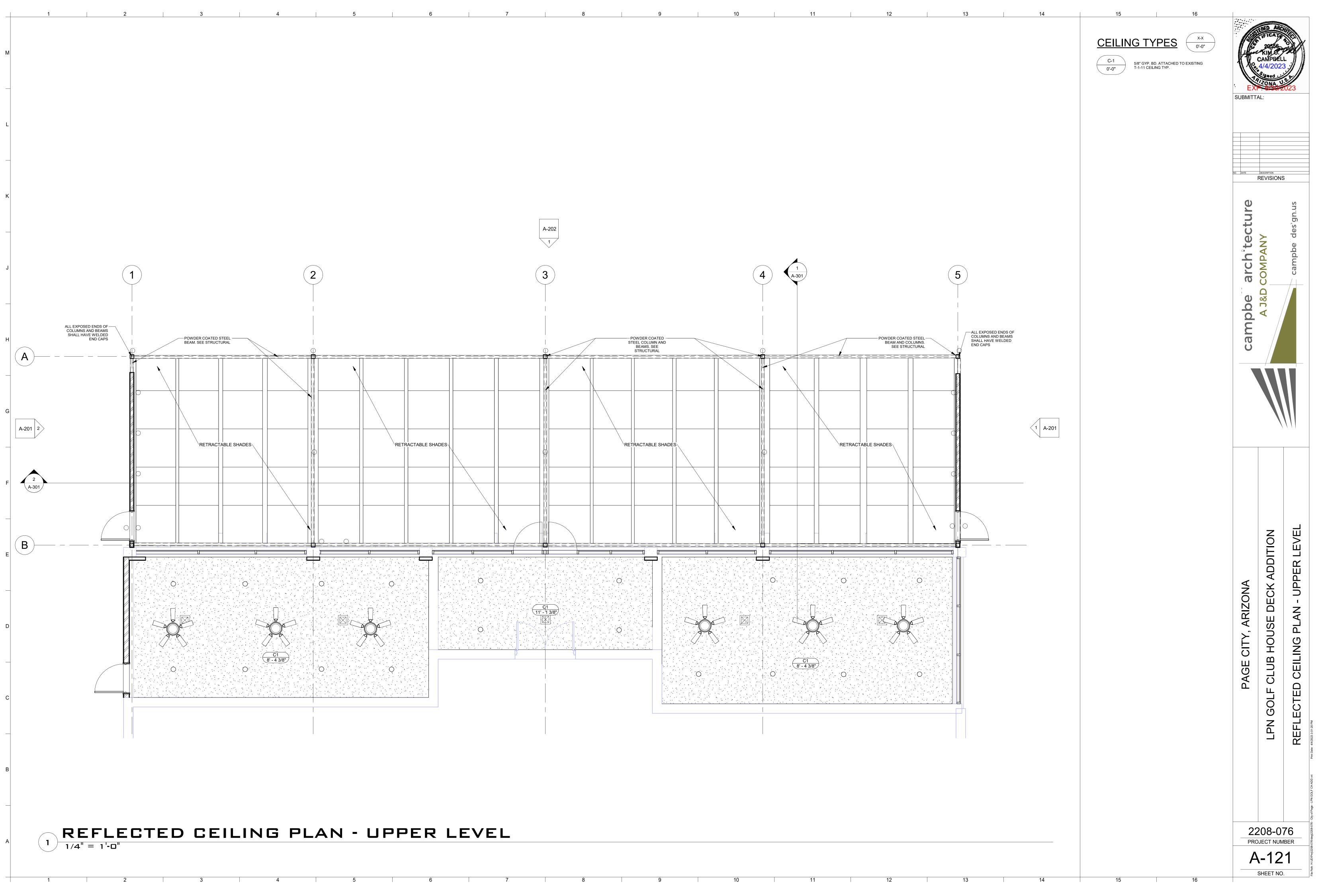


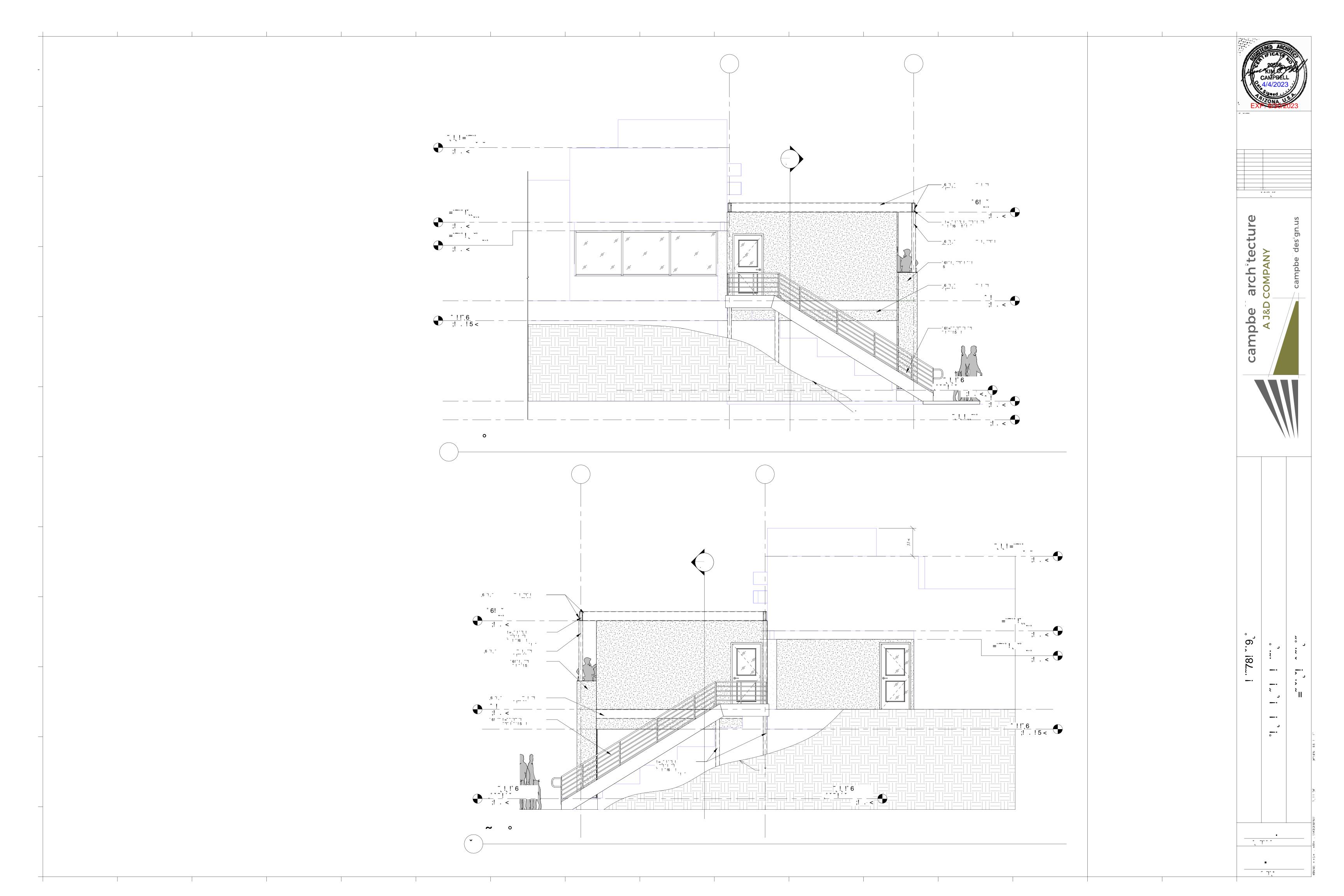


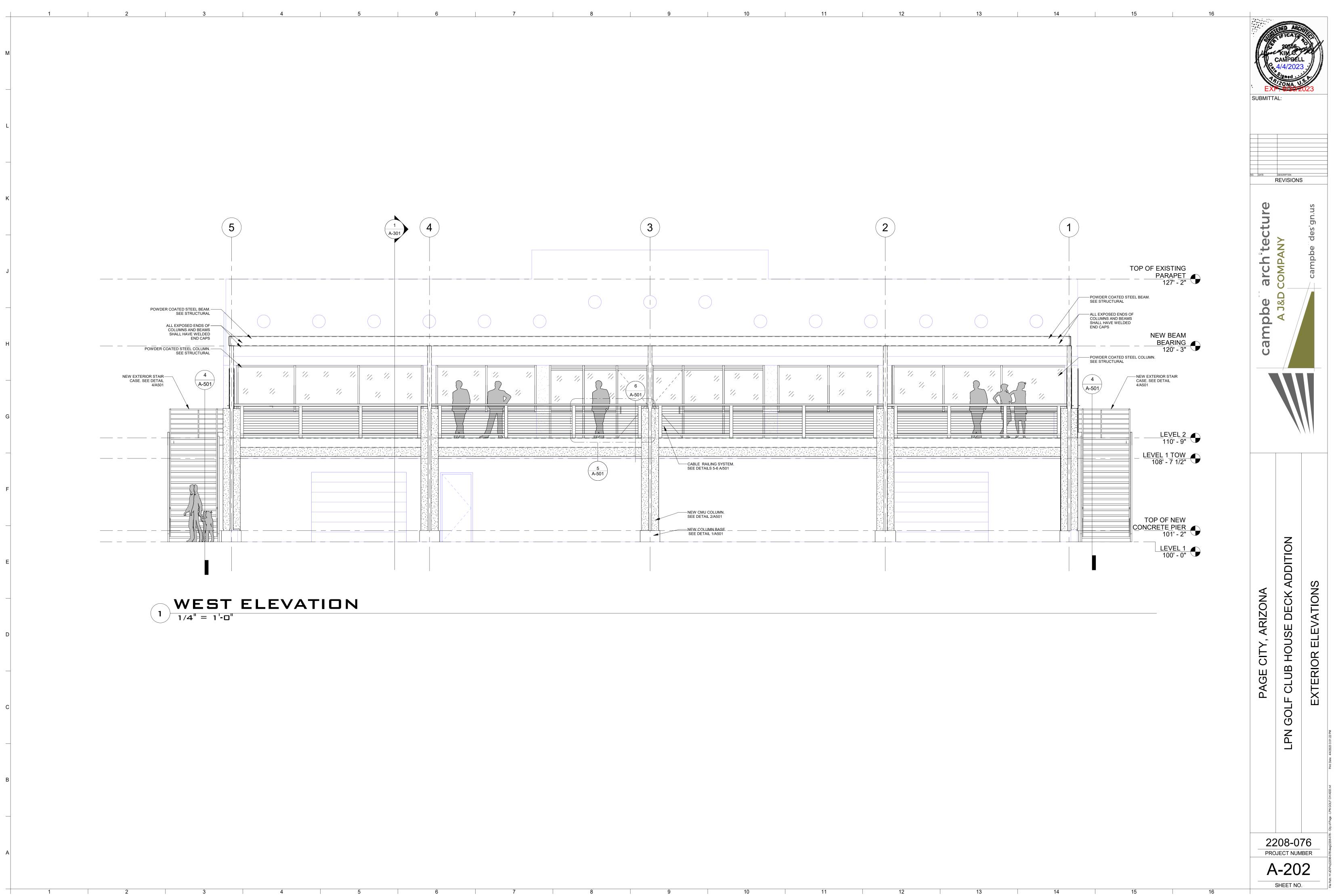


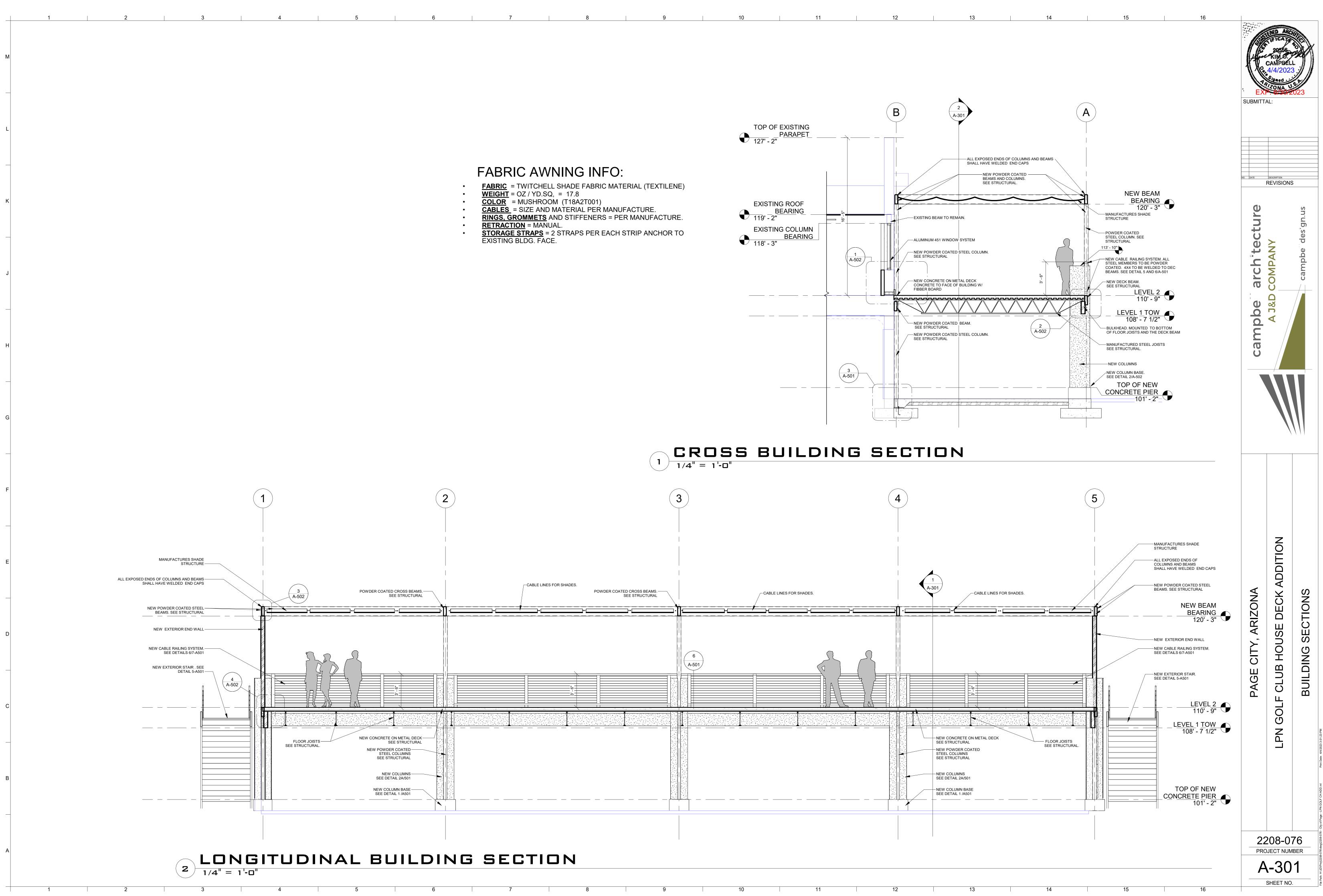


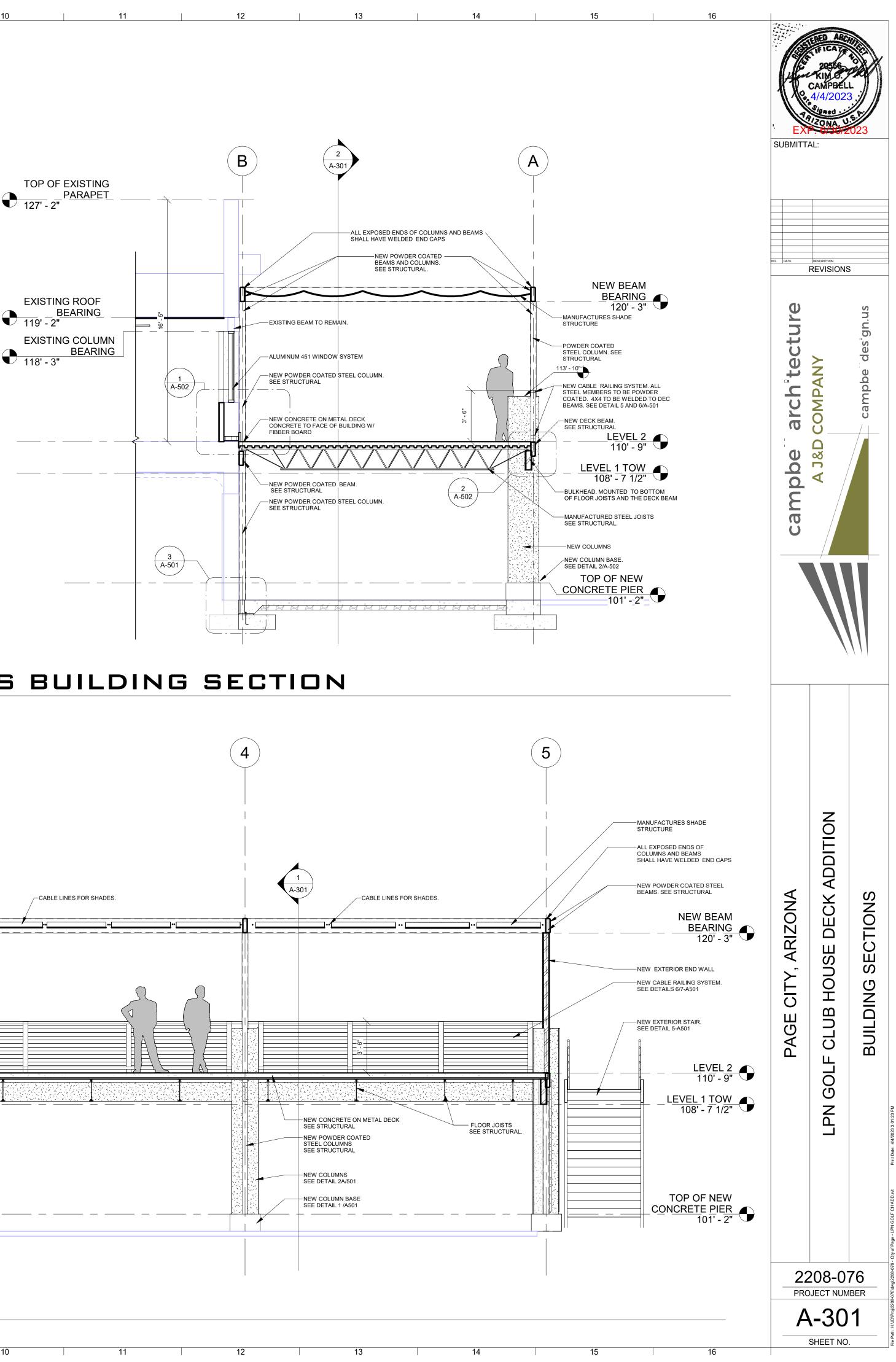


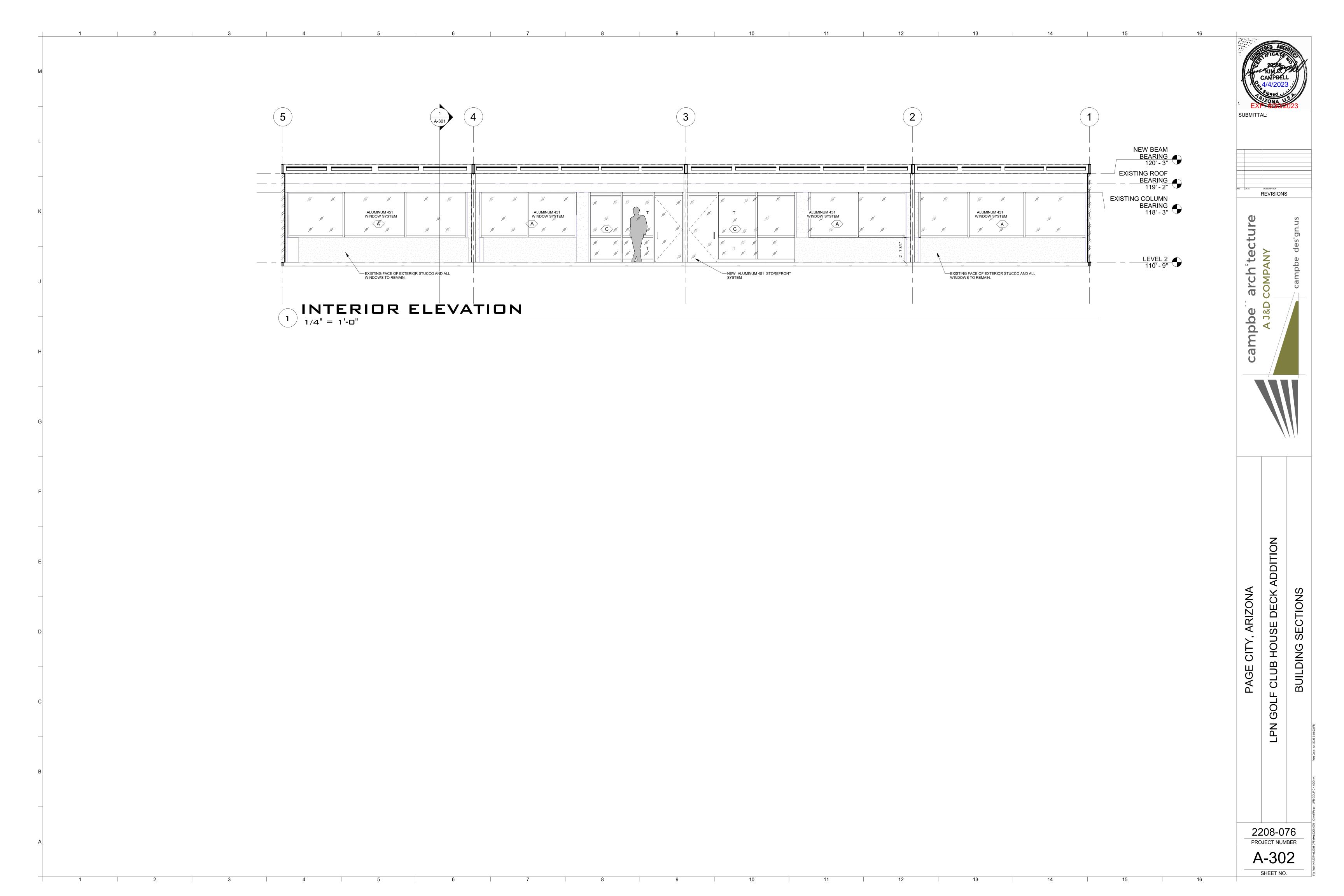


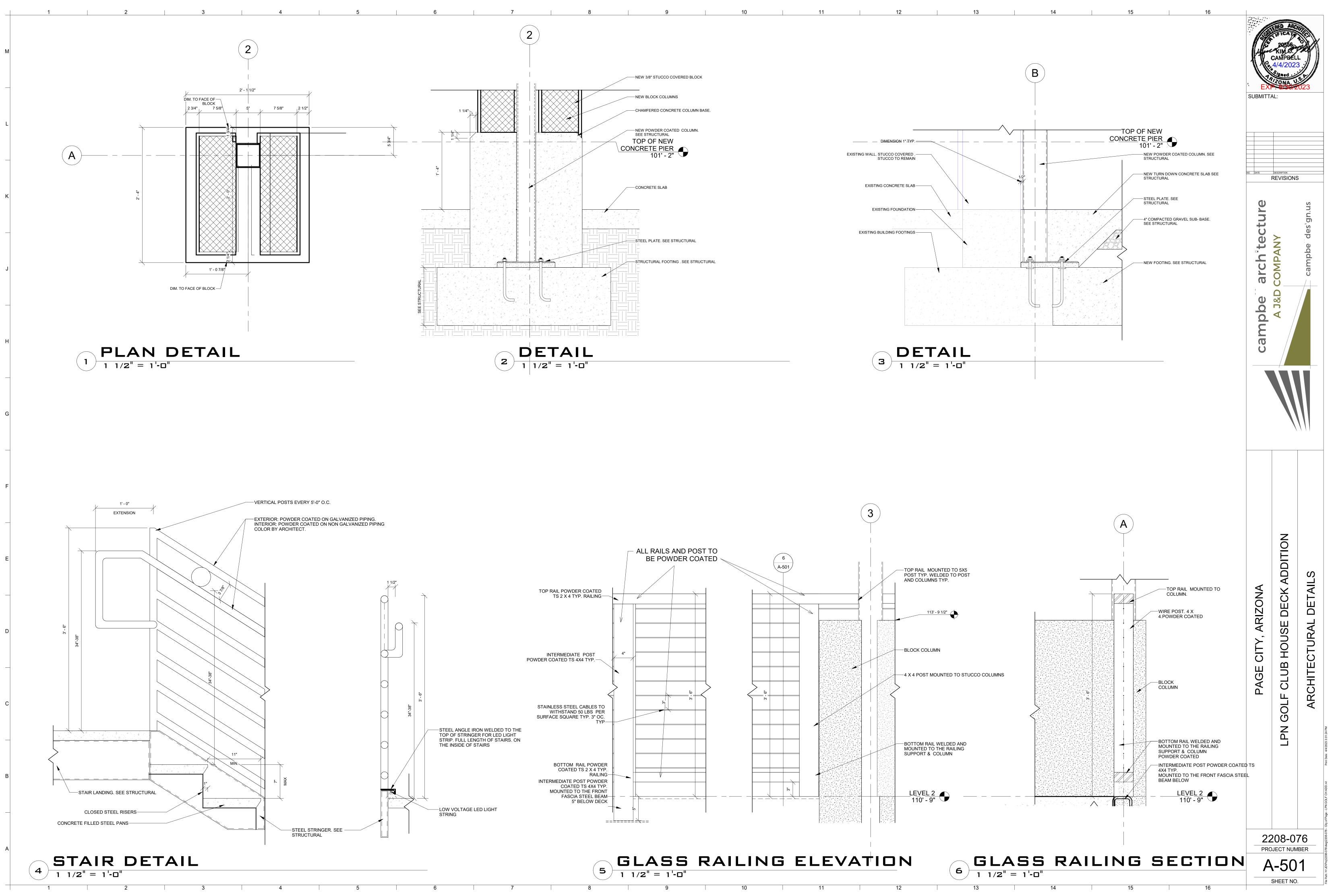


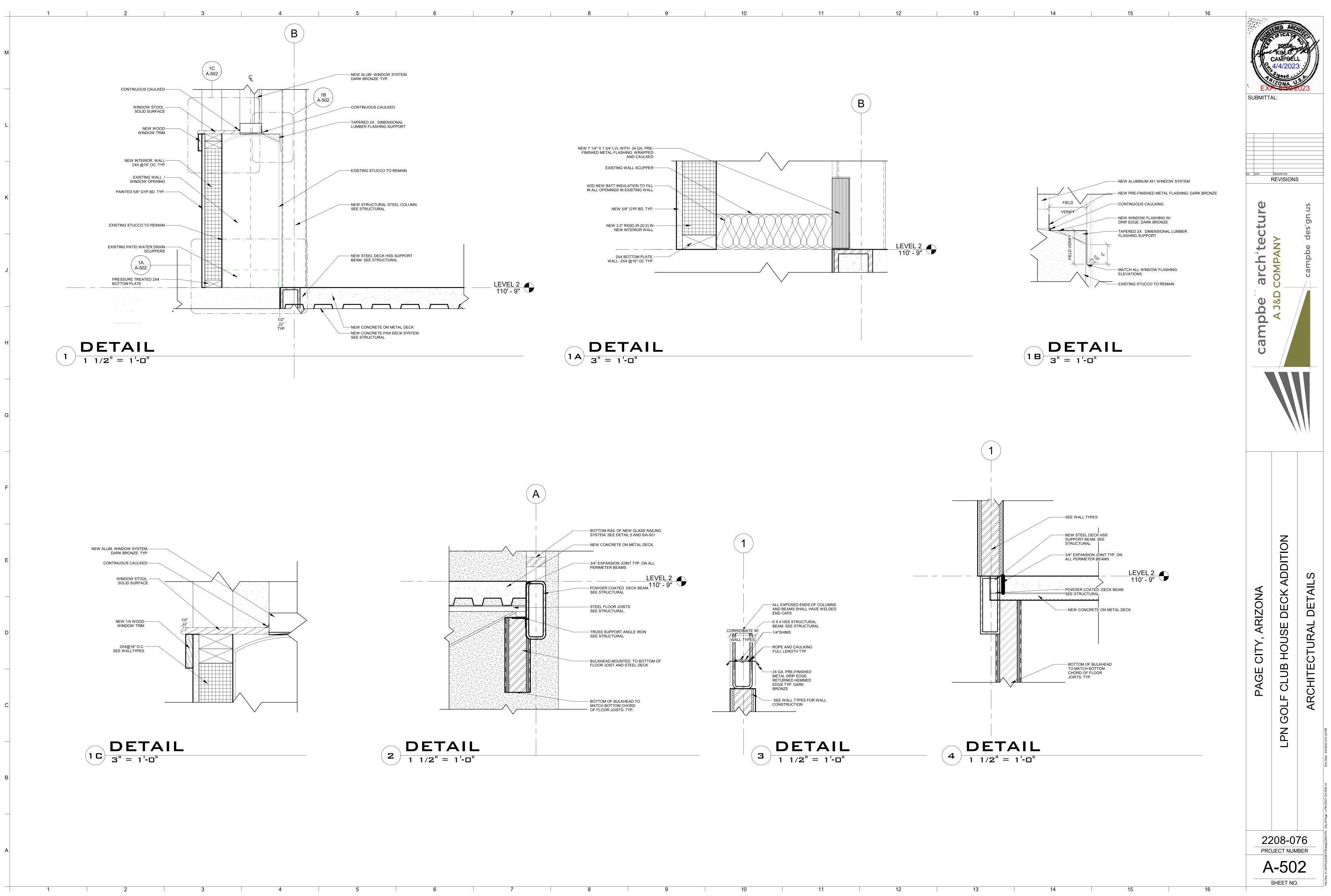




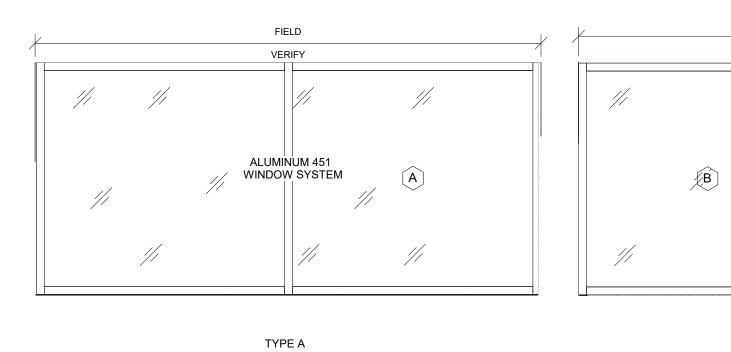






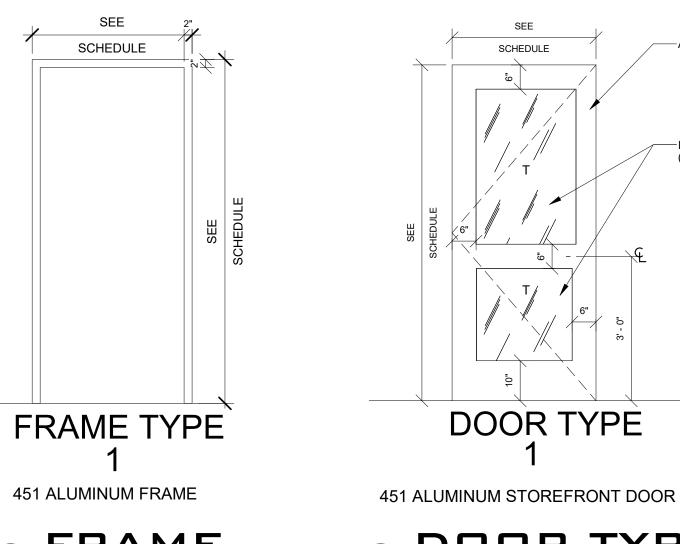


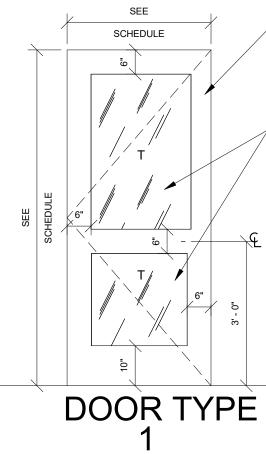
3 WINDOW TYPES 1/2" = 1'-0"



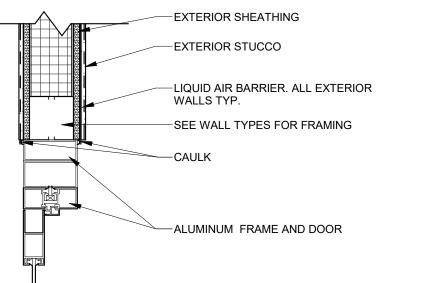




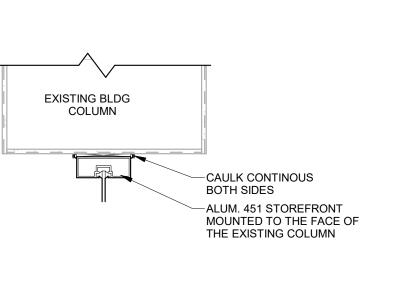








11 | 12



9

8

10

2 HEAD/JAMB 1 1/2" = 1'-0" TYP TYPE 2

 -ALUMINUM DOOR	

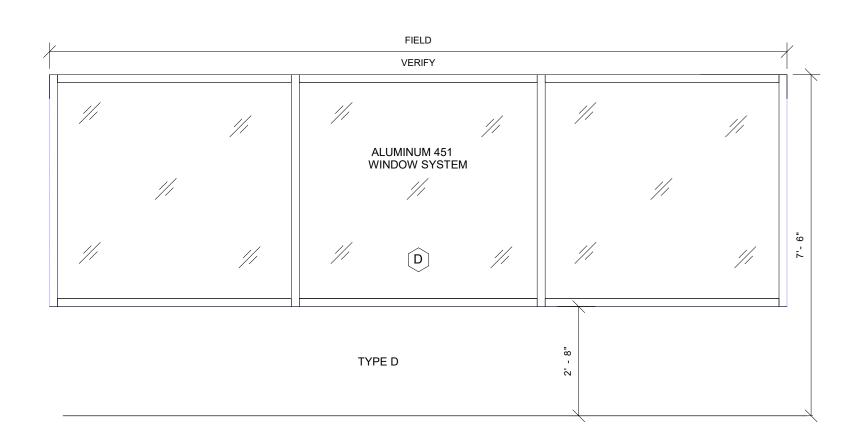
6 **DOOR TYPE** 1/2" = 1'-0"

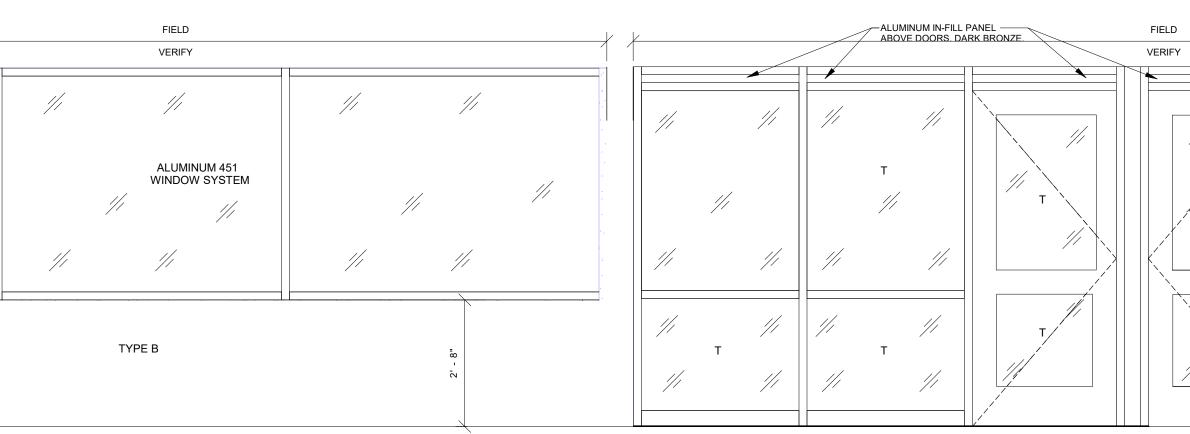
	ROOM FINISH SCHEDULE							
	Room					Walls		
Number	Name	Floor Finish	Base Finish	North	South	East	West	Comments
101	EXISTING DECK TO BE ENCLOSED	OSIS	4" RUBBER	-	-	-	-	
102	NEW OPEN DECK	PER OWNER	-	STUCCO	STUCCO	METAL CLADING ON LVL	STUCCO	
		1						

	DOOR SCHEDULE										
MARK	ROOM	DOOR	Frame		DOO	R				HARDWARE	GENERAL
	NUMBER	TYPE	Туре	WIDTH	HEIGHT	THICKNESS	HEAD	JAMB	SILL	GROUP	REMARKS
101A	101	1	1	3' - 0"	7' - 0"	1 3/4"	-	2		EXIT DEVICE	
102A	102	1	1	3' - 0"	7' - 0"	1 3/4"	-	2		EXIT DEVICE	
102B	102	1	С	3' - 0"	7' - 0"	1 3/4"	1	2		EXIT DEVICE	
102C	102	1	С	3' - 0"	7' - 0"	1 3/4"	1	2		EXIT DEVICE	
102D	102	1	С	3' - 0"	7' - 0"	1 3/4"	-	2		EXIT DEVICE	

DOOR AND WINDOW NOTE

- 1. ALL EXTERIOR GLAZING TO BE GUARDIAN GLASS SNX 62 / 27 CRYSTALGRAY- CLEAR A. FIXED WINDOWS:
 - a. U-FACTOR = 0.38 MAX b. SHGC = 0.40 MAX
 - B. ENTERANCE DOORS:
 - a. U-FACTOR = .77 MAX b. SHGC = 0.40 MAX
- ALL DOORS AND WINDOW METAL SHALL BE DARK BRONZE. 2. PROVIDE CODE REQUIRED TEMPERING ON ALL DOORS/WINDOWS TYP. 3.





