PARAGON ARCHITECTURE
430 S Glenstone Ave
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Addendum 01

Number of Pages: 22

Project:	**Project: 15-287 Joplin Advanced Training & Technology Center**
Client:	**Joplin Area Chamber of Commerce Foundation**
Re:	**Addendum 01**
Date:	**03/11/16**

This addendum shall modify the drawings and specification requirements as herein noted. However, this addendum shall not relieve the general contractor or sub-contractors of any responsibility under the plans and specifications except as amended herein.

SUBSTITUTIONS:

1. None included.

SPECIFICATIONS:

1. Section 00 43 93 BID SUBMITTAL CHECKLIST

a. A revised bid submittal checklist is included.

2. Section 01 50 00 TEMPORARY FACILITIES AND CONTROLS

a. The following shall be added to 3.2D:
Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

3. Section 04 01 10 MASONRY CLEANING

a. The "marked up" version of this section was inadvertently included in the project manual. A clean version is attached.

4. Section 04 20 00 UNIT MASONRY

a. The "marked up" version of this section was inadvertently included in the project manual. A clean version is attached.

DRAWINGS:

1. ADD01.01 CONSTRUCTION SIGN DETAILS

a. A construction sign shall be erected by the contractor and locater at the northeast corner of the site. The owner reserves the right to take possession of the construction sign following project completion.

GENERAL CLARIFICATIONS:

1. The Pre-bid meeting agenda and sign in sheets are attached.
2. The projected construction budget for this project is $1,475,000.00.
3. The existing roof does not have a warranty that we are aware of.

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4. Requests for visits to the site before bid opening day will need to be emailed Jessica Struckhoff, struckhoff@paragonarchitecture.com.
5. All forms listed in the bid submittal checklist are required to be included in the bid submission.
6. Although the building is vacant, once Phase I is complete, the owner will occupy the completed portion of the building. Cooperation with the owner during construction shall be minimized and proper notification of activities that may be disruptive shall be given to the owner.

ATTACHMENTS:

		Number of pages
1.	Pre-bid meeting agenda	5
2.	Pre-bid meeting sign in sheet	2
3.	Revised specification section 00 43 93	1
4.	Revised specification section 04 01 10	4
5.	Revised specification section 04 20 00	7
6.	ADD01.01	1

END OF ADDENDUM

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Thursday, March 10, 2016 @ 9:00AM
Joplin Area Chamber of Commerce
320 East 4th Street
Joplin, MO 64801

A. PROJECT INTRODUCTION:

Project Number: 15-287
Project Name: Joplin Advanced Training & Technology Center

B. INTRODUCTIONS:

Rob O'Brian – Chamber President
Tonya Sprenkle – Chamber Vice President
Steve Russell – Newman Innovation Center Director

Brad Erwin, Paragon Architecture – Project Architect
Jessica Struckhoff, Paragon Architecture – Architectural Project Manager

Design Team consultants:
Anderson Engineering – civil engineering
Toth & Associates – structural engineering
Malone Finkle Eckhardt & Collins – MEP engineering
Fellers Fixtures – kitchen equipment design

C. PROJECT DESCRIPTION:

The project consists of a renovation of an approximately 51,000 sf existing building. The project includes interior renovations for a technical training, innovation and economic development support center, a new parking lot, roof repairs and other miscellaneous exterior improvements.

D. BIDDING/CONTRACT REQUIREMENTS:

The Contractor shall seal their bid in an envelope and clearly mark the outside as Bid Form. Any mailed documents shall be sealed in two separate envelopes

Bids received at the **Joplin Area Chamber of Commerce** no later than **Thursday, March 24, 2016** @ **2:00PM** local time.

The following items are required with each bid. These forms are located in the project manual. Copies of these forms may be made but **original signatures** must be on the forms submitted at the time of Bid.

- **Bid Form –**
  - Indicate the total bid in both words and figures as indicated on the bid form
  - Acknowledgement of addenda
    - Contractor is responsible for obtaining all addenda
  - **Be sure to sign the bid form.**

- **Bid Security Form** – equivalent to 5% of the bid price and consist of a bid bond, certified check or cashiers check
  - **Be sure to sign the bid security.**

- **Alternates Form**
  - **Alternate No. 1:** Front entry rails

- **Alternate No. 2:** Laptop stations
- **Alternate No. 3:** Pegboards
- **Alternate No. 4:** Hardened structure
- **Alternate No. 5:** Painted exposed ceilings
- **Alternate No. 6:** Exterior aluminum canopy

- **Certificate of Insurance**

- **Forms included as part of the CDBG bid packet**
  - CDBG Bidder Qualification & Certifications
  - Anti-Collusion Statement
  - Certification of Bidder Regarding Equal Employment Opportunity
  - Certification of Bidder Regarding Section 3 and Segregated Facilities
  - Minority and Women's Business Enterprises Utilization Worksheet
  - Bidder's Section 3 Plan Format
  - Table A – Bidder's Proposed Section 3 Contracts/Subcontracts
  - Table B – Bidder's Section 3 Estimated New Hires
  - Table C – Contractor's Section 3 New Hires Report
  - Table D – Contractor's Section 3 Business Utilization Report
  - Certification by Proposed Subcontractor Regarding Equal Employment Opportunity – Note: this needs to be completed by each subcontractor
  - Certification by Proposed Subcontractor Regarding Section 3 and Segregated Facilities – Note: this need to be completed by each subcontractor
  - Certification Regarding Government-Wide Restriction on Lobbying
  - Certification of Owner's Attorney
  - Affidavit Section 28 5.530, Revised Statutes of Missouri

