



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
 DEFK10022

PAGE
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF
 BUYER 32
 304-558-2544

VENDOR

RFQ COPY
 TYPE NAME/ADDRESS HERE

SHIP TO

DIV ENGINEERING & FACILITIES
 CAMP DAWSON ARMY TRAINING SITE
 240 ARMY ROAD
 KINGWOOD, WV
 26537-1077 304-329-4417

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
08/02/2010				

BID OPENING DATE: 08/17/2010 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				***** ADDENDUM NO. 1 *****		
				ADDENDUM ISSUED FOR THE VOLKSTONE LIVE FIRE SHOOT HOUSE CONSTRUCTION PROJECT AT CAMP DAWSON, KINGWOOD, WV, TO DISTRIBUTE THE PRE-BID SIGN-IN SHEETS, THE PRE-BID MEETING MINUTES, THE CLARIFICATIONS, Q/A, REVISED DRAWINGS, AND AMENDED SPECIFICATIONS AS A RESULT OF THE MANDATORY ON-SITE PRE-BID MEETING ON 07/22/2010.		
				BID OPENING DATE AND TIME HAVE BEEN EXTENDED FROM 08/12/2010 TO 08/17/2010 AT 1:30 PM.		
				***** NO OTHER CHANGES *****		
0001	1	JB		968-20		
				BUILDING CONSTRUCTION		

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. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, 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.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.htm and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. 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. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. 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: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).

TSC-WVARNG POST ENGINEERING
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Pre-Bid Meeting Agenda, Classroom 201 , Camp Dawson AFRC, Kingwood WV

The following constitutes a Pre-bid Meeting Agenda for DEFK10022, Phase II, Live Fire Shoot House

Date: 20 July 2010

Time: 1:00 PM

Location: AFRC, Camp Dawson, WV

1. ADMINISTRATIVE:

- a. The Pre-bid meeting for this contract is at 1300 hours, 20 July 2010, at Camp Dawson, WV.
- b. Mandatory pre-bid attendance - Sign-In
- c. Funding: Federally-funded, WVARNG-administrated project. Award of this Project is contingent upon availability of Funds.
- d. User: West Virginia Army National Guard
- e. Administrator: Camp Dawson Engineering, WVARNG

2. INTRODUCTION:

POST ENGINEERING

a. TSC-WVARNG:

- 1. 1001 Army Road
Kingwood, WV 26537
- 2. LTC William Suver, Post Commander
304-791-4457
Email: william.suver@wv.ngb.army.mil
- 3. 1LT Don Weaver, Post Engineer
304-791-4333
Email: don.weaver@wv.ngb.army.mil
- 4. SFC Harrison Cogar
304-791-4161
Email: harrison.cogar@wv.ngb.army.mil

5. SGT Mike Cochran
 304-791-4161
 Email: michael.cochran6@wv.ngb.army.mil

6. Mr. Chuck Bowman, Division of Purchasing
 Email: charles.a.bowmanjr@wv.gov
 (304) 558-2157 (office)
 (304) 558-4115 (fax)

b. DESIGNER OF RECORD:

GRW Engineers, Inc., Lexington, KY

3. BIDDING ISSUES

POST ENGINEERING

- a. Questions must be submitted to Mr. Chuck Bowman, Division of Purchasing, email charles.a.bowmanjr@wv.gov, 304-558-2157 (office) 304-558-4115 (fax) no later than close of business on 27 July 2010.
- b. Direct discussion is **not** authorized with the Designer of Record, the Facilities Engineer, or the Project Manager.
- c. Federal Prevailing Wage Rate Applies.
- d. Bid Opening is set for 12 August 2010 at 1:30 PM.
- e. Change Orders: The only changes authorized or reviewed by the Owner will be:
 1. Owner directed.
 2. Unforeseen site conditions.
 3. Errors and omissions.
- f. Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Conflicts in drawings, clarifications, and/or lack of clarity shall be the responsibility of the Contractor after Bid Award. The Contractor is responsible to seek clarification prior to bidding if they believe there is a conflict or lack of clarity.
- g. Government assumes no responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract. The solicitation and specification remain unchanged regardless of what is said at the pre-bid conference unless they are changed by formal amendment to the solicitation.
- h. Completed bid-bond and drug free workplace certificates will accompany the bid or such bid will be rejected.

4. WORK HOURS/ SITE ACCESS-SECURITY**POST ENGINEERING**

- a. The Contractor will have access to the site from 0600 to 1600 hrs, Monday to Friday. If work hours must be modified, these will be approved on a case-by-case via the Project Manager and the Designer of Record and Camp Dawson Operations. (*Section 01010-2.06*)
- b. At the pre-construction meeting, submit a list of the Contractor's principal staff assignments, including the Project Manager and Superintendent. (*Section 01040-1.03*)
- c. Superintendence: In accordance with Contract documents, the Contractor must maintain full-time, active superintendent on the job. Duties of the superintendent will be identified at the first pre-construction meeting. (*Section 01040-1.04*)

5. TEMPORARY FACILITIES/UTILITY USAGE**POST ENGINEERING**

- a. Temporary Facilities
- b. Utility Usage

6. UTILITY INTERRUPTIONS**POST ENGINEERING**

- a. Required to give a 2-working day notification to Operations/Project Manager using the supplied standardized outage request form.
- b. Notifications must include the following information:
 - 1. Who
 - 2. What
 - 3. When
 - 4. Why
 - 5. Where
- c. Utility Interruptions can last no longer than six (6) hours without prior approval.
- d. The amount of time required for a utility interruption will be determined on a case-by-case basis and will be coordinated with Camp Dawson Operations and Post Engineering.