TYPE C

12

-13

13	14	15	16
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	STENED AR STENED AR 20556 KIM O. CAMPBEL 3. 4/4/202 7. 000A	
	COMPANY	campbe des gn.us
PAGE CITY, ARIZONA	LPN GOLF CLUB HOUSE DECK ADDITION	ARCHITECTURAL SCHEDULES
	2208-0 ROJECT NUM A-60 SHEET NC	ABER

SINGLE LINE	DOUBLE LINE		SINGLE LINE	DOUBLE LINE		
	W-R R	R/W=1. ROUND DUCT SIMILAR TO RECTNGULAR			POSITIVE PRESSURE DUCT - RISE	
	12/12	RECTANGULAR TO RECTANGULAR OR ROUND TO ROUND DUCT TRANSFORMATION MAXIMUM 15° INCLUDED ANGLE EXCEPT WHERE SHOWN OTHERWISE			POSITIVE PRESSURE DUCT - DROP	
9/9 J 9ØJ	9/9 900	RECTANGULAR TO ROUND DUCT TRANSFORMATION			NEGATIVE PRESSURE DUCT - RISE	
6		BRANCH DUCT SPLIT WITH 6" WIDTH AND MIN. R=WIDTH OF BRANCH DUCT DOWNSTREAM. ELBOW TURNING VANE OPTIONAL			NEGATIVE PRESSURE DUCT - DROP	
		TAP ENTRY AREA EQUALS 150% OF BRANCH AREA	•		ROUND DUCT - RISE	
f		MANUAL VOLUME DAMPER		$\sum $	ROUND DUCT - DROP	
P FD		FIRE DAMPER IN DUCT W/ACCESS PANEL REQD.			DUCT TURNING VANES	
	FSD F FSD	COMBINATION DUCT FIRE/SMOKE DAMPER W/ACCESS PANEL REQUIRED		12X12 200	CEILING SUPPLY DIFFUSER (BALANCE TO CFM SHOWN)	
	<u>{</u>	FLEXIBLE DUCT CONNECTION		- <u>20X20</u> 200	CEILING RETURN REGISTER (BALANCE TO CFM SHOWN)	
+++++++++++++++++++++++++++++++++++++++	↓ ↓	FLEXIBLE DUCT		- <u>12X12</u> 200	CEILING EXHAUST REGISTER (BALANCE TO CFM SHOWN) TOP	
12/8	12/8	RECTANGULAR DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES			SIDEWALL SUPPLY REGISTER (BALANCE FIGURES TO CFM SHOWN) FIGURES NECK SIZE.	
12Ø	<u>{</u> 12Ø }	ROUND DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES	_		SIDEWALL EXHAUST OR RETURN REGISTERBOTTOM(BALANCE TO CFM SHOWN)INDICATES	
UP ►		DUCT INCLINED RISE \rightarrow WITH RESPECT TO AIR FLOW \rightarrow 15° NOMINAL INCLINE WITH		- <u>12X12</u> 200	CEILING SUPPLY DIFFUSER WITH FLEXIBLE DUCT (BALANCE TO CFM SHOWN)	
DN►		DUCT INCLINED DROP RADIUS TURNS= DEPTH OF DUCT		<u>- 24X24</u>	CEILING RETURN AIR GRILLE WITH SOUND	

LINE TYPE	ABBREV.	DESCRIPTION
	CW	COLD WATER PIPE
	HW	HOT WATER PIPE
	HWR	HOT WATER RETURN PIPE
G	G	GAS PIPE
	V	VENT PIPE
	W	WASTE PIPE (BELOW GRADE)
	W	WASTE PIPE (ABOVE GRADE)
RD	RD	ROOF DRAIN PIPE
RDO	RDO	ROOF DRAIN OVERFLOW PIPE
A	А	COMPRESSED AIR PIPE
NO	NO	NITROUS OXIDE PIPE
c	С	CONDENSATE DRAIN PIPE
co	со	CONDENSATE OVERFLOW DRAIN PIPE
0	0	OXYGEN PIPE

						(GAS/DX	ROOFT	OP UNIT	SCHEE	DULE (F	ROPAN	IE)							
							SUPPLY FAN			HEATING SEC	TION	COOLING SEC	TION			ELECTRICAL				
									EXTERNAL	GAS INPUT		GROSS	GROSS			NO CONVEN	IENCE OUTLET			
			_				TOTAL	OUTSIDE	STATIC	LOW		TOTAL	SENSIBLE	ENTERING	AMBIENT	WITH POWE	RED EXHAUST	VOLT-	1	
	MANUF.		PERFORMANC				AIR FLOW	AIR FLOW	PRESSURE	INPUT		COOLING	COOLING	AIR TEMP.	AIR TEMP.			PHASE-	UNIT	
	AND	NOMINAL			THERMAL		RATE	RATE	DROP	LOAD		LOAD	LOAD	DB/WB	DB			HERTZ	WEIGHT	
SYMBOL	MODEL NO.	TONS	SEER	EER	EFFICIENCY	REFRIGERANT	(CFM)	(CFM)	(IN H20)	(BTUH)	FUEL	(MBH)	(MBH)	(DEG. F)	(DEG. F)	MCA	MOCP	(V-PH-HZ)	(LBS)	REMARKS
RTU – 048	CARRIER 48FC A05	4	14	11.6	80%	R-410A	1,600	140	0.3	67,000	PROPANE	44.6	32.5	80/67	105	25	30	208-3-60	885	1,2,3
																			1	

1. WITH NON-FUSED DISCONNECT.

2. STANDARD LEAK TEMPERATURE CONTROLLED DRY BULB ECONOMIZER WITH BAROMETRIC RELIEF.

3. WITH FIELD INSTALLED HAIL GUARDS. (SINGLE STAGE)

MECHANICAL SYMBOL LEGEND

PLUMBING SYMBOLS AND ABBREVIATIONS

LINE TYPE	ABBREV.
V	V
o	
 ə	
	FCO
COTG	COTG
	WCO
	FD
0	VTR
Ô	RD/RDO
R	PRV
ŧ	
•	POC

DESCRIPTION

VACUUM PIPE

PIPE RISE PIPE DROP

FLOOR CLEANOUT

CLEANOUT TO GRADE

WALL CLEANOUT

FLOOR DRAIN

VENT THROUGH THE ROOF

ROOF DRAIN OR ROOF DRAIN OVERFLOW PRESSURE REDUCING

VALVE

BUTTERFLY SHUTOFF VALVE 2 1/2" & LARGER. BALL VALVE 2" & SMALLER. GAS SHUTOFF COCK

UNION

POINT OF CONNECTION

I	13	14 15 16	I		
I			STAMP:	sional Engine	Ne 01 1
			egistered	LADD M. BIRCH	echanica/
				Ve Signed	, A
		SUPPLY DIFFUSER - 4-WAY BLOW PATTERN	SUBMITT	AL:	
		SUPPLY DIFFUSER - 3-WAY BLOW PATTERN			
		SUPPLY DIFFUSER - 2-WAY BLOW PATTERN			
		SUPPLY DIFFUSER - 2-WAY BLOW PATTERN			
		SUPPLY DIFFUSER - 1-WAY BLOW PATTERN	NO. DATE		S
		SUPPLY DIFFUSER W/ SD FD - FIRE DAMPER FSD - FIRE SMOKE DAMPER			
	$\langle \overline{EF} \rangle$	EQUIPMENT IDENTIFICATION	IL O		n.us
		EXAMPLE : RTU - ACRONYM USED FOR A PIECE OF EQUIPMENT. <u>1</u> - # IDENTIFYING THE UNIT AND DISTINGUISHING IT FROM OTHERS	ctul		design.us
		THE SAME SIZE. <u>060</u> - SYMBOL USED TO IDENTIFY THE EQUIPMENT ON THE PLANS WITH THAT IN THE SCHEDULES.	lite	ANY	ampbelld
-		KEYED NOTE IDENTIFICATION	archite	COMPAN	cam
	T	THERMOSTAT		J&D O 	
	S	SENSOR	campbel	A J8	
	SD	DUCT SMOKE DETECTOR	<u>S</u>		
	U.T.R.	UP THROUGH ROOF	Ca		
		ELECTRICAL PANEL			
	\$	SWITCH			
	Ø	POINT OF CONNECTION TO EXISTING AND NEW			
		POINT OF DEMOLITION FROM EXISTING AND NEW			
	(E)	EXISTING			
DE	FERRE	ED SUBMITTAL			
SEISMIC		ND ISOLATION DESIGN SHALL BE			ပ္ပ
A DEFEI SHOP D	RRED SUBMIT	TAL. CONTRACTOR SHALL SUBMIT TAILS AND CALCULATIONS TO THE			
BUILDIN	IG DEPARTMEN	NT FOR REVIEW.		Z	SCHEDULE
	_				SCF
	REG	STERS, DIFFUSERS AND GRILLES		ADDITION	ক
SYMBOL	DESCRIPTION	SPECIFICATION CEILING SUPPLY DIFFUSERS SHALL BE PLAQUE FACED PRICE SPD, WITH BORDER	NA	DECK	ŇO
CD	CEILING DIFFUSER	TYPE 36 FOR LAY-IN CEILINGS OR BORDER TYPE 6 FOR SURFACE MOUNTING IN OTHER THAN LAY IN CEILINGS, BAKED ENAMEL FINISH FOR BLOW AND PATTERN SHOWN ON DRAWINGS.	ARIZONA		ATI
		CEILING RETURN GRILLES SHALL BE PRICE PDDR WITH REMOVABLE		HOUSE	ABRIVIATIONS
RG	RETORN GRILLE	PERFORATED FACEPLATE AND BAKED ENAMEL FINISH. BORDER TYPE 3 FOR LAY IN CEILINGS OR BORDER TYPE 1 FOR SURFACE MOUNT.	CITY		
				CLUB	GEND
		PROPANE GAS SCHEDULE	PAGE		
		LONGEST SYMBOL GAS INPUT LENGTH PRESSURE		GOLI	ALL
		(BTU) (FT) EXISTING AC UNIT 75,000 11" W.C.			
		EXISTING AC UNIT 75,000 11" W.C. EXISTING AC UNIT 75,000 11" W.C.		LPN	MECHANIC
		EXISTING AC UNIT 75,000 11" W.C. EXISTING MUA 250,000 11" W.C.			ΪΪ
		EXIST WTR HTR 178,000 11" W.C.			ЦШ
		EXISTING RANGE 258,000 11" W.C. EXISTING FRYER 110,000 11" W.C.			∣≥
				1	1

IARKS 2,3

12

13

-15

11" W.C.

11" W.C.

67,000

1,088,000

14

PROPANE PIPE SIZED PER THE LONG LENGTH METHOD LISTED IN THE 2018 INTERNATIONAL FUEL GAS CODE, TABLE 402.4(28).

135

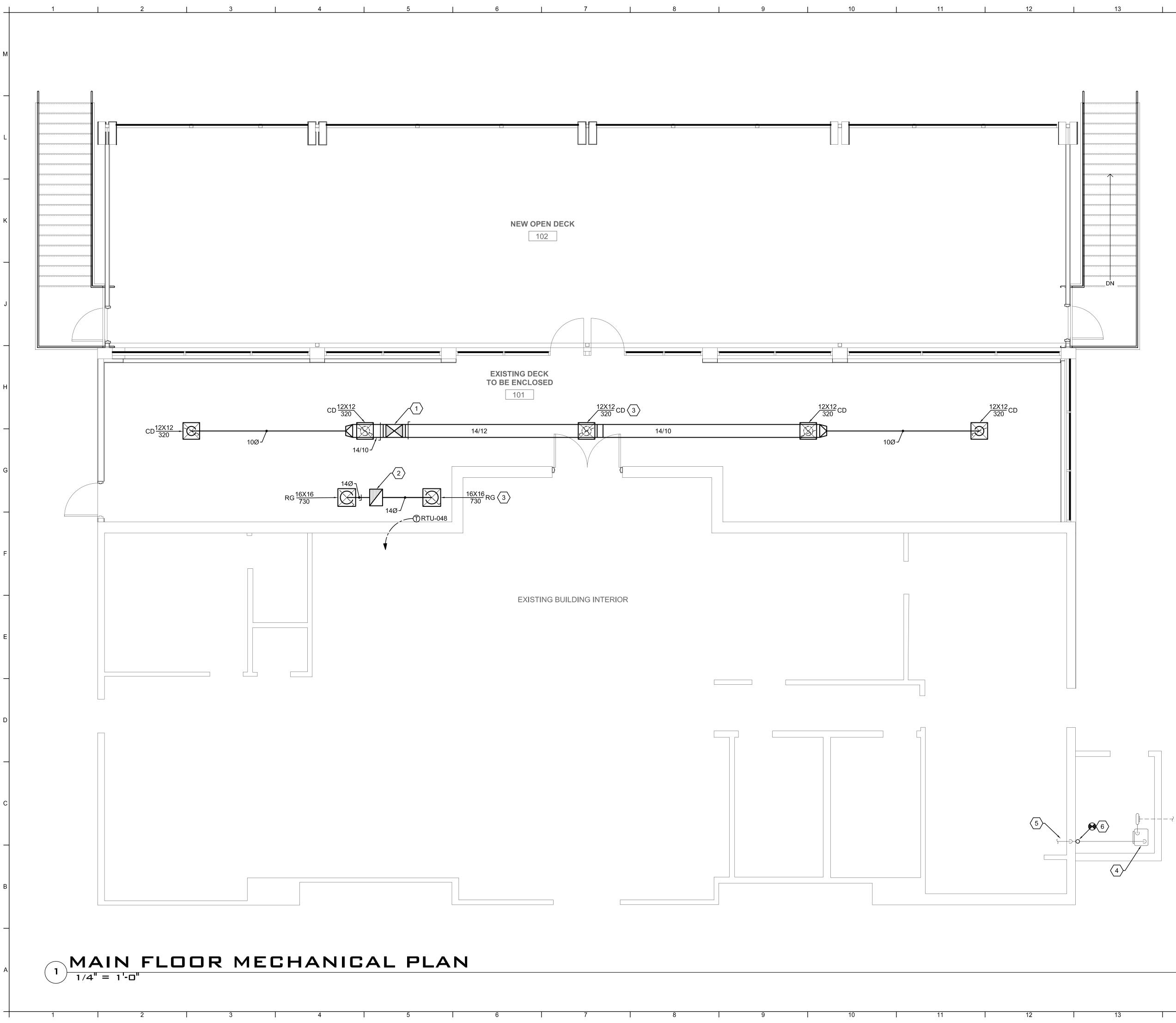
NEW RTU-048

TOTAL DEMAND

2208-076

PROJECT NUMBER

M001







- 18/14 SUPPLY AIR DUCT UP THROUGH THE ROOF BETWEEN THE ROOF TRUSSES. INSTALL HORIZONTAL DUCT UP IN THE JOIST SPACE.
- 14/18 RETURN AIR DUCT UP THROUGH THE ROOF BETWEEN ROOF TRUSSES. INSTALL BRANCH DUCTS UP IN THE JOIST SPACE.
- 3. SUPPLY AND RETURN GRILLES TO BE INSTALLED WITH SCREW DRIVER OPERATED, OPPOSED BLADE DAMPER, TYPICAL.
- 4. EXISTING PROPANE GAS METER.
- 5. EXISTING 2" PROPANE GAS LINE SERVING THE EXISTING CLUBHOUSE EQUIPMENT.
- CONNECT A NEW 3/4" PROPANE LINE TO THE EXISTING 2" LINE INTO THE BUILDING. INSTALL THE NEW 3/4" LINE UP THE OUTSIDE OF THE WALL TO THE ROOF. SECURE TO THE WALL WITH UNISTRUT AND PIPE CLAMPS.

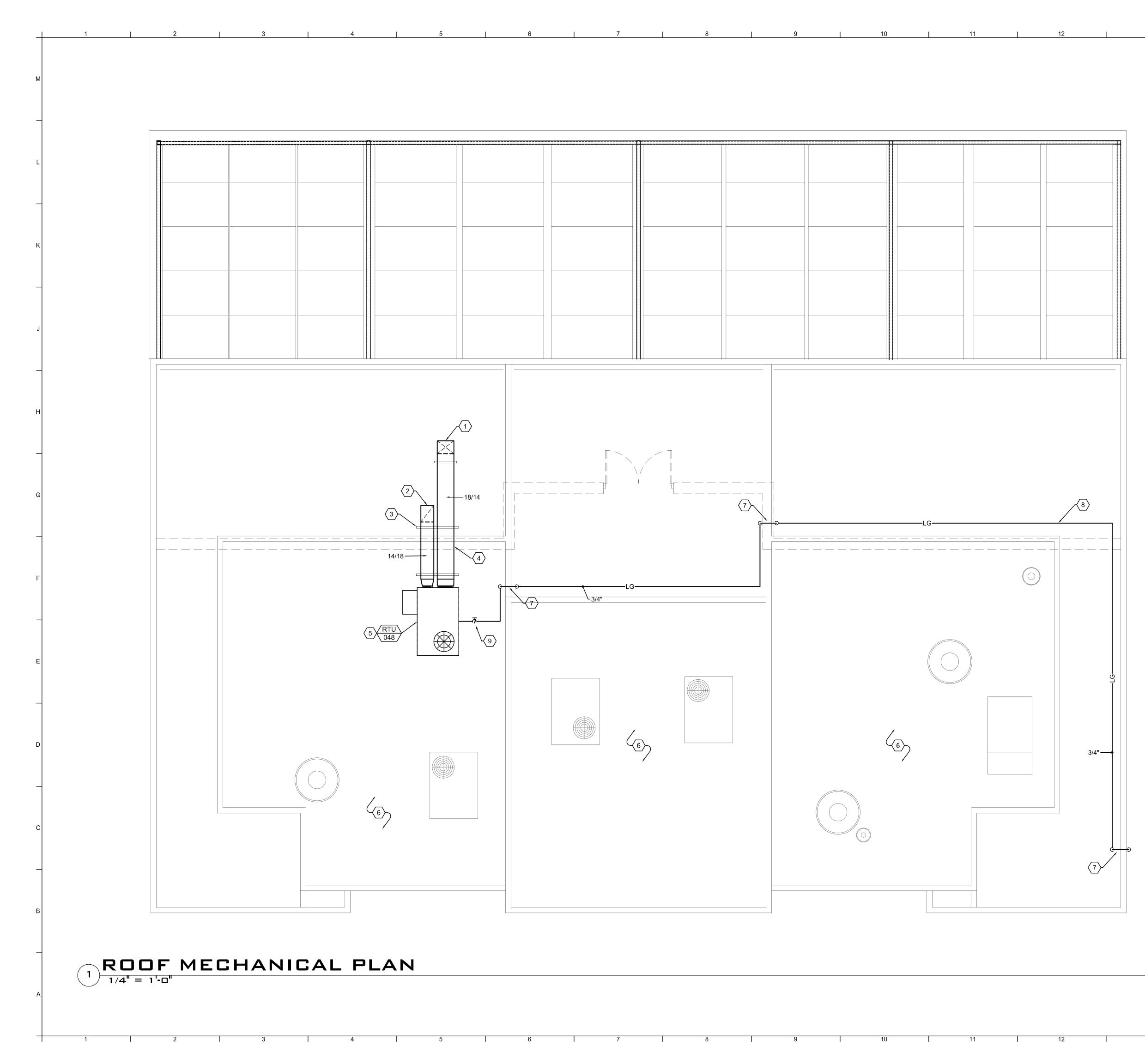
NO. DATE		
campbell architecture	A J&D COMPANY	campbelldesign.us
PAGE CITY, ARIZONA	LPN GOLF CLUB HOUSE DECK ADDITION	MAIN FLOOR MECHANICAL PLAN
PRC	208-07 DJECT NUM	IBER

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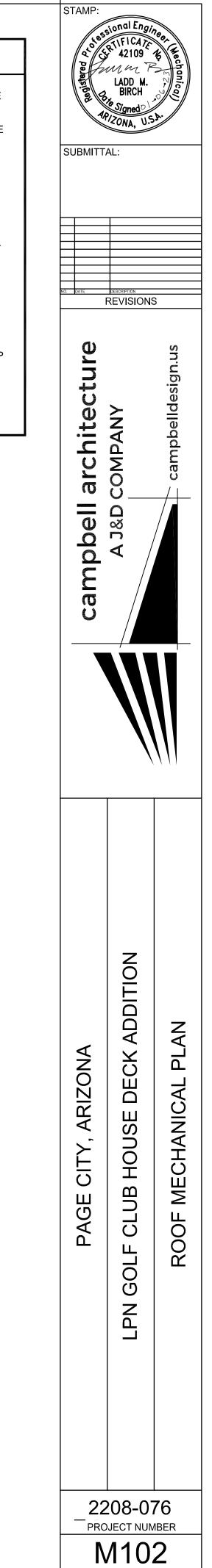
SUBMITTAL:

LADD M. BIRCH

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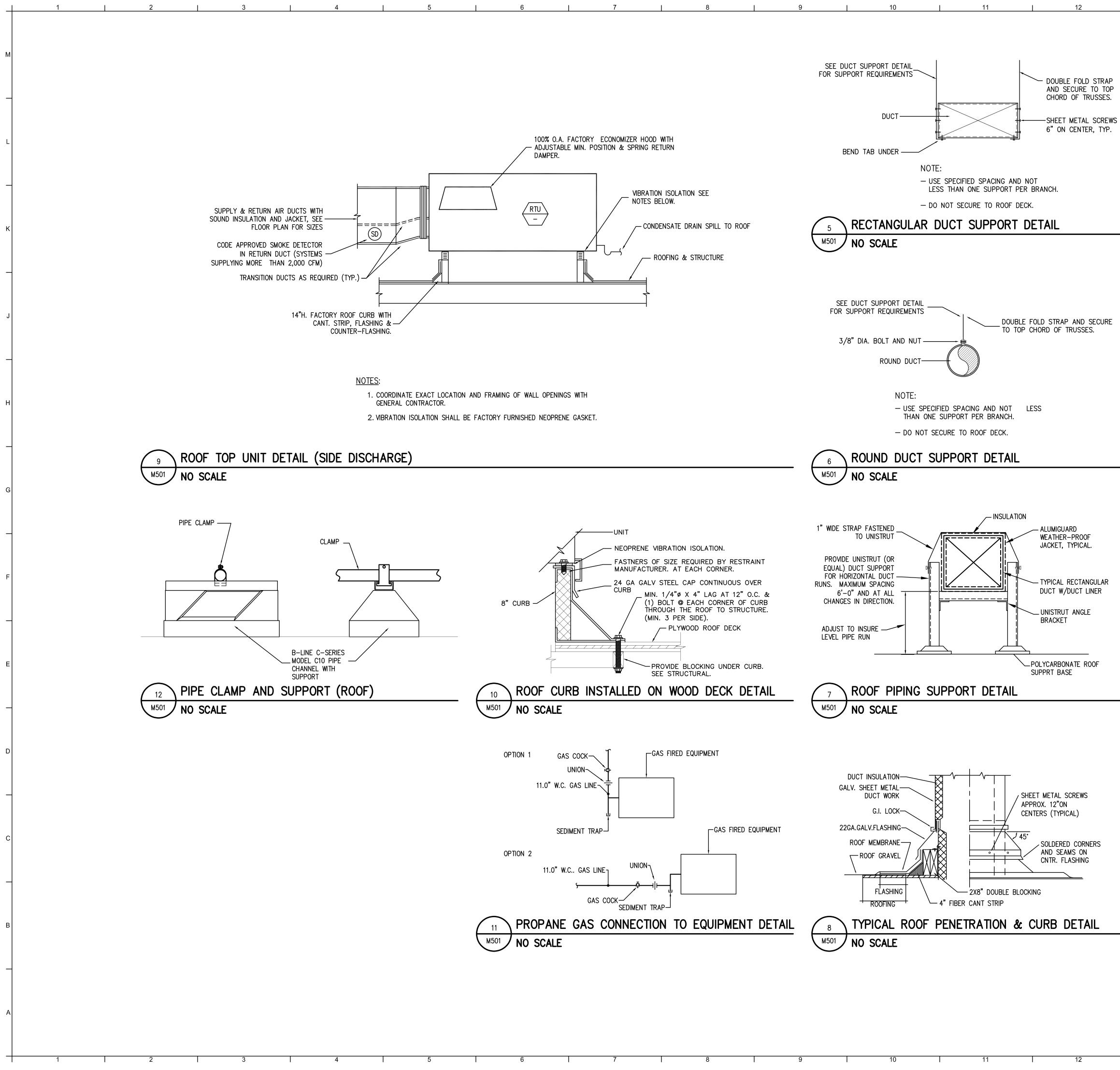


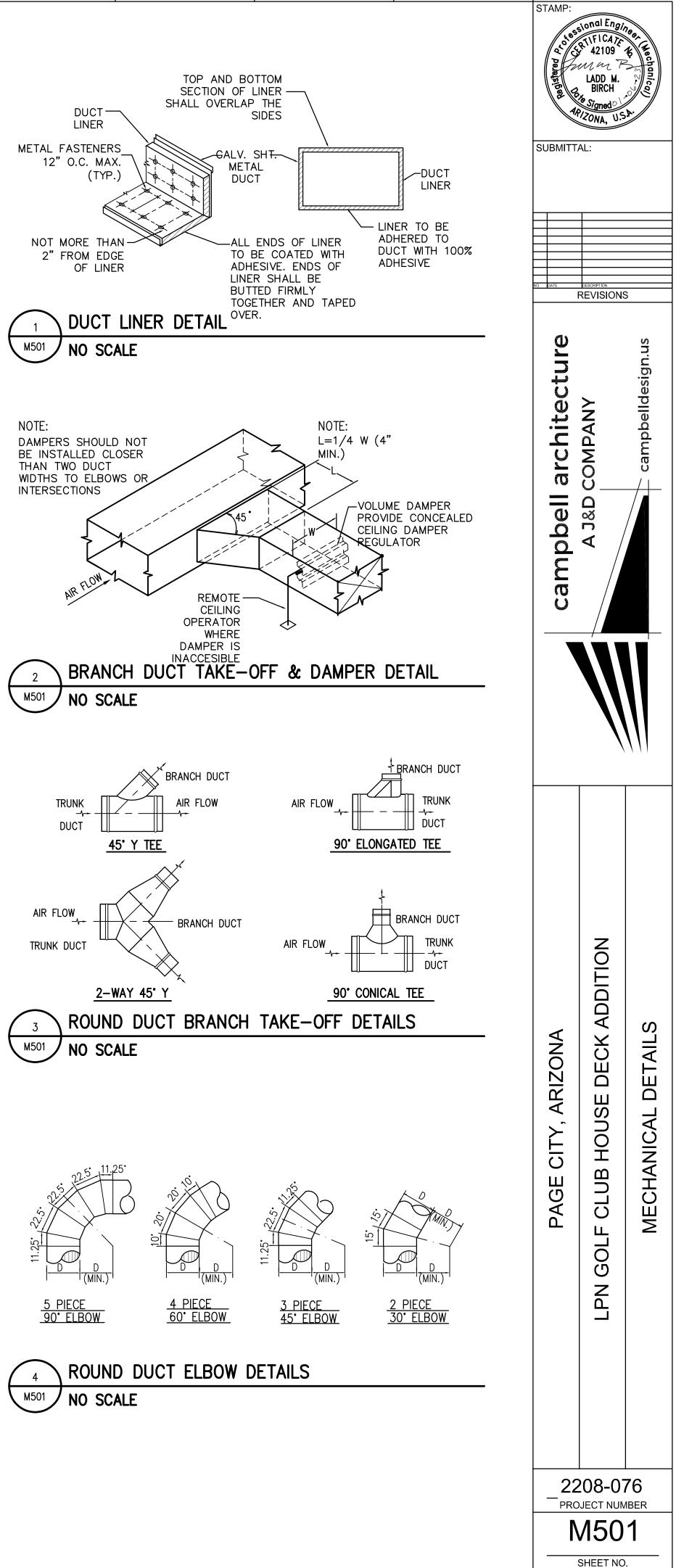
KEYED NOTES



1.	18/14 SUPPLY AIR DUCT DOWN THROUGH THE ROOF. SEE MAIN FLOOR MECHANICAL PLAN.
2.	14/18 RETURN AIR DUCT DOWN THROUGH THE ROOF. SEE MAIN FLOOR MECHANICAL PLAN.
3.	INSTALL ROOF MOUNTED DUCT SUPPORTS. SUPPORTS TO BE A MAXIMUM OF 6 FT. APART. REFER TO DETAILS.
4.	TRANSITION DUCTS FROM ROOF TOP UNIT HORIZONTAL OUTLETS TO BE INSTALLED HIGH ENOUGH TO CROSS PARAPET.
5.	INSTALL ROOF TOP UNIT ON 14" FACTORY CURB. INSTALL FLEXIBLE CONNECTIONS ON THE SUPPLY AND RETURN DUCTS.
6.	EXISTING MECHANICAL EQUIPMENT ON ROOF.
7.	INSTALL THE NEW 3/4" PROPANE GAS LINE OVER THE PARAPET AND INSTALL ON PIPE SUPPORTS ON ROOF. REFER TO THE DETAIL SHEET.
8.	ROUTE 3/4" PROPANE LINE TO AVOID EXISTING ROOF TOP EQUIPMENT AND PARAPET WALL CHANGES.

 INSTALL GAS COCK, UNION AND DIRT LEG PRIOR TO CONNECTION TO THE ROOF TOP UNIT. REFER TO THE DETAIL SHEET.





	VISION 23 ART 1 - GE	0000 MECHANCIAL ENERAL		
1.01 D	ESCRIPTIO	Ν	1.04 MI	SCELLANEOUS
A.	NECES	INCLUDED: FURNISH ALL LABOR, MATERIALS, EQUIPMENT, APPLIANCES AND SARY INCIDENTALS FOR THE COMPLETE INSTALLATION OF ALL HEATING, ATION AND AIR CONDITIONING AS SHOWN ON THE DRAWINGS AND AS SPECIFIED N.	A.	PERMIT AND FEES: A INSPECTIONS, EXAN AUTHORITIES HAVIN
	1.	AIR CONDITIONING AND HEATING TO EXISTING A/C UNITS AS INDICATED ON PLANS COMPLETE WITH DUCTWORK, AND CONTROLS.	В.	LOCATIONS AND AC REGARDING PECULI OF WORK UNDER TH
B.	RELAT	ED WORK INCLUDED IN THIS SECTION:		REQUIRING SERVICE ACCESSIBLE POSITI DUCTWORK AND/OR
	1.	FURNISHING ELECTRICAL DEVICES NECESSARY FOR MECHANICAL WORK, EXCEPT DISCONNECTS UNLESS INDICATED OTHERWISE.		RENDER ALL SUCH I
	2.	LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS INCLUDING FINAL CONNECTIONS AS INDICATED ON WIRING DIAGRAMS.	C.	SCAFFOLDING: FUR
	3.	CONDUIT FOR LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS INDICATED ON WIRING DIAGRAMS.	D.	DRAWINGS: DRAWIN DUCTWORK, EQUIP POSSIBLE. AL THE SCALE OF DRAV
	4.	RESPONSIBILITY FOR OBTAINING CLARIFICATION OF DISCREPANCIES BETWEEN MECHANICAL AND ELECTRICAL WORK FROM ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.		WORK WITH ALL OT DRAWINGS SHALL B ENGINEER. IN THE E DEEMED NECESSAR
	5.	RESPONSIBILITY FOR PROPER OPERATION OF AUTOMATIC ELECTRICAL CONTROLS AND EQUIPMENT, AND OF ELECTRIC POWER DRIVEN EQUIPMENT	_	WITHOUT ADDITION
		FURNISHED UNDER THIS SECTION.	E.	ALL HVAC EQUIPME

C. RELATED WORK IN OTHER SECTIONS:

- 1. ELECTRICAL WORK AS FOLLOWS WILL BE PROVIDED UNDER ELECTRICAL DIVISION:
 - CONDUIT FOR LINE VOLTAGE WIRING FOR EQUIPMENT AND DEVICES AS INDICATED OR SPECIFIED EXCEPT CONDUIT FOR LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS SPECIFIED UNDER DIVISION 22 000
 - LINE VOLTAGE WIRING FOR EQUIPMENT AND DEVICES AS INDICATED OR SPECIFIED HEREIN EXCEPT LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS SPECIFIED UNDER DIVISION 22 000.
 - PROVIDING DISCONNECT SWITCHES.
 - INSTALLING ELECTRICAL DEVICES SUCH AS STARTERS AND DISCONNECTS, AND, WHEN INDICATED, FURNISHING ALL SUCH DEVICES.
- D. CODES AND STANDARDS:
 - 1. IN ADDITION TO THE REQUIREMENTS OF ALL GOVERNING CODES, ORDINANCES AND AGENCIES, CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:
 - 2018 INTERNATIONAL MECHANICAL CODE.
 - 2018 INTERNATIONAL BUILDING CODE.
 - 2018 INTERNATIONAL PLUMBING CODE
 - 2018 INTERNATIONAL ENERGY CONSERVATION CODE.
 - 2018 INTERNATIONAL FUEL AND GAS CODE. ASHRAE 90.1-2016.
- H. ALL GAS FIRED EQUIPMENT SHALL INCLUDE A LABEL INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE ALTITUDE WHEREIN THE PROJECT IS TO BE LOCATED. THE APPLIANCE SHALL ALSO INCLUDE A COMPLIANCE STATEMENT INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE PROPER OPERATION AT THE ALTITUDE OF THE PROJECT AND SHALL BE LISTED CAPABLE FOR USE WITH NATURAL GAS OR PROPANE GAS IF PROPANE IS LISTED ON THE DRAWINGS.

1.02 PRODUCT HANDLING

- A. PROTECTION: TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE MATERIALS OF THIS SECTION BEFORE, DURING AND AFTER INSTALLATION.
- B. REPLACEMENTS: IN THE EVENT OF DAMAGE, IMMEDIATELY REPAIR ALL DAMAGED AND DEFECTIVE WORK TO THE APPROVAL OF THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.

1.03 JOB CONDITIONS

A. EXAMINATION OF SITE: EXAMINE THE SITE AND INCLUDE IN BID PROPOSAL ALL CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED.

ARRANGE, APPLY AND PAY FOR ALL NECESSARY PERMITS, MINATIONS AND FEES OR CHARGES REQUIRED BY PUBLIC NG JURISDICTION.

CCESSIBILITY: CONTRACTOR SHALL FULLY INFORM HIMSELF IARITIES AND LIMITATIONS OF SPACE AVAILABLE FOR INSTALLATION HIS SECTION. VALVES, MOTORS, CONTROLS AND OTHER DEVICES E, MAINTENANCE AND ADJUSTMENT SHALL BE PLACED IN FULLY IONS AND LOCATIONS. PROVIDE ACCESS DOORS WHERE REQUIRED IN R CONSTRUCTION WHETHER SPECIALLY DETAILED OR NOT, AND DEVICES ACCESSIBLE.

RNISH ALL SCAFFOLDING, RIGGING AND HOISTING AS REQUIRED FOR UTION OF THE WORK.

NGS INDICATE DESIRED LOCATION AND ARRANGEMENT OF MENT, AND OTHER ITEMS, AND ARE TO BE FOLLOWED AS CLOSELY AS LL OFFSETS AND INTERFERENCES MAY NOT BE SHOWN BECAUSE OF WINGS. ASSUME THE RESPONSIBILITY FOR COORDINATING THE HER TRADES. WORK SPECIFIED AND NOT CLEARLY DEFINED BY THE BE INSTALLED AND ARRANGED IN A MANNER SATISFACTORY TO THE EVENT CHANGES IN INDICATED LOCATIONS AND ARRANGEMENTS ARE RY BY ENGINEER, THEY SHALL BE MADE BY THIS CONTRACTOR AL CHARGES.

E. ALL HVAC EQUIPMENT SHALL BE LABELED. INFORMATION ON LABELS SHALL INCLUDE; IDENTIFICATION NUMBER AND NAME SAME AS THE DRAWINGS, FLOW AND STATIC PRESSURE AND THE AREA TO WHICH THE UNIT SERVES. LABELS SHALL BE BLACK FACED FORMICA WITH WHITE ENGRAVED LETTERING AT LEAST 3/16 INCH HIGH.