- **Bid Submittal Checklist**

The Following is the bidding phase schedule:
- All questions must be submitted by: **Thursday, March 17 @ 5:00PM**
- Anticipated date for last addendum: **Monday, March 21 @ 5:00PM**
- Bid Opening: **Thursday, March 24 @ 2:00PM**
- Anticipated Notice to Proceed: **Thursday, March 31, 2016**

E. INSTRUCTIONS TO BIDDERS:

- **Subcontracts:** Subcontractor list must be completed and submitted with the bid on the Bid Form. Subcontractors will be reviewed by the owner.
- **Plan review fees and building permit fees** are the architect's responsibility.
- **3rd party investigations, inspections, measurements and materials testing** are <u>not</u> the contractor's responsibility.
- **Conditions of Work** – Prior to bid, each bidder shall examine the Contract Documents carefully and examine the entire site and shall make necessary investigations necessary to fully inform him/her of conditions. Contract Documents are not set up for specific trades and all Contractors and Subcontractors are required to review **all** drawings and specifications.
- **Addenda and Interpretations**
  - No interpretations, clarifications and/or revisions to the Contractor Documents will be made orally.
  - **Substitutions**
    - All substitution request shall be submitted on substitution form **CSI Form 13.1A** and include the required supplemental documentation listed in the project manual.
    - If an accepted substitution later causes problems which are not pointed out in the Substitution Request, corrective action could include replacement with the specified item at no cost to the Owner.

- Every request shall be submitted in writing with supporting documentation and addressed to:
    - Jessica Struckhoff, struckhoff@paragonarchitecture.com
    - Brad Erwin, erwin@paragonarchitecture.com
    - Every interpretation will be made in the form of an addendum and will be made available through the online planroom: www.erplanroom.com. All addenda shall become part of the Contract Documents.
    - Requests must be received no later than **Thursday, March 17 @ 5:00PM.**

- **Bid Security** equivalent to 5% of the bid price will be required from each bidder and shall accompany the bid.
- **100% Performance Bond** and **100% Labor & Materials Payment Bond** is required at the time of contract execution.
- **Laws and Regulations** – All applicable State laws, municipal ordinances and rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the contract throughout and they will be deemed to be included in the contractor.
    - This includes State of Missouri RSMO 285.530 (1), No business entity or employer shall knowingly employ, hire for employment or continue to employ unauthorized alien(s) to perform work within the State of Missouri.
- **Safety Standards and Accident Prevention** – The contractor shall comply with the safety standards provisions of applicable laws, building & construction codes and the "Manual of Accident Prevention in Construction".
    - All on-site employees of the Contractor and subcontractors are required to complete the then hour OSHA training program.
    - All workers on the Project will be expected to dress neatly wearing shirts with sleeves, bearing the logo of the employing firm.
    - Hard hats will be worn at all times
    - Use of tobacco products and other controlled substances is not permitted on Project Site.
- **Contractor's Insurance**. (A) Worker's Compensation for all his/her employees, (B) Public Liability and Property Damage in the amounts listed, (C) All Risk Builders' Risk will be covered by the Owner. Refer to project manual for further information and liability limits.
- **A Certificate of Insurance** is required to be on file prior to commencing any work on site.
- **Liquidated Damages** are as follows: $300.00 for every working/business day past Substantial Completion
    - **Anticipated Notice to Proceed:** March 31, 2016
    - **Phase I Substantial Completion:** July 15, 2016
    - **Phase I Final Completion:** August 31, 2016
    - **Phase II Substantial Completion:** September 15, 2016
    - **Phase II Final Completion:** October 15, 2016
    - Please refer to the project manual for instructions related to Adverse Weather Conditions.
- **Roof Thermography Scan** – A roof thermography scan for this project was performed by Miller Engineering on February 19, 2016 and is appended to the project manual
    - The thermography scan report is provided for the Bidders' convenience and is intended to supplement rather than serve in lieu of Bidders' own investigations. Thermography scan is not a warranty of existing conditions.
    - Please refer to the Instruction to Bidders for the Bidders' responsibilities for examination of the project site and existing conditions.
- **Sales Tax**. A tax exemption certificate shall be issued to the successful contractor upon award of the contract. It is the contractor's responsibility to ensure that copies of the certificate are provided to other necessary parties per RSMo 144.06203

- **Prevailing Wage Order** – The Contractor and each subcontractor engaged in any construction of public works shall keep full and complete certified payroll records. The current Federal and State wage orders are included in the project manual for reference by the contractor. Your bids shall reflect the appropriate wage rates.
- **Application for Payment** should be submitted on AIA Form, and a **5% retainage** will be held back until project completion.
- **Periodic Applications for Payment** requires certified payrolls and lien waivers from the General Contractor and all Subcontractors.
- **Final Application for Payment** – Before final payment is released the Contractor shall provide all certified payrolls, final lien waivers, and the "Affidavit for Compliance with Prevailing Wage Law". This paperwork is required of the General Contractor as well as all Subcontractors and Major Suppliers providing work on the project.