7. CONTRACT DURATION / LIQUIDATED DAMAGES**POST ENGINEERING**

- a. Liquidated Damages
 - 1. Duration of the contract is 270 days from the NTP.
 - 2. Liquidated damages are **\$500** per calendar day.

8. SAFETY**POST ENGINEERING**

- a. All construction activities will be in conjunction with OSHA, Safety and Health Requirements Manual (US Army Corps of Engineers). As noted, the Army safety and health standards mirror OSHA. All construction activities on site will be a hardhat area and marked as such.
- b. Access to the site will be restricted and controlled by the Contractor. A visitor's sign-in and hardhats to be made available for personnel visiting site.
- c. Temporary fueling operations: Any temporary fueling operation will be maintained in accordance with OSHA and WV Fire Marshall Standards to included secondary containment, fire extinguishers, and spill control.
- d. Cleanup required daily by each perspective sub and General Contractor: No open dumps of construction materials. Remove demolished materials, waste materials including trash and debris and legally dispose of them off Owner's property.

9. SUPERVISION OF WORK**POST ENGINEERING**

Designer of Record will have the responsibility for the observation of Contractor's quality of work. The Designer of Record will provide recommendations for actions regarding progress payments, change orders, and acceptance of work.

10. ASPECTS OF CONTRACT**POST ENGINEERING**

- a. Modification Procedures – Section 01035
- b. Project Management and Coordination – Section 01040
- c. Payment Procedures – Section 01027
- d. Meetings – Section 01200
- e. Submittals – Section 01300
- f. CPM Construction Scheduling – Section 01355
- g. Materials and Equipment – Section 01600
- h. Warranties – Section 01740

11. SUBSTITUTIONS (SECTION 01631)**POST ENGINEERING**

- a. The Architect will consider requests for substitution if received within 60 days after commencement of the Work. Requests received more than 60 days after commencement of the Work may be considered or rejected at the discretion of the Architect.
- b. Substitution requests will only be considered when one or more of the following applies:
 - 1. Extensive revisions to the Contract Documents are not required.
 - 2. Proposed changes are in keeping with the intent of the Contract Documents.
 - 3. The request is timely, fully documented and properly submitted.

4. The specified product or method cannot be provided within the Contract Time. The Architect will not consider the request if the specified product cannot be provided as a result of failure to pursue the Work promptly.
 5. The request is related to an "or-equal" clause.
 6. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Such additional responsibilities for the Owner may include additional expenses for redesign and evaluation services, increased cost of related construction, and other similar considerations.
 7. The specified product cannot receive approval by a governing authority, and the substitution can be approved.
 8. The Contractor's submittal and the Architect's review or approval of Shop Drawings, Product Data or Samples that relate to a substitute does not by itself constitute a final approval of the requested substitution, nor does it relieve the Contractor from fulfilling existing Contract Requirements. Final approval will be granted by the Owner and confirmed in the form of a Change Order.
- c. Approval of Material Submittals shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance as stated in (d) below.
- d. If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the submittals, at the time of submission. If the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification NEED not be issued.

12. SUMMARY OF WORK

POST ENGINEERING

a. Summary (*Section 01010-1.01*)

1. Project Information (*Section 01010-1.02 B*)
2. Work will be constructed under a single prime contractor. (*Section 01010-1.03 B*)
3. Contractor shall have full use of premises for construction operations, subject to limitations and requirements of the West Virginia Army National Guard.
4. Contractor is responsible for keeping driveways and entrances serving the premises clear and available for the Owner's use.

b. SCOPE OF CIVIL WORK

1. Review the scope of work for subject project N/A

- 2. Purchasing Documents **PURCHASING DIVISION**
 - (a) General insurance/bonds from prime contractor by Notice to Proceed date. Copies to be provided to CFMO. For the subcontractors, copies of insurance due prior to start of work.
 - (b) Drug Free Compliance Affidavit

3. Environmental Issues/comments . N/A **ENVIRONMENTAL**

4. Construction Storm Water Permit N/A **ENVIRONMENTAL/CEI**

5. Sediment Erosion Control Measures N/A **ENVIRONMENTAL/CEI**

QUESTIONS AND ANSWERS

POST ENGINEERING

Q:

A:

Q:

A:

Q:

A:

Q:

A:

Q:

A:

13. CLOSING COMMENTS**POST ENGINEERING**

- Meeting notes will be published through state purchasing, along with clarifications to contract documents.
- Any further question will be addressed through an Addendum released after the question period has closed.
- Any further questions between now and bid award must be directed to State Purchasing no later than noon on close of business **09 July 2010**.

