



State of West Virginia  
 Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

# Request for Quotation

RFQ NUMBER  
**DEFK7213**

PAGE  
**1**

ADDRESS CORRESPONDENCE TO ATTENTION OF:  
**JOHN ABBOTT**  
**304-558-2544**

RFQ COPY  
 TYPE NAME/ADDRESS HERE

VENDOR

SHIP TO

**DIV ENGINEERING & FACILITIES**  
**ARMORY BOARD SECTION**

**1707 COONSKIN DRIVE**  
**CHARLESTON, WV**  
**25311-1099 341-6368**

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
05/16/2007				

BID OPENING DATE: **06/14/2007** **BID OPENING TIME 01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<b>ADDENDUM #01</b>  THIS ADDENDUM IS ISSUED TO MODIFY, ADD TO, AND/OR DELETE REQUIREMENTS OF THE ORIGINAL SPECIFICATIONS PER THE ATTACHED; AND TO EXTEND THE BID OPENING.  ATTACHMENTS: 1. ADDENDUM #1 ISSUED BY THE MASON AND HANGER GROUP, INC. 2. PRE-BID SIGN-IN SHEET  NEW BID OPENING DATE: 06/14/2007						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

**GENERAL TERMS & CONDITIONS  
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)**

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125.00 registration fee.
5. All services performed or goods delivered under State Purchase Orders/Contracts are to be continued for the term of the Purchase Order/Contract, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this contract is automatically null and void, and is terminated without further order.
14. **HIPAA Business Associate Addendum** - The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Covered Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.

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**INSTRUCTIONS TO BIDDERS**

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in cases of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications.

**SIGNED BID TO:**

Department of Administration  
Purchasing Division  
2019 Washington Street East  
Post Office Box 50130  
Charleston, WV 25305-0130

**ADDENDUM # 01**

ISSUE DATE: May 15, 2007

PROJECT: KINGWOOD READINESS CENTER  
Camp Dawson  
Kingwood, West Virginia

OWNER: West Virginia Army National Guard and  
U.S. Army Corps of Engineers, Mobile District

Contract No.: W912HN-05-D-001  
Task Order No.: CK04

ARCHITECT / ENGINEER: The Mason & Hanger Group, Inc  
a Day & Zimmermann company  
300 West Vine Street, Suite 1300  
Lexington, Kentucky 40507-1814  
MHG No. 0062.04  
tel 859.252.9980  
fax 859.389.8870

Revise and amend the Project Manual and Drawings all dated March 20, 2007 for Work on the above Project as stated in this Addendum; otherwise the original Project Manual and Drawings shall remain in effect.

This Addendum consists of 2 page(s) and the following attachments:

**AFFECTING BIDDING REQUIREMENTS:**

01-001: Refer to section titled "BID ITEM REVISIONS" in attachment: "Civil/Site Revisions".

**AFFECTING CONDITIONS OF THE CONTRACT:**

None

**AFFECTING SPECIFICATIONS:**

- 01-002: Division 16 Specifications, Delete references to seismic bracing of electrical systems and components.
- 01-003: Add Section 16461, "Low Voltage Transformers". Refer to attachment.
- 01-004: Edit Section 16415, "Transfer Switches" as follows:

**2.2 GENERAL TRANSFER-SWITCH PRODUCT REQUIREMENTS**

Add the following sentence to paragraph A. Switch shall be rated for use as service equipment. Provide over current protection and other equipment as necessary.

Edit number 1 under paragraph F Switch Characteristics as follows:

1. Limitation: Switches using molded-case switches or circuit breakers or insulated-case circuit-breaker components as the switching means are not acceptable.

- 01-005: Section 04810-2.5-B-8. DELETE word "Available".
- 01-006: Section 10420 DELETE entire section and REPLACE with 10420 -Attached.
- 01-007: Add Section 02350, "Redi-Rock ® Wall System". Refer to attachment: "Civil/Site Revisions".

**AFFECTING DRAWINGS:**

- 01-008: Delete 3/A512 SECTION DETAIL and replace with revised detail 3/A512 SECTION DETAIL per architectural supplemental drawing SD-A-001 attached.  
Note: Section notes and detail information to be applied to all sections with similar condition.
- 01-009: Delete 8/A512 SECTION DETAIL and replace with revised detail 8/A512 SECTION DETAIL per architectural supplemental drawing SD-A-002 attached.  
Note: Section notes and detail information to be applied to all sections with similar condition.
- 01-0010: Delete 8/A512 SECTION DETAIL and replace with revised detail 8/A512 SECTION DETAIL per architectural supplemental drawing SD-A-003 attached.  
Note: Section notes and detail information to be applied to all sections with similar condition.
- 01-0011: Add Diffuser tag to the two unmarked diffusers in corridor 102 to have type C diffuser with 230 cfm each.
- 01-0012: Add Diffuser tag to the two unmarked diffusers in Room 201 to have type C diffuser with 390 cfm each.
- 01-0013: Add Note to exhaust fan EF-6 to be 1500 cfm, 0.25 inches static and ¼ hp, 120volt 1 phase.

CLARIFICATIONS TO CONTRACTOR QUESTIONS:

- 01-0014: Q: Is PVC acceptable for plumbing piping?

*A/E Response: PVC piping can be used except for below ground (cast iron) or in return air plenum, which is against code.*

- 01-0015: Q: Is seismic bracing required for electrical components?