A. SHOP DRAWINGS: WITHIN 15 DAYS AFTER AWARD OF CONTRACT, AND BEFORE ANY OF THE MATERIALS OF THIS SECTION ARE FABERICATED AND DELIVERED TO THE JOBSITE, SUBMIT COMPLETE SHOP DRAWINGS AND EQUIPMENT SUBMITTALS FOR ENGINEER TO REVIEW IN ACCORDANCE WITH THESE SPECIFICATIONS. SHOW ALL DETAILS OF ALL DUCTWORK, AND EQUIPMENT PADS.

> SUBMIT ELECTRONIC COPIES OF ALL MANUFACTURER'S PRODUCT DATA SIMULTANEOUSLY WITH ALL SHOP DRAWING SUBMITTALS.

PRODUCT DATA TO INCLUDE ALL AIR CONDITIONING EQUIPMENT, HANGERS, FANS AND OTHER STANDARD ITEMS AS REQUIRED TO COMPLEMENT SHOP DRAWINGS FOR A SUBMITTAL INDICATING PRODUCTS TO BE USED ON THIS

RECORD DRAWINGS: MAINTAIN THROUGHOUT THE PROGRESS OF THE WORK PROJECT RECORD DRAWINGS AND SUBMIT TO THE OWNER.

D. OPERATING MANUALS AND MAINTENANCE MANUALS:

1.05 SUBMITTALS

B. PRODUCT DATA:

WORK.

1.

SUBMIT ELECTRONIC COPIES OF ALL OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS.

2. FULLY INSTRUCT OWNER'S OPERATING PERSONNEL AND DEMONSTRATE PERFORMANCE, OPERATION AND MAINTENANCE OF EQUIPMENT. AMOUNT OF TIME ALLOCATED FOR SAID INSTRUCTION AND DEMONSTRATION OF EQUIPMENT AND SYSTEMS SHALL BE PART OF THESE OBLIGATIONS. SUBMIT TO ENGINEER A LETTER SIGNED BY OWNER'S REPRESENTATIVE WHO WILL OPERATE SYSTEM STATING THAT HE HAS BEEN FULLY INSTRUCTED BY CONTRACTOR ABOUT OPERATION AND MAINTENANCE OF EQUIPMENT AND SYSTEM.

3. SUBMIT AN ADDITIONAL ELECTRONIC COPY OF APPROVED INSTRUCTIONS AND ONE ADDITIONAL ELECTRONIC COPY OF APPROVED CONTROL DIAGRAMS.

GUARANTEES: IN ADDITION TO EQUIPMENT WARRANTIES, FURNISH A WRITTEN GUARANTEE AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR ONE YEAR COMMENCING ON THE DATE OF CERTIFICATION OF SUBSTANTIAL COMPLETION OF THE PROJECT. GUARANTEE SHALL INCLUDE REPAIR OF DAMAGE TO, OR REPLACEMENT OF, ANY PART OF EQUIPMENT OR PREMISES CAUSED BY LEAKS OR BREAKS IN PIPE OR EQUIPMENT PROVIDED UNDER THIS SECTION.

1.06 EQUIPMENT IDENTIFICATION

- A. EXCEPT FOR INDIVIDUAL ROOM HEATING UNITS AND ITEMS FURNISHED UNDER TEMPERATURE CONTROL, ALL ITEMS OF MECHANICAL EQUIPMENT, INCLUDING FANS, PUMPS, BOILERS, AND ELECTRICAL SWITCHES AND STARTERS FOR MECHANICAL EQUIPMENT AND GAUGES SHALL BE LABELED.
- INFORMATION ON LABELS SHALL INCLUDE THE FOLLOWING:
- IDENTIFICATION NUMBER AND NAME. GENERALLY, THIS NUMBER AND NAME SHALL BE THE SAME AS THAT SHOWN ON THE DRAWINGS OR IN THE SPECS.
- 2. IF THE ITEM IS A FAN OR PUMP, THE FLOW AND HEAD SHALL BE INDICATED.
- IF THE ITEM IS PART OF A UNIT, THE LABEL SHALL HAVE, IN ADDITION TO ITS ITEM 3 NUMBER, THE NUMBER OF THE MAIN ITEM IT IS SERVING.
- 4. VALVES SHALL BE TAGGED WITH THE AREA SERVED AND THEIR NORMAL OPERATING POSITIONS SHALL BE INDICATED.
- WHERE THE MAIN UNIT IS SERVED BY THE VALVE IS APPARENT, ONLY THE VALVE FUNCTION NEEDS TO BE INCLUDED ON THE NAMEPLATE.
- C. THE TYPES OF NAMEPLATES SHALL BE AS FOLLOWS:
- VALVE TAGS SHALL BE 1/2" EMBOSSED ALUMINUM TAPES WITH IDENTIFICATION ON ONE SIDE FOR VALVES. TAGS FOR MAGNETIC STARTERS SHALL BE SCREWED TO THE METAL STARTER COVER. TAGS SHALL BE ADDRESSOGRAPH NO. B-5300.
- EQUIPMENT NAMEPLATES SHALL BE BLACK FACED FORMICA WITH WHITE ENGRAVED 2 LETTERING AT LEAST 3/16" HIGH.
- VALVE TAGS SHALL BE CONNECTED TO VALVE STEMS BY STEEL RINGS OR CHAINS. SCREWS SHALL BE USED FOR EQUIPMENT LABELS. PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A COMPLETE LIST OF ALL VALVES AND EACH ITEM OF EQUIPMENT TO BE IDENTIFIED WITH THE PROPER IDENTIFICATION.

PART 2 - PRODUCTS

2.01 DIFFUSERS, REGISTERS AND GRILLES

AIR DISTRIBUTION EQUIPMENT SHALL BE OF SIZES AND CAPACITIES INDICATED.

- A. REGISTERS, GRILLES, AND DIFFUSERS OF THE SIZES SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN SHALL BE FURNISHED AND INSTALLED. ALL GRILLES, DIFFUSERS, AND REGISTERS SHALL BE COMPLETE WITH FRAMES WITH RUBBER GASKETS SUITABLE FOR THE AREA AND WALL CONSTRUCTION WHERE SHOWN ON THE DRAWINGS.
- FINISH FOR ALL REGISTERS, DIFFUSERS, GRILLES, ETC., SHALL BE OFF-WHITE UNLESS OTHERWISE SELECTED BY THE OWNER. APPROVED MANUFACTURERS FOR ALL AIR DISTRIBUTION PRODUCTS SHALL BE PRICE INDUSTRIES, NAILOR, METAL AIR, TUTTLE & BAILEY, J&J, CARNES, HART AND COOLEY, OR ANEMOSTAT.
- SUPPLY AIR SHALL BE INTRODUCED INTO CONDITIONED SPACE IN SUCH A MANNER С THAT CONDITIONED AIR AND ROOM AIR IS RAPIDLY AND EVENLY MIXED, RESULTING IN EQUALIZATION OF TEMPERATURE AND DRAFTLESS AIR DISTRIBUTION THROUGHOUT ZONES OF OCCUPANCY WITH TEMPERATURE DIFFERENTIALS UP TO 25 DEGREES F FOR BOTH COOLING AND HEATING AIR. QUANTITIES AND THROWS SHALL BE AS INDICATED.
- VELOCITY OF MOVING AIR BELOW 5 FOOT LEVEL, DURING COOLING CYCLE, SHALL NOT EXCEED LIMITS OF EITHER 50 FPM AT 1.5 DEGREES F BELOW AVERAGE ROOM TEMPERATURE OR 70 FPM AT 1 DEGREE F BELOW AVERAGE ROOM TEMPERATURE. VELOCITY OF MOVING AIR AT THE 1FOOT LEVEL, DURING HEATING CYCLE, SHALL NOT BE LESS THAN 10 FPM. TEMPERATURE DIFFERENCE AT OR BELOW THE 5 FOOT LEVEL SHALL NOT EXCEED THE FOLLOWING: 2 DEGREES F BELOW AVERAGE ROOM TEMPERATURE AT 30 FPM, 1.5 DEGREES F BELOW AVERAGE ROOM TEMPERATURE AT 50 FPM, 1.0 DEGREES F BELOW AVERAGE ROOM TEMPERATURE AT 70 FPM. SOUND PRESSURE LEVEL IN ALL OCTAVE BANDS FOR EACH DIFFUSER SHALL NOT EXCEED NC35 NOISE CRITERIA CURVE AT TASK LEVEL WHEN UNITS OPERATE AT DESIGNED CAPACITIES.
- F CEILING DIFFUSERS, GRILLES AND REGISTERS SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE SO THAT THEY ARE NOT DEPENDING ON THE CEILING FOR SUPPORT.
- CEILING DIFFUSERS MAY BE ROUND NECKED OR EQUIVALENT SIZE SQUARE NECK. PROVIDE SQUARE TO ROUND NECK ADAPTER AS NECESSARY. FLEX DUCT SHALL TYPICALLY CONNECT DIRECTLY TO THE DIFFUSER USING A 1-1/2" RADIUS FLEXIBLE DUCT ELBOW. IF SPACE DOES NOT ALLOW FOR A FULL 1-1/2" RADIUS TO BE PROVIDED, THEN A LINED SHEET METAL BOOT SHALL BE PROVIDED. THE FLEXIBLE DUCT SHALL BE CONNECTED TO THE SIDE OF THE SHEET METAL BOOT. THE FLEXIBLE DUCT SHALL NOT BE CONNECT TO THE TOP OF THE SHEET METAL BOOT.

- A. FURNISH AND INSTALL PACKAGED ROOFTOP GAS-FIRED, DX AIR CONDITIONING UNITS OF SIZE AND CAPACITY SHOWN ON DRAWINGS. UNITS SHALL BE FACTORY ASSEMBLED, PIPED, INTERNALLY WIRED AND FULLY CHARGE WITH R-410A AND DESIGNED TO OPERATE AT OUTDOOR AMBIENT TEMPERATURES AS HIGH AS 120 DEG. F. COOLING AND HEATING CAPACITIES ARE RATED IN ACCORDANCE WITH ARI STANDARDS. UNIT DESIGN TO BE CERTIFIED BY THE AMERICAN GAS ASSOCIATION (AGA), SPECIFICALLY FOR OUTDOOR APPLICATIONS USING NATURAL GAS. EXTERIOR SURFACES PHOSPHATIZED, ZINC-COATED STEEL WITH EPOXY RESIN PRIMER AND BAKED ENAMEL FINISH.
- B. PANELS SHALL BE 20-GAUGE STEEL, GASKETED AND INSULATED, ONE-INCH, ONE-POUND DENSITY FOIL FACED GLASS FIBER INSULATION.
- C. BELT-DRIVEN, FORWARD CURVED, CENTRIFUGAL-TYPE WITH FAN EQUIPPED WITH ADJUSTABLE MOTOR SHEAVES. THE MOTOR TO BE THERMALLY OVERLOAD PROTECTED. PROVIDE AND INSTALL ADDITIONAL DRIVES AS NECESSARY TO MEET CFM AND STATIC PRESSURE REQUIREMENTS. DIRECT DRIVE UNITS MUST BE PROVIDED WITH A VARIABLE SPEED ADJUSTMENT CAPABLE OF ADJUSTING CFM'S TO MEET CFM REQUIREMENTS.
- D. PERMANENTLY LUBRICATED FAN AND MOTOR BEARINGS. FAN DRIVE COMPONENTS MOUNTED ON RUBBER-IN-SHEAR ISOLATORS.
- E. HEAT EXCHANGER SHALL BE EMBOSSED, FORMED AND SEAMED, 18-GAUGE ALUMINIZED STEEL, FACTORY TESTED FOR GAS LEAKES. STRESS RELIEVED, FREE FLOATING DESIGN. HEAT EXCHANGER TO BE LOCATED UPSTREAM OF COOLING COIL. BURNERS SHALL BE STAMPED AND SEAMED, WELDED 20-GAUGE ALUMINIZED STEEL COMPLETE WITH FORCE COMBUSTION BLOWER MOUNTED EXTERNAL TO AIR STREAM.
- F. FILTER SECTION SHALL HAVE A 2-INCH FARR 3030 WITH V-BLANK SECTION. REFRIGERATION CONTROLS TO INCLUDE CONDENSER FAN, EVAPORATOR FAN AND COMPRESSOR CONTACTORS, AND 24-VOLT TRANSFORMER. EACH CIRCUIT OF THE UNIT TO HAVE A SEPARATE SET OF REFRIGERATION CONTROLS.
- UNITS TO HAVE A 3,600 RPM HERMETICALLY SEALED COMPRESSORS. COMPRESSORS G ARE EQUIPPED WITH OVER TEMPERATURE, OVER CURRENT AND HIGH PRESSURE AND LOW PRESSURE CONTROLS. CRANKCASE HEATERS AS STANDARD. EVAPORATOR COIL TO HAVE TWO INDEPENDENT CIRCUITS, 3/8-INCH OD SEAMLESS ALUMINUM TUBING MECHANICALLY BONDED TO ALUMINUM FINS AND FACTORY PRESSURE AND LEAK TESTED AT 225 PSIG. PROVIDE NON-CORROSIVE SLOPED CONDENSATE PAN. EVAPORATOR PAN TO BE INTERNALLY SEALED AND INSULATED WITH COPPER DRAIN CONNECTIONS FOR EVAPORATOR SECTION. CONDENSER COILS, DUAL CIRCUITED, 3/8-INCH OD SEAMLESS COPPER TUBING MECHANICALLY BONDED TO ALUMINUM FINS AND EACH COIL FACTORY PRESSURE AND LEAK TESTED AT 425 PSIG. CONDENSER FANS TO BE DIRECT DRIVE, STATICALLY AND DYNAMICALLY BALANCED PROPELLER FANS, WEATHERPROOF FAN MOTORS UL LISTED WITH BUILT IN THERMAL OVERLOAD PROTECTION. PROVIDE NON CORROSIVE SLOPED CONDENSATE PAN.
- UNIT SHALL HAVE AN INTEGRATED ECONOMIZER CAPABLE OF INTRODUCING 100% OUTSIDE AIR AND EXHAUSTING 100% ROOM AIR. ECONOMIZER SHALL INCLUDE ALL NECESSARY HOODS, DAMPERS, BAROMETRIC DAMPERS, AND CONTROLS TO MAKE OPERATIONAL. ECONOMIZER SHALL BE CAPABLE OF SIMULTANEOUS ECONOMIZER AND COMPRESSOR OPERATION. ECONOMIZER CONTROL TO BE DEPENDENT ON OUTDOOR AIR TEMPERATURE.
- UNIT SHALL BE SUPPLIED WITH ALL SEISMIC AND VIBRATION ISOLATION REQUIRED BY CODE.
- EACH UNIT SHALL HAVE A SINGLE POINT POWER CONNECTION. WIRING SHALL COMPLY WITH NEC. ALL WIRING SHALL BE NUMBER CODED PER THE ELECTRICAL WIRING DIAGRAMS. ALL ELECTRICAL COMPONENTS SHALL BE LABELED ACCORDING TO THE ELECTRICAL DIAGRAM AND BE UL RECOGNIZED WHERE APPLICABLE. EACH UNIT SHALL HAVE A 24 VOLT CONTROL CIRCUIT TRANSFORMER AND CONTROL CIRCUIT FUSE. THE SUPPLY AIR FAN, COMPRESSOR AND CONDENSER FAN MOTOR BRANCH CIRCUITS SHALL BE FURNISHED FOR EACH COMPRESSOR AND CONDENSER FAN MOTOR. THE SUPPLY AIR FAN MOTORS SHALL HAVE CONTACTORS AND OVERLOAD PROTECTION. MAIN CONTROL PANELS SHALL BE WEATHERPROOF CONSTRUCTION WITH HINGED ACCESS PANEL AND QUICK RELEASE LATCHES. A TERMINAL BOARD SHALL BE PROVIDED FOR THE LOW VOLTAGE CONTROL WIRING. KNOCKOUTS SHALL BE PROVIDED IN THE BOTTOM OF THE MAIN CONTROL PANEL FOR FIELD WIRING ENTRANCE. EACH UNIT SHALL BE FURNISHED WITH A FACTORY INSTALLED STARTER.

- L. FACTORY T-STATS TO PROVIDE STAGED HEATING AND COOLING, AUTOMATIC CHANGE OVER, NIGHT SET BACK AND FAN CONTROL, MOUNTING HEIGHTS ARE TO BE 48 INCHES AFF
- M. PROPELLER POWER EXHAUST:
 - a. POWER EXHAUST SHALL BE USED IN CONJUNCTION WITH AN INTEGRATED
 - ECONOMIZER. b. INDEPENDENT MODULES FOR VERTICAL OR HORIZONTAL RETURN
 - c. HORIZONTAL POWER EXHAUST SHALL BE MOUNTED IN RETURN DUCTWORK. d. POWER EXHAUST SHALL BE CONTROLLED BY ECONOMIZER CONTROLLER OPERATION. EXHAUST FANS SHALL BE ENERGIZED WHEN DAMPERS OPEN PAST THE 0-100% ADJUSTABLE SETPOINT ON THE ECONOMIZER CONTROL.

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2.02 DX COOLING/GAS HEAT PACKAGED ROOF TOP AIR CONDITIONING UNIT:

- K. PREFABRICATED ROOF CURB SHALL BE PROVIDED WITH EACH UNIT.
 - CONFIGURATIONS SHALL BE AVAILABLE.
- N. UNIT SHALL BE SUPPLIED AND INSTALLED WITH LOUVERED HAIL GUARDS.

TAMP LADD M. BIRCH <ONA. SUBMITTAL: REVISIONS C Ļ. C Ω \mathbf{O} Σ \mathbf{O} 5 D ····· \square <u>q</u> 0 Ō () ADDITION NO ARIZONA СK ICA Ш О CIF Ш ш S NOH \succ S CIT CLUB CHANIC/ AGE Δ ш О Ш \geq C PN 2208-076 PROJECT NUMBER M701 SHEET NO.

2.03 DUCTS AND SHEET METAL WORK

- PROVIDE DUCTS, PLENUMS, ACCESS DOORS, FRESH AIR INTAKES, A INDICATED AND REQUIRED. ALL DUCTWORK SHALL BE CONSTRUCTE TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL F PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENT APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR (CONTRACTORS NATIONAL ASSOCIATION. PROVIDE PREFABRICATED DUCTS AND FITTINGS AND RECTANGULAR DUCTS OF GALVANIZED S FLEXIBLE DUCTWORK OR GYPSUM BOARD DUCTWORK IS NOT ACCE
- B. ALL CONNECTIONS TO MAIN DUCTS SHALL BE MADE WITH LOW LOSS
- FLAT DUCT SURFACES SHALL BE CRIMPED DIAGONALLY REGARDLE LONGITUDINAL JOINTS IN ALL DUCT SIZES MAY BE FLAT LOCK JOINT JOINTS AND INTERMEDIATE BRACING SHALL BE CONSTRUCTED OF G METAL OR GALVANIZED STRUCTURAL ANGLES IN ACCORDANCE WITH OF ASHRAE GUIDE AND PUBLIC AUTHORITIES HAVING JURISDICTION.
- TRANSVERSE JOINTS ON ALL DUCTS SHALL BE SEALED WITH MASTIC D.
- LONGITUDINAL JOINTS ON DUCTS WITH INTERNAL STATIC PRESSUR 0.75 INCHES OF WATER PRESSURE SHALL BE SEALED WITH MASTIC
- LOCK JOINTS SHALL BE HAMMERED TO MAKE THEM AIRTIGHT. INSID PRESENT A SMOOTH SURFACE TO FLOW AIR.
- G. CHANGES IN SIZE OF DUCTS SHALL INCREASE GRADUALLY WITH A S MORE THAN 12 INCHES IN 5 FEET WHERE POSSIBLE, BUT NOT MORE 3 FEET IN ANY EVENT.
- H. TURNS SHALL BE MADE WITH A THROAT RADIUS OF NOT LESS THAN

2.04 VOLUME DAMPERS

- A. DAMPERS: DAMPERS USED IN LOW-VELOCITY BRANCH DUCTS TO CONTROL THE VOLUME OF AIR SHALL BE YOUNG REGULATOR COMPANY 820 OR 5050 SERIES VOLUME CONTROL DAMPERS. AN OPERATING HEAD SHALL BE PLACED ON THE SIDE OF THE DUCT AND SHALL BE LOCKED IN POSITION BY A SET KEY WHERE THE DAMPER IS ACCESSIBLE. APPROVED MANUFACTURERS ARE; YOUNG, AIR BALANCE, RUSKIN, POTTORF, C&S, AIR RITE, GREENHECK, DANIEL, OR CESCO.
- CONCEALED DAMPER REGULATOR: WHERE THE DAMPER IS NOT ACCESSIBLE; END BEARING OR MITER GEAR, COUPLING, 3/8" SQUARE ROD, AND REGULATOR FOR OPERATING THE DAMPER SHALL BE PROVIDED. YOUNG MODEL 301 (OR EQUAL) 3/8" CONCEALED LOCKING REGULATOR DESIGNED TO CONTROL DAMPERS FROM THE CEILING LINE. THE 301 REGULATOR IS IMBEDDED IN THE CEILING SO THAT THE UNIT IS FLUSH WITH THE FINISHED SURFACE. IT IS 2-5/8" IN DIAMETER AND 15/16" DEEP, WITH A 3" COVER PLATE WHICH COVERS THE JOINT BETWEEN BOX AND PLASTER. THE COVER PLATE, WHICH SHOULD BE REMOVED BEFORE PLASTERING, IS HELD IN PLACE BY TWO 6-32X5/8" STAINLESS STEEL MACHINE SCREWS THAT ARE EASILY REMOVED FOR DAMPER ADJUSTMENT. THE 301 IS OPERATED BY YOUNG 04 WRENCH, WHICH FITS THE END OF THE 3/8" DAMPER ROD. 301 MUST BE USED WITH 3/8" ROD. COVER PLATE TO BE PROVIDED IN PRIMER COATED FINISH. USED EITHER 927 OR 1200 RIGHT ANGLE CONTROLS ON ANY ROUND OR RECTANGULAR SIDE CONTROL DAMPER INCLUDING THE 5020 AND 820 SERIES. MANUFACTURERS ARE; YOUNG, VENFABRICS, METCO, DURO DYNE, OR CAIN.

2.05 TEMPERATURE CONTROLS

THERMOSTATS SHALL BE PROVIDED WITH THE AIR CONDITIONING UNITS. THEY SHALL BE 7-DAY PROGRAMMABLE, INSTALLED AND WIRED BY THE HVAC CONTRACTOR. FACTORY T-STATS TO PROVIDE STAGED HEATING AND COOLING. AUTOMATIC CHANGE OVER. NIGHT SET BACK AND FAN CONTROL. MOUNTING HEIGHTS ARE TO BE 48 INCHES A.F.F.

2.06 INSULATION

- Α THERMAL DUCT INSULATION: INSULATE ALL SUPPLY AND RETURN AIR DUCTS, UNLESS OTHERWISE SPECIFIED WITH KNAUF OR EQUAL, MICROLITE FIBERGLASS DUCT INSULATION, FOIL FACED, 3/4 LB. DENSITY, 1-1/2" THICK INSULATION WRAPPED ENTIRELY AROUND DUCT WITH JOINTS LAPPED AT LEAST 2" AND SECURED WITH 16 GAUGE GALVANIZED WIRE ON 12" CENTERS. INSULATION SHALL COVER ALL SURFACES INCLUDING STANDING SEAMS. THERMAL RESISTIVE VALUE OF DUCT WRAP SHALL BE A MINIMUM OF R-6.
- RECTANGULAR SUPPLY DUCTS AND RETURN AIR DUCTS LOCATED IN UNCONDITIONED В SPACES SHALL BE LINED WITH KNAUF LINACOUSTIC OR EQUAL, 1 INCH, 1-1/2 LB, THERMAL RESISTIVE VALUE OF DUCT LINER SHALL BE A MINIMUM OF R-6. RECTANGULAR SUPPLY DUCTS AND RETURN AIR DUCTS LOCATED OUTSIDE THE BUILDING ENVELOPE SHALL BE LINED WITH KNAUF LINACOUSTIC OR EQUAL, 2 INCH, 1-1/2 LB, THERMAL RESISTIVE VALUE OF DUCT LINER SHALL BE A MINIMUM OF R-12 (R-8 WASHINGTON COUNTY, UTAH ONLY). DENSITY COATED FIBERGLASS DUCT LINER COMPLYING WITH FRICTION CORRECTION FACTOR NOT GREATER THAN 1.1 AT A VELOCITY OF 3000 FPM. APPLY INSULATION TO INSIDE OF DUCTS WITH AN APPROVED FIRE RETARDANT ADHESIVE TO PROVIDE 100% COVERAGE AND A SMOOTH SURFACE. IN DUCTS WITH ONE SIDE MORE THAN 12", SECURE INSULATION WITH MECHANICAL FASTENERS IN ADDITION TO ADHESIVE, SPACED AT 14" CENTERS IN BOTH DIRECTIONS. MECHANICAL FASTENERS SHALL BE FLUSH WITH THE LINER SURFACE AND SHALL START WITHIN 2" OF THE LEADING EDGE OF EACH SECTION, AND WITHIN 3" OF THE LEADING EDGE OF ALL CROSS JOINTS OF THE LINER SHALL BE HEAVILY COATED WITH AN APPROVED FIRE RESISTANT ADHESIVE. THE DUCT LINER SHALL BE CUT TO ASSURE SNUG CLOSING CORNER JOINTS, THE BLACK SURFACE OF THE LINER SHALL FACE THE AIR STREAM, TRANSVERSE JOINTS SHALL BE NEATLY BUTTED AND ALL DAMAGED AREAS SHALL BE HEAVILY COATED WITH AN APPROVED ADHESIVE.
- C. ALL DUCT INSULATION SHALL HAVE AN NRC RATING OF NOT LESS THAN 0.60 AND A K FACTOR OF NOT MORE THAN 0.27. DUCT DIMENSIONS SHALL BE INCREASED 2 INCHES ON EACH SIDE FROM THOSE SHOWN ON DRAWINGS TO ACCOMMODATE INSULATION.

	7		8	1	9		10		1	11		12	I	
							Р	PART 3 - EXI	ECUTION					
	2.07 TURNIN	G VANES						3.01 DISC	CREPANCIES	i				
, AND EXHAUSTS AS TED, ERECTED AND	SUI	PPLY, RETU	S SHALL BE FURNISHE RN, MIXED AIR AND FR	ESH AIR DUCTS	S, AND ELSEV	VHERE AS SHOW	N ON	Α.	IN THE EVEN	IT OF DISCREPAI	NCY, IMMEDIATE	ELY NOTIFY THE	OWNER.	
L REGULATIONS, ENTALS OR THE R CONDITIONING	ТО	BE SINGLE	S. MATERIAL OF TURNI BLADE, OF SIZE, SPACI RECOMMENDATIONS.					В.		OCEED WITH INS NCIES HAVE BEE			EPANCY U	
ED SPIRAL LOCKSEAM) STEEL. ALUMINUM CEPTABLE.	2.08 FIELD AI	PPLIED JACI	KETS FOR OUTDOOR E	XPOSED DUCT				3.02 EQU	IPMENT IDE	NTIFICATION				
SS FITTINGS.	1. GENERAL							A. ALL MAJOR EQUIPMENT SHALL BEAR FIRMLY ATTACHED METAL NAM STATE NAME OF MANUFACTURER, MODEL NUMBER AND ELECTRICA						
.ESS OF SIZE. ITS. TRANSVERSE	A.	FIELD AP DUCT.	PLIED JACKETS FOR, E	XPOSED, ROO	F MOUNTED S	SUPPLY AND RET	rurn	3.03 INITI	AL LUBRICA	TION, ADJUSTING	g, and filling s	SYSTEMS		
F GALVANIZED SHEET /ITH REQUIREMENTS	2. FIELD-APPLIED JACKETS								A. BEFORE OPERATING ANY MECHANICAL SYSTEMS, EQUIPMENT BEA LUBRICATED AND BOLTS, PULLEYS, AND OTHER MOVING PARTS CH					
DN. TIC OR TAPE.	A.	A. FIELD-APPLIED JACKETS SHALL COMPLY WITH ASTM C 921, TYPE I, UNLESS OTHERWISE INDICATED.								S ALIGNMENT AND TOLERANCES IN ACCORDANCE WITH MANUFAC INSTRUCTIONS. VIBRATIONS AND NOISE SHALL BE SUPPRESSED.				
JRES IN EXCESS OF	В.	METAL J	ACKET:					3.04 CLE	ANING OF EC	QUIPMENT, MATE	ERIALS AND PRE	MISES		
C OR TAPE.			LDERS BRAND, SPECIA B. FULLER COMPANY; M				IESS OF		UNUSED MA	SMOOTH AND C TERIALS, RUBBIS	,			
DE OF DUCT SHALL		b. <u>ITW</u>	INSULATION SYSTEMS	; ALUMINUM AN	ND STAINLES	S STEEL JACKET	ING.		SUBCONTRA	ACTOR.				
A SLOPE OF NOT		c. <u>RPF</u>	<u>R PRODUCTS, INC</u> .; INS	JL-MATE.				3.05 EQU	IPMENT AND) MATERIAL				
RE THAN 12 INCHES IN	C.		IM JACKET: COMPLY V 5005, TEMPER H-14.	/ITH ASTM B 20	9 (ASTM B 20	9M), ALLOY 3003,	, 3005,			R MANUFACTURE	ER'S RECOMMEN	IDATIONS.		
AN THE DUCT WIDTH.		,	ET AND ROLL STOCK	READY FOR SH	OP OR FIELD	SIZING.			ESSIBILITY					
ONTROL THE VOLUME			ISH AND THICKNESS HEDULES.	S ARE INDIC	ATED IN F	FIELD-APPLIED	JACKET		NSTRUMEN	RK READILY ACC TS, ADJUSTMEN ERE INDICATED /	T, SERVICE, INSF	PECTION AND RI	EPAIR, PR	

D. SECUREMENT BANDS

- a. <u>ITW INSULATION SYSTEMS;</u> GERRARD STRAPPING AND SEALS.
- b. <u>RPR PRODUCTS, INC.</u>; INSUL-MATE STRAPPING, SEALS, AND SPRINGS.
- c. ALUMINUM: ASTM B 209 (ASTM B 209M), ALLOY 3003, 3005, 3105, OR 5005; TEMPER H-14, 0.020 INCH (0.51 MM) THICK, (13 MM)3/4 INCH (19 MM) WIDE WITH WING SEAL.
- d. SPRINGS: TWIN SPRING SET CONSTRUCTED OF STAINLESS STEEL WITH ENDS FLAT AND SLOTTED TO ACCEPT METAL BANDS. SPRING SIZE DETERMINED BY MANUFACTURER FOR APPLICATION.

3. INSTALLATION

- A. EXAMINE SUBSTRATES AND CONDITIONS FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF APPLICATION.
- a. VERIFY THAT SYSTEMS ARE FREE OF DEFECTS.
- b. VERIFY THAT SURFACES ARE CLEAN AND DRY.
- B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
- C. SURFACE PREPARATION: CLEAN AND DRY SURFACES TO RECEIVE FIELD APPLIED JACKET. REMOVE MATERIALS THAT WILL ADVERSELY AFFECT APPLICATION.
- D. INSTALL FIELD APPLIED JACKETS WITH STRAIGHT AND EVEN SURFACES: FREE OF VOIDS THROUGHOUT THE LENGTH OF DUCTS AND FITTINGS.
- E. INSTALL JACKETS AND THICKNESSES REQUIRED FOR EACH ITEM OF DUCT SYSTEM.
- F. EXISTING FOIL FACED DUCT WRAP INSULATION TO REMAIN ON ALL SURFACES OF THE EXPOSED DUCT.
- G. INSTALL JACKETS TO THREE SIDES OF THE DUCT.
- H. INSTALLATION OF METAL JACKETS ON THE UNDERSIDE OF DUCTS MAY BE OMITTED.
- I. FIELD APPLIED JACKET AT ROOF PENETRATIONS:
- a. EXTEND JACKET OF OUTDOOR INSULATION OUTSIDE ROOF FLASHING AT LEAST 2 INCHES (50 MM) BELOW TOP OF ROOF FLASHING.
- b. SEAL JACKET TO ROOF FLASHING WITH FLASHING SEALANT.

J. WHERE METAL JACKETS ARE INDICATED, INSTALL WITH 2-INCH (50-MM) OVERLAP AT LONGITUDINAL SEAMS AND END JOINTS. OVERLAP LONGITUDINAL SEAMS ARRANGED TO SHED WATER. SEAL END JOINTS WITH WEATHERPROOF SEALANT RECOMMENDED BY INSULATION MANUFACTURER. SECURE JACKET WITH ALUMINUM BANDS 12 INCHES (300 MM) O.C. AND AT END JOINTS.

- K. DO NOT FIELD PAINT ALUMINUM JACKETS.
- L. INSTALL JACKET OVER INSULATION MATERIAL.
- M. DUCTS, EXPOSED, WITH FLAT SURFACES. (1800 MM)
- a. ALUMINUM, CORRUGATED 0.024 INCH (0.61 MM) (0.81 MM) (1.0 MM) THICK.

- I FF
- RESPONSIBILITY OF RESPECTIVE SUBCONTRACTORS.
- 3.07 SYSTEM BALANCING
- A. BALANCING WORK INCLUDED:
- COMPLETE TESTING AND BALANCING OF THE HVAC SYSTEM 1. SPECIFIED.
- VERIFICATION OF CONDITIONS: PRIOR TO TESTING AND BALANCING, EQUIPMENT AND MATERIALS AND ARRANGE WITH CONTRACTOR FO CORRECTION OF ALL DEFECTS IN WORKMANSHIP AND/OR MATERIAL AFFECT THE WORK SPECIFIED HEREIN.
- C. PROTECTION: AS SPECIFIED HEREIN.
- SYSTEM OPERATION: CONTRACTOR SHALL PUT ALL PARTS OF SYST D OPERATION AND SHALL CONTINUE THE OPERATION OF SAME DURIN DAY OF TESTING AND BALANCING.
- TEST DATA: SUBMIT COPY OF TEST AND BALANCE REPORT TO THE E Ε. REVIEW UPON COMPLETION OF WORK UNDER THIS SECTION.
- TEST AND BALANCE CONTRACTOR SHALL CERTIFY IN WRITING THAT F ADJUSTED AND BALANCED AND DESIGN CONDITIONS HAVE BEEN AT AREAS OF THE BUILDING.
- INSTRUMENTS: INSTRUMENTS USED BY CONTRACTOR SHALL BE ACC G. CALIBRATED AND MAINTAINED IN GOOD WORKING ORDER.
- H. AIR DISTRIBUTION TESTING AND BALANCING:
 - 1. TEST AND RECORD MOTOR FULL LOAD AMPERES AND RPM.
 - 2. TEST AND RECORD SYSTEM STATIC PRESSURES, SUCTION A
 - ADJUST ALL SUPPLY AND RETURN AIR DUCTS TO PROPER DE 3
 - 4. IN COOPERATION WITH THE CONTROL MANUFACTURER'S RE SETTING ADJUSTMENT OF AUTOMATICALLY OPERATED CONT AS SPECIFIED, INDICATED AND/OR NOTED.
- WITNESS: NOTIFY ARCHITECT TWO WEEKS PRIOR TO TESTING AND I. MAJOR EQUIPMENT IN ORDER TO ARRANGE THAT ENGINEER. ARCHI REPRESENTATIVE WILL WITNESS THE TESTS.

3.08 OPERATION

A. PLACE SYSTEM IN OPERATION AND REGULATE AND ADJUST TO ENGIN SATISFACTION. SYSTEMS SHALL OPERATE QUIETLY AND WITHOUT VIE

3.09 CERTIFICATION

A. UPON COMPLETION, THE CONTRACTOR SHALL INSPECT WORK OF THIS DELIVER TO OWNER A WRITTEN CERTIFICATION THAT INSTALLED MAT WORKMANSHIP CONFORM TO SPECIFICATIONS.

3.10 SEISMIC & VIBRATION ISOLATION

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE A SUBMITTAL FOR SEISMIC ISOLATION. STAMPED DRAWINGS AND DETAILS TO BE PROVIDED BY A LICEN THE STATE OF UTAH. APPROVED ARE AMBER-BOOTH, MASON INDUSTRIES, ACCOUSTICS, KINETICS NOISE CONTROL, INC., VIBRATION MOUNTING AND AND INTERNATIONAL SEISMIC APPLICATION TECHNOLOGY.