F. RULES:

- **Access to the Site**: Contractor shall have full access to the site for construction operations.
    - **Use of the Premises**: Driveways, walkways and entrances serving the premises shall be kept clear and available to the owner, owner's employees and emergency vehicles at all times. Schedule deliveries:
        - To minimize use of driveways and entrances
        - To minimize space and time requirements for storage of materials and equipment on-site.
- **Coordination with Occupants**: Owner will not occupy site and existing buildings during entire construction period. However, the owner reserves the right to occupy and to place and install equipment in completed portions of the project, prior to Substantial Completion. Cooperate with owner during construction operations to minimize conflicts. The owner's day to day operations shall not be interpreted.
    - Maintain access to existing walkways, corridors and other adjacent occupied or used facilities. Written permission from owner and/or authorities having jurisdiction must be obtained prior to obstruction.
- **Work Restrictions**:
    - Contractors shall comply with limitations of use of public streets and with other requirements of authorities having jurisdiction.
    - On-site work hours are not limited.
    - Do not interrupt utilities service to existing facilities unless owner has been notified not less than 2 days in advance and the owner has provided written permission.
    - Coordinate operations that may result in high levels of noise and vibrations, odors or other disruptions to owner occupancy with owner. Owner shall be notified of such conditions not less than 2 days in advance and provide written permission prior to disruptive operations.
- **Workers** shall be courteous and polite at all times; obscene language, gestures, etc. will not be tolerated.
- **Request for Inspections and Utility Locations.** Please be aware of the timeframe required for advance notice on these items.

G. TEMPORARY FACILLITIES AND CONTROLS

- **Portable chain link fencing** is required to be installed surrounding the project site.
- **Portable UL rated fire extinguishers** are required to be installed in all construction field office, storage shed and shipping container located on site.
- **Water service and electric power service** from the owner's existing system is available for use without metering and with payment of use charges. At Substantial Completion restore these facilities to a condition existing before initial use.

- **Sanitary facilities**: Use the owner's existing toilet facilities will be permitted, as long as the facilities are cleaned and maintained in a condition acceptable to the owner. At Substantial Completion restore these facilities to a condition existing before initial use.
- **Temporary heating, cooling, ventilation and humidity control** required by construction activities for curing and/or drying of completed installation or for protecting installed construction from adverse effects of low temperatures or high humidity shall be provided by the contractor as necessary.
- **Parking**: Construction personnel shall utilize owner's designated areas.
- **Project signs**: Project construction sign shall be provided by the contractor and are located as indicated in the drawings. Provide other temporary signs as required to inform the public and individuals seeking entrance to the project.
- **Waste disposal facilities** shall be contractor provided and comply with all requirements of authorities having jurisdiction.
    - Clean site and work areas daily.
    - Keep installed work clean.
    - Remove debris from concealed spaces before enclosing.
    - Dispose all waste lawfully.
- **Security and protection facilities installation**:
    - Protect existing vegetation, equipment, structures, utilities and other improvements to at project site and adjacent properties. Repair damage to existing facilities.
    - Provide environmental protection to minimize air, waterway and subsoil contamination and pollution.
    - Provide lockable entrances to prevent unauthorized entrance, vandalism and theft. Site entrances shall be locked at the end of the day.
    - Provide floor to ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by owners.
    - Install and maintain temporary fire protection facilities complying with NFPA 241.
- **Moisture and mold control**: Avoid trapping water in finished work. Document all visible signs of mold that may appear during construction. Refer to project manual for additional instructions.
- **Operation, termination and removal**:
    - Enforce strict discipline in use of temporary facilities.
    - Maintain facilities in good operating condition until removal. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation and similar facilities on a 24 hour basis as necessary to achieve indicated results and to avoid possible damage.
    - Do not change over from temporary security and protection to permanent facilities until Substantial Completion.
    - Temporary facilities are the property of the contractor. Owner reserves the right to take possession of the project signs.

H. SUMMARY OF WORK/DRAWINGS:

- Review project plans and specifications
- Question and answer session
- Visit project site

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Joplin Advanced Training & Technology Center
Project No.: 15-2287
Thursday, March 10, 2016 @ 9:00AM
Joplin Area Chamber of Commerce, 320 East 4th Street, Joplin, MO