*A/E Response: No, seismic bracing is not required for electrical components.*

End of Addendum # 01

**KINGWOOD READINESS CENTER  
ADDENDUM #01- CIVIL/SITE REVISIONS**

**BID ITEM REVISIONS**

**BID FORM SECTION II (BID SHEET): NAME CHANGE:**

Bid Item #9      Change name from "Structural Fill" to "Building Pad"

**BID FORM SECTION III (BID ITEM DESCRIPTIONS):**

Remove the following Bid Item Descriptions:

- #5                      Site Preparation
- #s 8 & 76            Unclassified Excavation
- #9                      Structural Fill
- #s 24 & 73          Pavement Markings
- #68                    Landscaping

Replace with:

**Bid Item 5:                      Site Preparation**

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**Unit:**                              Lump Sum (LS)

**Description:**                    This work shall consist of the removal of pavements to subgrade, lighting, sidewalks, trees and other vegetation, topsoil stripping and stockpiling, relocation of existing storm drains, and clearing and grubbing of all areas disturbed by the Contractor. Disposal and/or storage of items removed is also included.

**Measurement:**                There will be no direct measurement of materials, labor, and services provided by the contractor in completing this item.

**Payment:**                        Payment shall be made at the contract unit price per lump sum.

**Bid Items  
8 & 76:                              Unclassified Excavation**

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**Unit:**                              Cubic Yard (CY)

**Description:**                    This work shall consist of unclassified excavation to subgrade, loading and hauling of excavated material (if required), fill placement, compaction, and shall include final grading, shaping and contouring of the excavation and fill areas. This item does not include excavation for on- or off-site borrow if required. The terms for earthwork used in the remainder of this Section imply excavation in native materials. The Contractor, with approval of the C&FMO, shall adjust the final grades as necessary to create a finished project. The Contractor shall excavate to the lines and grades shown on the Plans. The Contractor shall perform all excavation of every description and of whatever

materials encountered to the depths indicated on the Plans. No additional compensation shall be considered for rock excavation. Excavation for utilities, drainage pipes, and building foundations is not included in this bid item.

Except at locations where excavation of unsuitable material is required, care shall be taken not to excavate below the depths specified. Final shaping and contouring of the areas shall be performed to the satisfaction of the C&FMO.

**Measurement:** The method of measurement for determining the quantity of unclassified excavation shall be before and after surveyed cross-sections of the excavated material and the average-end-area method for computing volume. Any excavation outside of plan lines and grades shall be excluded from payment. Initial cross-sections shall be surveyed after topsoil stripping is completed.

**Payment:** This item shall be paid for at the contract unit price per cubic yard, which price and payment shall be full compensation for doing all the work herein described in a workmanlike and acceptable manner; including the furnishing of all labor, materials, tools, equipment, supplies, quantity surveys and incidentals as necessary to complete the work.

**Bid Item 9: Building Pad**

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**Unit:** Cubic Yard (CY)

**Description:** This work shall consist of providing the fill material and its placement for the building pad from the limit of undercut to the building finish floor elevation (within and 10' outside of building or wall foundations), compaction, settlement monitoring, material removal to building subgrade elevation after settlement is complete, final grading, shaping and contouring of the area within and 10' outside of building or wall foundations. Fill and backfill are defined as suitable soil in the technical specifications. The Contractor, with approval of the C&FMO, shall adjust the final grades as necessary to create a finished project. The Contractor shall fill to the lines and grades shown on the Plans. Final shaping and contouring of the areas shall be performed to the satisfaction of the C&FMO. No payment will be made for surcharging or filling above building finish floor elevation.

**Measurement:** The method of measurement for determining the quantity of structural fill shall be before and after surveyed cross-sections of the in-place material and the average-end-area method for computing volume.

**Payment:** This item shall be paid for at the contract unit price per cubic yard, which price and payment shall be full compensation for doing all the work herein described in a workmanlike and acceptable manner; including the furnishing of all labor, materials, tools, equipment, supplies, quantity surveys and incidentals as necessary to complete the work.

**Bid Items****24 & 73: Pavement Marking**

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**Unit:** Lump Sum (LS)**Description:** Pavement markings shall consist of furnishing and installing various types of markings, as shown on the plans and an additional 100 sq ft for miscellaneous marking as directed by the C&FMO. It shall include edge lines, center lines, stop lines, crosswalks, parking stalls, and handicapped markings.**Measurement:** There will be no direct measurement of labor, materials and services provided by the contractor in completing this item.**Payment:** This item shall be paid for at the contract lump sum price upon satisfactory completion of all pavement markings shown on the plans.**Bid Item 68: Landscaping**

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**Unit:** Lump Sum (LS)**Description:** This work shall consist of furnishing and installing the planter (including existing pavement removal), and either the storage and replanting of the existing birch trees or providing new ones. This item also includes care and maintenance of landscaping until substantial completion.**Measurement:** There will be no direct measurement of materials, labor, and services provided by the contractor in completing this item.**Payment:** This item shall be paid for at the contract lump sum price upon satisfactory completion of the work described.**SPECIFICATION REVISIONS**

Add the following Specification section (included in this document as an attachment):

SECTION 02350, REDI-ROCK<sup>®</sup> WALL SYSTEM**END OF ADDENDUM - CIVIL/SITE REVISIONS**

*KINGWOOD READINESS CENTER  
West Virginia Army National Guard  
Camp Dawson  
Kingwood, West Virginia*

## SECTION 02350 – REDI-ROCK® WALL SYSTEM

### PART 1 - GENERAL

#### 1.1 SCOPE

- A. Work includes furnishing and installing concrete retaining wall units to the lines and grades designated on the construction drawings and as specified herein.