WVARNG LIVE FIRE EXERCISE SHOOTHOUSE PHASE 2 – SUPPORTING FACILITIES CONSTRUCTION

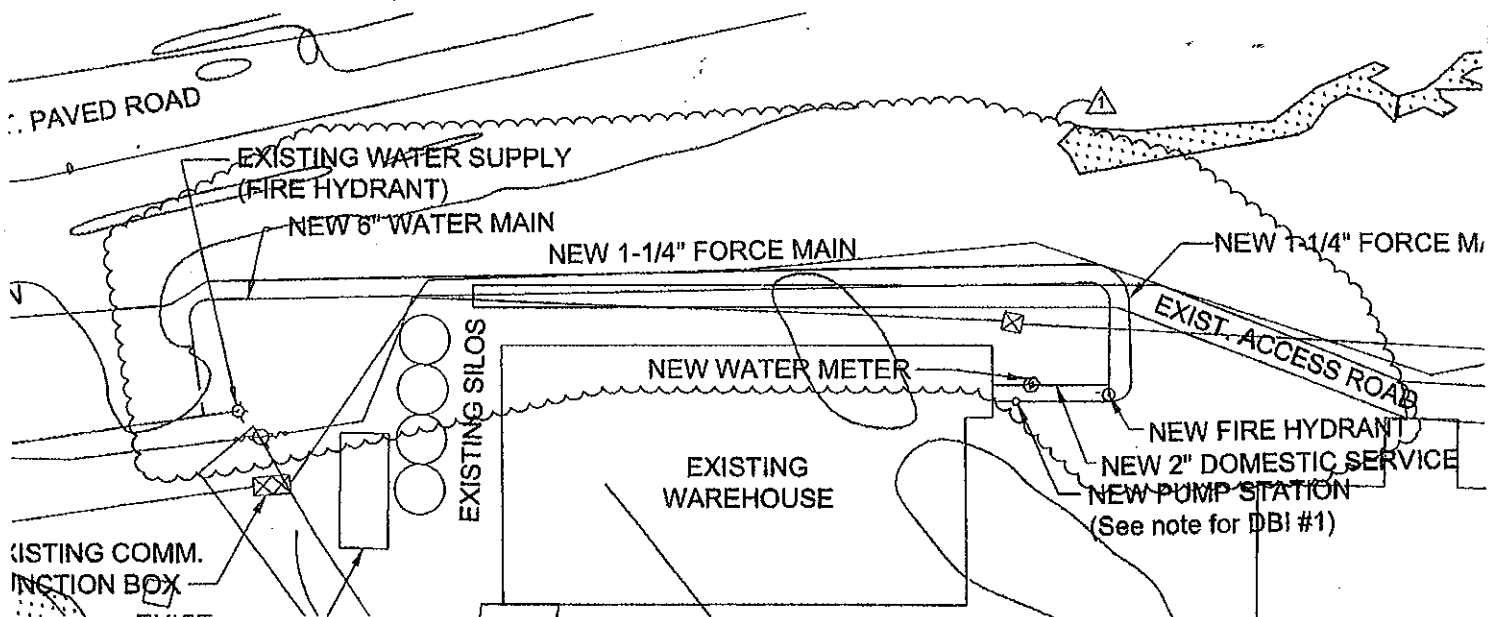
ADDENDUM ITEMS

The following are items of clarification to questions raised and issues discussed during the Pre-Bid meeting Tuesday, July 20, 2010 at the Armed Forces Reserve Center in Kingwood, WV, for the Phase 2 – Supporting Facilities Construction of the Live Fire Exercise Shoot House Project. These items shall be included in each Contractor's bid and shall become a part of the Construction Contract.

1. Contractor shall extend the existing 6" main to the north end of the warehouse building as indicated on attached drawing C-101A and install a new fire hydrant. Provide new 2" domestic service and new meter from 6" line into building as shown. Refer to attached drawing (C-101A) for additional information.
2. Contractor shall cut and remove existing steel pipe handrails at top of stringer on northwest stair to mezzanine. Provide new 1 ½" O.D. galvanized steel handrails at 3'-0" above nosing (to center) as indicated in attached drawing A-104A. Repair existing stair landing by replacing existing steel grate floor material with new steel bar grating as indicated in the attached cut sheet. Provide additional perimeter support framing where required, to support new landing.
3. Delete ceiling exhaust (EF-3 & EF-4) in the toilets and replace with sidewall fan units (flush to the interior) complete with wall housing, backdraft damper, and weather hood as indicated in drawings M-101A and M-601C and attached cutsheets. Bottom of fans a minimum of 6'8" AFF. Sawcut opening in existing CMU wall for installation of new sidewall fan units-typ.
4. Add a 2 pole wall mounted switch, conduit and wire for control of LFSH ventilation unit (EF-5) on the mezzanine. The switch location will be beside the wall mounted gang switches located adjacent to new LFSH at column line C3 on the ground floor.
5. Provide 4" O.D. concrete filled steel bollards at not more than 10'-0" o.c. (equally spaced) with 4-strands vinyl covered galvanized steel aircraft cable-3/8", (tensioned), threaded at turnbuckle end, swaged and toggled at post ends, in lieu of steel pipe handrails indicated. Sections of railing indicated on the drawing (Sheet A-105) at immediate top of the stair shall remain galvanized steel pipe rail as detailed in 1/A-105. See attached drawing A-105A and cut sheets.
6. Shore and remove existing damaged 8" CMU wall at Ammo Breakdown building adjacent to window (approx. 3'-0" wide section). Tooth in new CMU to match existing. Prep and paint wall as required by Contract Documents (see General Note 3, Demo Note 2, and Sheet Keynote 1 on A-104).
7. Demo exterior wall panels on mezzanine level beneath operable window (adjacent to column line A5), for installation of new louver L-1 (see M-601B), serving LFSH ventilation unit EF-5 and associated ductwork. Field verify exact opening dimensions prior to louver order, yet maintaining minimum free area scheduled. Provide additional steel framing members in exterior wall as required to support louver specified.
8. Install a switch to control exhaust fan 4 (EF-4) in men's restroom. Mount beside light switch.
9. Install a switch to control exhaust fan 3 (EF-3) in women's restroom. Mount beside light switch.

