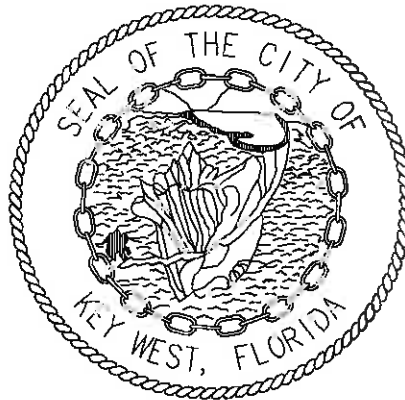


CONTRACT DOCUMENTS FOR:



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BAND ROOM STRUCTURAL REPAIRS

PROJECT #PR1102

NOVEMBER 2015

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MAYOR: CRAIG CATES

COMMISSIONERS:

RICHARD PAYNE

BILLY WARDLOW

JIMMY WEEKLEY

CLAYTON LOPEZ

SAM KAUFMAN

MARGARET ROMERO

PREPARED BY:  
City Of Key West  
Engineering Services

COPY NO. \_\_\_\_\_

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**PART 1**

**SOLICITATION AND PROPOSAL**

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**Bella Construction of Key West, Inc.**

**CGC 1518284**

35 Diamond

Key West, FL 33040

Ofc (305) 292-9888

Fax (305) 292-9880

[niels@concretebella.com](mailto:niels@concretebella.com)

Date: November 18, 2015

Proposal # 15-138

To: City of Key West

From: Niels Hubbell

Attn: Kreed Howell

Re: **BAND ROOM EMERGENCY  
DEMO AND REPAIR**

Email: [lhowell@cityofkeywest-fl.gov](mailto:lhowell@cityofkeywest-fl.gov)

### COVER SHEET

Kreed

Attached is a revised proposal with the requested breakout for Performance and Payment bond.

In addition I have transferred the contingency budget to the city's side for use if any changes occur as the plans are finalized.

I have also deducted the cost of permitting since the City will cover this cost.

Please contact me if you have any other questions.

Thanks

Niels

**Bella Construction of Key West, Inc.**  
**CGC 1518284**  
35 Diamond Dr  
Key West, FL 33040  
Ofc (305) 292-9888  
Fax (305) 292-9880  
[niels@concretebella.com](mailto:niels@concretebella.com)

**PROPOSAL**

Date: November 18, 2015

Proposal # 15-138 REVISED

To: City of Key West

From: Niels Hubbell

Attn: Kreed Howell

Re: BAND ROOM EMERGENCY  
DEMO AND REPAIR

Email: [lhowell@cityofkeywest-fl.gov](mailto:lhowell@cityofkeywest-fl.gov)

---

Bella has reviewed the information provided to us on this project to date and prepared the following quote:

**Our proposal for the work described below is \$247,500 (Two hundred Forty Seven thousand Five hundred dollars)**

See attached CSI breakdown for basis for the above cost.

Bella will provide all supervision, labor, materials, tools, equipment, and cleanup to complete the demolition, concrete repair, masonry window infill, roofing and temporary mechanical and electrical as listed on attached work scope.

Included in this price are the following items:

Concrete tie beam and tie column replacement in the quantities shown on the attached work scope. This represents total replacement of tie beams and complete replacement of the top 9vf of 15 columns. All concrete replacement to be done with 4,000 psi concrete.

New steel edge angle to be attached along sides parallel to steel joist to receive deck. Joist are assumed to bear on repaired tie beam and no steel embed work is included at joist bearing.

All mechanical and electrical work is assumed to be of a "temporary" nature and will be completed in Phase Two.

**Excludes:** Permit, Engineering Fees, Concrete Testing, Painting, and any work not specifically listed in attached Scope of Work.

Accepted by: \_\_\_\_\_

\_\_\_\_\_  
Bella Construction of Key West, Inc.

Date: \_\_\_\_\_

\_\_\_\_\_  
Date:

*EEH/STW*

**BAND ROOM EMERGENCY REPAIRS AND RENOVATION**

**CSI SUMMARY**

DIV 1	GENERAL REQUIREMENTS	\$	9,240
DIV 2	DEMOLITION	\$	84,152
DIV 3	CONCRETE REPAIRS	\$	78,208
DIV 4	MASONRY INFILL	\$	10,063
DIV 5	METALS	\$	4,200
DIV 6	WOOD & PLASTICS	\$	10,780
DIV 7	CAULK AND ROOFING	\$	10,060
DIV 8	NEW DOOR	\$	2,760
DIV 9	FINISHES	\$	-
DIV 10	SPECIALTIES	\$	-
DIV 11	EQUIPMENT	\$	-
DIV 12	FURNISHINGS	\$	-
DIV 13	SPECIAL CONSTRUCTION	\$	-
DIV 14	CONVEYING SYSTEMS	\$	-
DIV 15	MECHANICAL	\$	5,500
DIV 16	ELECTRICAL	\$	2,500
	SUBTOTAL	\$	<u>217,463</u>
	PERMIT ALLOWANCE		<u>By City</u>
	DIRECT COST SUBTOTAL	\$	217,463
	FEE	\$	24,000
		\$	<u>241,463</u>
	PERFORMANCE AND PAYMENT BOND	\$	6,037
	CONTINGENCY		<u>Carried by City</u>
	PROJECT TOTAL	\$	<u>247,500</u>

*REPAI*

ESTIMATE SUMMARY

PROJECT:  
 DATE:  
 SPEC. REVISION:

BAND ROOM  
 11/2/2015

SECTION	DESCRIPTION	QUANTITY	UNIT
DIV 1	GENERAL REQUIREMENTS AND SAFETY	0	
	PERMITS	1	CITY
	DUMPSTERS	0	
	CONCRETE 20 CY @ 3/4	2	EA
	GENERAL DEMO	2	EA
	SHORING SCAFFOLD RENTAL 40LF	40	LF
	DUCT SCREEN MISC	80	MNHR
DIV 1		0	
DIV 2	SITWORK and DEMOLITION	0	
	DEMO TIE BEAM	0	
	280 LF X 2 X 8" = 392 CF	392	CF
	40 LF 2 CREW DAYS	597.3	MNHR
	DEMO TIE COLUMNS	0	
	15 EA X 16" X 8" X 9VF = 109 CF	109	CF
	SHORING SCAFFOLD SET 10 SETS	720	MNHR
		320	MNHR
	DEMO INTERIOR 5 MEN 3 DAYS	120	MHR
	DEMO EXTERIOR AWNINGS ETC 5 M 2 DAYS	80	MHR
	DEMO WINDOW OPENINGS 14 EA 4M X 3 HRS	168	MNHR
	EQUIPMENT	24	HRS
	REMOVE ROOF AC AND MEZZ AC	1	ALLOW
		0	
DIV 3	CONCRETE	0	
	FORM TIE BEAM	1120	SF
	LABOR	224	MNHR
	DOWEL AND TIE REBAR	2800	LBS
	LABOR	700	MNHR
	POUR TIE BEAM	17	CY
	LABOR	87	MNHR
		0	
	FORM TIE COLUMNS	1080	SF
	LABOR	224	MNHR
	REBAR COLUMNS	1260	LBS
	LABOR	315	MNHR
	POUR TIE COLUMNS	13	CY
	LABOR	63	MNHR



ESTIMATE SUMMARY

PROJECT:

BAND ROOM

DATE:

11/2/2015

SPEC. REVISION:

SECTION	DESCRIPTION	QUANTITY	UNIT
DIV 4	MASONRY	0	
		0	
	INFILL OPENINGS	1150	BLOCK
		0	
DIV 5	METALS	0	
		0	
	EDGE ANGLES FOR DECK	105	LF
		0	
DIV 6	WOOD & PLASTICS	0	
		0	
	INSTALL NEW 2 X 6 NAILERS	840	LF
	LABOR	140	MNHR
	NEW FACIA HARDI	280	LF
	LABOR	56	MNHR
		0	
DIV 7	THERMAL & MOISTURE PROT. CAULKING AND SEALANTS	0	
		280	LF
		0	
	REMOVE REPLACE ROOF EDGE PATCH ROOF AT HVAC	1	LS
		0	
	MISC ROOF PATCH	1	ALLOW
DIV 8	DOORS & WINDOWS	0	
	HM DOORS AND FRAMES	0	
		0	
	NEW HM ENTRANCE DOOR AND FRAME	1	EA
	LABOR	24	MNHR
DIV 9	FINISHES	0	
		0	
		0	
DIV 15	MECHANICAL	0	
		0	
	HVAC NEW 5 TON TEMP UNIT	1	EA
		0	
DIV 16	ELECTRICAL	0	
		0	
	DISCONNECT EXISTING AND INSTALL TEMP SERVICE	1	LS
		0	

---

**PART 2**

**CONTRACT FORMS**

---

CONTRACT

This Contract, made and entered into this 2<sup>nd</sup> day of December 2015,  
by and between the City of Key West, hereinafter called the "Owner", and Bella  
Construction of Key West Inc.  
hereinafter called the "Contractor";

WITNESSETH:

The Contractor, in consideration of the sum to be paid him by the Owner and of the covenants and agreements herein contained, hereby agrees at his own proper cost and expense to do all the work and furnish all the materials, tools, labor, and all appliances, machinery, and appurtenances for **Band Room Structural Repairs PR1102**, Key West, Florida to the extent of the Proposal made by the Contractor, dated the 18<sup>th</sup> day of November 2015, all in full compliance with the Contract Documents referred to herein.

The CONTRACT DOCUMENTS, including the signed copy of the PROPOSAL, CONTRACT FORMS, PERFORMANCE & PAYMENT BONDS AND SCOPE OF WORK.

In consideration of the performance of the work as set forth in these Contract Documents, the Owner agrees to pay to the Contractor the amount bid in the Proposal as adjusted in accordance with the Contract Documents, or as otherwise herein provided, and to make such payments in the manner and at the times provided in the Contract Documents.

The Contractor agrees to complete the work within one hundred fifty (150) days and to accept as full payment hereunder the amounts computed as determined by the Contract Documents and based on the said BID.

The Contractor agrees to remedy all defects appearing in the work or developing in the materials furnished and the workmanship performed under this Contract during the warranty period after the date of final acceptance of the work by the Owner, and further agrees to indemnify and save the Owner harmless from any costs encountered in remedying such defects.

It is agreed that the Contract, based upon the BID, shall be fully complete within the stated number of consecutive calendar days from the date the Notice to Proceed is issued.

In the event the Contractor fails to complete the work within the time limit or extended time limit agreed upon, as more particularly set forth in the Contract Documents, liquidated damages shall be paid at a rate of \$1,000.00 per day. Sundays and legal holidays shall be included in determining days in default.

This contract will automatically expire upon completion of the project. Contractors warranty obligations remain in affect.

IN WITNESS WHEREOF, we, the parties hereto, each herewith subscribe the same this

2nd day of December, A.D., 2015.

CITY OF KEY WEST

By JKS200

Title CITY MANAGER

CONTRACTOR

By Edgar G Braswell III

Title President

\*\*\*\*



**SWORN STATEMENT UNDER SECTION 287.133(3)(A)  
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

**THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.**

1. This sworn statement is submitted with Bid or Proposal for Band  
Room Emergency Demo & Repair
2. This sworn statement is submitted by Bella Construction of Key West Inc  
(name of entity submitting sworn statement)  
whose business address is 35 Diamond Dr  
Key West, FL 33040  
and (if applicable) its Federal Employer Identification Number (FEIN) is 27-0952862  
  
(If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement \_\_\_\_\_)
3. My name is Edgar G. Braswell, IV  
(please print name of individual signing)  
and my relationship to the entity named above is President
4. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including but not limited to, any bid or contract for goods or services to be provided to any public or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, material misrepresentation.
5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means

- a. A predecessor or successor of a person convicted of a public entity crime; or
- b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
7. I understand that a "person" as defined in Paragraph 287.133(1)(8), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.
8. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies).

Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

\_\_\_\_\_ There has been a proceeding concerning the conviction before a hearing of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

\_\_\_\_\_ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

\_\_\_\_\_ The person or affiliate has not been put on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

Edgar D. Braswell III  
(signature)

12.2.15  
(date)

STATE OF Florida

COUNTY OF Montroe

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

Edgar G. Braswell, IV who, after first being sworn by me, affixed his/her  
(name of individual signing)

signature in the space provided above on this 2 day of December, 2015.

My commission expires: 5.14.18



[Handwritten Signature]

NOTARY PUBLIC



**INDEMNIFICATION**

To the fullest extent permitted by law, the CONTRACTOR expressly agrees to indemnify and hold harmless the City of Key West, their officers, directors, agents, and employees (herein called the "indemnitees") from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees and court costs, such legal expenses to include costs incurred in establishing the indemnification and other rights agreed to in this Paragraph, to persons or property, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR, its Subcontractors or persons employed or utilized by them in the performance of the Contract. Claims by indemnitees for indemnification shall be limited to the amount of CONTRACTOR's insurance or \$1 million per occurrence, whichever is greater. The parties acknowledge that the amount of the indemnity required hereunder bears a reasonable commercial relationship to the Contract and it is part of the project specifications or the bid documents, if any.

The indemnification obligations under the Contract shall not be restricted in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR under workers' compensation acts, disability benefits acts, or other employee benefits acts, and shall extend to and include any actions brought by or in the name of any employee of the CONTRACTOR or of any third party to whom CONTRACTOR may subcontract a part or all of the Work. This indemnification shall continue beyond the date of completion of the work.

CONTRACTOR: Bella Construction of SEAL:

Key West Inc  
35 Diamond

Address

Edgar G. Braswell IV

Signature

Edgar G. Braswell IV

Print Name

President

Title

12.2.15

Date

**LOCAL VENDOR CERTIFICATION PURSUANT TO CKW ORDINANCE 09-22 SECTION 2-798**

The undersigned, as a duly authorized representative of the vendor listed herein, certifies to the best of his/her knowledge and belief, that the vendor meets the definition of a "Local Business." For purposes of this section, "local business" shall mean a business which:

- a. Principle address as registered with the FL Department of State located within 30 miles of the boundaries of the city, listed with the chief licensing official as having a business tax receipt with its principle address within 30 miles of the boundaries of the city for at least one year immediately prior to the issuance of the solicitation.
- b. Maintains a workforce of at least 50 percent of its employees from the city or within 30 miles of its boundaries.
- c. Having paid all current license taxes and any other fees due the city at least 24 hours prior to the publication of the call for bids or request for proposals.
  - Not a local vendor pursuant to Ordinance 09-22 Section 2-798
  - Qualifies as a local vendor pursuant to Ordinance 09-22 Section 2-798

If you qualify, please complete the following in support of the self-certification & submit copies of your County and City business licenses. Failure to provide the information requested will result in denial of certification as a local business.

Business Name Bella Construction of Key West Phone: 305 292 9888  
Current Local Address: 35 Diamond Dr Fax: 305 292 9880  
(P.O Box numbers may not be used to establish status)

Length of time at this address: 6 months 1 year  
Edgar G. Braswell, IV Date: 12-2-15  
Signature of Authorized Representative

STATE OF Florida COUNTY OF Monroe

The foregoing instrument was acknowledged before me this 2 day of December, 2015.

By Edgar G. Braswell, IV, of Bella Construction  
(Name of officer or agent, title of officer or agent) (Name of corporation acknowledging)

or has produced identification \_\_\_\_\_ as  
identification  
(Type of identification)



Rachel Bashore  
Signature of Notary  
Rachel Bashore  
Print, Type or Stamp Name of Notary

Return Completed form with  
Supporting documents to: City of Key West Purchasing

Notary Public  
Title or Rank



---

**PART 3**

**CONDITIONS OF THE CONTRACT**

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**GENERAL CONDITIONS**  
**CONTENTS**

**Article**

**DEFINITIONS**

1. AS APPROVED
2. AS SHOWN, AND AS INDICATED
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4. CONTRACT DOCUMENTS
5. CONTRACTOR
6. CONTRACT COMPLETION
7. DAYS
8. DRAWINGS
9. ENGINEER
10. NOTICE
11. OR EQUAL
12. OWNER
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15. NOTICE TO PROCEED
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17. WORK

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DOCUMENTS

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29. LINES AND GRADES
30. SUBMITTALS
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  - C. COMPENSATION AND EMPLOYER'S  
LIABILITY INSURANCE
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- 71. RELEASE OF LIENS OR CLAIMS
- 72. FINAL PAYMENT
- 73. NO WAIVER OF RIGHTS
- 74. ACCEPTANCE OF FINAL PAYMENT  
CONSTITUTES RELEASE

\*\*\*\*\*

## **DEFINITIONS**

Whenever in the Contract Documents the following terms are used, the intent and meaning shall be interpreted as follows:

### **1. AS APPROVED**

The words "as approved", unless otherwise qualified, shall be understood to be followed by the words "by the ENGINEER for conformance with the Contract Document".

### **2. AS SHOWN, AND AS INDICATED**

The words "as shown" and "as indicated" shall be understood to be followed by the words "on the Drawings".

### **3. BIDDER**

The person or persons, partnership, firm, or corporation submitting a Proposal for the work contemplated.

### **4. CONTRACT DOCUMENTS**

The "Contract Documents" consist of the Bidding Requirements, Contract Forms, Conditions of the Contract, Specifications, Drawings, all modifications thereof incorporated into the Documents before their execution, Change Orders, and all other requirements incorporated by specific reference thereto. These form the Contract.

### **5. CONTRACTOR**

The person or persons, partnership, firm, or corporation who enters into the Contract awarded him by the OWNER.

### **6. CONTRACT COMPLETION**

The "Contract Completion" is the date the OWNER accepts the entire work as being in compliance with the Contract Documents, or formally waives nonconforming work to extent of nonconformity, and issues the final payment in accordance with the requirements set forth in Article, "Final Payment" of these General Conditions.

### **7. DAYS**

Unless otherwise specifically stated, the term "days" will be understood to mean calendar days. Business day or working day means any day other than Saturday, Sunday, or legal holiday.

### **8. DRAWINGS**

The term "Drawings" refers to the official Drawings, Profiles, cross sections, elevations, details, and other working drawings and supplementary drawings, or reproductions thereof, signed by the ENGINEER, which shows the location, character, dimensions, and details of the work to be performed. Drawings may either be bound in the same book as the balance of the Contract Documents, or bound in separate sets, and are a part of the Contract Documents, regardless of the method of binding.

### **9. ENGINEER**

The person or organization identified as such in the Contract Documents. The Term "ENGINEER" means ENGINEER or his authorized representative.

### **10. NOTICE**

The term "notice" or the requirement to notify, as used in the Contract Documents or applicable state or federal statutes, shall signify a written communication delivered in person or by registered mail to the individual, or to a member of the firm, or to an officer of the corporation for whom it is intended. Certified or registered mail shall be addressed to the last business address known to him who gives the notice.

### **11. OR EQUAL**

The term "or equal" shall be understood to indicate that the "equal" Product is equivalent to or better than the Product named in function, performance, reliability, quality, and general configuration. Determination of equality in reference to the Project design requirements will be made by the ENGINEER. Such equal Products shall not be purchased or installed by the CONTRACTOR without written authorization.

### **12. OWNER**

The person, organization, or public body identified as such in the Contract Documents.

### **13. PLANS (See Drawings)**

### **14. SPECIFICATIONS**

The term "Specifications" refers to those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards, and workmanship as applied to the work and certain

administrative details applicable thereto. Where standard specifications, such as those of ASTM, AASHTO, etc., have been referred to, the applicable portions of such standard specifications shall become a part of these Contract Documents. If referenced specifications conflict with specifications contained herein, the requirements contained herein shall prevail.

#### **15. NOTICE TO PROCEED**

A written notice given by the OWNER to the CONTRACTOR (with a copy to the ENGINEER) fixing the date on which the Contract time will commence to run and on which the CONTRACTOR shall start to perform his obligation under the Contract Documents. The Notice to Proceed will be given within 30 days following the execution of the Contract by the OWNER.

#### **16. SUBSTANTIAL COMPLETION**

“Substantial Completion” shall be that degree of completion of the Project or a defined portion of the Project, as evidenced by the ENGINEER’s written notice of Substantial Completion, sufficient to Provide the OWNER, at his discretion, the full-time use of the Project or defined portion of the Project for the purposes for which it was intended. “Substantial Completion” of an operating facility shall be that degree of completion that has Provided a minimum of 7 continuous days of successful, trouble-free, operation, which period shall begin after all performance and acceptance testing has been successfully demonstrated to the ENGINEER. All equipment contained in the work, plus all other components necessary to enable the OWNER to operate the facility in a manner that was intended, shall be complete on the substantial completion date.

#### **17. WORK**

The word “work” within these Contract Documents shall include all material, labor, tools, and all appliances, machinery, transportation, and appurtenances necessary to perform and complete the Contract, and such additional items not specifically indicated or described which can be reasonably inferred as belonging to the item described or indicated and as required by good Practice to Provide a complete and satisfactory system or structure. As used herein, “Provide” shall be understood to mean “furnish and install, complete in-place”.

### **CONTRACT DOCUMENTS**

#### **18. INTENT OF CONTRACT DOCUMENTS**

The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intent of the Documents is to describe a functionally complete Project (or part thereof) to be constructed in accordance with

the Contract Documents. Any work, materials, or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning.

Reference to standard specifications, manuals, or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect on the first published date of the Invitation to Bid, except as may be otherwise specifically stated. However, no Provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to ENGINEER, or any ENGINEER’s consultants, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the Provisions of Article LIMITATIONS ON ENGINEER’S RESPONSIBILITIES.

#### **19. DISCREPANCIES AND OMISSIONS**

Any discrepancies or omissions found in the Contract Documents shall be reported to the ENGINEER immediately. The ENGINEER will clarify discrepancies or omissions, in writing, within a reasonable time.

In resolving inconsistencies among two or more sections of the Contract Documents, Precedence shall be given in the following order:

- A. CONTRACT
- B. PROPOSAL
- C. SUPPLEMENTARY CONDITIONS
- D. INVITATION TO BID
- E. INSTRUCTIONS TO BIDDERS
- F. GENERAL CONDITIONS
- G. SPECIFICATIONS
- H. DRAWINGS

Addenda shall take Precedence over all sections referenced therein. Figure dimensions on Drawings shall take precedence over scale dimensions. Detailed Drawings shall take precedence over general Drawings.

#### **20. CHANGES IN THE WORK**

The OWNER, without notice to the Sureties and without invalidating the Contract, may order changes in the work



within the general scope of the Contract by altering, adding to, or deducting from the work, the Contract being adjusted accordingly. All such work shall be executed under the conditions of the original Contract, except as specifically adjusted at the time of ordering such change.

In giving instructions, the ENGINEER may order minor changes in the work not involving extra cost and not inconsistent with the purposes of the Project, but otherwise, except in an emergency endangering life and Property, additions or deductions from the work shall be performed only in pursuance of an approved Change Order from the OWNER, countersigned by the ENGINEER.

If the work is reduced by alterations, such action shall not constitute a claim for damages based on loss of anticipated Profits.

#### **21. EXAMINATION AND VERIFICATION OF CONTRACT DOCUMENTS**

The CONTRACTOR shall thoroughly examine and become familiar with all of the various parts of these Contract Documents and determine the nature and location of the work, the general and local conditions, and all other matters, which can in any way affect the work under this Contract. Failure to make an examination necessary for this determination shall not release the CONTRACTOR from the obligations of this Contract. No verbal agreement or conversation with any officer, agent, or employee of the OWNER or with the ENGINEER either before or after the execution of this Contract shall affect or modify any of the terms or obligations herein contained.

#### **22. DOCUMENTS TO BE KEPT ON THE JOBSITE**

The CONTRACTOR shall keep one copy of the Contract Documents on the job- site, in good order, available to the ENGINEER and to his representatives.

The CONTRACTOR shall maintain on a daily basis at the jobsite, and make available to the ENGINEER on request, one current record set of the Drawings which have been accurately marked to indicate all modifications in the completed work that differ from the design information shown on the Drawings. Upon Substantial completion of the work, the CONTRACTOR shall give the ENGINEER one complete set of these marked up record Drawings.

#### **23. ADDITIONAL CONTRACT DOCUMENTS**

Copies of Contract Documents or Drawings may be obtained on request from the ENGINEER and by paying the actual cost of reproducing the Contract Documents or Drawings.

#### **24. OWNERSHIP OF CONTRACT DOCUMENTS**

All portions of the Contract Documents, and copies thereof furnished by the ENGINEER are instruments of service for this Project. They are not to be used on other work and are to be returned to the ENGINEER on request at the completion of the work. Any reuse of these materials without specific written verification or adaptation by the ENGINEER will be at the risk of the user and without liability or legal expense to the ENGINEER. Such user shall hold the ENGINEER harmless from any and all damages, including reasonable attorneys' fees, from any and all claims arising from any such reuse. Any such verification and adaptation shall entitle the ENGINEER to further compensation at rates to be agreed upon by the user and the ENGINEER.

#### **THE ENGINEER**

#### **25. AUTHORITY OF THE ENGINEER**

The ENGINEER will be the OWNER's representative during the construction period. His authority and responsibility will be limited to the Provisions set forth in these Contract Documents. The ENGINEER will have the Authority to reject work that does not conform to the Contract Documents. However, neither the ENGINEER's authority to act under this Provision, nor any decision made by him in good faith either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any SUBCONTRACTOR, their respective Sureties, any of their agents or employees, or any other person performing any of the work.

#### **26. DUTIES AND RESPONSIBILITIES OF THE ENGINEER**

The ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the Progress and quality of the work and to determine, in general, if the work is proceeding in accordance with the intent of the Contract Documents. He will not make comprehensive or continuous review or observation to check quality or quantity of the work, and he will not be responsible for construction means, methods, techniques, sequences, or Procedures, or for safety Precautions and Programs in connection with the work. Visits and observations made by the ENGINEER shall not relieve the CONTRACTOR of his obligation to conduct comprehensive inspections of the work and to furnish materials and perform acceptable work, and to provide adequate safety Precautions, in conformance with the intent of the Contract.

The ENGINEER will make recommendations to the OWNER, in writing, on all claims of the OWNER or the CONTRACTOR arising from interpretation or execution of

the Contract Documents. Such recommendations will be of factual and/or technical nature, and will not include the legal interpretation of the Contract Documents. Any necessary legal interpretation of the Contract Document will be made by the OWNER. Such recommendation shall be necessary before the CONTRACTOR can receive additional money under the terms of the Contract. Changes in work ordered by the ENGINEER shall be made in compliance with Article CHANGES IN THE WORK.

One or more Project representatives may be assigned to observe the work. It is understood that such Project representatives shall have the authority to issue notice of nonconformance and make decisions within the limitations of the authority of the ENGINEER. The CONTRACTOR shall furnish all reasonable assistance required by the ENGINEER or Project representatives for Proper observation of the work. The above-mentioned Project representatives shall not relieve the CONTRACTOR of his obligations to conduct comprehensive inspections of the work and to furnish materials and perform acceptable work, and to provide adequate safety Precautions, in conformance with the intent of the Contract.

#### **27. LIMITATIONS ON ENGINEER'S RESPONSIBILITIES**

ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences, or Procedures of construction, or the safety Precautions and Programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the work in accordance with the Contract Documents.

ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any SUBCONTRACTOR, any supplier, or of any other person or organization performing or furnishing any of the work.

Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved", or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "Proper", or "satisfactory", or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the Provisions of this Article.

#### **28. REJECTED WORK**

Any defective work or nonconforming materials or equipment that may be discovered at any time prior to expiration of the warranty period shall be removed and replaced by work which shall conform to the Provisions of the Contract Documents. Any material condemned or rejected shall be removed at once from the Project site.

Failure on the part of the ENGINEER to condemn or reject bad or inferior work or to note nonconforming materials or equipment on CONTRACTOR submittals shall not be construed to imply acceptance of such work. The OWNER shall reserve and retain all of its rights and remedies at law against the CONTRACTOR and its Surety for correction of any and all latent defects discovered after the guarantee period.

#### **29. LINES AND GRADES**

Lines and grades shall be established as provided in the supplementary conditions. All stakes, marks, and other reference information shall be carefully preserved by the CONTRACTOR, and in case of their careless or unnecessary destruction or removal by him or his employees, such stakes, marks, and other information shall be replaced at the CONTRACTOR's expense.

#### **30. SUBMITTALS**

After checking and verifying all field measurements and after complying with applicable Procedures specified in Division I, GENERAL REQUIREMENTS, CONTRACTOR shall submit to ENGINEER, in accordance with the schedule for submittals for review, shop drawings, electrical diagrams, and catalog cuts for fabricated items and manufactured items (including mechanical and electrical equipment), which shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submittal. All submittals shall be identified as ENGINEER may require. The data shown shall be complete with respect to quantities, dimensions specified, performance and design criteria, materials, and similar data to enable ENGINEER to review the information. CONTRACTOR shall also submit to ENGINEER for review, with such Promptness as to cause no delay in work, all samples required by the Contract Documents. All samples shall have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission and shall be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which intended.

Before submission of each submittal, CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect

thereto and reviewed or coordinated each submittal with other submittals and with the requirements of the work and the Contract Documents.

At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the submittal may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each shop drawing submitted to ENGINEER for review and approval of each variation.

ENGINEER will review submittals with reasonable Promptness, but ENGINEER's review will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences, or Procedures of construction (except where a specific means, method, technique, sequence, or Procedure of construction is indicated in or required by the Contract Documents) or to safety Precautions or Programs incident thereto. The review of a separate item as such will not indicate review of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of shop drawings and submit as required new samples for review. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on Previous submittals.

ENGINEER's review of submittals shall not relieve CONTRACTOR from the responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission and ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated therein or accompanying the shop drawing or sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the shop drawings or from responsibility for having complied with the Provisions herein.

Where a shop drawing or sample is required by the specifications, any related work performed Prior to ENGINEER's review and approval of the pertinent submission shall be at the sole expense and responsibility of the CONTRACTOR.

### **31. DETAIL DRAWINGS AND INSTRUCTIONS**

The ENGINEER will furnish, with reasonable Promptness, additional instructions by means of Drawings or otherwise, if, in the ENGINEER's opinion, such are required for the Proper execution of the work. All such Drawings and instructions will be consistent with the Contract Documents, true developments thereof, and reasonably inferable there from.

## **THE CONTRACTOR AND HIS EMPLOYEES**

### **32. CONTRACTOR, AN INDEPENDENT AGENT**

The CONTRACTOR shall independently perform all work under this Contract and shall not be considered as an agent of the OWNER or of the ENGINEER, nor shall the CONTRACTOR's SUBCONTRACTORS or employees be subagents of the OWNER or of the ENGINEER.

#### **32. (a) ASSIGNMENT OF CONTRACT**

Assignment of any part or the whole of this Contract shall be subject to review and approval of the City Commission.

### **33. SUBCONTRACTING**

Unless modified in the Supplementary Conditions, within 10 days after the execution of the Contract, the CONTRACTOR shall submit to the ENGINEER the names of all SUBCONTRACTORS Proposed for the work, including the names of any SUBCONTRACTORS that were submitted with the Proposal. The CONTRACTOR shall not employ any SUBCONTRACTORS to which the OWNER may object to as lacking capability to properly perform work of the type and scope anticipated.

The CONTRACTOR is as fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS and of persons either directly or indirectly employed by them as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the Contract Documents shall create any contractual relationship between any SUBCONTRACTOR and the OWNER or ENGINEER.

### **34. INSURANCE AND LIABILITY**

#### **A. GENERAL**

The CONTRACTOR shall provide (from insurance companies acceptable to the OWNER) the insurance coverage designated hereinafter and pay all costs before commencing work under this Contract. The CONTRACTOR shall furnish the OWNER with certificates of insurance specified herein showing the type, amount class of operations covered, effective dates, and date of expiration of policies, and containing substantially the following statement:

"The insurance covered by this certificate shall not be canceled or materially altered, except after 30 days' written notice has been received by the OWNER."

In case of the breach of any Provision of this Article, the OWNER, at his option, may take out and maintain, at the

expense of the CONTRACTOR, such insurance as the OWNER may deem Proper and may deduct the cost of such insurance from any monies which may be due or become due the CONTRACTOR under this Contract.

**B. CONTRACTOR AND SUBCONTRACTOR INSURANCE**

The CONTRACTOR shall not commence work under this Contract until he has obtained all the insurance required hereunder and such insurance has been reviewed by the OWNER, nor shall the CONTRACTOR allow any SUBCONTRACTOR to commence work on his subcontract until insurance specified below has been obtained. Review of the insurance by the OWNER shall not relieve or decrease the liability of the CONTRACTOR hereunder.

**C. COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE**

The CONTRACTOR shall maintain during the life of this Contract the statutory amount of Workmen's Compensation Insurance, in addition, Employer's Liability Insurance in an amount as specified in the Supplementary Conditions, for each occurrence, for all of his employees to be engaged in work on the Project under this Contract. In case any such work is subcontracted, the CONTRACTOR shall require the SUBCONTRACTOR to provide similar Workmen's Compensation and Employer's Liability Insurance for all of the SUBCONTRACTOR's employees to be engaged in such work.

**D. GENERAL LIABILITY INSURANCE (INCLUDING AUTOMOBILE)**

The CONTRACTOR shall maintain during the life of this Contract such general liability, completed operations and Products liability, and automobile liability insurance as will Provide coverage for claims for damages for personal injury, including accidental death, as well as for claims for Property damage, which may arise directly or indirectly from performance of the work under this Contract. The general liability policy shall include contractual liability assumed by the CONTRACTOR under Article INDEMNITY. Coverage for Property damage shall be on a "broad form" basis with no exclusions for "X, C & U". The amount of insurance to be provided shall be as specified in the Supplementary Conditions.

In the event any work under this Contract is performed by a SUBCONTRACTOR, the CONTRACTOR shall be responsible for any liability directly or indirectly arising out of the work performed by the SUBCONTRACTOR; to the extent such liability is not covered by the SUBCONTRACTOR's insurance.

The OWNER and ENGINEER, their officers, agents, and employees shall be named as Additional Insured's on the CONTRACTOR's and any SUBCONTRACTOR's general liability and automobile liability insurance policies for any claims arising out of work performed under this Contract.

**E. BUILDERS RISK ALL RISK INSURANCE**

Unless otherwise modified in the Supplementary Conditions, the CONTRACTOR shall secure and maintain during the life of this Contract, Builders Risk All Risk Insurance coverage in an amount equal to the full value of the facilities under construction. Such insurance shall include coverage for earthquake, landslide, flood, collapse, loss due to the results of faulty workmanship or design, and all other normally covered risks, and shall provide for losses to be paid to the CONTRACTOR, OWNER, and ENGINEER as their interests may appear.

The OWNER and ENGINEER, their officers, agents, and employees shall be named as additional insured's on the CONTRACTOR's and any SUBCONTRACTOR's Builders Risk All Risk insurance policies for any claims arising out of work performed under this Contract.

This insurance shall include a waiver of subrogation as to the ENGINEER, the OWNER, the CONTRACTOR, and their respective officers, agents, employees and SUBCONTRACTORS.

**F. NO PERSONAL LIABILITY OF PUBLIC OFFICIALS**

In carrying out any of the Provisions hereof in exercising any authority granted by the Contract, there will be no personal liability upon any public official.

**35. INDEMNITY**

To the maximum extent permitted by law, the CONTRACTOR shall indemnify and defend the OWNER and the ENGINEER, and their officers, employees, agents, and sub-consultants, from all claims and losses, including attorney's fees and litigation costs arising out of Property losses or health, safety, personal injury, or death claims by the CONTRACTOR, its SUBCONTRACTORS of any tier, and their employees, agents, or invitees regardless of the fault, breach of Contract, or negligence of the OWNER or ENGINEER, excepting only such claims or losses that have been adjudicated to have been caused solely by the negligence of the OWNER or the ENGINEER and regardless of whether or not the CONTRACTOR is or can be named a party in a litigation.

**36. EXCLUSION OF CONTRACTOR CLAIMS**

In performing its obligations, the ENGINEER and its consultants may cause expense for the CONTRACTOR or its SUBCONTRACTORS and equipment or material suppliers. However, those parties and their sureties shall maintain no direct action against the ENGINEER, its officers, employees, agents, and consultants for any claim arising out of, in connection with, or resulting from the engineering services performed or required to be performed.

### **37. TAXES AND CHARGES**

The CONTRACTOR shall withhold and pay any and all sales and use taxes and all withholding taxes, whether State or Federal, and pay all Social Security charges and also all State Unemployment Compensation charges, and pay or cause to be withheld, as the case may be, any and all taxes, charges, or fees or sums whatsoever, which are now or may hereafter be required to be paid or withheld under any laws.

### **38. REQUIREMENTS OF STATE LAW FOR PUBLIC WORKS PROJECTS**

When the Contract Documents concern public works of the state or any county, municipality, or political subdivision created by its laws, the applicable statutes shall apply. All parties to this Contract shall determine the contents of all applicable statutes and comply with their Provisions throughout the performance of the Contract.

### **39. CODES, ORDINANCES, PERMITS AND LICENSES**

The CONTRACTOR shall keep himself fully informed of all local codes and ordinances, as well as state and federal laws, which in any manner affect the work herein specified. The CONTRACTOR shall at all times comply with said codes and ordinances, laws, and regulations, and Protect and indemnify the OWNER, the ENGINEER and their respective employees, and its officers and agents against any claim or liability arising from or based on the violation of any such laws, ordinances, or regulations. All permits, licenses and inspection fees necessary for Prosecution and completion of the work shall be secured and paid for by the CONTRACTOR, unless otherwise specified.

### **40. SUPERINTENDENCE**

The CONTRACTOR shall keep at the project site, competent supervisory personnel. The CONTRACTOR shall designate, in writing, before starting work, a Project superintendent who shall be an employee of the CONTRACTOR and shall have complete authority to represent and to act for the CONTRACTOR. ENGINEER shall be notified in writing prior to any change in superintendent assignment. The CONTRACTOR shall give efficient supervision to the work,

using his **best** skill and attention. The CONTRACTOR shall be solely responsible for all construction means, methods, techniques, and Procedures, and for providing adequate safety Precautions and coordinating all portions of the work under the Contract. It is specifically understood and agreed that the ENGINEER, its employees and agents, shall not have control or charge of and shall not be responsible for the construction means, methods, techniques, Procedures, or for providing adequate safety Precautions in connection with the work under Contract.

### **41. RECEPTION OF ENGINEER'S COMMUNICATIONS**

The superintendent shall receive for the CONTRACTOR all communications from the ENGINEER. Communications of major importance will be confirmed in writing upon request from the CONTRACTOR.

The ENGINEER may schedule Project meetings for the purposes of discussing and resolving matters concerning the various elements of the work. Time and place for these meetings and the names of persons required to be Present shall be as determined by the ENGINEER. CONTRACTOR shall comply with these attendance requirements and shall also require his SUBCONTRACTORS to comply.

### **42. SAFETY**

The CONTRACTOR shall be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees) and Property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety Provisions shall conform to U.S. Department of Labor (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. The CONTRACTOR's failure to thoroughly familiarize himself with the aforementioned safety Provisions shall not relieve him from compliance with the obligations and penalties set forth therein.

The CONTRACTOR shall develop and maintain for the duration of this Contract, a safety Program that will effectively incorporate and implement all required safety Provisions. The CONTRACTOR shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety Program. The duty of the ENGINEER to conduct construction review of the work does not include review or approval of the adequacy of the CONTRACTOR's safety Program, safety supervisor, or any safety measures taken in, on, or near the construction site. The CONTRACTOR, as a part of his safety Program, shall maintain at his office or other well-known place at the jobsite, safety equipment applicable to the work as Prescribed by the aforementioned authorities, all articles necessary for giving first-aid to the injured, and shall

establish the Procedure for the immediate removal to a hospital or a doctor's care of persons (including employees) who may be injured on the jobsite.

If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the ENGINEER and the OWNER. In addition, the CONTRACTOR must promptly report in writing to the ENGINEER all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.

If a claim is made by anyone against the CONTRACTOR or any SUBCONTRACTOR on account of any accident, the CONTRACTOR shall promptly report the facts in writing to the ENGINEER, giving full details of the claim.

#### **43. PROTECTION OF WORK AND PROPERTY**

The CONTRACTOR shall at all times safely guard and Protect from damage the OWNER's Property, adjacent Property, and his own work from injury or loss in connection with this Contract. All facilities required for Protection by federal, state, or municipal laws and regulations and local conditions must be provided and maintained.

The CONTRACTOR shall Protect his work and materials from damage due to the nature of the work, the elements, carelessness of other CONTRACTORS, or from any cause whatever until the completion and acceptance of the work. All loss or damages arising out of the nature of the work to be done under these Contract Documents, or from any unforeseen obstruction or defects which may be encountered in the Prosecution of the work, or from the action of the elements, shall be sustained by the CONTRACTOR.

#### **44. RESPONSIBILITY OF CONTRACTOR TO ACT IN AN EMERGENCY**

In case of an emergency which threatens loss or injury of Property, and/or safety of life, the CONTRACTOR shall act, without previous instructions from the OWNER or ENGINEER, as the situation may warrant. The CONTRACTOR shall notify the ENGINEER thereof immediately thereafter. Any claim for compensation by the CONTRACTOR, together with substantiating documents in regard to expense, shall be submitted to the OWNER through the ENGINEER and the amount of compensation shall be determined by agreement.

#### **45. MATERIALS AND APPLIANCES**

Unless otherwise stipulated, the CONTRACTOR shall Provide and pay for all materials, labor, water, tools, equipment, heat, light, fuel, power, transportation, construction equipment and machinery, appliances, telephone, sanitary

facilities, temporary facilities and other facilities and incidentals necessary for the execution and completion of the work.

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of good quality. The CONTRACTOR shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

In selecting and/or approving equipment for installation in the Project, the OWNER and ENGINEER assume no responsibility for injury or claims resulting from failure of the equipment to comply with applicable federal, state, and local safety codes or requirements, or the safety requirements of a recognized agency, or failure due to faulty design concepts, or defective workmanship and materials.

#### **46. CONTRACTORS' AND MANUFACTURERS' COMPLIANCE WITH STATE SAFETY, OSHA, AND OTHER CODE REQUIREMENTS**

The completed work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items required by the state and federal (OSHA) industrial authorities and applicable local and national codes. Further, any features of the work subject to such safety regulations shall be fabricated, furnished, and installed (including OWNER-furnished equipment) in compliance with these requirements. CONTRACTORS and manufacturers of equipment shall be held responsible for compliance with the requirements included herein. CONTRACTORS shall notify all equipment suppliers and SUBCONTRACTORS of the Provisions of this Article.

#### **47. SUBSTITUTION OF MATERIALS**

Except for OWNER-selected equipment items, and items where no substitution is clearly specified, whenever any material, article, device, Product, fixture, form, type of construction, or Process is indicated or specified by patent or Proprietary name, by name of manufacturer, or by catalog number, such specifications shall be deemed to be used for the purpose of establishing a standard of quality and facilitating the description of the material or Process desired. This Procedure

is not to be construed as eliminating from competition other Products of equal or better quality by other manufacturers where fully suitable in design, and shall be deemed to be followed by the words "or equal". The CONTRACTOR may, in such cases, submit complete data to the ENGINEER for consideration of another material, type, or Process that shall be substantially equal in every respect to that so indicated or specified. Substitute materials shall not be used unless approved in writing. The ENGINEER will be the sole judge of the substituted article or material.

#### **48. TESTS, SAMPLES, AND OBSERVATIONS**

The CONTRACTOR shall furnish, without extra charge, the necessary test pieces and samples, including facilities and labor for obtaining the same, as requested by the ENGINEER. When required, the CONTRACTOR shall furnish certificates of tests of materials and equipment made at the point of manufacture by a recognized testing laboratory.

The OWNER, ENGINEER, and authorized government agents, and their representatives shall at all times be Provided safe access to the work wherever it is in Preparation or Progress, and the CONTRACTOR shall Provide facilities for such access and for observations, including maintenance of temporary and permanent access.

If the Specifications, laws, ordinances, or any public authority require any work, to be specially tested or approved, the CONTRACTOR shall give timely notice of its readiness for observations. If any work should be covered up without approval or consent of the ENGINEER, it shall, if required by the ENGINEER, be uncovered for examination at the CONTRACTOR's expense.

Reexamination of questioned work may be ordered by the ENGINEER, and, if so ordered, the work shall be uncovered by the CONTRACTOR. If such work is found to be in accordance with the Contract Documents, the OWNER will pay the cost of uncovering, exposure, observation, inspection, testing and reconstruction. If such work is found to be not in accordance with the Contract Documents, the CONTRACTOR shall correct the defective work, and the cost of reexamination and correction of the defective work shall be paid by the CONTRACTOR.

#### **49. ROYALTIES AND PATENTS**

The CONTRACTOR shall pay all royalty and licenses fees, unless otherwise specified. The CONTRACTOR shall defend all suits or claims for infringement of any patent rights and shall save the OWNER and the ENGINEER harmless from any and all loss, including reasonable attorneys' fees, on account thereof.

#### **50. CONTRACTOR'S RIGHT TO TERMINATE CONTRACT**

If the work should be stopped under an order of any court or other public authority for a period of more than 3 months, through no act or fault of the CONTRACTOR, its SUBCONTRACTORS, or respective employees or if the ENGINEER should fail to make recommendation for payment to the OWNER or return payment request to CONTRACTOR for revision within 30 days after it is due, or if the OWNER should fail to pay the CONTRACTOR within 30 days after time specified in Article PARTIAL PAYMENTS, any sum recommended by the ENGINEER, then the CONTRACTOR

may, upon 15 days' written notice to the OWNER and the ENGINEER, stop work or terminate this Contract and recover from the OWNER payment for all acceptable work performed and reasonable termination expenses, unless said default has been remedied.

#### **51. CORRECTION OF DEFECTIVE WORK DURING WARRANTY PERIOD**

The CONTRACTOR hereby agrees to make, at his own expense, all repairs or replacements necessitated by defects in materials or workmanship, Provided under terms of this Contract, and pay for any damage to other works resulting from such defects, which become evident within 2 years after the date of final acceptance of the work or within 2 years after the date of substantial completion established by the ENGINEER for specified items of equipment, or within such longer period as may be Prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. Un-remedied defects identified for correction during the warranty period but remaining after its expiration shall be considered as part of the obligations of the warranty. Defects in material, workmanship, or equipment which are remedied as a result of obligations of the warranty shall subject the remedied portion of the work to an extended warranty period of 2 years after the defect has been remedied.

The CONTRACTOR further assumes responsibility for a similar guarantee for all work and materials provided by SUBCONTRACTORS or manufacturers of packaged equipment components. The effective date for the start of the guarantee or warranty period for equipment qualifying as substantially complete is defined in Article SUBSTANTIAL COMPLETION, AND Article SUBSTANTIAL COMPLETION DATE, in these General Conditions.

The CONTRACTOR also agrees to hold the OWNER and the ENGINEER harmless from liability of any kind arising from damage due to said defects. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order for same from the OWNER. If the CONTRACTOR fails to make the repairs and replacements promptly, or in an emergency where delay would cause serious risk, or loss, or damage, the OWNER may have the defective work corrected or the rejected work removed and replaced, and the CONTRACTOR and his Surety shall be liable for the cost thereof.

#### **PROGRESS OF THE WORK**

#### **52. BEGINNING OF THE WORK**

Following execution of the Contract, the CONTRACTOR shall meet with the OWNER and ENGINEER relative to his arrangements for prosecuting the work.

### **53. SCHEDULES AND PROGRESS REPORTS**

Prior to starting the construction, the CONTRACTOR shall Prepare and submit to the ENGINEER, a Progress schedule showing the dates on which each part or division of the work is expected to be started and finished, and a Preliminary schedule for submittals. The Progress schedule for submittals shall be brought up to date and submitted to the ENGINEER at the end of each month or at such other times the ENGINEER may request.

The CONTRACTOR shall forward to the ENGINEER, at the end of each month, an itemized report of the delivery status of major and critical items of purchased equipment and material, including shop drawings and the status of shop and field fabricated work. These Progress reports shall indicate the date of the purchase order, the current percentage of completion, estimated delivery, and cause of delay, if any.

If the completion of any part of the work or the delivery of materials is behind the submitted Progress schedule, the CONTRACTOR shall submit in writing a plan acceptable to the OWNER and ENGINEER for bringing the work up to schedule.

The OWNER shall have the right to withhold Progress payments for the work if the CONTRACTOR fails to update and submit the Progress schedule and reports as specified.