#### 1.2 REFERENCE STANDARDS

- A. ASTM A615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- B. ASTM C94 Ready-Mixed Concrete
- C. ASTM C1372 Segmental Retaining Wall Units

#### 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall check the materials upon delivery to assure proper material has been received.
- B. Contractor shall prevent excessive mud, wet cement and like materials from coming in contact with the SRW units.
- C. Contractor shall protect the materials from damage. Damaged material shall not be incorporated in the project.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product installed.
- B. Shop Drawings:
  - 1. Wall Blocks: Show sizes, profiles, coursing, and locations of special shapes.
- C. Samples for Initial Selection:
  - 1. Textures/styles: Top Block, in the minimum of three textures/styles.
  - 2. Color: Provide color charts and/or block fragments.
- D. Samples for Verification:
  - 1. Top Block of color and texture/style selected.



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**PART 2 - PRODUCTS**

**2.1 WALL UNITS**

- A. Wall units shall be Redi-Rock® as produced by a licensed manufacturer.
  - 1. Color will be selected by Owner and provided by the Redi-Rock® variegated two-tone color system during block manufacturing.
  - 2. Style/texture will be selected by the Owner.
- B. Wall units shall be made with Ready-Mixed concrete in accordance with ASTM C94, latest revision, and per the following chart:

Climate	Air Content	28 Day Compressive Strength, psi	Slump*
Severe	4½%-7½%	3000	5" ±1 ½"

\*Higher slumps are allowed if achieved by use of appropriate admixtures. Notwithstanding anything stated above, all material used in the wall units must meet applicable ASTM and local requirements for exterior concrete.

- C. Exterior block dimensions shall be uniform and consistent. Maximum dimensional deviations shall be 1% excluding the architectural surface. Maximum width (face to back) deviation including the architectural surface shall be 1.0 inch.
- D. Exposed face shall be finished as specified. Other surfaces to be smooth form type. Dime-size bug holes on the block face may be patched and/or shake-on color stain can be used to blend into the remainder of the block face.

**2.2 LEVELING PAD AND FREE DRAINING BACKFILL**

- A. Leveling pad shall be crushed stone.
- B. Free Draining Backfill material shall be washed stone and shall be placed to a minimum of 1' width behind the back of the wall and shall extend vertically from the Leveling Pad to an elevation 4" below the top of wall or as shown on the Plans.
- C. Backfill material shall be approved by the engineer. Site excavated soils may be used if approved unless otherwise specified in the drawings. Unsuitable soils with a PL>6, organic soils and frost susceptible soils shall not be used within a 1 to 1 influence area.
- D. Non-woven geotextile cloth shall be placed between the Free Draining Backfill and retained soil if required.

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## 2.3 DRAINAGE

- A. Internal and external drainage shall be provided by piping as shown on the Plans.

## PART 3 - CONSTRUCTION OF WALL SYSTEM

### 3.1 EXCAVATION

- A. In accordance with Section 02300 – Earthwork.

### 3.2 FOUNDATION SOIL PREPARATION

- A. In accordance with Section 02300 – Earthwork.

### 3.3 LEVELING PAD PLACEMENT

- A. Leveling Pad shall be placed as shown on the Drawings on prepared subgrade.
- B. Leveling Pad shall be compacted to 95% of modified proctor to ensure a level, hard surface on which to place the first course blocks. Pad shall be constructed to the proper elevation to ensure the final elevation shown on the plans.
- C. Leveling Pad shall have a 6 inch minimum depth for walls under 8 feet in height and a 12 inch minimum depth for walls over 8 feet. Pad dimensions shall extend beyond the blocks in all directions to a distance at least equal to the depth of the pad or as designed by Engineer.

### 3.4 UNIT INSTALLATION

- A. The first course of wall units shall be placed on the prepared Leveling Pad with the aesthetic surface facing out and the front edges tight together. All units shall be checked for level and alignment as they are placed.
- B. Ensure that units are in full contact with Leveling Pad. Proper care shall be taken to develop straight lines and smooth curves on base course as per wall layout.
- C. The backfill in front and back of entire base row shall be placed and compacted to firmly lock them in place. Check all units again for level and alignment. All excess material shall be swept from top of units.
- D. Install next course of wall units on top of base row. Position blocks to be offset from seams of blocks below. Blocks shall be placed fully forward so knob and groove are engaged. Check each block for proper alignment and level. Backfill to 12 inch width behind block with Free Draining Backfill. Spread backfill in uniform lifts not exceeding 9 inches. Employ methods using lightweight compaction equipment that will not disrupt the stability or batter of the wall.

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Kingwood, West Virginia*

Hand-operated plate compaction equipment shall be used around the block and within 3 feet of the wall to achieve consolidation. Compact backfill to 95% of modified proctor density within 2% of its optimum moisture content.

- E. Install each subsequent course in like manner. Repeat procedure to the extent of wall height.
- F. Allowable construction tolerance at the wall face is 2 degrees vertically and 1 inch in 10 feet horizontally.
- G. All walls shall be installed in accordance with local building codes and requirements.

END OF SECTION 02350

## SECTION 10420—BUILDING DEDICATION PLAQUE

### PART 1—GENERAL

#### SUMMARY

This section includes a cast metal dedication plaque.