	NAME	FIRM	TELEPHONE #	EMAIL
1.	Dennis Neely	B&D Yard Builders	417 437-7506	BLACK1Demo@YAHOO.COM
2.	Eddie Campbell	LARRY SNYDER & Co.	417-887-6897	e.campbell@lscinc.com
3.	MICAH FOREMAN	LIVING GREEN commercial cleaning	417.499.6420	mforeman@livinggreeninc.com
4.	RICK HUNDLEY	PALMERTON & PARRISH INC	417-299-0541	RHUNDLEY@PPIMO.COM
5.	Danny Langerot	Crossland Construction	620-674-2037	dlangerot@crosslandconstruction.com
6.	Cliff Jarrett	crossland	620-429-1414	cjarrett@crosslandconstruction.com
7.	Todd Markovich	SECO	417-755-3016	toddm@springfieldengineering.com
8.	Donnie Gary	Climate Tech Inc	417-782-8324	donnie@climatetechinc.com
9.	Frank Schaefer	RE Smith Const	417-623-4545	frank@[redacted]resmithconst.com
10.	Rob Beachner	City of Joplin	417-624-0820	rbeachner@joplinmo.org
11.	George Mastard	Laborers 319	417-623 5458	laborers 319 local 319@SBCglobal.net
12.	~~SHANE MCDANIEL~~	~~DALTON KILLINGER CONST. CO.~~	417-624-0651	bidfile@daltonkillinger.com
13.	BRAD BAKER	US BANK	417-625-3235	BRAD.BAKER1@USBANK.COM
14.	Thomas	B & D Yard Builders	417-621-5881	

Prebid Conference Signin

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Joplin Advanced Training & Technology Center
Project No.: 15-2287
Thursday, March 10, 2016 @ 9:00AM
Joplin Area Chamber of Commerce, 320 East 4th Street, Joplin, MO

	NAME	FIRM	TELEPHONE #	EMAIL
1.	Steve Cole	SECO	417-850-5729	Steveca@springfieldengineering.com
2.	Kenny Greene	Bales Construction	417 865-5800	Kgreene@balesconstruction.com
3.	Ronk Gorham	R+S Heating+Cooling	417-627-0829	Ronnygorham@gmail.com
4.	Tyler Mahon	CSG	417-451-5743	estimating@constructionservicesgroup.net
5.	RJ Flores	Cumix Electrical	417-425-3817	RJFlores@Cumix Electrical.com
6.	FRED L. DECASE JR.	OKE-THOMAS + ASSOC	417-865-6262	fred@OKE-THOMAS.COM
7.	Tyler Enservo	MFEC		
8.	Jessica Struckhoff	Paragon		
9.	Tonya Sprenkle	JACOC		
10.	Rob O'Brian	JACOC		
11.	Steve Russell	Newman Innovation Center.		
12.	Evan Hatt	Deloitte		
13.				
14.				

DOCUMENT 004393 - BID SUBMITTAL CHECKLIST

1.1 BID INFORMATION

A. Bidder: _____.

B. Prime Contract: _____.

1.2 BIDDER'S CHECKLIST

A. In an effort to assist the Bidder in properly completing all documentation required, the following checklist is provided for the Bidder's convenience. The Bidder is solely responsible for verifying compliance with bid submittal requirements.

B. Attach this completed checklist to the outside of the Submittal envelope.

1. Used the Bid Form provided in the Project Manual.
2. Prepared the Bid Form as required by the Instructions to Bidders.
3. Indicated on the Bid Form the Addenda received.
4. Attached to the Bid Form: Bid Supplement Form - Alternates.
5. Attached to the Bid Form: Bid Security for the amount required.
6. Prepared and included the following from the CDBG Bid Packet:
    a. CDBG Bidder Qualification & Certifications
    b. Anti-Collusion Statement
    c. Certification of Bidder Regarding Equal Employment Opportunity
    d. Certification of Bidder Regarding Section 3 and Segregated Facilities
    e. Minority and Women’s Business Enterprises Utilization Worksheet
    f. Bidder’s Section 3 Plan Format
    g. Table A Bidder’s Proposed Section 3 Contracts/Subcontracts
    h. Table B Bidder’s Section 3 Estimated New Hires
    i. Table C Contractor’s Section 3 New Hires Report
    j. Table D Contractor’s Section 3 Business Utilization Report
    k. Certification by Proposed Subcontractor Regarding Equal Employment Opportunity – completed by all subcontractors
    l. Citification of Proposed Subcontrator Regarding Section 3 and Segregated Facilities – completed by all subcontractors
    m. Certification Regarding Government-Wide Restriction on Lobbying
    n. Certification of Owner’s Attorney
    o. Affidavit Section 28 5. 530, Revised Statues of Missouri
7. Bid envelope shows name and address of the Bidder.
8. Bid envelope shows name of Project being bid.
9. Verified that the Bidder can provide executed Performance Bond and Labor and Material Bond.
10. Verified that the Bidder can provide Certificates of Insurance in the amounts indicated.

END OF DOCUMENT 00 43 93

SECTION 04 01 10 - MASONRY CLEANING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes cleaning the following:

1. Unit masonry surfaces.

1.2 DEFINITIONS

A. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.

B. Medium-Pressure Spray: 400 to 800 psi; 4 to 6 gpm.

C. High-Pressure Spray: 800 to 1200 psi; 4 to 6 gpm.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.5 QUALITY ASSURANCE

A. Mockups: Prepare mockups of cleaning on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Cleaning: Clean an area approximately 25 sq. ft. for each type of masonry and surface condition.

a. Test cleaners and methods on samples of adjacent materials for possible adverse reactions. Do not test cleaners and methods known to have deleterious effect.
b. Allow a waiting period of not less than seven days after completion of sample cleaning to permit a study of sample panels for negative reactions.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. Water: Potable.