### **54. PROSECUTION OF THE WORK**

It is expressly understood and agreed that the time of beginning, rate of Progress, and time of completion of the work are the essence of this Contract. The work shall be prosecuted at such time, and in or on such part or parts of the Project as may be required, to complete the Project as contemplated in the Contract Documents and the Progress schedule.

If the CONTRACTOR desires to carry on work at night or outside the regular hours, he shall give timely notice to the ENGINEER to allow satisfactory arrangements to be made for observing the work in Progress.

### **55. OWNER'S RIGHT TO RETAIN IMPERFECT WORK**

If any part or portion of the work completed under this Contract shall Prove defective and not in accordance with the Drawings and Specifications, and if the imperfection in the same shall not be of sufficient magnitude or importance as to make the work dangerous or unsuitable, or if the removal of such work will create conditions which are dangerous or undesirable, the OWNER shall have the right and authority to retain such work but will make such deductions in the final payment therefore as may be just and reasonable.

### **56. OWNER'S RIGHT TO DO WORK**

Should the CONTRACTOR neglect to Prosecute the work in conformance with the Contract Documents or neglect or refuse at his own cost to remove and replace work rejected by the ENGINEER, then the OWNER may notify the Surety of the condition, and after 10 days' written notice to the CONTRACTOR and the Surety, or without notice if an emergency or danger to the work or public exists, and without Prejudice to any other right which the OWNER may have under Contract, or otherwise, take over that portion of the work which has been improperly or non timely executed, and make good the deficiencies and deduct the cost thereof from the payments then or thereafter due the CONTRACTOR.

### **57. OWNER'S RIGHT TO TRANSFER EMPLOYMENT**

If the CONTRACTOR should abandon the work or if he should persistently or repeatedly refuse or should fail to make prompt payment to SUBCONTRACTORS for material or labor, or to persistently disregard laws, ordinances, or to prosecute the work in conformance with the Contract Documents, or otherwise be guilty of a substantial violation of any Provision of the Contract or any laws or ordinance, then the OWNER may, without Prejudice to any other right or remedy, and after giving the CONTRACTOR and Surety 10 days' written notice, transfer the employment for said work from the CONTRACTOR to the Surety. Upon receipt of such notice, such Surety shall enter upon the Premises and take possession of all materials, tools, and appliances thereon for the purpose of completing the work included under this contract and employ by Contract or otherwise, any qualified person or persons to finish the work and Provide the materials therefore, in accordance with the Contract Documents, without termination of the continuing full force and effect of this contract. In case of such transfer of employment to such Surety, the Surety shall be paid in its own name on estimates according to the terms hereof without any right of the CONTRACTOR to make any claim for the same or any part thereof.

If, after the furnishing of said written notice to the Surety, the CONTRACTOR and the Surety still fail to make reasonable Progress on the performance of the work, the OWNER may terminate the employment of the CONTRACTOR and take possession of the Premises and of all materials, tools, and appliances thereon and finish the work by whatever method he may deem expedient and charge the cost thereof to the CONTRACTOR and the Surety. In such case, the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the expense of completing the Contract, including compensation for additional managerial and administrative services, shall exceed



such unpaid balance, the CONTRACTOR and the Surety shall pay the difference to the OWNER.

#### **58. DELAYS AND EXTENSION OF TIME**

If the CONTRACTOR is delayed in the Progress of the work by any act or neglect of the OWNER or the ENGINEER, or by any separate CONTRACTOR employed by the OWNER, or by strikes, lockouts, fire, adverse weather conditions not reasonably anticipated, or acts of Nature, and if the CONTRACTOR, within 48 hours of the start of the occurrence, gives written notice to the OWNER of the cause of the potential delay and estimate of the possible time extension involved, and within 10 days after the cause of the delay has been remedied, the CONTRACTOR gives written notice to the OWNER of any actual time extension requested as a result of the aforementioned occurrence, then the Contract time may be extended by change order for such reasonable time as the ENGINEER determines. It is agreed that no claim shall be made or allowed for any damages, loss, or expense which may arise out of any delay caused by the above referenced acts or occurrences other than claims for the appropriate extension of time. No extension of time will be granted to the CONTRACTOR for delays occurring to parts of the work that have no measurable impact on the completion of the total work under this Contract. No extension of time will be considered for weather conditions reasonably anticipated for the area in which the work is being performed. Reasonably anticipated weather conditions will be based on official records of monthly Precipitation and other historical data. Adverse weather conditions, if determined to be of a severity that would impact Progress of the work, may be considered as cause for an extension of Contract completion time.

Delays in delivery of equipment or material purchased by the CONTRACTOR or his SUBCONTRACTORS, including OWNER-selected equipment shall not be considered as a just cause for delay, unless the OWNER determines that for good cause the delay is beyond the control of the CONTRACTOR. The CONTRACTOR shall be fully responsible for the timely ordering, scheduling, complete the work is the per-diem rate, as stipulated in the Proposal. The said amount is hereby agreed upon as a reasonable estimate of the costs, which may be accrued by the OWNER after the expiration of the time of completion. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty, but as liquidated damages which have accrued against the CONTRACTOR. The OWNER shall have the right to deduct such damages from any amount due, or that may become due the CONTRACTOR, or the amount of such damages shall be due and collectible from the CONTRACTOR or Surety.

#### **59. DIFFERING SITE CONDITIONS**

The CONTRACTOR shall promptly, and before the conditions are disturbed, give a written notice to the OWNER

and ENGINEER of:

- A. subsurface or latent physical conditions at the site which differ materially from those indicated in this contract,
- B. unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

The ENGINEER will investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or the time required for, performing any part of the work under this Contract, whether or not changed as a result of the conditions, and equitable adjustment shall be made under this Article and the Contract modified in writing accordingly.

No request by the CONTRACTOR for an equitable adjustment to the Contract under this Article will be allowed, unless the CONTRACTOR has given the written notice required; Provided that the time prescribed above for giving written notice may be extended by the OWNER.

No request by the CONTRACTOR for an equitable adjustment to the Contract for differing site conditions will be allowed if made after final payment under this Contract.

#### **60. LIQUIDATED DAMAGES**

Should the CONTRACTOR fail to complete the work, or any part thereof, in the time agreed upon in the Contract or within such extra time as may have been allowed for delays by extensions granted as Provided in the Contract, the CONTRACTOR shall reimburse the OWNER for the additional expense and damage for each calendar day, Sundays and legal holidays included, that the Contract remains uncompleted after the Contract completion date. It is agreed that the amount of such additional expense and damage incurred by reason of failure to complete the work is the per-diem rate, as stipulated in the Proposal. The said amount is hereby agreed upon as a reasonable estimate of the costs which may be accrued by the OWNER after the expiration of the time of completion. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty, but as liquidated damages which have accrued against the CONTRACTOR. The OWNER shall have the right to deduct such damages from any amount due, or that may become due the CONTRACTOR, or the amount of such damages shall be due and collectible from the CONTRACTOR or Surety.

#### **61. OTHER CONTRACTS**

The OWNER reserves the right to let other Contracts in connection with the work. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his work with theirs.

If any part of the work under this Contract depends for Proper execution or results upon the work of any other CONTRACTOR, utility service company or OWNER, the CONTRACTOR shall inspect and Promptly report to the ENGINEER in writing any patent or apparent defects to deficiencies in such work that render it unsuitable for such Proper execution and results. The CONTRACTOR's failure to so report shall constitute and acceptance of the work by others as being fit and Proper for integration with work under this Contract, except for latent or non apparent defects and deficiencies in the work.

#### **62. USE OF PREMISES**

The CONTRACTOR shall confine his equipment, the storage of materials and the operation of his workers to limits shown on the Drawings or indicated by law, ordinances, permits, or directions of the ENGINEER, and shall not unreasonably encumber the Premises with his materials. The CONTRACTOR shall provide, at his own expense, the necessary rights-of-way and access to the work, which may be required outside the limits of the OWNER's Property and shall furnish the ENGINEER copies of permits and agreements for use of the Property outside that provided by the OWNER.

The CONTRACTOR shall not load nor permit any part of the structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the work or adjacent Property to stresses or Pressures that will endanger it.

#### **63. SUBSTANTIAL COMPLETION DATE**

The ENGINEER may issue a written notice of substantial completion for the purpose of establishing the starting date for specific equipment guarantees, and to establish the date that the OWNER will assume the responsibility for the cost of operating such equipment. Said notice shall not be considered as final acceptance of any portion of the work or relieve the CONTRACTOR from completing the remaining work within the specified time and in full compliance with the Contract Documents. See SUBSTANTIAL COMPLETION under DEFINITIONS of these General Conditions.

#### **64. PERFORMANCE TESTING**

Operating equipment and systems shall be performance tested in the Presence of the ENGINEER to demonstrate compliance

with the specified requirements. Performance testing shall be conducted under the specified design operating conditions or under such simulated operating conditions as recommended or approved by the ENGINEER. Schedule such testing with the ENGINEER at least one week in advance of the planned date for testing.

#### **65. OWNER'S USE OF PORTIONS OF THE WORK**

Following issuance of the written notice of Substantial Completion, the OWNER may initiate operation of the facility. Such use shall not be considered as final acceptance of any portion of the work, nor shall such use be considered as cause for an extension of the Contract completion time, unless authorized by a Change Order issued by the OWNER.

#### **66. CUTTING AND PATCHING**

The CONTRACTOR shall do all cutting, fitting, or patching of his work that may be required to make its several parts come together Properly and fit it to receive or be received by work of other CONTRACTORS shown upon or reasonably implied by the Drawings.

#### **67. CLEANING UP**

The CONTRACTOR shall, at all times, keep Property on which work is in Progress and the adjacent Property free from accumulations of waste material or rubbish caused by employees or by the work. Upon completion of the construction, the CONTRACTOR shall remove all temporary structures, rubbish, and waste materials resulting from his operations.

#### **PAYMENT**

#### **68. PAYMENT FOR CHANGE ORDERS**

The OWNER's request for quotations on alterations to the work shall not be considered authorization to proceed with the work expediting, delivery, and installation of all equipment and materials. Within a reasonable period after the CONTRACTOR submits to the OWNER a written request for an extension of time, the ENGINEER will Present his written opinion to the OWNER as to whether an extension of time is justified, and, if so, his recommendation as to the number of days for time extension. The OWNER will make the final decision on all requests for extension of time.

Prior to the issuance of a formal Change Order, nor shall such request justify any delay in existing work. Quotations for alterations to the work shall include substantiating documentation with an itemized breakdown of CONTRACTOR and SUBCONTRACTOR costs, including

labor, material, rentals, approved services, overhead, and profit. OWNER may require detailed cost data in order to substantiate the reasonableness of the proposed costs.

Any compensation paid in conjunction with the terms of a Change Order shall comprise total compensation due the CONTRACTOR for the work or alteration defined in the Change Order. By signing the Change Order, the CONTRACTOR acknowledges that the stipulated compensation includes payment for the work or alteration plus all payment for the interruption of schedules, extended overhead, delay, or any other impact claim or ripple effect, and by such signing specifically waives any reservation or claim for additional compensation in respect to the subject Change Order.

At the OWNER's option, payment or credit for any alterations covered by a Change Order shall be determined by one or a combination of the methods set forth in A, B, or C below, as applicable:

#### A. UNIT PRICES

Those unit Prices stipulated in the Proposal shall be utilized where they are applicable. In the event the Change Order results in a change in the original quantity that is materially and significantly different from the original bid quantity, a new unit Price shall be negotiated upon demand of either party. Unit Prices for new items included in the Change Order shall be negotiated and mutually agreed upon.

#### B. LUMP SUM

A total lump sum for the work negotiated and mutually acceptable to the CONTRACTOR and the OWNER. Lump sum quotations for modifications to the work shall include substantiating documentation with an itemized breakdown of CONTRACTOR and SUBCONTRACTOR costs, including labor, material, rentals, approved services, overhead, and Profit, all calculated as specified under "C" below.

#### C. COST REIMBURSEMENT WORK

The term "cost reimbursement" shall be understood to mean that payment for the work will be made on a time and expense basis, that is, on an accounting of the CONTRACTOR's forces, materials, equipment, and other items of cost as required and used to do the work.

If the method of payment cannot be agreed upon Prior to the beginning of the work, and the OWNER directs by written Change Order that the work be done on a cost reimbursement basis, then the CONTRACTOR shall furnish labor, and furnish and install equipment and materials necessary to complete the work in a satisfactory manner and within a reasonable period of time. For the work performed, payment will be made for the documented actual cost of the following:

1. Labor including foremen for those hours they are assigned and participating in the cost reimbursement work (actual payroll cost, including wages, fringe benefits as established by negotiated labor agreements, labor insurance, and labor taxes as established by law). No other fixed labor burdens will be considered, unless approved in writing by the OWNER.
2. Material delivered and used on the designated work, including sales tax, if paid by the CONTRACTOR or his SUBCONTRACTOR.
3. Rental or equivalent rental cost of equipment, including necessary transportation for items having a value in excess of \$100. Rental or equivalent rental cost will be allowed for only those days or hours during which the equipment is in actual use. Rental and transportation allowances shall not exceed the current rental rates prevailing in the locality. The rentals allowed for equipment will, in all cases, be understood to cover all fuel, supplies, repairs, and renewals, and no further allowances will be made for those items, unless specific agreement to that effect is made.
4. Additional bond, as required and approved by the OWNER.
5. Additional insurance (other than labor insurance) as required and approved by the OWNER.

In addition to items 1 through 5 above, an added fixed fee for general overhead and Profit shall be negotiated and allowed for the CONTRACTOR (or approved SUBCONTRACTOR) actually executing the Cost Reimbursement work.

An additional fixed fee shall be negotiated and allowed the CONTRACTOR for the administrative handling of portions of the work that are executed by an approved SUBCONTRACTOR. No additional fixed fee will be allowed for the administrative handling of work executed by a SUBCONTRACTOR of a SUBCONTRACTOR, unless by written permission from the OWNER.

The added fixed fees shall be considered to be full compensation, covering the cost of general supervision, overhead, Profit, and any other general expense. The CONTRACTOR's records shall make clear distinction between the direct costs of work paid for on a cost reimbursement basis and the costs of other work. The CONTRACTOR shall furnish the ENGINEER report sheets in duplicate of each day's cost reimbursement work no later than the working day following the performance of said work. The daily report sheets shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the CONTRACTOR, SUBCONTRACTOR or other forces. The daily report sheets shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and also the

size, type, and identification number of equipment and hours operated.

Material charges shall be substantiated by valid copies of vendors' invoices. Such invoices shall be submitted with the daily report sheets, or, if not available, they shall be submitted with subsequent daily report sheets. Said daily report sheets shall be signed by the CONTRACTOR or his authorized agent.

The OWNER reserves the right to furnish such materials and equipment as he deems expedient and the CONTRACTOR shall have no claim for profit or added fees on the cost of such materials and equipment. To receive partial payments and final payment for cost reimbursement work, the CONTRACTOR shall submit to the ENGINEER, detailed and complete documented verification of the CONTRACTOR's and any of his SUBCONTRACTORS' actual costs involved in the cost reimbursement work. Such costs shall be submitted within 30 days after said work has been performed.

## **69. PARTIAL PAYMENTS**

### **A. GENERAL**

Nothing in this Article shall be construed to affect the right, hereby reserved, to reject the whole or any part of the aforesaid work, should such work be later found not to comply with the Provisions of the Contract Documents. All estimated quantities of work for which partial payments have been made are subject to review and correction on the final estimate. Payment by the OWNER and acceptance by the CONTRACTOR of partial payments based on periodic estimates of quantities of work performed shall not, in any way, constitute acceptance of the estimated quantities used as a basis for computing the amounts of the partial payments.

### **B. ESTIMATE**

At least 30 days before each Progress payment falls due, as specified in the Supplementary Conditions, the CONTRACTOR shall submit to the ENGINEER a detailed estimate of the amount earned during the Preceding month for the separate portions of the work, and request payment. As used in this Article, the words "amount earned" means the value, on the date of the estimate for partial payment, of the work completed in accordance with the Contract Documents, and the value of approved materials delivered to the Project site suitable stored and Protected Prior to incorporation into the work.

ENGINEER will, within 7 days after receipt of each request for payment, either indicate in writing a recommendation of payment and present the request to OWNER, or return the request to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In

the latter case, CONTRACTOR may, within 7 days, make the necessary corrections and resubmit the request.

ENGINEER may refuse to recommend the whole or any part of any payment if, in his opinion, it would be incorrect to make such representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such an extent as may be necessary in ENGINEER's opinion to protect the OWNER from loss because:

1. The work is defective, or completed work has been damaged requiring correction or replacement;
2. Written claims have been made against OWNER or Liens have been filed in connection with the work;
3. The Contract Price has been reduced because of Change Orders;
4. OWNER has been required to correct defective work or complete the work in accordance with Article OWNER'S RIGHT TO DO WORK;
5. Of CONTRACTOR's unsatisfactory Prosecution of the work in accordance with the Contract Documents; or
6. CONTRACTOR's failure to make payment to SUBCONTRACTORS or for labor, materials, or equipment.

### **C. DEDUCTION FROM ESTIMATE**

Unless modified in the Supplementary Conditions, deductions from the estimate will be as described below:

1. The OWNER will deduct from the estimate, and retain as part security, 10 percent of the amount earned for work satisfactorily completed. A deduction and retainage of 10 percent will be made on the estimated amount earned for approved items of material delivered to and properly stored at the jobsite but not incorporated into the work. When the work is 50 percent complete, the OWNER may reduce the retainage to 5 percent of the dollar value of all work satisfactorily completed to date provided the CONTRACTOR is making satisfactory progress and there is no specific cause for a greater retainage. The OWNER may reinstate the retainage up to 10 percent if the OWNER determines, at his discretion, that the CONTRACTOR is not making satisfactory progress or where there is other specific cause for such withholding.

**D. QUALIFICATION FOR PARTIAL PAYMENT FOR MATERIALS DELIVERED**

Unless modified in the Supplementary Conditions, qualification for partial payment for materials delivered but not yet incorporated into the work shall be as described below:

1. Materials, as used herein, shall be considered to be those items which are fabricated and manufactured material and equipment. No consideration shall be given to individual purchases of less than \$200 for any one item.
2. To receive partial payment for materials delivered to the site, but not incorporated in the work, it shall be necessary for the CONTRACTOR to include a list of such materials on the Partial Payment Request. At his sole discretion, the ENGINEER may approve items for which partial payment is to be made. Partial payment shall be based on the CONTRACTOR's actual cost for the materials as evidenced by invoices from the supplier. Proper storage and Protection shall be provided by the CONTRACTOR, and as approved by the ENGINEER. Final payment shall be made only for materials actually incorporated in the work and, upon acceptance of the work, all materials remaining for which advance payments had been made shall revert to the CONTRACTOR, unless otherwise agreed, and partial payments made for these items shall be deducted from the final payment for the work.
3. CONTRACTOR warrants and guarantees that title to all work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER at the time of payment free and clear of all liens, claims, security interests, and encumbrances.
4. If requested by the ENGINEER, the CONTRACTOR shall provide, with subsequent pay requests, invoices receipted by the supplier showing payment in full has been made.

**E. PAYMENT**

After deducting the retainage and the amount of all previous partial payments made to the CONTRACTOR from the amount earned, the amount due will be made payable to the CONTRACTOR. Recommendations for payment received by the OWNER less than 9 days Prior to the scheduled day for payment will not be Processed or paid until the following month.

**70. CLAIMS FOR EXTRA WORK**

In any case where the CONTRACTOR deems additional time or compensation will become due him under this Contract for circumstances other than those defined in Article DELAYS AND EXTENSION OF TIME, the CONTRACTOR shall notify the ENGINEER, in writing, of his intention to make claim for such time or compensation before he begins the work on which he bases the claim, in order that such matters may be settled, if possible, or other appropriate action taken. The notice of claim shall be in duplicate, in writing, and shall state the circumstances and the reasons for the claim, but need not state the amount. If such notification is not given or if the ENGINEER is not afforded proper facilities by the CONTRACTOR for keeping strict account of actual cost, then the CONTRACTOR hereby agrees to waive the claim for such additional time or compensation. Such notice by the CONTRACTOR, and fact that the ENGINEER has kept account of the cost as aforesaid, shall not in any way be construed as proving the validity of the claim.

No extension of time will be granted to the CONTRACTOR for delays resulting from extra work that have no measurable impact on the completion of the total work under this Contract. Claims for additional time or compensation shall be made in itemized detail and submitted, in writing, to the OWNER and ENGINEER within 10 days following completion of that portion of the work for which the CONTRACTOR bases his claim. Failure to make the claim for additional compensation in the manner and within the time specified above shall constitute waiver of that claim. In case the claim is found to be just, it shall be allowed and paid for as provided in Article PAYMENT FOR CHANGE ORDERS.

**71. RELEASE OF LIENS OR CLAIMS**

The CONTRACTOR shall indemnify and hold harmless the OWNER from all claims for labor and materials furnished under this Contract. Prior to the final payment, the CONTRACTOR shall furnish to the OWNER, as part of his final payment request, a certification that all of the CONTRACTOR's obligations on the project have been satisfied and that all monetary claims and indebtedness have been paid. The CONTRACTOR shall furnish complete and legal effective releases or waivers, satisfactory to the OWNER, of all liens arising out of or filed in connection with the work.

**72. FINAL PAYMENT**

Upon completion of all the work under this Contract, the CONTRACTOR shall notify the ENGINEER, in writing, that he has completed his part of the Contract and shall request final payment. Upon receipt of such notice the ENGINEER will inspect and, if acceptable, submit to the OWNER his recommendation as to acceptance of the completed work and as to the final estimate of the amount due the

CONTRACTOR. Upon approval of this final estimate by the OWNER and compliance by the CONTRACTOR with Provisions in Article **RELEASE OF LIENS OR CLAIMS**, and other Provisions as may be applicable, the OWNER shall pay to the CONTRACTOR all monies due him under the Provisions of these Contract Documents.

**73. NO WAIVER OF RIGHTS**

Neither the inspection by the OWNER, through the ENGINEER or any of his employees, nor any order by the OWNER for payment of money, nor any payment for, or acceptance of, the whole or any part of the work by the OWNER or ENGINEER, nor any extension of time, nor any possession taken by the OWNER or its employees, shall operate as a waiver of any Provision of this Contract, or any power herein reserved to the OWNER, or any right to damages herein Provided, nor shall any waiver of any breach in this Contract be held to be a waiver of any other or subsequent breach. Acceptance or final payment shall not be final and conclusive with regards to latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the OWNER's rights under the warranty.

**74. ACCEPTANCE OF FINAL PAYMENT  
CONSTITUTES RELEASE**

The acceptance by the CONTRACTOR of the final payment shall release the OWNER and the ENGINEER, as representatives of the OWNER, from all claims and all liability to the CONTRACTOR for all things done or furnished in connection with the work, and every act of the OWNER and others relating to or arising out of the work except claims Previously made in writing and still unsettled. No payment, however, final or otherwise, shall operate to release the CONTRACTOR or his Sureties from obligations under this Contract and the Performance Bond, Payment Bond, and other bonds and warranties, as herein provided.

## SUPPLEMENTARY CONDITIONS

The General Conditions are hereby revised as follows:

### ARTICLE 9 "ENGINEER"

Delete Article "ENGINEER" in its entirety and substitute the following:

The person or organization identified as such in the Contract Documents. The Term "ENGINEER" means ARCHITECT or his authorized representative.

### ARTICLE 34 "INSURANCE & LIABILITY"

Delete Article 34 (A), (B), (C), (D), and (E) and substitute with the following:

Contractor shall maintain limits no less than those stated below:

CONTRACTOR is to secure, pay for, and file with the City of Key West, prior to commencing any work under the Contract, all certificates for workers' compensation, public liability, and property damage liability insurance, and such other insurance coverages as may be required by specifications and addenda thereto, in at least the following minimum amounts with specification amounts to prevail if greater than minimum amounts indicated. Notwithstanding any other provision of the Contract, the CONTRACTOR shall provide the minimum limits of liability insurance coverage as follows:

Auto Liability	\$1,000,000	Combined Single Limit
General Liability	\$2,000,000	Aggregate (Per Project)
	\$2,000,000	Products Aggregate
	\$1,000,000	Any One Occurrence
	\$1,000,000	Personal Injury
	\$ 50,000	Fire Damage/Legal
Additional Umbrella Liability	\$1,000,000	Occurrence / Aggregate

CONTRACTOR shall furnish an original Certificate of Insurance indicating, and such policy providing coverage to, City of Key West named as an additional insured on a PRIMARY and NON CONTRIBUTORY basis utilizing an ISO standard endorsement at least as broad as CG 2010 (11/85) or its equivalent, (combination of CG 20 10 07 04 and CG 20 37 07 04, providing coverage for completed operations, is acceptable) including a waiver of subrogation clause in favor of City of Key West on all policies. CONTRACTOR will maintain the General Liability and Umbrella Liability insurance coverages summarized above with coverage continuing in full force including the additional insured endorsement until at least 3 years beyond completion and delivery of the work contracted herein.

Notwithstanding any other provision of the Contract, the CONTRACTOR shall maintain complete workers' compensation coverage for each and every employee, principal, officer, representative, or agent of the CONTRACTOR who is performing any labor, services, or material under the Contract. Further, CONTRACTOR shall additionally maintain the following minimum limits of coverage:

Bodily Injury Each Accident	\$1,000,000
Bodily Injury by Disease Each Employee	\$1,000,000
Bodily Injury by Disease Policy Limit	\$1,000,000

If the work is being done on or near a navigable waterway, CONTRACTOR's workers compensation policy shall be endorsed to provide USL&H Act (WC 00 01 06 A) and Jones Act (WC 00 02 01 A) coverage if specified by the City of Key West. CONTRACTOR shall provide the City of Key West with a Certificate of Insurance verifying compliance with the workman's compensation coverage as set forth herein and shall provide as often as required by the City of Key West such certification which shall also show the insurance company, policy number, effective and expiration date, and the limits of workman's compensation coverage under each policy.

CONTRACTOR's insurance policies shall be endorsed to give 30 days written notice to the City of Key West in the event of cancellation or material change, using form CG 02 24, or its equivalent.

Certificates of Insurance submitted to the City of Key West will not be accepted without copies of the endorsements being requested. This includes additional insured endorsements, cancellation/material change notice endorsements, and waivers of subrogation. Copies of USL&H Act and Jones Act endorsements will also be required if necessary. PLEASE ADVISE YOUR INSURANCE AGENT ACCORDINGLY.

CONTRACTOR will comply with any and all safety regulations required by any agency or regulatory body including but not limited to OSHA. CONTRACTOR will notify City of Key West immediately by telephone at (305) 809-3963 any accident or injury to anyone that occurs on the jobsite and is related to any of the work being performed by the CONTRACTOR.

Add the following Article:

**G. SURETY AND INSURER QUALIFICATIONS**

All bonds, insurance contracts, and certificates of insurance shall be either executed by or countersigned by a licensed resident agent of the Surety or insurance company, having his place of business in the State of Florida, and in all ways complying with the insurance laws of the State of Florida. Further, the said Surety or Insurance Company shall be duly licensed and qualified to do business in the State of Florida. If requested, Contractor shall Provide Proof of Florida Licensure for all insurance companies. The City of Key West shall be named as Additional Insured on the insurance certificates.

**H. COURSE OF CONSTRUCTION INSURANCE**

The City to provide Course of Construction coverage for building during repairs. Contractor shall be responsible for payment of associated deductibles and/or self-insured retentions in the event of a covered loss.

**ARTICLE 35 "INDEMNITY"**

Delete Article "INDEMNITY" in its entirety and substitute the following:



## INDEMNITY

To the fullest extent permitted by law, the CONTRACTOR expressly agrees to indemnify and hold harmless the City of Key West, their officers, directors, agents, and employees (herein called the "indemnitees") from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees and court costs, such legal expenses to include costs incurred in establishing the indemnification and other rights agreed to in this Paragraph, to persons or property, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR, its Subcontractors or persons employed or utilized by them in the performance of the Contract. Claims by indemnitees for indemnification shall be limited to the amount of CONTRACTOR's insurance or \$1 million per occurrence, whichever is greater. The parties acknowledge that the amount of the indemnity required hereunder bears a reasonable commercial relationship to the Contract and it is part of the project specifications or the bid documents, if any.

The indemnification obligations under the Contract shall not be restricted in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR under workers' compensation acts, disability benefits acts, or other employee benefits acts, and shall extend to and include any actions brought by or in the name of any employee of the CONTRACTOR or of any third party to whom CONTRACTOR may subcontract a part or all of the Work. This indemnification shall continue beyond the date of completion of the work.

## ARTICLE 39 "CODES, ORDINANCES, PERMITS, AND LICENSES"

Add the following:

### A. PERMIT FOR WORK WITHIN LOCAL RIGHTS-OF-WAY

The Contractor shall obtain from the City of Key West the necessary permits for work within the rights-of-way. The Contractor shall abide by all regulations and conditions, including maintenance of traffic.

### B. NOISE ORDINANCE

City of Key West has a noise ordinance that allows working hours Monday through Friday between 8:00 AM to 7:00 PM and Saturday between 8:00 AM to 4:00 PM. No work should be performed during Sundays, City Holidays, State Holidays, and National Holidays. Any construction operations outside these days and hours will require a variance from the City of Key West Commission.

### C. "LICENSES"

## **THE BIDDER MUST BE A LICENSED CONTRACTOR BY THE STATE OF FLORIDA AND SUBMIT PROOF OF SUCH WITH THE BID.**

1. Within 10 days of Notice of Award, the successful Bidder must represent that he holds all applicable, county, and City of Key West licenses and permits required to do business as a contractor with respect to the work described in the Contract Documents.

2. Further, the successful Bidder must, within 10 days of Notice of Award, furnish documentation showing that, as a minimum, he has complied with the provisions of Chapter 18 of the Code of Ordinances of the City of Key West in order to enter into the Agreement contained in the Contract Documents.
3. Specifically, within 10 days after Notice of Award, the successful Bidder must demonstrate that he holds, as a minimum, the following licenses and certificates:
  - a.) City of Key West Tax License Receipt;
  - b.) A valid Certificate of Competency issued by the Chief Building Official of Key West, Florida
  - c.) A valid occupational license issued by the City of Key West, Florida.

#### D. WORK DURING HOLIDAYS

There shall be no work during City Holidays, State Holidays and National Holidays. Any construction operations during these days shall be approved by the City of Key West.

#### ARTICLE 42 "SAFETY"

Add the following sub article:

##### OCCUPATIONAL SAFETY AND HEALTH

The Contractor shall observe and comply with all applicable local, state, and federal occupational safety and health regulations during the prosecution of work under this Contract. In addition, full compliance by the Contractor with the U.S. Department of Labor's Occupational Safety and Health Standards, as established in Public Law 91-596, will be required under the terms of this Contract.

#### ARTICLE 43 "PROTECTION OF WORK AND PROPERTY"

Add the following Article:

##### HISTORIC PRESERVATION

The Contractor shall comply with Florida's Archives and Historic Act (Florida Statutes, Chapter 267) and the regulations of the local historic preservation board as applicable and protect against the potential loss or destruction of significant historical or archaeological data, sites, and properties in connection with the project.

#### ARTICLE 57 "OWNERS RIGHT TO TRANSFER EMPLOYMENT"

Add the following Article:

## TERMINATION FOR CONVENIENCE AND RIGHT OF SUSPENSION

- A. Owner shall have the right to terminate this Contract without cause by written notice of Termination to the Contractor. In the event of such termination for convenience, the Contractor's recovery against the Owner shall be limited to that portion of the Contract amount earned through the date of termination, together with any retainage withheld and reasonable termination expenses incurred. Contractor shall not be entitled to any other or further recovery against the Owner, including, but not limited to, damages or any anticipated profit on portions of the Work not performed.
- B. The Owner shall have the right to suspend all or any portions of the Work upon giving the Contractor prior written notice of such suspension. If all or any portion of the Work is so suspended, the Contractor shall be entitled to reasonable costs, expenses and time extension associated with the suspension.

## ARTICLE 60 "LIQUIDATED DAMAGES"

Delete Article "LIQUIDATED DAMAGES" in its entirety and substitute the following:  
LIQUIDATED DAMAGES

Should the Contractor fail to complete the work or any part thereof in the time agreed upon in the Contract Documents or within such extra time as may have been allowed for delays by extensions granted as provided in the Contract, the Contractor shall reimburse the Owner for the additional expense and damage for each calendar day, Sundays and legal holidays included, that project outlined in Contract Documents remains uncompleted after the completion date. Liquidated damages shall be assessed. It is agreed that the amount of such additional expense and damage incurred by reason of failure to complete the work is the per diem rate as stipulated in the Proposal. The said amount is hereby agreed upon as a reasonable estimate of the costs which may be accrued by the Owner after the expiration of the time of completion. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty but as liquidated damages, which have accrued against the Contractor. The Owner shall have the right to deduct such damages from any amount due or that may become due the Contractor or the amount of such damages shall be due and collectible from the Contractor or Surety.

## ARTICLE 69 "PARTIAL PAYMENTS"

Delete the first paragraph of Article "PARTIAL PAYMENTS" and substitute the following:

No more than once each month the Contractor shall submit to the Engineer a detailed estimate of the amount earned during the preceding month for the separate portions of the work and request payment. As used in this Article the words "amount earned" means the value, on the date of the estimate, for partial payment of the work completed in accordance with the Contract Documents and the value of approved materials delivered to

the project site suitably stored and protected prior to incorporation into the work.

#### ARTICLE 69 "PARTIAL PAYMENTS"

Add the following:

Payment will be made by the Owner to the Contractor within 40 days receipt of the written recommendation of payment from the Engineer.

#### ARTICLE 69 "PARTIAL PAYMENTS"

Delete Subarticle C "DEDUCTION FROM ESTIMATE" in its entirety and substitute the following:

##### DEDUCTION FROM ESTIMATE

The OWNER will deduct from the estimate, and retain as part security, 10 percent of the amount earned for work satisfactorily completed. A deduction and retainage of 10 percent will be made on the estimated amount earned for approved items of material delivered to and properly stored at the jobsite but not incorporated into the work. When the work is 90 percent complete, the OWNER may reduce the retainage to 5 percent of the dollar value of all work satisfactorily completed to date provided the CONTRACTOR is making satisfactory progress and there is no specific cause for a greater retainage. The OWNER may reinstate the retainage up to 10 percent if the OWNER determines, at his discretion, that the CONTRACTOR is not making satisfactory progress or where there is other specific cause for such withholding.

#### ARTICLE 69 "PARTIAL PAYMENTS"

Delete Subarticle E "PAYMENT" in its entirety and substitute the following:

##### PAYMENT

After deducting the retainage and the amount of all previous partial payments made to the Contractor from the amount earned the amount due will be made payable to the Contractor. Recommendations for payment received by the Owner less than 40 days prior to the scheduled day for payment will not be processed or paid until the following month.

The OWNER will withhold progress payments until the Contractor has satisfied the above conditions.

#### ARTICLE 72 "FINAL PAYMENT"

Delete Article "FINAL PAYMENT" in its entirety and substitute the following:

## FINAL PAYMENT

Upon completion of the work the Contractor shall notify the Engineer, in writing, that he has completed it and shall request final payment. The Contractor shall be responsible for keeping an accurate and detailed record of his actual construction. Upon completion of construction and before final acceptance and payment the Contractor shall furnish the Engineer as-built drawings of his construction. Upon receipt of a request for final payment and the as-built drawings the Engineer will inspect and, if acceptable, submit to the Owner his recommendation as to acceptance of the completed work and as to the final estimate of the amount due the Contractor. Upon approval of this final estimate by the Owner and compliance by the Contractor with provisions in Article RELEASE OF LIENS OR CLAIMS, and other provisions as may be applicable, the Owner shall pay to the Contractor all monies due him under the provisions of these Contract Documents.

### ARTICLE 72 "FINAL PAYMENT"

Add the following;

#### **A. Acceptance and Final Payment.**

Whenever the Contractor has completely performed the work provided for under the Contract and the Engineer has performed a final inspection and made final acceptance and subject to the terms of the Engineer will prepare a final estimate showing the value of the work as soon as the Engineer makes the necessary measurements and computations. The Engineer will correct all prior estimates and payments in the final estimate and payment. The OWNER will pay the estimate, less any sums that the OWNER may have deducted or retained under the provisions of the Contract, as soon as practicable after final acceptance of the work, provided the Contractor has met the requirements of (1) through (8) below.

- 1 The Contractor has agreed in writing to accept the balance due or refund the overpayment, as determined by the OWNER, as full settlement of his account under the Contract and of all claims in connection therewith, or the Contractor, accepted the balance due or refunded the overpayment, as determined by the OWNER, with the stipulation that his acceptance of such payment or the making of such refund does not constitute any bar, admission, or estoppel, or have any effect as to those payments in dispute or the subject of a pending claim between the Contractor and the OWNER. To receive payment based on a FINAL PAYMENT CERTIFICATE, The Contractor further agrees, by submitting a FINAL PAYMENT CERTIFICATE that any pending or future arbitration claim or suit is limited to those particulars, including the itemized amounts, defined in the original FINAL PAYMENT CERTIFICATE , and that he will commence with any such arbitration claim or suit within 15 calendar days from and after the time of final PAYMENT of the work and that his failure to file a formal claim within this period constitutes his full acceptance of the Engineer's final estimate and payment. The overpayment refund check from the Contractor, if required, will be considered a part of any Acceptance Letter executed.

- 2 The Contractor has properly maintained the project, as specified hereinbefore.
- 3 The Contractor has furnished a sworn affidavit to the effect that the Contractor has paid all bills and no suits are pending (other than those exceptions listed, if any) in connection with work performed under the Contract and that the Contractor has not offered or made any gift or gratuity to, or made any financial transaction of any nature with, any employee of the OWNER in the performance of the Contract.
- 4 The surety on the contract bond consents, by completion of their portion of the affidavit and surety release subsequent to the Contractor's completion of his portion, to final payment to the Contractor and agrees that the making of such payment does not relieve the surety of any of its obligations under the bond.
- 5 The Contractor has furnished all required mill tests and analysis reports to the Engineer.
- 6 The Contractor has furnished as-built drawings in AutoCad and Adobe PDF, in accordance with all supplied data collections and files to be compatible with Esri ArcGIS 10.2.2 Software. The current computing environment consists of:

- Microsoft SQL Server
- Windows 7/Server 2008
- ESRI GIS Platform

#### Interfaces and Integrations

The City of Key West uses a number of software applications critical to its core operation and mission. The proposed mobile asset data collection solution will need to interface or integrate with these existing platforms.

- Arc Collector
- ArcGIS Online
- ArcMap 10.2

If there are any questions or concerns on whether your files meet this request. Please contact the Matt Willman, City of Key West GIS department. 305-809-3721.

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## **PART 4**

### **SCOPE OF WORK**

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## SCOPE OF WORK

### PART 1 - SCOPE OF WORK

#### 1.1 DESCRIPTION

- A. Work Included: The furnishing of all supervision, labor, materials, and equipment and for performing the building structural repairs and building interior finish removal as according to construction drawings with all incidental work to provide a complete and serviceable project identified as:

**Band Room Structural Repairs PR1106**

- B. Related requirements in other parts of the Contract Documents: General and Supplementary Conditions of the Contract for Construction.
- C. Contractor's Duties:
1. In addition to provisions stipulated in other portions of the Contract Documents, the Contractor shall:
    - a. Secure permits as necessary for proper execution and completion of the work.
    - b. Notify ( in writing) all residents and proprietors adjacent to construction site of work to be performed, more specifically the notice shall state the day and time construction will begin, hours of work, the name and phone number of the Contractor's Superintendent and an end date for the project.
- D. The Contractor shall be totally responsible for all permits required and shall ensure that construction complies with all applicable local, state, and federal codes.
- E. The Contractor shall provide an experienced, qualified, and competent Superintendent to oversee the Work and perform quality assurance inspections. Prior to starting construction, the proposed Superintendent's qualifications shall be submitted in writing to the City for approval. The approved Superintendent shall be expected to remain for the duration of the Project, unless the City or Engineer deem him/her inadequate and requests his/her removal or the Contractor cannot continue his services to the Project for a reason or reasons that shall be communicated in writing to the City.
- F. A replacement Superintendent shall be required to follow the same approval process as required for the original. The Superintendent shall provide to the City Inspector Construction Reports for each day of construction, the reports shall be in English, legible, and signed. Contractor shall provide PDF copies monthly. Reports shall include quantity control checks done daily.
- G. The Contractor shall provide material safety data sheets (2 copies) for chemicals, paints, coatings and materials used on-site prior to initiation of work.



1.2 CONTRACTOR'S USE OF PREMISES

- A. Work shall be scheduled as to not interfere with on-going area activities.
- B. Coordinate use of premises and requirements for security under direction of City.
- C. This is a smoke free construction zone. **NO SMOKING PERMITTED WITHIN CONSTRUCTION ZONE.**
- D. Assume full responsibility for the protection and safekeeping of products, under this Contract, stored on the site.
- E. Obtain and pay for the use of additional storage or work areas needed for operation.
- F. Contractor shall provide drinking water and toilet facilities for construction personnel; The City will not provide.

1.3 MAINTENANCE OF EXISTING UTILITIES OPERATION

- A. Provide at least three weeks notice prior to interruption of utility services for temporary or permanent connections.
- B. Keep interruption of utility services, and utility outages during disconnection, moving, and reconnection to a minimum.
- C. Keys Energy shall be notified two weeks in advance in writing by the contractor for any KEYS support equipment required by the Contractor during any excavation. (e.g., Power poles next to excavations requiring support, etc.) No additional payment will be paid for this coordination.