#### RELATED DOCUMENTS

Applicable provisions of Division 1 govern all work under this section.

#### SUBMITTALS

Submit product data and shop drawing, indicating details of construction, mounting, dimensions of individual components, profiles, and finishes. Provide setting drawing, template, and directions for installation of anchor bolts and other anchors to be installed as a unit of work in other sections. Furnish full-size rubbings for metal plaque.

#### QUALITY ASSURANCE

Fabricator Qualifications: Firm experienced in producing cast metal plaques similar to that specified herein, with a proven record of successful performance and ability to meet lead contractor's schedule.

### PART 2—PRODUCTS

MANUFACTURERS: Centec Cast or equal

#### MATERIALS

Provide bronze casting, copper alloy UNS C83600, in accordance with the requirements of ASTM B 584. Casting shall be free from pits, scale, sand holes, or other defects.

Fasteners: Use concealed fasteners fabricated from metals that are not corrosive to the sign material and mounting surface.

Anchors and Inserts: Use nonferrous metal or hot-dipped galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

#### CAST METAL PLAQUE:

Size: 18" x 24" x 1/4" thick with 1/4" single line flat band border  
 Metal: Bronze  
 Letter Style: Universe Bold Condensed

#### FINISHES

Borders and raised copy shall be hand-tooled and buffed to produce the manufacturer's standard satin polished finish. Background finish shall be dark statuary finish in manufacturer's standard pebble texture. Comply with NAAMM "Metal Finishes Manual" for finish designations and applications recommendations.

Bronze Finishes: Finish designations prefixed by "CDA" conform to the system established by the Copper Development Association for designating finishes.

Provide manufacturer's standard clear organic coating

### PART 3—EXECUTION

#### INSTALLATION

Install plaque in compliance with the manufacturer's instructions where indicated, using standard concealed-mounting method recommended by the manufacturer for the type of wall surface on which plaque will be mounted.

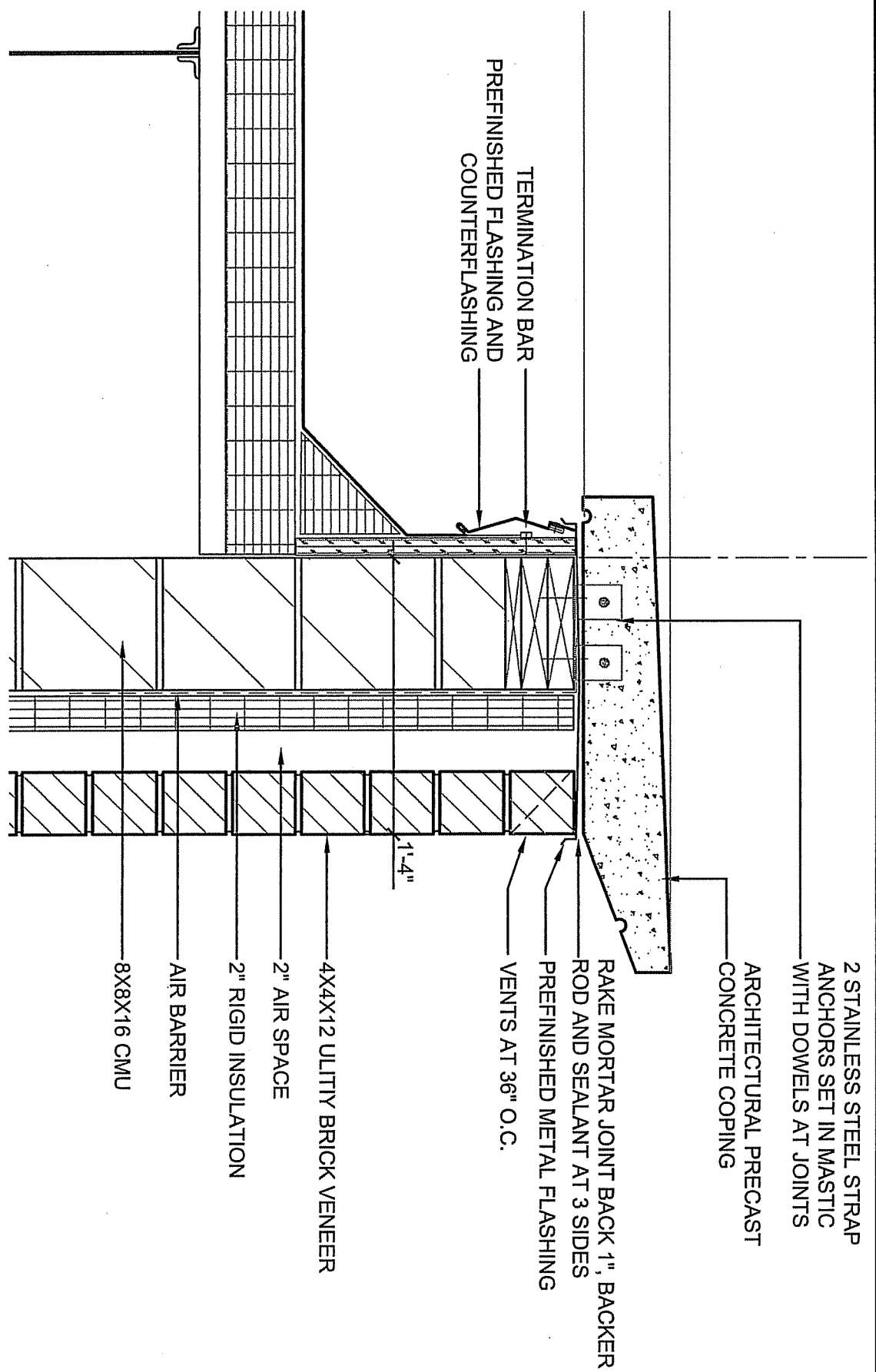
Install plaque level, plumb, and at the height indicated, with plaque surfaces free from distortion or other defects in appearance.