B. Hot Water: Water heated to a temperature of 140 to 160 deg F.

C. TSP-free formula: Basis-of-Design product: Simple Green Surface Prep Cleaner, or comparable product approved by architect.

2.2 CHEMICAL CLEANING SOLUTIONS

A. Dilute chemical cleaners with water to produce solutions not exceeding concentration recommended in writing by chemical-cleaner manufacturer.

PART 3 - EXECUTION

3.1 PROTECTION

A. Comply with each manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent paint removers and chemical cleaning solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

1. Cover adjacent surfaces with materials that are proven to resist paint removers and chemical cleaners used unless products being used will not damage adjacent surfaces. Use protective materials that are waterproof and UV resistant. Apply masking agents according to manufacturer's written instructions. Do not apply liquid strippable masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.

3.2 CLEANING MASONRY, GENERAL

A. Cleaning Appearance Standard: Cleaned surfaces are to have a uniform appearance as viewed from 50 feet away by Architect.

B. Proceed with cleaning in an orderly manner; work from top to bottom of each scaffold width and from one end of each elevation to the other. Ensure that dirty residues and rinse water do not wash over dry, cleaned surfaces.

C. Use only those cleaning methods indicated for each masonry material and location.

1. Brushes: Do not use wire brushes or brushes that are not resistant to chemical cleaner being used.

2. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that cleaning methods do not damage surfaces, including joints.

    a. Equip units with pressure gages.
    b. For chemical-cleaner spray application, use low-pressure tank or chemical pump suitable for chemical cleaner indicated, equipped with nozzle having a cone-shaped spray.
    c. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.
    d. For heated water-spray application, use equipment capable of maintaining temperature between 140 and 160 deg F at flow rates indicated.

D. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces. Keep wall wet below area being cleaned to prevent streaking from runoff.

E. Perform additional general cleaning, paint and stain removal, and spot cleaning of small areas that are noticeably different when viewed according to the "Cleaning Appearance Standard" Paragraph, so that cleaned surfaces blend smoothly into surrounding areas.

F. Water-Spray Application Method: Unless otherwise indicated, hold spray nozzle at least 6 inches from masonry surface and apply water in horizontal back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.

G. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.

1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.

3.3 PRELIMINARY CLEANING

A. Removing Plant Growth: Completely remove visible plant, moss, and shrub growth from masonry surfaces. Carefully remove plants, creepers, and vegetation by cutting at roots and allowing remaining growth to dry as long as possible before removal. Remove loose soil and plant debris from open joints to whatever depth they occur.

B. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to planned cleaning methods. Extraneous substances include paint, calking, asphalt, and tar.

1. Carefully remove heavy accumulations of rigid materials from masonry surface with sharp chisel. Do not scratch or chip masonry surface.

3.4 PAINT REMOVAL

A. Exterior Concrete and CMU: Pressure wash with TSP-free formula in pressure washer injector system with rotating pressure washer tip at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute.

3.5 CLEANING MASONRY

A. Detergent Cleaning:
   1. Exterior Concrete and CMU: Pressure wash with TSP-free formula in pressure washer injector system with rotating pressure washer tip at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute to remove oil, grease, loose rust, loose mill scale and loose paint.
   2. Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners prior to painting.
   3. The PH of the surface shall be between 6 and 9, unless the products to be used are designed to be used in high PH environments.
   4. Fill bug holes, air pockets and other voids with patching compound prior to painting.
      a. Patching Compound: Basis-of-Design product shall be ConSeal or comparable product approved by architect.

ND OF SECTION 04 01 10

SECTION 04 20 00 - UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Concrete masonry units.

1.2 DEFINITIONS

A. CMU(s): Concrete masonry unit(s).

B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For reinforcing steel. Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315. Show elevations of reinforced walls.

1.4 INFORMATIONAL SUBMITTALS

A. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91/C 91M for air content.
2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

1.5 FIELD CONDITIONS

A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 UNIT MASONRY, GENERAL

A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.

B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work.

2.2 CONCRETE MASONRY UNITS

A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.

B. CMUs: ASTM C 90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.
2. Density Classification: Normal weight below grade; Normal or Lightweight above grade, unless indicated otherwise.

2.3 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150/C 150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: ASTM C 207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Masonry Cement: ASTM C 91/C 91M.

1. Products Subject to compliance with requirements, provide one of the following:

a. Capital Materials Corporatoin; Flamingo Color Masonry Cement.
b. Cemex S.A.B. de C.V; Brikset Type N.
c. Essroc; Brixment
d. Holcim (US) Inc.; Mortamix Masonry Cement
e. Lafarge North America Inc; Magnolia Masonry Cement
f. Lehigh Cement Company; Lehigh Masonry Cement
g. National Cement Company, Inc; Coosa Masonry Cement

E. Aggregate for Mortar: ASTM C 144.

1. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.