10. Install a switch to also control exhaust fan 2 (EF-2) (currently control by thermostat) in Ammo Breakdown room. Mount beside light switch. The thermostat or switch should be able to turn on EF- 2.
11. Exhaust fan 1 (EF-1) shall run continuously.
12. Provide and install 3KW electric wall heater (EH-3 – a duplicate of EH-1&2) on outside wall in the mechanical room to include breaker, conduit and wire fed from panel “C” (duplicate electrical circuit for EH-2 fed from electrical panel “C”). Refer to M-601A.
13. Demolish, remove and dispose of four (4) existing light fixtures located above the mezzanine floor starting from column line B12 to column line B8. Conduit, wire and electrical devices shall be removed back to the source.

END OF ADDENDUM



PARTIAL SITE PLAN (PROPOSED)

SCALE: 1"=100'-0"



GRW PROJECT NO. 3280-46		WVARNG PROJECT NO. 540006A		DESIGNED TC
REVISIONS				DRAWN TC
NO.	DESCRIPTION	DATE	BY	REVIEWED DA
1	ADDED	7/20/10		APPROVED TC
SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 100' WHEN PLOTTED				

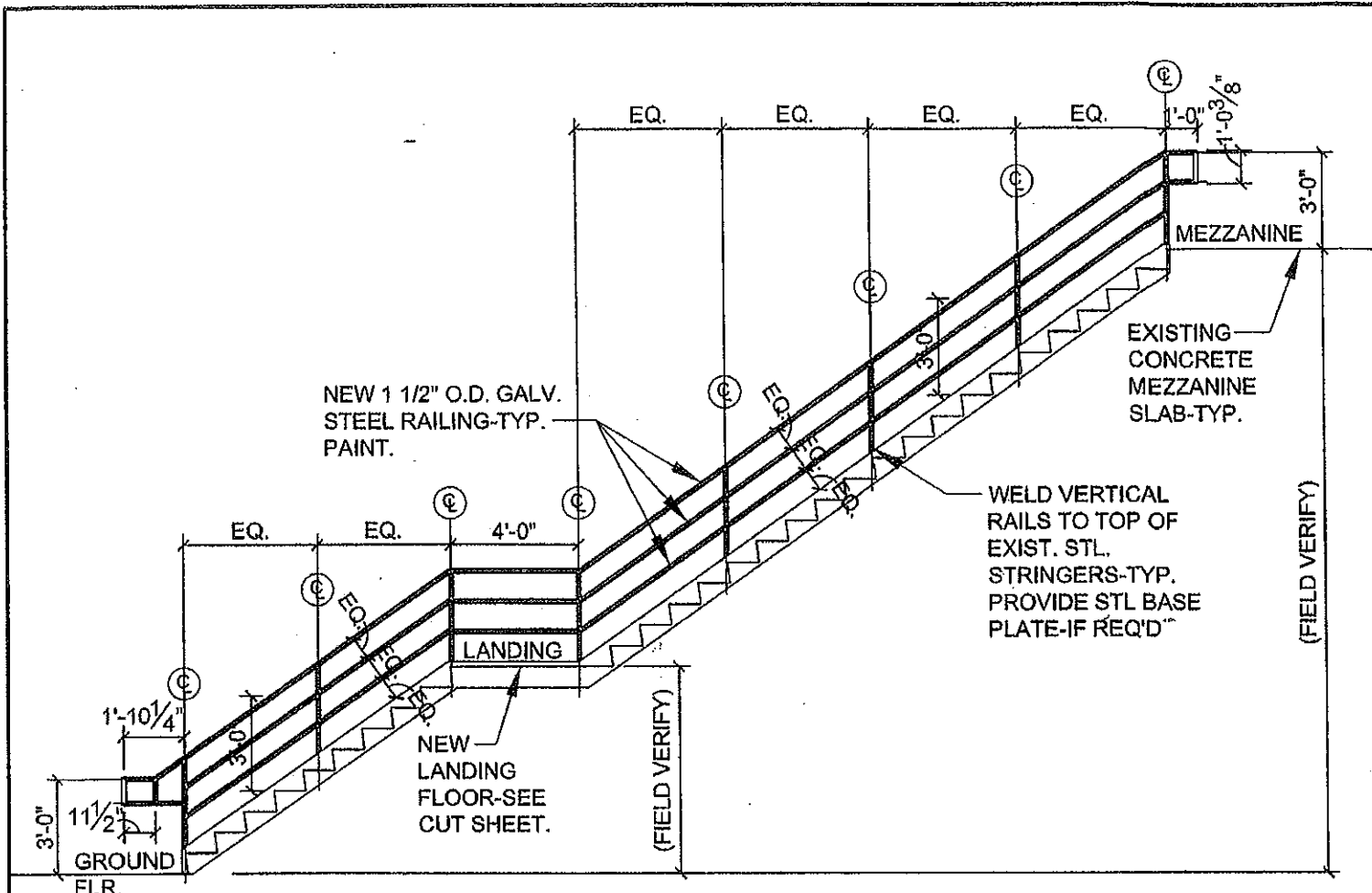
PARTIAL SITE PLAN
 LIVE FIRE EXERCISE SHOOT HOUSE
 PHASE 2-SUPPORTING FACILITIES
 WVARNG-VOLKSTONE TRAINING AREA
 KINGWOOD, WV



ENGINEERS - ARCHITECTS - PLANNERS
 www.grwinc.com

DATE	JULY 20, 2010
SCALE	1"=100'
SHEET NO.	C-101A

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ELEVATION

SCALE: 3/16"=1'-0"



NOTES:

1. EXISTING STEEL RAILINGS SHALL BE CUT OFF AT TOP OF EXISTING STRINGERS AND DISPOSED OF OFF SITE.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO FABRICATION OF STEEL RAILINGS.
3. ALL VERTICAL ELEVATIONS SHALL BE FIELD VERIFIED INCLUDING RISERS AND TOP OF STRINGERS PRIOR TO FABRICATION OF STEEL RAILINGS.
4. EXISTING LANDING SHALL BE REPLACED WITH 1" (h) PLAIN STEEL CLOSE MESH STEEL BAR GRATING AS INDICATED. FIELD VERIFY ACTUAL LANDING DIMENSIONS.