- END -

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NTIL ALL SUCH						Registered Pro	And Engin TVF1CAJE 42109 MMM LADD M. BIRCH Signed ZONA, U.S	Mechanica)
PLATES WHICH DATA.								
IGS SHALL BE KED FOR R'S OPERATING						NO. DATE	DESCRIPTION REVISIONS	
IRE PREMISES OF T BY						architecture	ANY	belldesign.us
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EMS IN FULL IG EACH WORKING								
ENGINEER FOR								
T SYSTEM HAS BEEN TAINED IN ALL								
CURATELY								
ND DISCHARGE. SIGN CFM.								
PRESENTATIVE, THE ROLS TO OPERATE							ITION	S
BALANCING OF ALL TECT OR OWNER'S						ΝA	DECK ADDITION	
EER'S BRATION OR NOISE.						, ARIZONA		SPECIFICATIONS
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c and vibration NSED Engineer in Vibro Controls, inc.						PAGE	LPN GOLF CLUB	MECHANICAL
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	PART 2 - PRODUCTS			3 06 TESTS	l lister
01 GENERAL CONDITIONS THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS AND DIVISION 1, ARE A PART OF	2.01 GENERAL A. PIPE SLEEVES AND WRAPPING: PROVIDE POLISHED CHROMIUM PLATED AND BRASS	2.03 ROOF FLASHING		3.06 TESTS	1 a 10%
THIS SECTION AND THE CONTRACT FOR THIS WORK AND SHALL APPLY TO THIS SECTION AS	SET SCREW FLANGES WHERE PLUMBING PIPING PASS THROUGH WALLS, FLOORS,	SANITARY VENT FLASHINGS: SEMCO 1100-3 OR 1100-5, WITH ONE-PIECE LEAD FLASHING AND COUNTERFLASHING SLEEVE.	A. INSPECTION: ALL PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING AUTHORITIES, THE ORIGINAL DESIGN, AND THE DEFENSION STANDARDS	PERFORM TESTS TO ARCHITECT'S SATISFACTION. MAKE TESTS IN PRESENCE OF OWNER'S REP AND AT A TIME SUITABLE TO HIM IF REQUESTED . FURNISH NECESSARY LABOR AND	ARIZ
FULLY AS IF REPEATED HEREIN.	CEILINGS, AND PARTITIONS IN FINISHED PORTIONS OF BUILDING INCLUDING FLANGES ON PIPES AT FIXTURES. ALL SLEEVES IN CONCEALED AND EXTERIOR WALLS SHALL BE	2.04 PIPE SLEEVES	REFERENCED STANDARDS.	EQUIPMENT AND BEAR COSTS FOR TESTING . COST OF REPLACING AND/OR REPAIRING DAMAGE RESULTING THEREFORE SHALL BE BORNE BY THIS CONTRACTOR. SHOULD THE	SUBMITTAL:
02 SCOPE OF WORK	20 GA. GALVANIZED IRON ONE INCH O.D. LARGER THAN THE PIPE, CAULKED IF BELOW GRADE IN A MOISTUREPROOF MANNER. ALL PIPES PENETRATING THROUGH FIRE	AT CONCRETE WALLS OR FLOORS, ADJUST-TO-CRETE, PARAMOUNT, HOLE-OUT OR SPERZEL	 B. DISCREPANCIES 1. IN THE EVENT OF DISCREPANCY, IMMEDIATELY NOTIFY THE ARCHITECT. 	CONTRACTOR REFUSE OR NEGLECT TO MAKE TESTS NECESSARY TO SATISFY THE ARCHITECT THAT REQUIREMENT OF SPECIFICATIONS AND DRAWINGS ARE MET, SUCH TESTS	
FURNISH ALL LABOR, MATERIALS, EQUIPMENT, APPLIANCES AND NECESSARY INCIDENTALS FOR THE COMPLETE INSTALLATION OF ALL PLUMBING AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.	WALLS AND FLOORS SHALL BE PROPERLY SAFED WITH DOW CORNING 3-6548 SILICONE RTV FOAM OR EQUAL. INSTALL PER MANUFACTURE'S DIRECTION.	CRETESLEEVE FLOOR SLEEVES SHALL EXTEND TO TOP OF CONCRETE CURBS FOR PIPING RISING THROUGH FLOORS . WALL SLEEVES SHALL BE FLUSH WITH FINISHED SURFACE. SLEEVES SHALL BE SIZED TO ALLOW 1/2 IN. CLEARENCE AROUND PIPE INSULATION.	 IN THE EVENT OF DISCREPANCY, IMMEDIATELY NOTIFY THE ARCHITECT. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL ALL SUCH 	MAY BE MADE BY AN INDEPENDENT TESTING COMPANY AND THE CONTRACTOR CHARGED FOR ALL EXPENSES.	
A. WORK SPECIFIED IN THIS SECTION	B. PIPE IDENTIFICATION:	INSULATION AND COVERING SHALL BE CONTINUOUS THROUGH WALL AND FLOOR SLEEVES.	DISCREPANCIES HAVE BEEN FULLY RESOLVED.	HYDROSTATIC TESTS: MAKE BY COMPLETELY FILLING PIPING SYSTEM WITH WATER AND FLIMINATING ACCUMULATIONS OF AIR SO THAT LEAKAGE. NO MATTER HOW SMALL, WILL BE	
 SANITARY SOIL, WASTE AND VENT SYSTEMS. 	1. PIPING IDENTIFICATION PER ANSI AND OSHA STANDARDS: EACH INDIVIDUAL PIPELINE SHALL BE MARKED FOR QUICK AND EASY IDENTIFICATION AS TO	2.05 PIPE HANGERS	3. INTERFERENCES BETWEEN INSTALLED WORK OF VARIOUS TRADES DUE TO LACK OF COORDINATION SHALL BE RESOLVED BY ARCHITECT WHOSE DECISION IS FINAL.	APPARENT ON TESTING GAUGE IMMEDIATELY . MAINTAIN PRESSURE UNTIL PIPE UNDER TEST HAS BEEN EXAMINED, BUT IN NO CASE LESS THAN 24 HOURS. TEST SYSTEMS AT THE	
 DOMESTIC HOT AND COLD WATER SYSTEMS. 	CONTENTS AND CHARACTER OF MATERIAL CARRIED IN THE PIPES BY SET ON SNA OR STR MARKER.	HANGERS SHALL BE SUPPLIED WITH FACTORY INSTALLED ISOLATION AND DI-CHROMATE FINISH.	RELOCATE OR OFFSET ANY WORK AS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES AT NO EXTRA COST TO THE OWNER WHEN SO DIRECTED BY THE	FOLLOWING PRESSURE.	NO. DATE DESC
3. DOMESTIC WATER HEATERS.	2. MARKERS SHALL BE INSTALLED AND SPACED AT NOT MORE THAN 8 FT.	PIPE 2 IN. AND SMALLER: GRINNEL F69. PIPE 2-1/2 IN. AND LARGER: GRINNEL F65. CONCRETE	ARCHITECT.	<u>SYSTEM</u> <u>TEST PRESSURE</u>	RE
 FURNISH AND SET ALL SLEEVES FOR PIPES PASSING THROUGH WALLS AND FLOORS. 	INTERVALS AND SO LOCATED THAT MARKERS SHALL BE VISIBLE WHERE PIPING SYSTEM IS EXPOSED.	INSERTS: GRINNEL 281 ANAD 282. RISER CLAMPS FOR COPPER PIPING: GRINNEL 261P, PLASTIC COATED. RISER CLAMPS FOR OTHER PIPING: GRINNERL 261.	3.02 LOCATIONS AND SPACE REQUIREMENTS A. CONTRACTOR SHALL FULLY INFORM HIMSELF REGARDING PECULIARITIES AND	DOMESTIC COLD WATER150 PSIGDOMESTIC HOT WATER150 PSIG	U
5. PIPE COVERING, INSULATION AND WRAPPING.	3. COLOR SCHEME SHALL BE APPROVED. BASE COLOR FOR MARKERS SHALL BE AS FOLLOWS:	HANGER RODS SHALL CONFORM TO THE FOLLOWING: PIPE SIZE 2 IN. AND SMALLER: 3/8 IN. RODS. PIPE SIZE 2-1/2 IN. AND 3 IN.: 1/2 IN. RODS. PIPE SIZE 3 IN. AND LARGER: 5/8 IN. RODS.	LIMITATIONS OF SPACES AVAILABLE FOR INSTALLATION OF WORK UNDER THIS DIVISION. DRAWINGS INDICATE DESIRED LOCATION AND ARRANGEMENT OF PIPING, EQUIPMENT AND OTHER ITEMS, AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE.	SANITARY SOIL, WASTE, VENT SYSTEM TESTS: BEFORE INSTALLATION OF FIXTURES, CAP END OF SYSTEM AND FILL LINES WITH WATER TO 10 FT. ABOVE THE SECTION BEING TESTED. (INCLUDING VENTS) AND ALLOW TO STAND FOR AT LEAST FIFTEEN (15) MINUTES BEFORE	tur
6. EXCAVATION AND BACKFILL.	DOMESTIC HOT WATER - YELLOW DOMESTIC COLD WATER - GREEN	2.06 PIPING SPECIALTIES	WORK SPECIFIED AND NOT CLEARLY DEFINED BY DRAWINGS SHALL BE INSTALLED AND ARRANGED IN A SATISFACTORY MANNER. IN ANY CASE AND AT ANY TIME, A CHANGE IN	INSPECTION STARTS. MAKE TESTS IN SECTIONS IF NECESSARY OR CONVENIENT. HOWEVER, INCLUDE INTERCONNECTIONS BETWEEN NEW SECTIONS AND PREVIOUSLY TESTED SECTIONS	U S ≥
7. ROUGH-IN AND FINAL CONNECTIONS TO AIR CONDITIONING EQUIPMENT OF CONDENSATE DRAINS.	SANITARY SEWER - GREEN SANITARY VENT - GREEN	A. APPLIANCE FLEXIBLE CONNECTORS	LOCATION REQUIRED BY OBSTACLES OR THE INSTALLATION OF OTHER TRADES NOT SHOWN ON THE MECHANICAL PLANS SHALL BE MADE BY CONTRACTOR WITHOUT	IN THE NEW TEST.	∆ N N
8. ALL PLUMBING FIXTURES, WATER HEATERS, VALVES, AND OTHER MISCELLANEOUS	CONDENSATE DRAIN - BLUE	1. INDOOR, FIXED-APPLIANCE FLEXIBLE CONNECTORS: COMPLY WITH ANSI Z21.24.	ADDITIONAL CHARGE PROVIDED THE CHANGE IS ORDERED BEFORE WORK IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.	ROOF DRAINAGE SYSTEM: TEST AS SPECIFIED FOR SANITARY SYSTEM.	
ITEMS OR EQUIPMENT REQUIRED FOR A COMPLETE INSTALLATION.	C. ONE MARKER SHALL BE INSTALLED AT EACH SIDE OF VALVES, SPECIAL FITTINGS AND AT BRANCH TAKE-OFF. IN FURRED SPACES INSTALL ONE BAND 2 FT. ABOVE FLOOR AND	2. INDOOR, MOVABLE-APPLIANCE FLEXIBLE CONNECTORS: COMPLY WITH ANSI Z21.69.	 B. VERIFY ALL SPACES, DIMENSIONS FOR ALL FIXTURES, EQUIPMENT, OR 	GAS SYSTEMS: TEST WITH COMPRESSED AIR AT 10 PSI FOR SIX HOURS OR LONGER AS DIRECTED TO PROVIDE A TIGHT SEAL WITHOUT LEAKS . USE PRESSURE RECORDER TO	aro
03 QUALITY ASSURANCE	19 IN. BELOW CEILING LINE.	3. OUTDOOR, APPLIANCE FLEXIBLE CONNECTORS: COMPLY WITH ANSI Z21.75.	OWNER-FURNISHED EQUIPMENT AND EQUIPMENT FURNISHED UNDER OTHER SECTIONS.	RECORD PRESSURE OF ALL LINES FOR DURATION OF TEST.	
A. CODES AND STANDARDS	D. MATERIALS: MATERIALS WHEN NOT OTHERWISE DEFINITELY SPECIFIED SHALL CONFORM TO THE APPLICABLE ASTM, ASME, AGA, AND ASA STANDARDS.	4. CORRUGATED STAINLESS-STEEL TUBING WITH POLYMER COATING.	C. OBTAIN ALL NECESSARY ROUGH IN DATA AND DIMENSIONS FOR ALL FIXTURES.	REPAIR ALL LEAKAGES AND RETEST AS REQUIRED.	J&I
1. ALL ITEMS INDICATED ON SITE, ARCHITECTURAL OR MECHANICAL DRAWINGS ARE TO BE PROVIDED COMPLETE FROM POINT OF CONNECTION TO FINISHED	E. ALL GAS FIRED EQUIPMENT SHALL INCLUDE A LABEL INDICATING THAT THE APPLIANCE	5. OPERATING-PRESSURE RATING: 0.5 PSIG.	EQUIPMENT, OR OWNER-FURNISHED EQUIPMENT AND EQUIPMENT FURNISHED UNDER OTHER SECTIONS.	3.07 PIPE INSTALLATION	d ⊲
FIXTURE IN CONFORMANCE WITH ALL GOVERNING AUTHORITY REQUIREMENTS. NOTHING IN THESE DRAWINGS OR SPECIFICATIONS SHALL BE CONSTRUED TO	HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE ALTITUDE WHEREIN THE PROJECT IS TO BE LOCATED. THE APPLIANCE SHALL ALSO INCLUDE A COMPLIANCE	6. END FITTINGS: ZINC-COATED STEEL.	D. MAINTAIN AMPLE HEADROOM CLEARANCES AND ACCESSIBILITY. MAINTAIN CEILING	MAKE PIPE RUNS STRAIGHT AND TRUE. SPRINGING OR FORCING PIPING INTO PLACE IS NOT PERMITTED . INSTALL IN MANNER TO PREVENT ANY UNDUE STRAIN ON EQUIPMENT. MAKE	3
PERMIT WORK IN VIOLATION OF GOVERNING CODES.	STATEMENT INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE PROPER OPERATION AT THE ALTITUDE OF THE PROJECT AND	 THREADED ENDS: COMPLY WITH ASME B1.20.1. MAXIMUM LENGTH: 72 INCHES. 	HEIGHTS.	JOINTS SMOOTH AND UNOBSTRUCTED INSIDE AND OUT, AND REAM PIPE ENDS THOROUGHLY TO REMOVE BURRS. CONCEAL PIPING IN FINISHED PORTIONS OF THE BUILDINGS EXCEPT AS	cal
2. IN ADDITION TO THE REQUIREMENTS OF ALL GOVERNING CODES, ORDINANCES AND AGENCIES, CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES	SHALL BE LISTED CAPABLE FOR USE WITH NATURAL GAS OR PROPANE GAS IF PROPANE IS LISTED ON THE DRAWINGS.	 MAXIMUM LENGTH: 72 INCHES. B. QUICK-DISCONNECT DEVICES: COMPLY WITH ANSI Z21.41 	E. CONSTANTLY CHECK WORK OF OTHER TRADES TO PREVENT INTERFERENCE WITH THIS INSTALLATION.	OTHERWISE DIRECTED OR INDICATED. CAP OR PLUG ENDS AND OPENINGS IN PIPE AND FITTINGS IMMEDIATELY TO EXCLUDE DIRT UNTIL EQUIPMENT IS INSTALLED OR FINAL	
AND STANDARDS:	2.02 PIPE AND FITTING SCHEDULE	1. COPPER-ALLOY CONVENIENCE OUTLET AND MATCHING PLUG CONNECTOR.	3.03 EXCAVATION AND BACKFILLING	CONNECTIONS ARE MADE.	
a. 2018 INTERNATIONAL PLUMBING CODE.	PIPE AND FITTINGS:	2. NITRILE SEALS.	PERFORM EXCAVATION AND BACKFILLING REQUIRED WORK UNDER THIS SECTION UNLESS	INSTALL PIPING TO CLEAR BEAMS UNLESS SLEEVING IS INDICATED. CONSTANTLY CHECK WORK OF OTHER TRADES TO PREVENT INTERFERENCE WITH THIS INSTALLATION. OBTAIN	
b. 2018 INTERNATIONAL BUILDING CODE.	A. NO PIPE OF A FOREIGN MANUFACTURER WILL BE ACCEPTABLE.	3. HAND OPERATED WITH AUTOMATIC SHUTOFF WHEN DISCONNECTED.	OTHER- WISE SPECIFIED. CONFORM TO REQUIREMENTS OF DIVISION 2, SOILS REPORT AND OF PUBLIC AUTHORITIES HAVING JURISDICTION.	APPROVAL FROM ARCHITECT IF CORING OR CUTTING OF CONCRETE WORK IS NECESSARY DUE TO FAILURE TO INSTALL REQUIRED SLEEVES PRIOR TO THE TIME OF CONCRETE POUR.	
c. 2018 INTERNATIONAL MECHANICAL CODE.	B. ALL PIPING, FITTINGS, FLANGES, ETC. SHALL BE FREE FROM DEFECTS AND SHALL	4. FOR INDOOR OR OUTDOOR APPLICATIONS.	3.04 SPECIALTY ITEMS	COST OF CORING AND CUTTING WORK SHALL BE BORNE BY THE SUBCONTRACTOR.	
d. 2018 INTERNATIONAL ENERGY CONSERVATION CODE.	COMPLY WITH THE APPROPRIATE ASTM SPECIFICATIONS.	5. ADJUSTABLE, RETRACTABLE RESTRAINING CABLE	INSTALL AS INDICATED ON THE DRAWINGS, AS HEREIN SPECIFIED, AND AS RECOMMENDED BY	EXPOSED PLATED OR ENAMELED PIPE: MAKE CONNECTIONS TO EQUIPMENT WITH SPECIAL CARE. SHOW NO TOOL MARKS OR THREADS.	
04 PRODUCT HANDLING	C. BLACK STEEL PIPE: ASTM A53 ERW GRADE B, STANDARD WEIGHT (SCHEDULE 40) OR EXTRA STRONG (SCHEDULE 80) AS SPECIFIED.	2.07 MANUAL GAS SHUTOFF VALVES	MANUFACTURER.	DIELECTRIC UNIONS: MAKE CONNECTIONS BETWEEN TWO DISSIMILAR METAL PIPES WITH	
A. PROTECTION: TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE MATERIALS OF THIS SECTION BEFORE, DURING AND AFTER INSTALLATION.	D. COPPER TUBING: ASTM B88, TYPE L OR K AS SPECIFIED.	A. GENERAL REQUIREMENTS FOR METALLIC VALVES, NPS 2 AND SMALLER: COMPLY WITH ASME B16.33.	3.05 HANGERS AND SUPPORTS	DIELECTRIC UNIONS.	
 B. REPLACEMENTS: IN THE EVENT OF DAMAGE, IMMEDIATELY REPAIR ALL DAMAGED AND DEFECTIVE WORK TO THE APPROVAL OF THE ENGINEER, AT NO ADDITIONAL COST TO 	E. PVC PIPE AND FITTINGS: ASTM D1785 CLASS 150 WITH ASTM D 2853 SOLVENT CEMENT JOINTS UNLESS OTHERWISE SPECIFIED. SCHEDULE 40. PVC PLASTIC PIPE FITTINGS:	1. CWP RATING: 125 PSIG.	HOLD HORIZONTAL PIPE RUNS FIRMLY IN PLACE USING APPROVED STEEL AND IRON HANGERS, SUPPORTS, AND/OR PIPE RESTS UNLESS OTHERWISE INDICATED. SUSPEND HANGER RODS FROM CONCRETE INSERTS OR FROM APPROVED BRACKETS, CLAMPS OR CLIPS. HANG PIPES	UNIONS: PROVIDE A UNION ON ONE SIDE OF EACH SHUTOFF VALVE, AT BOTH SIDES OF AUTOMATIC VALVES, AT EQUIPMENT CONNECTIONS AND ELSEWHERE INDICATED OR REQUIRED, UNLESS FLANGES ARE INDICATED.	
THE OWNER.	ASTM F 628, SCHEDULE 40.	 THREADED ENDS: COMPLY WITH ASME B1.20.1. DRYSEAL THREADS ON FLARE ENDS: COMPLY WITH ASME B1.20.3. 	INDIVIDUALLY OR IN GROUPS IF SUPPORTING STRUCTURE IS ADEQUATE TO SUPPORT WEIGHT OF PIPING AND FLUID. EXCEPT FOR BUIRED PIPING. HANG OR SUPPORT PIPE RUNS SO THAT	FLOOR, WALL AND CEILING PLATES: PROVIDE WHERE PIPES PIERCE FINISHED SURFACES.	
05 SUBMITTALS	F. ACRYLONITRILE BUTADIENE STYRENE (ABS) PLASTIC PIPE: ASTM D 2661, SCHEDULE 40, ASTM F 628, SCHEDULE 40. ABS PLASTIC PIPE FITTINGS: ASTM F 409, ACCESSIBLE AND	4. TAMPERPROOF FEATURE: LOCKING FEATURE FOR VALVES INDICATED IN	THEY MAY EXPAND OR CONTRACT FREELY WITHOUT STRAIN TO PIPE OR EQUIPMENT.	NOISE: INSTALL SOIL, WASTE, AND WATER PIPING IN A MANNER THAT PREVENTS ANY UNUSUAL	
A. MANUFACTURER'S LITERATURE: WITHIN 35 DAYS AFTER AWARD OF CONTRACT AND BEFORE ANY OF THE MATERIALS OF THIS SECTION ARE DELIVERED TO THE JOB SITE, SUBMIT ELECTRONIC BROCHURES OF ALL MATERIALS AND EQUIPMENT, PER DIVISION 1	 G. CAST IRON SOIL PIPE AND FITTINGS: ASTM A74 	"UNDERGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE" AND "ABOVEGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE" ARTICLES.	1. HORIZONTAL STEEL PIPING: PROVIDE HANGERS OR SUPPORTS EVERY 10 FT. EXCEPT EVERY 8 FT. FOR PIPING 1-1/4 IN. AND SMALLER.	NOISE FROM FLOW OF WATER UNDER NORMAL CONDITIONS.	
SUBMIT ELECTRONIC BROCHURES OF ALL MATERIALS AND EQUIPMENT, PER DIVISION 1 OF THE SPECIFICATIONS.	H. WELDED BLACK STEEL FITTINGS: ASTM A234 GRADE B, 150-POUND FOR STANDARD	5. LISTING: LISTED AND LABELED BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION FOR VALVES 1 INCH AND SMALLER.	 HORIZONTAL COPPER TUBING: FOR 2 IN. DIAMETER AND OVER, PROVIDE HANGERS EVERY 10 FT. : FOR 1-1/2 IN. DIAMETER AND SMALLER. EVERY 6 FT. 	SYSTEMS AND FOR ISOLATION OF FIXTURE GROUPS AND EQUIPMENT.	
B. OTHER SUBMITTALS:	WEIGHT PIPING, 300-POUND FOR EXTRA STRONG PIPING, OR OF WEIGHT OR SCHEDULE OF MATCHING PIPING.	6. SERVICE MARK: VALVES 1-1/4 INCHES TO NPS 2 SHALL HAVE INITIALS "WOG" PERMANENTLY MARKED ON VALVE BODY.	3. HORIZONTAL CAST-IRON HUB AND SPIGOT PIPING: PROVIDE HANGERS OR	BURIED PIPING: INSTALL WITH MINIMUM 36 IN. COVERAGE UNLESS OTHERWISE INDICATED. LAY PIPING ACCURATELY TO GRADE WHERE INVERT ELEVATIONS ARE INDICATED. WHEN REQUIRED. PROVIDE THRUST BLOCKS PER MANUFACTURER'S RECOMMENDATIONS.	
1. SHOP DRAWINGS.	I. THREADED MALLEABLE IRON FITTINGS: ANSI B16.3, 150-POUND FOR STANDARD WEIGHT PIPING. 300-POUND FOR EXTRA STRONG PIPING. OR OF WEIGHT OR SCHEDULE	B. GENERAL REQUIREMENTS FOR METALLIC VALVES, NPS 2-1/2 AND LARGER: COMPLY WITH ASME B16.38		REQUIRED, PROVIDE THRUST BLOCKS PER MANUFACTURER'S RECOMMENDATIONS.	
2. STERILIZATION TEST REPORT.	OF MATCHING PIPING EITHER BLACK OR GALVANIZED TO MATCH PIPING.		 HORIZONTAL CAST-IRON NO-HUB PIPING: PROVIDE HANGERS OR SUPPORTS AT EACH SIDE OF NO-HUB FITTINGS. PROVIDE ANTI-SEPARATION BRACING AT EACH 90 DEGREE CHANGE OF DIRECTION. 	EQUIPMENT AND MATERIALS: INSTALL PER MANUFACTURER'S RECOMMENDATIONS.	
3. TEST DATA.	J. WELDED FLANGES: ASTM A181 GRADE B, 150-POUND FOR STANDARD WEIGHT PIPING, 300-POUND FOR EXTRA STRONG PIPING OR OF EQUAL WEIGHT OF CONNECTED	 CWP RATING: 125 PSIG FLANGED ENDS: COMPLY WITH ASME B16.5 FOR STEEL FLANGES. 	5. VERTICAL PIPING: SUPPORT AT FLOOR WITH IRON PIPE CLAMPS.	INSTRUMENTS, ADJUSTMENT, SERVICE, INSPECTION AND REPAIR. PROVIDE ACCESS PANELS WHERE INDICATED AND REQUIRED.	ONA
C. RECORD DRAWINGS: KEEP AN ACCURATE DIMENSIONED RECORD OF AS-BUILT LOCATIONS AND ELEVATIONS, AS REFERRED TO APPROVED BASE DATUM, OF BURIED	EQUIPMENT.	3. TAMPERPROOF FEATURE: LOCKING FEATURE FOR VALVES INDICATED IN	5. VERTICAL PIPING: SUPPORT AT FLOOR WITH IRON PIPE CLAMPS. BRANCHES: PROVIDE SEPARATE HANGERS OR SUPPORTS FOR BRANCH LINES 6 FT. OR MORE	PIPE JOINTS: MAKE SCREWED JOINTS WITH A MINIMUM AMOUNT OF COMPOUND APPLIED TO	
CONCEALED LINES, MANHOLE, CLEANOUTS, VALVES, PLUGGED TEES, CAPPED ENDS, AND OF WORK WHICH IS INSTALLED DIFFERENT FROM SHOWN IN THE PLANS.	K. COPPER FITTINGS: WROUGHT COPPER, ANSI SPECIFICATION B16.22.	"UNDERGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE" AND "ABOVEGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE" ARTICLES.	IN LENGTH.	THE MALE THREAD ONLY. ALL JOINTS SHALL BE MADE PER CODE REQUIREMENTS.	ARI
D. OPERATION AND MAINTENANCE INSTRUCTIONS: DELIVER TO ARCHITECT ELECTRONIC	L. BALL VALVES, DOMESTIC WATER: BRONZE, FULLPORT, CLASS 150, THREADED. GRINNELL 3750 OR 171N	4. SERVICE MARK: INITIALS "WOG" SHALL BE PERMANENTLY MARKED ON VALVE BODY.	SOUND AND ELECTROLYSIS ISOLATORS: PROVIDE AT ALL HANGERS AND SUPPORTS FOR HOT AND COLD DOMESTIC WATER LINES . SECURELY ATTACH PIPE TO WALLS, STUDS, ETC. ALL	PROVIDE PIPE ISOLATION AT ALL HANGERS FOR NON-INSULATED MATERIALS.	, , , , , , , , , , , , , , , , , , ,
COPIES OF WRITTEN OPERATING AND MAINTENANCE INSTRUCTIONS AND BROCHURES FOR EQUIPMENT SPECIFIED IN THIS SECTION. FULLY INSTRUCT OWNER'S OPERATING	NIBCO T-585 JAMESBURY 300		SUCH PIPING ISOLATED FROM STRUCTURE BY "TRISOLATORS".	PIPING ROUGH-IN FOR FIXTURES: SUPPORT OR SECURE TO BUILDING CONSTRUCTION OF FIRMLY ANCHORED WASTE PIPING SO THAT PIPES CANNOT BE DISPLACED. DO NOT SECURE	CIT
PERSONNEL.	M. PARTITION STOP VALVES: T&S B415, LOOSE KEY TYPE WITH WALL FLANGE.			TO WALLS. USE OF MAKESHIFT DEVICES, SUCH AS ROPE, WIRE, TAPE, ETC. IS PROHIBITED.	ТШ
	N. BALANCING COCKS 2 INCHES AND SMALLER SHALL BE CRANE NO 250 OR MILWAUKEE BUTTERBALL BB2-100 OR BB2-350 WITH MEMORY STOP.			HORIZONTAL DRAINAGE PIPING SHALL BE INSTALLED IN UNIFORM ALIGNMENT AT UNIFORM SLOPES. THE MINIMUM SLOPE OF HORIZONTAL PIPE 4" OR LARGER IN DIAMETER MAY HAVE A SLOPE OF NOT LESS THAN 1% (1/8 INCH DER FOOT). THE MINIMUM SLOPE OF HORIZONTAL	PAG
A. EXAMINATION OF THE SITE: EXERCISE CARE IN EXAMINING THE SITE AND COORDINATE ALL WORK INDICATED ON THE DRAWINGS WITH EXISTING CONDITIONS. REPORT TO	O. SOLDER:			SLOPE OF NOT LESS THAN 1% (1/8 INCH PER FOOT). THE MINIMUM SLOPE OF HORIZONTAL PIPE LESS THAN 4" MAY HAVE A SLOPE OF NOT LESS THAN 2% (1/4 INCH PER FOOT).	L T
ARCHITECT IN WRITING CONDITIONS THAT WILL PREVENT PROPER PROVISIONS OF THIS WORK. VERIFY DEPTH AND LOCATION OF ALL SERVICE LINES WITH SERVICING	0. SOLDER. 0.1. JOINTS IN COPPER PIPING ABOVE GRADE SHALL BE STAY SAFE 50 SOLDER OR 95-5 SOLDER SHALL BE SILFOS OR SILVERFLOW FOR ALL REFRIGERANT PIPING JOINT.			- END -	
COMPANIES HAVING JURISDICTION BEFORE EXCAVATING. BY SUBMISSION OF THE BID, THE CONTRACTOR WARRANTS THAT HE HAS FAMILIARIZED HIMSELF WITH THE	P. CONDENSATE DRAINS SHALL BE TYPE L HARD COPPER TUBING WITH				
EXISTING CONDITIONS AND WILL PERFORM ALL WORK AS REQUIRED FOR HOOKUP AND AS REQUIRED BY THE CONTRACT DOCUMENTS AT NO ADDITIONAL CHARGE.	WROUGHT-COPPER FITTINGS OR PVC WHERE ALLOWED. A P-TRAP SHALL BE PROVIDED AT DRAIN PANS.				
B. PERMITS AND FEES: ARRANGE AND PAY FOR ALL PERMITS, INSPECTIONS AND FEES REQUIRED BY ALL GOVERNING AGENCIES.	Q. GAS PIPING IN THE BUILDING AND NOT BURIED SHALL BE STANDARD WEIGHT BLACK STEEL PIPE. PIPE 2-INCH AND SMALLER SHALL HAVE EITHER WELDED OR SCREWED				
C. SERVICE CONNECTIONS: MAKE ALL NECESSARY ARRANGEMENTS WITH APPLICABLE	FITTINGS. PIPE 2-1/2" OR LARGER SHALL HAVE WELDED FITTINGS. ALL GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH IFG CODE, DOMINION ENERGY				
UTILITY COMPANY FOR CONNECTION TO EXISTING SERVICE LINES. PAY ALL FEES ASSOCIATED WITH WORK INCLUDING METERS, HOOKUP CHARGE AND UTILITY	REQUIREMENTS AND REGULATIONS. GAS PIPING BURIED SHALL BE POLYETHYLENE PIPE WITH CONTINUOUS 18 GAUGE TRACING WIRE WITH SCHEDULE 40 BLACK STEEL				
ASSOCIATED WITH WORK INCLUDING METERS, HOOROF CHARGE AND UTIENT ASSESSMENT FEES.	EPOXY COATED TRANSITION RISERS AND/OR TRANSITION FITTINGS PER ASTM D2513 APPROVED AND INSTALLED IN ACCORDANCE WITH DOMINION ENERGY COMPANY				
D. DRAWINGS: COORDINATE ALL SPACE REQUIREMENTS WITH OTHER TRADES. DRAWINGS INDICATE DESIRED LOCATION AND ARRANGEMENT OF PIPING, EQUIPMENT,	REGULATIONS. PAINT ALL EXTERIOR EXPOSED GAS PIPING.				
AND OTHER ITEMS AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE.					
E. ALL GAS FIRED EQUIPMENT SHALL INCLUDE A LABEL INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE ALTITUDE WHEREIN THE					2208
PROJECT IS TO BE LOCATED. THE APPLIANCE SHALL ALSO INCLUDE A COMPLIANCE STATEMENT INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED. MODIFIED OR					