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**PART 5**

**SPECIFICATIONS AND DRAWINGS**

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# DOUGLASS BAND ROOM REPAIRS

727 FORT STREET  
KEY WEST FLORIDA

REVISIONS:  
11/10/2015

DOUGLASS BAND ROOM REPAIRS  
727 FORT STREET  
KEY WEST, FLORIDA, 33040

<p style="text-align: center;"><b>SITE MAP - KEY WEST</b></p> <p style="text-align: center;">SITE LOCATION DOUGLASS BAND ROOM REPAIRS - 727 FORT STREET</p> <p style="text-align: right;">Not to Scale</p>	<p style="text-align: center;"><b>PROJECT DIRECTORY</b></p> <p>DOUGLASS BAND ROOM REPAIRS</p> <p>ARCHITECT'S PROJECT No.: 1522</p> <p>OWNER: CITY OF KEY WEST Address: 3126 FLAGLER AVE KEY WEST, FL 33040 Tel: 305.809.3747</p> <p>Representative: L. KREED HOWELL</p> <p>ARCHITECT: BENDER &amp; ASSOCIATES ARCHITECTS, P.A. Address: 410 Angela Street, Key West, FL 33040 Tel: (305) 296-1347 Fax: (305) 296-2727 E-mail: lbender@bellsouth.net Project Architect: Bert L. Bender (Principal-in-Charge)</p>	<p style="text-align: center;"><b>GENERAL NOTES</b></p> <ol style="list-style-type: none"> <li>All work shall comply with the Florida Building Code, latest edition, and all applicable laws, codes and ordinances of the City, County, and the State of Florida. In the City of Key West, applicable Codes forming the basis of this design and compliance requirements for the Contractor include:              FLORIDA BUILDING CODE - Building 2014 EDITION              FLORIDA BUILDING CODE - Existing 2014 EDITION              FLORIDA BUILDING CODE - Residential 2014 EDITION              FLORIDA BUILDING CODE - Plumbing 2014              FLORIDA BUILDING CODE - Fuel Gas 2014 EDITION              FLORIDA BUILDING CODE - Mechanical 2014 EDITION              NATIONAL ELECTRICAL CODE 2008 EDITION              NFPA 101 LIFE SAFETY CODE w/ Florida Modifications              2006 EDITION FLORIDA FIRE PREVENTION CODE 2007 EDITION              NFPA 1 2006 EDITION              This project is designed in accordance with A.S.C.E. 7-10 to resist wind loads of 180 mph (gusts).</li> <li>Prior to submitting a bid, verify all existing conditions and dimensions on the jobsite, and also after award, but prior to the start of construction.</li> <li>Contours and/or existing grades shown are approximate. Verify with field conditions. Final grading shall provide gradual slopes and grades. Slope all grades away from the building. Planting areas shall be graded with soil suitable for planting. Rock and debris will not be allowed.</li> <li>Where discrepancies between drawings, specifications, and code requirements occur, adhere to the most stringent requirement.</li> <li>Dimensions shall take precedence over scale.</li> <li>All new utilities shall be underground.</li> <li>Drawings and specifications are complementary. Refer to all sheets of drawings and applicable sections of the specifications for interfaces of work with related trades.</li> <li>After completion of construction remove all debris and construction equipment. Restore site to original condition.</li> <li>Notify owner of any possible artifacts uncovered during site grading and throughout the course of construction.</li> <li>Furnish a receptacle on site to contain construction debris and maintain the site in an orderly manner to ensure public safety and prevent blowing debris.</li> <li>Comply with all requirements for selective demolition as specified, shown on the Demolition Plan, or called for in the selective Demolition Notes.</li> </ol> <p>61G1-16.003 Use of Seal. The personal seal, signature and date of the architect or interior designer shall appear on all architectural or interior design documents to be filed for public record and shall be construed to obligate his partners or his corporation. A corporate seal alone is insufficient. Documents shall be signed personally and sealed by the responsible architect or interior designer. Final official record documents (not tracings, etc.) shall be so signed. The signing and sealing of the specification index sheets shall be considered adequate. All drawing sheets and pages shall be so signed and sealed. An architect or interior designer shall not affix, or permit to be affixed, his seal or name to any plan, specifications, drawings, or other related document which was not prepared by him or under his responsible supervising control as provided in Rule Chapter 61G1-23, F.A.C. An architect or interior designer shall not use his seal or do any other act as an architect or interior designer unless holding at the time a certificate of registration and all required renewals thereof.</p> <p>Specific Authority 481.2055, 481.221 FS. Law Implemented 481.221, 481.225(1)(e), (g), (i), 481.225(1)(g), (h), (i) FS. History-New 12-23-79, Formerly 21B-16.03, Amended 7-27-89, Formerly 21B-16.003, Amended 11-21-94, 4-18-00.</p>	<p style="text-align: center;"><b>SHEET INDEX</b></p> <p>A.0 SITE LOCATION MAP, SHEET INDEX, GENERAL NOTES, FLORIDA ADMINISTRATIVE CODE, SYMBOLS LEGEND</p> <p><b>ARCHITECTURAL:</b>              A1.0 EXISTING SITE PLAN              A1.1 DEMOLITION FLOOR PLAN              A2.0 EXTERIOR DEMOLITION ELEVATIONS              A6.0 REFLECTED CEILING DEMOLITION PLAN              A8.0 PHOTO DETAILS              A9.0 PROPOSED FLOOR PLAN              A9.1 PROPOSED ELEVATION              SP1.0 SPECIFICATIONS              SP1.1 SPECIFICATIONS CONTINUED              SP1.2 SPECIFICATIONS CONTINUED              SP1.3 SPECIFICATIONS CONTINUED</p> <p><b>STRUCTURAL:</b>              S0.1 GENERAL NOTES/COMPONENTS AND CLADDING              S1.1 SITE PLAN              S5.1 TYPICAL DETAILS              S5.2 TYPICAL DETAILS</p>																																																																																																																																															
<p style="text-align: center;"><b>ABBREVIATIONS</b></p> <table border="0"> <tr><td>AB</td><td>ANCHOR BOLT</td><td>MIN</td><td>MINIMUM</td></tr> <tr><td>ABC</td><td>AGGREGATE BASE COURSE</td><td>NTS</td><td>NOT TO SCALE</td></tr> <tr><td>A/C</td><td>AIR CONDITIONING</td><td>OA</td><td>OVERALL</td></tr> <tr><td>BLKG</td><td>BLOCKING</td><td>OC</td><td>ON CENTER</td></tr> <tr><td>BUR</td><td>BUILT UP ROOF</td><td>OD</td><td>OUTSIDE DIAMETER</td></tr> <tr><td>CAB</td><td>CABINET</td><td>PCF</td><td>POUNDS PER CUBIC FOOT</td></tr> <tr><td>CER</td><td>CERAMIC</td><td>PL</td><td>PROPETY LINE</td></tr> <tr><td>CL</td><td>CENTER LINE</td><td>PLAM</td><td>PLASTIC LAMINATE</td></tr> <tr><td>CLG</td><td>CEILING</td><td>PLF</td><td>POUNDS PER LINEAL FOOT</td></tr> <tr><td>CMU</td><td>CONCRETE MASONRY UNIT</td><td>PNL</td><td>PANEL</td></tr> <tr><td>COL</td><td>COLUMN</td><td>PT</td><td>CCA PRESSURE TREATED POINT</td></tr> <tr><td>CONC</td><td>CONCRETE</td><td>PT</td><td>POINT</td></tr> <tr><td>DBL</td><td>DOUBLE</td><td>PVC</td><td>POLYVINYLCHLORIDE</td></tr> <tr><td>DIAG</td><td>DIAGONAL</td><td>R</td><td>RADIUS (OR) RISER</td></tr> <tr><td>DS</td><td>DOWNSPOUT</td><td>R/A</td><td>RETURN AIR</td></tr> <tr><td>DTL</td><td>DETAIL</td><td>REBAR</td><td>STEEL REINFORC. 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TITLES</b></p> <p style="text-align: center;"><b>WALL ELEVATION INDICATOR</b> (SHOWN WITHIN ROOM ON PLAN)</p> <p style="text-align: center;"><b>ROOM NUMBER INDICATOR</b> (SHOWN BESIDE OR UNDER ROOM NAME)</p> <p style="text-align: center;"><b>DOOR OPENING INDICATOR</b> (EACH OPENING SCHEDULED SEPARATELY)</p> <p style="text-align: center;"><b>WINDOW INDICATOR</b> (EACH WINDOW TYPE &amp; SIZE SCHEDULED)</p> <p style="text-align: center;"><b>PARTITION/WALL TYPE INDICATOR</b> (COMMERCIAL &amp; INSTITUTIONAL PROJECTS)</p>	<p style="text-align: center;"><b>GENERAL PROJECT NOTES</b></p> <ol style="list-style-type: none"> <li>REMOVE ALL BUILDING INTERIOR FINISHES, THUS EXPOSING ALL BUILDING STRUCTURAL ELEMENTS.</li> <li>REMOVE ALL EXTERIOR DOOR AND WINDOW SYSTEMS, AS SHOWN.</li> <li>REMOVE MEZZANINE LOCATED HVAC.</li> <li>IN FILL ALL EXTERIOR BAY DOOR AND WINDOW OPENINGS.</li> <li>REMOVE AND REPLACING ENTIRE CAST-IN-PLACE CONCRETE TIE-BEAM, CORNICE, AND FRIEZE.</li> <li>REMOVE AND REPLACING THE SECTIONS OF CAST-IN-PLACE CONCRETE COLUMNS IDENTIFIED BY ATLANTIC ENGINEERING SERVICES STRUCTURAL ASSESSMENT AS REQUIRING FULL DEPTH REPAIRS.</li> <li>REPAIR SECTIONS OF CAST-IN-PLACE CONCRETE COLUMN IDENTIFIED BY ATLANTIC ENGINEERING STRUCTURAL ASSESSMENT AS REQUIRING PARTIAL DEPTH REPAIRS, OR REPLACE COMPLETELY.</li> <li>REPAIR ROOF DISTURBED BY CORNICE REPLACEMENT.</li> <li>RELOCATE EXISTING HVAC AIR HANDLER AT FLOOR LEVEL AND CONDENSER AT BUILDING EXTERIOR.</li> <li>THE EXISTING FINISH FLOOR IS 6.46 FEET MSL. THE FEMA FLOOD ZONE IS AE 6.</li> <li>PAINTING: THERE WILL BE NO INTERIOR PAINTING, EXTERIOR PAINTING WILL BE LIMITED TO THE PROTECTION OF THE NEW COMPONENTS. 1 PRIMER COAT AND ONE FINISH COAT.</li> </ol>
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CMU	CONCRETE MASONRY UNIT	PNL	PANEL																																																																																																																																															
COL	COLUMN	PT	CCA PRESSURE TREATED POINT																																																																																																																																															
CONC	CONCRETE	PT	POINT																																																																																																																																															
DBL	DOUBLE	PVC	POLYVINYLCHLORIDE																																																																																																																																															
DIAG	DIAGONAL	R	RADIUS (OR) RISER																																																																																																																																															
DS	DOWNSPOUT	R/A	RETURN AIR																																																																																																																																															
DTL	DETAIL	REBAR	STEEL REINFORC. BAR																																																																																																																																															
DWR	DRAINER	REFR.	REFRIGERATOR																																																																																																																																															
EJ	EXPANSION JOINT	SF	SQUARE FOOT (FEET)																																																																																																																																															
EL	ELEVATION	SS	STAINLESS STEEL																																																																																																																																															
ELEC	ELECTRIC	SPEC	SPECIFICATION																																																																																																																																															
EQ	EQUAL	T	TYPICAL																																																																																																																																															
EXH	EXHAUST	UNO	UNLESS NOTED OTHERWISE																																																																																																																																															
FV	FIELD VERIFY	VCT	VINYL COMPOSITION TILE																																																																																																																																															
GALV	GALVANIZED	VERT	VERTICAL																																																																																																																																															
GI	GALVANIZED IRON	WD	WOOD																																																																																																																																															
HORZ	HORIZONTAL	WNF	WELDED WIRE FABRIC																																																																																																																																															
HDW	HARDWARE	WH	WATER HEATER																																																																																																																																															
HVAC	HEATING VENTILATING & AIR CONDITIONING	W/O	WITHOUT																																																																																																																																															
FOC	FACE OF CONCRETE																																																																																																																																																	
FOS	FACE OF STUD																																																																																																																																																	
FIN	FINISH																																																																																																																																																	
FE	FIRE EXTINGUISHER																																																																																																																																																	
FND	FOUNDATION																																																																																																																																																	
FTG	FOOTING																																																																																																																																																	
ID	INSIDE DIAMETER																																																																																																																																																	
MAX	MAXIMUM																																																																																																																																																	
		<p style="text-align: center;"><b>MATERIAL DESIGNATIONS</b></p> <ul style="list-style-type: none"> <li>CONCRETE MASONRY UNITS IN PLAN</li> <li>CONC., STUCCO, PLASTER</li> <li>IN ELEV.,POURED CONC. IN PLAN</li> <li>METAL IN ELEVATION</li> <li>METAL IN SECTION</li> <li>FINISH WOOD IN ELEV. &amp; IN SECTION</li> <li>DIMENSION LUMBER IN SECTION (CONTINUOUS)</li> <li>WOOD BLOCKING IN SECTION (DISCONTINUOUS)</li> <li>GYPSON WALL BOARD IN SECTION (LARGE SCALE)</li> <li>EARTH, NATURAL SUBSTRATE</li> <li>GRAVEL, AGGREGATE BASE COURSE, FILL</li> <li>FIBERGLASS BATT INSULATION</li> <li>RIGID INSULATION</li> </ul> <p style="text-align: center;"><b>PARTITIONS &amp; WALLS</b></p> <ul style="list-style-type: none"> <li>CONCRETE MASONRY UNITS</li> <li>POURED CONCRETE</li> <li>WOOD FRAME</li> <li>METAL STUDS</li> <li>EXISTING CONSTRUCTION TO REMAIN</li> <li>EXISTING CONSTRUCTION TO BE DEMOLISHED</li> </ul>	<p style="text-align: center;"><b>DESCRIPTION OF WORK:</b></p> <p>REMOVING ALL BUILDING INTERIOR FINISHES, THUS EXPOSING ALL BUILDING STRUCTURAL ELEMENTS, AS DESCRIBED IN THE GENERAL PROJECT NOTES.</p>																																																																																																																																															

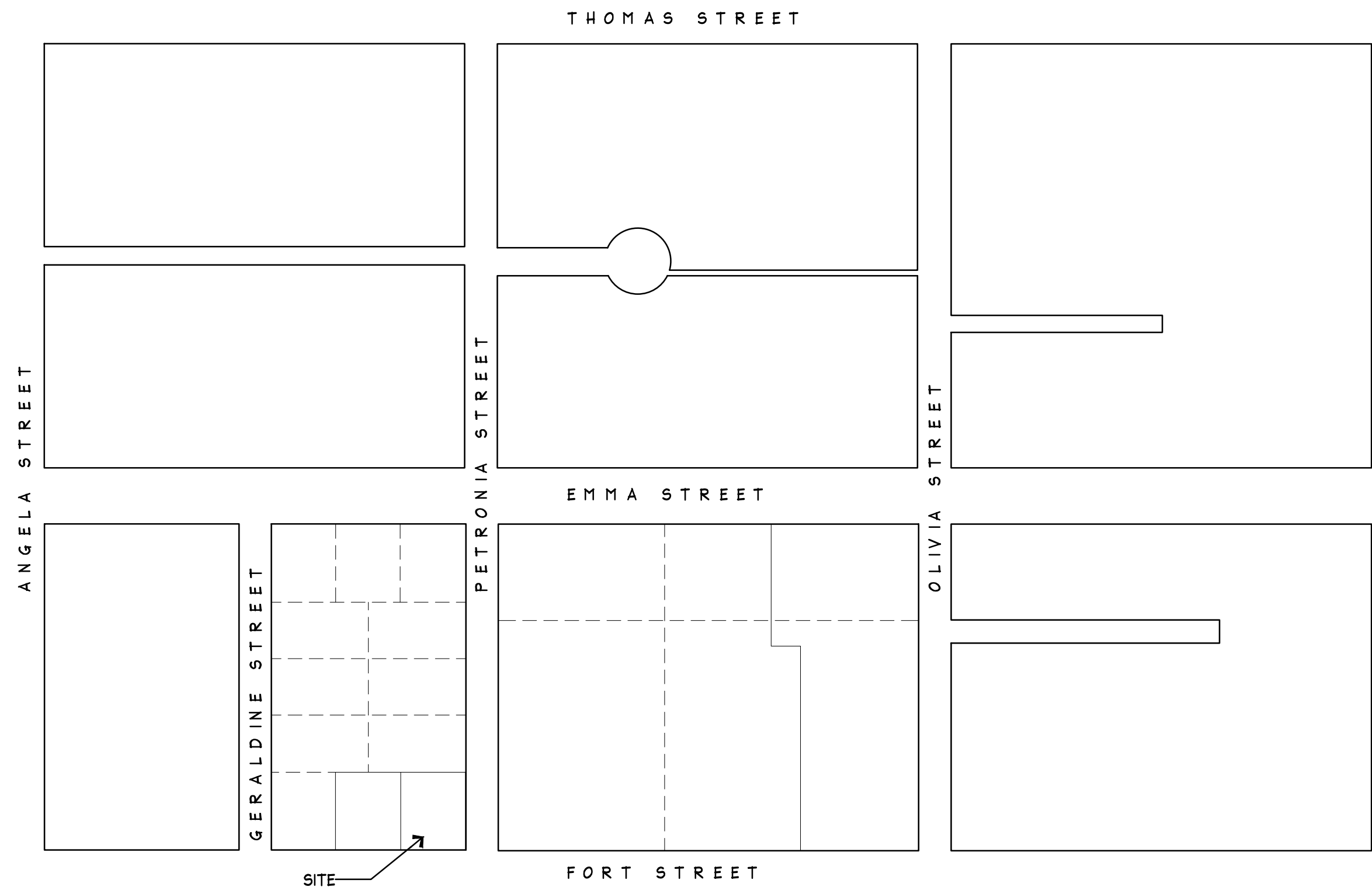
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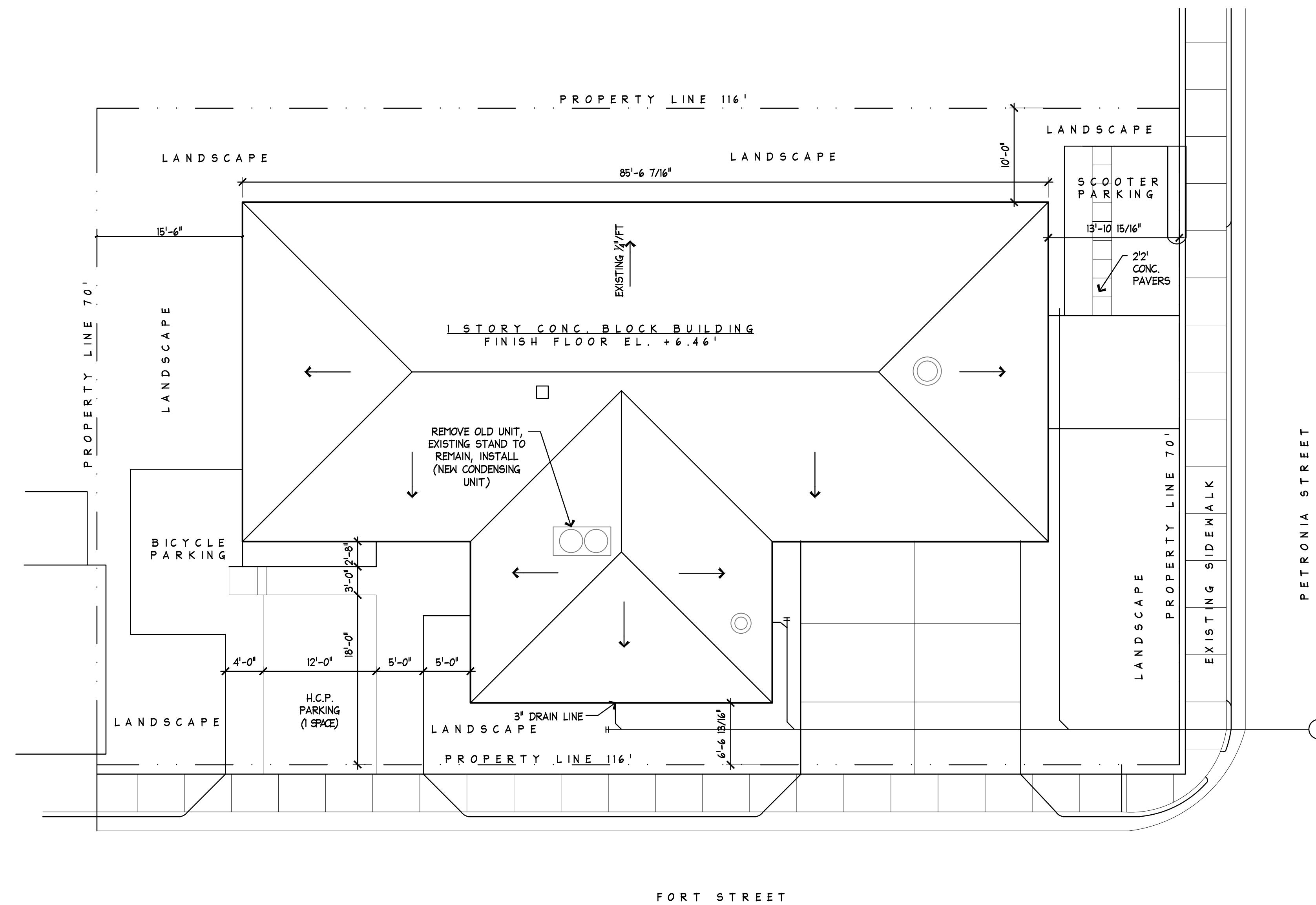
Project No.: 1522  
SITE MAP  
PROJECT DIRECTORY  
GENERAL NOTES  
ABBREVIATIONS  
SHEET INDEX  
SYMBOL LEGEND  
Date: 09/17/15

A.0

1 OF 16

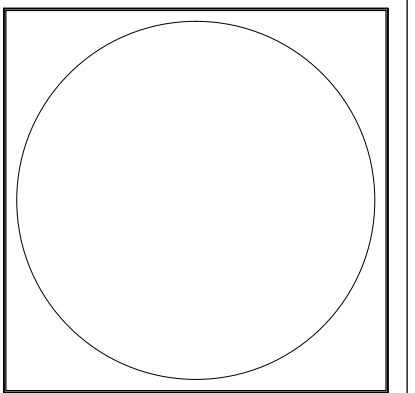


**2 LOCATION MAP**  
 A1.0 SCALE: N.T.S.



**1 SITE PLAN**  
 A1.0 SCALE: 1/8"=1'-0"

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 Facsimile (305) 296-2727  
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Project No: 1522  
 SITEPLAN  
 Date: 09/17/15

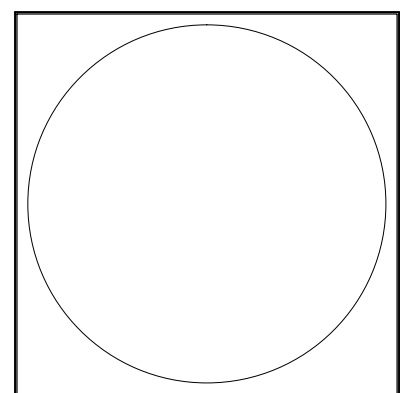
**A1.0**  
 2 OF 16



**DEMOLITION NOTES**

- Prior to submitting a bid, verify all existing conditions and dimensions on the jobsite, and also after award, but prior to the start of construction.
- All demolished material shall become the property of the contractor, unless specifically noted otherwise, and shall be properly removed from the site. Comply with all applicable laws, codes and regulations of governmental agencies having jurisdiction over the project.
- All costs of demolition including permit fees, disposal fees, etc. are the responsibility of the Contractor.
- It is the Contractor's responsibility to be aware of and to conform with all applicable demolition and disposal codes, safety requirements, and environmental protection regulations of any governmental body having jurisdiction over the work.
- Provide safety barricades as required to protect the safety of the general public and workers connected with the project.
- Provide bracing and shoring as required to protect the safety of the general public and workers connected with the project.
- Demolished material classified as clean fill may be distributed on site when specifically approved by the Architect in advance.

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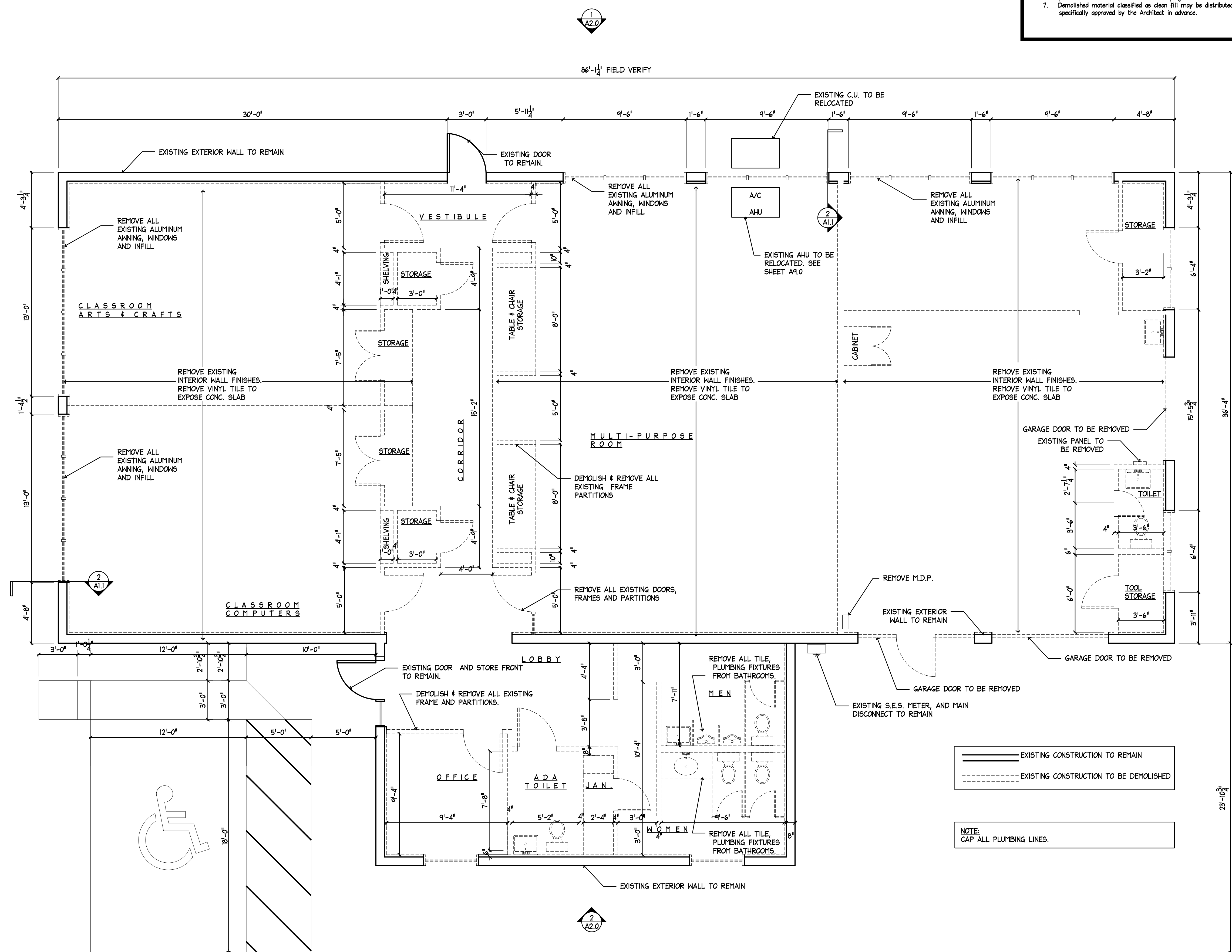


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Project No: 1522  
 DEMOLITION FLOOR PLAN  
 Date: 09/17/15

**A1.1**  
 3 OF 16



2 EXISTING WINDOW CONDITION  
 A1.1 SCALE: 1/2"=1'-0"

1 DEMOLITION FLOOR PLAN  
 A1.1 SCALE: 1/4"=1'-0"

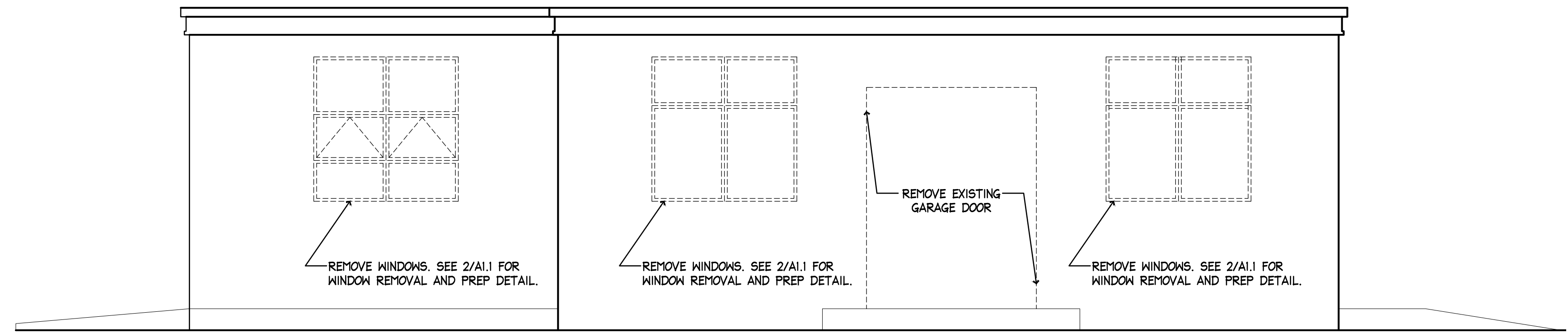


**DEMOLITION NOTES**

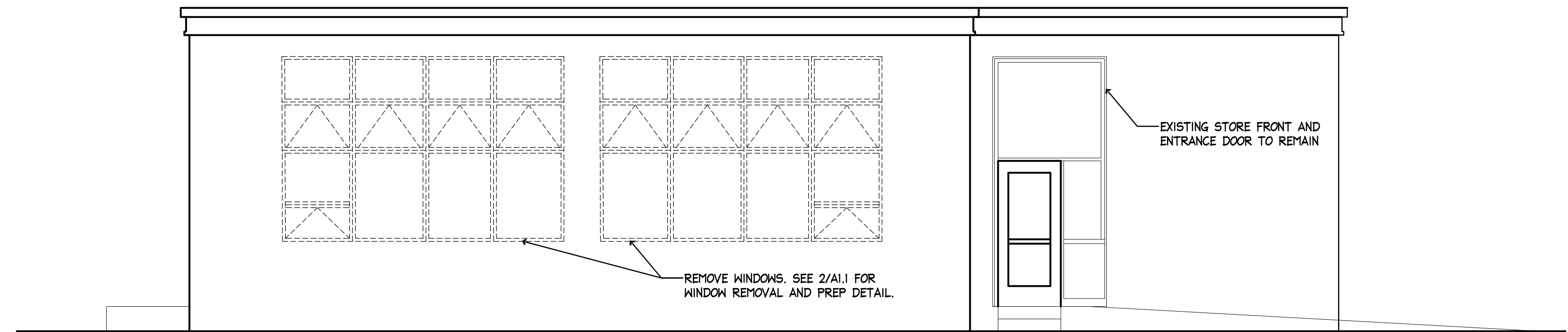
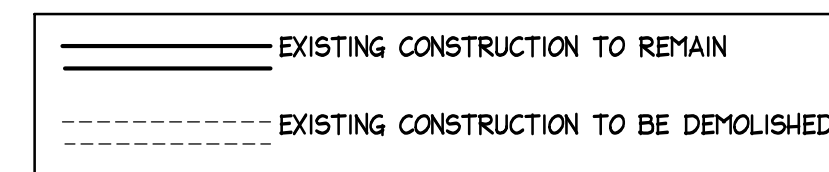
1. Prior to submitting a bid, verify all existing conditions and dimensions on the jobsite, and also after award, but prior to the start of construction.
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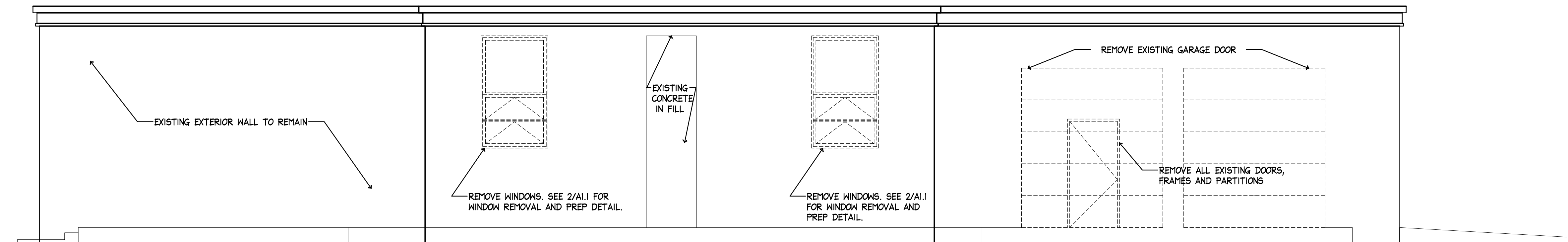
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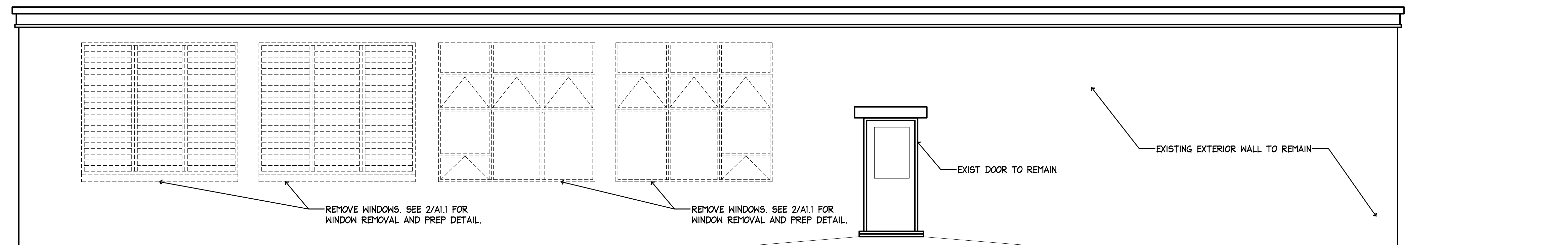
**4 SOUTH EXTERIOR DEMOLITION ELEVATION**  
 SCALE: 1/4"=1'-0"



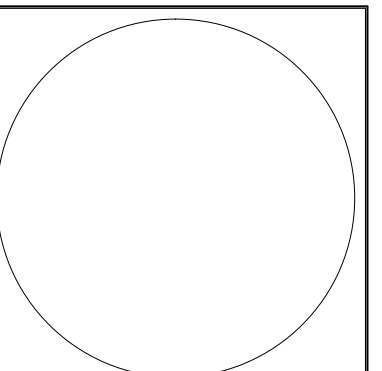
**3 NORTH EXTERIOR DEMOLITION ELEVATION**  
 SCALE: 1/4"=1'-0"



**2 WEST EXTERIOR DEMOLITION ELEVATION**  
 SCALE: 1/4"=1'-0"



**1 EAST EXTERIOR DEMOLITION ELEVATION**  
 SCALE: 1/4"=1'-0"



410 Angela Street  
 Key West, Florida 33040  
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 Facsimile (305) 296-2727  
 Florida License AAC002022

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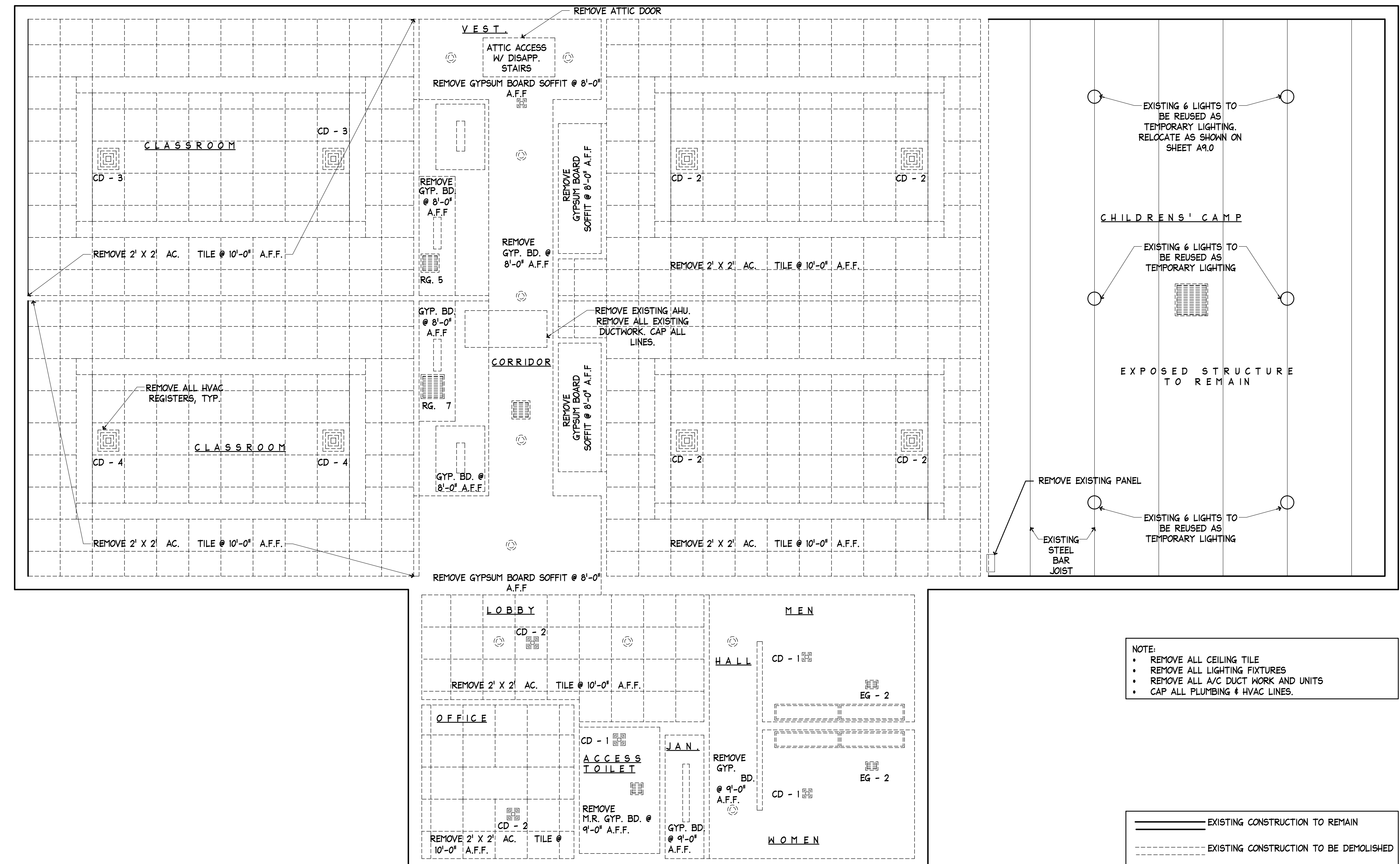
Project No: 1522  
 EXTERIOR DEMOLITION ELEVATIONS  
 Date: 09/17/15

**A2.0**

**DEMOLITION NOTES**

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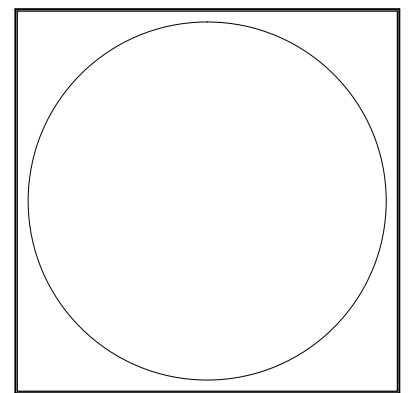
**DOUGLASS BAND ROOM REPAIRS**  
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NOTE:  
 • REMOVE ALL CEILING TILE  
 • REMOVE ALL LIGHTING FIXTURES  
 • REMOVE ALL A/C DUCT WORK AND UNITS  
 • CAP ALL PLUMBING & HVAC LINES.

————— EXISTING CONSTRUCTION TO REMAIN  
 - - - - - EXISTING CONSTRUCTION TO BE DEMOLISHED

1 REFLECTED CEILING DEMOLITION PLAN  
 A6.0 SCALE: 1/4"=1'-0"



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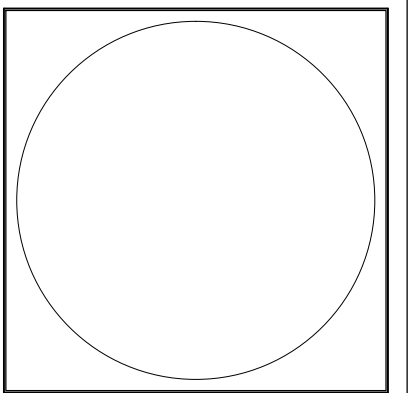
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Project No: 1522  
 REFLECTED CEILING DEMOLITION PLAN  
 Date: 09/17/15

**A6.0**  
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Project No: 1522  
 PHOTO DETAILS  
 Date: 09/17/15



EXISTING LIGHTS TO BE RELOCATED AS TEMPORARY LIGHTING

**7 PHOTO DETAIL 7**  
 A8.0 SCALE: N.T.S.



EXISTING CONDENSING UNIT ON THE ROOF TO BE REMOVED. STAND TO REMAIN.

EXISTING A/C UNIT IN THE ATTIC TO BE REMOVED

**4 PHOTO DETAIL 4**  
 A8.0 SCALE: N.T.S.



**5 PHOTO DETAIL 5**  
 A8.0 SCALE: N.T.S.



EXISTING DOOR TO REMAIN

**6 PHOTO DETAIL 6**  
 A8.0 SCALE: N.T.S.



EXISTING S.E.S. METER, AND MAIN DISCONNECT TO REMAIN

GARAGE DOORS TO BE IN FILLED WITH CMU

**1 PHOTO DETAIL 1**  
 A8.0 SCALE: N.T.S.



**2 PHOTO DETAIL 2**  
 A8.0 SCALE: N.T.S.



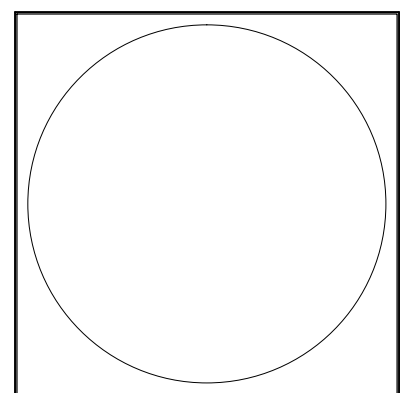
EXISTING DOOR AND STOREFRONT TO REMAIN

**3 PHOTO DETAIL 3**  
 A8.0 SCALE: N.T.S.



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▲ 11/10/2015

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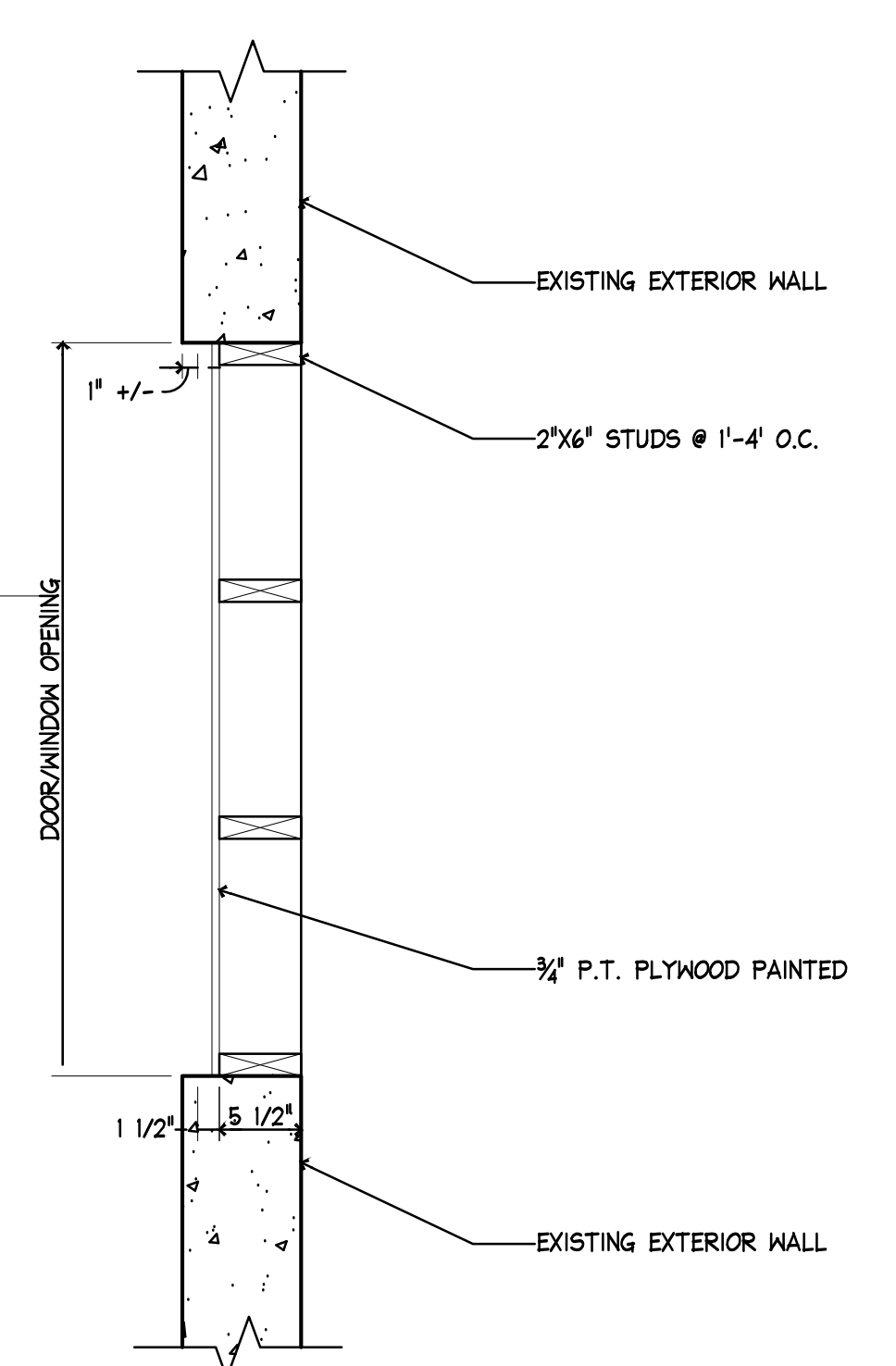
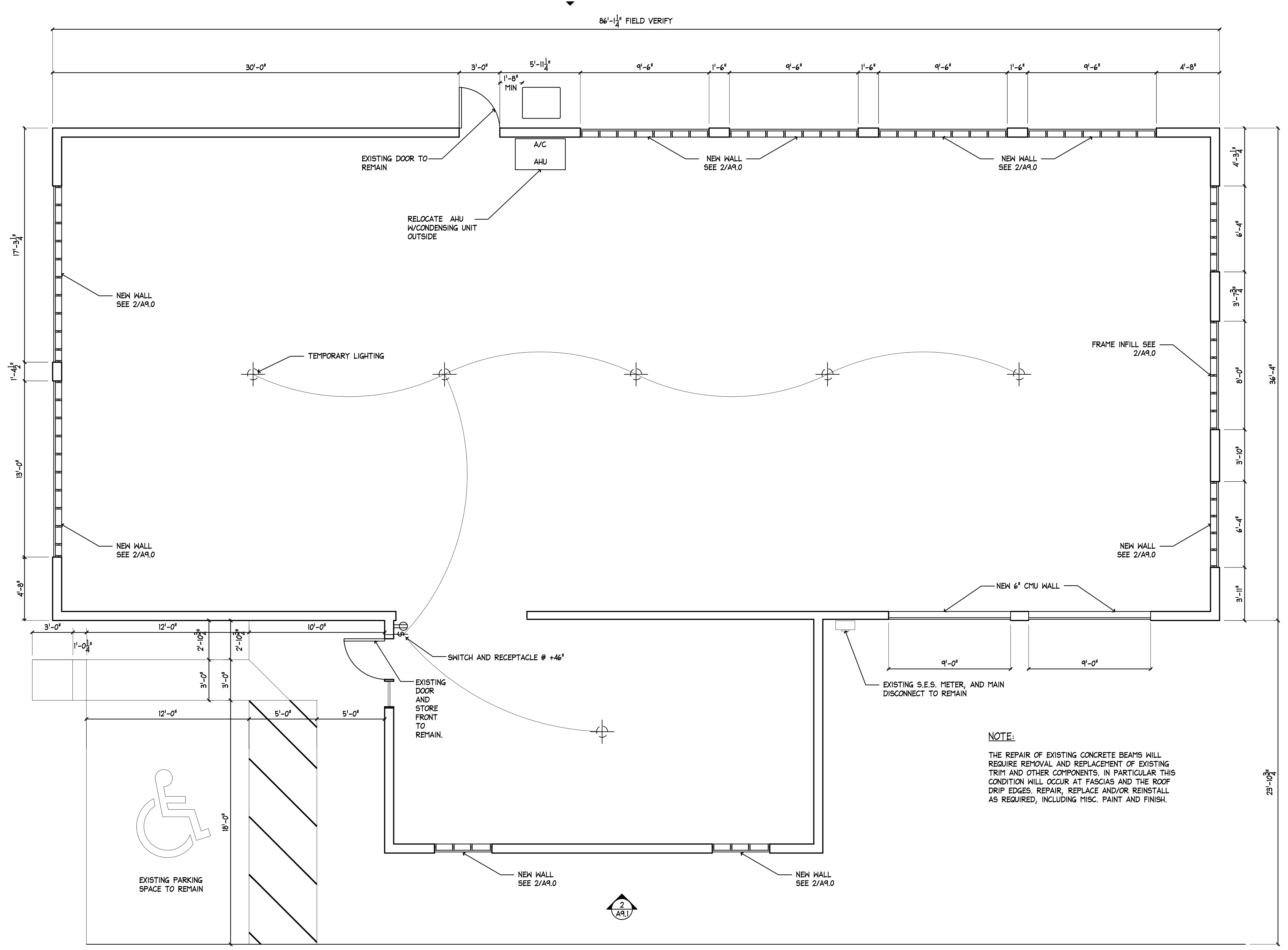


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 Facsimile (305) 296-2727  
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Project No: 1522  
 PROPOSED FLOOR PLAN  
 Date: 09/17/15

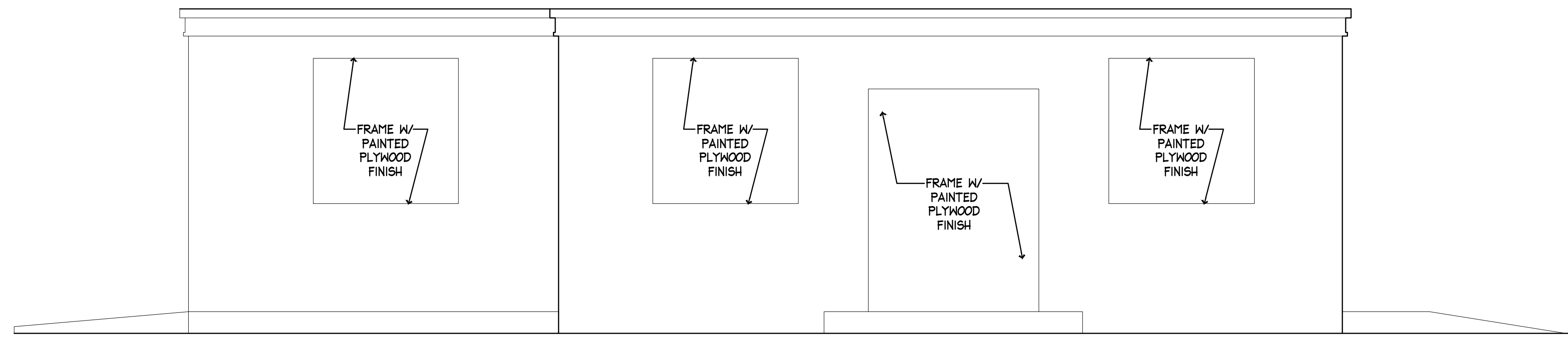
**A9.0**  
 7 OF 16



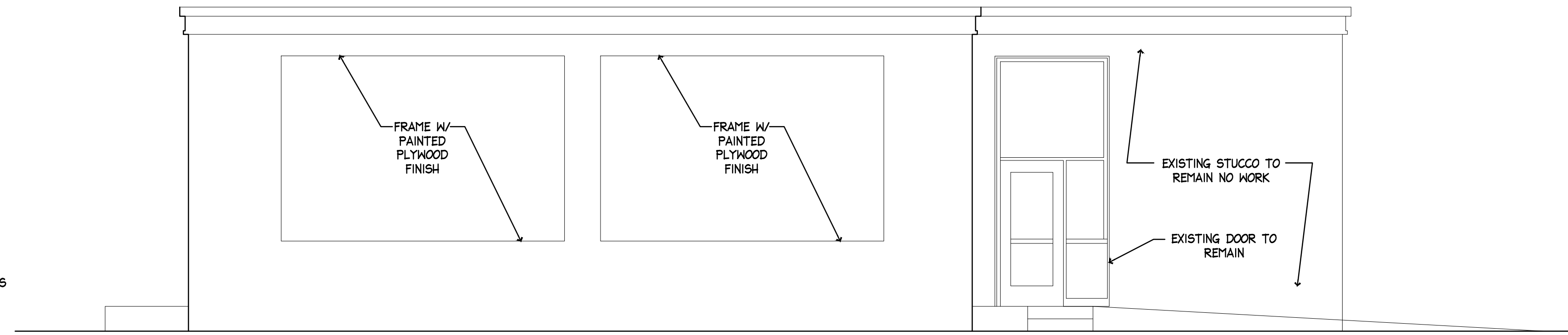
**2 TYPICAL PLAN @ EXTERIOR OPENING**  
 A9.0 SCALE: 1"=1'-0"

**1 PROPOSED FLOOR PLAN**  
 A9.0 SCALE: 1/4"=1'-0"



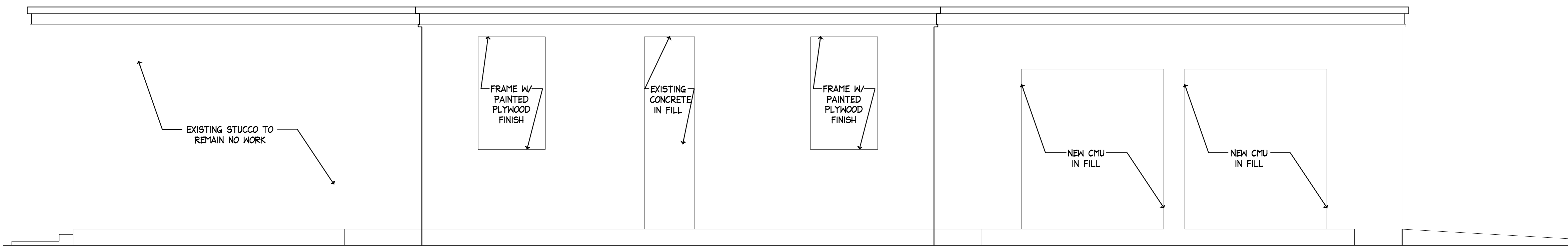


4 SOUTH PROPOSED EXTERIOR ELEVATION  
 A9.1 SCALE: 1/4"=1'-0"

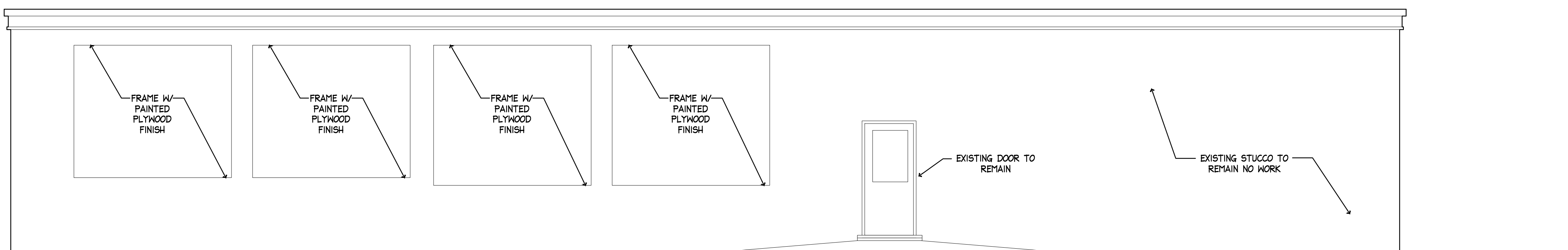


NOTE:  
 THE REPAIR OF EXISTING CONCRETE BEAMS WILL REQUIRE REMOVAL AND REPLACEMENT OF EXISTING TRIM AND OTHER COMPONENTS. IN PARTICULAR THIS CONDITION WILL OCCUR AT FASCIAS AND THE ROOF DRIP EDGES. REPAIR, REPLACE AND/OR REINSTALL AS REQUIRED, INCLUDING MISC. PAINT AND FINISH.