GRW PROJECT NO. 3280-16		WVARNG PROJECT NO. 540006A		DESIGNED: DAA
REVISIONS				DRAWN: DAA
NO.	DESCRIPTION	DATE	BY	CHECKED: DAA
1	ADDENDUM 1	7/20/10		APPROVED: DAA
SCALE CHECK: _____				SCALE: 3/16" = 1'-0"

RAILING ELEVATION

LIVE FIRE EXERCISE SHOOT HOUSE
 PHASE 2-SUPPORTING FACILITIES
 WVARNG-VOLKSTONE TRAINING AREA
 KINGWOOD, WV



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DATE: JULY 20, 2010
 SCALE: 3/16" = 1'-0"
 SHEET NO. **A-104A**

Item Specs: 6601319999

McNICHOLS since 1952

McNICHOLS® Quality Bar Grating, Plain Steel, Close Mesh, GCM Series, GCM-1-100, 36.0630" x 144.0000"

Visit us online at <http://www.mcnichols.com>
Order Now: 1-877-884-4653 or email sales@mcnichols.com



Item Specifications:

Item Number :	6601319999
Product Line :	Grating
Product Type :	Bar
Weight :	18.1 #/SF
Class :	Close Mesh
Trade Name :	McNICHOLS
Category :	GCM Series
Major Material :	Plain Steel
Minor Material :	Hot Rolled
AKA Description :	GCM-1-100
Construction :	Press Lock
Spacing Description :	7-P-4
Bearing Bar Height :	1.00
Bearing Bar Thickness :	0.1875
Bearing Bar Spacing :	0.4375
Surface :	Smooth
Cross Bar Spacing :	4.0
Percent Open Area :	55
Width :	36.0630
Length (Span for Grating) :	144.0000
SKU Type :	Panel
Cross Bar Type :	Rectangular
HS Item Number :	6601319999



Accessories:

Angle	Banding	Clips, Anchors, Etc
End Plates	Hardware	Kick Plate
Nosing		

Options:

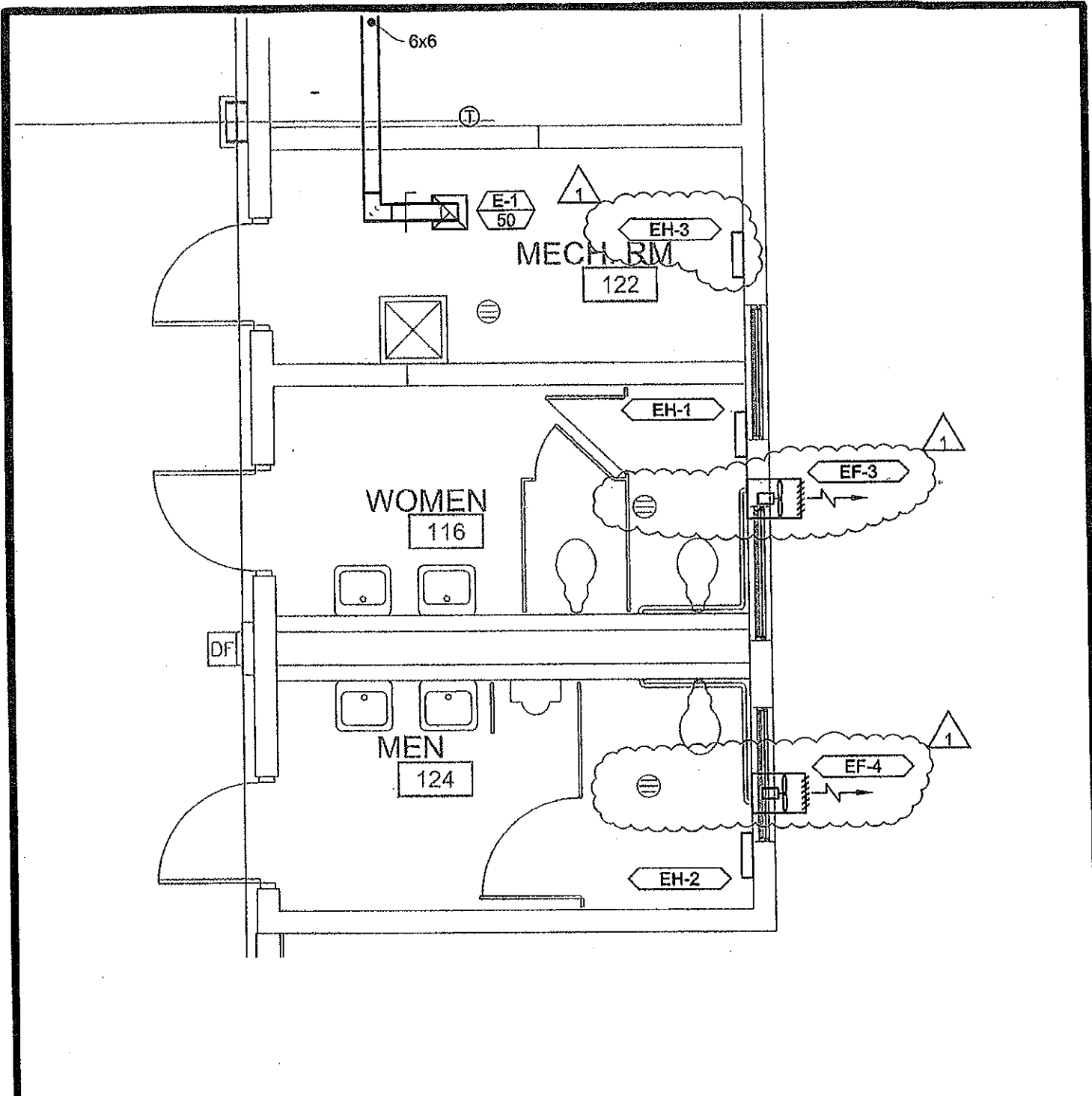
Add Studs	The process of adding additional studs, different studs or different spacing to Embed angle
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Item Specs: 6601319999