	PART 2 - PRODUCTS 2.01 GENERAL	2.03 ROOF FLASHING	PART 3 - EXECUTION 3.01 SURFACE CONDITIONS	3.06 TESTS	LADD M. W. BIRCH BIRCH
AND DIVISION 1, ARE A PART OF ALL APPLY TO THIS SECTION AS	A. PIPE SLEEVES AND WRAPPING: PROVIDE POLISHED CHROMIUM PLATED AND BRASS SET SCREW FLANGES WHERE PLUMBING PIPING PASS THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS IN FINISHED PORTIONS OF BUILDING INCLUDING FLANGES ON PIPES AT FIXTURES. ALL SLEEVES IN CONCEALED AND EXTERIOR WALLS SHALL BE	SANITARY VENT FLASHINGS: SEMCO 1100-3 OR 1100-5, WITH ONE-PIECE LEAD FLASHING AND COUNTERFLASHING SLEEVE. 2.04 PIPE SLEEVES	A. INSPECTION: ALL PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING AUTHORITIES, THE ORIGINAL DESIGN, AND THE REFERENCED STANDARDS.	PERFORM TESTS TO ARCHITECT'S SATISFACTION. MAKE TESTS IN PRESENCE OF OWNER'S REP AND AT A TIME SUITABLE TO HIM IF REQUESTED . FURNISH NECESSARY LABOR AND EQUIPMENT AND BEAR COSTS FOR TESTING . COST OF REPLACING AND/OR REPAIRING DAMAGE RESULTING THEREFORE SHALL BE BORNE BY THIS CONTRACTOR. SHOULD THE	SUBMITTAL:
	20 GA. GALVANIZED IRON ONE INCH O.D. LARGER THAN THE PIPE, CAULKED IF BELOW GRADE IN A MOISTUREPROOF MANNER. ALL PIPES PENETRATING THROUGH FIRE WALLS AND FLOORS SHALL BE PROPERLY SAFED WITH DOW CORNING 3-6548 SILICONE	AT CONCRETE WALLS OR FLOORS, ADJUST-TO-CRETE, PARAMOUNT, HOLE-OUT OR SPERZEL CRETESLEEVE FLOOR SLEEVES SHALL EXTEND TO TOP OF CONCRETE CURBS FOR PIPING	B. DISCREPANCIES1. IN THE EVENT OF DISCREPANCY, IMMEDIATELY NOTIFY THE ARCHITECT.	CONTRACTOR REFUSE OR NEGLECT TO MAKE TESTS NECESSARY TO SATISFY THE ARCHITECT THAT REQUIREMENT OF SPECIFICATIONS AND DRAWINGS ARE MET, SUCH TESTS MAY BE MADE BY AN INDEPENDENT TESTING COMPANY AND THE CONTRACTOR CHARGED FOR	
OWN ON THE DRAWINGS AND AS	RTV FOAM OR EQUAL. INSTALL PER MANUFACTURE'S DIRECTION.B. PIPE IDENTIFICATION:	RISING THROUGH FLOORS . WALL SLEEVES SHALL BE FLUSH WITH FINISHED SURFACE. SLEEVES SHALL BE SIZED TO ALLOW 1/2 IN. CLEARENCE AROUND PIPE INSULATION. INSULATION AND COVERING SHALL BE CONTINUOUS THROUGH WALL AND FLOOR SLEEVES.	2. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL ALL SUCH DISCREPANCIES HAVE BEEN FULLY RESOLVED.	ALL EXPENSES. HYDROSTATIC TESTS: MAKE BY COMPLETELY FILLING PIPING SYSTEM WITH WATER AND	
	1. PIPING IDENTIFICATION PER ANSI AND OSHA STANDARDS: EACH INDIVIDUAL PIPELINE SHALL BE MARKED FOR QUICK AND EASY IDENTIFICATION AS TO CONTENTS AND CHARACTER OF MATERIAL CARRIED IN THE PIPES BY SET ON SNA OR STR MARKER.	2.05 PIPE HANGERS HANGERS SHALL BE SUPPLIED WITH FACTORY INSTALLED ISOLATION AND DI-CHROMATE FINISH.	3. INTERFERENCES BETWEEN INSTALLED WORK OF VARIOUS TRADES DUE TO LACK OF COORDINATION SHALL BE RESOLVED BY ARCHITECT WHOSE DECISION IS FINAL. RELOCATE OR OFFSET ANY WORK AS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES AT NO EXTRA COST TO THE OWNER WHEN SO DIRECTED BY THE	ELIMINATING ACCUMULATIONS OF AIR SO THAT LEAKAGE, NO MATTER HOW SMALL, WILL BE APPARENT ON TESTING GAUGE IMMEDIATELY . MAINTAIN PRESSURE UNTIL PIPE UNDER TEST HAS BEEN EXAMINED, BUT IN NO CASE LESS THAN 24 HOURS. TEST SYSTEMS AT THE FOLLOWING PRESSURE.	
IG THROUGH WALLS AND	 MARKERS SHALL BE INSTALLED AND SPACED AT NOT MORE THAN 8 FT. INTERVALS AND SO LOCATED THAT MARKERS SHALL BE VISIBLE WHERE PIPING SYSTEM IS EXPOSED. 	PIPE 2 IN. AND SMALLER: GRINNEL F69. PIPE 2-1/2 IN. AND LARGER: GRINNEL F65. CONCRETE INSERTS: GRINNEL 281 ANAD 282. RISER CLAMPS FOR COPPER PIPING: GRINNEL 261P, PLASTIC COATED. RISER CLAMPS FOR OTHER PIPING: GRINNERL 261.	ARCHITECT. 3.02 LOCATIONS AND SPACE REQUIREMENTS	SYSTEMTEST PRESSUREDOMESTIC COLD WATER150 PSIGDOMESTIC HOT WATER150 PSIG	REVISIONS
	 COLOR SCHEME SHALL BE APPROVED. BASE COLOR FOR MARKERS SHALL BE AS FOLLOWS: 	HANGER RODS SHALL CONFORM TO THE FOLLOWING: PIPE SIZE 2 IN. AND SMALLER: 3/8 IN. RODS. PIPE SIZE 2-1/2 IN. AND 3 IN.: 1/2 IN. RODS. PIPE SIZE 3 IN. AND LARGER: 5/8 IN. RODS.	A. CONTRACTOR SHALL FULLY INFORM HIMSELF REGARDING PECULIARITIES AND LIMITATIONS OF SPACES AVAILABLE FOR INSTALLATION OF WORK UNDER THIS DIVISION. DRAWINGS INDICATE DESIRED LOCATION AND ARRANGEMENT OF PIPING,	SANITARY SOIL, WASTE, VENT SYSTEM TESTS: BEFORE INSTALLATION OF FIXTURES, CAP END OF SYSTEM AND FILL LINES WITH WATER TO 10 FT. ABOVE THE SECTION BEING TESTED.	ture in the
ITIONING EQUIPMENT OF	DOMESTIC HOT WATER - YELLOW DOMESTIC COLD WATER - GREEN SANITARY SEWER - GREEN	2.06 PIPING SPECIALTIES A. APPLIANCE FLEXIBLE CONNECTORS	EQUIPMENT AND OTHER ITEMS, AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. WORK SPECIFIED AND NOT CLEARLY DEFINED BY DRAWINGS SHALL BE INSTALLED AND ARRANGED IN A SATISFACTORY MANNER. IN ANY CASE AND AT ANY TIME, A CHANGE IN LOCATION REQUIRED BY OBSTACLES OR THE INSTALLATION OF OTHER TRADES NOT	(INCLUDING VENTS) AND ALLOW TO STAND FOR AT LEAST FIFTEEN (15) MINUTES BEFORE INSPECTION STARTS. MAKE TESTS IN SECTIONS IF NECESSARY OR CONVENIENT. HOWEVER, INCLUDE INTERCONNECTIONS BETWEEN NEW SECTIONS AND PREVIOUSLY TESTED SECTIONS IN THE NEW TEST.	tect N≺
ES, AND OTHER MISCELLANEOUS	SANITARY VENT - GREEN CONDENSATE DRAIN - BLUE	1. INDOOR, FIXED-APPLIANCE FLEXIBLE CONNECTORS: COMPLY WITH ANSI Z21.24.	SHOWN ON THE MECHANICAL PLANS SHALL BE MADE BY CONTRACTOR WITHOUT ADDITIONAL CHARGE PROVIDED THE CHANGE IS ORDERED BEFORE WORK IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.	ROOF DRAINAGE SYSTEM: TEST AS SPECIFIED FOR SANITARY SYSTEM.	chił MPAI
E INSTALLATION.	C. ONE MARKER SHALL BE INSTALLED AT EACH SIDE OF VALVES, SPECIAL FITTINGS AND AT BRANCH TAKE-OFF. IN FURRED SPACES INSTALL ONE BAND 2 FT. ABOVE FLOOR AND 19 IN. BELOW CEILING LINE.	 INDOOR, MOVABLE-APPLIANCE FLEXIBLE CONNECTORS: COMPLY WITH ANSI Z21.69. OUTDOOR, APPLIANCE FLEXIBLE CONNECTORS: COMPLY WITH ANSI Z21.75. 	B. VERIFY ALL SPACES, DIMENSIONS FOR ALL FIXTURES, EQUIPMENT, OR OWNER-FURNISHED EQUIPMENT AND EQUIPMENT FURNISHED UNDER OTHER SECTIONS.	GAS SYSTEMS: TEST WITH COMPRESSED AIR AT 10 PSI FOR SIX HOURS OR LONGER AS DIRECTED TO PROVIDE A TIGHT SEAL WITHOUT LEAKS . USE PRESSURE RECORDER TO RECORD PRESSURE OF ALL LINES FOR DURATION OF TEST.	
L OR MECHANICAL DRAWINGS	D. MATERIALS: MATERIALS WHEN NOT OTHERWISE DEFINITELY SPECIFIED SHALL CONFORM TO THE APPLICABLE ASTM, ASME, AGA, AND ASA STANDARDS.	 CORRUGATED STAINLESS-STEEL TUBING WITH POLYMER COATING. OPERATING-PRESSURE RATING: 0.5 PSIG. 	C. OBTAIN ALL NECESSARY ROUGH IN DATA AND DIMENSIONS FOR ALL FIXTURES, EQUIPMENT, OR OWNER-FURNISHED EQUIPMENT AND EQUIPMENT FURNISHED UNDER	REPAIR ALL LEAKAGES AND RETEST AS REQUIRED. 3.07 PIPE INSTALLATION	A J&I
OF CONNECTION TO FINISHED ING AUTHORITY REQUIREMENTS. IONS SHALL BE CONSTRUED TO DDES.	E. ALL GAS FIRED EQUIPMENT SHALL INCLUDE A LABEL INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE ALTITUDE WHEREIN THE PROJECT IS TO BE LOCATED. THE APPLIANCE SHALL ALSO INCLUDE A COMPLIANCE STATEMENT INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED. MODIFIED OR	 6. END FITTINGS: ZINC-COATED STEEL. 7. THREADED ENDS: COMPLY WITH ASME B1.20.1. 	OTHER SECTIONS. D. MAINTAIN AMPLE HEADROOM CLEARANCES AND ACCESSIBILITY. MAINTAIN CEILING HEIGHTS.	MAKE PIPE RUNS STRAIGHT AND TRUE. SPRINGING OR FORCING PIPING INTO PLACE IS NOT PERMITTED . INSTALL IN MANNER TO PREVENT ANY UNDUE STRAIN ON EQUIPMENT. MAKE JOINTS SMOOTH AND UNOBSTRUCTED INSIDE AND OUT, AND REAM PIPE ENDS THOROUGHLY	ama
OVERNING CODES, ORDINANCES ENTS OF THE FOLLOWING CODES	RE-CALIBRATED FOR THE PROPER OPERATION AT THE ALTITUDE OF THE PROJECT AND SHALL BE LISTED CAPABLE FOR USE WITH NATURAL GAS OR PROPANE GAS IF PROPANE IS LISTED ON THE DRAWINGS.	8. MAXIMUM LENGTH: 72 INCHES.B. QUICK-DISCONNECT DEVICES: COMPLY WITH ANSI Z21.41	E. CONSTANTLY CHECK WORK OF OTHER TRADES TO PREVENT INTERFERENCE WITH THIS INSTALLATION.	TO REMOVE BURRS. CONCEAL PIPING IN FINISHED PORTIONS OF THE BUILDINGS EXCEPT AS OTHERWISE DIRECTED OR INDICATED. CAP OR PLUG ENDS AND OPENINGS IN PIPE AND FITTINGS IMMEDIATELY TO EXCLUDE DIRT UNTIL EQUIPMENT IS INSTALLED OR FINAL	Ö
	2.02 PIPE AND FITTING SCHEDULE PIPE AND FITTINGS:	 COPPER-ALLOY CONVENIENCE OUTLET AND MATCHING PLUG CONNECTOR. NITRILE SEALS. 	3.03 EXCAVATION AND BACKFILLING PERFORM EXCAVATION AND BACKFILLING REQUIRED WORK UNDER THIS SECTION UNLESS	CONNECTIONS ARE MADE. INSTALL PIPING TO CLEAR BEAMS UNLESS SLEEVING IS INDICATED. CONSTANTLY CHECK WORK OF OTHER TRADES TO PREVENT INTERFERENCE WITH THIS INSTALLATION. OBTAIN	
Ξ.	A. NO PIPE OF A FOREIGN MANUFACTURER WILL BE ACCEPTABLE.	 HAND OPERATED WITH AUTOMATIC SHUTOFF WHEN DISCONNECTED. FOR INDOOR OR OUTDOOR APPLICATIONS. 	OTHER- WISE SPECIFIED. CONFORM TO REQUIREMENTS OF DIVISION 2, SOILS REPORT AND OF PUBLIC AUTHORITIES HAVING JURISDICTION.	APPROVAL FROM ARCHITECT IF CORING OR CUTTING OF CONCRETE WORK IS NECESSARY DUE TO FAILURE TO INSTALL REQUIRED SLEEVES PRIOR TO THE TIME OF CONCRETE POUR. COST OF CORING AND CUTTING WORK SHALL BE BORNE BY THE SUBCONTRACTOR.	
/ATION CODE.	 B. ALL PIPING, FITTINGS, FLANGES, ETC. SHALL BE FREE FROM DEFECTS AND SHALL COMPLY WITH THE APPROPRIATE ASTM SPECIFICATIONS. C. BLACK STEEL PIPE: ASTM A53 ERW GRADE B, STANDARD WEIGHT (SCHEDULE 40) OR 	5. ADJUSTABLE, RETRACTABLE RESTRAINING CABLE 2.07 MANUAL GAS SHUTOFF VALVES	3.04 SPECIALTY ITEMS INSTALL AS INDICATED ON THE DRAWINGS, AS HEREIN SPECIFIED, AND AS RECOMMENDED BY	EXPOSED PLATED OR ENAMELED PIPE: MAKE CONNECTIONS TO EQUIPMENT WITH SPECIAL CARE. SHOW NO TOOL MARKS OR THREADS.	
PROTECT THE MATERIALS OF	 DLACK STEEL FIFE. ASTMASS ERW GRADE B, STANDARD WEIGHT (SCHEDULE 40) OR EXTRA STRONG (SCHEDULE 80) AS SPECIFIED. D. COPPER TUBING: ASTM B88, TYPE L OR K AS SPECIFIED. 	A. GENERAL REQUIREMENTS FOR METALLIC VALVES, NPS 2 AND SMALLER: COMPLY WITH ASME B16.33.	MANUFACTURER. 3.05 HANGERS AND SUPPORTS	DIELECTRIC UNIONS: MAKE CONNECTIONS BETWEEN TWO DISSIMILAR METAL PIPES WITH DIELECTRIC UNIONS.	
ELY REPAIR ALL DAMAGED AND R, AT NO ADDITIONAL COST TO	E. PVC PIPE AND FITTINGS: ASTM D1785 CLASS 150 WITH ASTM D 2853 SOLVENT CEMENT JOINTS UNLESS OTHERWISE SPECIFIED. SCHEDULE 40. PVC PLASTIC PIPE FITTINGS:	 CWP RATING: 125 PSIG. THREADED ENDS: COMPLY WITH ASME B1.20.1. 	HOLD HORIZONTAL PIPE RUNS FIRMLY IN PLACE USING APPROVED STEEL AND IRON HANGERS, SUPPORTS, AND/OR PIPE RESTS UNLESS OTHERWISE INDICATED. SUSPEND HANGER RODS FROM CONCRETE INSERTS OR FROM APPROVED BRACKETS, CLAMPS OR CLIPS. HANG PIPES	UNIONS: PROVIDE A UNION ON ONE SIDE OF EACH SHUTOFF VALVE, AT BOTH SIDES OF AUTOMATIC VALVES, AT EQUIPMENT CONNECTIONS AND ELSEWHERE INDICATED OR REQUIRED, UNLESS FLANGES ARE INDICATED.	
	ASTM F 628, SCHEDULE 40. F. ACRYLONITRILE BUTADIENE STYRENE (ABS) PLASTIC PIPE: ASTM D 2661, SCHEDULE 40, ASTM F 628, SCHEDULE 40. ABS PLASTIC PIPE FITTINGS: ASTM F 409, ACCESSIBLE AND	 DRYSEAL THREADS ON FLARE ENDS: COMPLY WITH ASME B1.20.3. TAMPERPROOF FEATURE: LOCKING FEATURE FOR VALVES INDICATED IN 	INDIVIDUALLY OR IN GROUPS IF SUPPORTING STRUCTURE IS ADEQUATE TO SUPPORT WEIGHT OF PIPING AND FLUID. EXCEPT FOR BUIRED PIPING, HANG OR SUPPORT PIPE RUNS SO THAT THEY MAY EXPAND OR CONTRACT FREELY WITHOUT STRAIN TO PIPE OR EQUIPMENT.	FLOOR, WALL AND CEILING PLATES: PROVIDE WHERE PIPES PIERCE FINISHED SURFACES. NOISE:INSTALL SOIL, WASTE, AND WATER PIPING IN A MANNER THAT PREVENTS ANY UNUSUAL	
ER AWARD OF CONTRACT AND E DELIVERED TO THE JOB SITE, AND EQUIPMENT, PER DIVISION 1	REPLACEABLE, SOLVENT CEMENT AND THREADED TYPES, DRAIN PATTERN. G. CAST IRON SOIL PIPE AND FITTINGS: ASTM A74	 "UNDERGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE" AND "ABOVEGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE" ARTICLES. 5. LISTING: LISTED AND LABELED BY AN NRTL ACCEPTABLE TO AUTHORITIES 	1. HORIZONTAL STEEL PIPING: PROVIDE HANGERS OR SUPPORTS EVERY 10 FT. EXCEPT EVERY 8 FT. FOR PIPING 1-1/4 IN. AND SMALLER.	NOISE FROM FLOW OF WATER UNDER NORMAL CONDITIONS. SHUTOFF VALVES: PROVIDE WHERE INDICATED AND REQUIRED FOR ADEQUATE CONTROL OF	
	H. WELDED BLACK STEEL FITTINGS: ASTM A234 GRADE B, 150-POUND FOR STANDARD WEIGHT PIPING, 300-POUND FOR EXTRA STRONG PIPING, OR OF WEIGHT OR SCHEDULE OF MATCHING PIPING.	 HAVING JURISDICTION FOR VALVES 1 INCH AND SMALLER. 6. SERVICE MARK: VALVES 1-1/4 INCHES TO NPS 2 SHALL HAVE INITIALS "WOG" PERMANENTLY MARKED ON VALVE BODY. 	 HORIZONTAL COPPER TUBING: FOR 2 IN. DIAMETER AND OVER, PROVIDE HANGERS EVERY 10 FT.; FOR 1-1/2 IN. DIAMETER AND SMALLER, EVERY 6 FT. HORIZONTAL CAST-IRON HUB AND SPIGOT PIPING: PROVIDE HANGERS OR 	SYSTEMS AND FOR ISOLATION OF FIXTURE GROUPS AND EQUIPMENT. BURIED PIPING: INSTALL WITH MINIMUM 36 IN. COVERAGE UNLESS OTHERWISE INDICATED. LAY PIPING ACCURATELY TO GRADE WHERE INVERT ELEVATIONS ARE INDICATED. WHEN	NOI I
	I. THREADED MALLEABLE IRON FITTINGS: ANSI B16.3, 150-POUND FOR STANDARD WEIGHT PIPING, 300-POUND FOR EXTRA STRONG PIPING, OR OF WEIGHT OR SCHEDULE	B. GENERAL REQUIREMENTS FOR METALLIC VALVES, NPS 2-1/2 AND LARGER: COMPLY WITH ASME B16.38	 4. HORIZONTAL CAST-IRON NO-HUB PIPING: PROVIDE HANGERS OR SUPPORTS AT 	REQUIRED, PROVIDE THRUST BLOCKS PER MANUFACTURER'S RECOMMENDATIONS.	
	OF MATCHING PIPING EITHER BLACK OR GALVANIZED TO MATCH PIPING. J. WELDED FLANGES: ASTM A181 GRADE B, 150-POUND FOR STANDARD WEIGHT PIPING, 300-POUND FOR EXTRA STRONG PIPING OR OF EQUAL WEIGHT OF CONNECTED	 CWP RATING: 125 PSIG FLANGED ENDS: COMPLY WITH ASME B16.5 FOR STEEL FLANGES. 	EACH SIDE OF NO-HUB FITTINGS. PROVIDE ANTI-SEPARATION BRACING AT EACH 90 DEGREE CHANGE OF DIRECTION.	ACCESSIBILITY: INSTALL WORK READILY ACCESSIBLE FOR NORMAL OPERATION, READING OF INSTRUMENTS, ADJUSTMENT, SERVICE, INSPECTION AND REPAIR. PROVIDE ACCESS PANELS WHERE INDICATED AND REQUIRED.	NA NA
ED RECORD OF AS-BUILT OVED BASE DATUM, OF BURIED PLUGGED TEES, CAPPED ENDS,	EQUIPMENT. K. COPPER FITTINGS: WROUGHT COPPER, ANSI SPECIFICATION B16.22.	3. TAMPERPROOF FEATURE: LOCKING FEATURE FOR VALVES INDICATED IN "UNDERGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE" AND	5. VERTICAL PIPING: SUPPORT AT FLOOR WITH IRON PIPE CLAMPS. BRANCHES: PROVIDE SEPARATE HANGERS OR SUPPORTS FOR BRANCH LINES 6 FT. OR MORE IN LENGTH.	PIPE JOINTS: MAKE SCREWED JOINTS WITH A MINIMUM AMOUNT OF COMPOUND APPLIED TO THE MALE THREAD ONLY. ALL JOINTS SHALL BE MADE PER CODE REQUIREMENTS.	RIZO
SHOWN IN THE PLANS.	L. BALL VALVES, DOMESTIC WATER: BRONZE, FULLPORT, CLASS 150, THREADED. GRINNELL 3750 OR 171N	 "ABOVEGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE" ARTICLES. 4. SERVICE MARK: INITIALS "WOG" SHALL BE PERMANENTLY MARKED ON VALVE BODY. 	SOUND AND ELECTROLYSIS ISOLATORS: PROVIDE AT ALL HANGERS AND SUPPORTS FOR HOT AND COLD DOMESTIC WATER LINES . SECURELY ATTACH PIPE TO WALLS, STUDS, ETC. ALL	PROVIDE PIPE ISOLATION AT ALL HANGERS FOR NON-INSULATED MATERIALS.	Υ, AF
INSTRUCTIONS AND BROCHURES INSTRUCT OWNER'S OPERATING	NIBCO T-585 JAMESBURY 300 M. PARTITION STOP VALVES: T&S B415, LOOSE KEY TYPE WITH WALL FLANGE.		SUCH PIPING ISOLATED FROM STRUCTURE BY "TRISOLATORS".	PIPING ROUGH-IN FOR FIXTURES: SUPPORT OR SECURE TO BUILDING CONSTRUCTION OF FIRMLY ANCHORED WASTE PIPING SO THAT PIPES CANNOT BE DISPLACED. DO NOT SECURE TO WALLS. USE OF MAKESHIFT DEVICES, SUCH AS ROPE, WIRE, TAPE, ETC. IS PROHIBITED.	BHO CIT
NING THE SITE AND COORDINATE	N. BALANCING COCKS 2 INCHES AND SMALLER SHALL BE CRANE NO 250 OR MILWAUKEE BUTTERBALL BB2-100 OR BB2-350 WITH MEMORY STOP.			HORIZONTAL DRAINAGE PIPING SHALL BE INSTALLED IN UNIFORM ALIGNMENT AT UNIFORM SLOPES. THE MINIMUM SLOPE OF HORIZONTAL PIPE 4" OR LARGER IN DIAMETER MAY HAVE A SLOPE OF NOT LESS THAN 1% (1/8 INCH PER FOOT). THE MINIMUM SLOPE OF HORIZONTAL	AGE CLUE
ING CONDITIONS. REPORT TO ENT PROPER PROVISIONS OF RVICE LINES WITH SERVICING	O. SOLDER: O.1. JOINTS IN COPPER PIPING ABOVE GRADE SHALL BE STAY SAFE 50 SOLDER OR 95-5 SOLDER SHALL BE SILFOS OR SILVERFLOW FOR ALL REFRIGERANT PIPING JOINT.			PIPE LESS THAN 4" MAY HAVE A SLOPE OF NOT LESS THAN 2% (1/4 INCH PER FOOT). - END -	
NG. BY SUBMISSION OF THE BID, RIZED HIMSELF WITH THE AS REQUIRED FOR HOOKUP AND	P. CONDENSATE DRAINS SHALL BE TYPE L HARD COPPER TUBING WITH WROUGHT-COPPER FITTINGS OR PVC WHERE ALLOWED. A P-TRAP SHALL BE PROVIDED				
ADDITIONAL CHARGE.	AT DRAIN PANS. Q. GAS PIPING IN THE BUILDING AND NOT BURIED SHALL BE STANDARD WEIGHT BLACK STEEL PIPE. PIPE 2-INCH AND SMALLER SHALL HAVE EITHER WELDED OR SCREWED FITTINGS. PIPE 2-1/2" OR LARGER SHALL HAVE WELDED FITTINGS. ALL GAS PIPING				
NGEMENTS WITH APPLICABLE RVICE LINES. PAY ALL FEES JP CHARGE AND UTILITY	SHALL BE INSTALLED IN ACCORDANCE WITH IFG CODE, DOMINION ENERGY REQUIREMENTS AND REGULATIONS. GAS PIPING BURIED SHALL BE POLYETHYLENE PIPE WITH CONTINUOUS 18 GAUGE TRACING WIRE WITH SCHEDULE 40 BLACK STEEL				
WITH OTHER TRADES. GEMENT OF PIPING, EQUIPMENT,	EPOXY COATED TRANSITION RISERS AND/OR TRANSITION FITTINGS PER ASTM D2513 APPROVED AND INSTALLED IN ACCORDANCE WITH DOMINION ENERGY COMPANY REGULATIONS. PAINT ALL EXTERIOR EXPOSED GAS PIPING.				
SELY AS POSSIBLE.					
OR THE ALTITUDE WHEREIN THE LISO INCLUDE A COMPLIANCE EEN ADJUSTED, MODIFIED OR					2208-076
E ALTITUDE OF THE PROJECT AND AS OR PROPANE GAS IF					M703

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			GENERAL NOTES		SCHEMATIC S
м		1.	THE ELECTRICAL SYSTEMS DEFINED BY THESE PLANS AND SPECIFICATIONS ARE TO BE CONSTRUCTED AS COMPLETE AND OPERABLE SYSTEMS AND SHALL BE BID WITH THIS INTENT. THE CONTRACTOR SHALL	SYMBOL	DESCRIPTION ONE-LINE DIAGRAM FUSE
			VISIT THE SITE, READ ALL THE RELEVANT DOCUMENTS AND BECOME FAMILIAR WITH THE TYPE OF CONSTRUCTION AND WORK TO BE ACCOMPLISHED. SHOULD ANY ERROR, OMISSION OR CONFLICT EXIST IN EITHER THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING	100A °)	
_			BEFORE SUBMITTING HIS BID PRICE SO A CHANGE CAN BE ISSUED IN A PRE-BID ADDENDUM. OTHERWISE, THE CONTRACTOR AND/OR EQUIPMENT SUPPLIER SHALL SUPPLY THE PROPER MATERIALS AND LABOR TO INSTALL COMPLETE AND OPERABLE SYSTEMS AT THEIR OWN EXPENSE. WHEN EACH	3P ./	
			ELECTRICAL SYSTEM IS COMPLETE AND OPERABLE STSTEMS AT THEIR OWN EXPENSE. WHEN EACH OPERATION. ANY INCOMPLETE SYSTEM SHALL BE MADE COMPLETE AND OPERABLE.		ONE-LINE DIAGRAM METER BASE
L		2.	THE ARCHITECTURAL AND MECHANICAL PLANS ARE CONSIDERED A PART OF THE ELECTRICAL DOCUMENTS SO FAR AS THEY APPLY. THE ELECTRICAL CONTRACTOR SHALL REFER TO AND COORDINATE	÷	ONE-LINE DIAGRAM GROUND ROD
			WITH THEM. NO EXTRA COST SHALL BE ALLOWED FOR FAILURE TO COORDINATE THE CONTRACT DOCUMENTS WITH OTHER TRADES AND/OR IF EQUIPMENT DIMENSIONS ARE GREATER THAN SPECIFIED AND/OR DIMENSIONED ON THE PLANS.		
			NO ADDITIONS TO THE CONTRACTOR BID WILL BE ALLOWED FOR CHANGES MADE NECESSARY BY INTERFERENCE WITH OTHER WORK.	250A-4	ONE-LINE DIAGRAM CONDUCTOR CALL
к		4.	THE ELECTRICAL CONTRACTOR SHALL PROVIDE EQUIPMENT, MATERIALS AND LABOR FOR THE CONNECTIONS OF ALL EQUIPMENT SHOWN ON THE PLANS – ARCHITECTURAL, MECHANICAL, ETC.		
		5.	THIS PROJECT IS TO BE INSTALLED IN STRICT ACCORDANCE WITH LOCAL AND STATE CODES AND THE NEC. IF AT ANY TIME DURING CONSTRUCTION, OR AFTER, SOMETHING IS FOUND TO BE INSTALLED IN VIOLATION OF THE CODES LISTED ABOVE, IT SHALL BE CORRECTED AT THE CONTRACTORS EXPENSE.	SYMBOL	POWER SYI DESCRIPTION
_		6.	THE ELECTRICAL CONTRACTOR SHALL INSTALL A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT RUN. CONDUIT SHALL NOT BE USED AS AN EQUIPMENT GROUNDING CONDUCTOR. THE ELECTRICAL CONTRACTOR SHALL GROUND THE ELECTRICAL SYSTEM IN ACCORDANCE WITH LOCAL AND NATIONAL CODES.	(S)(D)(Q) Φ Φ 	(S)SIMPLEX (D)DUPLEX (Q)QUADPLEX OR CONVENIENCE OUTLET, STANDARD
l.		7.	ELECTRICAL CONTRACTOR SHALL CONFIRM MINIMUM CODE (NEC) WORKING CLEARANCE BEFORE	₱ ₱ ቑ	CONVENIENCE OUTLET, GFCI
			INSTALLING ANY ELECTRICAL PANELS OR CABINETS AND SHALL MOVE THE PANELS AT HIS EXPENSE IF REJECTED BY AN INSPECTOR. IF CLEARANCE IS NOT POSSIBLE, THE DESIGNER SHALL BE NOTIFIED IMMEDIATELY IN WRITING.	��ቁ	CONVENIENCE OUTLET, CUSTOM MOUN SEE ARCHITECTURAL INTERIOR ELEVAT
_		8.	THE CONTRACTOR SHALL ALLOW THE MOVEMENT, BEFORE ROUGH-IN, OF ANY ELECTRICAL PANEL, DEVICE, LIGHT FIXTURE, ETC. A DISTANCE OF 10 FEET WITHOUT REQUIRING ADDITIONAL COST TO THE PROJECT.	��ቁ	CONVENIENCE OUTLET, CUSTOM MOUN SEE ARCHITECTURAL INTERIOR ELEVAT
		9.	THE ELECTRICAL CONTRACTOR SHALL SECURE ALL CONDUIT TO THE STRUCTURE AS IT IS SET IN PLACE USING INDUSTRY STANDARD METHODS AND PRACTICES.	⊕ ^{wp}	CONVENIENCE OUTLET IN WEATHERPR
н		10.	TO ASSURE ALL DEVICES ARE RIGIDLY SET, THE ELECTRICAL CONTRACTOR SHALL SECURE ALL DEVICE BOXES WITH BRACKETS, HANGERS, ETC. DESIGNED FOR THE APPLICATION. ANY DEVICE BOXES NOT	•	SPECIAL PURPOSE OUTLET
		11.	SECURED WILL BE MADE SECURE AT THE CONTRACTORS EXPENSE. BEFORE ANY ELECTRICAL CONDUIT, BOXES, ETC. ARE COVERED (FLOOR, CEILINGS, WALLS, ETC.), THEY		
			SHALL BE APPROVED BY THE INSPECTING OFFICER (INSPECTOR). THE UNCOVERING AND REPLACEMENT OF ELECTRICAL WORK FOR THE INSPECTION PURPOSES WILL BE AT THE COST OF THE ELECTRICAL CONTRACTOR.	\$ 6	MANUAL MOTOR WITH THERMAL OVERL
G		12.	LENGTHS OF FLEXIBLE CONDUIT GREATER THAN 48 INCHES SHALL NOT BE INSTALLED ON THIS PROJECT, EXCEPT WHIPS ON LIGHT FIXTURES, WHICH MAY BE UP TO SIX (6) FEET IN LENGTH. FLEXIBLE CONDUIT	$\langle \hat{\mathbf{G}} \rangle$	MOTOR, ROOF
		13.	SHALL NOT BE CONCEALED. ALL BATTERY POWERED OR CONTINUOUS BURN LIGHT FIXTURES SHOWN ON THE PLANS, SUCH AS EXIT LIGHTS, OR NIGHT LIGHTS, SHALL BE CONNECTED TO THE UN-SWITCHED LEG OF THE LIGHTING CIRCUIT		PANEL BOARD, SURFACE
_			FEEDING THAT AREA. NORMAL LIGHTING FIXTURES INDICATED WITH REGULAR BATTERY BACK UP SHALL BE SWITCHED AS INDICATED ON PLANS WITH UN-SWITCHED CONDUCTOR PROVIDED FOR BATTERY CHARGING UNIT.		PANEL BOARD, RECESSED
F		14.	ALL SURFACE/LAY-IN MOUNTED FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE AND NOT THE CEILING GRID.		ELECTRICAL L
		15.	DURING CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL REMOVE, REROUTE, AND/OR RELOCATE ANY EXISTING ELECTRICAL EQUIPMENT THAT CONFLICTS WITH THE REMODEL OR ADDITION. ALL SYSTEMS	SYMBOL	
_			SHALL BE OPERABLE AT THE COMPLETION OF THE PROJECT. THE OWNER RESERVES FIRST RIGHT OF REFUSAL ON ALL ELECTRICAL EQUIPMENT WHICH IS NOT TO BE REUSED. EQUIPMENT WHICH IS NOT REUSED OR RECLAIMED BY THE OWNER BECOMES THE PROPERTY OF THE ELECTRICAL CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES.		CONDUIT RUN CONCEALED IN WALL OR
		16.	THE ELECTRICAL CONTRACTOR SHALL MAINTAIN ELECTRICAL CONTINUITY TO REMAINING EQUIPMENT WHEN ANY EXISTING ELECTRICAL EQUIPMENT IS REMOVED.		CONDUIT RUN CONCEALED IN FLOOR O
E					DEMOLITION
			SYMBOL NOTES	***	DEMOLITION
		(1)			EXISTING TO REMAIN
		(2) (3) (4)	WIRE LIGHT FIXTURE FROM ADJACENT J-BOX CONNECT NEAREST UN-SWITCHED HOT CONDUCTOR TO EMERGENCY BALLAST		HOME RUN TO PANEL
D		(5) (6) (7)	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL INTERIOR ELEVATIONS	•	CONDUIT STUB DOWN
		(8) (9) (10)	PROVIDE UL LISTED DEVICE COMPATIBLE WITH THE FIRE ALARM PANEL/SYSTEM	o	CONDUIT STUB UP
		(11) (12) (13)	PROVIDE MUD RING AND/OR BOX COVER APPROPRIATE FOR DEVICE/FIXTURE SERVED		ELECTRICAL
		(14) (15)	SIZE TO THE EQUIPMENT BEING CONTROLLED		OVE COUNTER ER EXISTIN
С			NAC: NOTIFICATION APPLIANCE CIRCUIT PANEL ANNUN: GRAPHIC ANNUNCIATOR PANEL SES: SMOKE EVACUATION SYSTEM PANEL	AFF AB	AILABLE FAULT CURRENT EX EXISTIN OVE FINISHED FLOOR FMC FLEXIB OVE FINISHED GRADE GC GENER
		(16) (17)	LIGHT FIXTURES ARE SCALED WITHIN THE DRAWINGS BASED ON ACTUAL DIMENSIONS	AMP AM	PS INTERRUPTING CAPA. GEC GROUN PS GFCI GROUN ERICAN WIRE GAUGE INTERR
				BC BAI BFC BEI	RE COPPER GND GROUN LOW FINISHED CEILING IMC INTERN LOW FINISHED GRADE IG ISOLAT
				C CO CND CO	NDUIT KCMIL 1000 CI NDUCTOR LFMC LIQUID NDUIT ONLY CONDU
В				CR CR CT CU	ITICAL LFNC LIQUID- RRENT TRANSDUCER METAL
				DED DE DFA DR	PPER MATERIAL MC MECHA DICATED MCA MINIMU OP FROM ABOVE N1 NEMA 1
				EM EM	ECTRICAL CONTRACTOR N3R NEMA 3 ERGENCY/EGRESS BATT. N NEW ECTRIC METALLIC TUBING NL NIGHT I
				ENT ELE	ECTRIC NON-METALLIC SWITCH BING
А					
				5	
I	1			5	6

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HEMATIC SYMBOL	SCHEDUL	E	POWER SYMBOL SCHEDU					
DN	MOUNTING	COMMENTS	SYMBOL	DESCRIPTION	MOUNTIN			
DIAGRAM FUSE			(S)(D)(Q)	(S)SIMPLEX (D)DUPLEX (Q)QUADPLEX OR DOUBLE DUPLEX				
			Φ Φ ⊕	CONVENIENCE OUTLET, STANDARD	+18"			
DIAGRAM CIRCUIT BREAKER			•••	CONVENIENCE OUTLET, GFCI	+18"			
DIAGRAM METER BASE			♦♥♥	CONVENIENCE OUTLET, CUSTOM MOUNTED. SEE ARCHITECTURAL INTERIOR ELEVATIONS	AS NOTE			
DIAGRAM GROUND ROD			+ + +	CONVENIENCE OUTLET, CUSTOM MOUNTED GFCI. SEE ARCHITECTURAL INTERIOR ELEVATIONS	AS NOTE			
DIAGRAM TRANSFORMER			•		AS NOTE			
			¶	CONVENIENCE OUTLET IN WEATHERPROOF ENCLOSURE	+18"			
DIAGRAM CONDUCTOR CALLOUT				SPECIAL PURPOSE OUTLET	AS NOTE			
OWER SYMBOL S	CHEDULE		Ø	DIRECT CONNECTION TO EQUIPMENT	AS NOTE			

	MOUNTING	COMMENTS
QUADPLEX OR DOUBLE DUPLEX		
STANDARD	+18"	
GFCI	+18"	
CUSTOM MOUNTED. ERIOR ELEVATIONS	AS NOTED	(6)
CUSTOM MOUNTED GFCI. ERIOR ELEVATIONS	AS NOTED	(6)
N WEATHERPROOF ENCLOSURE	+18"	
ET	AS NOTED	(6)
	AS NOTED	(12)
IERMAL OVERLOAD		
	ROOF	
	+6'-6" A.F.F.	(15)
D	+6'-6" A.F.F.	(15)