Concealed Mounting: Mount the plaque by inserting threaded studs into tapped lugs on the back of the plaque. Set in predrilled holes filled with quick-setting cement.

#### CLEANING AND PROTECTION

After installation, clean soiled plaque surfaces according to the manufacturer's instructions. Protect units from damage until acceptance by the owner.

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**3** SECTION DETAIL  
1 1/2"=1'-0"

SECTION NOTES AND DETAIL INFORMATION TO BE APPLIED TO ALL SECTIONS WITH SIMILAR CONDITION

DESIGNED BY: H. NOUGHANI	DRAWN BY: K. SPODEN	CHECKED BY: DCD	REVISION DATE: 05/14/07	SHEET NUMBER: SD-A-001
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KINGHOOD, WV

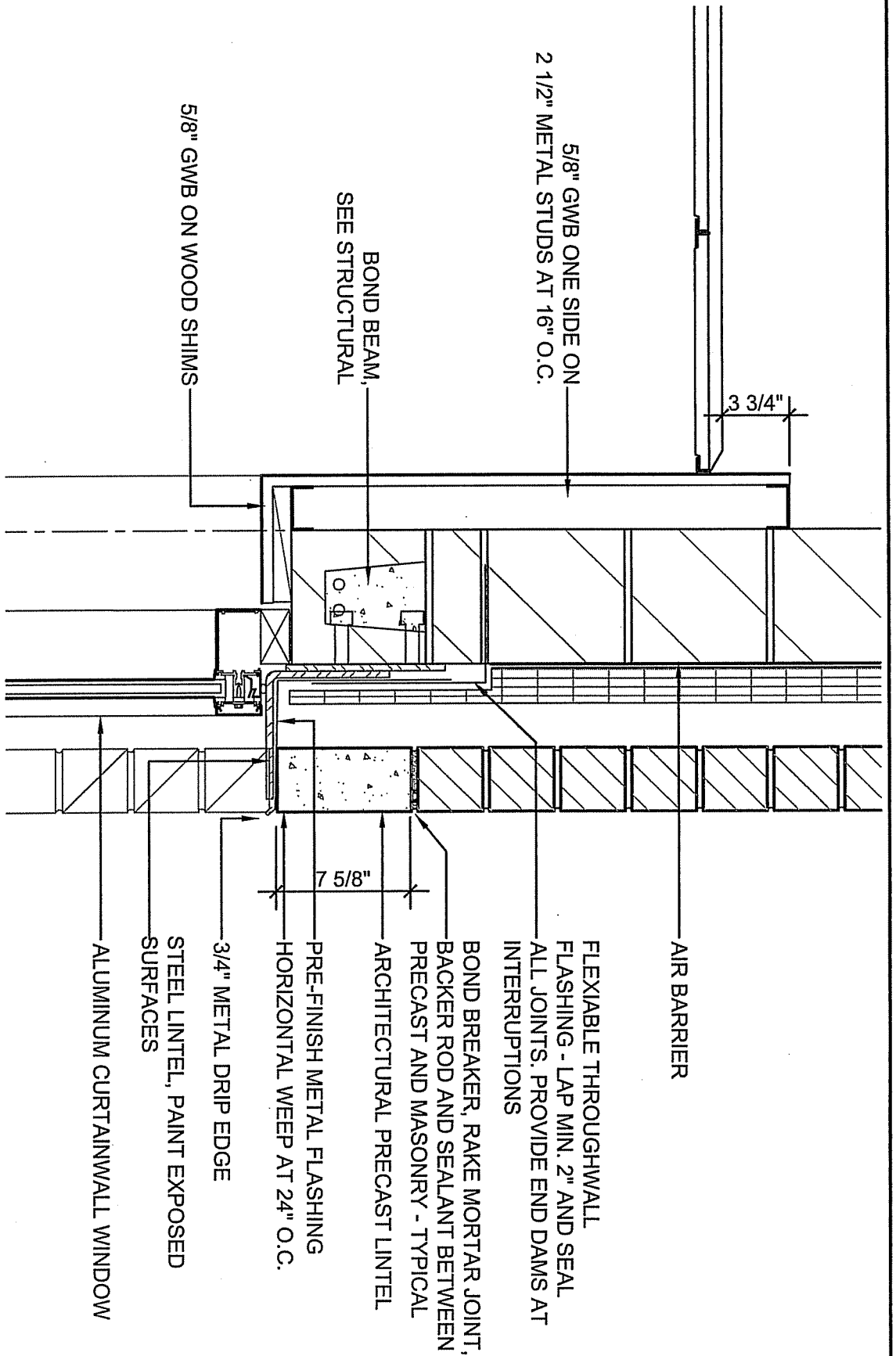
A-512 WALL SECTION DETAILS

ADDENDUM #001

**Mason & Hanger**  
A Day & Zimmermann Company

assemblage ARCHITECTS

410 D'Onofrio Drive  
Madison, WI 53719  
608.827.5047



**8** SECTION DETAIL  
 1 1/2" = 1'-0"

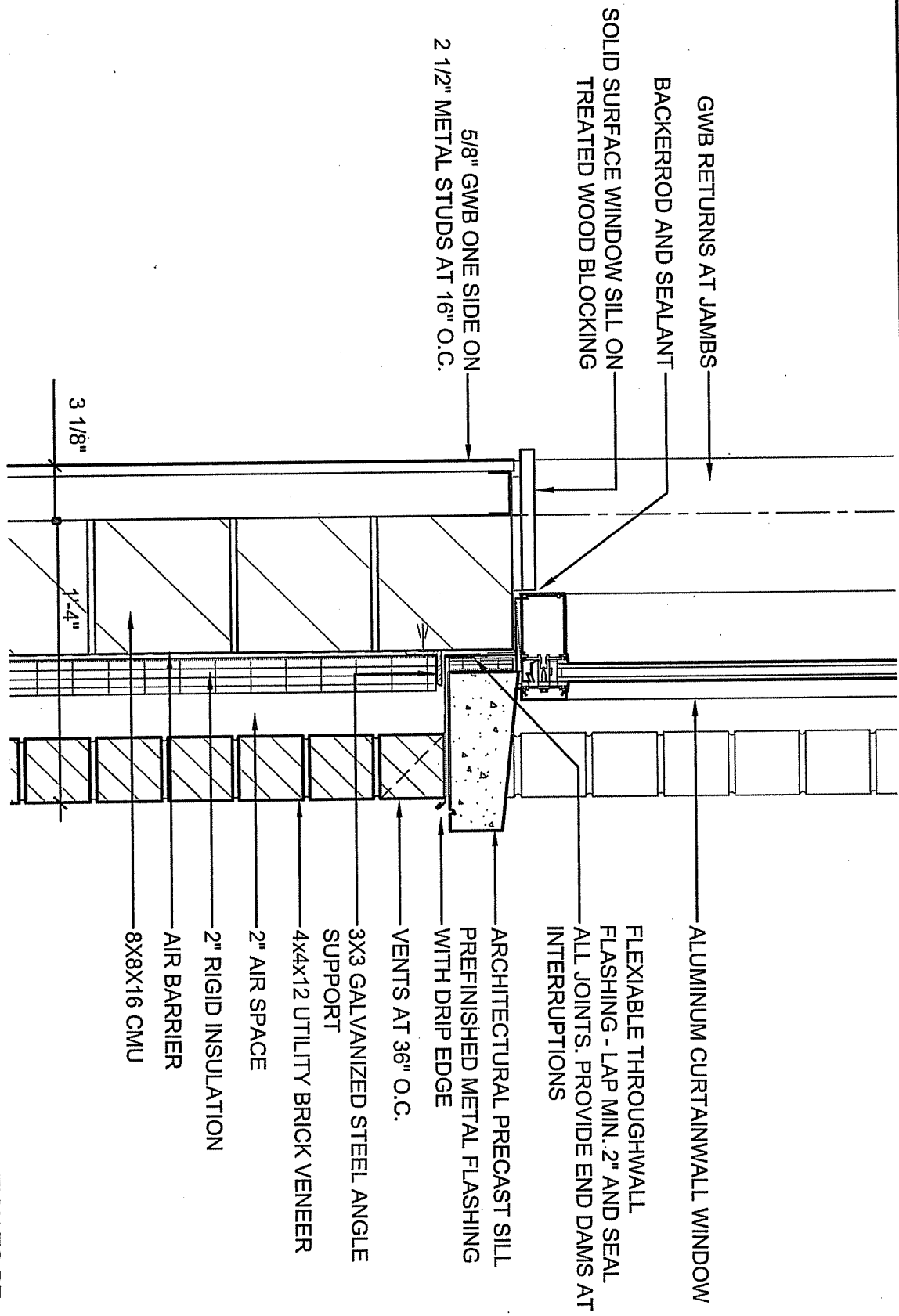
SECTION NOTES AND DETAIL INFORMATION TO BE APPLIED TO ALL SECTIONS WITH SIMILAR CONDITION