F. Aggregate for Grout: ASTM C 404.

G. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Euclid Chemical Company (The); an RPM company; Accelguard 80.
b. Grace Construction Products, W.R. Grace & Co. - Conn; Morset.
c. Sonneborn Products; BASF Aktiengesellschaft; Trimix-NCA.

H. Water: Potable.

2.4 REINFORCEMENT

A. Uncoated-Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.

B. Masonry-Joint Reinforcement, General: ASTM A 951/A 951M.

1. Interior Walls: Hot-dip galvanized carbon steel.
2. Exterior Walls: Hot-dip galvanized carbon steel.
3. Wire Size for Side Rods: 0.148-inch diameter.
4. Wire Size for Cross Rods: 0.148-inch diameter.
5. Wire Size for Veneer Ties: 0.148-inch diameter.
6. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
7. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.

C. Masonry-Joint Reinforcement for Single-Wythe Masonry: Ladder or truss type with single pair of side rods.

2.5 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:

1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M, with ASTM A 153/A 153M, Class B-2 coating.
2. Steel Sheet, Galvanized after Fabrication: ASTM A 1008/A 1008M, Commercial Steel, with ASTM A 153/A 153M, Class B coating.
3. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

2.6 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.

B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

C. Bond-Breaker Strips: Asphalt-saturated felt complying with ASTM D 226/D 226M, Type I (No. 15 asphalt felt).

2.7 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Diedrich Technologies, Inc.; a division of Sandell Construction Solutions.
    b. EaCo Chem, Inc.
    c. ProSoCo, Inc.

2.8 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Use portland cement-lime mortar unless otherwise indicated.
3. For exterior masonry, use portland cement-lime mortar.
4. For reinforced masonry, use portland cement-lime mortar.
5. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C 270. Provide the following types of mortar for applications stated unless another type is indicated.

1. For masonry below grade or in contact with earth, use Type S.
2. For reinforced masonry, use Type N.
3. For mortar parge coats, use Type N.
4. For exterior, above-grade, load-bearing and nonload-bearing walls and parapet walls; for interior load-bearing walls; for interior nonload-bearing partitions; and for other applications where another type is not indicated, use Type N.
5. For interior nonload-bearing partitions, use Type N.

D. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602/ACI 530.1/ASCE 6 for dimensions of grout spaces and pour height.
2. Proportion grout in accordance with ASTM C 476, Table 1 orparagraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi.
3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

B. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.

3.2 TOLERANCES

A. Dimensions and Locations of Elements:

1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch or minus 1/4 inch.
2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
3. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch.

3.3 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.

C. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

D. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.

E. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

3.4 MORTAR BEDDING AND JOINTING

A. Lay CMUsas follows:

1. Bed face shells in mortar and make head joints of depth equal to bed joints.
2. Bed webs in mortar in all courses of piers, columns, and pilasters.
3. Bed webs in mortar in grouted masonry, including starting course on footings.
4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.

B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

3.5 MASONRY-JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.

1. Space reinforcement not more than 16 inches o.c.
2. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.
3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings.

B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.

3.6 REPAIRING, POINTING, AND CLEANING

A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

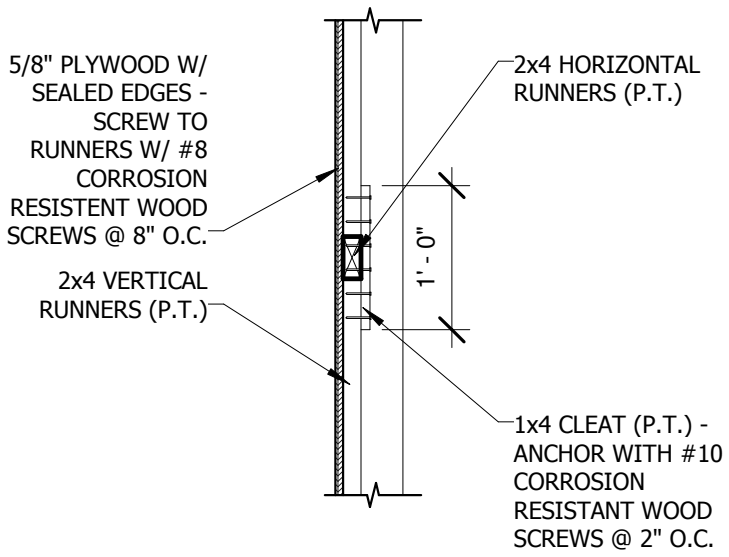
B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes.
3. Protect adjacent surfaces from contact with cleaner.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