7

	POWER SYMBOL SCH	EDULE			LIGHTING SYMBOL SCH	IEDULE	=
MBOL	DESCRIPTION	MOUNTING	COMMENTS	SYMBOL	DESCRIPTION	MOUNTING	COMMEN
(D)(Q)	(S)SIMPLEX (D)DUPLEX (Q)QUADPLEX OR DOUBLE DUPLEX			•	LINEAR LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	CEILING	(1)(2)(3)(1
\$ \$	CONVENIENCE OUTLET, STANDARD	+18"			EMERGENCY LINEAR LIGHT FIXTURE	CEILING	(1)(2)(3)(
₽ ₽	CONVENIENCE OUTLET, GFCI	+18"					
₽₽	CONVENIENCE OUTLET, CUSTOM MOUNTED. SEE ARCHITECTURAL INTERIOR ELEVATIONS	AS NOTED	(6)	-		WALL	(1)(2)(3)(
•	CONVENIENCE OUTLET, CUSTOM MOUNTED GFCI. SEE ARCHITECTURAL INTERIOR ELEVATIONS	AS NOTED	(6)		EMERGENCY LINEAR LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	WALL	(1)(2)(3)(
₽₽	CONVENIENCE OUTLET, CUSTOM MOUNTED 2 CIRCUIT. SEE ARCHITECTURAL INTERIOR ELEVATIONS	AS NOTED	(6)		LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	CEILING	(1)(3)
WP	CONVENIENCE OUTLET IN WEATHERPROOF ENCLOSURE	+18"			EMERGENCY LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	CEILING	(1)(3)
	SPECIAL PURPOSE OUTLET	AS NOTED	(6)	0	LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	CEILING	(1)(2)
Ð	DIRECT CONNECTION TO EQUIPMENT	AS NOTED			EMERGENCY LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	CEILING	(1)(2)
 D	JUNCTION BOX	AS NOTED	(12)	O	LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	SUSPENDED	(1)(2)(3
_					CEILING FAN AND LIGHT COMBO. SEE LUMINAIRE SCHEDULE	SUSPENDED	
D	JUNCTION BOX, WALL	AS NOTED	(12)	Ю	LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	AS NOTED	(1)(2)
	JUNCTION BOX, FLOOR	FLOOR	(12)	н©	EMERGENCY LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	AS NOTED	(1)(2)
TH	MANUAL MOTOR WITH THERMAL OVERLOAD			\otimes	EXIT SIGN. SEE LUMINAIRE SCHEDULE	CEILING	(1)(4)(5
<u> </u>	NON-FUSED DISCONNECT SWITCH	AS NOTED	(13)(14)	н⊗	EXIT SIGN, ON WALL. SEE LUMINAIRE SCHEDULE	AS NOTED	(1)(2)(4)(
ን	FUSED DISCONNECT SWITCH	AS NOTED	(13)(14)	9.0	EMERGENCY BUG EYE, ON WALL. SEE LUMINAIRE SCHEDULE	AS NOTED	(1)(2)
IWP	FUSED DISCONNECT SWITCH IN WEATHERPROOF ENCLOSURE	AS NOTED	(13)(14)	P P	POWER PACK	CEILING	
Ś	MOTOR			⊕	VACANCY SENSOR	CEILING	(7)
j)	MOTOR, ROOF	ROOF		₩ ₩	DAYLIGHT SENSOR	CEILING	(7)
/	PANEL BOARD, SURFACE	+6'-6" A.F.F.	(15)				
/	PANEL BOARD, RECESSED	+6'-6" A.F.F.	(15)	\$	SINGLE POLE SWITCH	+4'-0"	(17)
				\$ ²	DOUBLE POLE, SINGLE THROW SWITCH	+4'-0"	(17)
	VOICE & DATA SYMBOL S	CHEDL	JLE	\$ ³	THREE WAY SWITCH	+4'-0"	(17)
IBOL	DESCRIPTION	MOUNTING	COMMENTS	\$\$	DUAL LEVEL SWITCH BANK	+4'-0"	(17)
7	TELEPHONE OUTLET, SINGLE PORT	+18"		↓	DIMMING SWITCH	+4'-0"	(17)
7	DATA OUTLET, DUAL PORT	+18"		\$	LOW VOLTAGE SWITCH. SEE RELAY PANEL	+4'-0"	(17)
F	DATA OUTLET, DUAL PORT SEE ARCHITECTURAL INTERIOR ELEVATIONS		(6)	⊕#	VACANCY SWITCH. ATTRIBUTE SIGNIFES MODEL NUMBER	+4'-0"	(17)
7	DUAL DATA AND DUAL TELEPHONE PORT	+18"			TIME CLOCK	AS NOTED	
F	DUAL DATA AND DUAL TELEPHONE PORT SEE ARCHITECTURAL INTERIOR ELEVATIONS		(6)	X	LIGHTING CONTROL PANEL, SURFACE	+6'-6" A.F.F.	
	TELEVISION/COAXIAL/HDMI OUTLET	AS NOTED	(6)(11)		LIGHTING CONTROL PANEL, RECESSED	+6'-6" A.F.F.	
Ò	WIRELESS ACCESS POINT (WAP)	CEILING					

	POWER SYMBOL SCH	EDULE			LIGHTING SYMBOL SC		
		MOUNTING	COMMENTS	SYMBOL	DESCRIPTION	MOUNTING	COMME
5)(D)(Q) Ф ⊕	(S)SIMPLEX (D)DUPLEX (Q)QUADPLEX OR DOUBLE DUPLEX CONVENIENCE OUTLET, STANDARD	+18"		o	LINEAR LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	CEILING	(1)(2)(3)(
		+18"			EMERGENCY LINEAR LIGHT FIXTURE	CEILING	(1)(2)(3)(
				⊊ਾ⊋	LINEAR LIGHT FIXTURE	WALL	(1)(2)(3)
* *		AS NOTED	(6)		EMERGENCY LINEAR LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	WALL	(1)(2)(3)
† †	SEE ARCHITECTURAL INTERIOR ELEVATIONS	AS NOTED	(6)	0	LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	CEILING	(1)(3)
•	CONVENIENCE OUTLET, CUSTOM MOUNTED 2 CIRCUIT. SEE ARCHITECTURAL INTERIOR ELEVATIONS	AS NOTED	(6)		EMERGENCY LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	CEILING	(1)(3)
Φ^{WP}	CONVENIENCE OUTLET IN WEATHERPROOF ENCLOSURE	+18"		0	LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	CEILING	(1)(2)
۲	SPECIAL PURPOSE OUTLET	AS NOTED	(6)		EMERGENCY LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	CEILING	(1)(2)
Ø	DIRECT CONNECTION TO EQUIPMENT	AS NOTED					
0	JUNCTION BOX	AS NOTED	(12)		LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	SUSPENDED	(1)(2)(
Ю	JUNCTION BOX, WALL	AS NOTED	(12)		CEILING FAN AND LIGHT COMBO. SEE LUMINAIRE SCHEDULE	SUSPENDED	
O	JUNCTION BOX, FLOOR	FLOOR	(12)	ю	LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	AS NOTED	(1)(2)
	MANUAL MOTOR WITH THERMAL OVERLOAD			н©	EMERGENCY LIGHT FIXTURE. SEE LUMINAIRE SCHEDULE	AS NOTED	(1)(2)
ָ ר	NON-FUSED DISCONNECT SWITCH	AS NOTED	(12)(14)	\otimes	EXIT SIGN. SEE LUMINAIRE SCHEDULE	CEILING	(1)(4)(
			(13)(14)	ю	EXIT SIGN, ON WALL. SEE LUMINAIRE SCHEDULE	AS NOTED	(1)(2)(4)
Ŀ	FUSED DISCONNECT SWITCH	AS NOTED	(13)(14)	29	EMERGENCY BUG EYE, ON WALL. SEE LUMINAIRE SCHEDULE	AS NOTED	(1)(2)
E H Mb	FUSED DISCONNECT SWITCH IN WEATHERPROOF ENCLOSURE	AS NOTED	(13)(14)	P	POWER PACK	CEILING	
9	MOTOR			⊕	VACANCY SENSOR	CEILING	(7)
<u>(</u> 6)	MOTOR, ROOF	ROOF		*	DAYLIGHT SENSOR	CEILING	(7)
	PANEL BOARD, SURFACE	+6'-6" A.F.F.	(15)	\$	SINGLE POLE SWITCH	+4'-0"	(17)
<u> </u>	PANEL BOARD, RECESSED	+6'-6" A.F.F.	(15)	\$ ²			
					DOUBLE POLE, SINGLE THROW SWITCH	+4'-0"	(17)
	VOICE & DATA SYMBOL S	SCHEDL	ILE	\$ ³	THREE WAY SWITCH	+4'-0"	(17)
YMBOL	DESCRIPTION	MOUNTING	COMMENTS	\$ \$	DUAL LEVEL SWITCH BANK	+4'-0"	(17)
∇	TELEPHONE OUTLET, SINGLE PORT	+18"		↓	DIMMING SWITCH	+4'-0"	(17)
▼	DATA OUTLET, DUAL PORT	+18"		\$	LOW VOLTAGE SWITCH. SEE RELAY PANEL	+4'-0"	(17)
₩	DATA OUTLET, DUAL PORT SEE ARCHITECTURAL INTERIOR ELEVATIONS		(6)	⊕#	VACANCY SWITCH. ATTRIBUTE SIGNIFES MODEL NUMBER	+4'-0"	(17)
V	DUAL DATA AND DUAL TELEPHONE PORT	+18"			TIME CLOCK	AS NOTED	
*	DUAL DATA AND DUAL TELEPHONE PORT SEE ARCHITECTURAL INTERIOR ELEVATIONS		(6)				
•	TELEVISION/COAXIAL/HDMI OUTLET	AS NOTED	(6)(11)			+6'-6" A.F.F.	
				\mathbb{M}	LIGHTING CONTROL PANEL, RECESSED	+6'-6" A.F.F.	

SYMBOL	DESCRIPTION	MOUNTING	COMMENTS							
0	COORDINATION SYMBOL SCHEDULE									
۲	WIRELESS ACCESS POINT (WAP)	CEILING								
۲	TELEVISION/COAXIAL/HDMI OUTLET	AS NOTED	(6)(11)							

					
	COORDINATION SYMBOL S	SCHED	ULE	Sheet Number	Sheet Title
SYMBOL	DESCRIPTION	MOUNTING	COMMENTS	E001	ELECTRICAL SYMBOLS & NOTES
$\left\langle \begin{array}{c} XX \\ X \end{array} \right\rangle$	MECHANICAL/PLUMBING EQUIPMENT CALLOUT			ED101	ELECTRICAL DEMO PLAN
				E101	ELECTRICAL LIGHTING PLAN - GND LEVEL
$\begin{pmatrix} x \\ xx.x \end{pmatrix}$	DIAGRAM CALLOUT			E102	ELECTRICAL LIGHTING PLAN - DECK LEVEL
				E112	ELECTRICAL POWER PLAN - DECK LEVEL
<u>(K-1</u>)	KITCHEN EQUIPMENT CALLOUT. SEE KITCHEN EQUIPMENT SCHEDULE			E113	ELECTRICAL POWER PLAN - ROOF LEVEL
				E501	ELECTRICAL DIAGRAMS
				E601	ELECTRICAL SCHEDULES
	GENERAL DEMOLITION	NOTES	S	E701	ELECTRICAL SPECIFICATIONS
				E702	ELECTRICAL SPECIFICATIONS
1. ELEC	TRICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES	DURING DEMOLITI	ON AND		

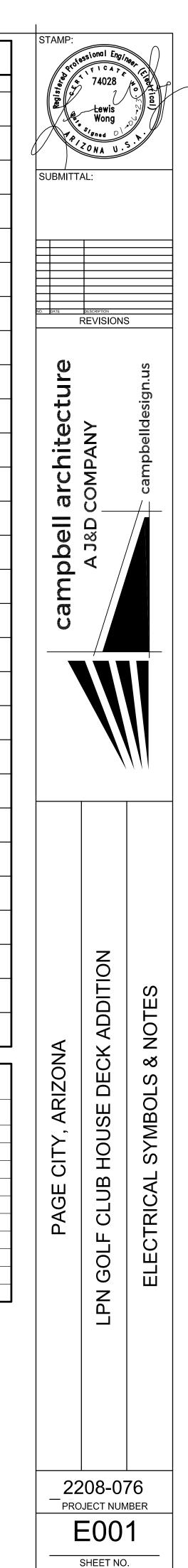
- CONSTRUCTION TO FACILITATE TIMELY WORK.
- 2. ALL AREAS ARE TO BE KEPT CLEAN AND CLEAR OF DEBRIS AT ALL TIMES.
- CONTRACTOR SHALL PATCH AND REPAIR ALL WALLS, CEILINGS, ETC. TO MATCH EXISTING CONDITIONS. PENETRATIONS SHALL BE SEALED WITH FIRE RATED CAULK.
- ROUTE ALL CONDUIT IN A NEAT AND ORDERLY FASHION. ALL CONDUIT SHALL BE CONCEALED ABOVE CEILINGS OR IN WALLS OR FINISHED SPACES UNLESS OTHERWISE INDICATED ON THE PLANS.
- DEVICES SHOWN ON DEMOLITION SHEETS ARE GATHERED FROM AS-BUILT DRAWINGS AND FIELD INVESTIGATION. NOT ALL DEVICES ARE SHOWN. DEVICE PLACEMENT IS SCHEMATIC AND NOT EXACT. CONTRACTOR TO FIELD VERIFY FOR EXACT LOCATIONS AND COORDINATE WORK WITH ALL OTHER DEVICES, EQUIPMENT, CONDUIT, ETC. WHETHER OR NOT SHOWN TO COMPLETE PROJECT.
- CONTRACTOR TO COORDINATE WITH OWNER FOR ITEMS TO BE SALVAGED PRIOR TO DEMOLITION. CONTRACTOR RESPONSIBLE FOR DISPOSING OF ANY MATERIAL THAT THE OWNER DOES NOT WANT TO KEEP.
- CAP AND LABEL ALL EMPTY CONDUIT TO REMAIN.

CAL LINETYPE SCHEDULE MOUNTING COMMENTS

LED IN WALL OR ABOVE CEILING	
LED IN FLOOR OR BELOW GROUND	

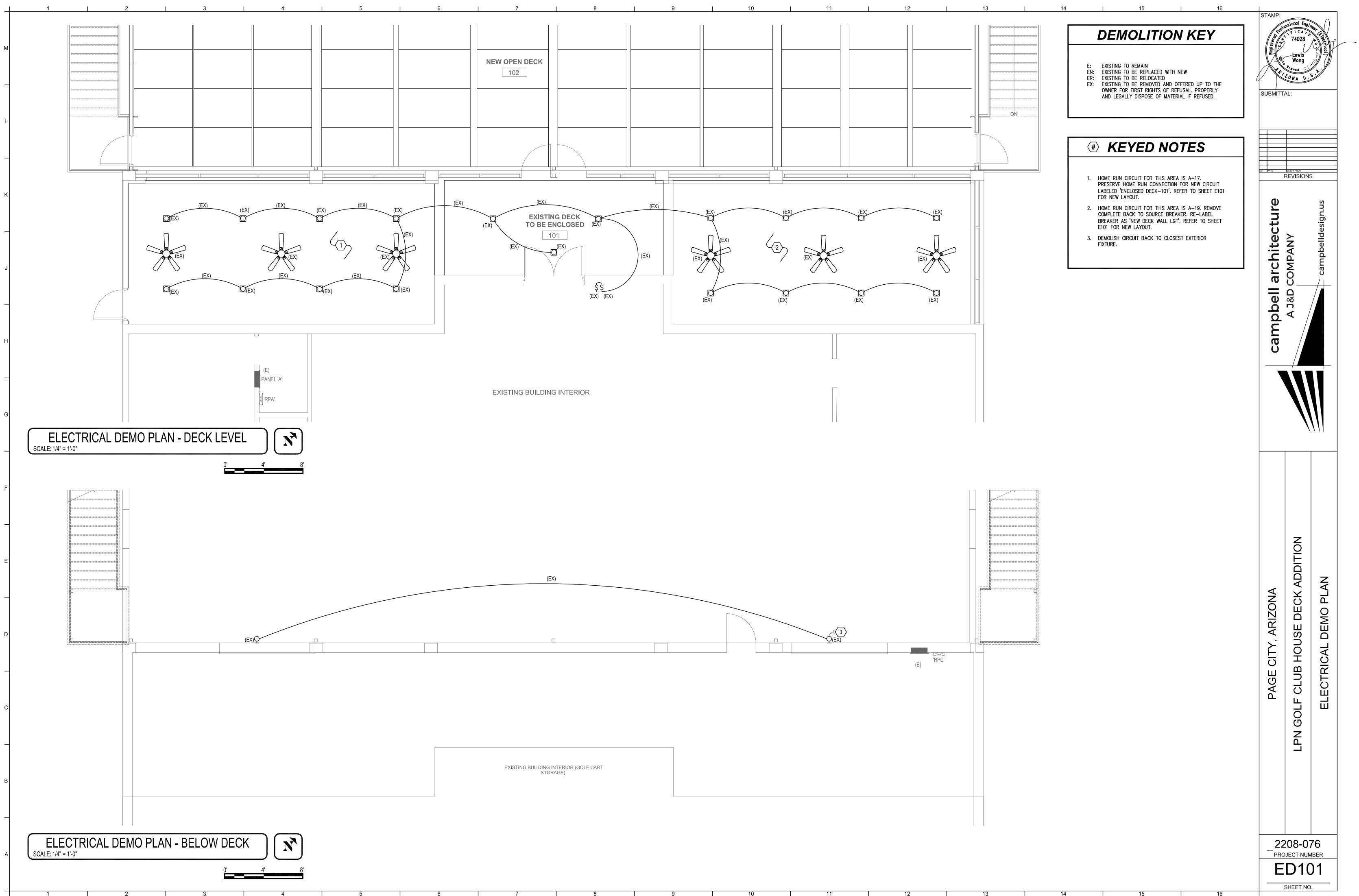
RICAL ABBREVIATIONS

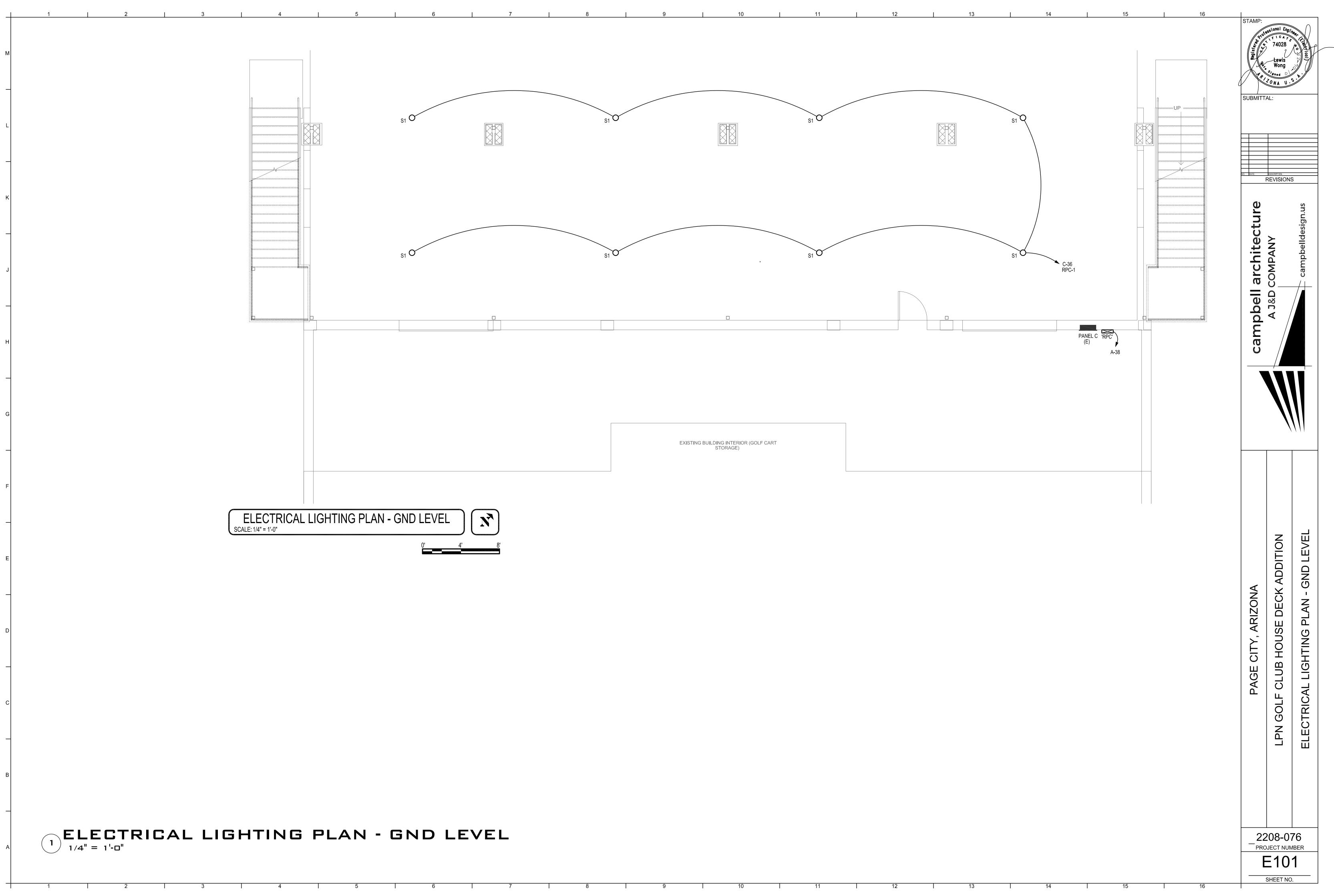
ER	EXISTING TO BE RELOCATED	PC	PLUMBING CONTRACTOR
EX	EXISTING TO REMAIN	POC	POINT OF CONNECTION
FMC	FLEXIBLE METALLIC CONDUIT	POS	POINT OF SALE
GC	GENERAL CONTRACTOR	R	RECEIVER
GEC	GROUND ELECTRODE CONDUCTOR	RM	ROOF MOUNTED
GFC	GROUND FAULT CURRENT	RMC	RIGID METALLIC CONDUIT
	INTERRUPTER	RNC	RIGID NON-METALLIC CONDUIT
GND	GROUND	SBJ	SYSTEM BONDING JUMPER
IMC	INTERMEDIATE METAL CONDUIT	SCA	SHORT CIRCUIT AMPERES
IG	ISOLATED GROUND	Т	TRANSMITTER
KCMIL	1000 CIRCULAR MILS (MCM)	TC	
LFMC	LIQUID TIGHT FLEXIBLE METAL		CONTROLLER
	CONDUIT	UG	
LFNC	LIQUID-TIGHT FLEXIBLE NON-	UNO	
	METAL CONDUIT	UPS	
MC	MECHANICAL CONTRACTOR		SUPPLY
MCA	MINIMUM CIRCUIT AMPS	VA	VOLTS/AMPS
N1	NEMA 1	VIF	
N3R	NEMA 3R	WP	
Ν	NEW	XP	
NL	NIGHT LIGHT, BYPASS LOCAL	XR	EXISTING TO BE REMOVED
	SWITCHING		

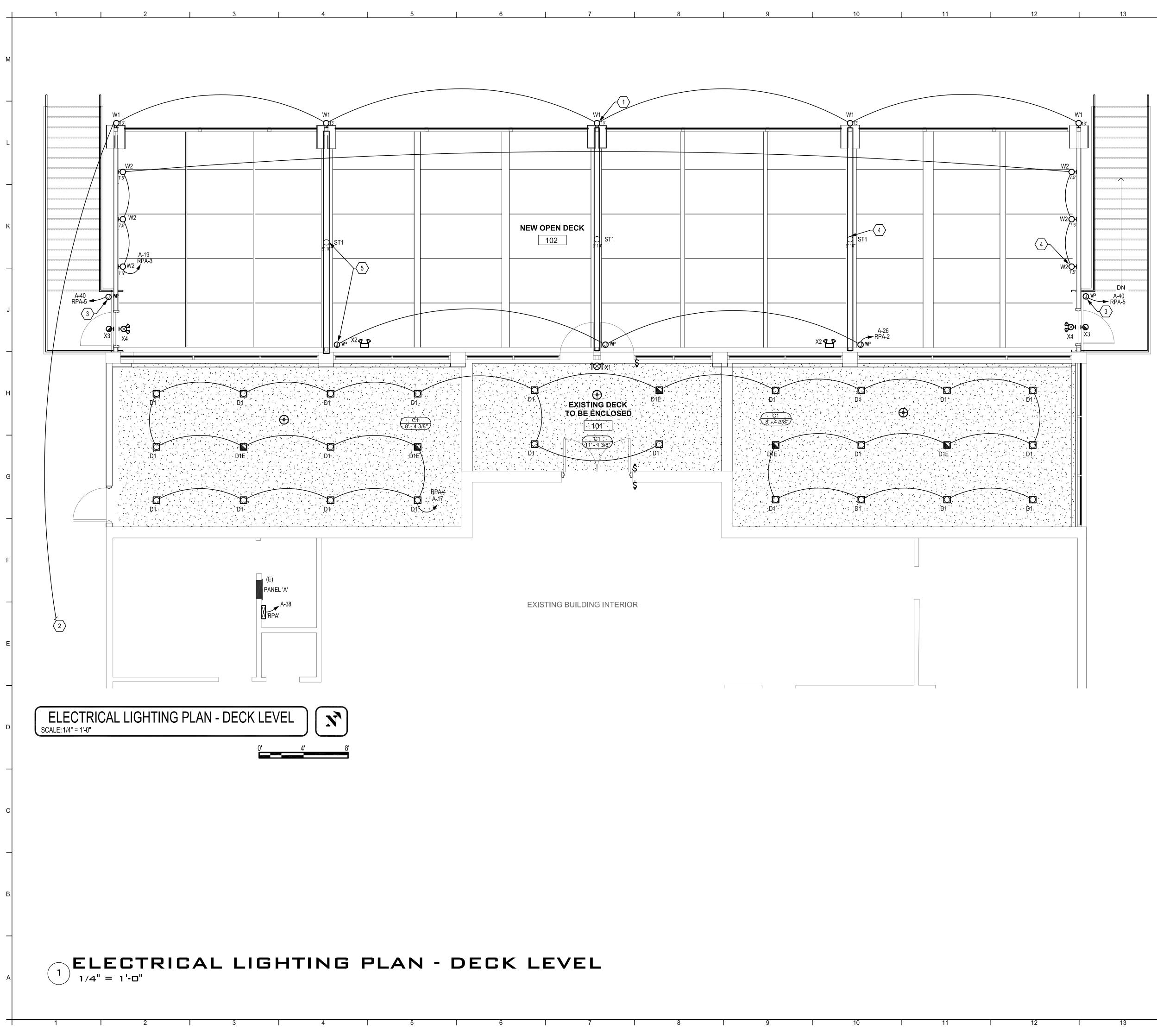


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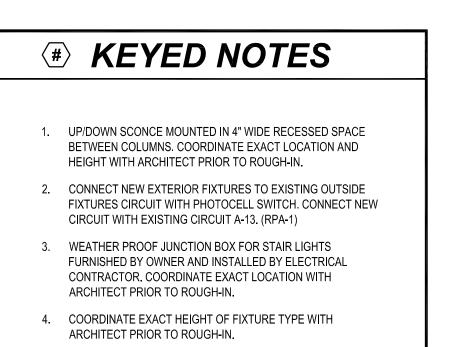
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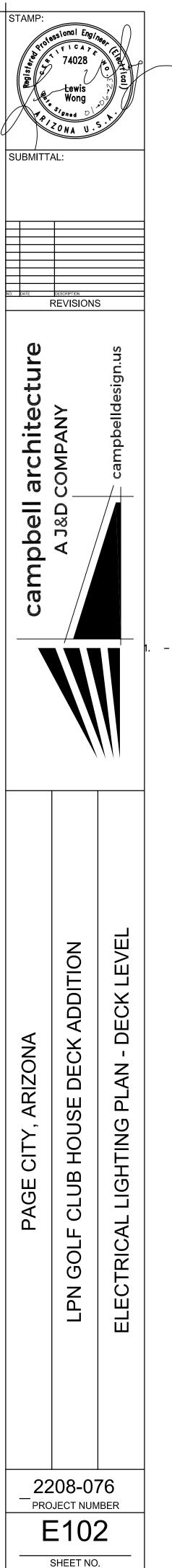


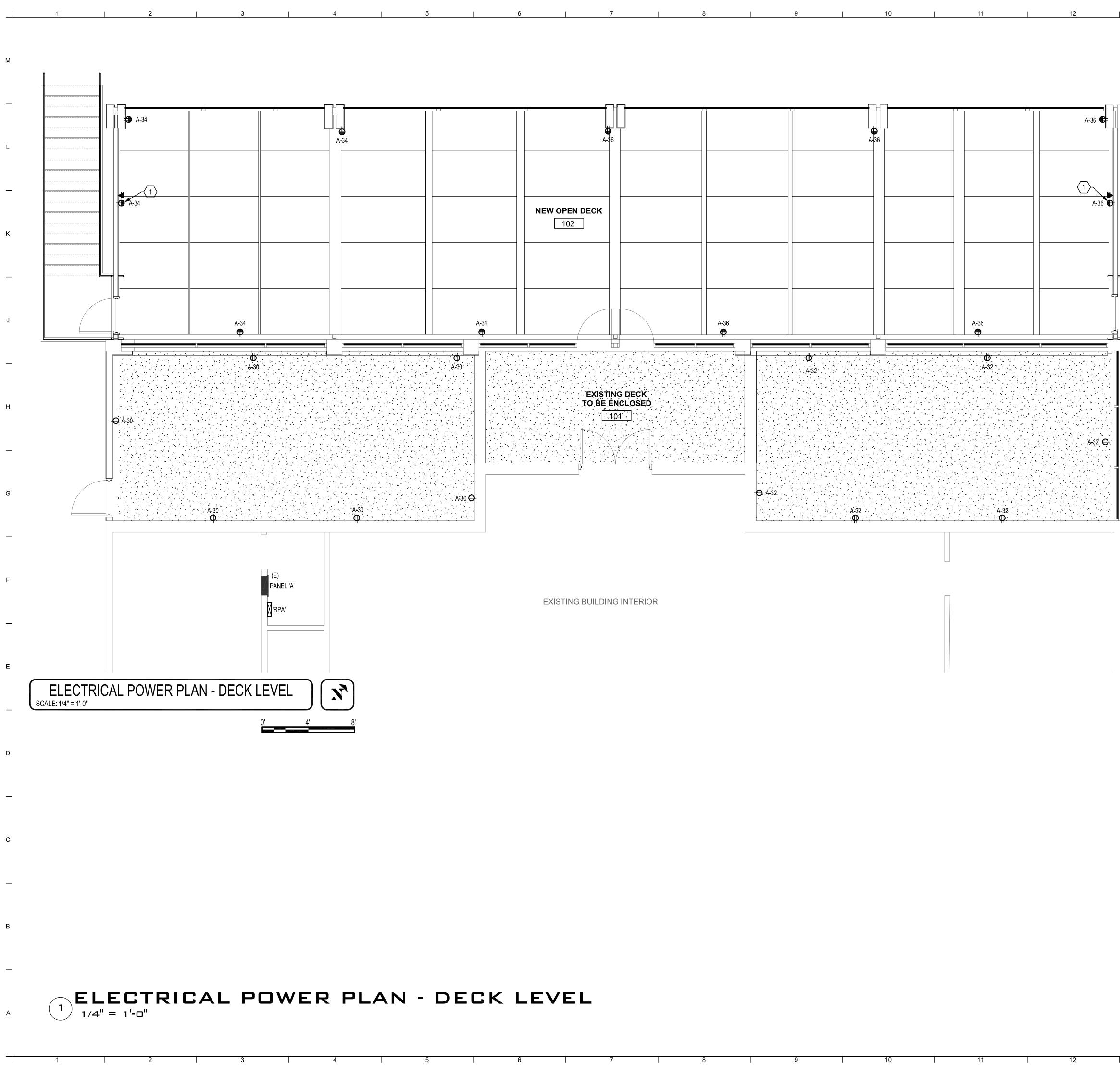


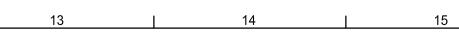
5. CIRCUITED JUNCTION BOXES FOR 12V STRING LIGHTS. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.

GENERAL NOTES

- 1. CONNECT EMERGENCY EXIT/EGRESS LIGHT FIXTURE TO UN-SWITCHED CONDUCTOR OF NEAREST 120 VOLT LIGHTING CIRCUIT. INSTALL IN COMPLIANCE WITH NEC 700.12(F).
- 2. PROVIDE UN-SWITCHED CONDUCTOR AHEAD OF LIGHTING CONTROL RELAY TO EMERGENCY FIXTURE BATTERY PACK. NORMAL ON/OFF OPERATION OF FIXTURE THROUGH RELAY INDICATED.
- 3. TYPE MC CABLE IS ACCEPTABLE FOR USE ON THIS PROJECT WHERE ALLOWED BY CODE AND WHERE CONCEALED IN WALLS OR ABOVE CEILINGS.
- 4. OCCUPANCY/VACANCY SENSOR LAYOUT ON THIS SHEET IS DIAGRAMMATIC. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH SENSOR REPRESENTATIVE ON THE QUANTITY AND PROPER LAYOUT OF SENSORS TO ENSURE COMPLETE COVERAGE.