DESIGNED BY: H. NOUGHANI	DRAWN BY: K. SPODEN	CHECKED BY: DCD	REVISION DATE: 05/14/07	SHEET NUMBER: SD-A-002
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 KINGWOOD, WV  
 A-512 WALL SECTION DETAILS

ADDENDUM #001

**Mason & Hanger**  
 A Day & Zimmermann Company  
 assemblage ARCHITECTS  
 410 D'Onofrio Drive  
 Madison, WI 53719  
 608.827.5047



**8** SECTION DETAIL  
1 1/2" = 1'-0"

SECTION NOTES AND DETAIL INFORMATION TO BE APPLIED TO ALL SECTIONS WITH SIMILAR CONDITION

DESIGNED BY: H. NOUGHANI	DRAWN BY: K. SPODEN	CHECKED BY: DCD	REVISION DATE: 05/14/07	SHEET NUMBER: SD-A-003
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A-512 WALL SECTION DETAILS

ADDENDUM #001

**Mason & Hanger**  
A Day & Zimmermann Company  
assemblage ARCHITECTS  
410 D'Onofrio Drive  
Madison, WI 53719  
608.827.5047



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*Bid Set Submittal*

## SECTION 16461 - LOW-VOLTAGE TRANSFORMERS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following types of dry-type transformers rated 600 V and less, with capacities up to 1000 kVA:
  - 1. Distribution transformers.