3 NORTH PROPOSED EXTERIOR ELEVATION  
 A9.1 SCALE: 1/4"=1'-0"

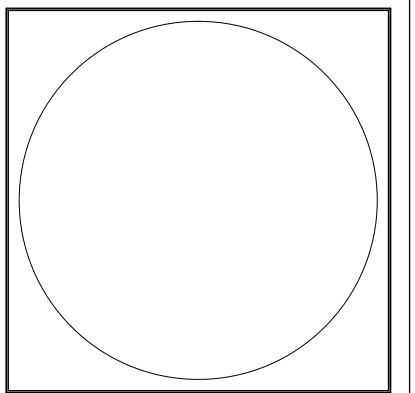


2 WEST PROPOSED EXTERIOR ELEVATION  
 A9.1 SCALE: 1/4"=1'-0"



1 EAST PROPOSED EXTERIOR ELEVATION  
 A9.1 SCALE: 1/4"=1'-0"

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Project No: 1522  
 PROPOSED EXTERIOR ELEVATIONS  
 Date: 09/17/15

SPECIFICATIONS:

SECTION 01010  
SUMMARY OF WORK

PART 1 - GENERAL

- 1.1 PROJECT DESCRIPTION
A. Project consists of the selective demolition of interior partitions, finishes, all mechanical, electrical and plumbing components, and concrete repairs to a CBS structure.
B. The work will include, but not necessarily be limited to, the following items:
1. Steel structural components, site and building electrical systems, mechanical, plumbing, building flood proofing, gypsum board, metal stud framing, aluminum tube framing, impact doors and windows.
1.2 INTENT OF THE SPECIFICATIONS
A. The intent of these specifications is to describe the materials and methods of construction required for the performance of the work. In general, it is intended that the drawings shall delineate the detailed extent of the work. Drawings, specifications, and contract documents are complementary, and what is required by one shall be as binding as if required by all.
1.3 PROTECTION
A. The Contractor shall use every available precaution to provide for the safety of property owner, visitors to the site, and all connected with the work under the Contract.
B. All existing facilities both above and below ground shall be protected and maintained free of damage. Existing facilities shall remain operating during the period of construction unless otherwise permitted. All access roadways must remain open to traffic unless otherwise permitted.
C. Barricades shall be erected to fence off all construction areas from operations personnel.

PART 2 - PRODUCTS (Not applicable).

PART 3 - EXECUTION (Not applicable).

END OF SECTION

SECTION 01045  
CUTTING AND PATCHING

PART 1 - GENERAL

- 1.1 DESCRIPTION
A. Work included: This Section establishes general requirements pertaining to cutting (including excavating), fitting, and patching of the Work required to:
1. Make the several parts fit properly.
2. Uncover work to provide for installing, inspecting, or both, of ill-timed work.
3. Remove and replace work not conforming to requirements of the Contract Documents; and
4. Remove and replace defective work.
B. Related work:
1. The Work of this Section must comply with all other Sections of these Technical Special Provisions.
2. In addition to other requirements specified, upon the Architect's request uncover work to provide for inspection by the Architect of covered work, and remove samples of installed materials for testing.
3. Do not cut or alter work performed under separate contracts without the Architect's written permission.
1.2 SUBMITTALS
A. Request for Architect's consent.
1. Prior to cutting which effects structural safety, submit written request to the Architect for permission to proceed with cutting.
2. Coordinate cutting of existing fabric with the Architect and provide Schedule of Repairs as required in other sections, prior to commencing operations.
3. Should conditions of the Work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify the Architect and secure his written permission and the required Change Order prior to proceeding.
B. Notices to the Architect:
1. Prior to cutting and patching performed pursuant to the Architect's instructions, submit cost estimate to the Architect. Secure the Architect's approval of cost estimates and type of reimbursement before proceeding with cutting and patching.
2. Submit written notice to the Architect designating the time the Work will be uncovered, to provide for the Architect's observation.

PART 2 - PRODUCTS

- 2.1 MATERIALS
A. For replacement of items removed, use materials complying with pertinent Sections of these Specifications.
2.2 PAYMENT FOR COSTS
A. The Owner will reimburse the Contractor for cutting and patching performed pursuant to the written Change Order, after claim for such reimbursement is submitted by the Contractor. Perform other cutting and patching needed to comply with the Contract Documents at no additional cost to the Owner.

PART 3 - EXECUTION

- 3.1 SURFACE CONDITIONS
A. Inspection:
Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, patching, and backfilling. After uncovering the work, inspect conditions affecting installation of new work.
B. Disregard:
1. If uncovered conditions are not as anticipated, immediately notify the Architect and secure needed directions.
3. Do not proceed until unsatisfactory conditions are corrected.
3.2 PREPARATION PRIOR TO CUTTING
A. Provide required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.
3.3 PERFORMANCE
A. Perform required excavating and backfilling as required under pertinent other Sections of these Technical Special Provisions.
1. Perform cutting and demolition by methods which will prevent damage to other portions of the Work and provide proper surfaces to receive installation of repair and new work.
2. Perform fitting and adjusting of products to provide finished installation complying with the specified tolerances and finishes.

END OF SECTION

SECTION 01400  
SUBMITTALS AND SUBSTITUTIONS

PART 1 - GENERAL

- 1.1 DESCRIPTION
A. Work included: Make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.
B. Related work:
1. The Work of this Section must comply with all other Sections of these Specifications.
2. Individual requirements for submittals also may be described in pertinent Sections of these Specifications.
C. Work not included:
1. Unrequired submittals will not be reviewed by the Architect.
2. The Contractor may require his subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the Work, but such data shall remain between the Contractor and his subcontractors and will not be reviewed by the Architect.
1.2 QUALITY ASSURANCE
A. Coordination of submittals:
1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
3. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.
B. Substitutions:
1. The Contract is based on the standards of quality established in these technical specifications. Substitutions will be considered only when listed at time of bidding, on the form provided therefore in the bidding documents, and when substantiated by the Contractor's submittal of required data within 35 calendar days after award of the Contract.
2. The following products do not require further approval except for interface within the Work:
a. Products specified by reference to standard specifications such as ASTM and similar standards.
b. Products specified by manufacturer's name and catalog model number.
C. "Or equal":
1. Reference in the plans or special provisions, to any proprietary article, device, product, material or fixture, or any form or type of construction by name, make or catalog number, with or without the words "or equal", shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may use any article, device, product, material or fixture, or any form or type of construction, which in the judgment of the Architect (expressed in writing) is equal, for the purpose intended, to that named.
2. The decision of the Architect shall be final.
1.3 SUBMITTAL
A. Make submittals of Shop Drawings, Samples, substitution requests, and other items in accordance with provisions of this Section.

PART 2 - PRODUCTS

- 2.1 SHOP DRAWINGS
A. Scale and measurements: Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work.
B. Types of prints required:
1. Submit Shop Drawings in the form of each sheet plus three or blackline prints of each sheet.
C. Review comments of the Architect will be shown on the blackline print when it is returned to the Contractor. The Contractor may make and distribute such copies as are required for his purposes.
2.2 MANUFACTURERS' LITERATURE
A. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents is being submitted for review.
B. Submit the number of copies which are required to be returned, plus one copy which will be retained by the Architect.
2.3 SAMPLES
A. Provide Sample or Samples identical to the precise article proposed to be provided. Identify as described under "Identification of Submittals" below.
B. Number of Samples required:
1. Unless otherwise specified, submit Samples in the quantity which is required to be returned, plus one which will be retained by the Architect.
2. By prearrangement in specific cases, a single Sample may be submitted for review and, when approved, be installed in the Work, at a location agreed upon by the Architect.
2.4 COLORS AND PATTERNS
A. Unless the precise color and pattern is specifically called out in these technical specifications, and whenever a choice of color or pattern is available in three

specified products, submit accurate color and pattern charts to the Architect for selection.

PART 3 - EXECUTION

- 3.1 IDENTIFICATION OF SUBMITTALS
A. Consecutively number all submittals.
1. When material is resubmitted for any reason, transmit under new letter of transmittal and with a new transmittal number.
2. On re-submittals, cite the original submittal number for reference.
B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.
C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.
D. Maintain an accurate submittal log for the duration of the Work, showing current status of all submittals at all times. Make the submittal log available to the Architect for the review upon request.
3.2 GROUPING OF SUBMITTALS
A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.
1. Partial submittals may be rejected as not complying with the provisions of the Contract.
2. The Contractor may be held liable for delays so occasioned.
3.3 TIMING OF SUBMITTALS
A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.
B. In scheduling, allow at least ten working days for review by the Architect following his receipt of the submittal.
3.4 ARCHITECT'S REVIEW
A. Review by the Architect does not relieve the Contractor from responsibility for error which may exist in the submitted data.
B. Revisions:
1. Make revisions required by the Architect.
2. If the Contractor considers any required revisions to be a change, he shall so notify the Architect as provided for in F.D.O.T. Standard Specifications, as amended.
3. Make only those revisions directed or approved by the Architect.

END OF SECTION

SECTION 01370  
SCHEDULE OF VALUES

PART 1 - GENERAL

- 1.1 DESCRIPTION
A. Work included: Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents.
B. Related work:
1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Schedule of values is required under Paragraph 4.8 of the General Conditions.
3. Schedule of values is required to be compatible with the "continuation sheet" accompanying applications for payment, as described in Section 01152.
1.2 QUALITY ASSURANCE
A. Use required means to assure arithmetical accuracy of the sums described.
B. When so required by the Architect, provide copies of the subcontracts or other data acceptable to the Architect, substantiating the sums described.
1.3 SUBMITTALS
A. Prior to first application for payment, submit a proposed schedule of values to the Architect.
1. Meet with the Architect and determine additional data, if any, required to be submitted.
2. Secure the Architect's approval of the schedule of values prior to submitting first application for payment.

END OF SECTION

SECTION 01410  
TESTING LABORATORY SERVICES

PART 1 - GENERAL

- 1.1 DESCRIPTION
A. Work Included: Provide testing and inspecting, complete, as described in this section and elsewhere in these Technical Special Provisions.
B. Related work:
1. The Work of this Section must comply with all other Sections of these Technical Special Provisions.
1.2 QUALITY ASSURANCE
A. The Owner shall provide and pay for the services of the testing laboratory.
B. Upon completion of each test and/or inspection, promptly distribute copies of test or inspection reports to the Architect, to governmental agencies requiring submission of such reports, and to such other persons as directed by the architect.

PART 2 - PRODUCTS

- 2.1 PAYMENT FOR TESTING
A. Include within the contract Sum an allowance amount sufficient to cover all testing and inspection required under this Section of these Specifications, and to cover all testing and inspecting required by governmental agencies having jurisdiction.
B. The owner will pay for any additional testing and inspecting specifically requested by the Architect over and above those specifically identified in the price proposal of the Contractor. Remaining test amounts will be returned to the owner.
C. When initial tests requested by the Architect indicate non-compliance with these technical specifications, subsequent retesting occasioned by the non-compliance shall be performed by the same testing laboratory and the costs thereof shall be paid by the Contractor from the allowance.
2.2 SPECIFIC TESTS AND INSPECTIONS
A. Provide all tests and inspections required by governmental agencies having jurisdiction, required by provisions of these technical specifications, and such other tests and inspections as are directed by the Architect.
B. Tests include, but are not limited to, those described in detail in Part 3 of this Section.

PART 3 - EXECUTION

- 3.1 TAKING SPECIMENS
A. Except as may be specifically otherwise approved by the Architect, have the testing laboratory secure and handle all samples and specimens of existing materials for testing. Secure and handle all samples and specimens to be installed in the work as directed by the testing laboratory.
3.2 COOPERATION WITH TESTING LABORATORY
A. Provide access to the Work at all times and at all locations where the Work is in progress. Provide facilities for such access to enable the laboratory to perform its functions properly.
3.3 WAIVER OF INSPECTION AND/OR TESTS
A. Specified inspections and/or tests may be waived only by the specific approval of the Architect, and such waivers will be expected to result in credit to the Owner equal to normal cost of such inspection and/or test.

END OF SECTION

SECTION 02070  
SELECTIVE DEMOLITION

PART 1 - GENERAL

- 1.1 DESCRIPTION
A. Work included: Carefully demolish and remove from the site those items scheduled to be so demolished and removed.
B. Related work:
1. The Work of this Section must comply with all other Sections of these Specifications.
2. Section 01045, Cutting and Patching.
1.2 QUALITY ASSURANCE
A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
1.3 PRODUCT HANDLING
A. Comply with pertinent provisions of Section 01640 of these Specifications.

PART 2 - PRODUCTS

(No products are required in this Section)

PART 3 - EXECUTION

- 3.1 SURFACE CONDITIONS
A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
3.2 DEMOLITION
A. By careful study of the Contract Documents, determine the location and extent of selective demolition to be performed.
B. In company with the Architect, visit the site and verify the extent and location of selective demolition required.
1. Carefully identify limits of selective demolition.
2. Mark interface surfaces as required to enable workmen also to identify items to be removed and items to be left in place intact.
C. Prepare and follow an organized plan for demolition and removal of items.
1. Shut off, cap, and otherwise protect existing public utility lines in accordance with the requirements of the public agency or utility having jurisdiction.
2. Completely remove items scheduled to be so demolished and removed, leaving surface clean, solid, and ready to receive new materials specified elsewhere.
3. In all activities, comply with pertinent regulations of governmental agencies having jurisdiction.
D. Except for Owner requested material and artifacts, demolished material shall be considered to be property of the Contractor and shall be completely removed from the job site.

- E. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.
F. Use protective measures as necessary to protect all materials to remain.

3.3 REPLACEMENTS

- A. In the event of demolition of items not so scheduled to be demolished, promptly replace such items to the approval of the Architect and at no additional cost to the Owner.

END OF SECTION

SECTION 03300  
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

- 1.1 DESCRIPTION
A. WORK INCLUDED: PROVIDE CAST-IN-PLACE CONCRETE, INCLUDING FORMWORK AND REINFORCEMENT, WHERE SHOWN ON THE DRAWINGS, AS SPECIFIED HEREIN, AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION.
1.2 QUALITY ASSURANCE
A. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR THE PROPER PERFORMANCE OF THE WORK IN THIS SECTION.
B. COMPLY WITH THE "SPECIFICATION FOR STRUCTURAL CONCRETE BUILDINGS", ACI 301, EXCEPT AS MAY BE MODIFIED HEREIN.
C. DO NOT COMMENCE PLACEMENT OF CONCRETE UNTIL MIX DESIGNS HAVE BEEN REVIEWED AND APPROVED BY THE ARCHITECT AND ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION.
1.3 SUBMITTALS
A. SUBMIT CONCRETE MIX DESIGNS TO THE ARCHITECT FOR REVIEW AND APPROVAL.
B. DISTRIBUTE APPROVED MIX DESIGNS TO BATCH PLANT, JOB SITE, AND GOVERNMENTAL AGENCIES HAVING JURISDICTION.
1.4 PRODUCT HANDLING
A. COMPLY WITH PRODUCT MANUFACTURERS PRINTED INSTRUCTIONS.

PART 2 - PRODUCTS

- A. DESIGN, ERECT, SUPPORT, BRACE AND MAINTAIN FRAMEWORK SO IT WILL SAFELY SUPPORT VERTICAL AND LATERAL LOADS WHICH MIGHT BE APPLIED UNTIL SUCH LOADS CAN BE SUPPORTED SAFELY BY THE CONCRETE STRUCTURE.
B. CONSTRUCT FORMS TO THE EXACT SIZES, SHAPES, LINES AND DIMENSIONS SHOWN, AND AS REQUIRED TO OBTAIN ACCURATE ALIGNMENT, LOCATION, GRADES, AND LEVEL AND PLUMB WORK IN THE FINISHED STRUCTURE.
2.2 REINFORCEMENT
A. COMPLY WITH THE FOLLOWING AS MINIMUMS:
1. BARS: ASTM A615, GRADE 60 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, USING DEFORMED BARS FOR NUMBER 3 AND LARGER.
2. WELDED WIRE FABRIC: ASTM A185
3. BENDING: ACI 318
B. FABRICATE REINFORCEMENT TO THE REQUIRED SHAPES AND DIMENSIONS, WITHIN FABRICATION TOLERANCES STATED IN THE CRSI "MANUAL OF STANDARD PRACTICES".
C. DO NOT USE REINFORCEMENT HAVING ANY OF THE FOLLOWING DEFECTS:
1. BAR LENGTHS, DEPTHS, OR BENDS EXCEEDING THE SPECIFIED FABRICATING TOLERANCES;
2. BENDS OR KINKS NOT INDICATED ON THE DRAWINGS OR REQUIRED FOR THE WORK;
3. BARS WITH CROSS-SECTION REDUCED DUE TO EXCESSIVE RUST OR OTHER CAUSES.

2.3 CONCRETE

- A. COMPLY WITH THE FOLLOWING MINIMUMS:
1. PORTLAND CEMENT: ASTM C150, TYPE I OR II, LOW ALKALI.
2. AGGREGATE GENERAL:
a. ASTM C30, UNIFORMLY GRADED AND CLEAN;
b. DO NOT USE AGGREGATE KNOWN TO CAUSE EXCESSIVE SHRINKAGE.
3. AGGREGATE, COARSE: CRUSHED ROCK OR WASHED GRAVEL EQUAL TO 3/4" AND WITH A MAXIMUM SIZE NUMBER 4.
4. AGGREGATE, FINE: NATURAL WASHED SAND OF HARD AND DURABLE PARTICLES VARYING FROM FINE TO PARTICLES PASSING A 3/8" SCREEN, OR WHICH AT LEAST 12% SHALL PASS A 50-MESH SCREEN.
5. WATER: CLEAN AND POTABLE
6. FLY ASH: ASTM C618, TYPE C OR TYPE F.
7. ADMIXTURES, GENERAL: PROVIDE ADMIXTURES FOR CONCRETE THAT CONTAINS NOT MORE THAN 0.1 PERCENT CHLORIDE IONS.
8. AIR-ENTRAINING ADMIXTURE: ASTM C 260, CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER REQUIRED ADMIXTURES.
9. WATER-REDUCING ADMIXTURE: ASTM C 494, TYPE A.
10. HIGH-RANGE WATER-REDUCING ADMIXTURE (SUPER PLASTICIZER): ASTM C 494 TYPE F OR TYPE G.
B. PROVIDE CONCRETE WITH THE COMPRESSIVE STRENGTHS SHOWN ON THE DRAWINGS. WHEN SUCH STRENGTHS ARE NOT SHOWN ON THE DRAWINGS, PROVIDE THE FOLLOWING AS MINIMUMS:
1. CONCRETE WALLS, COLUMNS AND BEAMS: 4000 PSI
2. CONCRETE WALKS AND SLABS ON GRADE: 3000 PSI
C. SURFACE TREATMENT:
1. WHERE "SEALER", "LIQUID CURING AGENT" OR "HARDENER" IS CALLED FOR ON THE DRAWINGS, OR OTHERWISE USED, SUBMIT PRODUCT DATA TO THE ARCHITECT FOR APPROVAL.

2.4 OTHER MATERIALS

- A. PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ARCHITECT.
2.5 ADMIXTURES
A. USE WATER-REDUCING ADMIXTURE OR HIGH-RANGE WATER-REDUCING ADMIXTURE (SUPERPLASTICIZER) IN CONCRETE AS REQUIRED FOR PLACEMENT AND WORKABILITY.
B. USE HIGH-RANGE WATER-REDUCING ADMIXTURE (HRWR) IN PUMPED CONCRETE, CONCRETE FOR INDUSTRIAL SLABS, ARCHITECTURAL CONCRETE, PARKING STRUCTURE SLABS, CONCRETE REQUIRED TO BE WATERTIGHT, AND CONCRETE WITH WATER/CEMENT RATIOS BELOW 0.50.
C. LIMIT USE OF FLY ASH TO NOT EXCEED 25 PERCENT OF CEMENT CONTENT BY WEIGHT.
2.6 SUBSTITUTIONS
A. SUBSTITUTIONS OF OTHER PRODUCTS AND METHODS WILL BE ALLOWED ONLY AFTER REVIEW AND APPROVAL BY THE ARCHITECT. SUBMIT THE MANUFACTURER'S SPECIFICATIONS AND TECHNICAL DATA TO THE ARCHITECT FOR APPROVAL.

PART 3 - EXECUTION

- 3.1 SURFACE AND CONDITIONS
A. EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.
3.2 REINFORCING
A. COMPLY WITH THE FOLLOWING, AS WELL AS THE SPECIFIED STANDARDS, FOR DETAILS AND METHODS OF REINFORCING PLACEMENTS AND SUPPORTS.
1. CLEAN REINFORCEMENT AND REMOVE LOOSE DUST AND MILL SCALE, EARTH, AND OTHER MATERIALS, WHICH REDUCE BOND OR DESTROY BOND WITH CONCRETE.
2. POSITION, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT BY FORMS, CONSTRUCTION, AND THE CONCRETE PLACEMENT OPERATIONS.
3. PLACE REINFORCEMENT TO OBTAIN THE REQUIRED COVERAGES FOR CONCRETE PROTECTION.
4. INSTALL WELDED WIRE FABRIC IN AS LONG LENGTHS AS PRACTICABLE, LAPPING ADJOINING PIECES ON FULL MESH MINIMUM.
UNLESS OTHERWISE SHOWN ON THE DRAWINGS, OR REQUIRED BY GOVERNMENTAL AGENCIES HAVING JURISDICTION, LAP BARS 24 DIAMETERS MINIMUM.
3.3 EMBEDDED ITEMS
A. DO NOT EMBED PIPING, OTHER THAN ELECTRICAL CONDUIT, IN STRUCTURAL CONCRETE.
1. LOCATE CONDUIT TO MAINTAIN MAXIMUM STRENGTH OF THE STRUCTURE.
2. INCREASE THE THICKNESS OF THE CONCRETE IF THE OUTSIDE DIAMETER OF THE CONDUIT EXCEEDS 30% OF THE THICKNESS OF THE CONCRETE.
B. SET BOLTS, INSERTS, AND OTHER REQUIRED ITEM IN THE CONCRETE, ACCURATELY SECURED SO THEY WILL NOT BE DISPLACED, AND IN THE PRECISE LOCATIONS NEEDED.
3.4 MIXING CONCRETE
A. TRANSIT MIX THE CONCRETE IN ACCORDANCE WITH PROVISIONS OF ASTM C94.
B. MIXING WATER:
1. AT THE BATCH PLANT. WITHHOLD 2-1/2 GAL. OF WATER PER CU. YD. OF CONCRETE.
2. UPON ARRIVAL AT THE JOB SITE, ADD ALL OR PART OF THE WITHHELD WATER (AS REQUIRED FOR PROPER SLUMP) BEFORE THE CONCRETE IS DISCHARGED FROM THE MIXER.
3. MIX NOT LESS THAN FIVE MINUTES AFTER THE WITHHELD WATER HAS BEEN ADDED, AND NOT LESS THAN ONE MINUTE OF THAT TIME IMMEDIATELY PRIOR TO DISCHARGE OF THE BATCH.
4. UNLESS OTHERWISE DIRECTED, PROVIDE 15 MINUTES TOTAL MIXING TIME PER BATCH AFTER FIRST ADDITION OF WATER.
C. DO NOT USE CONCRETE THAT HAS STOOD FOR OVER 30 MINUTES AFTER LEAVING THE MIXER, OR CONCRETE THAT IS NOT PLACED WITHIN 60 MINUTES AFTER WATER IS FIRST INTRODUCED INTO THE MIX.
3.5 PLACING CONCRETE
A. PREPARATION:
1. REMOVE FOREIGN MATTER ACCUMULATED IN THE FORMS.
2. RIGIDLY CLOSE OPENINGS LEFT IN THE FORMWORK.
3. WET WOOD FORMS SUFFICIENTLY TO TIGHTEN UP CRACKS. WET OTHER MATERIAL SUFFICIENTLY TO MAINTAIN WORKABILITY OF THE CONCRETE.
4. USE ONLY CLEAN TOOLS.

- B. CONVEYING:
1. PERFORM CONCRETE PLACING AT SUCH A RATE THAT CONCRETE WHICH IS BEING INTEGRATED WITH FRESH CONCRETE IS STILL PLASTIC..
2. DEPOSIT CONCRETE AS NEARLY AS PRACTICABLE IN ITS FINAL LOCATION SO AS TO AVOID SEPARATION DUE TO REHANDLING AND FLOWING.
3. DO NOT USE CONCRETE WHICH BECOMES NON-PLASTIC AND UNWORKABLE OR DOES NOT MEET REQUIRED QUALITY CONTROL LIMITS, OR HAS BEEN CONTAMINATED BY FOREIGN MATERIALS.
4. REMOVE REJECTED CONCRETE FROM THE JOB SITE.
C. PLACING CONCRETE IN FORMS:
1. DEPOSIT CONCRETE IN HORIZONTAL LAYERS NOT DEEPER THAN 24", AND AVOID INCLINED CONSTRUCTION JOINTS.
2. REMOVE TEMPORARY SPREADERS IN FORMS WHEN CONCRETE HAS REACHED THE ELEVATION OF THE SPREADERS.
D. PLACING CONCRETE SLABS:
1. DEPOSIT AND CONSOLIDATE CONCRETE SLABS IN A CONTINUOUS OPERATION, WITHIN LIMITS OF CONSTRUCTION JOINTS, UNTIL THE PLACING OF A PANEL OR A SECTION IS COMPLETED.
2. BRING SLAB SURFACES TO THE CORRECT LEVEL WITH A STRAIGHTEDGE, AND THEN STRIKE OFF.
3. USE BULLDOZERS OR DARBIES TO SMOOTH THE SURFACE, LEAVING THE SURFACE FREE FROM BUMPS AND HOLLOWES.
4. DO NOT SPRINKLE WATER ON THE PLASTIC SURFACE. DO NOT DISTURB THE SLAB SURFACE PRIOR TO START OF FINISHING OPERATIONS.
3.6 CONSOLIDATION
A. GENERAL
1. CONSOLIDATE EACH LAYER OF CONCRETE IMMEDIATELY AFTER PLACING, BY USE OF INTERNAL CONCRETE VIBRATORS SUPPLEMENTED BY HAND SPADING, RODDING, OR TAMPING.
2. DO NOT VIBRATE FORMS OR REINFORCEMENT.
3. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE INSIDE THE FORMS.
3.7 JOINTS
A. CONSTRUCTION JOINTS:
1. DO NOT USE HORIZONTAL CONSTRUCTION JOINTS EXCEPT AS MAY BE SHOWN ON THE DRAWINGS.
2. IF ADDITIONAL CONSTRUCTION JOINTS ARE FOUND TO BE REQUIRED, SECURE THE ARCHITECT'S APPROVAL OF JOINT DESIGN AND LOCATION PRIOR TO START OF CONCRETE PLACEMENT.
B. EXPANSION JOINTS:
1. DO NOT PERMIT REINFORCEMENT OR OTHER EMBEDDED METAL ITEMS THAT ARE BEING BONDED WITH CONCRETE (EXCEPT DOWELS IN FLOORS BONDED ON ONLY ONE SIDE OF THE JOINTS) TO EXTEND CONTINUOUSLY THROUGH ANY EXPANSION JOINT MATERIAL APPROVED BY THE ARCHITECT.
2. FILL EXPANSION JOINTS FULL DEPTH WITH EXPANSION JOINT MATERIAL APPROVED BY THE ARCHITECT.
3.8 CONCRETE FINISHING
A. EXCEPT AS MAY BE SHOWN OTHERWISE ON THE DRAWINGS, PROVIDE THE FOLLOWING FINISHES AT THE INDICATED LOCATIONS:
1. SCRATCH FINISH:
a. APPLY TO MONOLITHIC SLAB SURFACES THAT ARE TO RECEIVE CONCRETE FLOOR TOPPING OR MORTAR SETTING BED.
2. FLOAT FINISH:
a. APPLY TO MONOLITHIC SLAB SURFACE THAT ARE TO RECEIVE TROWEL FINISH AND OTHER FINISHES SPECIFIED HEREINAFTER, AND TO SLAB SURFACES WHICH ARE TO BE COVERED WITH INSULATION.
3. TROWEL FINISH:
a. APPLY TO MONOLITHIC SLAB SURFACES THAT ARE TO BE EXPOSED TO VIEW, UNLESS OTHERWISE SHOWN, AND TO SLAB SURFACES THAT ARE TO BE COVERED WITH RESILIENT FLOORING, CARPETING, PAINT, OR OTHER THIN-FILM FINISH COATING SYSTEM.
4. NON-SLIP BROOM FINISH
a. APPLY TO WALKS, STAIRS, DRIVES, RAMPS, AND SIMILAR PEDESTRIAN AND VEHICULAR AREAS.
3.9 REMEDIAL WORK
A. REPAIR OR REPLACE DEFICIENT WORK AS DIRECTED BY THE ARCHITECT AND AT NO ADDITIONAL COST TO THE OWNER.

END OF SECTION

SECTION 03310  
CONCRETE REPAIRS

PART 1 - GENERAL

- 1.1 DESCRIPTION
A. WORK INCLUDED: PROVIDE CAST-IN-PLACE CONCRETE REPAIRS, INCLUDING FORMWORK AND REINFORCEMENT, WHERE SHOWN ON THE DRAWINGS, AS SPECIFIED HEREIN, AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION.
1.2 QUALITY ASSURANCE
A. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR THE PROPER PERFORMANCE OF THE WORK IN THIS SECTION.
B. COMPLY WITH THE "SPECIFICATION FOR STRUCTURAL CONCRETE BUILDINGS", ACI 301, EXCEPT AS MAY BE MODIFIED HEREIN.
C. DO NOT COMMENCE PLACEMENT OF CONCRETE UNTIL MIX DESIGNS HAVE BEEN REVIEWED AND APPROVED BY THE ARCHITECT AND ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION.
1.3 SUBMITTALS
A. SUBMIT CONCRETE MIX DESIGNS TO THE ARCHITECT FOR REVIEW AND APPROVAL.

1.4 PRODUCT HANDLING

- A. COMPLY WITH PRODUCT MANUFACTURERS PRINTED INSTRUCTIONS.

PART 2 - PRODUCTS

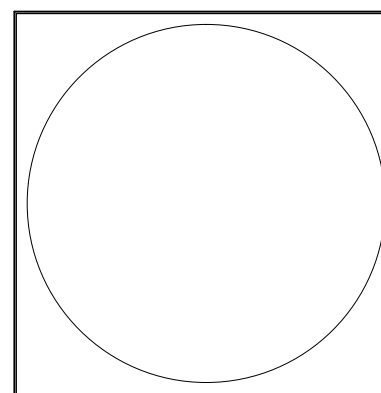
- 2.1 FORMS
A. DESIGN, ERECT, SUPPORT, BRACE AND MAINTAIN FORMWORK SO IT WILL SAFELY SUPPORT VERTICAL AND LATERAL LOADS WHICH MIGHT BE APPLIED UNTIL SUCH LOADS CAN BE SUPPORTED SAFELY BY THE CONCRETE STRUCTURE.
B. CONSTRUCT FORMS TO THE EXACT SIZES, SHAPES, LINES AND DIMENSIONS SHOWN, AND AS REQUIRED TO OBTAIN ACCURATE ALIGNMENT, LOCATION, GRADES, AND LEVEL AND PLUMB WORK IN THE FINISHED STRUCTURE.
2.2 REINFORCEMENT
A. COMPLY WITH THE FOLLOWING AS MINIMUMS:
1. BARS: ASTM A615, GRADE 60 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, USING DEFORMED BARS FOR NUMBER 3 AND LARGER.
2. WELDED WIRE FABRIC: ASTM A185
3. BENDING: ACI 318
B. FABRICATE REINFORCEMENT TO THE REQUIRED SHAPES AND DIMENSIONS, WITHIN FABRICATION TOLERANCES STATED IN THE CRSI "MANUAL OF STANDARD PRACTICES".
C. DO NOT USE REINFORCEMENT HAVING ANY OF THE FOLLOWING DEFECTS:
1. BAR LENGTHS, DEPTHS, OR BENDS EXCEEDING THE SPECIFIED FABRICATING TOLERANCES;
2. BENDS OR KINKS NOT INDICATED ON THE DRAWINGS OR REQUIRED FOR THE WORK;
3. BARS WITH CROSS-SECTION REDUCED DUE TO EXCESSIVE RUST OR OTHER CAUSES.

2.3 CONCRETE

- A. COMPLY WITH THE FOLLOWING MINIMUMS:
1. PORTLAND CEMENT: ASTM C150, TYPE I OR II, LOW ALKALI.
2. AGGREGATE GENERAL:
a. ASTM C30, UNIFORMLY GRADED AND CLEAN;
b. DO NOT USE AGGREGATE KNOWN TO CAUSE EXCESSIVE SHRINKAGE.
3. AGGREGATE, COARSE: CRUSHED ROCK OR WASHED GRAVEL EQUAL TO 3/4" AND WITH A MAXIMUM SIZE NUMBER

REVISIONS:  
11/10/2015

DOUGLASS BAND ROOM REPAIRS  
727 FORT STREET  
KEY WEST, FLORIDA, 33040



410 Angela Street  
Key West, Florida 33040  
Telephone (305) 296-1347  
Facsimile (305) 296-2727  
Florida License AC002022

Bender & Associates  
ARCHITECTS  
p.a.

Project No: 1522  
SPECIFICATIONS  
DIVISION 1,2  
Date: 04/17/15

SP1.0  
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4. AGGREGATE, FINE: NATURAL WASHED SAND OF HARD AND DURABLE PARTICLES VARYING FROM FINE TO PARTICLES PASSING A 3/8" SCREEN, OF WHICH AT LEAST 12% SHALL PASS A 50-MESH SCREEN.
- WATER: CLEAN AND POTABLE
- A. SURFACE TREATMENT:
- WHERE "SEALER" "LIQUID CURING AGENT" OR "HARDENER" IS CALLED FOR ON THE DRAWINGS, OR OTHERWISE USED, SUBMIT PRODUCT DATA TO THE ARCHITECT FOR APPROVAL.
- 2.4 ACAPS CONCRETE REPAIRS FOR SPALLED OR DETERIORATED CONCRETE
- A. REPAIR MORTARS
- FOR FORMED HORIZONTAL AND VERTICAL REPAIRS:
    - SIKATOP III, EXTENDED WITH AGGREGATE PER MANUFACTURER
  - FOR FORM & POUR AND FORM & PUMP VERTICAL, OVERHEAD, AND HORIZONTAL SURFACES FULL DEPTH STRUCTURAL REPAIR:
    - MAPEI PLANITOP 11 SCC (PRE-EXTENDED) - UP TO 8"
    - MAPEI PLANITOP 15 EXTENDED WITH AGGREGATE PER MANUFACTURER.
  - FOR HAND-PACKED VERTICAL AND OVERHEAD REPAIRS:
    - SIKATOP 123,
    - MAPEI PLANITOP 23
    - MAPEI PLANITOP XS.
- B. EPOXY ADHESIVES
- FOR SEALING CRACKS TO BE INJECTED:
    - SIDADUR 31 HI-MOD GEL EPOXY
    - MAPEI PLANIBOND AE FAST
  - FOR INJECTING CRACKS IN STRUCTURE:
    - SIDADUR 35 HI-MOD LV EPOXY,
    - SIMPSON ETI 2 COMPONENT INJECTION EPOXY,
    - MAPEI EPOJET,
    - MAPEI EPOJET LV.
  - FOR FILLING CRACKS IN SLABS ON GRADE:
    - SIDADUR 35 HI-MOD LV EPOXY
    - MAPEI PLANIBOND CR 50
    - MAPEI EPOJET LV.
- C. ANTI-CORROSION PROTECTIVE COATING FOR REINFORCEMENT:
- SIKATOP 108 ARMATEC
  - MAPEI MAPAPER 1K
  - SIKATOP ARMATEC 110
  - MAPEI PLANIBOND 3C
- D. CONCRETE BONDING AGENT:
- SIKADUR 32 HI-MOD OR LPL
  - MAPEI PLANIBOND EBA
  - SIKATOP108, ARMATEC
  - SIKA ARMATEC 110
  - MAPEI PLANIBOND 3C
- E. PENETRATING SEALER:
- SIKAGARD 70, PENETRATING SEALER
  - MAPEI PLANISEAL WR
- F. PLASTER
- FOR BASE:
    - THOROSEAL CEMENT BASE PLUS ACRYL 60
    - PLANISEAL 88 PLUS PLANICRETE AC
  - FOR FINISH:
    - THOROSEAL PLASTER MIX PLUS ACRYL 60
- G. REINFORCING STEEL
- ASTM A615, GRADE 60
- H. AGGREGATE
- COARSE: PEA GRAVEL, 1/4" TO 3/8" WASHED, ROUND QUARTZ CONFORMING TO ASTM C33.
  - FINE: CLEAN, WASHED, DRIED SILICA SAND TO ASTM C33.
- I. PLASTER CORNER BEAD
- RIGID VINYL OR PVC CORNER BEAD WITH 2 INCH PERFORATED FLANGES.
  - ANY OTHER PLASTERING ACCESSORY OR REINFORCEMENT TO BE OF VINYL OR PVC AND OF SAME MATERIAL AND MANUFACTURE AS ABOVE.
- J. CONCRETE PATCHER, SMALL VOIDS, PATCHING OR RESURFACING STAIRS, ETC.
- ABONSAL VINYL CONCRETE PATCHER
  - SIKA MONOTOP, SIKATOP SF
  - SIKACHEM 133
  - MAPEI PLANITOP XS - VERTICAL, OVERHEAD
  - MAPEI MAPECEM 102 - "X" TO 2" NEAT - UP TO 6" EXTENDED OR PLANITOP 18 ES - "X" TO 1" NEAT. UP TO 6" EXTENDED - HORIZONTAL
  - THORITE
- 2.5 OTHER MATERIALS
- A. PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ARCHITECT.
- 2.6 SUBSTITUTIONS
- A. SUBSTITUTIONS OF OTHER PRODUCTS AND METHODS WILL BE ALLOWED ONLY AFTER REVIEW AND APPROVAL BY THE ARCHITECT. SUBMIT THE MANUFACTURER'S SPECIFICATIONS AND TECHNICAL DATA TO THE ARCHITECT FOR APPROVAL.
- PART 3 - EXECUTION
- 3.1 SURFACE AND CONDITIONS
- A. EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.
- B. SET BOLTS, INSERTS, AND OTHER REQUIRED ITEM IN THE CONCRETE, ACCURATELY SECURED SO THEY WILL NOT BE DISPLACED, AND IN THE PRECISE LOCATIONS NEEDED.
- 3.2 REINFORCING
- A. COMPLY WITH THE FOLLOWING, AS WELL AS THE SPECIFIED STANDARDS, FOR DETAILS AND METHODS OF REINFORCING PLACEMENTS AND SUPPORTS.
- CLEAN REINFORCEMENT AND REMOVE LOOSE DUST AND MILL SCALE, EARTH, AND OTHER MATERIALS, WHICH REDUCE BOND OR DESTROY BOND WITH CONCRETE.
  - POSITION, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT BY FORMS, CONSTRUCTION, AND THE CONCRETE PLACEMENT OPERATIONS.
  - PLACE REINFORCEMENT TO OBTAIN THE REQUIRED COVERAGES FOR CONCRETE PROTECTION.
  - INSTALL WELDED WIRE FABRIC IN AS LONG LENGTHS AS PRACTICABLE, LAPPING ADJOINING PIECES ON FULL MESH MINIMUM.
  - UNLESS OTHERWISE SHOWN ON THE DRAWINGS, OR REQUIRED BY GOVERNMENTAL AGENCIES HAVING JURISDICTION, LAP BARS 24 DIAMETERS MINIMUM.
- 3.3 EMBEDDED ITEMS
- A. DO NOT EMBED PIPING, OTHER THAN ELECTRICAL CONDUIT, IN STRUCTURAL CONCRETE.
- LOCATE CONDUIT TO MAINTAIN MAXIMUM STRENGTH OF THE STRUCTURE.
  - INCREASE THE THICKNESS OF THE CONCRETE IF THE OUTSIDE DIAMETER OF THE CONDUIT EXCEEDS 30% OF THE THICKNESS OF THE CONCRETE.
- B. SET BOLTS, INSERTS, AND OTHER REQUIRED ITEM IN THE CONCRETE, ACCURATELY SECURED SO THEY WILL NOT BE DISPLACED, AND IN THE PRECISE LOCATIONS NEEDED.
- 3.4 REPAIR OF TOP SLAB DELAMINATIONS SHALL BE EXECUTED AS FOLLOWS:
- A. REMOVE ALL LOOSE CONCRETE AND DEBRIS.