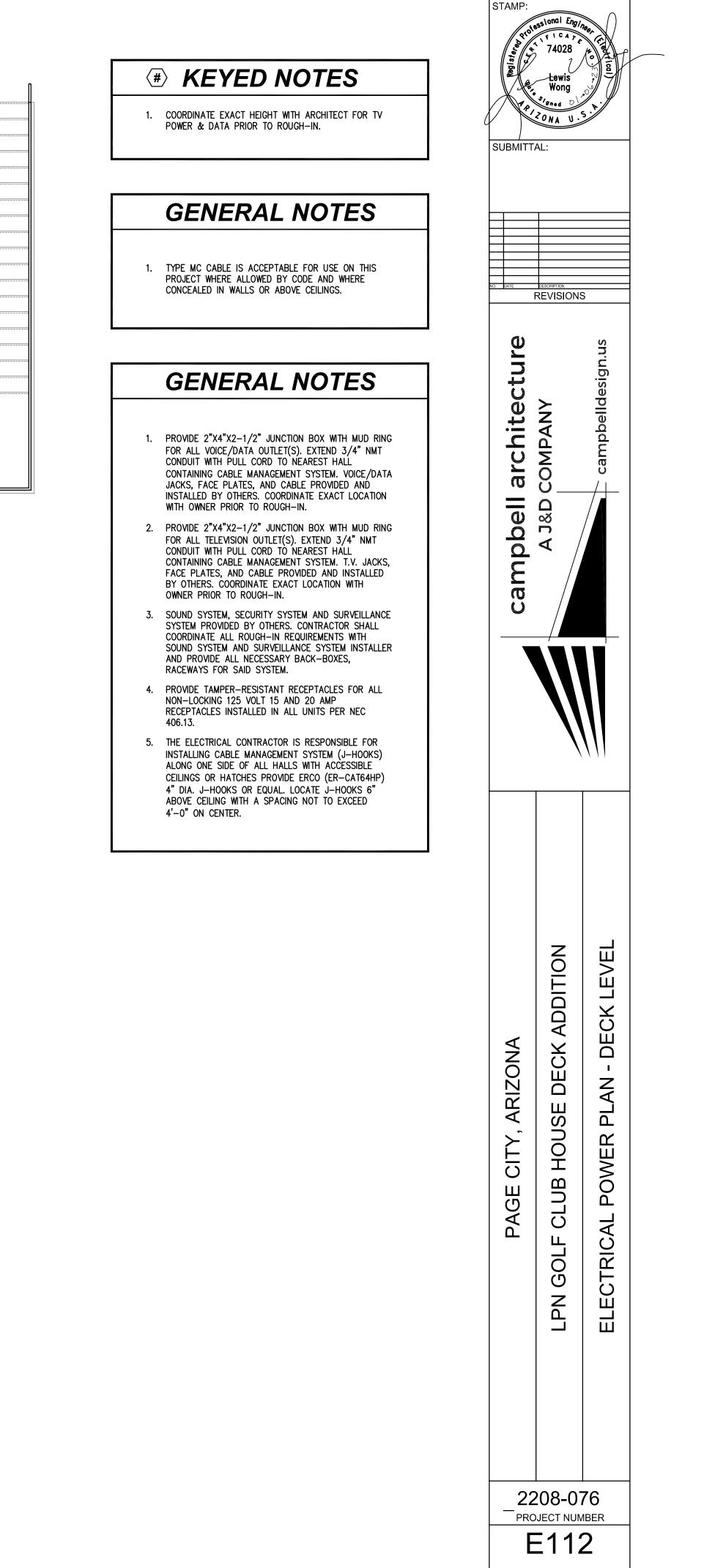


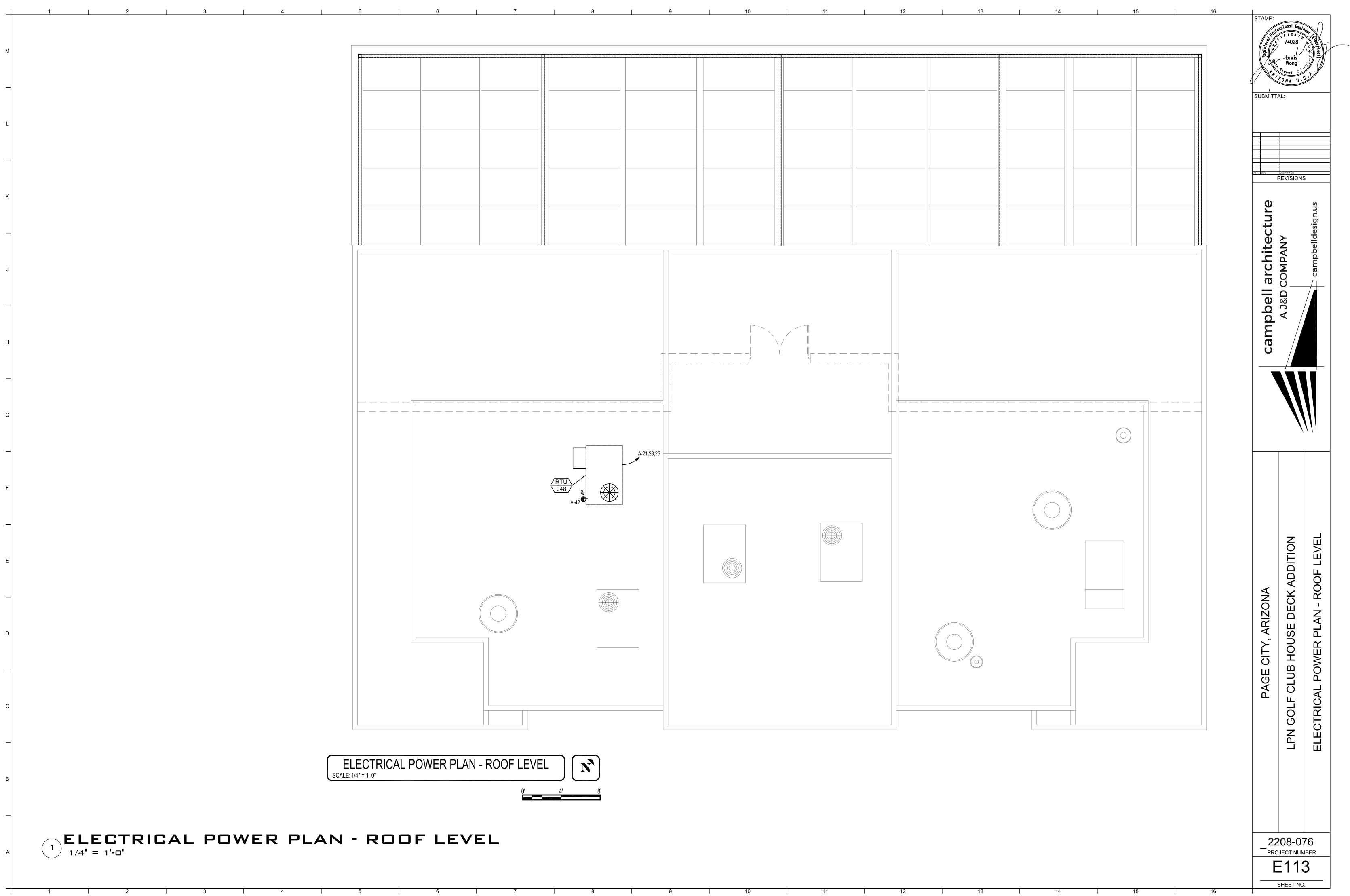


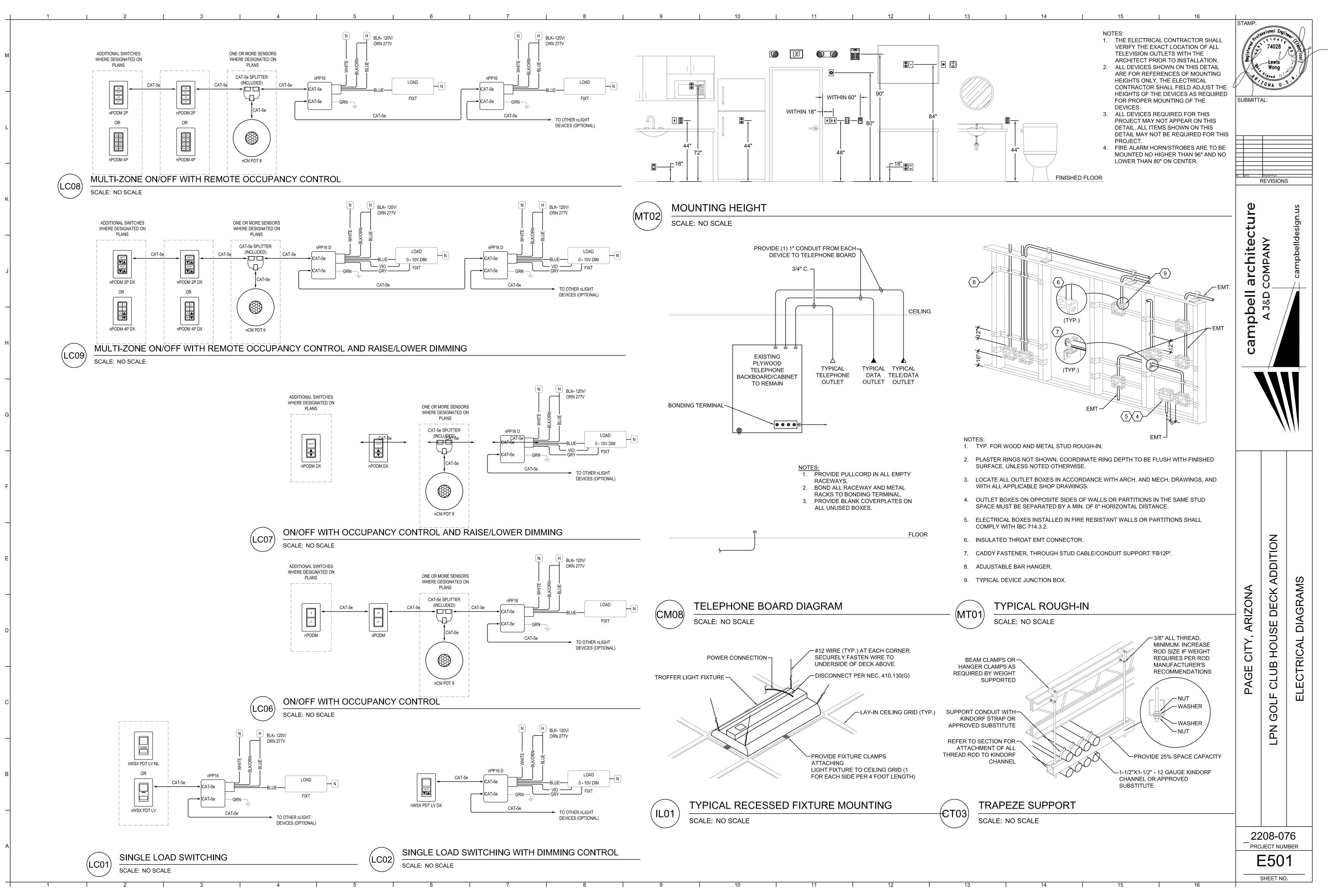


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	PANEL NAME:	RPA											1 [
	LOCATION:	NEAR PANE	L 'A'	1										I
CONT	ROL CIRCUIT:			-										
	VOLTAGE:													
	MOUNTING:	SURFACE M	DUNT	1					REM/	ARKS			1	_
RELAY #		CRIPTION	PANEL-CIRCUIT	LOAD (VA)	LOW VOLTAGE SWITCH	A	В	C D	E	F G	Н	I J	CIF	
1	EXTERIOR I	DECORATIVE LGT	A-13	376								x	- <u>NC</u> 1	
2	STE	RING LGT	A-26	30		X							3	_
3	DECK	WALL LGT	A-19	450		Х							5	
4	ENCLOS	SED DECK 101	A-17	574		X							7	_
5	STAIR	TREAD LGT	A-21									Х	9	_
6													13	-
7													15	
8													17	7
REMARKS			PROGRAMMING REQU	JIREMENTS									19	
A:	1-BUTTON ON/OFF	W/MASTER OVERIDE											21 23	
B:	2-BUTTON ON/OFF	W/MASTER OVERIDE											25	_
C:	3-BUTTON ON/OFF	W/MASTER OVERIDE											27	_
D:	4-BUTTON ON/OFF	W/MASTER OVERIDE											29	_
E	5-BUTTON ON/OFF	W/MASTER OVERIDE											31 33	_
F	6-BUTTON ON/OFF	W/MASTER OVERIDE											35	_
G	TIMED ON/TIMED	DFF											37	
Н	TIMED ON/PHOTO	CELL OFF											39	_
	PHOTOCELL ON/T	MED OFF											4	
J	PHOTOCELL ON/P	HOTOCELL OFF											I I—	ODI = SI

	PANEL NAME:	RPC											
	LOCATION:	NEAR PAN	EL 'C'										
CONT	ROL CIRCUIT:												
	VOLTAGE:												
	MOUNTING:	SURFACE M	IOUNT						REM	ARK	S		
RELAY #		DESCRIPTION	PANEL-CIRCUIT	LOAD (VA)	LOW VOLTAGE SWITCH	A	В	C D	E	F	G	Н	1
1	UNDE	ER DECK LIGHTING	C-36	133 VA									Х
2													
3													
4													
EMARKS			PROGRAMMING REQU	JIREMENTS									
A:	1-BUTTON ON	OFF W/MASTER OVERIDE											
B:	2-BUTTON ON	OFF W/MASTER OVERIDE											
C:	3-BUTTON ON	OFF W/MASTER OVERIDE											
D:	4-BUTTON ON	OFF W/MASTER OVERIDE											
E	5-BUTTON ON	OFF W/MASTER OVERIDE											
F	6-BUTTON ON	OFF W/MASTER OVERIDE											
G	TIMED ON/TIM	ED OFF											
Н	TIMED ON/PHO	DTOCELL OFF											
	PHOTOCELL C	N/TIMED OFF											
J	PHOTOCELL C	N/PHOTOCELL OFF											

°C	-		2 AWG	CU	#1(0 AWG	CU	#8	AWG (CU	#6	6 AWG (CU
٨	2	60	75	90	60	75	90	60	75	90	60	75	90
А	kVA	20	25	30	30	35	40	40	50	55	55	65	75
5	0.60	191	182	173	304	289	276	484	460	439	769	732	698
7.5	0.90	127	121	115	203	193	184	322	307	292	513	488	465
10	1.20	95	91	86	152	144	138	242	230	219	384	366	349
12.5	1.50	76	72	69	121	115	110	193	184	175	307	293	279
15	1.80	63	60	57	101	96	92	161	153	146	256	244	232
17.5	2.10	-	52	49	87	82	78	138	131	125	219	209	199
20	2.40	-	45	43	76	72	69	121	115	109	192	183	174
22.5	2.70	-	-	38	67	64	61	107	102	97	171	162	155
25	3.00	-	-	-	-	57	55	96	92	87	153	146	139
27.5	3.30	-	-	-	-	52	50	88	83	79	139	133	127
30	3.60	-	-	-	-	-	46	80	76	73	128	122	116
32.5	3.90	-	-	-	-	-	-	-	70	67	118	112	107
35	4.20	-	-	-	-	-	-	-	65	62	109	104	99
37.5	4.50	-	-	-	-	-	-	-	61	58	102	97	93
40	4.80	-	-	-	-	-	-	-	57	54	96	91	87
42.5	5.10	-	-	-	-	-	-	-	-	51	90	86	82
45	5.40	-	-	-	-	-	-	-	-	-	-	81	77
47.5	5.70	-	-	-	-	-	-	-	-	-	-	77	73
50	6.00	-	-	-	-	-	-	-	-	-	-	73	69
52.5	6.30	-	-	-	-	-	-	-	-	-	-	-	66
55	6.60	-	-	-	-	-	-	-	-	-	-	-	63
57.5	6.90	-	-	-	-	-	-	-	-	-	-	-	60
60	7.20	-	-	-	-	-	-	-	-	-	-	-	58

	V	/0	L7	Ά	GE	D	R)P) - /	208	8/1	1		Γ		V	/0	LT	Ά	GE	D	R)P	-	208	8/3	}	
WIR	SIZE	#1:	2 AWG	CU	#1	0 AWG	CU	#8	AWG (CU	#6	AWG (CU		WIRE	SIZE	#1:	2 AWG	CU	#10	0 AWG	CU	#8	AWG (CU	#6	AWG (CU
(С	60	75	90	60	75	90	60	75	90	60	75	90		°	0	60	75	90	60	75	90	60	75	90	60	75	90
А	kVA	20	25	30	30	35	40	40	50	55	55	65	75		А	kVA	20	25	30	30	35	40	40	50	55	55	65	75
5	1.04	331	315	301	527	502	479	839	798	761	1334	1269	1211		5	1.80	383	364	347	609	579	553	969	922	879	1540	1466	1398
7.5	1.56	221	210	200	351	334	319	559	532	507	889	846	807		7.5	2.70	255	243	231	406	386	368	646	614	586	1027	977	932
10	2.08	165	157	150	263	251	239	419	399	380	667	634	605		10	3.60	191	182	173	304	289	276	484	461	439	770	733	699
12.5	2.60	132	126	120	211	200	191	335	319	304	533	507	484	1	12.5	4.50	153	145	139	243	231	221	387	368	351	616	586	559
15	3.12	110	105	100	175	167	159	279	266	253	444	423	403		15	5.40	127	121	115	203	193	184	323	307	293	513	488	466
17.5	3.64	-	90	86	150	143	136	239	228	217	381	362	346	1	17.5	6.30	-	104	99	174	165	158	276	263	251	440	418	399
20	4.16	-	78	75	131	125	119	209	199	190	333	317	302		20	7.21	-	91	86	152	144	138	242	230	219	385	366	349
22.5	4.68	-	-	66	117	111	106	186	177	169	296	282	269	2	22.5	8.11	-	-	77	135	128	122	215	204	195	342	325	310
25	5.20	-	-	-	-	100	95	167	159	152	266	253	242		25	9.01	-	-	-	-	115	110	193	184	175	308	293	279
27.5	5.72	-	-	-	-	91	87	152	145	138	242	230	220	2	27.5	9.91	-	-	-	-	105	100	176	167	159	280	266	254
30	6.24	-	-	-	-	-	79	139	133	126	222	211	201		30	10.81	-	-	-	-	-	92	161	153	146	256	244	233
32.5	6.76	-	-	-	-	-	-	-	122	117	205	195	186	3	32.5	11.71	-	-	-	-	-	-	-	141	135	237	225	215
35	7.28	-	-	-	-	-	-	-	114	108	190	181	173		35	12.61	-	-	-	-	-	-	-	131	125	220	209	199
37.5	7.80	-	-	-	-	-	-	-	106	101	177	169	161	3	37.5	13.51	-	-	-	-	-	-	-	122	117	205	195	186
40	8.32	-	-	-	-	-	-	-	99	95	166	158	151		40	14.41	-	-	-	-	-	-	-	115	109	192	183	174
42.5	8.84	-	-	-	-	-	-	-	-	89	156	149	142	4	42.5	15.31	-	-	-	-	-	-	-	-	103	181	172	164
45	9.36	-	-	-	-	-	-	-	-	-	-	141	134		45	16.21	-	-	-	-	-	-	-	-	-	-	162	155
47.5	9.88	-	-	-	-	-	-	-	-	-	-	133	127	4	47.5	17.11	-	-	-	-	-	-	-	-	-	-	154	147
50	10.40	-	-	-	-	-	-	-	-	-	-	126	121		50	18.01	-	-	-	-	-	-	-	-	-	-	146	139
52.5	10.92	-	-	-	-	-	-	-	-	-	-	-	115	5	52.5	18.91	-	-	-	-	-	-	-	-	-	-	-	133
55	11.44	-	-	-	-	-	-	-	-	-	-	-	110		55	19.81	-	-	-	-	-	-	-	-	-	-	-	127
57.5	11.96	-	-	-	-	-	-	-	-	-	-	-	105	5	57.5	20.71	-	-	-	-	-	-	-	-	-	-	-	121
60	12.48	-	-	-	-	-	-	-	-	-	-	-	100		60	21.62	-	-	-	-	-	-	-	-	-	-	-	116
THE I DIST, LOAE WHE EXCE PLUS SECT K FAC CALC	VD CALCULATION USED: $2 \times K \times Q \times I \times [D / ECM]$ THE PURPOSE OF THIS TABLE IS TO DISPLAY THE MAXIMUM ALLOWABLE 1-WAY DISTANCES IN FEET FOR 208V, SINGLE-PHASE BRANCH CIRCUITS [AT DESIGN LOAD] THAT MAINTAIN A TARGET MAXIMUM 3-PERCENT VOLTAGE DROP. WHERE THE ASSOCIATED FEEDER CIRCUIT VOLTAGE DROP [AT DESIGN LOAD] EXCEEDS 2-PERCENT, THESE TABLES CANNOT BE USED. THE COMBINED FEEDER PLUS BRANCH VOLTAGE DROP MUST NOT EXCEED 5-PERCENT PER ASHRAE 90.1, SECTION 8.4.1 [ADDENDUM C] AND IECC C405.9. K FACTORS USED: 60°C = 12.275, 75°C = 12.9, 90°C = 13.525 CALCULATION USED TO ADJUST K FACTORS FOR 60°C AND 90°C CONDUCTORS: K2 = 12.9 x [1 + 0.00323 x [T2 - 75]]									T L V E F S V	THE P DISTA LOAD WHER EXCE PLUS SECTI K FAC CALC	LCULAT URPOSI NCES IN THAT M EDS 2-P BRANCH ON 8.4. TORS U JLATION 2.9 x [1	E OF TH N FEET MAINTA ASSOCI ERCEN H VOLT N USED: 60 N USED	HIS TAB FOR 20 IN A TA ATED F T, THES AGE DF ENDUM D°C = 12 TO AD	LE IS T 8V, TH RGET I EEDEF SE TAB ROP ML C] AND 2.275, 7 JUST K	O DISP REE-PH MAXIML CIRCL LES CA JST NO IECC C 5°C = 1 FACTC	ILAY TH IASE BI JIT 3-PE JIT VOL NNOT I NNOT I T EXCE C405.9. 2.9, 90°	IE MAX RANCH RCENT TAGE I BE USE ED 5-P C = 13.	CIRCU VOLT/ DROP [/ D. THE ERCEN	ITS [AT AGE DR AT DES COMB T PER J	DESIG COP IGN LO INED FI ASHRA	N AD] EEDER E 90.1,						

WIRE	SIZE	#1:	2 AWG	CU	#1	0 AWG	CU	#8	AWG (CU	#6	AWG (CU
0	С	60	75	90	60	75	90	60	75	90	60	75	9
А	kVA	20	25	30	30	35	40	40	50	55	55	65	7
5	0.60	191	182	173	304	289	276	484	460	439	769	732	69
7.5	0.90	127	121	115	203	193	184	322	307	292	513	488	46
10	1.20	95	91	86	152	144	138	242	230	219	384	366	34
12.5	1.50	76	72	69	121	115	110	193	184	175	307	293	27
15	1.80	63	60	57	101	96	92	161	153	146	256	244	23
17.5	2.10	-	52	49	87	82	78	138	131	125	219	209	19
20	2.40	-	45	43	76	72	69	121	115	109	192	183	17
22.5	2.70	-	-	38	67	64	61	107	102	97	171	162	15
25	3.00	-	-	-	-	57	55	96	92	87	153	146	13
27.5	3.30	-	-	-	-	52	50	88	83	79	139	133	12
30	3.60	-	-	-	-	-	46	80	76	73	128	122	11
32.5	3.90	-	-	-	-	-	-	-	70	67	118	112	10
35	4.20	-	-	-	-	-	-	-	65	62	109	104	99
37.5	4.50	-	-	-	-	-	-	-	61	58	102	97	9
40	4.80	-	-	-	-	-	-	-	57	54	96	91	8
42.5	5.10	-	-	-	-	-	-	-	-	51	90	86	8
45	5.40	-	-	-	-	-	-	-	-	-	-	81	7
47.5	5.70	-	-	-	-	-	-	-	-	-	-	77	7
50	6.00	-	-	-	-	-	-	-	-	-	-	73	6
52.5	6.30	-	-	-	-	-	-	-	-	-	-	-	6
55	6.60	-	-	-	-	-	-	-	-	-	-	-	6
57.5	6.90	-	-	-	-	-	-	-	-	-	-	-	6
60	7.20	-	-	-	-	-	-	-	-	-	-	-	5

CALCULATION USED TO ADJUST K FACTORS FOR 60°C AND 90°C CONDUCTORS: K2 = 12.9 x [1 + 0.00323 x [T2 - 75]]

12	

				F	PA	NEL	BOA	RD	SCH	IEDU	JLE	Ē				
	A			-		MOUN			ED		AINS	_		DIMS.	SPECIAL EQUIPMENT	
	PANEL	VOLTAGE		208\	Y/120					225	AMP		20	" W	X GROUND BUS	
	NQ										_				SUB-FEED BRKR	
	TYPE	PHASE 3	W	IRES	4	Х	FLUSH	X	TOP	X	LUGS		5.7	75" D	NEMA 3R	
	SEE DRAWINGS		-						_		-				SURGE PROTECTOR	
	LOCATION	AIC 10K		AMPS	S		SURF.		BOTTOM		BRKR		35	" Н	200% NEUTRAL	
CIR		0005	В	RKR	WIRE	CIRCUIT	COM	BINED PH	ASES	CIRCUIT	WIRE	BRKI	R			CIR
NO.	CIRCUIT DESCRIPTION	CODE	Ρ	AMP	SIZE	LOAD	А	В	С	LOAD	SIZE	AMP	Ρ	CODE	CIRCUIT DESCRIPTION	NO.
1	LTG- PRO-SHOP	9	1	20			0					20	1	9	REC- PRO-SHOP	2
3	-	9	1	20				0]			20	1	9	-	4
5	LTG- OFFICE, STORAGE	9	1	20					0			20	1	9	-	6
7	LTG- DINING	9	1	20			0]				20	1	9	REC- TMB	8
9	LTG-RECEPTION	9	1	20				0				20	1	9	REC- OFFICE	10
11	-	9	1	20					0			20	1	9	-	12
13	LTG- BUILDING EXTERIOR	11	1	30	10	376	376					20	1	9	REC- DINING	14
15	LTG- SITE	9	1	20				0				20	1	9	-	16
17	ENCLOSED DECK-101	11	1	20	12	575			575			20	1	9	REC- TV	18
19	NEW DECK WALL LGT	11	1	20	12	450	450		_			20	1	9	-	20
21	RTU-048	1,10	3	-	-	2401		2401				20	1	9	REC- PRO-SHOP, RECEPT	22
23	-	-	-	-	-	2401		-	2401			20	1	9	REC- ROOF	24
25	-	-	-	-	-	2401	2431		-	30	12	20	1	11	DECK STRING LGT	26
27	AC-1	9	2	40				0					1	9	SECURITY PANEL	28
29	-	9	2	40				-	1080	1080	12	20	1	10	OLD DECK SW REC	30
31	AC-2	9	3	40			1080		-	1080	12	20	1	10	OLD DECK NE REC	32
33	-	9	3	40				900		900	12	20	1	10	NEW DECK SW REC	34
35	-	9	3					7	1080	1080	12	20	1	10	NEW DECK NE REC	36
37	AC-3	9	3	40			500		٦	500	12	20	1	10	RELAY PANEL 'A'	38
39	-	9	3	40				180		180	12	20	1	10	STAIR TREAD LGT	40
41	-	9	3	40				1	180	180	12	20	1	10	ROOF REC	42
I —	<u>DES:</u>				_	VA	4837	3481	5316	<u>14</u>					EAKER TO REMAIN, REMOVE LO	٩D
	SEE ONE-LINE DIAGRAM OR E					DIV	4837	3481	5460	AV. AMP				BREAKE		
	ROCPD, CONDUCTOR, GROU					AMPS	40	29	45	<u>38</u>					KR AND LOAD TO REMAIN	
		3 = PROVID					ISTING LO	DAD							EW BREAKER FOR NEW LOAD	
4 =	GFCI BREAKER	5 = PROVID	ΕL	OCK-C	JFF DE	VICE						11 = l	JTIL	IZE EXIS	STING BREAKER FOR NEW LOAD	
															EXISTING PANEL TO REM	MAIN

				PA	NEL	BOA	RD	SCH	IEDI	JLE	Ξ				
	С							EED		AINS		П	IMS.	SPECIAL EQUIPMENT	
-	PANEL	VOLTAGE	208	3Y/120	10001		<u> </u>		400	AMP		20"		X GROUND BUS	
	NQ	VOLINOL		/1/120	_				-100	/	-	20	V V	SUB-FEED BRKR	
-	TYPE	PHASE 3	WIRES	4	x	FLUSH	x	TOP	x	LUGS	.	5.75	5" D	NEMA 3R	
	LOWER LEVEL					1 20011		_ 101		- 2000	·	0.10		SURGE PROTECTOR	
-	LOCATION	AIC 42K	AMF	PS -		SURF.		воттом		BRKF		35"	н	200% NEUTRAL	•
CIR					CIRCUIT	-	IBINED PH		CIRCUIT		E				CIR
NO.	CIRCUIT DESCRIPTION	CODE	P AM			A	B	C	LOAD		AMP I		CODE	CIRCUIT DESCRIPTION	NO.
1	LTG- ROW #1	9	1 20			0						1	9	REC- GENERAL	2
3	LTG- STORAGE, REST RM	9	1 20				0				80	1	9	BATTERY CHARGERS	4
5	LTG- NL & EMERG.	9	1 20					0			70	1	9	-	6
7	LTG- ROW #2	9	1 20			0]				70	1	9	-	8
9	-	9	1 20				0				70	1	9	-	10
11	LTG- ROW #3	9	1 20			1		0			60	1	9	-	12
13	-	9	1 20			0					70	1	9	-	14
15	LTG- ROW #4	9	1 20				0				70	1	9	-	16
17	-	9	1 20					0			70	1	9	-	18
19	SPACE					0					70	1	9	-	20
21	-						0				70	1	9	-	22
23	-						_	0			60	1	9	-	24
25	EQUIP #18	9	2 40			0					70	1	9	-	26
27	-	9	2 40				0					1	9	<u> </u>	28
29	EF-3, EF-4 (CONTROL)	9	1 15				_	0			70	1	9	-	30
31	EF-3	9	3 20			0						1	9	-	32
33	-	9	3 20				0					1	9	INSTANT WATER HTR	34
35	-	9	3 20				_	133	133	12	20	1	10	UNDER DECK LGT	36
37	EF-4	9	3 20			500			500	12	20	1	10	RELAY PANEL 'C'	38
39	-	9	3 20				0							-	40
41	-	9	3 20				_	0						-	42
					VA	500	0	133	-					EAKER TO REMAIN, REMOVE LO	AD
	SEE ONE-LINE DIAGRAM OR E				DIV	500	0	133	AV. AMP				BREAKE		
	OCPD, CONDUCTOR, GROU				AMPS	4	0	1	2	А	J			KR AND LOAD TO REMAIN	
	SHUNT-TRIP BREAKER	3 = PROVID	E NEW I	BREAKE	ER FOR EX	ISTING LO	DAD				10 = PI	20	/IDE NE	W BREAKER FOR NEW LOAD	
4 = (GFCI BREAKER	5 = PROVID	E LOCK	OFF DE	EVICE						11 = U	TILI.	ZE EXIS	TING BREAKER FOR NEW LOAD	

EXISTING PANEL TO REMAIN

T)/DE	DECODIDATION			LA	MPS	MOUNTNIO	NOTES
TYPE	DESCRIPTION	MANUFACTURER: CATALOG NUMBER	VOLTS	QTY	MODEL	MOUNTING	VA
D1	6" RECESSED LED	LITHONIA: LDN6-27/1500 L06WR OR APPROVED EQUIVALENT	120	1	LED	CELING RECESSED	20.5 VA
ST1	DROP DOWN STRING LIGHTS LED (TRANSFORMER IN JUNCTION BOX)	TIVOLI: LSAD-DRP-27-24 OR APPROVED EQUIVALENT	120	1	LED	CELING SUSPENDED	30 VA TOTAL
W1	EXTERIOR SCOPE MEDIUM SCONCE LED	INSIGHT LIGHTING: SSM-UD-LO-27K-NA-27K-NA-WM-120-NO OR APPROVED EQUIVALENT	120	1	LED	WALL SURFACE	20 VA
W2	DECORATIVE LIGHT SCONCE LED	GENERATION LIGHTING: VS2471MBK OR APPROVED EQUIVALENT	120	1	LED	WALL SURFACE	75 VA
D1E	6" RECESSED EMERGENCY LED WITH 90 MINUTE BATTERY BACK-UP	LITHONIA: LDN6-27/1500-L06WR-EL OR APPROVED EQUIVALENT	120	1	PS250	CELING RECESSED	275 VA
S1	OUTDOOR CAST FLUSH MOUNT LED	LITHONIA: OLCFM 15 DDB (1077L) OR APPROVED EQUIVALENT	120	1	LED	CELING SURFACE	16.6 VA
X1	THERMOPLASTIC LED EXIT SIGN WITH90 MINUTE BATTERY BACK UP	LITHONIA: LQM-S-W-3-G-120/277-ELN	120	1	INCLUDED	CELING SURFACE	5 VA
X2	DESIGNER EMERGENCY BUGEYE WITH 90 MINUTE BATTERY BACK UP	LITHONIA: ELM2L M12	120	1	INCLUDED	WALL SURFACE	5 VA
Х3	DIE CAST EXTERIOR EMERGENCY EGRESS WITH 90 MINUTE BATTERY BACK UP	LITHONIA: AFB OEL DDBTXD UVOLT N WT	120	1	INCLUDED	WALL SURFACE	5 VA
X4	THERMOPLASTIC LED EXIT/BUGEYE COMBO WITH 90 MINUTE BATTERY BACKUP	LITHONIA: LHQMSW3G	120	1	INCLUDED	WALL	5 VA

- 13

14

- 15

16

STAME

SUBMITTAL:

- WITH ALL MOUNTING HARDWARE AND EQUIPMENT FOR A COMPLETE INSTALLATION.
- DISCREPANCIES PRIOR TO BID. FIXTURES SHALL MATCH ARCHITECTURAL CEILING TYPES.

- RECEIVED AFTER THIS TIME CUT-OFF SHALL NOT BE REVIEWED OR APPROVED.
- BID ON THE APPROVED LISTED FIXTURES. A VERBAL APPROVAL WILL NOT BE GIVEN OR APPROVED BY VBFA AT ANY TIME.
- SUBMITTING FOR APPROVAL INDICATING EQUIVALENCY.
- 9. PROVIDE FACES AND CHEVRONS AS SHOWN ON THE DRAWINGS.

TYPE	DESCRIPTION	V/PH	LOAD
RTU-048	ROOF-TOP UNIT	208/3	25 MC
ABBREVIAT	IONS:		
V/PH = VOL	TAGE/PHASE	KVA = KILC	VOLT AMP
KW = KILOV	VATTS	VA = VOLT	AMPERES
W = WATTS		MCA = MIN	IMUM CIRC
HP = HORS	EPOWER	FLA = FULL	LOAD AM
REMARKS:			
1. NEMA 1 F	USED DISCONNECT SWITCH		
2. NEMA 1 N	ION-FUSED DISCONNECT SWITCH		
3. BREAKER	R IN ENCLOSURE		
4. MANUAL	STARTER WITH THERMAL OVERLOAD		
5 MANUA	MOTOR CONTROLLER W/OUT THERMAL	OVERI OAD	

5. MANUAL MOTOR CONTROLLER W/OUT THERMAL OVERLOAD

- 6. MAGNETIC STARTER 7. MAGNETIC STR/NON-FUSED DISCONNECT COMBINATION
- 8. MAGNETIC STR/FUSED DISCONNECT COMBINATION
- 9. NEMA 3R FUSED DISCONNECT SWITCH
- 10. NEMA 3R NON-FUSED DISCONNECT SWITCH

11. VARIABLE FREQUENCY DRIVE

- 12. RECEPTACLE/SPECIAL PURPOSE OUTLET/ETC.
- 13. DIRECT CONNECTION 14. DUCT DETECTOR IN RETURN AIR DUCT

15. CONTROLLED WITH LIGHTS

16. INDOOR UNIT POWERED FROM OUTDOOR UNIT WITH LINE VOLTAGE

GENERAL NOTES

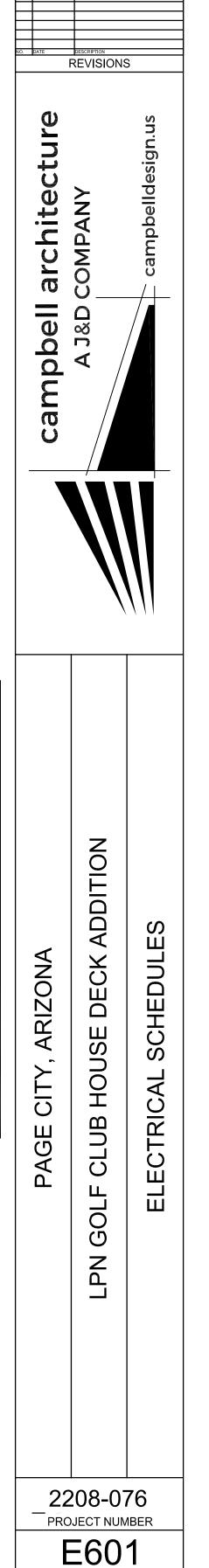
1. REFER TO LUMINAIRE DESCRIPTION FOR FIXTURE REQUIREMENTS. MANUFACTURER'S MODEL NUMBERS MAY NOT BE SPECIFIC OR COMPLETE. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE COMPLETE FIXTURES AS DESCRIBED ON THIS SCHEDULE 2. REFER TO THE ARCHITECTURAL REFLECTED CEILING DRAWINGS FOR EXACT FIXTURE LOCATIONS AND CEILING TYPES. VERIFY EXACT CEILING TYPES AND BRING TO THE ATTENTION OF THE ARCHITECT AND THE ELECTRICAL ENGINEER WITH ANY 3. PROVIDE ALL FIXTURE SUPPORT AND SEISMIC BRACING TO SECURE FIXTURE TO STRUCTURE, WALLS AND CEILING SYSTEMS. REFER TO MOUNTING DETAILS FOR ADDITIONAL REQUIREMENTS. PROVIDE ALL POLE BASES AS SHOWN ON THE DETAILS. 4. PRIOR APPROVAL SHALL BE REQUIRED FOR ALL MANUFACTURER'S WHO ARE NOT LISTED ON THIS SCHEDULE. THE PRIOR APPROVALS SHALL BE SUBMITTED TO THE ELECTRICAL ENGINEER (7) WORKING DAYS PRIOR TO THE BID. PRIOR APPROVALS 5. SUBMITTALS FOR PRIOR APPROVAL SHALL BE EQUIVALENT TO THE SPECIFIED FIXTURES AND REVIEWED AND SIGNED BY THE PRINCIPLE OF THE ORGANIZATION THAT IS SUBMITTING FOR APPROVAL. PROVIDE COMPLETE FIXTURE SUBMITTALS AS LISTED IN THE SPECIFICATION. ALL INFORMATION THAT DOES NOT APPLY TO THE FIXTURE BEING SUBMITTED SHALL BE CROSSED OUT. THE ELECTRICAL ENGINEER SHALL BE THE FINAL DETERMINATION IF THE FIXTURE IS EQUIVALENT OR NOT.

6. FIXTURES THAT HAVE BEEN REVIEWED AND APPROVED AS EQUIVALENT TO THE SPECIFIED FIXTURES SHALL BE LISTED IN AND ADDENDUM PRIOR TO BID. LIGHT FIXTURES WITHOUT PRIOR APPROVAL ARE REJECTED AND CONTRACTOR SHALL BASE THEIR

7. ANY ADDITIONAL TIME REQUIRED TO VERIFY IF SUBMITTED FIXTURE MEETS ALL PHOTOMETRIC REQUIREMENTS SHALL BE PAID BY THE AGENCY REQUESTING APPROVAL. PHOTOMETRIC POINT-BY-POINT PLANS MAY BE REQUIRED FROM THE AGENCY

8. COLOR TEMPERATURE FOR ALL LAMPING SHALL BE 3500K FOR INTERIOR LIGHTING AND 4000K FOR EXTERIOR LIGHTING UNLESS NOTED OTHERWISE IN THIS SCHEDULE.

EQUIPMENT SCHEDULE ELECTRICAL OVER CURRENT PROTECTION STR IPERES GND = GROUND COND = CONDUIT DISC = DISCONNECT OCPD = OVERCURRENT PROTECTIVE DEVICE RCUIT AMPACITY STR = STARTER PL = POLE MOCP = MAXIMUM OCPD (LISTED BY THE MANUFACTURER) MPERES REMARKS: A. FURNISHED, INSTALLED AND CONNECTED UNDER DIVISION 26. B. FURNISHED AND INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTION UNDER DIV 26. C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIV 26. D. FURNISHED, INSTALLED AND CONNECTED UNDER ANOTHER DIVISION. E. FURNISHED AND INSTALLED UNDER DIV 26 REQUIRING CONNECTION UNDER ANOTHER DIVISION. ARIZONA OCPD TYPES: F1 = INDUCTIVE FUSE (CLASS RK5) C1 = THERMAL MAGNETIC CIRCUIT BREAKER F2 = NON-INDUCTIVE FUSE (CLASS RK1) C2 = MAGNETIC ONLY CIRCUIT BREAKER NOTES: - THE DIVISION 26 CONTRACTOR MAY INCREASE THE CONDUIT SIZE BY ONE INCREMENTAL SIZE TO FACILITATE INSTALLATION OR TO HELP WITH MATERIAL AVAILABILITY/COST. • \succ CH GENERAL NOTE: THE EC SHALL COORDINATE ALL REQUIREMENTS (IE: MOCP SIZE, UNIT THERMAL PROTECTION, ETC) WITH APPROVED MECHANICAL SHOP DRAWINGS/ SUBMITTALS AND BRING UP ANY DISCREPANCIES WITH THE ELECTRICAL ENGINEER OF RECORD IN WRITING PRIOR TO ROUGH-IN. PAGE SHEET NO.