#### 1.3 SUBMITTALS

- A. Product Data: Include rated nameplate data, capacities, weights, dimensions, minimum clearances, installed devices and features, and performance for each type and size of transformer indicated.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 1. Wiring Diagrams: Power wiring.
- C. Qualification Data: For testing agency.
- D. Source quality-control test reports.
- E. Field quality-control test reports.
- F. Operation and Maintenance Data: For transformers to include in emergency, operation, and maintenance manuals.

#### 1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

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*Bid Set Submittal*

1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.
- B. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7.
- C. Source Limitations: Obtain each transformer type through one source from a single manufacturer.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- E. Comply with IEEE C57.12.91, "Test Code for Dry-Type Distribution and Power Transformers."

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Temporary Heating: Apply temporary heat according to manufacturer's written instructions within the enclosure of each ventilated-type unit, throughout periods during which equipment is not energized and when transformer is not in a space that is continuously under normal control of temperature and humidity.

#### 1.6 COORDINATION

- A. Coordinate size and location of concrete bases with actual transformer provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.
- B. Coordinate installation of wall-mounting and structure-hanging supports with actual transformer provided.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following or equal:
  1. ACME Electric Corporation; Power Distribution Products Division.
  2. Challenger Electrical Equipment Corp.; a division of Eaton Corp.
  3. Controlled Power Company.

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4. Eaton Electrical Inc.; Cutler-Hammer Products.
5. Federal Pacific Transformer Company; Division of Electro-Mechanical Corp.
6. General Electric Company.
7. Hammond Co.; Matra Electric, Inc.
8. Magnetek Power Electronics Group.
9. Micron Industries Corp.
10. Myers Power Products, Inc.
11. Siemens Energy & Automation, Inc.
12. Sola/Hevi-Duty.
13. Square D; Schneider Electric.

## 2.2 GENERAL TRANSFORMER REQUIREMENTS

- A. Description: Factory-assembled and -tested, air-cooled units for 60-Hz service.
- B. Cores: Grain-oriented, non-aging silicon steel.
- C. Coils: Continuous windings without splices except for taps.
  1. Internal Coil Connections: Brazed or pressure type.
  2. Coil Material: Copper.

## 2.3 DISTRIBUTION TRANSFORMERS

- A. Comply with NEMA ST 20, and list and label as complying with UL 1561.
- B. Cores: One leg per phase.
- C. Enclosure: Ventilated, NEMA 250, Type 2.
  1. Core and coil shall be encapsulated within resin compound, sealing out moisture and air.
- D. Transformer Enclosure Finish: Comply with NEMA 250.
  1. Finish Color: Gray.
- E. Taps for Transformers Smaller Than 3 kVA: One 5 percent tap above normal full capacity.
- F. Taps for Transformers 25 kVA and Larger: Two 2.5 percent taps above and two 2.5 percent taps below normal full capacity.
- G. Insulation Class: 220 deg C, UL-component-recognized insulation system with a maximum of 150 deg C rise above 40 deg C ambient temperature.
- H. Energy Efficiency for Transformers Rated 15 kVA and Larger:
  1. Complying with NEMA TP 1, Class 1 efficiency levels.
  2. Tested according to NEMA TP 2.

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- I. K-Factor Rating: Transformers indicated to be K-factor rated shall comply with UL 1561 requirements for nonsinusoidal load current-handling capability to the degree defined by designated K-factor.
  - 1. Unit shall not overheat when carrying full-load current with harmonic distortion corresponding to designated K-factor.
  - 2. Indicate value of K-factor on transformer nameplate shall have a K-4 rating.
- J. Fungus Proofing: Permanent fungicidal treatment for coil and core.

#### 2.4 IDENTIFICATION DEVICES

- A. Nameplates: Engraved, laminated-plastic or metal nameplate for each distribution transformer, mounted with corrosion-resistant screws. Nameplates and label products are specified in Division 16 Section "Electrical Identification."

#### 2.5 SOURCE QUALITY CONTROL

- A. Test and inspect transformers according to IEEE C57.12.91.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine conditions for compliance with enclosure- and ambient-temperature requirements for each transformer.
- B. Verify that field measurements are as needed to maintain working clearances required by NFPA 70 and manufacturer's written instructions.
- C. Examine walls, floors, roofs, and concrete bases for suitable mounting conditions where transformers will be installed.
- D. Verify that ground connections are in place and requirements in Division 16 Section "Grounding and Bonding" have been met. Maximum ground resistance shall be 5 ohms at location of transformer.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. Construct concrete bases and anchor floor-mounting transformers according to manufacturer's written instructions.

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3.3 CONNECTIONS

- A. Ground equipment according to Division 16 Section "Grounding and Bonding."
- B. Connect wiring according to Division 16 Section "Conductors and Cables."

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Report results in writing.
- C. Perform tests and inspections and prepare test reports.
  - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections:
  - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
- E. Remove and replace units that do not pass tests or inspections and retest as specified above.
- F. Test Labeling: On completion of satisfactory testing of each unit, attach a dated and signed "Satisfactory Test" label to tested component.

3.5 ADJUSTING

- A. Record transformer secondary voltage at each unit for at least 48 hours of typical occupancy period. Adjust transformer taps to provide optimum voltage conditions at secondary terminals. Optimum is defined as not exceeding nameplate voltage plus 10 percent and not being lower than nameplate voltage minus 3 percent at maximum load conditions. Submit recording and tap settings as test results.
- B. Output Settings Report: Prepare a written report recording output voltages and tap settings.