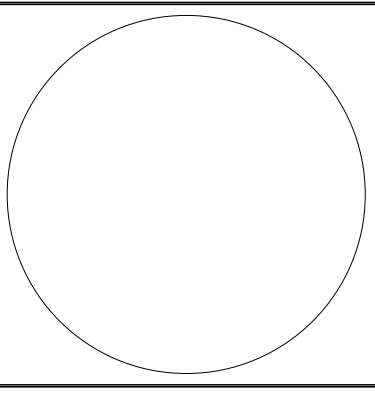
- B. SAWCUT THE PERIMETER OF THE SPALL TO A DEPTH OF 1/2 INCH +/-, DO NOT CUT REINFORCEMENT.
- C. REMOVE ALL CONCRETE NECESSARY TO EXPOSE ALL CORRODED REINFORCING STEEL. AT LEAST 3/4 INCH OF CONCRETE ALL AROUND CORRODED BARS MUST BE REMOVED. AT LEAST 6 INCHES OF CLEAN BAR MUST BE EXPOSED BEFORE STOPPING DEMOLITION. THE PERIMETER OF THE PATCHED AREA MUST BE SQUARE.
- D. SANDBLAST OR WIREBRUSH THE REINFORCING STEEL, REMOVING ALL CORRODED SCALE AND RETURNING STEEL TO ITS ORIGINAL METALLIC COLOR. SHOULD THE REMAINING CROSS-SECTIONAL AREA OF A BAR BE REDUCED BY MORE THAN 15% THEN A NEW BAR MUST BE PROPERLY LAP SPICED TO REPLACE THE INADEQUATE PORTION OF THE BAR.
- E. DEMOLITION SHOULD RESULT IN A CONCRETE SUBSTRATE WITH A SURFACE PROFILE THAT HAS A AMPLITUDE OF AT LEAST 1/4 INCH.
- F. THE CONCRETE SUBSTRATE TO BE CLEANED OF ALL DEBRIS, DUST AND LAITANCE.
- G. THE REINFORCING STEEL TO BE COATED WITH CORROSION PROTECTION MATERIAL.
- H. THE CONCRETE SUBSTRATE TO BE COATED WITH BONDING AGENT.
- I. THE PROPER REPAIR MORTAR SHALL BE PREPARED, MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE REPAIR MORTAR SHOULD BE EXTENDED WITH AGGREGATE IF THE REPAIR DEPTH WARRANTS IT.
- 3.5 REPAIR OF FULL DEPTH SLAB DAMAGE SHALL BE EXECUTED AS FOLLOWS:
- A. REMOVE ALL DEBRIS, DUST AND LAITANCE.
- B. PREPARE CONCRETE AND REINFORCING AS IN 3.2.C AND 3.2.H ABOVE.
- C. THE PROPER REPAIR MORTAR SHALL BE PREPARED, MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE REPAIR MORTAR SHOULD BE EXTENDED WITH AGGREGATE IF THE REPAIR DEPTH WARRANTS IT.
- 3.6 REPAIR OF COLUMN SPALLS TO BE EXECUTED AS FOLLOWS:
- A. REMOVE ALL LOOSE CONCRETE AND DEBRIS, BUT ONLY FROM ONE CORNER OF THE COLUMN AT ONE TIME. SHOULD REMOVAL OF CONCRETE EXTEND TO A DEPTH GREATER THAN 6 INCHES THEN CEASE DEMOLITION AND CONTACT ENGINEER AND WAIT FOR FURTHER DIRECTION BEFORE CONTINUING WORK.
- B. PREPARE CONCRETE AND REINFORCING AS IN 3.2.C AND 3.2.H ABOVE.
- C. THE PROPER REPAIR MORTAR SHALL BE PREPARED, MIXED, PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS USING A FORM AND PUMP METHOD OF PLACEMENT. THE REPAIR MORTAR SHOULD BE EXTENDED WITH AGGREGATE IF THE REPAIR DEPTH WARRANTS IT.
- 3.7 REPAIR OF FAILED EXISTING STUCCO SHALL BE EXECUTED AS FOLLOWS:
- A. REMOVE ALL LOOSE EXISTING STUCCO, FAILED CORNER BEAD, REINFORCING AND DEBRIS, SAWCUT SQUARE EDGES INTO EXISTING SOUND STUCCO, MINIMUM OF 3" EACH SIDE OF CORNER OR CRACK AND REMOVE ALL STUCCO WITHIN THE SURROUNDING SAWCUT BOUNDARY.
- B. REMOVE ALL FOREIGN SUBSTANCES BY PROPER MEANS TO PROVIDE A SOUND, CLEAN CONCRETE SUBSTRATE FOR STUCCO APPLICATION.
- C. DO NOT RE-USE ANY EXISTING STUCCO REINFORCING.
- D. ATTACH NEW CORNER BEAD OR REINFORCING, IF REQUIRED, PER MANUFACTURERS RECOMMENDATIONS.
- E. APPLY STUCCO MATERIAL IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- F. PROVIDE A FINISH WHICH MATCHES AND BLENDS WITH THE EXISTING SURROUNDING STUCCO FINISH.
- 3.8 CONCRETE EXPOSED BY REPAIR AND NEW REPAIR AREAS
- A. ALL EXISTING CONCRETE EXPOSED BY REPAIR AND NEW REPAIR AREAS AND PLASTER SHALL BE COATED WITH THE PENETRATING SEALER IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECS.
- 3.9 REMEDIAL WORK
- A. REPAIR OR REPLACE DEFICIENT WORK AS DIRECTED BY THE ARCHITECT AND AT NO ADDITIONAL COST TO THE OWNER.
- END OF SECTION
- SECTION 0420  
REINFORCED UNIT MASONRY
- PART 1 - GENERAL
- 1.1 DESCRIPTION
- A. WORK INCLUDED: Provided reinforced unit masonry where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. RELATED WORK:
- Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
- 1.2 QUALITY ASSURANCE
- A. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK OF THIS SECTION.
- 1.3 SUBMITTALS
- A. Comply with pertinent provisions of Section 01340.
- B. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit sufficient technical data to provide compliance with the specified requirements.
- C. Mock-ups:
- At an area on the site where approved by the Architect, provide mock-up masonry panels as follows:
    - Make each mock-up panel approximately 4'-0" high and 6'-0" long.
    - Provide one mock-up panel for each combination of masonry unit, bond pattern, mortar color, and joint type used in the Work.
    - The mock-up panels may be part of the Work, and may be incorporated into the finished Work when so approved by the Architect.
    - Revise as necessary and secure the Architect's approval.
  - If the mock-up panels are not permitted to be part of the finished Work, completely demolish and remove them from the job site upon completion and acceptance of the other work of this Section.
- 1.4 PRODUCT HANDLING
- A. Comply with pertinent provisions of Section 01640.
- B. Store masonry units above ground on level platform which allow air circulation under the stacked units.
- C. Cover and protect against wetting prior to use.
- PART 2 - PRODUCTS
- 2.1 CONCRETE MASONRY UNITS
- A. Provide lightweight hollow load-bearing concrete masonry units complying with ASTM C90, grade N, type I, in color "natural gray," and in dimensions as indicated on the Drawings.
- Where dimensions are not indicated on the Drawings, provide units having nominal face dimensions of 16" long by 8" high by the depth shown or otherwise required.
  - Provide accessory shapes as indicated or otherwise required.
- 2.2 REINFORCEMENT AND ACCESSORIES
- A. Comply with the following as minimums:
- Bars: ASTM A615, grade 40, unless otherwise shown on the Drawings, using deformed bars for number 3 and larger.
  - Fabricate reinforcement in accordance with recommendations contained in CRSI "Manual of Standard Practices."
- 2.3 MORTAR
- A. Ingredients:
- Portland cement: Comply with ASTM C150, type I.
  - Lime:
    - Provide hydrated lime complying with ASTM C207, or quicklime complying with ASTM C5.
    - When quicklime is used, slake and then screen through a 16 mesh sieve. After slaking and screening, but before using, store and protect for not less than ten days.
  - Aggregate: Provide clean, sharp, well graded aggregate free from injurious amounts of dust, lumps, shale, alkali, surface coatings, and organic matter, and complying with ASTM C144.
  - Admixtures: Do not use admixtures unless specifically approved in advance by the Architect.
  - Water: Provide water free from deleterious amounts of acids, alkalis, and organic materials.
- B. Mixing:
- Provide mortar type "M" or type "S," as designated on the Drawings or otherwise directed by the Architect, and in accordance with ASTM C270.
  - Proportions:
    - For type "M" mortar, provide one part Portland cement to 1/4 part hydrated lime and 3-3/4 parts sand by volume.
    - For type "S" mortar, provide one part Portland cement to 1/2 part hydrated lime and 4-1/2 parts sand by volume.
- C. Mechanically mix in a batch mixer for not less than three minutes, using only sufficient water to produce a mortar which is spreadable and of a workable

- consistency.
- Relemp mortar with water as required to maintain high plasticity.
    - On mortar boards, relemp only by adding water within a basin formed with mortar, and by working the mortar into the water.
    - Discard and do not use mortar which is unused after 1-1/2 hours following initial mixing.
- 2.4 GROUT
- A. Ingredients:
- Portland cement: Comply with ASTM C150, Type I.
  - Aggregate: Provide clean, sharp, well graded aggregate free from injurious amounts of ducts, lumps, shale, alkali, surface coats, and organic matter.
  - Admixtures: Do not use admixtures unless specifically approved in advance by the Architect.
  - Water: Provide water free from injurious amounts of acids, alkalis, and organic materials.
- B. Mixing:
- Provide "fine grout" or coarse grout" as designated on the Drawings or otherwise directed by the Architect, and in accordance with ASTM C476.
  - When the minimum grout compressive strength is required to be more than 2,000 psi, provide laboratory design mix prepared as required for these Specifications.
  - Proportions:
    - For "fine grout", provide one part Portland cement to 2-1/4 parts minimum to 3 parts maximum of damp loose sand, with sufficient water to achieve fluid consistency.
    - For "coarse grout", provide one part Portland cement to 3 parts maximum of damp loose sand to two parts coarse aggregate, with sufficient water to achieve fluid consistency.
  - "Fluid consistency" is interpreted as meaning as fluid as possible for pouring intimately in place without segregation.
  - Use "fine grout" where called for on the Drawings, where the grout space is less than 3" in its least dimension, and where otherwise directed by the Architect or required by governmental agencies having jurisdiction.
- PART 3 - EXECUTION
- 3.1 SURFACE CONDITIONS
- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- 3.2 ENVIRONMENTAL CONDITIONS
- A. Do not place masonry units when air temperature is below 40 degrees F.
- B. Protect masonry construction from direct exposure to wind and sun when erected in ambient air temperature of 99 degrees F in the shade, with relative humidity less than 50%.
- 3.3 INSTALLATION
- A. General
- Do not commence installation of the work of this Section until horizontal and vertical alignment of foundation is within 1" of plumb and the lines shown on the Drawings.
  - Lay only dry masonry units.
  - Use Masonry saws to cut and fit masonry units.
  - Set units plumb, true to line, and with level courses accurately spaced.
  - Clean the top surface of foundation free from dirt, debris, and laitance, and expose the aggregate prior to start of installing first course.
  - Accurately fit the units to plumbing, ducts, openings, and other interfaces, neatly patching all holes.
  - Keep the walls continually clean, preventing grout and mortar stains. If grout does run over, clean immediately.
  - Unless otherwise shown on the Drawings, provide running bond with vertical joints located at center of masonry units in the alternate course below.
  - Do not use chipped or broken units. If such units are discovered in the finished wall, the Architect may require their immediate removal and replacement with new units at no additional cost to the Owner.
  - Laying up:
    - Place units in mortar with full shovled bed and head joints.
    - Align vertical cells of hollow units to maintain a clear and unobstructed system of flues.
    - Hold racking to an absolute minimum.
    - Provide cleanouts at the bottom of each cell of hollow units for removing mortar droppings. Do not close the cleanouts until they have been inspected and approved by the Architect.
  - Reinforcement:
    - Provide reinforcement as shown on the Drawings, fully embedded in grout and not in mortar or mortar joints.
    - Provide required metal accessories to ensure adequate alignment of steel during grid filling operations.
  - Tooling:
  - Tool joints to a dense, smooth surface.
  - Unless otherwise shown on the Drawings, provide joints of "concave" pattern throughout.
- 3.4 GROUTING
- A. Perform grouting in strict accordance with the provisions of the governing building code.
- Solidly fill vertical cells containing reinforcement.
  - Consolidate grout at time of pour by puddling with a mechanical vibrator, filling all cells of the masonry, and then reconsolidating later by puddling before the plasticity is lost.
- 3.5 CLEANING
- A. Inspection and adjustment:
- Upon completion of the work of this Section, make a thorough inspection of installed masonry and verify that units have been installed in accordance with the provisions of this Section.
  - Make necessary adjustments.
  - Clean surfaces of masonry as required for proper application of the specified finishes.
- END OF SECTION
- SECTION 06100  
ROUGH CARPENTRY
- PART 1 - GENERAL
- 1.1 DESCRIPTION
- A. WORK INCLUDED: PROVIDE WOOD, NAILS, BOLTS, SCREWS, FRAMING ANCHORS AND OTHER ROUGH HARDWARE, AND OTHER ITEMS NEEDED, AND PERFORM ROUGH CARPENTRY FOR THE CONSTRUCTION SHOWN ON THE DRAWINGS, AS SPECIFIED HEREIN, AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION.
- B. RELATED WORK:
- DOCUMENTS AFFECTING WORK OF THIS SECTION INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, AND SECTIONS IN DIVISION 1 OF THESE SPECIFICATIONS.
- 1.2 QUALITY ASSURANCE
- A. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK OF THIS SECTION.
- B. CODES AND STANDARDS:
- IN ADDITION TO COMPLYING WITH THE PERTINENT CODES AND REGULATIONS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION, UNLESS OTHERWISE SPECIFICALLY DIRECTED OR PERMITTED BY THE ARCHITECT COMPLY WITH:
    - "PRODUCT USE MANUAL" OF THE WESTERN WOOD PRODUCTS ASSOCIATION FOR SELECTION AND USE OF PRODUCTS INCLUDED IN THAT MANUAL;
    - "PLYWOOD SPECIFICATION AND GRADE GUIDE" OF THE AMERICAN PLYWOOD ASSOCIATION;
    - "STANDARD SPECIFICATIONS FOR GRADES OF CALIFORNIA REDWOOD LUMBER" OF THE REDWOOD INSPECTION BUREAU FOR REDWOOD, WHEN USED.
- 1.3 PRODUCT HANDLING
- A. COMPLY WITH PERTINENT PROVISIONS OF SECTION 01640.
- B. PROTECTION:
- DELIVER THE MATERIALS TO THE JOB SITE AND STORE, IN A SAFE AREA, OUT OF THE WAY OF TRAFFIC, AND SHORED UP OFF THE GROUND SURFACE.
  - IDENTIFY FRAMING LUMBER AS TO GRADES, AND STORE EACH GRADE SEPARATELY FROM OTHER GRADES.
  - PROTECT METALS WITH ADEQUATE WATERPROOF OUTER WRAPPING.
  - USE EXTREME CARE IN OFF LOADING OF LUMBER TO PREVENT DAMAGE, SPLITTING, AND BREAKING OF MATERIALS.
- PART 2 - PRODUCTS
- 2.1 GRADE STAMPS
- A. IDENTIFY FRAMING LUMBER BY THE GRADE STAMP OF THE WEST COAST LUMBER INSPECTION BUREAU, OR SUCH OTHER GRADE STAMP AS IS APPROVED IN ADVANCE BY THE ARCHITECT.
- B. IDENTIFY PLYWOOD AS TO SPECIES, GRADE, AND QUILTY TYPE BY THE AMERICAN PLYWOOD ASSOCIATION.
- C. IDENTIFY OTHER MATERIALS OF THIS SECTION BY THE APPROPRIATE STAMP OF THE AGENCY APPROVED IN ADVANCE BY THE ARCHITECT.
- 2.2 MATERIALS
- A. PROVIDE MATERIALS IN THE QUANTITIES NEEDED FOR THE WORK SHOWN ON THE DRAWINGS, AND MEETING OR EXCEEDING THE FOLLOWING STANDARDS OF QUALITY
- HORIZONTAL FRAMING MEMBERS: DOUGLAS FIR-HEMLOCK, TABLE 1, NO. 1 DENSE, PRESSURE TREATED.
  - PLATES AND VERTICAL FRAMING MEMBERS: SOUTHERN YELLOW PINE, TABLE 1, STANDARD GRADE, PRESSURE TREATED.
  - SHEATHING: PROVIDE SOLID BOARD SHEATHING, SOUTHERN YELLOW PINE, TABLE 1, STANDARD GRADE, PRESSURE TREATED. MILL TO MATCH EXISTING SHEATHING OR AS DETAILED ON THE DRAWINGS.
  - WOOD PRESERVATIVE: AMMONIACAL COPPER ARSENITE, OR 5% SOLUTION OF PENTACHLOROPHENOL, OR ALKALINE COPPER QUAT (ACQ) ARSENIC FREE.
5. ROUGH HARDWARE:
- A. STEEL ITEMS:
- COMPLY WITH ASTM A7 OR ASTM A36.
  - USE HOT DIPPED GALVANIZED OR STAINLESS STEEL AT ALL LOCATIONS.

- b. MACHINE BOLTS: COMPLY WITH ASTM A307.
- c. LAG BOLTS: COMPLY WITH FED SPEC FF-B-61.
- d. NAILS:
- USE COMMON EXCEPT AS OTHERWISE NOTED.
  - COMPLY WITH FED SPEC FF-N-1.
  - USE HOT DIPPED GALVANIZED OR STAINLESS STEEL AT ALL LOCATIONS.
- e. JOIST HANGERS: SIMPSON, TECO, OR EQUAL, AS APPROVED BY THE ARCHITECT, HOT DIPPED GALVANIZED, OR STAINLESS
- STEEL.
- 2.3 OTHER MATERIALS
- A. PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ARCHITECT.
- PART 3 - EXECUTION
- 3.1 SURFACE CONDITIONS
- A. EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.
- 3.2 DELIVERIES
- A. STOCKPILE MATERIALS SUFFICIENTLY IN ADVANCE OF NEED TO ASSURE THEIR AVAILABILITY IN A TIMELY MANNER FOR THIS WORK.
- B. MAKE AS MANY TRIPS TO THE JOB SITE AS ARE NEEDED TO DELIVER MATERIALS OF THIS SECTION IN A TIMELY MANNER TO ENSURE ORDERLY PROGRESS OF THE WORK.
- 3.3 COMPLIANCE
- A. DO NOT PERMIT MATERIALS NOT COMPLYING WITH THE PROVISIONS OF THIS SECTION TO BE BROUGHT ONTO OR TO BE STORED AT THE JOB SITE.
- B. PROMPTLY REMOVE NON-COMPLYING MATERIALS FROM THE JOB SITE AND REPLACE WITH MATERIALS MEETING THE REQUIREMENTS OF THIS SECTION.
- 3.4 WORKMANSHIP
- A. PROVIDE JOINTS WHICH ARE TIGHT, TRUE, AND WELL NAILED, WITH MEMBERS ASSEMBLED IN ACCORDANCE WITH THE DRAWINGS AND WITH PERTINENT CODES AND REGULATIONS.
- B. SELECTION OF LUMBER PIECES:
- CAREFULLY SELECT THE MEMBERS.
  - SELECT INDIVIDUAL PIECES SO THAT KNOTS AND OBVIOUS DEFECTS WILL NOT INTERFERE WITH PLACING BOLTS OR PROPER NAILING, AND WILL ALLOW MAKING OF PROPER CONNECTIONS.
  - CUT OUT AND DISCARD DEFECTS WHICH RENDER A PIECE UNABLE TO SERVE ITS INTENDED FUNCTION.
  - LUMBER MAY BE REJECTED BY THE ARCHITECT, WHETHER OR NOT IT HAS BEEN INSTALLED, FOR EXCESSIVE WARP, TWIST, BOW, CROOK, MILDEW, FUNGUS, OR MOLD, AS WELL AS FOR IMPROPER CUTTING AND FITTING.
  - DO NOT SHIM ANY FRAMING COMPONENT.
- 3.5 GENERAL FRAMING
- A. GENERAL
- IN ADDITION TO FRAMING OPERATIONS NORMAL TO THE FABRICATION AND ERECTION INDICATED ON THE DRAWINGS, INSTALL WOOD BLOCKING AND BACKING REQUIRED FOR THE WORK OF OTHER TRADES.
  - SET HORIZONTAL AND SLOPED MEMBERS WITH CROWN UP.
  - DO NOT NOTCH, CUT, OR BORE MEMBERS FOR PIPES, DUCTS, OR CONDUITS, OR FOR OTHER REASONS EXCEPT AS SHOWN ON THE DRAWINGS OR AS SPECIFICALLY APPROVED IN ADVANCE BY THE ARCHITECT.
  - WHERE NEW MEMBERS REPLACE EXISTING, AND WILL BE EXPOSED TO VIEW, MILL AND DRESS TO MATCH EXISTING MEMBERS AS TO SIZE AND TEXTURE.
  - ISOLATE ACO ARSENIC FREE LUMBER FROM METAL FRAMING THAT IS NOT HOT DIP GALVANIZED OR STAINLESS STEEL. USE KRAFT PAPER, BUILDING FELT, 6 MIL PAINT OR OTHER ARCHITECT APPROVED METHODS.
- B. BEARINGS:
- MAKE BEARINGS FULL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
  - FINISH BEARING SURFACES ON WHICH STRUCTURAL MEMBERS ARE TO REST SO AS TO GIVE SURE AND EVEN SUPPORT.
  - WHERE FRAMING MEMBERS SLOPE, CUT OR NOTCH THE ENDS AS REQUIRED TO GIVE UNIFORM BEARING SURFACE.
- 3.6 BLOCKING AND BRIDGING
- A. INSTALL BLOCKING AS REQUIRED TO SUPPORT ITEMS OF FINISH AND TO CUT OFF CONCEALED DRAFT OPENINGS, BOTH VERTICAL AND HORIZONTAL, BETWEEN CEILING AND FLOOR AREAS.
- B. BRIDGING:
- INSTALL WOOD CROSS BRIDGING (NOT LESS THAN 2" X 3" NOMINAL), METAL CROSS BRIDGING OF EQUAL STRENGTH, OR SOLID BLOCKING BETWEEN JOISTS WHERE THE SPAN EXCEEDS 8'-0"
  - PROVIDE MAXIMUM DISTANCE OF 8'-0" BETWEEN A LINE OF BRIDGING AND A BEARING.
  - CROSS BRIDGING MAY BE OMITTED FOR ROOF AND CEILING JOISTS WHERE THE OMISSION IS PERMITTED BY CODE, EXCEPT WHERE OTHERWISE INDICATED ON THE DRAWINGS.
  - INSTALL SOLID BLOCKING BETWEEN JOISTS AT POINTS OF SUPPORT AND WHEREVER SHEATHING IS DISCONTINUOUS. BLOCKING MAY BE OMITTED WHERE JOISTS ARE SUPPORTED ON METAL HANGERS.
- 3.7 ALIGNMENT
- A. ON FRAMING MEMBERS TO RECEIVE A FINISHED SURFACE, ALIGN THE FINISH SUBSURFACE TO VARY NOT MORE THAN 1/8" FROM THE PLANE OF SURFACES OF ADJACENT FURRING AND FRAMING MEMBERS.
- 3.8 FASTENINGS
- A. NAILING:
- USE ONLY COMMON WIRE NAILS OR SPIKES OF THE DIMENSION SHOWN ON THE NAILING SCHEDULE, EXCEPT WHERE OTHERWISE SPECIFICALLY NOTED ON THE DRAWINGS.
  - FOR CONDITIONS NOT COVERED IN THE NAILING SCHEDULE PROVIDE PENETRATION INTO THE PIECE RECEIVING THE POINT OF NOT LESS THAN 1/2 THE LENGTH OF THE NAIL OR SPIKE, PROVIDED, HOWEVER, THAT 16D NAILS MAY BE USED TO CONNECT TWO PIECES OF 2" (NOMINAL) THICKNESS.
  - NAIL WITHOUT SPLITTING WOOD.
  - PREBORE AS REQUIRED.
  - REMOVE SPLIT MEMBERS AND REPLACE WITH MEMBERS COMPLYING WITH THE SPECIFIED REQUIREMENTS.
- B. BOLTING:
- DRILL HOLES 1/16" LARGER IN DIAMETER THAN THE BOLTS BEING USED.
  - DRILL STRAIGHT AND TRUE FROM ONE SIDE ONLY.
  - DO NOT BEAR BOLT THREADS ON WOOD, BUT USE WASHERS UNDER HEAD AND NUT WHERE BOTH BEAR ON WOOD, AND USE WASHERS UNDER ALL NUTS.
- C. SCREWS:
- FOR LAG SCREWS AND WOOD SCREWS, PRE-BORE HOLES SAME DIAMETER AS ROOT OF THREADS, ENLARGING HOLES TO SHANK DIAMETER FOR LENGTH OF SHANK.
- END OF SECTION
- SECTION 07320  
SEALANTS AND CALKING
- PART 1 - GENERAL
- 1.1 DESCRIPTION
- A. WORK INCLUDED: THROUGHOUT THE WORK SEAL AND CALK JOINTS WHERE SHOWN ON THE DRAWINGS AND ELSEWHERE AS REQUIRED TO PROVIDE A POSITIVE BARRIER AGAINST PASSAGE OF MOISTURE AND PASSAGE OF AIR.
- B. RELATED WORK:
- THE WORK OF THIS SECTION MUST COMPLY WITH ALL OTHER SECTIONS OF THESE SPECIFICATIONS.
- 1.2 QUALITY ASSURANCE
- A. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK OF THIS SECTION.
- 1.3 SUBMITTALS
- A. COMPLY WITH PERTINENT PROVISIONS OF SECTION 01340 OF THESE SPECIFICATIONS.
- B. PRODUCT DATA: WITHIN 45 CALENDAR DAYS AFTER THE CONTRACTOR HAS RECEIVED THE OWNER'S NOTICE TO PROCEED, SUBMIT:
- MATERIALS LIST OF ITEMS PROPOSED TO BE PROVIDED UNDER THIS SECTION.
  - MANUFACTURER'S SPECIFICATIONS AND OTHER DATA NEEDED TO PROVE COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.
  - MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES WHICH, WHEN APPROVED BY THE ARCHITECT, WILL BECOME THE BASIS FOR ACCEPTING OR REJECTING ACTUAL INSTALLATION PROCEDURES USED ON THE WORK.
  - SAMPLES: ACCOMPANYING THE SUBMITTAL DESCRIBED ABOVE, SUBMIT SAMPLES OF EACH SEALANT, EACH BACKING MATERIAL, EACH PRIMER, AND EACH BOND BREAKER PROPOSED TO BE USED.
- 1.4 PRODUCT HANDLING
- A. COMPLY WITH PERTINENT PROVISIONS OF SECTION 01640 OF THESE SPECIFICATIONS.
- B. DO NOT RETAIN AT THE JOB SITE MATERIAL WHICH HAS EXCEEDED THE SHELF LIFE RECOMMENDED BY ITS MANUFACTURER.
- PART 2 - PRODUCTS
- 2.1 SEALANTS
- A. EXCEPT AS SPECIFICALLY OTHERWISE APPROVED BY THE ARCHITECT, USE ONLY THE TYPES OF SEALANTS DESCRIBED IN THIS ARTICLE.
- B. PROVIDE ONE COMPONENT, NONMODULUS SEALANT COMPLYING WITH FED SPEC TT-S-0220C, CLASS A, TYPE II WITH EACH COLOR OF SEALANT AND EACH CLASS OF SEALANT THE PRODUCT OF A SINGLE MANUFACTURER SELECTED FROM THE FOLLOWING TREMCO PRODUCTS, OR EQUAL PRODUCTS APPROVED BY THE ARCHITECT PRIOR TO AWARD OF BID.
- CLASS A (FOR NON-TRAFFIC BEARING HORIZONTAL SURFACES):
    - "VULKEM 921"
    - TREMCO DYMONIC FC.
    - DOW CORNING 995
  - CLASS B (FOR VERTICAL SURFACES):
    - "VULKEM 921"
    - TREMCO DYMONIC FC
    - DOW CORNING 995

REVISIONS:  
11/10/2015

DOUGLASS BAND ROOM REPAIRS  
727 FORT STREET  
KEY WEST, FLORIDA, 33040



410 Angela Street  
Key West, Florida 33040  
Telephone (305) 296-1347  
Facsimile (305) 296-2727  
Florida License AC002022

Bender & Associates  
ARCHITECTS  
p.a.

Project No: 1522  
SPECIFICATIONS CONTINUED  
Date: 04/17/15

SP1.1  
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3. FOR OTHER SERVICES, PROVIDE PRODUCTS ESPECIALLY FORMULATED FOR THE PROPOSED USE AND APPROVED IN ADVANCE BY THE ARCHITECT.
    - c. EXCEPT AS OTHERWISE DIRECTED BY THE ARCHITECT, MAKE SAMPLES APPROXIMATELY 8" X 10" IN SIZE.
      - IF SO DIRECTED BY THE ARCHITECT, SUBMIT SAMPLES DURING PROGRESS OF THE WORK IN THE FORM OF ACTUAL APPLICATION OF THE APPROVED MATERIALS ON ACTUAL SURFACES TO BE PAINTED.
    2. REVISE AND RESUBMIT EACH SAMPLE UNTIL THE REQUIRED GLOSS, COLOR, AND TEXTURE IS ACHIEVED. SUCH SAMPLES, WHEN APPROVED, WILL BECOME STANDARDS OF COLOR AND FINISH FOR ACCEPTING OR REJECTING THE WORK OF THIS SECTION.
    3. DO NOT COMMENCE FINISH PAINTING UNTIL APPROVED SAMPLES ARE ON FILE AT THE JOB SITE, OR APPLIED TO THE DESIGNATED AREAS OF THE PROJECT.
    4. THE PAINTING CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINISH OF HIS WORK AND SHALL NOT START PAINTING UNTIL THE SURFACES ARE IN PROPER CONDITION TO RECEIVE PAINT. IF THE CONTRACTOR CONSIDERS ANY SURFACES UNSUITABLE TO A DEGREE THAT THEY CANNOT BE CORRECTED BY SCRAPING OR SANDING, HE SHALL REPORT THIS TO THE ARCHITECT OR THE OWNER BEFORE APPLYING ANY MATERIALS TO SAME. STARTING HIS OWN WORK SHALL BE CONSIDERED AN ACCEPTANCE OF THE SURFACES.
2. PRIMERS
  - a. USE ONLY THOSE PRIMERS WHICH ARE NON-STAINING, HAVE BEEN TESTED FOR DURABILITY ON THE SURFACES TO BE SEALED, AND ARE SPECIFICALLY RECOMMENDED FOR THIS INSTALLATION BY THE MANUFACTURER OF THE SEALANT USED.
- 2.3 BACKUP MATERIALS
  - A. USE ONLY THOSE BACKUP MATERIALS WHICH ARE SPECIFICALLY RECOMMENDED FOR THIS INSTALLATION BY THE MANUFACTURER OF THE SEALANT USED, WHICH ARE NON-ABSORBENT, AND WHICH ARE NON-STAINING.
  - B. ACCEPTABLE TYPES INCLUDE:
    - CLOSED-CELL RESILIENT URETHANE OR POLYVINYL-CHLORIDE FOAM;
    - CLOSED-CELL POLYETHYLENE FOAM;
    - CLOSED-CELL SPONGE OF VINYL OR RUBBER;
    - BOND-PREVENTATIVE MATERIALS
  - A. USE ONLY ONE OF THE FOLLOWING AS BEST SUITED FOR THE APPLICATION, AND AS RECOMMENDED BY THE MANUFACTURER OF THE SEALANT USED:
    1. POLYETHYLENE TAPE, PRESSURE-SENSITIVE ADHESIVE, WITH THE ADHESIVE REQUIRED ONLY TO HOLD TAPE TO THE CONSTRUCTION MATERIALS AS INDICATED.
    2. ALUMINUM FOIL COMPLYING WITH MIL-A-148E;
    3. WAX PAPER COMPLYING WITH FED SPEC UUA-P-270.
    - 2.5 MASKING TAPE
      - A. FOR MASKING AROUND JOINTS, PROVIDE MASKING TAPE COMPLYING WITH FED SPEC UUC-T-106C.
- 2.6 OTHER MATERIALS
  - A. PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ARCHITECT.

**PART 3 - EXECUTION**

- 3.1 SURFACE CONDITIONS
  - A. EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.
- 3.2 PREPARATION
  - A. CONCRETE AND CERAMIC TILE SURFACES:
    1. INSTALL ONLY ON SURFACES WHICH ARE DRY, SOUND, AND WELL BRUSHED, WIPING FREE FROM DUST.
    2. AT OPEN JOINTS, REMOVE DUST BY MECHANICALLY BLOWN COMPRESSED AIR IF SO REQUIRED.
    3. USE SOLVENT TO REMOVE OIL AND GREASE, WIPING THE SURFACES WITH CLEAN RAGS.
    4. WHERE SURFACES HAVE BEEN TREATED, REMOVE THE SURFACE TREATMENT BY SANDBLASTING OR WIRE BRUSHING.
    5. REMOVE LAITANCE AND MORTAR FROM JOINT CAVITIES.
    6. WHERE BACKSTOP IS REQUIRED, INSERT THE APPROVED BACKUP MATERIAL INTO THE JOINT CAVITY TO THE DEPTH NEEDED.
  - B. STEEL SURFACES:
    1. STEEL SURFACES IN CONTACT WITH SEALANT:
      - a. SANDBLAST AS REQUIRED TO ACHIEVE ACCEPTABLE SURFACE FOR BOND AND MUST BE APPROVED IN ADVANCE BY THE ARCHITECT.
      - b. IF SANDBLASTING IS NOT PRACTICAL, OR WOULD DAMAGE ADJACENT FINISH, SCRAPE THE METAL OR WIRE BRUSH TO REMOVE MILL SCALE.
      - c. USE SOLVENT TO REMOVE OIL AND GREASE, WIPING THE SURFACES WITH CLEAN RAGS.
    2. REMOVE PROTECTIVE COATINGS ON STEEL BY SANDBLASTING OR BY USING A SOLVENT WHICH LEAVES NO RESIDUE.
  - C. ALUMINUM SURFACES:
    1. ALUMINUM SURFACES IN CONTACT WITH SEALANT:
      - a. REMOVE TEMPORARY PROTECTIVE COATINGS, DIRT, OIL, AND GREASE.
      - b. WHEN MASKING TAPE IS USED FOR PROTECTIVE COVER, REMOVE THE TAPE JUST PRIOR TO APPLYING THE SEALANT.
      2. USE ONLY SUCH SOLVENTS TO REMOVE PROTECTIVE COATINGS AS ARE RECOMMENDED FOR THAT PURPOSE BY THE MANUFACTURER OF THE ALUMINUM WORK, AND WHICH ARE NON-STAINING.
- 3.3 INSTALLATION OF BACKUP MATERIAL
  - A. USE ONLY THE BACKUP MATERIAL RECOMMENDED BY THE MANUFACTURER OF THE SEALANT USED, AND APPROVED BY THE ARCHITECT FOR THE PARTICULAR INSTALLATION, COMPRESSING THE BACKUP MATERIAL 25% TO 50% TO ACHIEVE A POSITIVE AND SECURE FIT.
  - B. WHEN USING BACKUP OF TUBE OR ROD STOCK, AVOID LENGTHWISE STRETCHING OF THE MATERIAL. DO NO TWIST OR BRAID HOSE OR ROD BACKUP STOCK.
- 3.4 PRIMING
  - A. USE ONLY THE PRIMER RECOMMENDED BY THE MANUFACTURER OF THE SEALANT, AND APPROVED BY THE ARCHITECT FOR THE PARTICULAR INSTALLATION, APPLYING IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AS APPROVED BY THE ARCHITECT.
- 3.5 BOND-BREAKER INSTALLATION
  - A. PROVIDE AN APPROVED BOND-BREAKER WHERE RECOMMENDED BY THE MANUFACTURER OF THE SEALANT, AND WHERE DIRECTED BY THE ARCHITECT, ADHERING STRICTLY TO THE INSTALLATION RECOMMENDATIONS AS APPROVED BY THE ARCHITECT.
- 3.6 INSTALLATION OF SEALANTS
  - A. PRIOR TO START OF INSTALLATION IN EACH JOINT, VERIFY THE JOINT TYPE ACCORDING TO DETAILS ON THE DRAWINGS, OR AS OTHERWISE DIRECTED BY THE ARCHITECT, AND VERIFY THAT THE REQUIRED PROPORTION OF WIDTH OF JOINT TO DEPTH OF JOINT HAS BEEN SECURED.
  - B. EQUIPMENT:
    1. APPLY SEALANT UNDER PRESSURE WITH POWER-ACTUATED HAND GUN, OR BY OTHER APPROPRIATE MEANS.
    2. USE GUNS WITH NOZZLE OF PROPER SIZE, AND PROVIDING SUFFICIENT PRESSURE TO COMPLETELY FILL THE JOINTS AS DESIGNED.
    - C. THOROUGHLY AND COMPLETELY MASK JOINTS WHERE THE APPEARANCE OF SEALANT ON ADJACENT SURFACES WOULD BE OBJECTIONABLE.
    - D. INSTALL SEALANT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION AS APPROVED BY THE ARCHITECT, THOROUGHLY FILLING JOINTS TO THE RECOMMENDED DEPTH.
    - E. TOOL JOINTS TO THE PROFILE SHOWN ON THE DRAWINGS, OR AS OTHERWISE REQUIRED IF SUCH PROFILES ARE NOT SHOWN ON THE DRAWINGS.
    - F. CLEANING UP:
      1. REMOVE MASKING TAPE IMMEDIATELY AFTER JOINTS HAVE BEEN TOOLED.
      2. CLEAN ADJACENT SURFACES FREELY AS THE INSTALLATION PROGRESSES, USING SOLVENT OR CLEANING AGENT RECOMMENDED BY THE MANUFACTURER OF THE SEALANT USED.

**SECTION 0900 PAINTING**

- PART 1 - GENERAL
  - 1.1 DESCRIPTION
    - A. WORK INCLUDED: PAINT AND FINISH THE EXTERIOR AND INTERIOR EXPOSED SURFACES LISTED ON THE PAINTING SCHEDULE SHOWN ON THE DRAWINGS AS SPECIFIED HEREIN, AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION.
    - B. RELATED WORK:
      1. DOCUMENTS AFFECTING WORK OF THIS SECTION INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, SECTIONS IN DIVISION 1 AND SECTION 06880 (RESTORATION AND CLEANING) OF THESE SPECIFICATIONS.
      2. PRIMING OR PRIMING AND FINISHING OF CERTAIN SURFACES MAY BE SPECIFIED TO BE FACTORY-PERFORMED OR INSTALLER-PERFORMED UNDER PERTINENT OTHER SECTIONS.
    - C. WORK COVERED IN THIS SECTION INCLUDES:
      1. PAINTING ALL INTERIOR SURFACES AS CALLED FOR IN THE FINISH SCHEDULE (I.E. WALLS, CEILINGS, BEAMS, RAFTERS).
      2. PAINTING ALL EXTERIOR TRIM.
      3. PAINTING ALL PT. POSTS, SIDING, TRIM, ETC.
      4. PAINTING AND FINISHING ANY OTHER WORK REQUIRING FINISHING, BUT LEFT UNFINISHED BY OTHER PEOPLE.
    - D. WORK NOT INCLUDED:
      1. UNLESS OTHERWISE INDICATED, PAINTING OTHER THAN PROTECTIVE PRIME COATS, IS NOT REQUIRED ON SURFACES IN CONCEALED AREAS AND INACCESSIBLE AREAS, AND BEAM BEARING POCKETS.
      2. METAL SURFACES OF CHROMIUM PLATE, COPPER, BRONZE, AND SIMILAR FINISHED MATERIALS WILL NOT REQUIRE PAINTING UNDER THIS SECTION EXCEPT AS MAY BE SO SPECIFIED.
      3. DO NOT PAINT MOVING PARTS OF OPERATING UNITS, MECHANICAL OR ELECTRICAL PARTS SUCH AS VALVE OPERATORS, LINKAGES, SENSING DEVICES, AND MOTOR SHAFTS, UNLESS OTHERWISE INDICATED.
      4. DO NOT PAINT OVER REQUIRED LABELS OR EQUIPMENT IDENTIFICATION, PERFORMANCE RATINGS, NAME, OR NOMENCLATURE PLATES.
    - E. DEFINITIONS:
      1. "PAINT" AS USED HEREIN, MEANS COATING SYSTEMS INCLUDING PRIMERS, EMULSIONS, EPOXY, ENAMELS, SEALERS, FILLERS, AND OTHER APPLIED MATERIALS WHETHER USED AS PRIME, INTERMEDIATE OR FINISH COATS.
  - 1.2 QUALITY ASSURANCE
    - A. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK OF THIS SECTION.
    - B. PAINT COORDINATION:
      1. PROVIDE FINISH COATS WHICH ARE COMPATIBLE WITH THE PRIME COATS ACTUALLY USED.
      2. REVIEW OTHER SECTIONS OF THESE SPECIFICATIONS AS REQUIRED, VERIFYING THE PRIME COATS TO BE USED AND ASSURING COMPATIBILITY OF THE TOTAL COATING SYSTEM FOR THE VARIOUS SUBSTRATA.
      3. UPON REQUEST, FURNISH INFORMATION ON THE CHARACTERISTICS OF THE SPECIFIC FINISH MATERIALS TO BE APPLIED THAT COMPATIBLE PRIME COATS ARE USED.
      4. PROVIDE BARRIER COATS OVER NON-COMPATIBLE PRIMERS, OR REMOVE THE PRIMER AND RE-PRIME AS REQUIRED.
      5. NOTIFY THE ARCHITECT IN WRITING OF ANTICIPATED PROBLEMS IN USING THE SPECIFIED COATING SYSTEMS OVER PRIME-COATINGS SUPPLIED UNDER OTHER SECTIONS.
    - C. SUBMITTALS:
      1. COMPLY WITH PERTINENT PROVISIONS OF SECTION 01300 OF THESE SPECIFICATIONS.
      2. PRODUCT DATA: WITHIN THIRTY (30) CALENDAR DAYS AFTER THE CONTRACTOR HAS RECEIVED THE OWNER'S NOTICE TO PROCEED, SUBMIT MATERIALS LIST OF ITEMS PROPOSED TO BE PROVIDED UNDER THIS SECTION.
      3. MANUFACTURER'S SPECIFICATIONS AND OTHER DATA NEEDED TO PROVE COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.
      4. SAMPLES:
        1. FOLLOWING THE SELECTION OF COLORS AND GLOSSES BY THE ARCHITECT, AS DESCRIBED UNDER "COLOR SCHEDULES" IN PART 2 OF THIS SECTION, SUBMIT SAMPLES FOR THE ARCHITECT'S REVIEW.
          - a. PROVIDE SAMPLES OF EACH COLOR AND EACH GLOSS FOR EACH MATERIAL ON WHICH THE FINISH IS SPECIFIED TO BE APPLIED.

1. EXCEPT AS SPECIFICALLY OTHERWISE APPROVED BY THE ARCHITECT, CONFINE SPRAY APPLICATION TO METAL FRAMEWORK AND SIMILAR SURFACES WHERE HAND BRUSH WORK WOULD BE INFERIOR.
  2. WHERE SPRAY APPLICATION IS USED, APPLY EACH COAT TO PROVIDE THE HIDING EQUIVALENT OF BRUSH COATS.
  3. DO NOT DOUBLE BACK WITH SPRAY APPLICATIONS.
  4. FOR COMPLETED WORK, MATCH THE APPROVED SAMPLES AS TO TEXTURE, COLOR, AND COVERAGE. REMOVE, REFINISH, OR REPAINT WORK NOT IN COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.
- 3.5 PAINTING SCHEDULE
  - PROVIDE THE FOLLOWING PAINT FINISHES AS SCHEDULED ON THE DRAWINGS. SEE PARAGRAPH 2.2, THIS SECTION, FOR COLOR SCHEDULE. MATERIALS FOR PAINTING AND FINISHING ARE BASED ON THE PRODUCTS OF THE SHERWIN WILLIAMS CO.
    - A. INTERIOR SURFACES:
      - CEMENT - WALLS & CEILINGS: POURED CONCRETE
      - a. LATEX SYSTEMS
    1. EG-SHEL / SATIN FINISH
      - 1ST COAT: S-W PREPRIME MASONRY PRIMER, B28W300 (7 MILS WET, 3 MILS DRY)
      - 2ND COAT: S-W PROMAR 200 LATEX EG-SHEL ENAMEL, B20W200 SERIES
      - 3RD COAT: S-W PROMAR 200 LATEX EG-SHEL ENAMEL, B20W200 SERIES (4 MILS WET, 1.3 MILS DRY PER COAT)
    2. FLAT FINISH
      - 1ST COAT: S-W PREPRIME MASONRY PRIMER, B28W300 (7 MILS WET, 3 MILS DRY)
      - 2ND COAT: S-W PROMAR 200 LATEX FLAT WALL PAINT, B30W200 SERIES
      - 3RD COAT: S-W PROMAR 200 LATEX FLAT WALL PAINT, B30W200 SERIES (4 MILS WET, 1.3 MILS DRY PER COAT)
    2. METAL - (STRUCTURAL STEEL, COILINGS, TRUSSES, BEAMS, MISCELLANEOUS & ORNAMENTAL IRON, FERROUS METAL)
      - a. EPOXY SYSTEM (WATER BASE)
    1. GLOSS FINISH
      - 1ST COAT: S-W DURA-POX WATER BASED EPOXY PRIMER, B70-710 SERIES (4 MILS WET, 2 MILS DRY)
      - 2ND COAT: S-W EPO-PELX MULTIMIL WATER BASED EPOXY, B71-100 SERIES
      - 3RD COAT: S-W EPO-PELX MULTIMIL WATER BASED EPOXY, B71-100 SERIES (4 - 6 MILS DRY PER COAT)
    2. EG-SHEL FINISH
      - 1ST COAT: S-W DURA-POX WATER BASED EPOXY PRIMER, B70-710 SERIES (4 MILS WET, 2 MILS DRY)
      - 2ND COAT: S-W EPO-PELX MULTIMIL WATER BASED EPOXY, B71-100 SERIES
      - 3RD COAT: S-W EPO-PELX MULTIMIL WATER BASED EPOXY, B71-100 SERIES (4 - 6 MILS DRY PER COAT)
    3. DRYWALL - (WALLS, CEILINGS, GYPSUM BOARD, WOOD PULP BOARD, PLASTER BOARD, ETC.)
      - a. LATEX SYSTEMS
      1. SEMI-GLOSS FINISH
        - 1ST COAT: S-W PREPRIME 200 LATEX PRIMER, B28W200 (4 MILS WET, 1.2 MILS DRY)
        - 2ND COAT: S-W PROMAR 200 LATEX SEMI-GLOSS, B31W200 SERIES
        - 3RD COAT: S-W PROMAR 200 LATEX SEMI-GLOSS, B31W200 SERIES (4 MILS WET, 1.3 MILS DRY PER COAT)
      2. EG-SHEL / SATIN FINISH
        - 1ST COAT: S-W PREPRIME 200 LATEX PRIMER, B28W200 (4 MILS WET, 1.2 MILS DRY)
        - 2ND COAT: S-W PROMAR 200 LATEX EG-SHEL, B20W200 SERIES
        - 3RD COAT: S-W PROMAR 200 LATEX EG-SHEL, B20W200 SERIES (4 MILS WET, 1.6 MILS DRY PER COAT)
      3. FLAT FINISH
        - 1ST COAT: S-W PREPRIME 200 LATEX PRIMER, B28W200 (4 MILS WET, 1.2 MILS DRY)
        - 2ND COAT: S-W PROMAR 200 LATEX FLAT, B30W200 SERIES
        - 3RD COAT: S-W PROMAR 200 LATEX FLAT, B30W200 SERIES (4 MILS WET, 1.4 MILS DRY PER COAT)
    1. SEMI-GLOSS FINISH
      - 1ST COAT: S-W PREPRIME 200 LATEX PRIMER, B28W200 (4 MILS WET, 1.2 MILS DRY)
      - 2ND COAT: S-W PROMAR 200 LATEX SEMI-GLOSS, B31W200 SERIES
      - 3RD COAT: S-W PROMAR 200 LATEX SEMI-GLOSS, B31W200 SERIES (4 MILS WET, 1.3 MILS DRY PER COAT)
    2. EG-SHEL / SATIN FINISH
      - 1ST COAT: S-W PREPRIME 200 LATEX PRIMER, B28W200 (4 MILS WET, 1.2 MILS DRY)
      - 2ND COAT: S-W PROMAR 200 LATEX EG-SHEL, B20W200 SERIES
      - 3RD COAT: S-W PROMAR 200 LATEX EG-SHEL, B20W200 SERIES (4 MILS WET, 1.6 MILS DRY PER COAT)
    3. FLAT FINISH
      - 1ST COAT: S-W PREPRIME 200 LATEX PRIMER, B28W200 (4 MILS WET, 1.2 MILS DRY)
      - 2ND COAT: S-W PROMAR 200 LATEX FLAT, B30W200 SERIES
      - 3RD COAT: S-W PROMAR 200 LATEX FLAT, B30W200 SERIES (4 MILS WET, 1.4 MILS DRY PER COAT)
  1. SATIN FINISH
    - 1ST COAT: S-W LOXON EXTERIOR ACRYLIC MASONRY PRIMER, A24W300 (8 MILS WET, 3.1 MILS DRY)
    - 2ND COAT: S-W A-100 EXTERIOR LATEX SATIN, A82 SERIES
    - 3RD COAT: S-W A-100 EXTERIOR LATEX SATIN, A82 SERIES (4 MILS WET, 1.4 MILS DRY PER COAT)
  2. FLAT FINISH
    - 1ST COAT: S-W LOXON EXTERIOR ACRYLIC MASONRY PRIMER, A24W300 (8 MILS WET, 3.1 MILS DRY)
    - 2ND COAT: S-W A-100 EXTERIOR LATEX FLAT, A6 SERIES
    - 3RD COAT: S-W A-100 EXTERIOR LATEX FLAT, A6 SERIES (4 MILS WET, 1.4 MILS DRY PER COAT)
  2. MASONRY - (CONCRETE MASONRY UNITS [CMU] - CINDER OR CONCRETE BLOCK)
    - a. LATEX SYSTEMS
    1. SATIN FINISH
      - 1ST COAT: S-W PREPRIME BLOCK FILLER, B25W25 (7.5 - 12.5 SQ. FT./GAL.)
      - 2ND COAT: S-W A-100 EXTERIOR LATEX SATIN, A82 SERIES
      - 3RD COAT: S-W A-100 EXTERIOR LATEX SATIN, A82 SERIES (4 MILS WET, 1.4 MILS DRY PER COAT)
    2. FLAT FINISH
      - 1ST COAT: S-W PREPRIME BLOCK FILLER, B25W25 (7.5 - 12.5 SQ. FT./GAL.)
      - 2ND COAT: S-W A-100 EXTERIOR LATEX FLAT, A6 SERIES
      - 3RD COAT: S-W A-100 EXTERIOR LATEX FLAT, A6 SERIES (4 MILS WET, 1.4 MILS DRY PER COAT)
  3. METAL (MISC. IRON, ORNAMENTAL IRON, HANDRAILS, LADDERS, FENCES)
    - a. ALKYLID SYSTEMS
  1. GLOSS FINISH
    - 1ST COAT: S-W ALL SURFACE ENAMEL PRIMER, A11W210 (4 MILS WET, 2.4 MILS DRY)
    - 2ND COAT: S-W ALL SURFACE ENAMEL, A11 SERIES
    - 3RD COAT: S-W ALL SURFACE ENAMEL, A11 SERIES (4 MILS WET, 2.4 MILS DRY PER COAT)
  2. SEMI-GLOSS FINISH
    - 1ST COAT: S-W METALASTIC DTM ACRYLIC ENAMEL, B55Z600 SERIES
    - 2ND COAT: S-W METALASTIC DTM ACRYLIC ENAMEL, B55Z600 SERIES (3.5 MILS DRY PER COAT)
  - b. URETHANE SYSTEMS
  1. GLOSS FINISH
    - 1ST COAT: S-W KEM BOND HS UNIVERSAL METAL PRIMER, B50Z SERIES (8 MILS WET, 5 MILS DRY)
    - 2ND COAT: S-W HS-SOLIDS POLYURETHANE, B65-300 SERIES
    - 3RD COAT: S-W HS-SOLIDS POLYURETHANE, B65-300 SERIES (3-4 MILS DRY PER COAT)
  2. SATIN FINISH
    - 1ST COAT: S-W KEM BOND HS UNIVERSAL METAL PRIMER, B50Z SERIES (8 MILS WET, 5 MILS DRY)
    - 2ND COAT: S-W COROTHANE II SATIN POLYURETHANE, B65-200 SERIES
    - 3RD COAT: S-W COROTHANE II SATIN POLYURETHANE, B65-200 SERIES (2-4 MILS DRY PER COAT)
  4. METAL - (STRUCTURAL IRON & STEEL, CONDUCTORS, DOORS, DUCTS, VENTS)
    - a. ALKYLID SYSTEMS
    1. GLOSS FINISH
      - 1ST COAT: S-W KEM BOND HS UNIVERSAL METAL PRIMER, B50Z SERIES (8 MILS WET, 5 MILS DRY)
      - 2ND COAT: S-W INDUSTRIAL ENAMEL, HS B54Z400 SERIES
      - 3RD COAT: S-W INDUSTRIAL ENAMEL, HS B54Z400 SERIES (2 - 4 MILS DRY PER COAT)
    2. SEMI-GLOSS FINISH
      - 1ST COAT: S-W METALASTIC DTM ACRYLIC ENAMEL, B55Z600 SERIES
      - 2ND COAT: S-W METALASTIC DTM ACRYLIC ENAMEL, B55Z600 SERIES (3.5 MILS DRY PER COAT)
  3. FLAT FINISH
    - 1ST COAT: S-W KEM BOND HS UNIVERSAL METAL PRIMER, B50Z SERIES (8 MILS WET, 5 MILS DRY)

**PART 2 - PRODUCTS**

- 2.1 PAINT MATERIALS
  - A. ACCEPTABLE MATERIALS:
    1. THE PAINTING SCHEDULE IN PART 3 OF THIS SECTION IS BASED ON PRODUCTS OF THE SHERWIN WILLIAMS COMPANY.
    2. EQUAL PRODUCTS OF BENJAMIN MOORE, DUIN-EDWARDS, DEER-O, OR PITTSBURGH PAINTS. STAINS AS MANUFACTURED BY OLYMPIC, U.S. PLYWOOD AND WOODFLO, OR OTHER MANUFACTURERS APPROVED IN ADVANCE BY THE ARCHITECT, MAY BE SUBSTITUTE IN ACCORDANCE WITH PROVISIONS OF THE CONTRACT.
    3. WHERE PRODUCTS ARE PROPOSED OTHER THAN THOSE SPECIFIED BY NAME AND NUMBER IN THE PAINTING SCHEDULE, PROVIDE UNDER THE PRODUCTS DATA SUBMITTAL REQUIRED BY ARTICLE 1.3 OF THIS SECTION A NEW PAINTING SCHEDULE COMPILED IN THE SAME FORMAT USED FOR THE PAINTING SCHEDULE INCLUDED IN THIS SECTION.
  - B. UNDERCOATS AND THINNERS:
    1. PROVIDE UNDERCOAT PAINT PRODUCED BY THE SAME MANUFACTURER AS THE FINISH COAT.
    2. USE ONLY THE THINNERS RECOMMENDED BY THE PAINT MANUFACTURER, AND USE ONLY TO THE RECOMMENDED LIMITS.
    3. INsofar AS PRACTICABLE, USE UNDERCOAT, FINISH COAT, AND THINNER MATERIAL AS PARTS OF A UNIFIED SYSTEMS OF PAINT FINISH.
  - 2.2 COLOR SCHEDULES
    - A. THE ARCHITECT WILL PREPARE A COLOR SCHEDULE WITH SAMPLES FOR GUIDANCE IN PAINTING.
    - B. THE ARCHITECT MAY SELECT, ALLOCATE, AND VARY COLORS ON DIFFERENT SURFACES THROUGHOUT THE WORK, SUBJECT TO THE FOLLOWING:
      1. EXTERIOR AND INTERIOR WORK: A MAXIMUM OF SIX DIFFERENT COLORS MAY BE USED, WITH VARIATIONS FOR TRIM, DOORS, MISCELLANEOUS WORK, AND METAL WORK.
  - 2.3 APPLICATION EQUIPMENT
    - A. FOR APPLICATION OF THE APPROVED PAINT, USE ONLY SUCH EQUIPMENT AS IS RECOMMENDED FOR APPLICATION OF THE PARTICULAR PAINT BY THE MANUFACTURER OF THE PARTICULAR PAINT, AND AS APPROVED BY THE ARCHITECT.
    - B. PRIOR TO USE OF APPLICATION EQUIPMENT, VERIFY THAT THE PROPOSED EQUIPMENT IS ACTUALLY COMPATIBLE WITH THE MATERIAL TO BE APPLIED, AND THAT INTEGRITY OF THE FINISH WILL NOT BE JEOPARDIZED BY USE OF THE PROPOSED EQUIPMENT.
  - 2.4 OTHER MATERIALS
    - A. PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ARCHITECT.