Angle Cutting	Straight line cutting to produce an angle other than 90 degrees
Anodizing	The process of coating aluminum electrolytically, resulting in a thin film of aluminum oxide of extreme hardness. Can be processed either clear or in colors.
Banding	A process involving the application of a flat piece of metal to the end of cut bar grating to give a more finished appearance and protect the ends.
Bevel Cutting	A type of cut where the blade is set to other than a 90 degree angle with respect to the surface of the material.
Circle Cutting	Shearing or sawing material in a circular path to a specified dimension.
Coating	A material applied as a covering to another material such as vinyl coating applied to steel.
Cut to Size	This describes the option of cutting a standard size into pieces of specified size with typically 90 degree corners. Used to describe this process regardless of what tool or machine is used to do the cutting.
Drawings Required	Drawings required to confirm material specifications, sizes or to aid in erection of the finished materials.
Hot Dip Galvanizing	The process of applying a zinc rich coating to steel to prevent corrosion by submerging the material in a tank of molten zinc for a period of time.
Install Hinges	The process where hinges are installed between grating and an interior cut-out such that the interior portion of the grating can swing open like a door.
Install Mounting Lugs	The process in which flat pieces of material are fit and welded in place between bearing bars on grating to facilitate the attachment of the grating to its structure.
Install Nosing	The process by which a nosing product is added to the leading edge of a piece of grating or a stair tread.
Install Toe Plate	The process by which a flat piece of material is attached to the edge of a piece of grating at a 90 degree angle to the surface and extending above the surface of the material, preventing a foot from extending over the edge of the grating
Notching	A type of cutting where material is removed from a portion of the edge of a product to specified dimensions resulting in a "cut-out" or notch in the edge of the material
Painting (Grating)	The process of applying paint to a grating product.
Plating	The application of a thin layer of a secondary metal to a primary metal through an electrolytic process.
Powder Coating	The process of applying powdered paint to an item then placing it in an oven where the powder particles melt and coalesce to form a continuous coating.
Pressure Blasting	Pressure blasting consists of attacking the surface of a material with one of many types of media. Sand, glass and shot blasting are most common. Can be used to remove rust or corrosion or to impart a different surface finish to the material.
Welding	The process of fusing two pieces of metal together through the application of heat, sometimes with pressure and sometimes with an intermediate or filler material having a high melting point.

Applications:

Architectural/Decorative	Applications where the appearance of the finished item is as important as the function of the item.
Catwalk/Walkway	Material used as flooring on a raised pathway enabling movement from one area to another.
Flooring	Material used as flooring.
Part/Equipment	Products used as parts on equipment or machinery.
Platform/Deck/Mezzanine	Materials used in the construction of a mezzanine or platform up above the existing level.
Railings	Products used to form a physical barrier around an area or platform, typically a handrail.
Ramp	Material used in a gradual incline to get from one elevation to the next.
Trench/Grate/Drain	Material used to cover a long narrow hole, typically used for drainage



OPERATIONS STORAGE BUILDING - MECHANICAL FLOOR PLAN

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



GRW PROJECT NO. 3280-46		WVARNG PROJECT NO. 640006A	
REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	ADDENDUM 1	7/20/10	AAT

DESIGNED BY	AAT
DRAWN BY	EGR
CHECKED BY	AAT
APPROVED BY	AAT

MECHANICAL FLOOR PLAN
 LIVE FIRE EXERCISE SHOOT HOUSE
 PHASE 2-SUPPORTING FACILITIES
 WVARNG-VOLKSTONE TRAINING AREA
 KINGWOOD, WV



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DATE	JULY 20, 2010
SCALE	1/4" = 1'-0"
KEY NO.	M-101A

MARK	TYPE	CFM	S.P. IN WG	RPM	DRIVE	FAN TIP FPM	MOTOR		ACCESSORIES
							HP	V/PH/Hz	
EF-1	3	180	0.375	1300	DIR	3702	Frac	115/1/60	1,2,4,8
EF-2	3	230	0.375	1550	DIR	3297	Frac	115/1/60	1,2,4,8
EF-3	5	150	0.2	1550	DIR	3246	Frac	115/1/60	1,2,4,8
EF-4	5	150	0.2	1550	DIR	3246	Frac	115/1/60	1,2,4,8
EF-5	4	400	1.25	1377	BELT	6669	2	230/1/60	1,3,4,7,8,9
EF-5A	4	6900	1.5	864	BELT	6999	5	230/1/60	1,3,4,7,8,9