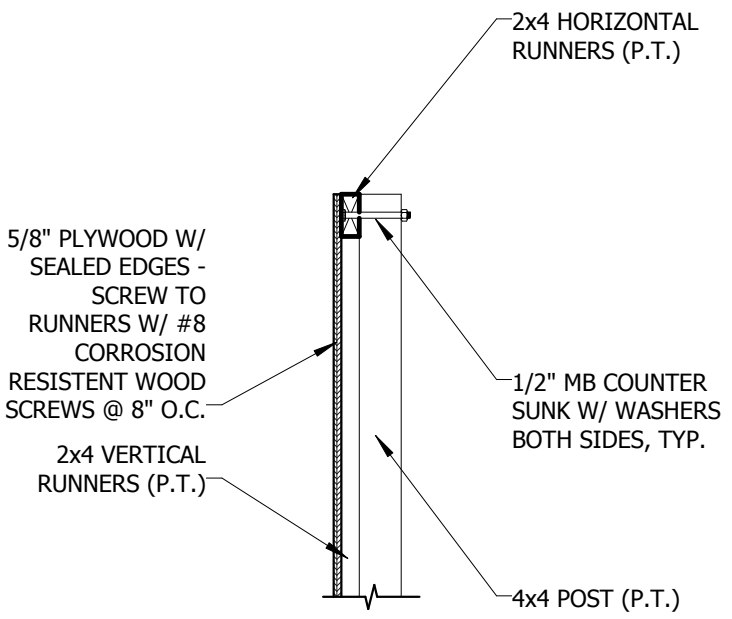
3.7 MASONRY WASTE DISPOSAL

A. Excess Masonry Waste: Remove excess clean masonry waste and legally dispose of off Owner's property.

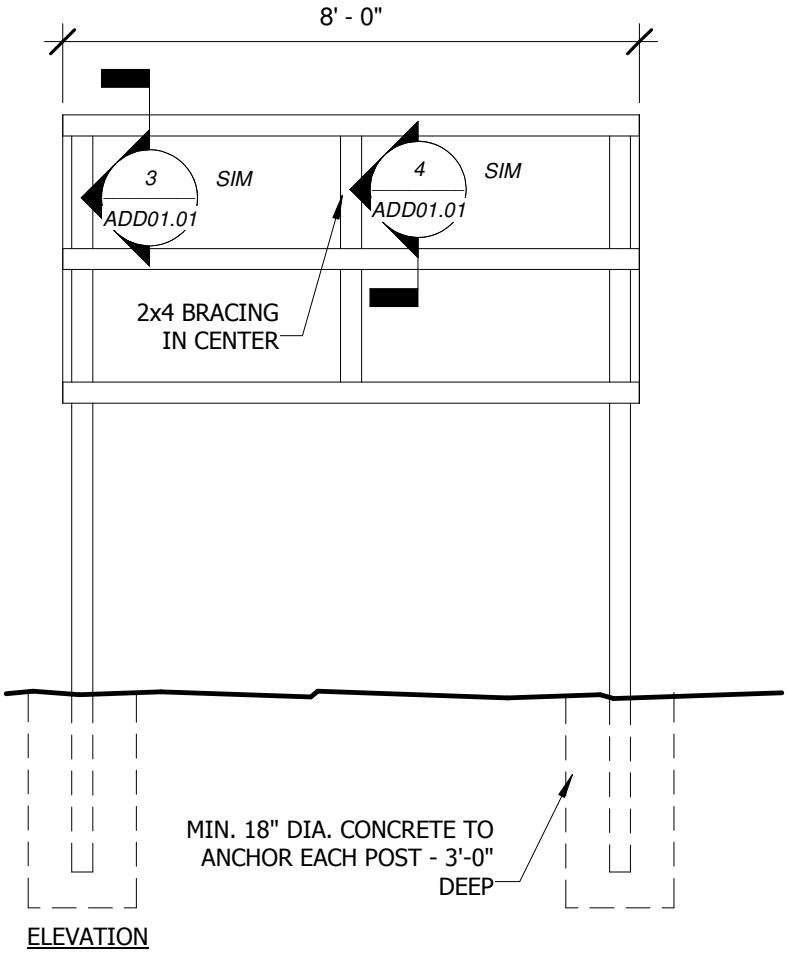
END OF SECTION 04 20 00



4 SIGN DETAIL 4
SCALE: 3/4" = 1'-0"

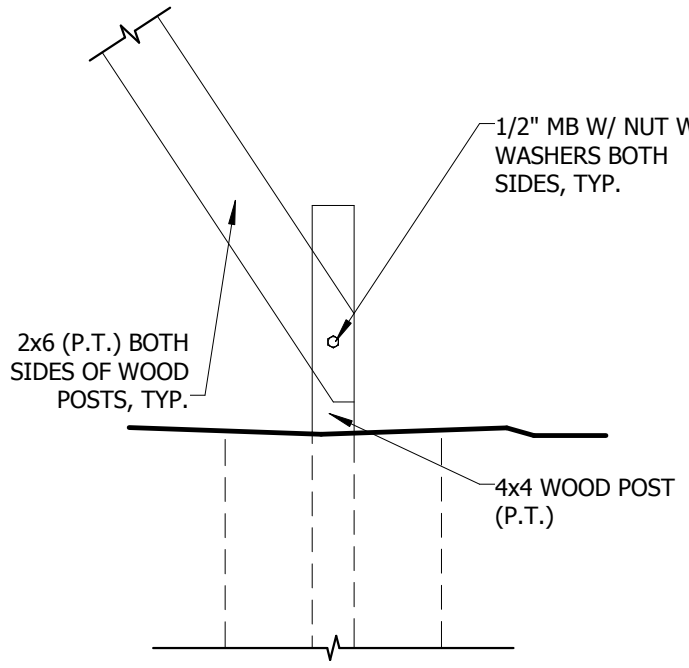


3 SIGN DETAIL 3
SCALE: 3/4" = 1'-0"

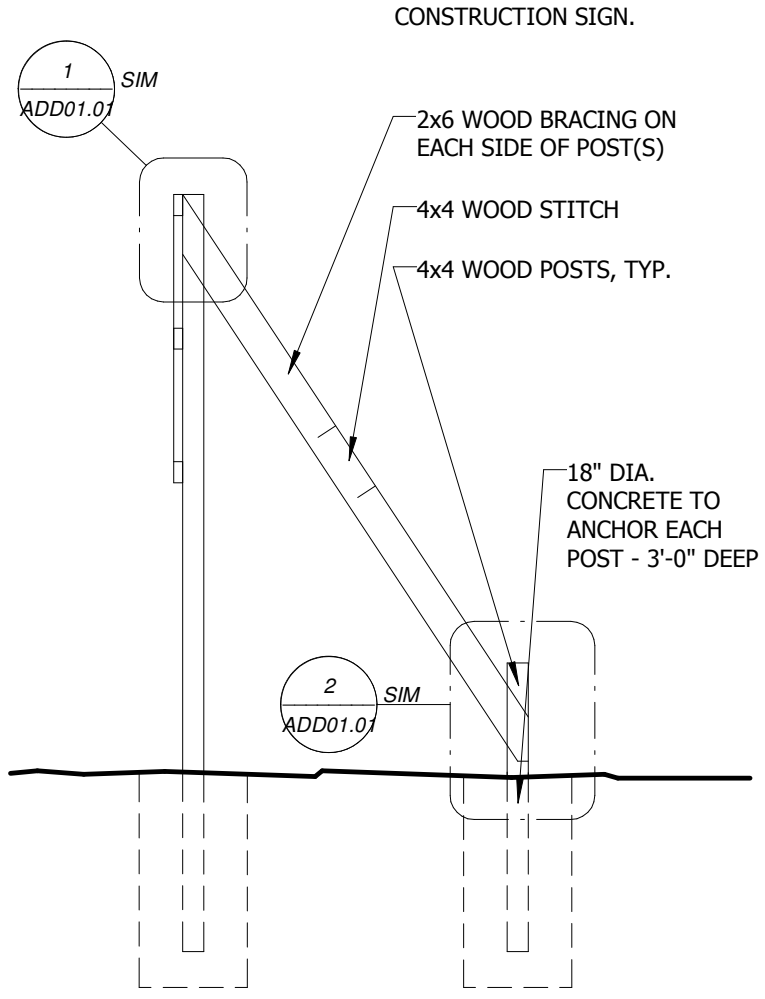