**PART 3 - EXECUTION**

- 3.1 SURFACE CONDITIONS
    - A. EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL SATISFACTORY CONDITIONS ARE CORRECTED.
    - B. IN PLACE TEST PANELS OF ALL COATINGS AND COLORS APPLIED TO EACH DIFFERENT BUILDING MATERIAL WILL BE REQUIRED FOR ARCHITECT/ENGINEER APPROVAL.
  - 3.2 MATERIALS PREPARATION
    - A. GENERAL:
      1. MIX AND PREPARE PAINT MATERIALS IN STRICT ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS AS APPROVED BY THE ARCHITECT.
      2. WHEN MATERIALS ARE NOT IN USE, STORE IN TIGHTLY COVERED CONTAINERS.
      3. MAINTAIN CONTAINERS USED IN STORAGE, MIXING, AND APPLICATION OF PAINT IN A CLEAN CONDITION, FREE FROM FOREIGN MATERIALS AND RESIDUE.
      - B. STIRRING:
        1. STR MATERIALS BEFORE APPLICATION, PRODUCING A MIXTURE OF UNIFORM DENSITY.
        2. DO NOT STIR INTO THE MATERIAL ANY FILM WHICH MAY FORM ON THE SURFACE, BUT REMOVE THE FILM AND, IF NECESSARY, STRAIN THE MATERIAL BEFORE USING.
    - 3.3 SURFACE PREPARATION
      - A. GENERAL:
        1. PERFORM PREPARATION AND CLEANING PROCEDURES IN STRICT ACCORDANCE WITH THE PAINT MANUFACTURERS' RECOMMENDATIONS AS APPROVED BY THE ARCHITECT.
        2. REMOVE REMOVABLE ITEMS WHICH ARE IN PLACE AND ARE NOT SCHEDULED TO RECEIVE PAINT FINISH, OR PROVIDE SURFACE APPLIED PROTECTION PRIOR TO SURFACE PREPARATION AND PAINTING OPERATIONS.
        3. FOLLOWING COMPLETION OF PAINTING IN EACH SPACE OR AREA, REINSTALL THE REMOVED ITEMS BY USING WORKMEN WHO ARE SKILLED IN THE NECESSARY TRADES.
      - B. CLEAN SURFACE TO BE PAINTED PRIOR TO APPLYING PAINT OF SURFACE TREATMENT.
        1. REMOVE OIL AND GREASE WITH CLEAN CLOTHS AND CLEANING SOLVENT OF LOW TOXICITY AND FLASH POINT IN EXCESS OF 200 DEGREES F, PRIOR TO START OF MECHANICAL CLEANING.
        2. SCHEDULE THE CLEANING AND PAINTING SO THAT DUST AND OTHER CONTAMINANTS FROM THE CLEANING PROCESS WILL NOT FALL ONTO WET NEWLY PAINTED SURFACES.
        7. MASK AS REQUIRED, LAY DROP CLOTHS, AND GENERALLY PROTECT ALL ADJACENT SURFACES. PROPERLY PROTECT OR REMOVE LIGHT FIXTURES, HANGINGS, ETC. DURING PAINTING.
        8. PROVIDE BARRIER COATS OVER INCOMPATIBLE PRIMERS OR REMOVE AND RE-PRIME. NOTIFY ARCHITECT IN WRITING OF PROBLEMS ANTICIPATED WITH USING THE SPECIFIED FINISH COAT MATERIAL WITH SUBSTRATES PRIME BY OTHERS.
      - B. PREPARATION OF WOOD SURFACES:
        1. CLEAN WOOD SURFACES UNTIL FREE FROM DIRT, OIL, AND OTHER FOREIGN SUBSTANCE.
        2. REMOVE LOOSE AND FLAKING PAINT BY HAND SCRAPING ONLY. USE CARE IN PREPARING EXISTING WOOD SURFACES. USE OF GRINDERS, WATERBLASTING, SANDBLASTING, OR OTHER ABRASIVES WILL NOT BE ALLOWED.
        3. SMOOTH FINISHED WOOD SURFACES EXPOSED TO VIEW, USING THE PROPER SANDPAPER, WHERE SO REQUIRED, USE VARYING DEGREES OF COARSENESS IN SANDPAPER TO PRODUCE A UNIFORMLY SMOOTH AND UNMARRED WOOD SURFACE.
        4. PREPARE WOOD SURFACES BY SEALING ALL KNOTS WITH QD 30 KNOT SEALER. PUTTY NAIL HOLES, CRACKS, AND BLEMSHES AND SAND ROUGH AREAS BEFORE APPLYING SECOND COAT OF PAINT.
      5. UNLESS SPECIFICALLY APPROVED BY THE ARCHITECT, DO NOT PROCEED WITH PAINTING OF WOOD SURFACES UNTIL THE MOISTURE CONTENT OF THE WOOD IS 18% OR LESS AS MEASURED BY A MOISTURE METER APPROVED BY THE ARCHITECT.
    - C. PREPARATION OF METAL SURFACES:
      1. THOROUGHLY CLEAN SURFACES UNTIL FREE FROM DIRT, OIL, RUST, SCALE AND GREASE. REMOVE RUST BY SCRAPING OR SANDING.
      2. ON GALVANIZED SURFACES, USE SOLVENT FOR THE INITIAL CLEANING, AND THEN TREAT THE SURFACE THOROUGHLY WITH PHOSPHORIC ACID ETCH. REMOVE ETCHING SOLUTION COMPLETELY BEFORE PROCEEDING.
      3. ALLOW TO DRY THOROUGHLY BEFORE APPLICATION OF PAINT.
      4. PRIME ALL NON-GALVANIZED METAL WITH A ZINC BASED PRIMER.
    - D. CEMENTitious MATERIALS: PREPARE CONCRETE, CONCRETE MASONRY BLOCK, CEMENT PLASTER, AND MINERAL FIBER REINFORCED CEMENT PANEL SURFACES TO BE PAINTED. PATCH ALL HOLES, CRACKS, OR DEFORMITIES IN THE SURFACE AS REQUIRED BY THE PRODUCT MANUFACTURER. REMOVE EFFLORESCENCE, CHALK, DUST, DIRT, GREASE, OILS, AND RELEASE AGENTS. ROUGHEN AS REQUIRED TO REMOVE GLAZE. IF HARDENERS OR SEALERS HAVE BEEN USED TO IMPROVE CURING, USE MECHANICAL METHODS OF SURFACE PREPARATION.
      1. DO NOT USE ABRASIVE BLAST CLEANING METHODS UNLESS APPROVED IN ADVANCE BY THE ARCHITECT AND RECOMMENDED BY THE PAINT MANUFACTURER.
      2. DETERMINE ALKALINITY AND MOISTURE CONTENT OF SURFACES BY PERFORMING APPROPRIATE TESTS. IF SURFACES ARE SUFFICIENTLY ALKALINE TO CAUSE BUSTERING AND BURNING OF FINISH PAINT, CORRECT THIS CONDITION BEFORE APPLICATION. DO NOT PAINT SURFACES WHERE MOISTURE CONTENT EXCEEDS THAT PERMITTED IN MANUFACTURERS' PRINTED DIRECTIONS.
      3. CLEAN CONCRETE FLOORS TO BE PAINTED WITH A 5 PERCENT SOLUTION OF MURIATIC ACID OR OTHER ETCHING CLEANER. FLUSH THE FLOOR WITH CLEAN WATER TO REMOVE ACID, NEUTRALIZE WITH AMMONIA, AND RINSE: ALLOW TO DRY AND VACUUM BEFORE PAINTING.
- 3.4 PAINT APPLICATION
  - A. GENERAL:
    1. TOUCH UP SHOP-APPLIED PRIME COATS WHICH HAVE BEEN DAMAGED, AND TOUCH UP BARE AREAS PRIOR TO START OF FINISH COATS APPLICATION.
    2. SLIGHTLY VARY THE COLOR OF SUCCEEDING COATS.
      - a. DO NOT APPLY ADDITIONAL COATS UNTIL THE COMPLETED COAT HAS BEEN INSPECTED AND APPROVED.
      - b. ONLY THE INSPECTED AND APPROVED COATS OF PAINT WILL BE CONSIDERED IN DETERMINING THE NUMBER OF COATS APPLIED.
    3. SAND AND DUST BETWEEN COATS TO REMOVE DEFECTS VISIBLE TO THE UNAIDED EYE FROM A DISTANCE OF FIVE FEET.
    4. ON REMOVABLE PANELS AND HINGED PANELS, PAINT THE BACK SIDES TO MATCH THE EXPOSED SIDES.
    5. FINISH TOPS, BOTTOMS AND EDGES OF DOORS THE SAME AS DOOR FACES.
    6. NAIL HOLES AND IMPERFECTIONS SHALL BE NEATLY PUTTED AFTER THE FIRST COAT. PUTTY SHALL BE COLORED TO MATCH THE COLOR OF THE SURFACE TO WHICH IT IS APPLIED.
    7. ALL WORKMANSHIP SHALL BE OF A PROFESSIONAL QUALITY WITH PAINT SPREAD EVENLY WITHOUT RUNS. COLORS SHALL BE SELECTED BY THE ARCHITECT OR THE OWNER, AND SHALL CONFORM TO THE APPROVED SAMPLE.
    - B. DRYING:
      1. ALLOW SUFFICIENT DRYING TIME BETWEEN COATS, MODIFYING THE PERIOD AS RECOMMENDED BY THE MATERIAL MANUFACTURER TO SUIT ADVERSE WEATHER CONDITIONS. ENAMELS, VARNISHES AND EXTERIOR OIL PAINTS SHALL BE ALLOWED TO DRY AT LEAST 48 HOURS BETWEEN COATS. INTERIOR PAINTS SHALL BE ALLOWED TO DRY AT LEAST 24 HOURS BETWEEN COATS.
      2. CONSIDER OIL-BASED AND OIL-RESINOUS SOLVENT-TYPE PAINT AS DRY FOR RECOATING WHEN THE PAINT FEELS FIRM, DOES NOT CAUSE LIFTING OR LOSS OF ADHESION OF THE UNDERCOAT.
    - C. BRUSH APPLICATIONS:
      1. BRUSH OUT AND WORK THE BRUSH COATS ONTO THE SURFACE IN AN EVEN FILM.
      2. CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, RUNS, SAGS, ROPINESS, AND OTHER SURFACE IMPERFECTIONS WILL NOT BE ACCEPTABLE.
    - D. SPRAY APPLICATION:
      1. BRUSH OUT AND WORK THE BRUSH COATS ONTO THE SURFACE IN AN EVEN FILM.
      2. CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, RUNS, SAGS, ROPINESS, AND OTHER SURFACE IMPERFECTIONS WILL NOT BE ACCEPTABLE.

1. EXCEPT AS SPECIFICALLY OTHERWISE APPROVED BY THE ARCHITECT, CONFINE SPRAY APPLICATION TO METAL FRAMEWORK AND SIMILAR SURFACES WHERE HAND BRUSH WORK WOULD BE INFERIOR.
  2. WHERE SPRAY APPLICATION IS USED, APPLY EACH COAT TO PROVIDE THE HIDING EQUIVALENT OF BRUSH COATS.
  3. DO NOT DOUBLE BACK WITH SPRAY APPLICATIONS.
  4. FOR COMPLETED WORK, MATCH THE APPROVED SAMPLES AS TO TEXTURE, COLOR, AND COVERAGE. REMOVE, REFINISH, OR REPAINT WORK NOT IN COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.
- 3.5 PAINTING SCHEDULE
  - PROVIDE THE FOLLOWING PAINT FINISHES AS SCHEDULED ON THE DRAWINGS. SEE PARAGRAPH 2.2, THIS SECTION, FOR COLOR SCHEDULE. MATERIALS FOR PAINTING AND FINISHING ARE BASED ON THE PRODUCTS OF THE SHERWIN WILLIAMS CO.
    - A. INTERIOR SURFACES:
      - CEMENT - WALLS & CEILINGS: POURED CONCRETE
      - a. LATEX SYSTEMS
    1. EG-SHEL / SATIN FINISH
      - 1ST COAT: S-W PREPRIME MASONRY PRIMER, B28W300 (7 MILS WET, 3 MILS DRY)
      - 2ND COAT: S-W PROMAR 200 LATEX EG-SHEL ENAMEL, B20W200 SERIES
      - 3RD COAT: S-W PROMAR 200 LATEX EG-SHEL ENAMEL, B20W200 SERIES (4 MILS WET, 1.3 MILS DRY PER COAT)
    2. FLAT FINISH
      - 1ST COAT: S-W PREPRIME MASONRY PRIMER, B28W300 (7 MILS WET, 3 MILS DRY)
      - 2ND COAT: S-W PROMAR 200 LATEX FLAT WALL PAINT, B30W200 SERIES
      - 3RD COAT: S-W PROMAR 200 LATEX FLAT WALL PAINT, B30W200 SERIES (4 MILS WET, 1.3 MILS DRY PER COAT)
    2. METAL - (STRUCTURAL STEEL, COILINGS, TRUSSES, BEAMS, MISCELLANEOUS & ORNAMENTAL IRON, FERROUS METAL)
      - a. EPOXY SYSTEM (WATER BASE)
    1. GLOSS FINISH
      - 1ST COAT: S-W DURA-POX WATER BASED EPOXY PRIMER, B70-710 SERIES

2.2 FLEXIBLE DUCT

- A. PROVIDE FACTORY FABRICATED INSULATED LOW PRESSURE FLEXIBLE DUCT WITH THE FOLLOWING ATTRIBUTES:
  1. ZINC-COATED SPRING STEEL HELIX WITH 1" THICK FIBERGLASS INSULATION, SHEATHED IN A SEAMLESS VAPOR BARRIER JACKET.
  2. INTERIOR FIRE-RESISTIVE COATED TO PREVENT FIBER EROSION.
  3. STRAIGHT RUN SOUND ABSORPTION OF 3DB PER FT. AND 5 DB PER FT. SOUND ABSORPTION AT 45 DEGREE BENDS.
  4. COMPOSITE ASSEMBLY INCLUDING INSULATION AND VAPOR BARRIER, MEETING CLASS 1 REQUIREMENTS OF FLAME SPREAD OF 24 OR LESS AND SMOKE DEVELOPED OF 50 OR LESS AS SET FORTH IN NFPA BULLETIN 904, AND BEARING UL LABEL AS AIR DUCT.
- B. PROVIDE FLEXIBLE DUCT IN FULLY EXTENDED CONDITION, FREE FROM SAGS AND KINKS.
  1. USE ONLY THE MINIMUM LENGTH REQUIRED TO MAKE THE CONNECTION.
  2. DO NOT EXCEED 8'-0" IN LENGTH.
  3. WHERE HORIZONTAL SUPPORT IS REQUIRED, PROVIDE AT LEAST 3/4" WIDE BANDING MATERIAL HANGERS AT NOT MORE THAN 36" CENTERS.
  4. MAKE JOINTS AND CONNECTIONS WITH 1/2" WIDE POSITIVE LOCKING STEEL STRAPS.
- C. ACCEPTABLE PRODUCTS:
  1. INSULATED LOW PRESSURE FLEXIBLE DUCT "TYPE S-181" MANUFACTURED BY GLASS INSULATION CO., LOS ANGELES.
  2. FOR TOILET EXHAUST OR RETURN AIR CONNECTORS AND RUNOUTS, ALUMINUM FLEXIBLE DUCTS SUCH AS "FLEXMASTER" OR "VANGUARD" MAY BE USED IF ACCEPTABLE TO THE GOVERNMENTAL AGENCIES HAVING JURISDICTION.

2.3 INSULATION

- A. GENERAL:
  1. PROVIDE MATERIALS COMPLYING WITH NFPA BULLETIN 90-A, AS DETERMINED BY UL METHOD NFPA 225-ASTM E84, AND COMPLYING WITH THE GOVERNING CODE, WITH FLAME SPREAD RATING UNDER 25 AND SMOKE DEVELOPED RATING UNDER 50.
  2. WHERE VAPOR BARRIERS ARE USED, PROVIDE INTACT AND CONTINUOUS THROUGHOUT.
  3. ACCEPTABLE MANUFACTURERS:
    - a. OWENS-CORNING FIBERGLAS.
    - b. JOHNS-MANVILLE
    - c. CERTAINTEE.
- B. CONCEALED DUCTS IN NON-CONDITIONED SPACES:
  1. INSULATE SUPPLY DUCTS WITH 1" THICK FIBERGLASS BLANKET SUCH AS FIBERGLAS FRK ED-100," OR EQUAL APPROVED IN ADVANCE BY THE ARCHITECT.
  2. INSULATE RETURN DUCTS WITH 3/4 PCF 1" THICK FIBERGLASS DUCT WRAP BLANKET.
- C. ACOUSTICAL DUCT LINER: FOR DUCTS EXPOSED TO THE WEATHER, AND FOR SUPPLY DUCTS FROM SUPPLY FAN TO FIRST BRANCH DUCTS:
  1. LINE WITH ONE OF THE FOLLOWING 1" THICK MATERIALS:
    - a. CSG NO. 300, COATED;
    - b. PPG 3 PCF;
    - c. SUPERLINE (OR TEXTRAFINE) FIBERGLASS PF-615;
    - d. JOHNS-MANVILLE 3 POG MICORTEX COATED DUCT LINER.
  2. APPLY DUCT LINER WITH COATED SIDE FACING AIR STREAM AND SECURED TO THE SHEET METAL WITH "ED104" ADHESIVE OR WITH MECHANICAL CLIPS RECOMMENDED BY THE MANUFACTURER.
  3. MAKE JOINTS TIGHTLY BUTTED AND HEAVILY SIZED WITH "LAGFAS" OR "ARABOLT LAGGING ADHESIVE," ASSURING CONTINUITY OF SURFACES.
- D. HOT WATER PIPING:
  1. INSULATE WITH PREFORMED FIBERGLASS SNAP-ON INSULATION SUCH AS 25 ASL/SLL.
  2. FOR PIPES UP TO 1" DIAMETER, PROVIDE 1" THICK INSULATION.
  3. FOR PIPES 1" DIAMETER AND LARGER, PROVIDE 1-1/2" THICK INSULATION.
  4. WHERE INSULATION IS EXPOSED TO THE WEATHER, PROTECT WITH WATERPROOF CORRUGATED ALUMINUM COVER.

2.4 AIR OUTLETS

- A. CEILING DIFFUSERS:
    1. PROVIDE "METALAIR" SERIES 9000, WITH OPPOSED BLADE DAMPER AND PERFORATED FACE, IN SIZES, CAPACITIES, AND PATTERN NOTED ON THE DRAWINGS.
    2. PROVIDE INSULATED ADAPTOR BOXES ABOVE EACH DIFFUSER NECK TO PERMIT CONNECTION OF FLEXIBLE DUCT.
  - B. GRILLES: MATCH SUPPLY.
  - C. REGISTERS: PROVIDE DOUBLE DEFLECTING TYPE WITH OPPOSED BLADE DAMPERS.
  - D. PROVIDE FACTORY-APPLIED OR SITE-APPLIED BLACK COATING ON THE INSIDE OF ALL AIR OUTLETS AND CONNECTING PLENUMS.
  - E. PROVIDE SUPPLY REGISTER IN EACH TOILET ROOM, SIZED FOR 10" LESS THAN THE REQUIRED CODE VENTILATION. PROVIDE SEPARATE ZONE FOR EACH TOILET ROOM IF NECESSARY.
  - F. PROVIDE SPONGE RUBBER UNDER ALL FLANGES.
  - G. ACCEPTABLE ALTERNATE PRODUCTS: EQUAL PRODUCTS MANUFACTURED BY KRUEGER, ADP, TITUS, TUTTLE AND BAILEY, OR CARNES.
- 2.5 VIBRATION ISOLATION AND FLEXIBLE CONNECTIONS
- A. AT DUCTS TO EQUIPMENT, PROVIDE VENT-FABRIC FLEXIBLE CONNECTIONS WITH A MINIMUM 6" FULL LENGTH, AND APPROVED BY THE GOVERNMENTAL AGENCIES HAVING JURISDICTION.
  - B. FOR RETURN AIR CONNECTIONS AT EACH FLOOR TO THE RETURN RISER, PROVIDE FIBERGLASS OR LINED DUCT WITH A MINIMUM OF TWO ELBOWS.
  - C. PROVIDE ADDITIONAL SOUND ISOLATION AS REQUIRED TO LIMIT THE NOISE LEVEL IN CONDITIONED SPACE TO A MAXIMUM OF NC-40.
  - D. MOUNT VIBRATING EQUIPMENT ON "THYCURB VIBROURBS" WITH A MINIMUM STATIC DEFLECTION OF 1".
  - E. ISOLATE PIPING FROM THE STRUCTURE IN A MANNER TO PREVENT TRANSMISSION OF VIBRATION.
- 2.6 ROOF EXHAUST FANS
- A. PROVIDE CURB-MOUNTED TYPE WITH THE FOLLOWING ATTRIBUTES:
    1. ALUMINUM OR FIBERGLASS HOOD, WITH HINGED OR REMOVABLE COVER FOR EASY ACCESS TO MOTOR AND FAN TO BACKDRAFT DAMPERS;
    2. V-BELT DRIVES, WITH 1.5 SERVICE FACTOR AND ADJUSTABLE SHEAVE ON THE MOTOR;
    3. OPEN DRIP-PROOF CONSTRUCTION MOTORS, WITH POWER DISCONNECT SWITCHES APPROVED BY THE GOVERNMENTAL AGENCIES HAVING JURISDICTION;
    4. BACKWARD CURVED CENTRIFUGAL WHEEL FAN IMPELLER, WITH DEEP-SPUN THROAT VENTURI.
  - B. APPROVED MANUFACTURERS:
    1. GREENHECK;
    2. EXTAIRE;
    3. JENN-AIR;
    4. PENN.

2.7 MOTORS

- A. PROVIDE MOTORS DESIGNED FOR THE SUPPLY VOLTAGES MADE AVAILABLE FOR THIS PORTION OF THE WORK, AND WITH THE FOLLOWING ATTRIBUTES:
  1. SIZED TO DEVELOP THE REQUIRED BRAKE HORSEPOWER AND TO OPERATE SATISFACTORILY WITH A VOLTAGE VARIATION OF PLUS OR MINUS 10%;
  2. CONFORMING TO NEMA MOTOR STANDARDS;
  3. DYNAMICALLY BALANCED, AND HELD TO COMMERCIAL TOLERANCE;
  4. WHERE T-FRAME MOTORS ARE USED, OVERSIZED AT LEAST 10%;
  5. SELECTED SO THAT, WHEN AMBIENT TEMPERATURE REACHES 120 DEGREES F FOR A PERIOD OF TWO HOURS OR MORE, THE MOTOR WILL OPERATE SATISFACTORILY WITHOUT FAILURE, AND WITH A MINIMUM SERVICE FACTOR OF 1.5;
  6. WITH SQUIRREL-CAGE TYPE DRIP-PROOF ENCLOSURE, UNLESS OTHERWISE INDICATED, CONSTANT SPEED, ACROSS-THE LINE OTHERWISE INDICATED, CONSTANT SPEED, ACROSS-THE LINE NORMAL STARTING TORQUE DESIGNED FOR QUITE OPERATION;
  7. EACH MOTOR AND AMPLI SIZE TO OPERATE ITS UNIT AT PROPER FULL LOAD AND SPEED CONTINUOUSLY, WITHOUT HEATING IN ANY PART MORE THAN 40 DEGREES C ABOVE THE TEMPERATURE OF THE SURROUNDING ATMOSPHERE.
- B. WHERE MOTOR IS USED WITH V-BELT DRIVE, EQUIP WITH A SLIDING BASE AND BELT GUARD, AND MOTOR SHEAVE.

2.8 PACKAGE ROOFTOP VA UNITS

- A. GENERAL: PROVIDE HVAC EQUIPMENT AS SCHEDULED ON THE DRAWINGS.

2.9 PIPING

- A. FOR REFRIGERANT PIPING, PROVIDE TYPE "K" COPPER, REFRIGERANT GRADE, WITH WROUGHT COPPER FITTINGS, AND WITH JOINTS THOROUGHLY CLEANED PRIOR TO SOLDERING.
- B. FOR HOT WATER PIPING, PROVIDE TYPE "M" COPPER WITH WROUGHT COPPER FITTINGS, OR PROVIDE SCHEDULE 40 GALVANIZED STEEL PIPE.

2.10 OTHER MATERIALS

- A. PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ARCHITECT.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

3.2 COORDINATION

- A. COORDINATE AS REQUIRED WITH OTHER TRADES TO ASSURE PROPER AND ADEQUATE PROVISION IN THE WORK OF THOSE TRADES FOR INTERFACE WITH THE WORK OF THIS SECTION.

3.3 PREPARATION

- A. HOLES IN CONCRETE:
  1. PROVIDE SLEEVES, ACCURATELY DIMENSIONED AND SHAPED TO PERMIT PASSAGE OF ITEMS OF THIS SECTION.
  2. DELIVER ALL SUCH SLEEVES, WITH ACCURATE SETTING DRAWINGS AND SETTING INFORMATION, TO THE TRADES PROVIDING THE SURFACES THROUGH WHICH SUCH ITEMS MUST PENETRATE, AND IN A TIMELY MANNER TO ASSURE INCLUSION IN THE WORK.
- B. FLASHING:
  1. WHERE ITEMS OF THIS SECTION PENETRATE THE ROOF, OUTER WALLS, OR WATERPROOFING OF ANY KIND, PROVIDE UNDER THIS SECTION ALL BASE FLASHING AND COUNTERFLASHING REQUIRED AT SUCH PENETRATION.
  2. PROVIDE ON EACH PIPE PASSING THROUGH THE ROOF A 4 LB. SEAMLESS LEAD FLASHING AND COUNTERFLASHING ASSEMBLY.

3.4 EQUIPMENT INTERFACE

- A. PROVIDE ALL REQUIRED SHUTOFF VALVES, UNIONS, AND FINAL CONNECTIONS OF PIPING TO THE WORK OF THIS SECTION.
- B. FOR ELECTRICALLY OPERATED EQUIPMENT, VERIFY THE ELECTRICAL CHARACTERISTICS ACTUALLY AVAILABLE FOR THE WORK OF THIS SECTION AND PROVIDE EQUIPMENT MEETING THOSE CHARACTERISTICS.

3.5 PAINTING

- A. PAINT INSIDE OF ALL AIR OUTLETS AND CONNECTING PLENUMS WITH ONE COAT OF BLACK PAINT, OR PROVIDE ALL SUCH ITEMS FACTORY PREPAINTED.
- B. FOR ROOF-MOUNTED EQUIPMENT, PROVIDE FACTORY PREFINISH ON ALL EXPOSED SURFACES.
- C. TOUCHUP SCRATCHES AND ABRASIONS TO BE INVISIBLE TO THE UNAIDED EYE FROM A DISTANCE OF 5'-0".

3.6 INSULATION

- A. WRAP INSULATION FIRMLY AROUND DUCTWORK, COVERING ALL SURFACES INCLUDING STANDING SEAMS, AND WITH ALL JOINTS LAPPED AT LEAST 2".
- B. SECURELY FASTEN THE INSULATION IN PLACE WITH 16 GAGE SOFT ANNEALED BLACK OR GALVANIZED WIRE SPACED APPROXIMATELY 12" ON CENTERS FOR STRAIGHT RUNS AND 3" ON CENTERS FOR ELBOWS AND FITTINGS.
- C. TAKE SPECIAL CARE TO AVOID EXCESSIVE STRETCHING AND COMPRESSING, AND TO ACHIEVE SECURING AT LAPPED SECTIONS WHERE POSSIBLE.

3.7 INSTRUCTIONS

- A. UPON COMPLETION OF THIS PORTION OF THE WORK, AND PRIOR TO ITS ACCEPTANCE BY THE OWNER, PROVIDE A QUALIFIED ENGINEER AND FULLY INSTRUCT THE OWNER'S MAINTENANCE PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF ITEMS PROVIDED UNDER THIS SECTION.
- B. DEMONSTRATE THE CONTENTS OF THE APPROVED OPERATION AND MAINTENANCE MANUAL REQUIRED UNDER ARTICLE 1.3 ABOVE.

3.8 TESTING AND ADJUSTING

- A. TEST AND ADJUST EACH PIECE OF EQUIPMENT AND EACH SYSTEM AS REQUIRED TO ASSURE PROPER BALANCE AND OPERATION.
  1. TEST AND REGULATE VENTILATION AND AIR CONDITIONING SYSTEMS TO CONFORM TO THE AIR VOLUMES SHOWN ON THE APPROVED DESIGN DRAWINGS.
  2. MAKE TESTS AND ADJUSTMENTS IN APPARATUS AND DUCTS FOR EACH GRILLE AND CEILING OUTLET.
  3. WHERE REQUIRED, PROVIDE PULLEYS FOR FANS AT NO ADDITIONAL COST TO THE OWNER, AND SET TO DRIVE THE FANS AT THE SPEED NEEDED TO GIVE THE INDICATED VOLUME.
  4. FOR EACH SYSTEM, TAKE THE FOLLOWING DATA IN TABULATED FORM:
    - a. AIR VOLUMES AT ALL SUPPLY, RETURN, AND EXHAUST OUTLETS;
    - b. TOTAL CFM SUPPLIED;
    - c. TOTAL CFM RETURNED;
    - d. TOTAL STATIC PRESSURE AT EACH FAN AND AT EACH SYSTEM;
    - e. MOTOR SPEED, FAN SPEED, AND INPUT AMPERE RATING FOR EACH FAN.
- B. SUBMIT TWO SETS OF TEST AND BALANCE REPORTS TO THE ARCHITECT FOR APPROVAL.
- C. ELIMINATE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF ALL CONTROLS, MAINTENANCE OF TEMPERATURE, AND OPERATION IN ACCORDANCE WITH THE APPROVED DESIGN.
- D. SECURE REQUIRED APPROVAL FROM GOVERNMENTAL AGENCIES HAVING JURISDICTION.

END OF SECTION

SECTION 16400 ELECTRICAL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. WORK INCLUDED: PROVIDE COMPLETE ELECTRICAL AND TELEPHONE SERVICE WHERE SHOWN ON THE DRAWINGS, AS SPECIFIED HEREIN, AND AS NEEDED FOR COMPLETE AND PROPER INSTALLATION INCLUDING, BUT NOT NECESSARILY LIMITED TO:
    1. MAIN SWITCHBOARD, METERING FACILITIES, MAIN SWITCH, AND DISTRIBUTION BOARD OR BOARDS AS NEEDED;
    2. FEEDER SYSTEM, IN CONDUIT TO BRANCH CIRCUITS PANELS;
    3. BRANCH CIRCUIT PANELS FOR POWER AND LIGHTING;
    4. BRANCH CIRCUIT WIRING, IN CONDUIT, FOR LIGHTING, RECEPTACLES, JUNCTION BOXES, AND MOTORS;
    5. TELEPHONE CONDUIT AND TERMINAL BOARDS;
    6. HANGERS, ANCHORS, SLEEVES, CHASES, SUPPORTS FOR FIXTURES, AND OTHER ELECTRICAL MATERIALS AND EQUIPMENT IN ASSOCIATION THEREWITH;
    7. LIGHTING FIXTURES AND LAMPS;
    8. WIRING SYSTEM, IN CONDUIT, FOR EQUIPMENT AND CONTROLS PROVIDED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS INCLUDING, BUT NOT NECESSARILY LIMITED TO, PLUMBING AND FIRE SPRINKLER SECTIONS;
    9. MOTOR STARTERS AND CONTROLS FOR MOTORS PROVIDED UNDER THE CONTRACT, BUT FOR WHICH MOTOR STARTERS AND CONTROLS ARE NOT OTHERWISE PROVIDED;
    10. OTHER ITEMS AND SERVICES REQUIRED TO COMPLETE THE SYSTEMS.
  - B. RELATED WORK:
    1. DOCUMENTS AFFECTING WORK OF THIS SECTION INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, AND SECTIONS IN DIVISION 1 OF THESE SPECIFICATIONS.
  - C. WHERE CONSULTANT DRAWINGS CONTAIN NOTES AND OR SPECIFICATION REQUIREMENTS AND CONFLICTS OCCUR WITH THESE SPECIFICATIONS, ADHERE TO THE REQUIREMENTS OF THE CONSULTANT DOCUMENTS.
- 1.2 QUALITY ASSURANCE
- A. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK OF THIS SECTION.
  - B. WITHOUT ADDITIONAL COST TO THE OWNER, PROVIDE SUCH OTHER LABOR AND MATERIALS AS ARE REQUIRED TO COMPLETE THE WORK OF THIS SECTION IN ACCORDANCE WITH THE REQUIREMENTS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION, REGARDLESS OF WHETHER SUCH MATERIALS AND ASSOCIATED LABOR ARE CALLED FOR ELSEWHERE IN THESE CONTRACT DOCUMENTS.
- 1.3 SUBMITTALS
- A. COMPLY WITH PERTINENT PROVISIONS OF SECTION 01340.
  - B. PRODUCT DATA: WITHIN THIRTY-FIVE (35) CALENDAR DAYS AFTER THE CONTRACTOR HAS RECEIVED THE OWNER'S NOTICE TO PROCEED, SUBMIT:
    1. MATERIALS LIST OF ITEMS PROPOSED TO BE PROVIDED UNDER THIS SECTION;
    2. MANUFACTURER'S SPECIFICATIONS AND OTHER DATA NEEDED TO PROVE COMPLIANCE WITH THE SPECIFIED REQUIREMENTS;
    3. MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES WHICH, WHEN APPROVED BY THE ARCHITECT, WILL BECOME THE BASIS FOR ACCEPTING OR REJECTING ACTUAL INSTALLATION PROCEDURES USED ON THE WORK.
  - C. SAMPLES:
    1. WHEN SO REQUESTED BY THE ARCHITECT PROMPTLY PROVIDE SAMPLES OF ITEMS SCHEDULED TO BE EXPOSED IN THE FINAL STRUCTURE;
    2. WHEN SPECIFICALLY SO REQUESTED BY THE CONTRACTOR AND APPROVED BY THE ARCHITECT, APPROVED SAMPLES WILL BE RETURNED TO THE CONTRACTOR FOR INSTALLATION ON THE WORK.
  - D. MANUAL: UPON COMPLETION OF THIS PORTION OF THE WORK, AND AS A CONDITION OF ITS ACCEPTANCE, DELIVER TO THE ARCHITECT TWO COPIES OF AN OPERATION AND MAINTENANCE MANUAL COMPILED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 1730 OF THESE SPECIFICATIONS. INCLUDE WITHIN EACH MANUAL:
    1. COPY OF THE APPROVED RECORD DOCUMENTS FOR THIS PORTION OF THE WORK;
    2. COPIES OF ALL CIRCUIT DIRECTORIES;
    3. COPIES OF ALL WARRANTIES AND GUARANTEES.

1.4 PRODUCT HANDLING

- A. COMPLY WITH PERTINENT PROVISIONS OF SECTION 01640.

1.5 WARRANTY

- A. PROVIDE STANDARD ONE YEAR WARRANTY ON ALL LABOR AND MATERIALS.

PART 2 - PRODUCTS

2.1 GENERAL

- A. PROVIDE ONLY MATERIALS THAT ARE NEW, OF THE TYPE AND QUALITY SPECIFIED. WHERE UNDERWRITERS' LABORATORIES, INC. HAVE ESTABLISHED STANDARDS FOR SUCH MATERIALS, PROVIDE ONLY MATERIAL BEARING THE UL LABEL.

2.2 LIGHTING FIXTURES

- A. PROVIDE FIXTURES OF THE TYPES SHOWN ON THE DRAWINGS.
- B. WHERE FIXTURE SUBSTITUTES ARE PROPOSED, SUBMIT A SAMPLE FIXTURE WITH THE MATERIALS LIST REQUIRED TO BE SUBMITTED UNDER ARTICLE 1.3 ABOVE.

2.3 OTHER MATERIALS

- A. PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ARCHITECT.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

3.2 PREPARATION

- A. COORDINATE:
  1. COORDINATE AS NECESSARY WITH OTHER TRADES TO ASSURE PROPER AND ADEQUATE PROVISION IN THE WORK OF THOSE TRADES FOR INTERFACE WITH THE WORK OF THIS SECTION.
  2. COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE SCHEDULE FOR WORK OF OTHER TRADES TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.
  3. WHERE LIGHTING FIXTURES AND OTHER ELECTRICAL ITEMS ARE SHOWN IN CONFLICT WITH LOCATIONS OF STRUCTURAL MEMBERS OR OTHER EQUIPMENT, PROVIDE REQUIRED SUPPORTS AND WIRING TO CLEAR THE ENCROACHMENT;
- B. DATA INDICATED ON THE DRAWINGS AND IN THESE SPECIFICATIONS ARE AS EXACT AS COULD BE SECURED, BUT THEIR ABSOLUTE ACCURACY IS NOT WARRANTED. THE EXACT LOCATIONS, DISTANCES, LEVELS, AND OTHER CONDITIONS WILL BE GOVERNED BY ACTUAL CONSTRUCTION AND THE DRAWINGS AND SPECIFICATIONS SHOULD BE USED ONLY FOR GUIDANCE IN SUCH REGARD.
- C. WHERE OUTLETS ARE NOT SPECIFICALLY LOCATED ON THE DRAWINGS, LOCATE AS DETERMINED IN THE FIELD BY THE ARCHITECT, WHERE OUTLETS ARE INSTALLED WITHOUT SUCH SPECIFIC DIRECTION, RELOCATE AS DIRECTED BY THE ARCHITECT AND AT NO ADDITIONAL COST TO THE OWNER.
- D. VERIFY ALL MEASUREMENTS AT THE BUILDING. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF DIFFERENCES BETWEEN WORK SHOWN ON THE DRAWINGS AND ACTUAL MEASUREMENTS AT THE SITE OF CONSTRUCTION.
- E. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, BUT ARE REQUIRED TO BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT. WHERE DEVIATIONS ARE REQUIRED TO CONFORM WITH ACTUAL CONSTRUCTION AND THE WORK OF OTHER TRADES, MAKE SUCH DEVIATIONS WITHOUT ADDITIONAL COST TO THE OWNER.

3.3 TESTING AND INSPECTION

- A. PROVIDE PERSONNEL AND EQUIPMENT, MAKE REQUIRE TESTS, AND SECURE REQUIRED APPROVALS FROM THE ARCHITECT AND GOVERNMENTAL AGENCIES HAVING JURISDICTION.
- B. MAKE WRITTEN NOTICE TO THE ARCHITECT ADEQUATELY IN ADVANCE OF EACH OF THE FOLLOWING STAGES OF CONSTRUCTION:
  1. IN THE UNDERGROUND CONDITION PRIOR TO COVERING, WHEN ALL ASSOCIATED ELECTRICAL WORK IS IN PLACE;
  2. WHEN ALL ROUGH-IN IS COMPLETE, BUT NOT COVERED;
  3. AT COMPLETION OF THE WORK OF THIS SECTION.
- C. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND TO NOT COMPLY WITH THE SPECIFIED REQUIREMENTS, WITHIN THREE DAYS AFTER RECEIPT OF NOTICE OF SUCH NON-COMPLIANCE REMOVE THE NON-COMPLYING ITEMS FROM THE JOB SITE AND REPLACE THEM WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS, ALL AT NO ADDITIONAL COST TO THE OWNER.
- D. IN THE ARCHITECT'S PRESENCE:
  1. TEST ALL PARTS OF THE ELECTRICAL SYSTEM AND PROVE THAT SUCH ITEMS PROVIDED UNDER THIS SECTION FUNCTION ELECTRICALLY IN THE REQUIRED MANNER.

3.4 PROJECT COMPLETION

- A. UPON COMPLETION OF THE WORK OF THIS SECTION, THOROUGHLY CLEAN ALL EXPOSED PORTIONS OF THE ELECTRICAL INSTALLATION, REMOVING ALL TRACES OF SOIL, LABELS, GREASE, OIL, AND OTHER FOREIGN MATERIAL, AND USING ONLY THE TYPE CLEANER RECOMMENDED BY THE MANUFACTURER OF THE ITEM BEING CLEANED.

END OF SECTION

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

3.2 COORDINATION

- A. COORDINATE AS REQUIRED WITH OTHER TRADES TO ASSURE PROPER AND ADEQUATE PROVISION IN THE WORK OF THOSE TRADES FOR INTERFACE WITH THE WORK OF THIS SECTION.

3.3 PREPARATION

- A. HOLES IN CONCRETE:
  1. PROVIDE SLEEVES, ACCURATELY DIMENSIONED AND SHAPED TO PERMIT PASSAGE OF ITEMS OF THIS SECTION.
  2. DELIVER ALL SUCH SLEEVES, WITH ACCURATE SETTING DRAWINGS AND SETTING INFORMATION, TO THE TRADES PROVIDING THE SURFACES THROUGH WHICH SUCH ITEMS MUST PENETRATE, AND IN A TIMELY MANNER TO ASSURE INCLUSION IN THE WORK.
- B. FLASHING:
  1. WHERE ITEMS OF THIS SECTION PENETRATE THE ROOF, OUTER WALLS, OR WATERPROOFING OF ANY KIND, PROVIDE UNDER THIS SECTION ALL BASE FLASHING AND COUNTERFLASHING REQUIRED AT SUCH PENETRATION.
  2. PROVIDE ON EACH PIPE PASSING THROUGH THE ROOF A 4 LB. SEAMLESS LEAD FLASHING AND COUNTERFLASHING ASSEMBLY.

3.4 EQUIPMENT INTERFACE

- A. PROVIDE ALL REQUIRED SHUTOFF VALVES, UNIONS, AND FINAL CONNECTIONS OF PIPING TO THE WORK OF THIS SECTION.
- B. FOR ELECTRICALLY OPERATED EQUIPMENT, VERIFY THE ELECTRICAL CHARACTERISTICS ACTUALLY AVAILABLE FOR THE WORK OF THIS SECTION AND PROVIDE EQUIPMENT MEETING THOSE CHARACTERISTICS.

3.5 PAINTING

- A. PAINT INSIDE OF ALL AIR OUTLETS AND CONNECTING PLENUMS WITH ONE COAT OF BLACK PAINT, OR PROVIDE ALL SUCH ITEMS FACTORY PREPAINTED.
- B. FOR ROOF-MOUNTED EQUIPMENT, PROVIDE FACTORY PREFINISH ON ALL EXPOSED SURFACES.
- C. TOUCHUP SCRATCHES AND ABRASIONS TO BE INVISIBLE TO THE UNAIDED EYE FROM A DISTANCE OF 5'-0".

3.6 INSULATION

- A. WRAP INSULATION FIRMLY AROUND DUCTWORK, COVERING ALL SURFACES INCLUDING STANDING SEAMS, AND WITH ALL JOINTS LAPPED AT LEAST 2".
- B. SECURELY FASTEN THE INSULATION IN PLACE WITH 16 GAGE SOFT ANNEALED BLACK OR GALVANIZED WIRE SPACED APPROXIMATELY 12" ON CENTERS FOR STRAIGHT RUNS AND 3" ON CENTERS FOR ELBOWS AND FITTINGS.
- C. TAKE SPECIAL CARE TO AVOID EXCESSIVE STRETCHING AND COMPRESSING, AND TO ACHIEVE SECURING AT LAPPED SECTIONS WHERE POSSIBLE.

3.7 INSTRUCTIONS

- A. UPON COMPLETION OF THIS PORTION OF THE WORK, AND PRIOR TO ITS ACCEPTANCE BY THE OWNER, PROVIDE A QUALIFIED ENGINEER AND FULLY INSTRUCT THE OWNER'S MAINTENANCE PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF ITEMS PROVIDED UNDER THIS SECTION.
- B. DEMONSTRATE THE CONTENTS OF THE APPROVED OPERATION AND MAINTENANCE MANUAL REQUIRED UNDER ARTICLE 1.3 ABOVE.

3.8 TESTING AND ADJUSTING

- A. TEST AND ADJUST EACH PIECE OF EQUIPMENT AND EACH SYSTEM AS REQUIRED TO ASSURE PROPER BALANCE AND OPERATION.
  1. TEST AND REGULATE VENTILATION AND AIR CONDITIONING SYSTEMS TO CONFORM TO THE AIR VOLUMES SHOWN ON THE APPROVED DESIGN DRAWINGS.
  2. MAKE TESTS AND ADJUSTMENTS IN APPARATUS AND DUCTS FOR EACH GRILLE AND CEILING OUTLET.
  3. WHERE REQUIRED, PROVIDE PULLEYS FOR FANS AT NO ADDITIONAL COST TO THE OWNER, AND SET TO DRIVE THE FANS AT THE SPEED NEEDED TO GIVE THE INDICATED VOLUME.
  4. FOR EACH SYSTEM, TAKE THE FOLLOWING DATA IN TABULATED FORM:
    - a. AIR VOLUMES AT ALL SUPPLY, RETURN, AND EXHAUST OUTLETS;
    - b. TOTAL CFM SUPPLIED;
    - c. TOTAL CFM RETURNED;

d. TOTAL STATIC PRESSURE AT EACH FAN AND AT EACH SYSTEM.


e. MOTOR SPEED, FAN SPEED, AND INPUT AMPERE RATING FOR EACH FAN.