EXHAUST FAN SCHEDULE

- FAN TYPE:**
- CENTRIFUGAL ROOF EXHAUSTER
 - UPBLAST CENTRIFUGAL ROOF EXHAUSTER
 - SIDEWALL CENTRIFUGAL FAN
 - INLINE CENTRIFUGAL FAN
 - SIDEWALL PROPELLER FAN
 - SWSI CENTRIFUGAL UTILITY FAN
 - TOILET RM CEILING EXHAUST FAN
- NOTE:**
IF AB1-2 IS SELECTED REPLACE EF-5 WITH EF-5A
- FAN ACCESSORIES:**
- ELECTRICAL DISCONNECT SWITCH
 - INLET SCREEN, WALL HOUSING OR CAP OSHA MOTOR GUARD
 - ADJ. SHEAVES, OSHA MOTOR AND/OR BELT GUARD
 - BACKDRAFT DAMPER
 - MANUFACTURER'S PREFABRICATED INSULATED ROOF CURB
 - HINGED CURB CAP
 - NEOPRENE VIBRATION ISOLATORS
 - FACTORY INSTALLED SINGLE POINT WIRING
 - MOTOR STARTER

GRW PROJECT NO. 3280-45		WVARRG PROJECT NO. 64000AA	
REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	ADDENDUM 1	7/20/10	AAT

DESIGNED	AAT
CHECKED	EGR
APPROVED	AAT
DATE	AAT

MECHANICAL SCHEDULES

**LIVE FIRE EXERCISE SHOOT HOUSE
PHASE 2-SUPPORTING FACILITIES
WVARRG-VOLKSTONE TRAINING AREA
KINGWOOD, WV**



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DATE	JULY 20, 2010
SCALE	NONE
DRAWING NO.	M-601C

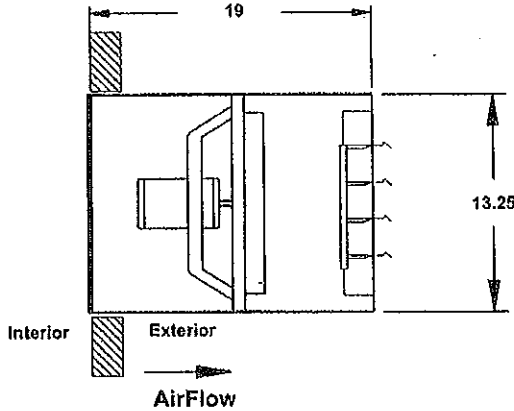


Printed Date: 7/22/2010
 Job: 3280-46 LFSH WV ANG
 Product Type: Fan
 Mark: EF-3, 4

2A - Flush Interior Standard Exhaust
 For Interior Service Applications

SE1

Sidewall Direct Drive Exhaust Fan



Tag EF-3, 4

STANDARD CONSTRUCTION FEATURES

- Fan panels of galvanized steel • Aluminum blade propeller • Heavy gauge welded wire motor supports and fan guard that is Zinc plated • Motor mounted to support guard with neoprene isolators • Corrosion resistant fasteners

SELECTED OPTIONS & ACCESSORIES

- Damper WD-320-PB-10x10, Gravity Operated
- Short Wall Hsg., Flush Interior (2A-Exhaust) w/ OSHA Guard
- Switch - Nema-1, Toggle, Ship With Unit, Field Mounted
- Aluminum Propeller
- Galv. Weatherhood 45 Degree w/ B.S.
- Wiring Pigtail, External, 9 Feet from Unit of Metallic Liquid-Tite Motor w/ Thermal Overloads

Note: Wall Housing Sizes 42 and Larger with heavy motors and all Filled Wall Housings need additional bracing.

NOTES: All dimensions shown are in units of inches
 Fan weight is without accessories

DIMENSIONS

Approx. Fan Weight (lb)	Recommended Roof/Wall Opening: (in)	Optional Damper (in)
15	14.25 x 14.25	10 x 10

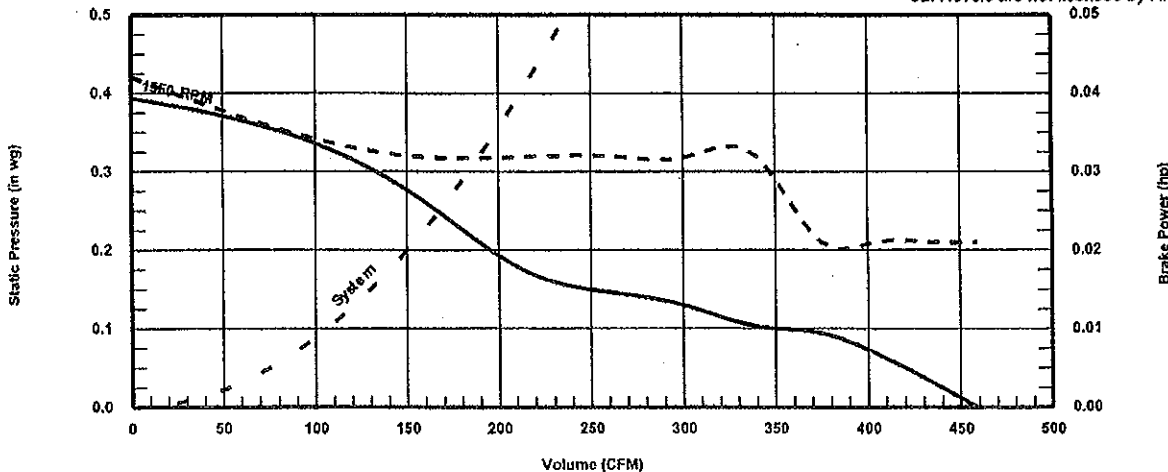
PERFORMANCE (Elevation ft = 0, Airstream Temperature F = 70)