3.6 CLEANING

- A. Vacuum dirt and debris; do not use compressed air to assist in cleaning.

END OF SECTION 16461





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Rep: <u>RAY GEGICK</u>	<u>PITTSBURGH, PA</u>	TOLL FREE
Email Address: <u>RGEGICK@CHOICEONEMAIL.COM</u>	<u>15237</u>	FAX <u>412-366-1404</u>
Company: <u>SYSKA HUNTERY GROUP.</u>	<u>16150 RIVERBEND CT.</u>	PHONE <u>201-228-1452</u>
Rep: <u>JOHN HEDER</u>	<u>WILLIAMSPORT, MD.</u>	TOLL FREE <u>CELL 4152860135</u>
Email Address: <u>mhaver@sysca.com</u>	<u>21795</u>	FAX <u>201-223-5584</u>
Company: <u>CONESTOGA SYSTEMS USA</u>	<u>2105 EMMERSON AVE B.</u>	PHONE <u>410-679-0079</u>
Rep: <u>BOB LAUNE</u>	<u>SUITE 106</u>	TOLL FREE <u>CELL 410-984-5225</u>
Email Address: <u>bb.laune@conestogasytemsusa.com</u>	<u>EDGEWOOD, MD, 21040</u>	FAX <u>410-679-0080</u>
Company: <u>Q E BOLYARD + SOD INC</u>	<u>125 E HIGH ST</u>	PHONE <u>304-329-1330</u>
Rep: <u>AUDITA BOLYARD</u>	<u>KINGWOOD WV</u>	TOLL FREE
Email Address: <u>cebsine@mountain.net</u>	<u>26537</u>	FAX <u>304-329-1571</u>
Company: <u>STEWART'S ELECTRICAL</u>	<u>772 FAIRMONT RD.</u>	PHONE <u>304.296.0885</u>
Rep: <u>CURT STEWART / Dave Noeland</u>	<u>Westover WV</u>	TOLL FREE
Email Address: <u>CKSTEW@Verizon.net</u>	<u>26501</u>	FAX <u>304.296.3995</u>



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Email Address: rgombos@verizon.net		FAX 304-343-2724
Company: Sheet Metal Workers 33 Rep: Travis P. Baker	805 Tenn. Ave. Charleston 25302	PHONE 304-343-9429 TOLL FREE
Email Address:		FAX 304-343-2724
Company: Foster Supply Inc. Rep: Brett Robinson	PO Box 488 Scott Depot WV 25560	PHONE 504-755-8241 TOLL FREE
Email Address:		FAX 504-755-8280
Company: High Point Construction Group Rep: Todd Whitehair	PO Box 577 Buckhannon WV 26201	PHONE 304-472-5595 TOLL FREE
Email Address:		FAX 304-472-5594
Company: Master Services Mid Atlantic Rep: Patrick Smith		PHONE 304-636-8170 TOLL FREE
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Email Address: <u>dmr@edonsite.com</u>		
Company: <u>G.A. Brown &amp; Son</u>	<u>215 Mill St</u>	PHONE <u>304-365-4500</u> TOLL FREE
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Email Address: <u>ghighland@gbrown.com</u>		
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Rep: <u>Wes Drake</u>	<u>Stuwood WV 26301</u>	FAX <u>304-624-7182</u>
Email Address: <u>wdrake@verizon.net</u>		
Company: <u>ALLEN LLC</u>	<u>299 Bakers Ridge Road</u>	PHONE <u>304-594-3545</u> TOLL FREE
Rep: <u>Bruce Coar</u>	<u>MORGANTOWN, WV 26508</u>	FAX <u>304-594-4140</u>
Email Address: <u>bcogar@fallen.com</u>		
Company: <u>Capital Engineering Inc.</u>	<u>111 Wyoming Street</u>	PHONE <u>304-344-0720</u> TOLL FREE
Rep: <u>Robert M. Fuller</u>	<u>Charles Run WV 25302</u>	FAX <u>304-344-0820</u>
Email Address: <u>RFULLER@CapitalEngineering.com</u>		

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Company: Marg Austenw & Partners Inc Rep: Jerry Kuhens	Po Box 520 Morgantown WV 26505	PHONE 304-292-3454 TOLL FREE FAX 304-242-0746
Company: Markham / NGL Rep: Henri Fery	340 Mansfield Rd Pitts Knos Wv	PHONE 412-919-1900 TOLL FREE FAX 412-919-5933
Company: Kisser / NGL Markham.com Rep: Steve Kangan	Rte 1 Box 84 Cumberland Sp East	PHONE 304-738-3300 TOLL FREE FAX 304-738-3384
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Company: <u>TAZZARI GARDEN &amp; LAND</u> Rep: <u>Choris Tatham</u> Email Address: <u>chris@tazzari.com</u>	<u>1228 Country Club Road</u> <u>Fairmont W.V. 26508</u>	PHONE <u>304-864-4333</u> TOLL FREE <u>800-924-8739</u> FAX <u>304-864-4335</u>
Company: <u>EIMDRS ELECTRIC</u> Rep: <u>Darren Sams</u> Email Address: <u>dsams@eimdrs</u>	<u>222 Capital St.</u> <u>Charleston, WV 25330</u>	PHONE <u>(304) 550-6258</u> TOLL FREE <u>(cell) (304) 445-4331</u> FAX <u>(304) 720-5446</u>
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