B. SUBMIT TWO SETS OF TEST AND BALANCE REPORTS TO THE ARCHITECT FOR APPROVAL.

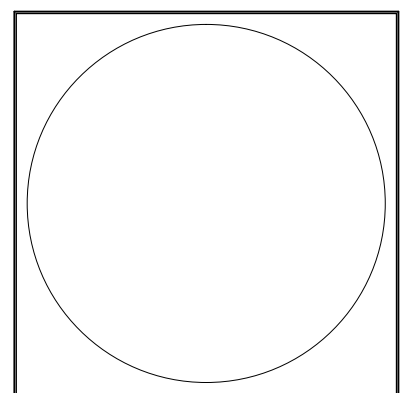
C. ELIMINATE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF ALL CONTROLS, MAINTENANCE OF TEMPERATURE, AND OPERATION IN ACCORDANCE WITH THE APPROVED DESIGN.

D. SECURE REQUIRED APPROVAL FROM GOVERNMENTAL AGENCIES HAVING JURISDICTION.

END OF SECTION

REVISIONS:  
 11/10/2015

DOUGLASS BAND ROOM REPAIRS  
 727 FORT STREET  
 KEY WEST, FLORIDA, 33040



410 Angela Street  
 Key West, Florida 33040  
 Telephone (305) 296-1347  
 Facsimile (305) 296-2727  
 Florida License AAC002022

Bender & Associates  
 ARCHITECTS  
 p.c.

Project No: 1522  
 SPECIFICATIONS CONTINUED  
 Date: 04/17/15

SP1.3

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GENERAL NOTES

- 100. DESIGN CRITERIA
- 100.1 DESIGN BUILDING CODE:
  - A. FLORIDA BUILDING CODE, 2010
- 100.2 GRAVITY LOADS:
  - A. FLOOR LIVE LOADS:
    - 1. GROUND FLOOR \_\_\_\_\_ 100 PSF
    - 2. MECHANICAL MEZZANINE \_\_\_\_\_ 50 PSF
  - B. ROOF LIVE LOADS:
    - 1. FLAT ROOF \_\_\_\_\_ 20 PSF
- 100.3 LATERAL LOADS:
  - A. WIND LOADS (IN ACCORDANCE WITH DESIGN BUILDING CODE PER GENERAL NOTE 100.1)
    - 1. ULTIMATE DESIGN WIND SPEED (3 SECOND GUST),  $V_{ult} = 180$  MPH
    - 2. NOMINAL DESIGN WIND SPEED (3 SECOND GUST),  $V_{asd} = 140$  MPH
    - 3. RISK CATEGORY = II
    - 4. EXPOSURE CATEGORY = C
    - 5. ENCLOSURE CLASSIFICATION = ENCLOSED
    - 6. INTERNAL PRESSURE COEFFICIENT ( $GCPH$ ) =  $+/- 0.18$
    - 7. COMPONENTS AND CLADDING PRESSURES: SEE "COMPONENTS AND CLADDING WIND LOADS" TABLE AND "COMPONENTS AND CLADDING WIND PRESSURE DIAGRAM"
- 110. GENERAL
- 110.1 THESE DRAWINGS HAVE BEEN PRODUCED ENTIRELY ON ATLANTIC ENGINEERING SERVICES' CAD SYSTEM. ANY OTHER LETTERING, LINES OR SYMBOLS, OTHER THAN PROFESSIONAL STAMPS AND SIGNATURES, HAVE BEEN MADE WITHOUT THE AUTHORIZATION OF ATLANTIC ENGINEERING SERVICES AND ARE INVALID.
- 110.2 THE STRUCTURAL DRAWINGS SHALL GOVERN THE WORK FOR ALL STRUCTURAL FEATURES, UNLESS NOTED OTHERWISE. THE ARCHITECTURAL DRAWINGS SHALL GOVERN THE WORK FOR ALL DIMENSIONS.
- 110.3 DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONS. ONLY DIMENSIONS INDICATED ON DRAWINGS MAY BE USED TO ESTABLISH THE LOCATION AND EXTENT OF STRUCTURAL WORK. IF A REQUIRED DIMENSION IS NOT FURNISHED ON DRAWINGS, THE CONTRACTOR SHALL SUBMIT A REQUEST FOR INFORMATION TO OBTAIN THE DIMENSION.
- 110.4 UNLESS OTHERWISE INDICATED, PROVIDE EQUAL SPACING OF STRUCTURAL COMPONENTS BETWEEN OVERALL DIMENSIONS INDICATED ON DRAWINGS.
- 110.5 THE METHOD AND FREQUENCY OF ATTACHING MECHANICAL EQUIPMENT UNITS, ETC., TO THE STRUCTURAL ELEMENTS SHALL BE SUBJECT TO THE ENGINEER'S REVIEW AND APPROVAL.
- 110.6 UNLESS OTHERWISE INDICATED, STRUCTURAL COMPONENTS SUPPORTING MECHANICAL EQUIPMENT HAVE NOT BEEN DESIGNED FOR THE VIBRATIONAL EFFECTS OF THE EQUIPMENT. THE CONTRACTOR SHALL PROVIDE VIBRATION ISOLATORS FOR ANY MECHANICAL EQUIPMENT MOUNTED TO THE STRUCTURE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- 110.7 THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, ETC., AND SHALL NOTIFY THE ARCHITECT OF ANY AND ALL DISCREPANCIES, ADDITIONAL INFORMATION, ETC., BEFORE BEGINNING THE WORK.
- 110.8 THE CONTRACTOR SHALL USE EXTREME CAUTION IN THE DEMOLITION OF EXISTING STRUCTURES. SUCH DEMOLITION SHALL BE PERFORMED IN SUCH A MANNER AS TO MAINTAIN THE STRUCTURAL INTEGRITY OF ALL EXISTING STRUCTURES TO REMAIN. PROVIDE SHORING AS REQUIRED.
- 110.9 THE CONTRACTOR SHALL PREPARE A WRITTEN DEMOLITION PLAN TO BE SUBMITTED TO THE ARCHITECT FOR REVIEW. THIS PLAN IS TO INDICATE, AS A MINIMUM, SEQUENCE OF DEMOLITION OPERATIONS, LOCATION OF PROPOSED TEMPORARY SHORING, SCAFFOLDING, BRACING, ETC., AND PROPOSED METHOD OF DEMOLITION. WHERE REQUIRED, THE CONTRACTOR SHALL RETAIN THE SERVICES OF A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF FLORIDA FOR THE DESIGN OF TEMPORARY SHORING AND BRACING. THE REVIEW OF THE PROPOSED DEMOLITION PLAN IS FOR CONFORMANCE WITH THE DESIGN CONCEPT AND FOR GENERAL COMPLIANCE WITH THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS. COMMENTS REGARDING THESE SUBMITTALS DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.
- 110.10 ALL STRUCTURAL WORK SHALL BE INSPECTED IN ACCORDANCE WITH THE BUILDING CODE AND ALL LOCAL ORDINANCES. THE OWNER SHALL ENGAGE AN EXPERIENCED, QUALIFIED INSPECTION AGENCY, SUBJECT TO THE REVIEW OF THE ARCHITECT, TO PERFORM ALL INSPECTION WORK, AS REQUIRED. THRESHOLD BUILDINGS SHALL BE INSPECTED BY A LICENSED THRESHOLD INSPECTOR IN ACCORDANCE WITH THE THRESHOLD INSPECTION PLAN.
- 120. SHOP DRAWINGS
- 120.1 THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW BY ATLANTIC ENGINEERING SERVICES AND THE PROJECT ARCHITECT. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL COMPONENTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
  - A. CONCRETE AND/OR MASONRY POST-INSTALLED ANCHORS
  - B. COLD FORMED METAL FABRICATIONS UTILIZED IN WOOD-TO-WOOD CONNECTIONS.
  - C. CONCRETE REPAIR MATERIAL DATA SHEETS.
  - D. REINFORCING STEEL FOR CONCRETE AND MASONRY.
- 120.2 SHOP DRAWINGS TO BE SUBMITTED SHALL PROVIDE COMPLETE INFORMATION FOR THE PRODUCTS OR COMPONENTS TO BE SUPPLIED. SUBMITTAL INFORMATION SHALL INCLUDE, BUT NOT BE LIMITED TO: MEMBER SIZES AND DIMENSIONS; GRADES OF MATERIAL FURNISHED; MATERIAL PREPARATION REQUIRED; MATERIAL FINISH AND MATERIAL COATINGS TO BE FURNISHED; INFORMATION REGARDING CUTS, COPES, AND HOLES REQUIRED FOR OTHER TRADES; END CONNECTIONS; CAMBER AND OTHER DEVIATION FROM LINE; SPECIAL ERECTION AND/OR INSTALLATION PROCEDURES, INCLUDING REQUIREMENTS FOR TEMPORARY STABILIZATION.
- 120.3 ALL SHOP DRAWING RESUBMITTALS AND RECORD COPY SUBMITTALS SHALL HAVE ALL REVISIONS SUBSEQUENT TO THE PREVIOUS SUBMISSION CLOUDED OR OTHERWISE IDENTIFIED ON THE RESUBMITTED SHEETS. RESUBMITTALS AND RECORD COPY SUBMITTALS WITHOUT IDENTIFICATION OF REVISIONS WILL BE REJECTED WITHOUT REVIEW.

- 120.4 THE CONTRACTOR SHALL NOT DIRECTLY INCORPORATE THE STRUCTURAL DRAWINGS, OR PORTIONS THEREOF, INTO SHOP DRAWINGS OR ERECTION DRAWINGS TO BE SUBMITTED FOR THIS PROJECT WITHOUT FIRST OBTAINING THE EXPRESS WRITTEN PERMISSION OF ATLANTIC ENGINEERING SERVICES. SUBMITTED SHOP DRAWINGS WHICH CONTAIN COPIES OR REPRODUCTIONS OF ANY PORTION OF THE STRUCTURAL DRAWINGS WITHOUT THE EXPRESS WRITTEN PERMISSION OF ATLANTIC ENGINEERING SERVICES WILL BE RETURNED REJECTED. PERMISSION FOR A SPECIFIC CONTRACTOR OR SUB-CONTRACTOR TO USE PORTIONS OF THE STRUCTURAL DRAWINGS IN THEIR PREPARATION OF SHOP DRAWINGS REQUIRES THAT CONTRACTOR OR SUB-CONTRACTOR TO ENTER INTO A WRITTEN AGREEMENT WITH ATLANTIC ENGINEERING SERVICES AND TO PAY A SERVICE FEE. SUCH AGREEMENT IS NON-TRANSFERABLE AND IS EXTENDED ONLY TO THAT CONTRACTOR FOR THE DURATION OF THIS PROJECT.
- 120.5 THE CONTRACTOR SHALL SUBMIT PRINTED COPIES OF SHOP DRAWINGS FOR REVIEW BY ATLANTIC ENGINEERING SERVICES. PRINTED COPIES OF SHOP DRAWINGS SHALL CONSIST OF FOUR (4) REPRODUCIBLE PRINTS. UPON THE COMPLETION OF THE SHOP DRAWING REVIEW, THREE (3) PRINTS SHALL BE RETURNED TO THE PROJECT ARCHITECT. ONE (1) SHALL BE RETAINED BY THE ARCHITECT, ONE (1) SHALL BE DISTRIBUTED TO THE OWNER, AND ONE (1) SHALL BE SENT TO THE CONTRACTOR FOR DISTRIBUTION AS REQUIRED.
- 120.6 SUBJECT TO THE APPROVAL OF ATLANTIC ENGINEERING SERVICES, THE CONTRACTOR MAY SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS IN LIEU OF PRINTED COPIES. ELECTRONIC COPIES SHALL BE SUBMITTED TO ATLANTIC ENGINEERING SERVICES IN ADOBE ACROBAT FILE FORMAT, WITH ONE (1) ELECTRONIC FILE PER PACKAGE SUBMISSION. ATLANTIC ENGINEERING SERVICES WILL PRINT, REVIEW, RE-SCAN THE REVIEWED SHOP DRAWINGS WITH ALL COMMENTS/NOTATIONS, AND RETURN ONE (1) ELECTRONIC PACKAGE TO THE ARCHITECT TO PRINT, REVIEW, RE-SCAN, AND DISTRIBUTE TO THE CONTRACTOR.
- 120.7 THE REVIEW OF SHOP DRAWINGS AND OTHER SUBMITTALS FOR THIS PROJECT IS FOR CONFORMANCE WITH THE DESIGN CONCEPT AND FOR GENERAL COMPLIANCE WITH THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS. COMMENTS REGARDING THESE SUBMITTALS DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.
- 300. REINFORCED CONCRETE
- 300.1 ALL REINFORCED CONCRETE WORK SHALL BE IN CONFORMANCE WITH THE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318, LATEST EDITION) AND SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301, LATEST EDITION) OF THE AMERICAN CONCRETE INSTITUTE.
- 300.2 MINIMUM DESIGN COMPRESSION STRENGTH ( $F'_c$ ) REQUIRED AT 28 DAYS:
  - A. SLABS ON GRADE \_\_\_\_\_ 4000 PSI
- 300.3 MAXIMUM WATER TO CEMENTITIOUS MATERIALS RATIO:
  - A. SLABS ON GRADE \_\_\_\_\_ 0.56
- 300.4 ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (MINIMUM 144 PCF) WITH ALL CEMENT CONFORMING TO ASTM C150, TYPE I, II OR III. MAXIMUM AGGREGATE SIZE SHALL BE 1-1/2" FOR FOOTINGS AND 3/4" FOR WALLS AND SLABS, CONFORMING TO ASTM C33.
- 300.5 REINFORCEMENT
  - A. DEFORMED BARS \_\_\_\_\_ ASTM A615, GRADE 60
  - B. DEFORMED BARS (WELDABLE) \_\_\_\_\_ ASTM A706, GRADE 60
  - C. WELDED WIRE FABRIC \_\_\_\_\_ ASTM A185
- 300.6 MINIMUM COVER FOR CAST-IN-PLACE CONCRETE REINF., UNLESS OTHERWISE SHOWN ON DRAWINGS, SHALL BE AS FOLLOWS:
  - A. BEAMS (OVER MAIN REINF.) \_\_\_\_\_ 2"
  - B. COLUMNS \_\_\_\_\_ 2"
- 300.7 SPLICES IN REINFORCEMENT, WHERE PERMITTED, SHALL BE AS FOLLOWS:
  - A. WELDED WIRE MESH \_\_\_\_\_ 8"
  - B. ALL OTHERS \_\_\_\_\_ CLASS "B" TENSION, CASE "1" MINIMUM, UNLESS OTHERWISE NOTED
- 300.8 CLASS "B", CASE "1" TENSION SPLICES IN INCHES, SHALL BE AS FOLLOWS:
 

4000 PSI		
SIZE	TOP BARS	ALL OTHERS
#3 (#10)	24	19
#4 (#13)	32	25
#5 (#16)	40	31
#6 (#19)	48	37
- 300.9 SPLICES IN TOP REINFORCEMENT SHALL BE LOCATED AT MIDSPAN AND SPLICES IN BOTTOM REINFORCEMENT SHALL BE LOCATED OVER SUPPORTS, UNLESS NOTED OTHERWISE.
- 300.10 TOP BARS IN BEAMS SHALL TERMINATE IN A CLASS "B" TENSION SPLICE OR HOOK AT DISCONTINUOUS END.
- 300.11 ALL REINFORCING SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES DURING PLACEMENT OF CONCRETE. REINFORCING SUPPORTS FOR ALL EXPOSED CONCRETE SHALL BE GALVANIZED WITH PLASTIC COATED FEET. ALL WELDED WIRE MESH SHALL BE CHAIRED IN ACCORDANCE WITH THE DESIGN BUILDING CODE.
- 300.12 ALL TIES SHALL HAVE 135 DEGREE HOOKS.
- 300.13 CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF ALL SLOTS, PIPE SLEEVES, ETC., AS REQUIRED FOR MECHANICAL TRADES BEFORE CONCRETE IS PLACED.
- 300.14 PIPES OR CONDUITS PLACED IN SLABS SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 THE SLAB THICKNESS AND SHALL NOT BE SPACED CLOSER THAN 3 DIAMETERS ON CENTERS. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN SLAB WITHIN 12" OF COLUMN FACE OR FACE OF BEARING WALL. NO CONDUITS MAY BE PLACED IN EXTERIOR SLABS.
- 300.15 PRIOR TO CONCRETE PLACEMENT, THE CONTRACTOR SHALL SUBMIT A CONCRETE MIX DESIGN PREPARED IN ACCORDANCE WITH ACI-318 CHAPTER 5 TO THE STRUCTURAL ENGINEER FOR REVIEW.
- 350. CONCRETE/MASONRY ANCHORS
- 350.1 ALL ADHESIVE STUD ANCHORS SHALL BE "HILTI HIT-HY 200 ADHESIVE CONCRETE ANCHORS" AS MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. (OR APPROVED EQUIVALENT).
- 350.2 ALL EXPANSION STUD ANCHORS SHALL BE "HILTI KWIK-BOLT 3 EXPANSION CONCRETE ANCHORS" AS MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. (OR APPROVED EQUIVALENT).
- 350.3 THE "HAS ANCHOR ROD" SHALL CONFORM TO ASTM A36 STEEL, THE "HAS SUPER ANCHOR ROD" SHALL CONFORM TO ASTM A193 STEEL, AND THE NUT SHALL CONFORM TO ASTM A563, GRADE A.
- 350.4 THE "KWIK-BOLT 3 EXPANSION ANCHORS" STUD SHALL CONFORM TO ASTM A510 OR ASTM A108 STEEL AND THE NUT SHALL CONFORM TO ASTM A563, GRADE A.

- 350.5 ALL EPOXY ADHESIVE ANCHORS FOR ANCHORING TO HOLLOW MASONRY SHALL BE "HILTI HIT-HY 70 ADHESIVE ANCHORS" AS MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. (OR EQUAL).
- 350.6 THE SPACING, MINIMUM EMBEDMENT, AND INSTALLATION OF THE ANCHORS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES.
- 420. MASONRY
- 420.1 ALL MASONRY WORK SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (TMS 402/ACI 530/ASCE 5) AND THE "SPECIFICATIONS FOR MASONRY STRUCTURES" (TMS 602/ACI 530.1/ASCE 6) OF THE MASONRY SOCIETY.
- 420.2 ALL MASONRY WORK TO BE EXECUTED IN COLD WEATHER SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS FOR COLD WEATHER CONSTRUCTION OF THE LATEST EDITION OF "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (TMS 402/ACI 530/ASCE 5) AND THE "SPECIFICATIONS FOR MASONRY STRUCTURES" (TMS 602/ACI 530.1/ASCE 6) OF THE MASONRY SOCIETY WITH THE FOLLOWING ADDITION TO THE REQUIREMENTS OF TMS 602/ACI 530.1/ASCE 6, SECTION 1.8-C: FOR ALL CONDITIONS WHEN TEMPERATURES FALL BELOW 40 DEGREES F, THE TEMPERATURE OF THE NEWLY LAID MASONRY OR NEWLY GRouted MASONRY SHALL BE MAINTAINED ABOVE 32 DEGREES (F) FOR A MINIMUM OF 24 HOURS USING THE METHODS DESCRIBED IN TMS 602/ACI 530.1/ASCE 6.
- 420.3 MORTAR SHALL CONFORM TO THE PROPORTION SPECIFICATION OF ASTM C270, TYPE M OR S. PROVIDE TYPE M MORTAR AT ALL HIGH STRENGTH MASONRY NOTED AS  $F_m = 2500$  PSI OR GREATER. PROVIDE TYPE S MORTAR AT ALL STRUCTURAL MASONRY AND REINFORCED MASONRY UNLESS NOTED OTHERWISE.
- 420.4 GROUT SHALL CONFORM TO ASTM C476 AND AS FOLLOWS:
  - A. COMPRESSIVE STRENGTH ( $F'_c$ ) OF GROUT =  $F_m$  AS INDICATED BELOW BUT NO LESS THAN 2,000 PSI.
  - B. SLUMP OF GROUT SHALL BE 8 TO 11 INCHES AS MEASURED ACCORDING TO ASTM C143.
  - C. MAX. AGGREGATE SIZE SHALL BE 3/8" (AGGREGATE GRADED TO PRODUCE FINE GROUT IN CONFORMANCE WITH ASTM C476 AND C404).
- 420.5 LIMIT CEMENTITIOUS MATERIALS IN MORTAR TO: PORTLAND CEMENT CONFORMING TO ASTM C150 TYPE I LIME CONFORMING TO ASTM C207; MORTAR CEMENT CONFORMING TO ASTM C1329; AND MASONRY CEMENT CONFORMING TO ASTM C91.
- 420.6 PROVIDE SOLID AND HOLLOW LOAD BEARING CONCRETE BLOCK UNITS CONFORMING TO ASTM C90. FURNISH CONCRETE BLOCK WITH NET AREA COMPRESSIVE STRENGTH.
- 420.7 MINIMUM 28-DAY ULTIMATE COMPRESSIVE STRENGTH OF MASONRY:
  - A.  $F_m$  \_\_\_\_\_ 1500 PSI
- 420.8 HORIZONTAL JOINT REINFORCING FOR ALL EXTERIOR AND LOAD BEARING WALLS SHALL BE GALVANIZED (TRUSS OR LADDER TYPE DUR-O-WAL, OR EQUIVALENT AS APPROVED BY THE ENGINEER WITH 2-3/16" DIAMETER LONGITUDINAL WIRE AND 9 GAGE CROSS WIRE, SPACED AT 16" CENTER TO CENTER, UNLESS NOTED OTHERWISE. PROVIDE ADDITIONAL LAYERS OF JOINT REINFORCEMENT IN THE FIRST TWO COURSES ABOVE AND BELOW A MASONRY OPENING. PROVIDE LAP AS RECOMMENDED BY MANUFACTURER WITH A MINIMUM OF 6". DISCONTINUE JOINT REINFORCING AT CONTROL JOINTS. PROVIDE "L" SHAPE AND "T" SHAPE DUR-O-WAL AT ALL INTERSECTION CORNERS WITH 8" MINIMUM LAP. SEE TYPICAL DETAILS.
- 420.9 FULL BED AND HEAD JOINTS SHALL BE USED.
- 420.10 ALL MASONRY WALLS SHALL BE SECURELY BRACED UNTIL FLOOR OR ROOF SYSTEM HAS BEEN INSTALLED AND HAS BECOME CAPABLE OF STABILIZING THE WALLS.
- 420.11 GROUT SOLID ALL CELLS IN MASONRY UNITS INSTALLED BELOW GRADE.
- 420.12 GROUT SOLID ALL CELLS CONTAINING REINFORCING, AND WHERE INDICATED ON PLANS AND SECTIONS.
- 420.13 PROVIDE FINE GROUT PER ASTM C476 WHEN WIDTH OF GROUT SPACE IS LESS THAN 2". PROVIDE COARSE GROUT FOR GROUT SPACE WIDTHS 2" OR GREATER. PROVIDE FINE GROUT WHEN REINFORCING HAS LESS THAN 1/2" CLEARANCE.
- 420.14 PROVIDE CONTROL JOINTS IN MASONRY CONSTRUCTION PER THE TYPICAL DETAILS. REFER TO ARCHITECTURAL DRAWINGS FOR CONTROL JOINT WIDTH AND LOCATIONS. THE CONTRACTOR SHALL SUBMIT THE PROPOSED CONTROL JOINT LAYOUT TO THE ARCHITECT FOR REVIEW AND APPROVAL. PROVIDE MASONRY CONTROL JOINTS IN ACCORDANCE WITH THE FOLLOWING GUIDELINES UNLESS OTHERWISE INDICATED ON DRAWINGS:
  - A. ALIGN CONTROL JOINTS IN CONCRETE MASONRY BACKUP FOR MULTI-WYTHE AND CAVITY WALLS TO MATCH LOCATIONS IN MASONRY VENEER UNLESS NOTED OTHERWISE.
  - B. CONTROL JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF 20 FEET ON CENTER IN THE WALL FIELD AND A MAXIMUM OF 10 FEET FROM BUILDING CORNERS
  - C. LOCATE CONTROL JOINTS AT MAJOR HEIGHT CHANGES, CHANGES IN WALL THICKNESS AND AT WALL OPENINGS.
  - D. CONTROL JOINTS IN PARAPETS SHALL BE SPACED AT 15 FEET ON CENTER MAXIMUM. WHERE JOINTS IN PARAPETS CAN NOT BE ALIGNED WITH JOINTS IN WALL FIELD, PROVIDE CONTROL JOINTS IN THE PARAPET ONLY AT HALF THE WALL FIELD SPACING.
  - E. CONTROL JOINTS SHALL BE A MINIMUM WIDTH OF 3/8" AND SHALL UTILIZE COMPRESSIBLE MATERIAL WITH A MINIMUM EXTENSIBILITY OF 60%.
- 420.15 PROVIDE CLEAN OUT AND INSPECTION HOLES AT BOTTOM OF MASONRY WALL IN ACCORDANCE WITH MASONRY CODE AT REINFORCING IF HIGH LIFT GROUTING (OVER 4 FEET HIGH) IS USED.
- 420.16 DEFORMED BAR REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60. PROVIDE LAP SPLICES PER THE TABLE BELOW. PROVIDE BAR SPACERS AS REQUIRED TO PROPERLY LOCATE REINFORCING.
 

#3 (#10)	15"
#4 (#13)	20"
#5 (#16)	25"
#6 (#19)	39"
- 420.17 MASONRY COURSING SHOWN IN SECTION IS APPROXIMATE. REFER TO PLANS AND ELEVATIONS FOR ACTUAL COURSING. COORDINATE ACTUAL COURSING REQUIREMENTS WITH ARCHITECTURAL DRAWINGS.
- 420.18 BRICK VENEER ANCHORS SHALL BE PROVIDED PER ACI 530 AND SHALL BE SPACED NOT MORE THAN 16" O.C. HORIZONTALLY OR VERTICALLY WITH ADDITIONAL ANCHORS PROVIDED WITHIN 8" OF OPENINGS AND SPACED NOT MORE THAN 16" AROUND PERIMETER. BRICK VENEER ANCHORS INSTALLED IN WALLS WITH A DIMENSION FROM INSIDE FACE OF BRICK TO FACE OF BACKUP SUBSTRATE GREATER THAN 4 1/2" SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA FOR WIND LATERAL LOADS.
- 420.19 ALL ANCHOR BOLTS SHALL CONFORM TO ASTM A307.

- 610. STRUCTURAL LUMBER
- 610.1 ALL STRUCTURAL LUMBER WORK SHALL BE IN ACCORDANCE WITH THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" (NDS - LATEST EDITION) PUBLISHED BY THE AMERICAN WOOD COUNCIL.
- 610.2 ALL STRUCTURAL LUMBER SHALL BE AS A MINIMUM NO. 2 GRADE SOUTHERN PINE AND SHALL HAVE AT LEAST THE FOLLOWING MINIMUM ALLOWABLE DESIGN STRESSES (NOT INCORPORATING THE SIZE ADJUSTMENT FACTOR (CF)) AND MODULUS OF ELASTICITY AT A MAXIMUM MOISTURE CONTENT OF 19%:
 

A. $F_b$ (BENDING)	750 PSI
B. $F_v$ (SHEAR)	175 PSI
C. $F_c$ (COMPRESSION)	1,250 PSI
D. $F_t$ (TENSION)	450 PSI
E. $E$	1,400,000 PSI
- 610.3 ALL LUMBER SHALL COMPLY WITH PS 20 "AMERICAN SOFTWOOD LUMBER STANDARD" AND WITH THE APPLICABLE RULE OF INSPECTION AGENCIES CERTIFIED BY AMERICAN LUMBER STANDARD. FACTORY-MARK EACH PIECE OF LUMBER WITH GRADE STAMP OF INSPECTION AGENCY EVIDENCING COMPLIANCE WITH GRADING RULE REQUIREMENTS.
- 610.4 STRUCTURAL STEEL PLATES, ANGLES, ETC., SHALL BE ASTM A36. CONTRACTOR TO SUBMIT SHOP DRAWINGS ON ALL MISCELLANEOUS METALS FOR REVIEW BY STRUCTURAL ENGINEER.
- 610.5 ALL BOLTS SHALL BE 5/8" DIAMETER ASTM A307 UNLESS NOTED OTHERWISE WITH 2 WASHERS PER BOLT UNLESS OTHERWISE NOTED.
- 610.6 NO CUTS, HOLES, OR COPES REQUIRED FOR OTHER TRADES IN STRUCTURAL WOOD FRAMING WILL BE PERMITTED WITHOUT PRIOR REVIEW AND APPROVAL OF ENGINEER AND ARCHITECT.
- 610.7 PRESSURE TREAT WITH WATER-BORNE PRESERVATIVES ALL LUMBER FOR SILL PLATES AND OTHER WOOD WHICH MAY BE EXPOSED TO WEATHER OR EARTH. PRESSURE TREATMENT SHALL COMPLY WITH REQUIREMENTS OF AWWA STANDARDS C2 AND LP-22.
- 610.8 PROVIDE NAILING PATTERN IN COMPLIANCE WITH THE DESIGN BUILDING CODE'S RECOMMENDED FASTENING SCHEDULE WHEN JOINING TWO OR MORE FRAMING MEMBERS.
- 610.9 ALL WOOD JOISTS BEARING ENDS SHALL BE ANCHORED TO SUPPORT IN WOOD FRAMING WITH A TYPE A34 FRAMING ANCHOR, AS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, INC.
- 610.10 ALL WOOD JOIST OR HEADERS ENDS WHICH FRAME INTO BEAMS SHALL BE HUNG WITH THE FOLLOWING JOISTS HANGERS, AS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, INC., OR WITH APPROVED SUBSTITUTES WITH THE FOLLOWING WORKING LOAD CAPACITIES.
 

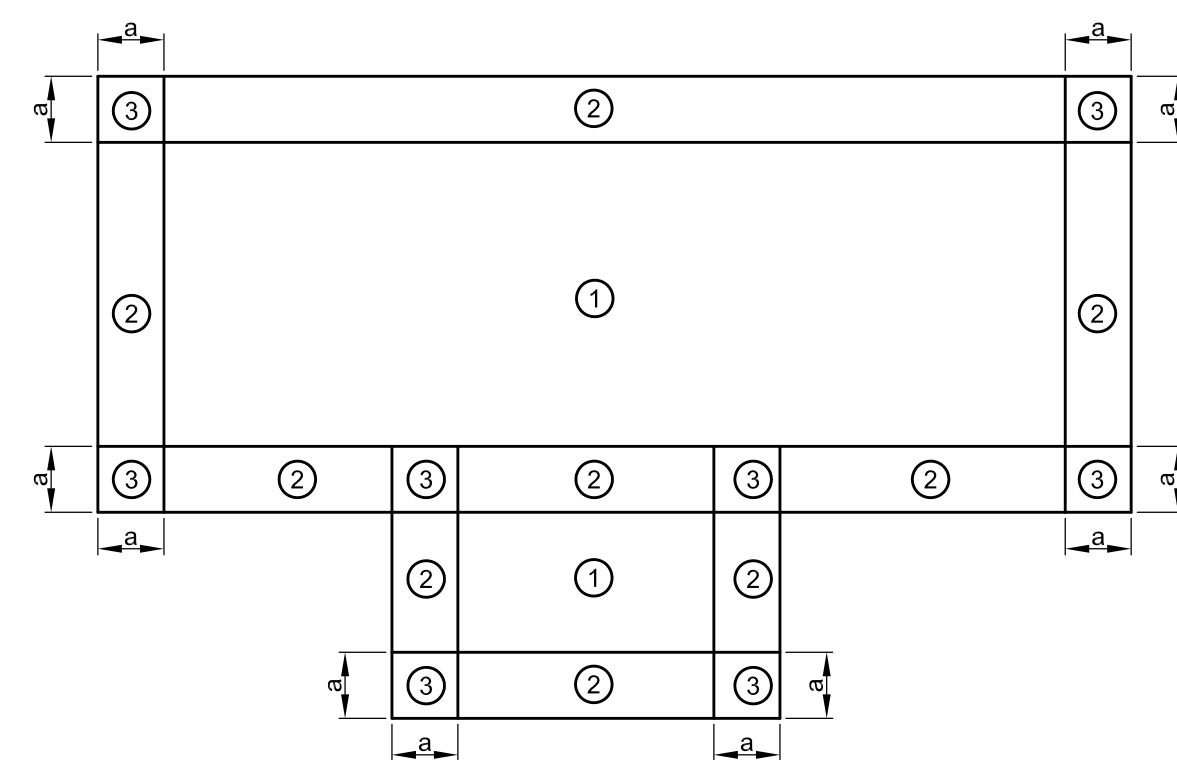
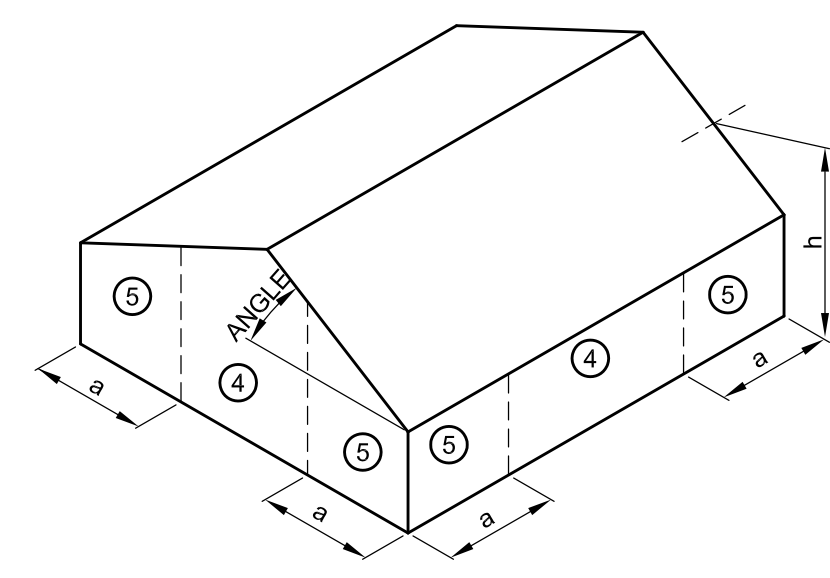
JOIST SIZE	SIMPSON HANGER	LOAD CAPACITY
2X6	U26	705 LBS.
2X8	U26	705 LBS.
2X10	U210	1,175 LBS.
2X12	U210	1,175 LBS.
2-2X8	HU26-2	990 LBS.
2-2X8	HU28-2	1,303 LBS.
2-2X10	HU210-2	1,666 LBS.
2-2X12	HU212-2	2,016 LBS.
- 610.11 ALTERNATE CONNECTION DETAILS MAY BE USED IF SUCH DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. HOWEVER, THE ENGINEER SHALL BE THE SOLE JUDGE OF ACCEPTANCE AND THE CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF THOSE SPECIFIED DETAILS SHOWN ON THE DRAWINGS THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF SUCH ALTERNATE DETAILS WHICH HE PROPOSES.

- 620. STRUCTURAL WOOD PANELS/WOOD SHEATHING
- 620.1 FURNISH PANELS THAT ARE EACH FACTORY MARKED WITH A CERTIFICATION STAMP EVIDENCING COMPLIANCE WITH GRADE AND SPAN RATING REQUIREMENTS. THE CENTER-TO-CENTER SPACING IN INCHES SHALL NOT EXCEED THE SPAN RATING STAMPED ON THE PANELS. INSTALLATION OF THE PANELS SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE APA.
  - A. WALLS SHEATHING:
    - 1. MIN. THICKNESS = 3/4"
    - 2. BOND CLASSIFICATION = EXPOSURE 1
    - 3. GRADE = APA RATED SHEATHING STRUCTURAL I
    - 4. SPAN RATING = AS REQUIRED TO SUIT JOIST/TRUSS SPACING
- 620.2 PANELS SHALL COMPLY WITH USDCO PS-1 OR PS-2 AND APA PRP-108 AND SHALL MEET THE FOLLOWING REQUIREMENTS:
  - A. WALLS SHEATHING:
    - 1. MIN. THICKNESS = 3/4"
    - 2. BOND CLASSIFICATION = EXPOSURE 1
    - 3. GRADE = APA RATED SHEATHING STRUCTURAL I
    - 4. SPAN RATING = AS REQUIRED TO SUIT JOIST/TRUSS SPACING
- 620.3 ALL PANELS WHICH HAVE ANY EDGE OR FACE PERMANENTLY EXPOSED TO THE WEATHER SHALL BE CLASSED EXTERIOR, EXCEPT OPEN SOFFITS OR ROOF SHEATHING EXPOSED ON THE UNDERSIDE MAY BE CLASSED EXPOSURE 1.
- 620.4 ALL WALL STRUCTURAL PANELS SHALL BE NAILED WITH 10D COMMON NAILS AT 6" ON CENTER AT ALL ENDS AND EDGES AND AT 10" ON CENTER AT ALL INTERMEDIATE SUPPORTS.
- 620.5 ALL PLYWOOD PANELS SHALL COMPLY WITH THE WIND UPLIFT REQUIREMENTS OF NM519 FOR FULLY-WIND-RESISTIVE ROOF ASSEMBLIES COMPLYING WITH UL CLASS 90 CLASSIFICATION.

**COMPONENTS AND CLADDING WIND LOADS FOR EXPOSURE C  $V_u = 180$  mph**

ROOF ANGLE 0 DEGREES		
ZONE	EFFECTIVE WIND AREA (FT) <sup>2</sup>	Psit WIND PRESSURES
1	10.0	30 -72
1	20.0	28 -70
1	50.0	25 -68
1	100.0	24 -66
2	10.0	30 -121
2	20.0	28 -108
2	50.0	25 -91
2	100.0	24 -78
3	10.0	30 -181
3	20.0	28 -150
3	50.0	25 -109
3	100.0	24 -78
WALL		
4	10.0	66 -71
4	20.0	63 -68
4	50.0	59 -65
4	100.0	56 -62
5	10.0	66 -88
5	20.0	63 -82
5	50.0	59 -75
5	100.0	56 -68

NOTES:  
1. TABULATED COMPONENT AND CLADDING PRESSURES (Psit) HAVE BEEN CALCULATED IN ACCORDANCE WITH THE DESIGN BUILDING CODE PER NOTE 100.1 BASED ON ULTIMATE DESIGN WIND SPEED (V<sub>ult</sub>) PER NOTE 100.3A AND SHOULD BE USED IN CONJUNCTION WITH ASCE 7-10 LOAD COMBINATIONS. TABULATED PRESSURES CAN BE CONVERTED TO NOMINAL VALUES BY MULTIPLYING BY 0.6.



**COMPONENTS AND CLADDING WIND PRESSURE DIAGRAM**  
a=5'-6"

**DOUGLASS BAND ROOM REPAIRS**  
727 FORT STREET  
KEY WEST, FLORIDA, 33040

410 Angela Street  
Key West, Florida 33040  
Telephone (305) 236-1347  
Facsimile (305) 296-2727  
Florida License AA0020222

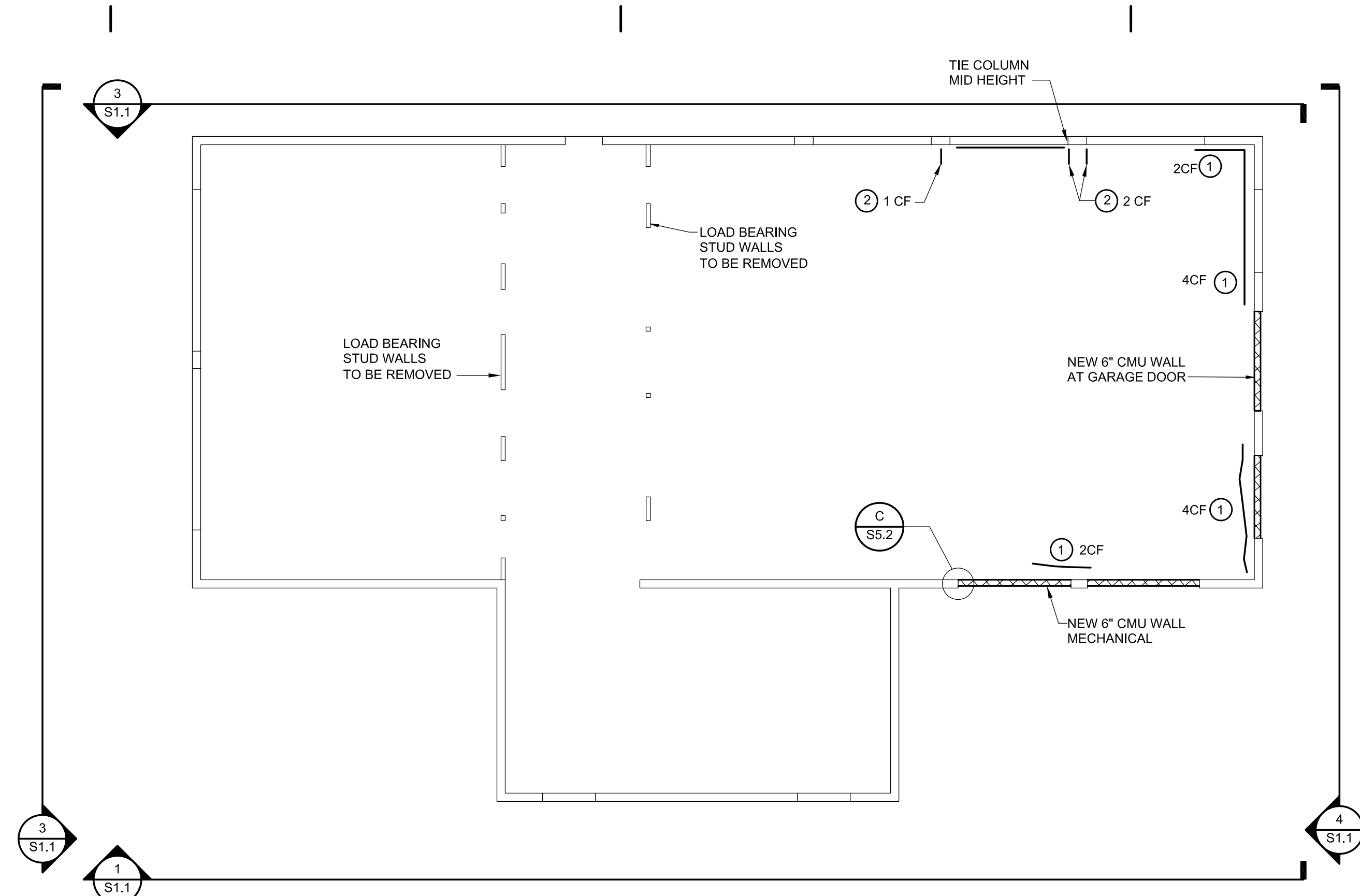
*Bender & Associates*  
**ARCHITECTS**  
p.c.

Project No: 1522  
GENERAL NOTES/COMPONENTS AND CLADDING  
Date: 09/17/15

S0.1

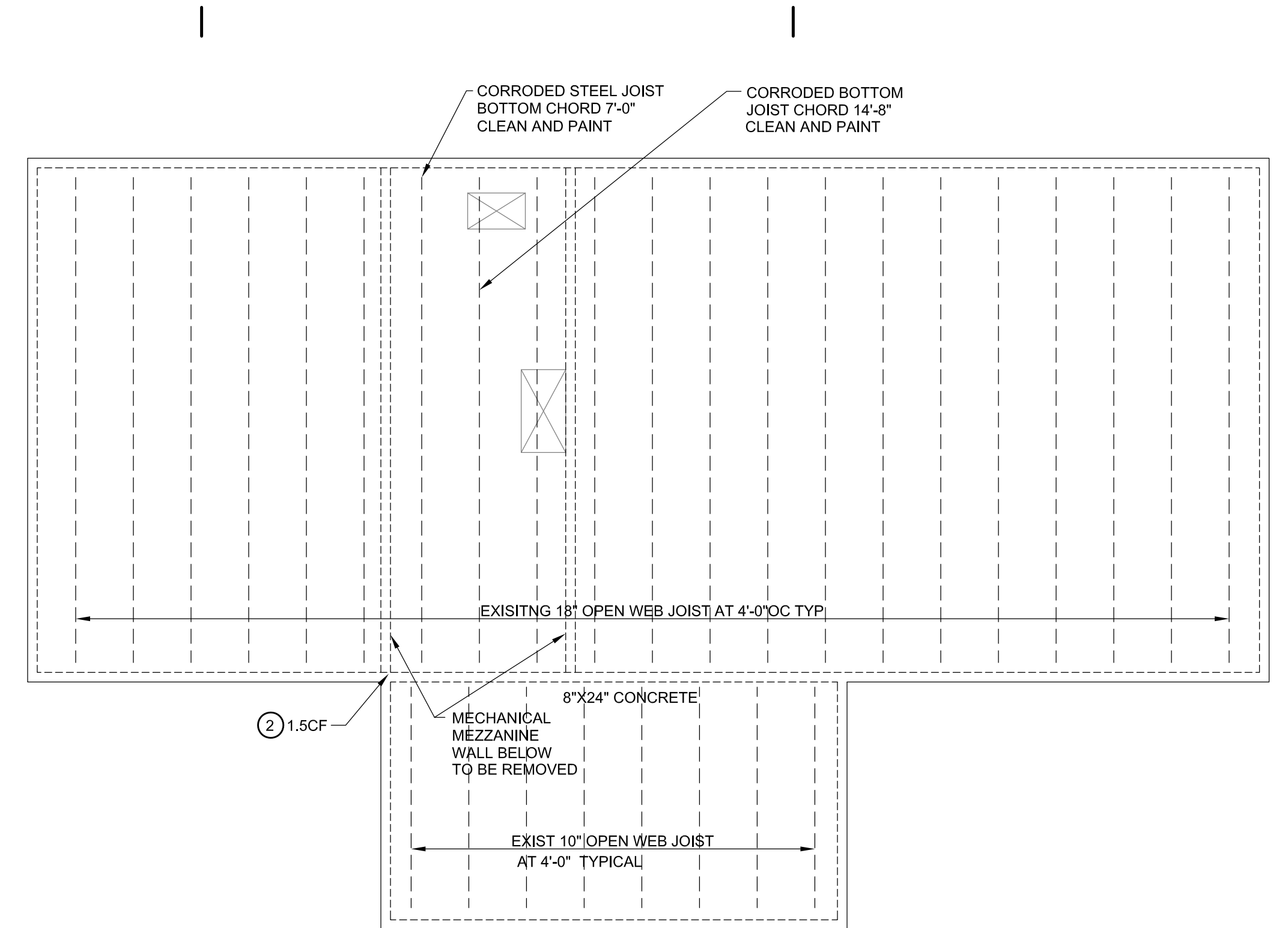
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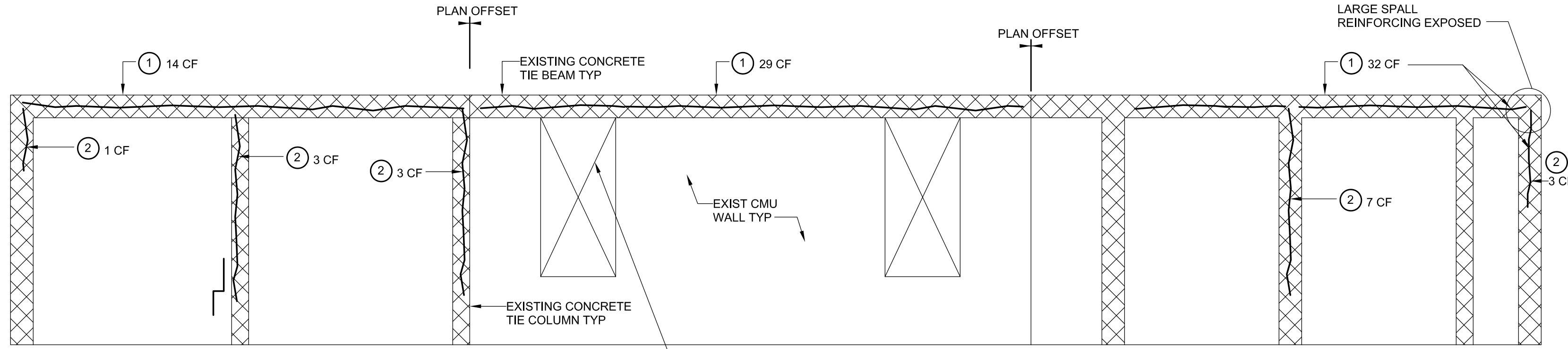
**FLOOR REPAIR PLAN**

SCALE: 1/8" = 1'-0"  
 NOTES:  
 ① LINEAR SPALL IN CONCRETE BEAM SEE B/S5.1, D/S5.1, AND E/S5.1.  
 ② LINEAR SPALL IN CONCRETE COLUMN SEE C/S5.1.