_	1	I	2	I	3	I	4	·	5	I	6
М										SH ALL LABOR, MA L A COMPLETE AN	
								В.	RULES AND F 1. ALL W	EGULATIONS ORK AND MATERIA	_S SHALL BE INST
L									AS AE SPECIF INSTAI A.) B.) C.) D.) E.) F.) G.) H.)	ATEST EDITIONS OF OPTED BY THE AU ICATION THE SAME LATIONS SHALL CO NFPA (NATIONAL F "NATIONAL, ELECTF UL (UNDERWRITERS NEMA (NATIONAL F UBC (UNIFORM BU IBC (INTERNATIONA IFC (INTERNATIONA IECC (INTERNATIONA IECC (INTERNATIONA STATE AND LOCAL	THORITY HAVING J AS IF HEREIN WE ONFORM TO THE A IRE PROTECTION A RICAL CODE"; PUB LABORATORIES, I LECTRICAL MANUF LDING CODE) AND L BUILDING CODE) L FIRE CODE). AL ENERGY CONSE L ELECTRICAL COE
_								C.	and schedu Authorities) INSPECTIONS UNL LE ALL APPLICABL HAVING JURISDICT ALL INCLUDE ALL	E PERMITS, FEES A ON AND REQUIRIN
J								D.	1. Worki In The Exper	? AND MATERIAL MANSHIP SHALL BE IR TRADE SHALL E IENCED SUPERINTED ETED AND ACCEPT	BE EMPLOYED. THE NDENT, WHO WILL
_									DIVISIO CATAL	S OTHERWISE HERE IN OF THE SPECIFI OGS OF THE MANU ICT OF A SINGLE M	CATIONS SHALL BE FACTURER. EACH
Н									EQUIPI REQUII	WNER'S REPRESEN MENT AND/OR WOR REMENTS HEREIN S	KMANSHIP AND DE PECIFIED.
_									MANUI 5. REFER	ANUFACTURED MAT FACTURER'S NAME ENCE TO STANDAR TIED, OR THAT ACC	AND RATING. DS ARE INTENDED
G								E.	1. EQUIPI ACCOF	ER'S RECOMMENDA MENT INSTALLED UI DING TO THE MAN NGS OR HEREIN SF	NDER THIS DIVISION
								F.	GUARANTEE 1. ALL M	ATERIALS AND EQU	IPMENT PROVIDED
F									DURIN WILL E CORRE DEFEC SHALL	NTEED FOR A MIN G THIS PERIOD DUE E HELD LIABLE AN CT THE TROUBLE O TIVE MATERIAL OR BE CORRECTED IN R, AT NO ADDITION	TO DEFECTIVE M. D SHALL FURNISH DR MALFUNCTION INFERIOR WORKMA MEDIATELY TO THI
_								G.	1. WITHIN INSTAI AS A	ND MAINTENANCE I 90 DAYS AFTER LATION SHALL BE MINIMUM, THE LOC	THE DATE OF SYS PROVIDED TO THE
E									2. OPERA DESIGI SYSTE a. b.	HTING EQUIPMENT. TION AND MAINTEN IATED REPRESENTA M ACCEPTANCE. TH SUBMITTAL DATA I EQUIPMENT AND LI OPERATION AND M LIGHTING CONTROL MINIMUM, A RECOM RECALIBRATING AL A COMPLETE NARF OPERATE INCLUDIN	TIVE OF THE BUIL IESE MANUALS SH NDICATING ALL SE GHTING CONTROLS AINTENANCE MANU S WITH ROUTINE M IMENDED RELAMPIN L LIGHTING CONTR
D								H.	2. INSTAI	5H: TO SUPPLY AN L: TO UNPACK, AS READY FOR USE.	
_										DE: TO FURNISH A	ND INSTALL.
С											
-											
В											
-											
А											
_	1	1	2	1	3		4	· 1	5		6

7	8	9	10	11	12

MENT AND TRANSPORTATION AS REQUIRED TO PROPERLY LECTRICAL SYSTEM.

ISTALLED AS SHOWN AND HEREIN SPECIFIED.

- SPECIFICATIONS, STANDARDS, AND AMENDMENTS, JURISDICTION, SHALL FORM A PART OF THIS WRITTEN OUT IN FULL (ALL MATERIALS AND APPLICABLE REQUIREMENTS THEREOF: ASSOCIATION), PUBLICATION NUMBER 70, UB. NO. 72E, "AUTOMATIC FIRE DETECTORS". INC.).
- NUFACTURER'S ASSOCIATION). ND STANDARD BUILDING CODE.

- NSERVATION CODE).
- CODE).
- HORITY AND CODES.
- SPECIFIED, THE CONTRACTOR SHALL APPLY, PAY FOR AND INSPECTIONS REQUIRED BY ANY AND ALL PUBLIC RING INSPECTION.
- Y CHARGES IN THE BASE BID.

QUALITY AND NONE BUT COMPETENT PERSONNEL SKILLED THE CONTRACTOR SHALL FURNISH THE SERVICES OF AN BE IN CHARGE OF THE EXECUTION OF WORK, UNTIL

IFIED, ALL MATERIALS AND EQUIPMENT UNDER THIS BE NEW, OF BEST GRADE AND AS LISTED IN PRINTED CH ARTICLE OF IT'S KIND SHALL BE THE STANDARD

- IAVE THE RIGHT TO ACCEPT OR REJECT MATERIAL DETERMINE WHEN THEY HAVE COMPLIED WITH THE
- BE CLEARLY MARKED OR STAMPED WITH THE

ED TO BE THE LATEST REVISION OF THE STANDARD AUTHORITY HAVING JURISDICTION.

SION OF THE SPECIFICATIONS SHALL BE INSTALLED ECOMMENDATIONS, UNLESS OTHERWISE SHOWN ON THE

ED AND INSTALLED UNDER THIS SECTION SHALL BE EAR. SHOULD ANY TROUBLE OR MALFUNCTIONS DEVELOP MATERIALS OR FAULTY WORKMANSHIP, THE CONTRACTOR ISH LABOR. MATERIALS AND EQUIPMENT NECESSARY TO WITHOUT ADDITIONAL COST TO THE OWNER. ALL MANSHIP NOTICED DURING THE TIME OF INSTALLATION THE ENTIRE SATISFACTION OF THE ARCHITECT AND

YSTEM ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL E BUILDING OWNER. RECORD DRAWINGS SHALL INCLUDE. E IDENTIFIER, CONTROL AND CIRCUITING FOR EACH PIECE

SHALL BE PROVIDED TO THE BUILDING OWNER OR THE UILDING OWNER WITHIN 90 DAYS AFTER THE DATE OF SHALL INCLUDE, A MINIMUM, THE FOLLOWING: SELECTED OPTIONS FOR EACH PIECE OF LIGHTING

ANUALS FOR EACH PIECE OF LIGHTING EQUIPMENT AND MAINTENANCE CLEARLY IDENTIFIED INCLUDING, AS A IPING PROGRAM AND A SCHEDULE FOR INSPECTING AND TROLS.

EACH LIGHTING CONTROL SYSTEM IS INTENDED TO) SETTINGS.

LOAD, INSPECT FOR DAMAGE.

APPLY, PLACE, FINISH, CURE, PROTECT, CLEAN, AND

I. SUBMITTALS

- PROVIDE SHOP DRAWINGS AND MANUFACTURER'S LITERATURE OF MATERIALS AND EQUIPMENT AS 1. REQUIRED IN THE GENERAL CONDITIONS, AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND AS LISTED BELOW:
- CATALOG CUTS 2.
 - A.) CONDUIT AND FITTINGS. 1.) RIGID METAL
 - 2.) INTERMEDIATE METAL
 - 3.) ELECTRICAL METALLIC TUBING 4.) FLEXIBLE METALLIC
 - 5.) LIQUID TIGHT FLEXIBLE METALLIC
 - 6.) FITTINGS (EACH TYPE)
 - B.) WIRE AND CABLE C.) SWITCHES
 - 1.) SNAP
 - 2.) LOCATOR
 - 3.) PILOT 4.) DIMMER
 - 5.) OCCUPANCY/VACANCY
 - D.) RECEPTACLE OUTLETS
 - 1.) GENERAL PURPOSE
 - 2.) GROUND FAULT CIRCUIT INTERRUPTION
 - 3.) SWITCHED 4.) USB
 - E.) TRIM AND COVER PLATES (EACH TYPE AND STYLE)
 - F.) PANEL BOARDS
 - G.) CIRCUIT BREAKERS (EACH SIZE AND TYPE) H.) SAFETY SWITCHES
 - I.) FUSES (EACH SIZE AND TYPE)
 - J.) LIGHTING FIXTURES
 - K.) NAMEPLATES L.) PHOTOELECTRIC SWITCHES
- 3. SHOP DRAWINGS
 - A.) PANEL BOARDS B.) LIGHTING FIXTURES

THE ABOVE IS A STANDARD SUBMITTAL REQUIREMENT LIST. ELECTRICAL CONTRACTOR SHALL SUBMIT ALL APPLICABLE ITEMS FOR REVIEW. MATERIAL NOT SUBMITTED AND APPROVED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTORS COST IF DIRECTED BY THE ARCHITECT OR THE OWNER'S REPRESENTATIVE.

- PART 2 MATERIALS
- A. GENERAL

MATERIALS AND EQUIPMENT SHALL BE STANDARD CATALOGED PRODUCTS OF MANUFACTURERS 1. REGULARLY ENGAGED IN THE MANUFACTURE OF THE PRODUCT. UL LISTED, AND SHALL BE THE LATEST STANDARD DESIGN THAT CONFORMS TO SPECIFIED MATERIALS AND EQUIPMENT.

- B. RACEWAY
 - 1. ELECTRICAL METALLIC TUBING (EMT) SHALL BE USED IN INTERIOR DRY LOCATIONS.
 - GALVANIZED FLEXIBLE STEEL OR LIQUID TIGHT STEEL CONDUIT SHALL BE USED FOR CONNECTIONS TO MECHANICAL EQUIPMENT AND TRANSFORMERS OR AS INDICATED. LIQUID TIGHT CONDUIT SHALL BE USED IN EXTERIOR OR DAMP LOCATIONS.
- 3. SCHEDULE 40 PVC (WITH PVC COATED OR VINYL TAPE DOUBLE WRAPPED RIGID STEEL ELBOWS AND RISES) SHALL BE USED FOR RUNS THAT ARE IN CONTACT WITH THE EARTH.
- 4. 3/4" CONDUIT SHALL BE THE MINIMUM SIZE CONDUIT.
- 5. OUTDOOR AND WET OR DAMP LOCATIONS: PROVIDE RIGID STEEL CONDUIT. PROVIDE CAST METAL OR PVC OUTLET, JUNCTION, AND PULL BOXES.
- 6. PROVIDE SEAL-OFFS IN ALL CONDUITS THAT ENTER THE FREEZERS AND COOLERS.
- C. FITTINGS
 - 1. ALL FITTINGS SHALL BE STEEL/MALLEABLE IRON WITH INSULATING BUSHINGS.
- D. OUTLETS AND JUNCTION BOXES
 - 1. BOXES IN INTERIOR DRY LOCATION SHALL BE GALVANIZED ONE-PIECE PRESSED STEEL, KNOCKOUT TYPE, NOT LESS THAN 4 INCHES SQUARE AND 2 1/8" DEEP; APPLETON, RACO, OR EQUAL.
 - 2. BOXES SHALL BE EQUIPPED WITH PLASTER RINGS, EXTENSION RINGS, AND FIXTURE STUDS AS REQUIRED.
 - 3. BOXES FOR FLOOR OUTLETS SHALL BE OF THE CAST-METAL THREADED-CONDUIT-ENTRANCE, WATERPROOF TYPE WITH MEANS FOR ADJUSTING COVER PLATE TO FINISHED FLOOR LEVEL. BOXES SHALL BE SUCH AS HUBBELL B2503 OR EQUAL. THE COVER SHALL BE HUBBELL S3925, S3082 OR EQUAL TO MATCH THE FLOOR TYPE OR AS SHOWN ON THE PLANS.
 - 4. PROVIDE FLUSH MOUNTING OUTLET BOX IN FINISHED AREAS.
 - 5. BOXES FOR STRUCTURED CABLING (DATA & PHONE) IN INTERIOR DRY LOCATIONS SHALL BE GALVANIZED ONE-PIECE PRESSED STEEL, KNOCKOUT TYPE 4 11/16" x 2 1/8"; RAYCO OR EQUAL.
 - 6. ALL BOXES IN FINISHED SPACES SHALL BE PROVIDED WITH MUD RINGS AS REQUIRED FOR THE DEVICE AND WALL MATERIAL.
 - a. CONTROLLED DUPLEX CONVENIENCE RECEPTACLES, 125 VOLT, 20 AMP:

DESCRIPTION: PROVIDE PERMANENTLY MARKED RECEPTACLE WITH THE POWER SYMBOL AND THE WORD "CONTROLLED". MARKING IDENTIFIES WHICH RECEPTACLES ARE TURNED OFF BY AUTOMATIC CONTROLS WHEN THE SPACE IS VACANT.

- E. CONDUCTORS
 - 1. ALL CONDUCTORS SHALL BE SOFT DRAWN, ANNEALED COPPER IN RACEWAY SIZED AS SHOWN ON THE PLANS. ALL CONDUCTORS TO BE MINIMUM #12 AWG U.N.O. #8 AWG AND LARGER SHALL BE STRANDED OR AS INDICATED ON THE DRAWINGS.
- 2. CONDUCTORS SHALL BE COPPER, THHN OR THWN-2 COLOR CODED IN ACCORDANCE WITH PART 3, SECTION C. 1. OF THESE SPECIFICATIONS.
- F. WIRING CONNECTIONS
 - 1. MAKE ALL ELECTRICAL CONNECTIONS.
 - 2. MAKE CONNECTION TO DEVICES USING "PIG-TAILS". DO NOT USE A DEVICE AS A CONNECTION OR A SPLICE UNIT.
 - 3. DO NOT PLACE STRANDED CONDUCTORS DIRECTLY UNDER SCREWS. INSTALL CRIMP-ON, INSULATED, FORK TERMINALS FOR CONDUCTOR TERMINATIONS, OR INSTALL SOLID CONDUCTORS.

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IDENTIFICATION 1. PROVIDE EACH PANEL BOARD, DISCONNECT SWITCH, AND BREAKER IN SWITCHBOARD WITH A MICARTA PLASTIC NAMEPLATE MADE OF WHITE-FACED BLACKCORE PLASTIC LAMINATE. NAMEPLATE SHALL BE MINIMUM 3" WIDE BY 3/4" HIGH FOR PANEL BOARD IDENTIFICATION INCLUDE DESIGNATION, PHASE, AND VOLTAGE. FASTEN WITH EPOXY GLUE. DOUBLE STICK TAPE IS <u>NOT</u> ACCEPTABLE. PROVIDE UPDATED PANEL SCHEDULES IN ALL ALTERED EXISTING PANELS. TELEPHONE SYSTEM	Registered	Lewis Wong	
1. PROVIDE COMPLETE RACEWAY SYSTEM AS INDICATED ON THE DRAWINGS. WIRING DEVICES			
1. PLATES – COLOR OF PLATE SHALL MATCH ADJACENT WALL FINISHES. VERIFY COLOR WITH ARCHITECT.			
2. TELEPHONE OUTLETS SHALL BE PROVIDED WITH OUTLET BOX AND PLATE AS INDICATED ON THE DRAWINGS.			
 SWITCHES – SHALL BE AS SHOWN ON THE PLANS OR EQUAL OF P&S, LEVITON OR COOPER 20 AMP, SILENT TYPE. COLOR SHALL MATCH ADJACENT WALL FINISHES, VERIFY COLOR WITH ARCHITECT. 	NO. DATE	DESCRIPTION	3
4. RECEPTACLES – SHALL BE AS SHOWN ON PLANS OR EQUAL OF P&S, LEVITON OR COOPER 20AMP. COLOR SHALL MATCH ADJACENT WALL FINISHES, VERIFY COLORS WITH ARCHITECT.	é,		ns
5. SPECIAL PURPOSE OUTLETS SHALL BE AS INDICATED ON THE DRAWINGS.	tul		sign.
 FRACTIONAL HORSEPOWER MANUAL STARTER 1. PROVIDE FRACTIONAL HORSEPOWER MANUAL STARTER WITH THE FOLLOWING FEATURES. A.) MELTING ALLOY TYPE THERMAL OVERLOAD RELAY B.) RED NEON PILOT LIGHT 	hitectu	PANY	npbelldesign.us
C.) THERMAL ELEMENT SIZED FOR MOTOR LOAD	arc	ΜO	can
2. PROVIDE A NAMEPLATE ON EACH COMPONENT OF MOTOR CONTROL EQUIPMENT AS SPECIFIED IN "NAMEPLATES".		<u> </u>	
 SAFETY SWITCHES THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL SAFETY SWITCHES AS INDICATED ON THE DRAWINGS OR AS REQUIRED. ALL SAFETY SWITCHES SHALL BE UL LISTED. THE SWITCHES SHALL BE FUSED SAFETY SWITCHES OR NON-FUSED SAFETY SWITCHES AS SHOWN ON THE DRAWINGS OR REQUIRED AND SHALL BE MANUFACTURED BY SQUARE D, GENERAL ELECTRIC, SIEMENS OR CUTLER HAMMER. 	campbel	A 3&D	
2. SWITCHES SHALL HAVE A QUICK-MAKE AND QUICK-BREAK OPERATING HANDLE AND MECHANISM WHICH SHALL BE AN INTEGRAL PART OF THE BOX. PADLOCKING PROVISIONS SHALL BE PROVIDED FOR PADLOCKING IN THE OFF POSITION WITH AT LEAST THREE PADLOCKS. SWITCHES SHALL BE HORSEPOWER RATED FOR 250 VOLTS AC OR DC OR 600 VOLTS AC AS REQUIRED. LUGS SHALL BE UL LISTED FOR COPPER AND ALUMINUM CABLE AND SHALL HAVE A TEMPERATURE RATING OF AT LEAST 75 DEGREES C.			
3. SWITCHES SHALL BE FURNISHED IN NEMA 1 GENERAL PURPOSE ENCLOSURES WITH KNOCKOUTS UNLESS OTHERWISE NOTED OR REQUIRED. SWITCHES LOCATED ON THE EXTERIOR OF THE BUILDING OR IN "WET" LOCATIONS SHALL HAVE NEMA 3R ENCLOSURES (WP).			
4. THE SAFETY SWITCHES SHALL BE SECURELY MOUNTED IN ACCORDANCE WITH THE NEC. THE CONTRACTOR SHALL PROVIDE ALL MOUNTING MATERIALS AND INSTALL FUSES IN THE FUSED SAFETY SWITCHES. THE FUSES SHALL BE DUAL ELEMENT ON MOTOR CIRCUITS.			
5. PROVIDE FUSES AS SPECIFIED BELOW. FUSES SHALL BE INSTALLED SO THAT THE RATING IS CLEARLY VISIBLE WITHOUT REMOVING FUSE. PROVIDE A SPARE FUSE FOR EACH FUSE INSTALLED.			
6. PROVIDE A NAMEPLATE ON EACH DISCONNECT SWITCH AS SPECIFIED IN "NAMEPLATES".			
 FUSES 1. FUSES SHALL BE CLASS "RK-1" REJECTION TYPE. FUSES SERVING MOTOR LOADS SHALL BE DUAL ELEMENT WITH A MINIMUM TIME DELAY OF 10 SECONDS AT 500% RATING. FUSES SHALL BE CURRENT LIMITING TIME DELAY TYPE WITH INTERRUPTING CAPACITY OF 200,000 AMP RMS SYMMETRICAL. 			
 FUSES SERVING SWITCH OR CIRCUIT BREAKER DISTRIBUTION PANELS, LIGHTING PANEL BOARDS AND OTHER NON – MOTOR LOADS NEED NOT BE TIME DELAY TYPE, BUT SHALL BE CURRENT LIMITING WITH THE INTERRUPTING CAPACITY OF 200,000AMP RMS SYMMETRICAL MINIMUM. FUSES SHALL BE BUSSMAN, GOULD OR LITTELFUSE. 		ITION	
3. PROVIDE FUSES SIZED FOR THE CONNECTED EQUIPMENT.		DD	SNC
 PANEL BOARDS DEAD FRONT TYPE, EQUIPPED WITH BOLT - ON CIRCUIT BREAKERS AND PROVISIONS FOR FUTURE BREAKERS, AS INDICATED. SQUARE D, GENERAL ELECTRIC, SIEMENS, OR CUTLER HAMMER. THE NUMBER OF POLES, TYPE, VOLTAGE, AND AMP RATING SHALL BE AS INDICATED ON THE PLANS. BUS BARS SHALL BE COPPER. PROVIDE FULL SIZE GROUND BUS. NEUTRAL WIRES SHALL BE CONNECTED TO A COMMON NEUTRAL BUS WITH BINDING SCREWS OR LUGS, THE NEUTRAL BUS SHALL BE INSULATED FROM THE CABINET. 	ARIZONA	SE DECK ADDITION	CIFICATIONS
 FURNISH COMPLETE WITH DOOR, KEYED LOCK AND TYPE WRITTEN, LAMINATED DIRECTORY. CABINETS SHALL BE RIGIDLY SUPPORTED INDEPENDENT OF CONDUITS. KEYING SHALL MATCH EXISTING PANEL BOARDS, IF ANY. 	CITY, /	SNOH	SPE
3. PROVIDE FULLY RATED PANEL BOARDS WITH A MINIMUM AIC RATING AS INDICATED ON THE DRAWINGS.	ΙШ	CLUB I	ICA
INTERIOR AND EXTERIOR LUMINARIES 1. PROVIDE LIGHTING SYSTEM COMPLETE WITH LAMPS AND ACCESSORIES, AS INDICATED IN THE CONTRACT DOCUMENTS.	PAG	GOLF CL	LECTRICAL
 LUMINARIES: A.) PROVIDE COMPLETE LUMINAIRE ASSEMBLIES OF TYPE INDICATED ON THE DRAWINGS WITH FEATURES, OPTIONS AND ACCESSORIES AS SCHEDULED AND AS NEEDED FOR A COMPLETE ASSEMBLY AND INSTALLATION. 		PN GC	
B.) PHILLIPS AUTO ENERGY ADVANTAGE ECON-O-WATT LAMPS SHALL NOT BE USED. CONTINUE ON SHEET E702			
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PART 2 – MATERIALS (CONTINUED) O. FIRE ALARM SEQUENCE OF OPERATION AND NOTES	PART 3 – EXECUTION A. DESCRIPTION
 A. THE ACTIVATION OF MANUAL PULL STATIONS, SMOKE DETECTORS, HEAT DETECTORS, FLOW DEVICE AND DUCT SMOKE DETECTORS SHALL CAUSE FIRE ALARM OPERATION AS FOLLOWS: THE AUDIBLE APPLIANCES (HORNS) TO SOUND AT A NORMALLY ATTENDED POINT IN THE FACILITY. 	1. ALL MATERIALS SHALL BE INSTALLED IN A PROFESSIONAL MANNER INDICATIVE OF THE TRADE. ALL PENETRATIONS OF THE OUTSIDE WALLS OR ROOF SHALL BE SEALED WITH APPROPRIATE SEALANT OR CAULK FOR THE PARTICULAR SURFACE INVOLVED.
 VISUAL APPLIANCES (STROBE LIGHTS) TO ACTIVATE. THE VISUAL INDICATION OF THE ALARM INITIATING AREA OF INCIDENCE BY DEVICE TYPE AND LOCATION AT THE FIRE ALARM CONTROL PANEL (FACP). 	 B. RACEWAYS 1. RACEWAYS SHALL RUN CONCEALED UNLESS OTHERWISE INDICATED. EXPOSED RACEWAY RUNS SHALL BE PARALLEL WITH SUPPORTING WALLS, BEAMS, AND CEILINGS AND WITH EACH OTHER AN SHALL NOT RUN CLOSER THAN 6 INCHES TO ANY WATER PIPE OR HEATER FLUME.
4. ACTIVATION OF AN AUDIBLE SIGNAL AT THE FIRE ALARM CONTROL PANEL AND REMOTE ANNUNCIATOR PANELS.	2. RACEWAY ENDS SHALL BE REAMED AFTER THREADING AND AFTER CUTTING AND BE MADE TO BUTT IN THE CENTER OF THE COUPLING. THE USE OF RUNNING THREADS IS PROHIBITED.
5. INITIATE OFF SITE ALARM NOTIFICATION. B. DISPLAY INITIATING DEVICE CIRCUIT TROUBLE CONDITIONS, SINGLE OPENS AND SINGLE GROUNDS. FOR EACH FIRE ALARM AND SUPERVISORY INITIATING CIRCUITS, AND PROVIDE A COMMON SYSTEM	3. RACEWAYS SHALL BE INSTALLED AS A COMPLETE SYSTEM, CONTINUOUS FROM OUTLET TO OUTLE CABINET, BOX OR FITTINGS, AND SHALL BE MECHANICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY FROM ONE TO ANOTHER IS OBTAINED. CONDUITS SHALL BE SUPPORTED
C. DISPLAY NOTIFICATION APPLIANCE CIRCUIT TROUBLE CONDITIONS, SINGLE OPENS, SHORTS, AND SINGLE GROUNDS, FOR EACH CIRCUIT, AND A COMMON SYSTEM TROUBLE AT THE FIRE ALARM CONTROL PANEL.	WITH ONE OR TWO HOLE STAMPED STEEL OR MALLEABLE IRON STRAPS (SUCH AS MANUFACTURE BY RACO) DESIGNED FOR SUPPORTING CONDUIT. THE SIZE OF STRAP SHALL MATCH THE SIZE O THE CONDUIT. NAILS, PERFORATED STRAP, OR PLUMBERS TAPE SHALL NOT BE USED FOR SUPPORT OF RACEWAY.
D. THE EFFECTIVE INTENSITY OF ALL NOTIFICATION STROBES SHALL BE A MINIMUM OF 15 CANDELA PRODUCING AN EQUIVALENT ILLUMINANCE OF 0.03 LUMENS/SQ. FT AT 20'-0" ON A HORIZONTAL AXIS.	4. PROVIDE 1/8" POLY PULL CORD IN RACEWAYS WITHOUT CONDUCTORS.
E. SYSTEM OPERATION SHALL BE LOW VOLTAGE (24 VOLTS DC) INCLUDING ALL SUPERVISORY AND CONTROL FUNCTIONS.	5. FOUR 90 DEGREE BENDS MAXIMUM BETWEEN TERMINATIONS OR BOXES. C. CONDUCTORS
F. UPON LOSS OF 120 VAC OPERATING POWER, THE ENTIRE SYSTEM SHALL OPERATE ON STAND-BY BATTERY POWER FOR 60 HOURS IN SUPERVISORY MODE AND THEN BE CAPABLE OF ALARM OPERATION FOR 5 MINUTES.	1. ALL CONDUCTORS SHALL BE INSTALLED IN CONDUIT AND COLOR CODED AS FOLLOWS: PHASE 208/120 PHASE A BLACK
G. THE TRANSFER TO STANDBY POWER SHALL NOT CAUSE A GENERAL ALARM TO BE GENERATED BUT SHALL BE INDICATED AT THE FIRE ALARM PANEL AND THE REMOTE ANNUNCIATOR PANELS AS SYSTEM AND BATTERY TROUBLE.	PHASE B RED PHASE C BLUE NEUTRAL WHITE GROUND GREEN
H. AUDIBLE AND VISUAL EVACUATION SIGNALS SHALL MEET THE REQUIREMENTS AND RECOMMENDATIONS OF NFPA-72 AND THE AMERICANS WITH DISABILITIES ACT (ADA).	2. MAKE JOINTS, SPLICES, TAPS AND CONNECTORS IN CONDUCTORS WITH SOLDERLESS CONNECTORS
I. SMOKE DETECTORS SHALL BE AS SHOWN ON THE PLANS AND OF THE PHOTOELECTRIC TYPE. LISTED TO UL-217. EACH DETECTOR SHALL HAVE A SOLID STATE PIEZO ALARM SIGNAL. SMOKE DETECTORS USED IF DIFFERENT FROM ABOVE. SHALL BE FOR 120 VOLT AC OPERATION LAMP WITH A POWER-ON INDICATOR. THE BUILT-IN AUDIBLE SIGNAL SHALL PRODUCE SOUND OUTPUTS FOR	3. WRING FOR FIRE ALARM SHALL BE TWISTED AND/OR SHIELDED SIZE AS RECOMMENDED BY THE MANUFACTURER OF THE EQUIPMENT AND TO ENSURE PROPER VOLTAGE AT THE DEVICE (AVOID VOLTAGE DROP OF MORE THAN 3%).
NOT LESS THAN 85DB AT 10'-0" FEET. THE BUILDING REQUIRED STANDARD SMOKE DETECTOR SHALL BE USED IF DIFFERENT FROM ABOVE.	 D. JUNCTION AND PULL BOXES 1. PULL BOXES SHALL BE PROVIDED WHERE INDICATED OR WHERE NECESSARY TO FACILITATE THE PULLING OF CONDUCTORS. TELEPHONE RACEWAYS SHALL HAVE A MAXIMUM OF TWO 90 DEGREE BENDS BETWEEN TERMINATIONS OR BOXES.
	E. GROUNDING 1. INSTALL A CODE SIZED GROUNDING CONDUCTOR IN ALL RACEWAYS. DO NOT USE THE RACEWAY
	FOR GROUNDING. MAKE GOOD CONTACT AT ALL PANEL BOARDS, OUTLET BOXES, AND JUNCTION OR PULL BOXES TO THE RACEWAY SYSTEM. USE APPROVED BONDING MATERIALS.
	 F. LUMINAIRE INSTALLATION 1. ALL FIXTURES RECESSED AND SURFACE SHALL BE SUPPORTED FROM THE STRUCTURE AND NOT FROM THE CEILING FRAMING OR GRID CEILING.
	 INSTALL RECESSED LUMINAIRES TO PERMIT REMOVAL FROM BELOW. LOCATE LUMINAIRES AS INDICATED ON THE DRAWINGS.
	 4. INSTALL ACCESSORIES FURNISHED WITH AND REQUIRED FOR EACH LUMINAIRE. G. BONDING 1. BOND ALL PIPING (GAS WATER, ETC) AS REQUIRED BY THE NEC. CONFIRM SYSTEMS TO BE USE
	WITH MC. H. SEISMIC REQUIREMENTS
	 IF REQUIRED, RECESSED TYPE LIGHTING FIXTURES, IN ADDITION TO THE STANDARD SEISMIC CLIPS AND SUPPORT ON T-BAR GRID SYSTEM, SHALL HAVE 2#12 STEEL SAFETY WIRES PER FIXTURE. ONE END OF EACH SAFETY WIRE SHALL BE SECURELY FASTENED TO THE BUILDING STRUCTURE. THE OTHER END (6 INCHES LONGER THAN THE T-BAR GRID SUPPORT WIRES) SHALL BE FASTEN TO DIAGONAL CORNERS OF EACH LIGHTING FIXTURE.
	I. CUTTING AND PATCHING
	1. PERFORM DRILLING, CUTTING, AND PATCHING OF THE GENERAL CONSTRUCTION WORK WHETHER EXISTING OR NEW, AS REQUIRED FOR THE INSTALLATION OF ELECTRICAL WORK. PATCH WITH THE SAME MATERIALS, WORKMANSHIP, AND FINISH AS THE ORIGINAL WORK AND ACCURATELY MATCH ALL SURROUNDING WORK. SUCH WORK WILL BE DONE BY A CRAFTSMAN ACCREDITED IN THE APPLICABLE TRADE UNDER THE CONTRACTOR'S SUPERVISION AND BE ACCEPTABLE TO THE OWNER'S REPRESENTATIVE. COORDINATE WITH OTHER TRADES AND GENERAL CONTRACTOR PRIOR
	TO CUTTING, DRILLING, OR CORING. J. WIRING DEVICES
	1. MOUNTING HEIGHTS TO THE CENTER OF THE DEVICE AND ORIENTATION SHALL BE AS FOLLOWS: THERMOSTATS/MECHANICAL SWITCHES 48" AFF
	LIGHT SWITCHÉS 48" AFF CONVENIENCE AND TELEPHONE OUTLETS ABOVE COUNTER 44" AFF
	DATA, TELEPHONE, TV AND CONVENIENCE OUTLETS (TYPICAL) 18" AFF ALL MOUNTING HEIGHTS ARE TYPICAL UNLESS NOTED OTHERWISE ON THE PLANS. ALL SWITCHES AND
	THERMOSTATS TO BE MOUNTED AS CLOSE TO DOOR JAMB AS POSSIBLE. COORDINATE ALL DEVICES WIT ARCHITECTURAL PLANS AND DETAILS. RECEPTACLES SHALL BE ORIENTED WITH THE GROUND TERMINAL UP WHEN INSTALLED VERTICAL AND WITH THE NEUTRAL TERMINAL(S) UP WHEN INSTALLED HORIZONTAL

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TEST 1.	TING DEMONSTRATE THAT ALL COMPONENTS OF THE WORK OF THIS DIVISION HAVE BEEN PROVIDED AND THAT THEY OPERATE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.	Registered	74028	r ind
2.	TEST WIRING AND CONNECTORS FOR CONTINUITY, SHORT CIRCUITS AND IMPROPER GROUNDS. TEST EACH LIGHTING AND APPLIANCE PANEL WITH MAINS DISCONNECTED FROM FEEDERS, BRANCHES		Wong Signed O ZONA U.	s.
	CONNECTED, WALL SWITCHES CLOSED AND FIXTURES PERMANENTLY CONNECTED AND COMPLETE WITH LAMPS. TEST EACH INDIVIDUAL POWER CIRCUIT WITH THE POWER EQUIPMENT CONNECTED FOR PROPER OPERATION.	SUBMITT		
3.	PROVIDE DETAILED DOCUMENTATION OF EACH TEST PERFORMED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE, WITH THE NAMES AND THE SIGNATURES OF QUALIFIED INDIVIDUALS WHO CONDUCTED AND WITNESSED EACH TEST.			
4.	LIGHTING CONTROL DEVICES AND CONTROL SYSTEMS SHALL BE TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED, AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. WHEN OCCUPANT SENSORS, TIME SWITCHES, PROGRAMMABLE			
	SCHEDULE CONTROLS, OR PHOTO-SENSORS ARE INSTALLED, AT A MINIMUM, THE FOLLOWING PROCEDURES SHALL BE PERFORMED: a. OCCUPANT SENSORS			
	 4.1.1. CERTIFY THAT THE SENSOR HAS BEEN LOCATED AND AIMED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. 4.1.2. FOR PROJECTS WITH UP TO SEVEN (7) OCCUPANCY SENSORS, ALL OCCUPANCY SENSORS SHALL BE TESTED. 	NO. DATE	REVISION	S
	4.1.3. FOR PROJECTS WITH MORE THAN SEVEN (7) OCCUPANCY SENSORS, TESTING SHALL BE DONE FOR EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY. FOR EACH SENSOR TO BE TESTED, VERIFY THE FOLLOWING: a.a. STATUS INDICATOR (AS APPLICABLE) OPERATES CORRECTLY.	e E		sn.r
	a.b. CONTROLLED LIGHTS TURN OFF OR DOWN TO THE PERMITTED LEVEL WITHIN THE REQUIRED TIME. a.c. FOR AUTO-ON OCCUPANT SENSORS, THE LIGHTS TURN ON TO THE PERMITTED	ectu	>	belldesign.us
	LEVEL WHEN SOMEONE ENTERS THE SPACE. a.d. FOR MANUAL-ON SENSORS, THE LIGHTS TURN ON ONLY WHEN MANUALLY ACTIVATED a.e. THE LIGHTS ARE NOT INCORRECTLY TURNED ON BY MOVEMENT IN NEARBY	hite	PAN	
	AREAS OR BY HVAC OPERATION. b. AUTOMATIC TIME SWITCHES: 1.1.1. CONFIRM THAT THE AUTOMATIC TIME—SWITCH CONTROL IS PROGRAMMED WITH	arc	COMPANY	_ camp
	APPROPRIATE WEEKDAY, WEEKEND, AND HOLIDAY (AS APPLICABLE) SCHEDULES. 1.1.2. DOCUMENT FOR THE OWNER AUTOMATIC TIME-SWITCH PROGRAMMING, INCLUDING WEEKDAY, WEEKEND, AND HOLIDAY SCHEDULES, AS WELL AS ALL SETUP AND PREFERENCE PROGRAM SETTINGS.		A J&D (
	1.1.3. VERIFY THAT CORRECT TIME AND DATE ARE PROPERLY SET IN THE TIME SWITCH. 1.1.4. VERIFY THAT ANY BATTERY BACKUP (AS APPLICABLE) IS INSTALLED AND ENERGIZED. 1.1.5. VERIFY THAT THE OVERRIDE TIME LIMIT IS SET TO NO MORE THAN TWO (2) HOURS.	qdu	۲	
	 1.1.6. SIMULATE OCCUPIED CONDITION. VERIFY AND DOCUMENT THE FOLLOWING: 1.1.7. ALL LIGHTS CAN BE TURNED ON AND OFF BY THEIR RESPECTIVE AREA CONTROL SWITCH. 1.1.8. THE SWITCH ONLY OPERATES LIGHTING IN THE ENCLOSED SPACE IN WHICH THE 	campbe		
	SWITCH IS LOCATED. c. DAYLIGHT CONTROLS: 1.1.1. ALL CONTROL DEVICES (PHOTOCONTROLS) HAVE BEEN PROPERLY LOCATED,			
	FIELD-CALIBRATED, AND SET FOR APPRÓPRIATE SETPOINTS AND THRESHOLD LIGHT LEVELS. 1.1.2. DAYLIGHT CONTROLLED LIGHTING LOADS ADJUST TO APPROPRIATE LIGHT LEVELS IN RESPONSE TO AVAILABLE DAYLIGHT.			
	1.1.3. THE LOCATION WHERE CALIBRATION ADJUSTMENTS ARE MADE IS READILY ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL.			
EITH CEF	INDIVIDUAL(S) RESPONSIBLE FOR THE FUNCTIONAL TESTING SHALL NOT BE DIRECTLY INVOLVED IN HER THE DESIGN OR CONSTRUCTION OF THE PROJECT AND SHALL PROVIDE DOCUMENTATION TIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET OR EXCEED ALL DOCUMENTED PERFORMANCE TERIA.			
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