ELEVATION

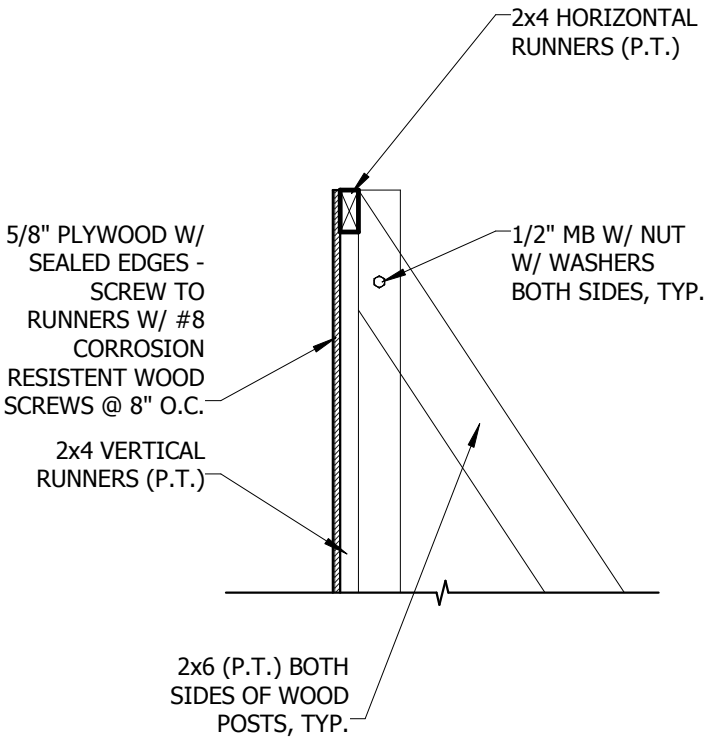
NOTE: ARCHITECT WILL PROVIDE IMAGERY FOR CONSTRUCTION SIGN.



2 SIGN DETAIL 2
SCALE: 3/4" = 1'-0"



5 SIGN SECTIONS
SCALE: 3/8" = 1'-0"



1 SIGN DETAIL 1
SCALE: 3/4" = 1'-0"

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PROJECT NUMBER: 15-287
DATE: 03/10/16
ORIGINAL SHEET: N/A

CONSTRUCTION SIGN DETAILS

ADD01.01