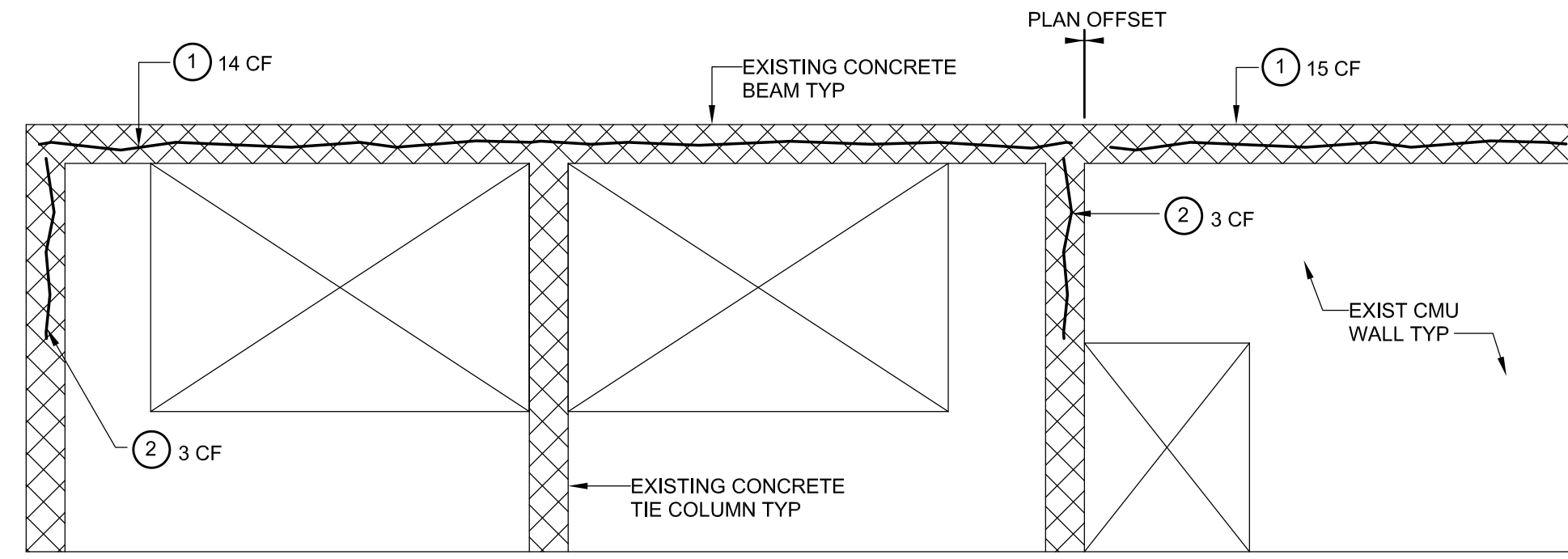


**EXISTING ROOF PLAN**

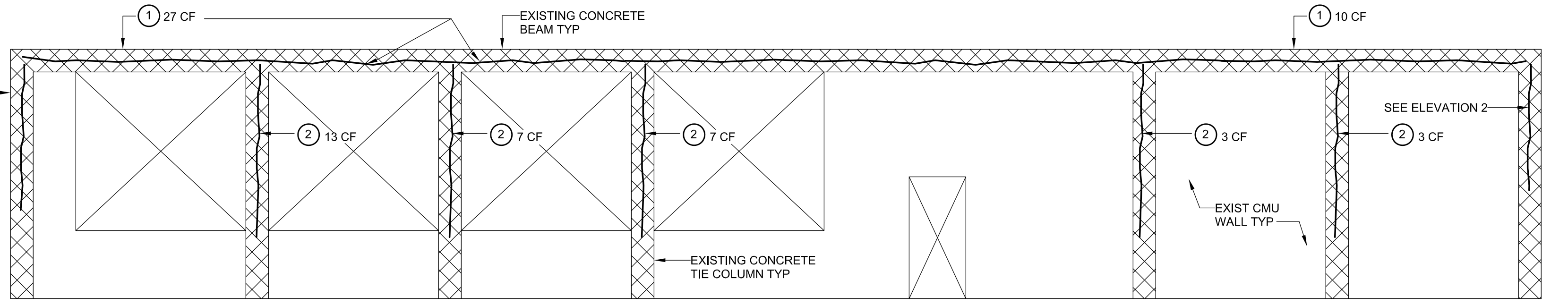
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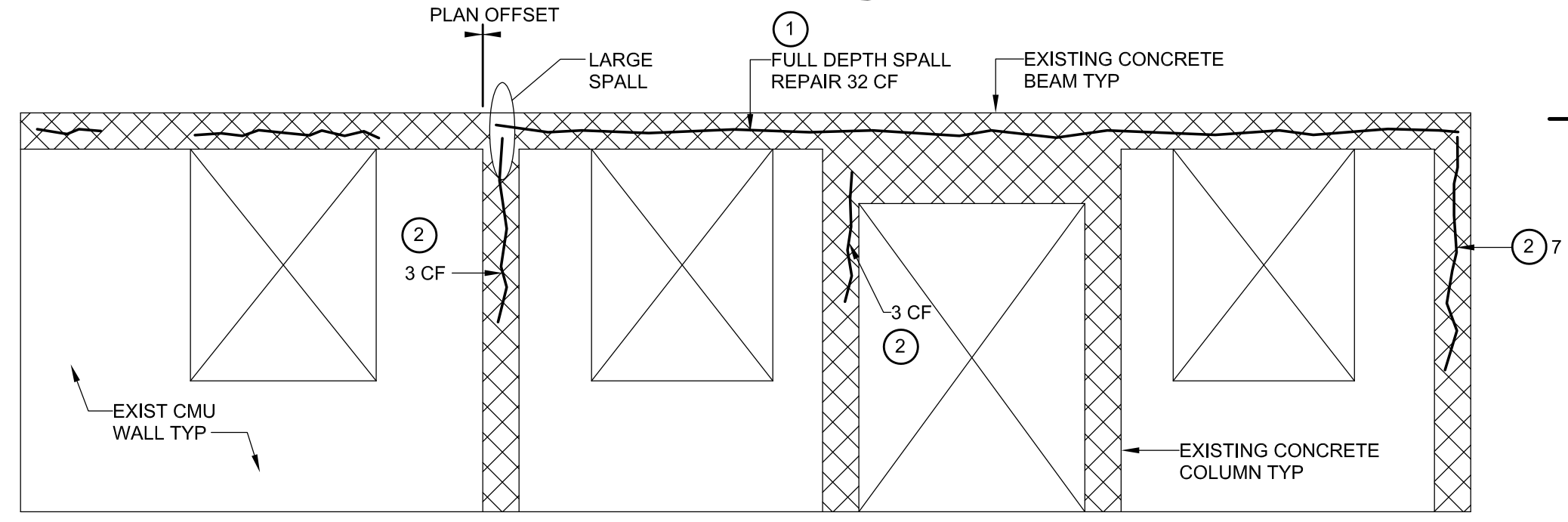
**SECTION 1**  
 SCALE: 3/16" = 1'-0"  
 S1.1



**SECTION 2**  
 SCALE: 3/16" = 1'-0"  
 S1.1



**SECTION 3**  
 SCALE: 3/16" = 1'-0"  
 S1.1



**SECTION 4**  
 SCALE: 3/16" = 1'-0"  
 S1.1

NOTES:  
 ① LINEAR SPALL IN CONCRETE BEAM SEE B/S5.1, D/S5.1, AND E/S5.1.  
 ② LINEAR SPALL IN CONCRETE COLUMN SEE C/S5.1.

0 5' 10'  
 SCALE: 3/16" = 1'-0"  
 0 8' 16'  
 SCALE: 1/8" = 1'-0"  

 MARK J. KESTER PE 31405  
 ATLANTIC ENGINEERING SERVICES  
 4501 Arlington Expressway  
 Building B, Suite 201  
 Jacksonville, FL 32217  
 PH: 904.743.4633 FX: 904.725.9295  
 35-18  
 FL. COA. #78

**DOUGLASS BAND ROOM REPAIRS**  
 727 FORT STREET  
 KEY WEST, FLORIDA, 33040

410 Angela Street  
 Key West, Florida 33040  
 Telephone (305) 296-1347  
 Facsimile (305) 296-2727  
 Florida License AAC002022

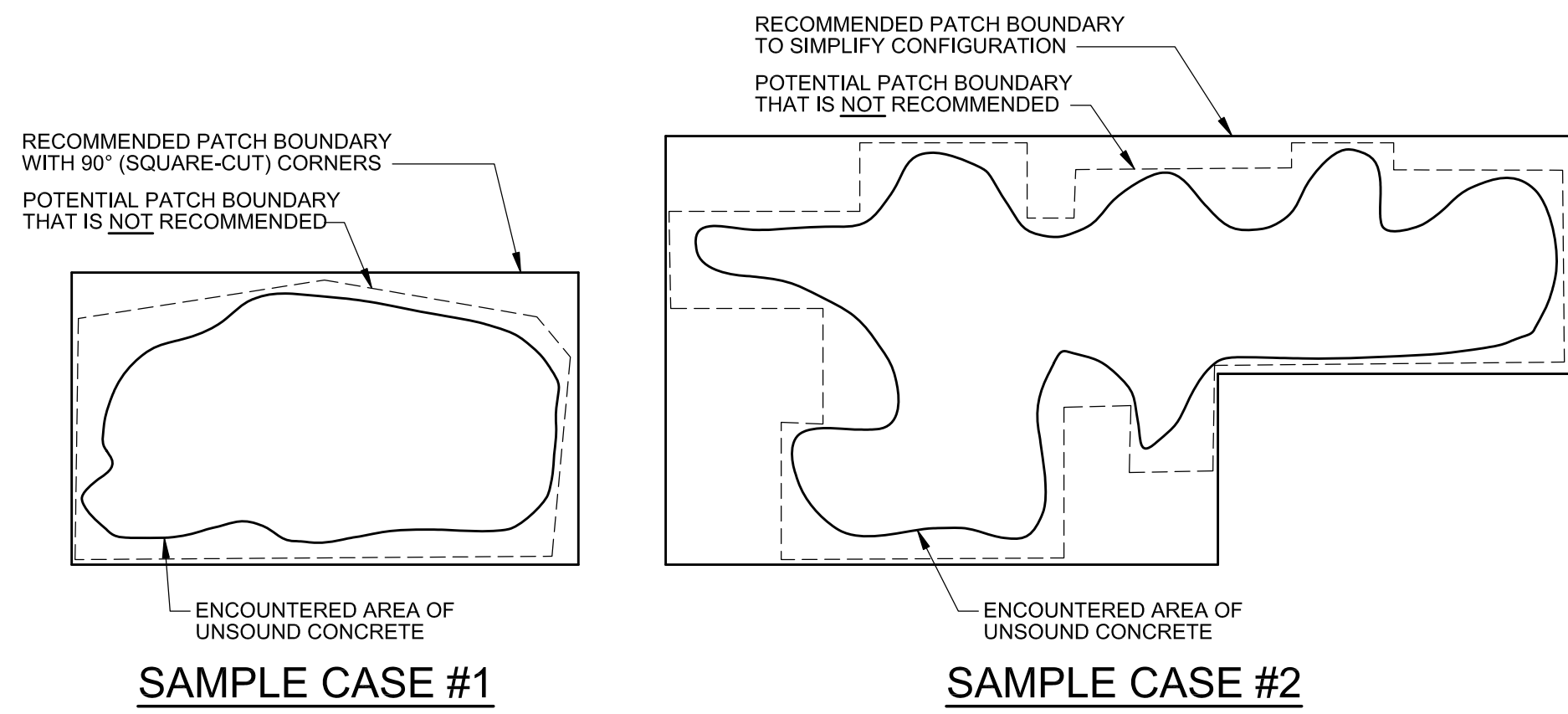
*Bender & Associates*  
**ARCHITECTS**  
 p.c.

Project No: 1522  
 SITEPLAN  
 Date: 09/17/15

**S1.1**  
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**SAMPLE CASE #1**

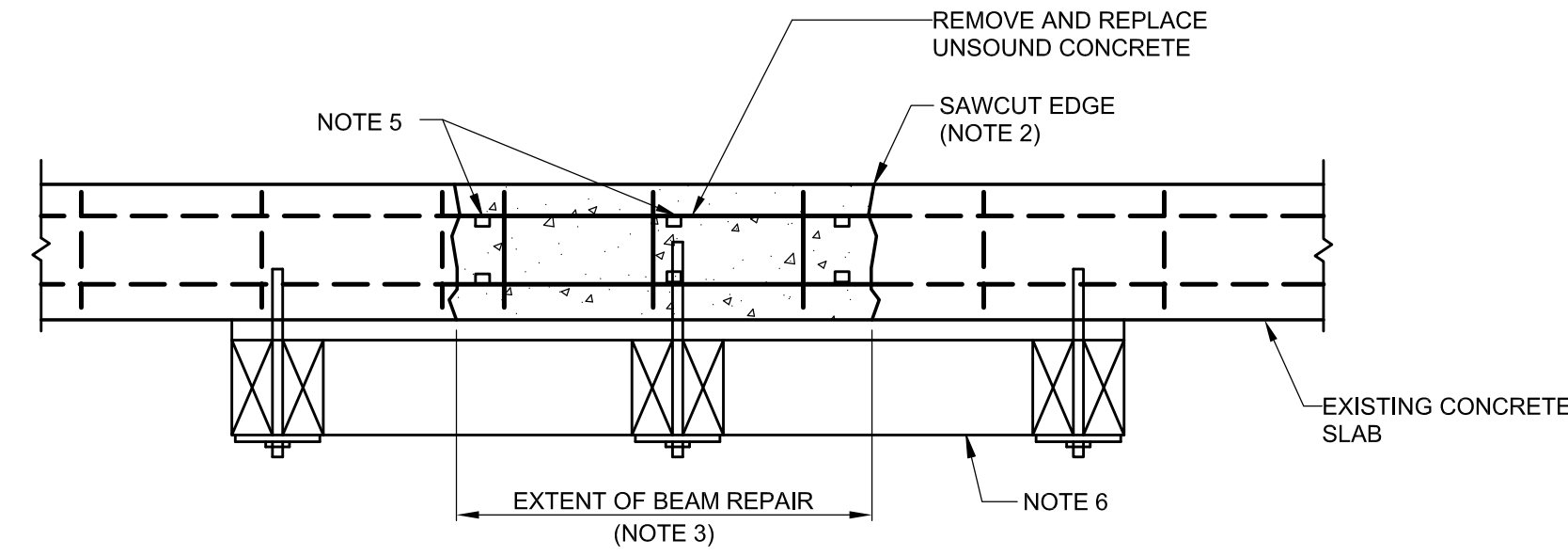
**SAMPLE CASE #2**

**NOTES:**

- RECOMMEND THAT INITIAL OUTLINE OF ENCOUNTERED AREA OF UNSOUND CONCRETE BE MARKED W/ BLUE PAINT. OUTLINE AREA OF REPAIR PER ABOVE RECOMMENDED CASES WITH ORANGE PAINT

**TYPICAL PATCH AREA CONFIGURATION DETAIL**

SCALE: N.T.S.



**TYPICAL FULL DEPTH BEAM REPAIR DETAIL**

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

**NOTES:**

- PRIOR TO BEGINNING REPAIR, OUTLINE EXTENT OF PATCH ON BEAM WITH SPRAY PAINT FOR REVIEW BY ENGINEER.
- SAWCUT EDGES 3" MINIMUM BEYOND LIMITS OF UNSOUND CONCRETE AREAS TO 1/2" MAXIMUM DEPTH. TAKE EXTREME CARE TO AVOID CUTTING REINFORCING STEEL. SQUARE CUT CORNERS IN PATTERNS AS SIMPLE AS POSSIBLE. SEE TYPICAL PATCH AREA CONFIGURATION DETAIL ON THIS SHEET FOR CONCEPT.
- EXTEND PATCH AREA TO 3" BEYOND UNCORRODED REINFORCING. PROVIDE SUPPLEMENTAL REINFORCING FOR REINFORCING THAT HAS LOST MORE THAN TEN PERCENT OF ITS CROSS-SECTION. BARS MAY BE LAPPED WITH A MINIMUM ACI CLASS "B" TENSION LAP OR MECHANICAL SPLICES MAY BE PROVIDED. COAT ALL EXPOSED CONCRETE AND REINFORCING WITH BONDING AGENT / REINFORCEMENT PROTECTION SIKARMAATEC 110 PER MANUFACTURER'S SPECIFICATIONS.
- FORM PATCH AREA AND TROWEL APPLY OR PUMP WITH SIKATOP 611 PER MANUFACTURER'S SPECIFICATIONS OR READY MIX CONCRETE.
- PROVIDE GALVANIZED ANODES ON EACH END AND AT 12" OC OF ALL REINFORCING EXPOSED DURING DEMOLITION. DO NOT COAT COAT AREA OF REBAR WITH SIKARMAATEC 110
- FORMWORK TO BE DESIGNED BY THE CONTRACTOR FOR THE DEAD AND LIVE (PRESSURE) OF THE REPAIR MATERIAL. FORM WORK SHALL BE SUPPORTED FROM EXIST BEAM OR FROM SLAB BELOW, SEE GENERAL NOTES.

**CONCRETE REPAIR**

- SEE SPECIFICATIONS FOR DIRECTIONS ON SOUNDING, CONCRETE REMOVAL, SURFACE PREPARATION, PLACEMENT OF REPAIR MATERIAL AND ALL OTHER REPAIR REQUIREMENTS.
- THE LIMITS OF ANTICIPATED DEMOLITION AND THE PROPOSED REPAIR METHODS ARE SHOWN IN DETAILS.

**DEMOLITION**

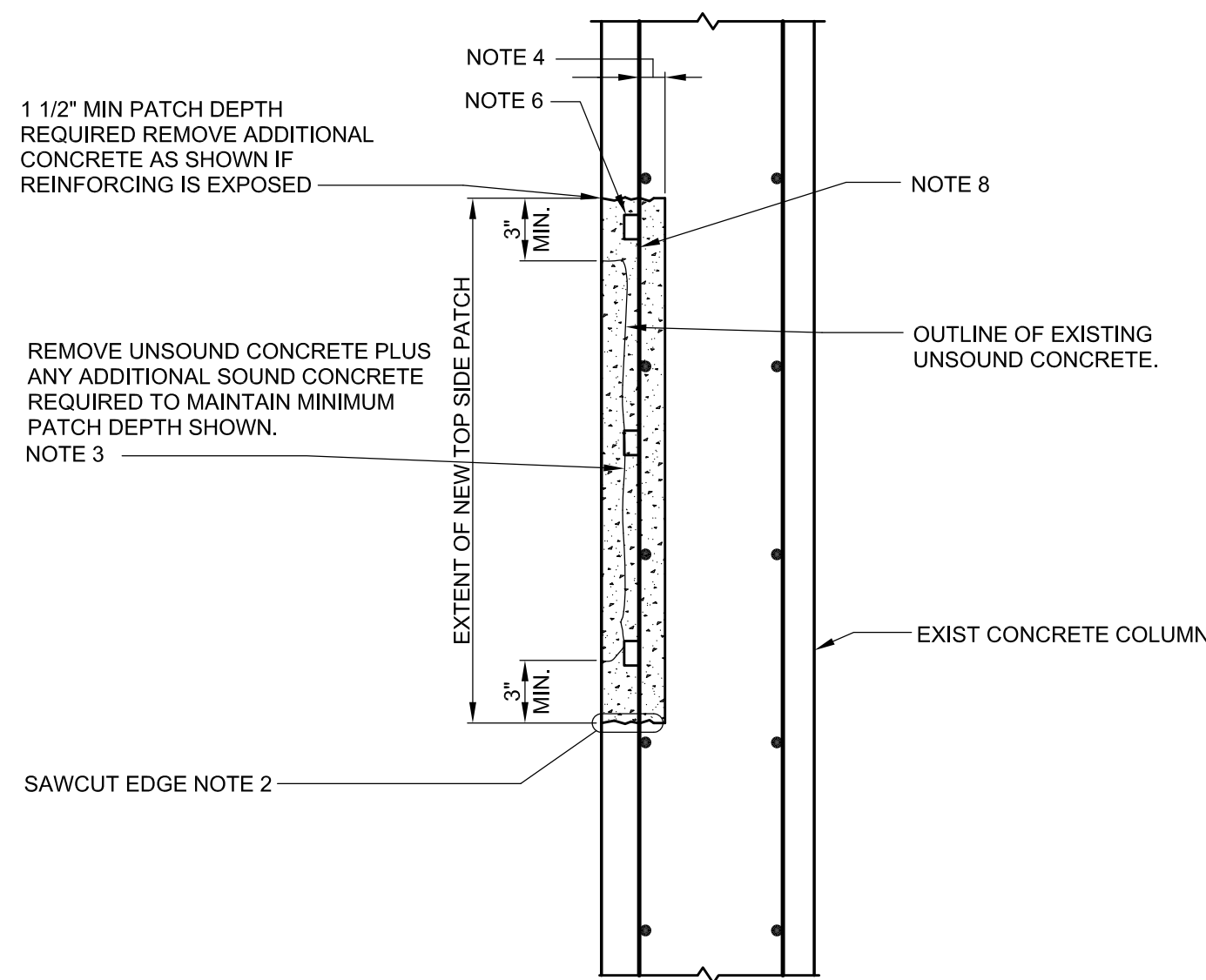
- PERFORM SOUNDING OF CONCRETE SURFACES AS REQUIRED BY THE PROJECT SPECIFICATIONS. MARK ALL SPALLED AREAS WITH A PAINT OUTLINE.
- DEMOLISH CONCRETE TO AT LEAST THE LIMITS MARKED PER NOTE #1 ABOVE IN ACCORDANCE WITH THE SECTIONS AND TYPICAL DETAILS AND TO A MINIMUM DEPTH OF 1-1/2" OR TO SOUND CONCRETE WHICHEVER IS GREATER. FINAL DEMOLISHED AREA SHALL BE APPROXIMATELY RECTANGULAR WITH STRAIGHT SIDES, LEVEL SURFACE AND SQUARE-CUT CORNERS. THIS MAY NECESSITATE REMOVAL OF SOUND CONCRETE IN SOME AREAS TO CONFORM WITH THE REQUIREMENTS OF THE SECTIONS AND TYPICAL DETAILS. THE SURFACE OF THE SOUND CONCRETE SHALL BE DETERMINED AND APPROVED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.
- AT THE PERIMETER OF THE DEMOLITION, THE SURFACE NORMAL TO THE FACE OF MEMBERS SHALL BE SAW-CUT APPROXIMATELY STRAIGHT FOR A MINIMUM DEPTH OF 1/2" OR TO THE DEPTH OF THE EXISTING REINFORCING STEEL WHICHEVER IS LESS.
- THE FINAL DEMOLISHED SURFACE AT ANY LOCATION SHALL BE REASONABLY SMOOTH WITH NO SHARP PROJECTIONS.
- DO NOT DAMAGE OR CUT EXISTING REINFORCING STEEL DURING DEMOLITION.
- SAND BLAST OR WATER BLAST CLEAN ALL DEMOLISHED SURFACES AND REINFORCING. REMOVE ALL LOOSE MATERIALS AND RUST AND DISPOSE ALL DEBRIS OFF SITE.

**SPALL REPAIR**

- ALL REINFORCED CONCRETE WORK SHALL BE IN CONFORMANCE WITH THE "BUILDING CODE REQUIREMENTS OF REINFORCED CONCRETE" (ACI 318, LATEST EDITION) AND SPECIFICATIONS OF STRUCTURAL CONCRETE (ACI 301, LATEST EDITION) OF THE AMERICAN CONCRETE INSTITUTE.
- DEMOLISHED CONCRETE AREA SHALL BE REPAIRED BY THE FORM AND CAST METHOD FOR VERTICAL REPAIRS AND THE CAST-IN-PLACE METHOD FOR HORIZONTAL REPAIRS. DEPTH OF DEMOLISHED AREAS SHALL BE MAINTAINED AT A MINIMUM OF 1-1/2".
- REINFORCEMENT
  - DEFORMED BARS, . . . . . ASTM A615 GRADE 60
- ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS STIRRUPS OR CHAIRS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.

**PAINTING**

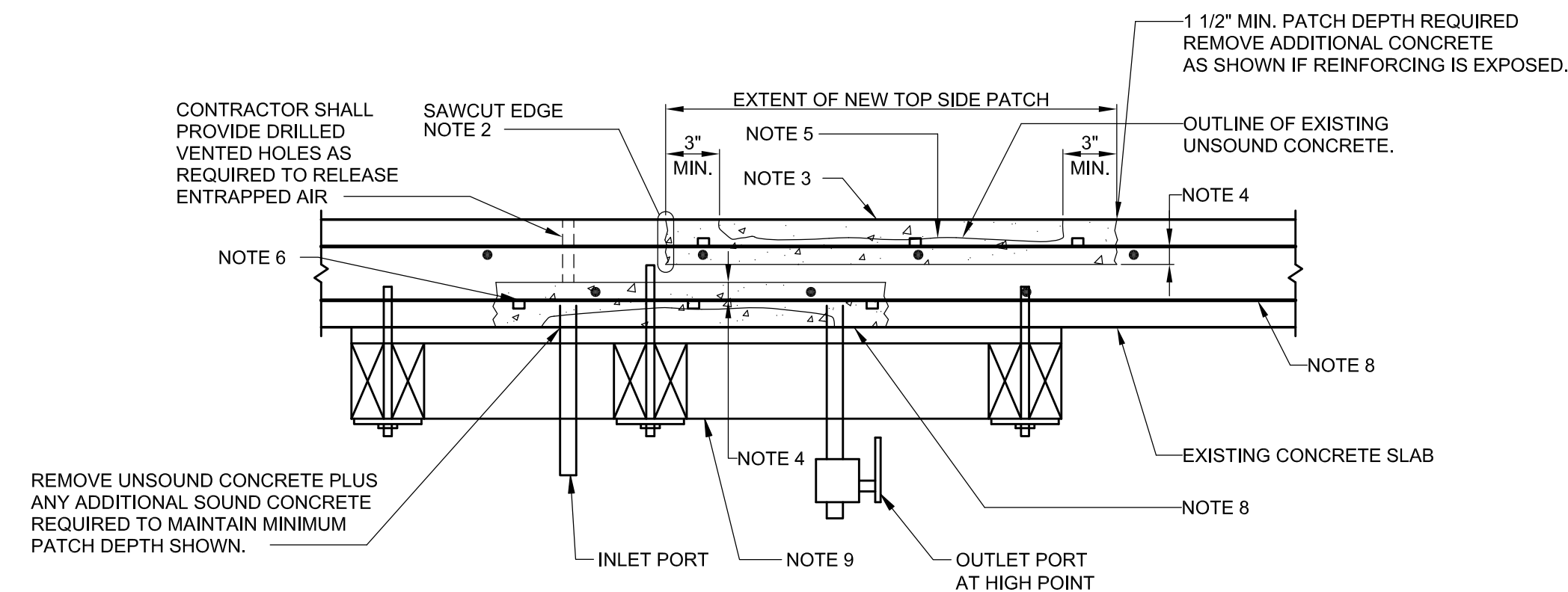
- PAINT ALL EXPOSED CONCRETE IN AREAS THAT HAVE BEEN PREVIOUSLY PAINTED TO MATCH EXISTING PAINT TYPE AND COLOR. COORDINATE WITH THE OWNER.



**TYPICAL PARTIAL DEPTH CONCRETE WALL/ SPANDREL BEAM REPAIR DETAIL**

**NOTES:**

- PRIOR TO BEGINNING REPAIR, OUTLINE EXTENT OF PATCH ON BEAM WITH SPRAY PAINT FOR REVIEW BY ENGINEER.
- SAWCUT EDGES 3" MINIMUM BEYOND LIMITS OF UNSOUND CONCRETE AREAS TO 1/2" MAXIMUM DEPTH. TAKE EXTREME CARE TO AVOID CUTTING REBAR AND TENDONS. SQUARE CUT CORNERS IN PATTERNS AS SIMPLE AS POSSIBLE. SEE TYPICAL PATCH AREA CONFIGURATION DETAIL ON THIS SHEET FOR CONCEPT.
- TROWEL APPLY POLYMER MODIFIED PATCH MORTAR SIKARMAATEC SHB, OR SIKARMAATEC 223 PER MANUFACTURER'S SPECIFICATIONS. FORM AND AND PUMP WITH SIKARMAATEC 611 IF REINFORCEMENT IS EXPOSED.
- 1" MIN CLEARANCE BETWEEN EXPOSED REBAR AND SOUND CONCRETE IF REBAR IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE.
- PRIOR TO PLACING PATCH MATERIAL SANDBLAST OR WATERBLAST EXISTING SURFACES AND EXPOSED REINFORCING SURFACES AND REINFORCING SHALL BE CLEAN, SOUND, AND FREE OF CONTAMINANTS. COAT EXPOSED CONCRETE SURFACE AND EXPOSED REINFORCING WITH BONDING AGENT / REINFORCEMENT PROTECTION SIKARMAATEC 110 PER MANUFACTURER'S SPECIFICATIONS.
- PROVIDE GALVANIZED ANODES ON EACH END AND AT 12" OC OF ALL REINFORCING EXPOSED DURING DEMOLITION. DO NOT COAT COAT AREA OF REBAR WITH SIKARMAATEC 110 WHERE WIRE LEADS CONNECT TO REINFORCING.
- PROVIDE TEMPORARY SHORING IF PATCH EXCEEDS DEPTH OF VERTICAL REINFORCING.
- EXISTING REINFORCING TO REMAIN. NOTIFY ENGINEER IF REINFORCING IS EXPOSED DURING DEMOLITION. IF REINFORCING IS EXPOSED DURING DEMOLITION, REPAIR WALL SPALL PER THE FORM ANF PUMP METHOD USING SIKARMAATEC 611.

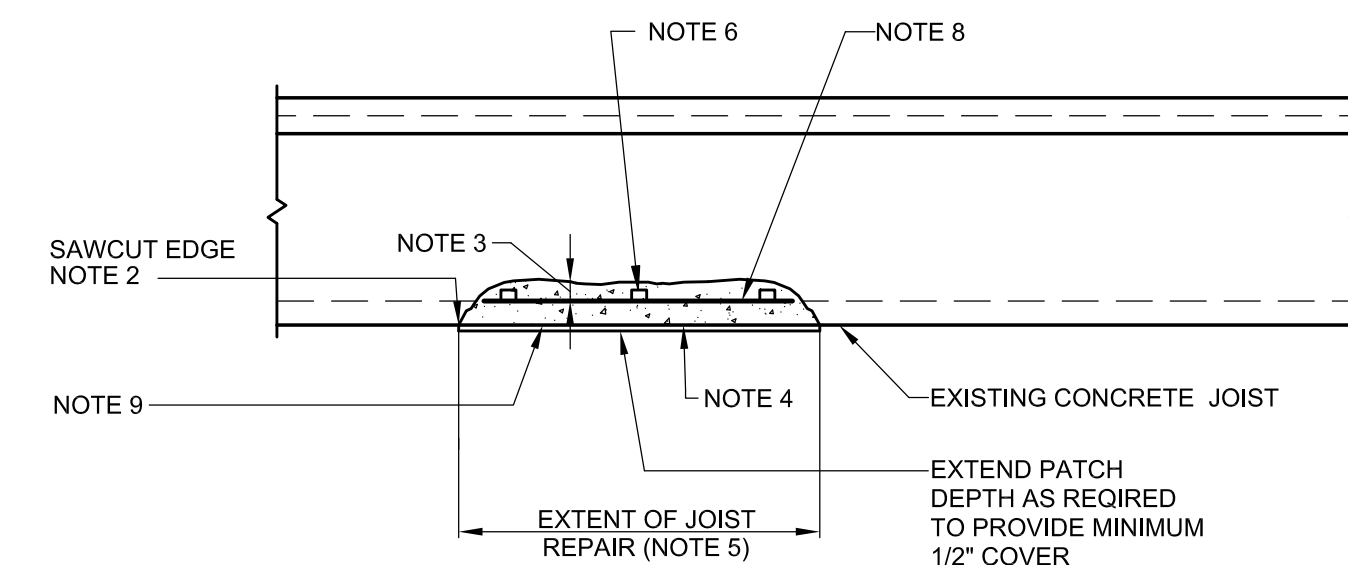


**TYPICAL PARTIAL DEPTH BEAM REPAIR DETAIL**

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

**NOTES:**

- PRIOR TO BEGINNING REPAIR, OUTLINE EXTENT OF PATCH ON BEAM WITH SPRAY PAINT FOR REVIEW BY ENGINEER.
- SAWCUT EDGES 3" MINIMUM BEYOND LIMITS OF UNSOUND CONCRETE AREAS TO 1/2" MAXIMUM DEPTH. TAKE EXTREME CARE TO AVOID CUTTING REBAR AND TENDONS. SQUARE CUT CORNERS IN PATTERNS AS SIMPLE AS POSSIBLE. SEE TYPICAL PATCH AREA CONFIGURATION DETAIL ON THIS SHEET FOR CONCEPT.
- TROWEL APPLY POLYMER MODIFIED PATCH MORTAR SIKARMAATEC SHB, OR SIKARMAATEC 223 PER MANUFACTURER'S SPECIFICATIONS. FORM AND AND PUMP WITH SIKARMAATEC 611 IF REINFORCEMENT IS EXPOSED.
- 1" MIN CLEARANCE BETWEEN EXPOSED REBAR AND SOUND CONCRETE IF REBAR IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE.
- PRIOR TO PLACING PATCH MATERIAL SANDBLAST OR WATERBLAST EXISTING SURFACES AND EXPOSED REINFORCING SURFACES AND REINFORCING SHALL BE CLEAN, SOUND, AND FREE OF CONTAMINANTS. COAT EXPOSED CONCRETE SURFACE AND EXPOSED REINFORCING WITH BONDING AGENT / REINFORCEMENT PROTECTION SIKARMAATEC 110 PER MANUFACTURER'S SPECIFICATIONS.
- PROVIDE GALVANIZED ANODES ON EACH END AND AT 12" OC OF ALL REINFORCING EXPOSED DURING DEMOLITION. DO NOT COAT COAT AREA OF REBAR WITH SIKARMAATEC 110
- PROVIDE TEMPORARY SHORING IF PATCH EXCEEDS DEPTH OF VERTICAL REINFORCING.
- EXISTING REINFORCING TO REMAIN. NOTIFY ENGINEER IF REINFORCING IS EXPOSED DURING DEMOLITION. IF REINFORCING IS EXPOSED DURING DEMOLITION, REPAIR WALL SPALL PER THE FORM ANF PUMP METHOD USING SIKARMAATEC 611.
- FORMWORK TO BE DESIGNED BY THE CONTRACTOR FOR THE DEAD AND LIVE (PRESSURE) OF THE REPAIR MATERIAL. FORM WORK SHALL BE SUPPORTED FROM EXIST BEAM OR FROM SLAB BELOW, SEE GENERAL NOTES.



**TYPICAL PARTIAL DEPTH CONCRETE BEAM REPAIR**

SCALE: N.T.S.

**NOTES:**

- PRIOR TO BEGINNING REPAIR, OUTLINE EXTENT OF PATCH ON BEAM WITH SPRAY PAINT FOR REVIEW BY ENGINEER.
- SAWCUT EDGES 3" MINIMUM BEYOND LIMITS OF UNSOUND CONCRETE AREAS TO 1/2" MAXIMUM DEPTH. TAKE EXTREME CARE TO AVOID CUTTING REINFORCING STEEL. SQUARE CUT CORNERS IN PATTERNS AS SIMPLE AS POSSIBLE. SEE TYPICAL PATCH AREA CONFIGURATION DETAIL ON THIS SHEET FOR CONCEPT.
- 1" MINIMUM CLEARANCE BETWEEN EXPOSED REINFORCING AND SOUND CONCRETE.
- FORM PATCH AREA AND TROWEL APPLY OR PUMP WITH SIKATOP 611 PER MANUFACTURER'S SPECIFICATIONS OR READY MIX CONCRETE.
- EXTEND PATCH AREA TO 3" BEYOND UNCORRODED REINFORCING. PROVIDE SUPPLEMENTAL REINFORCING FOR REINFORCING THAT HAS LOST MORE THAN TEN PERCENT OF ITS CROSS-SECTION. BARS MAY BE LAPPED WITH A MINIMUM ACI CLASS "B" TENSION LAP OR MECHANICAL SPLICES MAY BE PROVIDED. COAT ALL EXPOSED CONCRETE AND REINFORCING WITH BONDING AGENT / REINFORCEMENT PROTECTION SIKARMAATEC 110 PER MANUFACTURER'S SPECIFICATIONS.
- PROVIDE GALVANIZED ANODES ON EACH END AND AT 12" OC OF ALL REINFORCING EXPOSED DURING DEMOLITION. DO NOT COAT COAT AREA OF REBAR WITH SIKARMAATEC 110 WHERE LEADS CONNECT TO REINFORCING.
- PROVIDE TEMPORARY SHORING AS REQUIRED.
- SANDBLAST OR WATERBLAST EXPOSED REINFORCING TO REMOVE ALL CORROSION AND CONTAMINANTS. COAT EXPOSED REINFORCING WITH BONDING AGENT / REINFORCEMENT PROTECTION. SIKARMAATEC 110 PER MANUFACTURER'S SPECIFICATIONS.
- REMOVE UNSOUND CONCRETE PLUS ANY ADDITIONAL SOUND CONCRETE REQUIRED TO MAINTAIN PATCH DEPTH SHOWN. COAT EXPOSED CONCRETE WITH BONDING AGENT / REINFORCEMENT PROTECTION, SIKARMAATEC 110 PER MANUFACTURER'S SPECIFICATIONS.

**DOUGLASS BAND ROOM REPAIRS**  
727 FORT STREET  
KEY WEST, FLORIDA, 33040

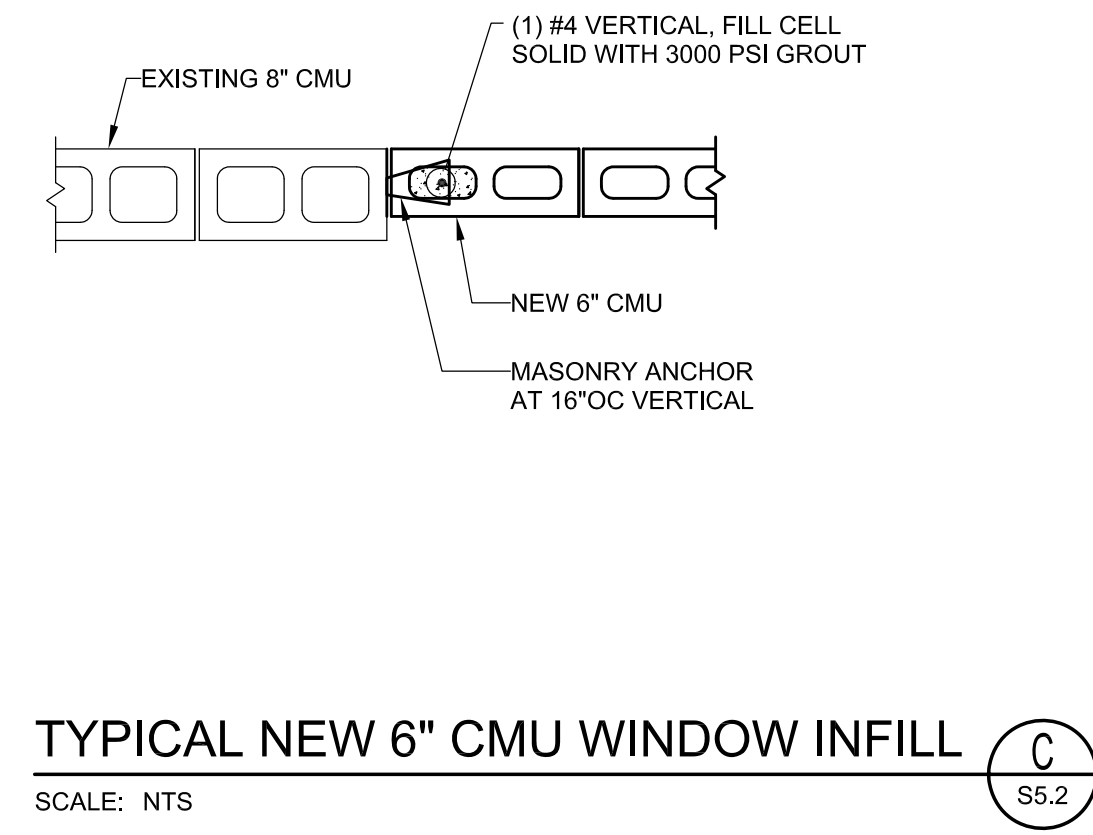
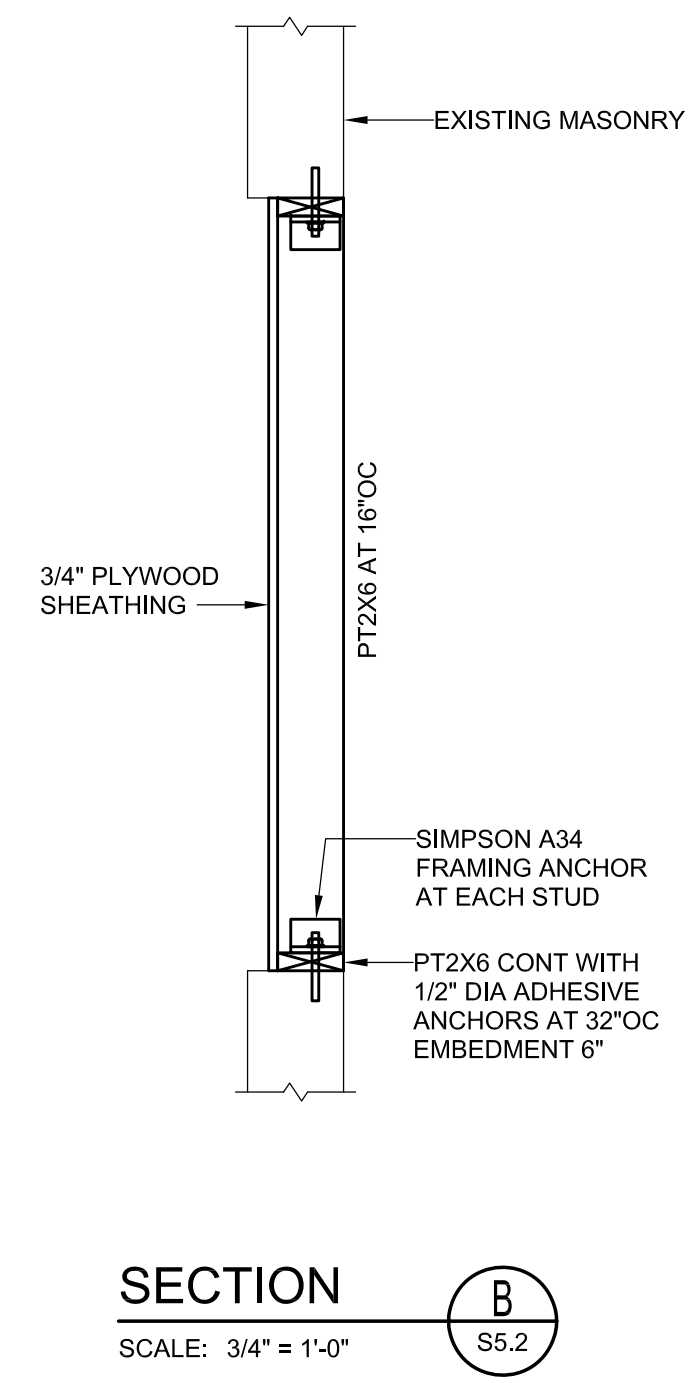
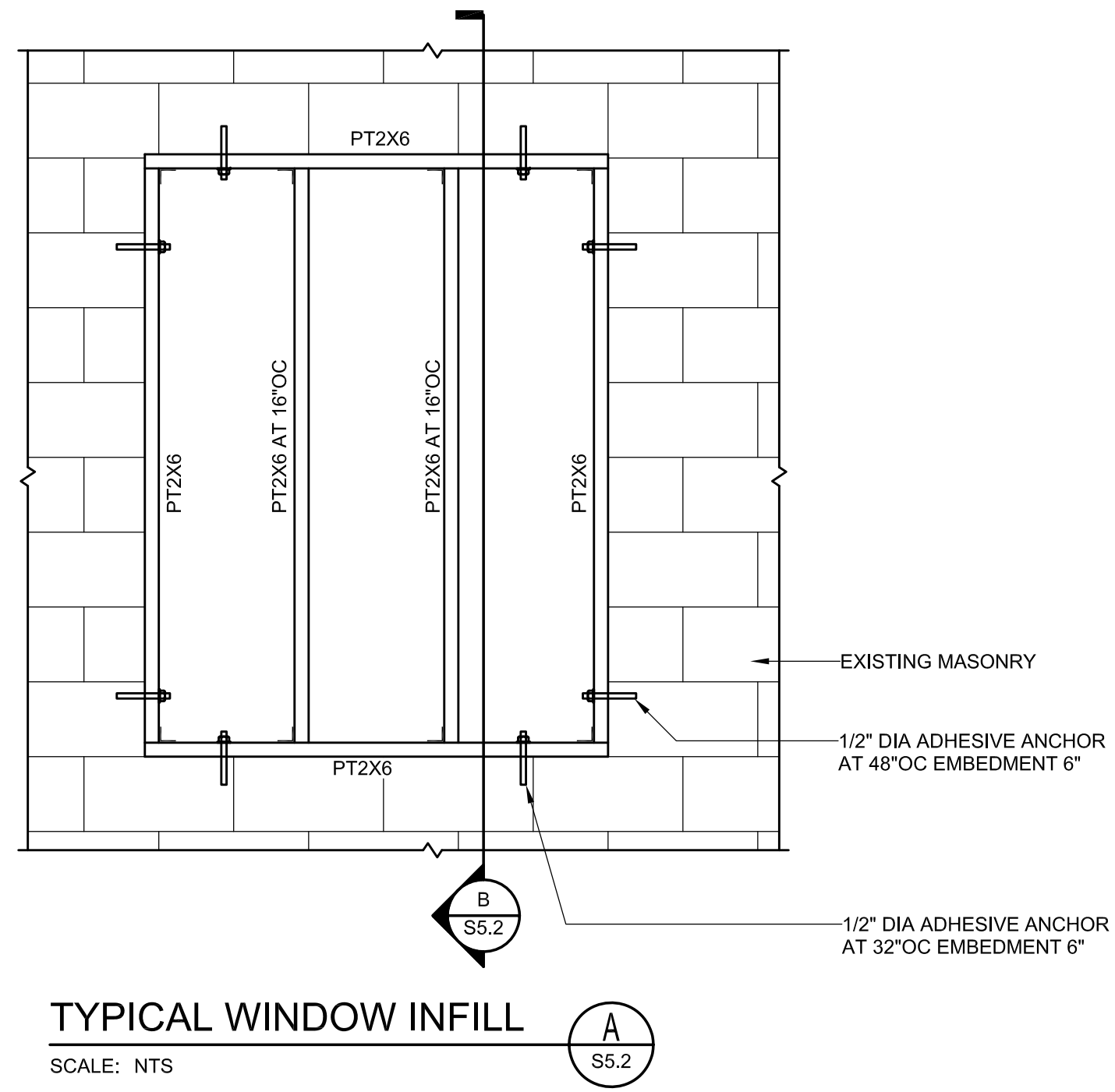
410 Angela Street  
Key West, Florida 33040  
Telephone (305) 296-1347  
Facsimile (305) 296-2727  
Florida License AA002022

*Bender & Associates*  
**ARCHITECTS**  
p.c.

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