Qty	Model	Volume (CFM)	SP (in wg)	FRPM	Operating Power (hp)	Motor Information				
						Size (hp)	V/C/P	Encl.	Motor RPM:	Windings
1	SE1-8-440-D-1	198	0.2	1,550	0.03	1/30	115/60/1	TEAO	1550	1

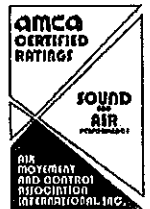
SOUND

Inlet Sound Power by Octave Band								Lwa	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
71	72	62	58	56	53	48	44	62	51	6.2

LWA - A weighted sound power level, based on ANSI S1.4.
 dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5.0 ft.
 Sones calculated using AMCA 301 at 5.0 ft.
 dBA levels are not licensed by AMCA International.

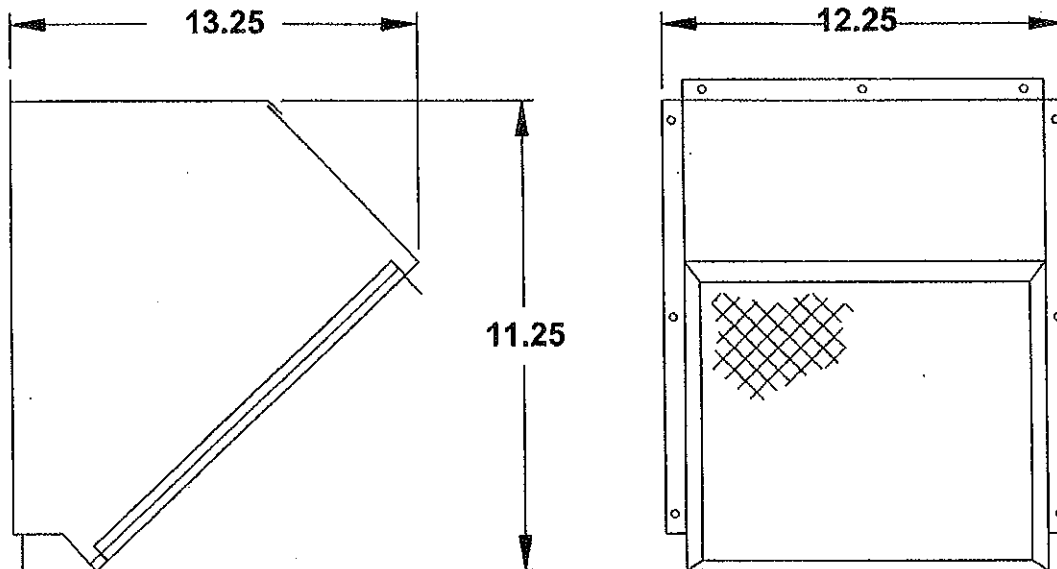


— RPM Curve
 - - - System Curve
 - - - Brake Power Curve
 Do not select to the left of this surge curve



WH 45° Weatherhood**STANDARD CONSTRUCTION FEATURES**

- Galvanized steel or aluminum construction
- 0.5 welded wire birdscreen
- Prepunched mounting holes
- Field assembled.



NOTES: All dimensions shown are in units of inches



Printed Date: 7/22/2010
 Job: 3280-46 LFSH WV ANG
 Product Type: Fan
 Mark: EF-3, 4

WD-320 Vertical Mount Exhaust Damper

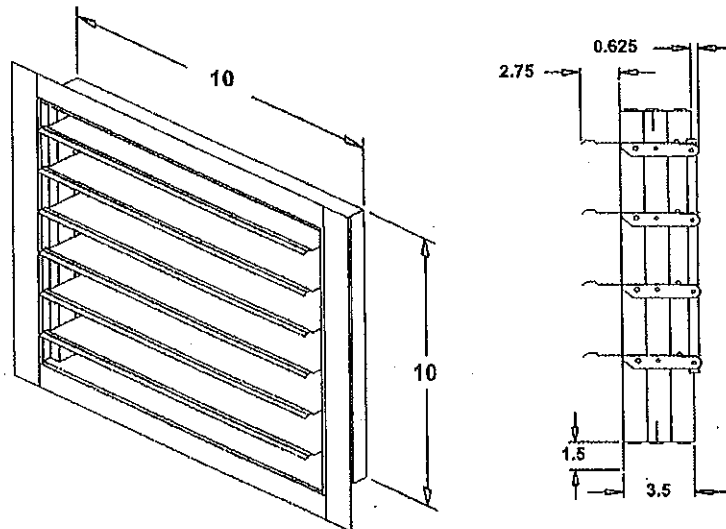
STANDARD CONSTRUCTION FEATURES

Vertical mount exhaust damper is constructed of 18 ga. galvanized steel with pre-punched mounting holes and a flanged frame.

- Damper blades are 0.025 in roll formed aluminum with vinyl seals on the closing edge
- Steel axles are 0.188 in diameter zinc plated steel mounted in acetal bushings
- Synthetic axle bearings

Accessory Configuration

Blade Action	Parallel
Actuator Type	Gravity

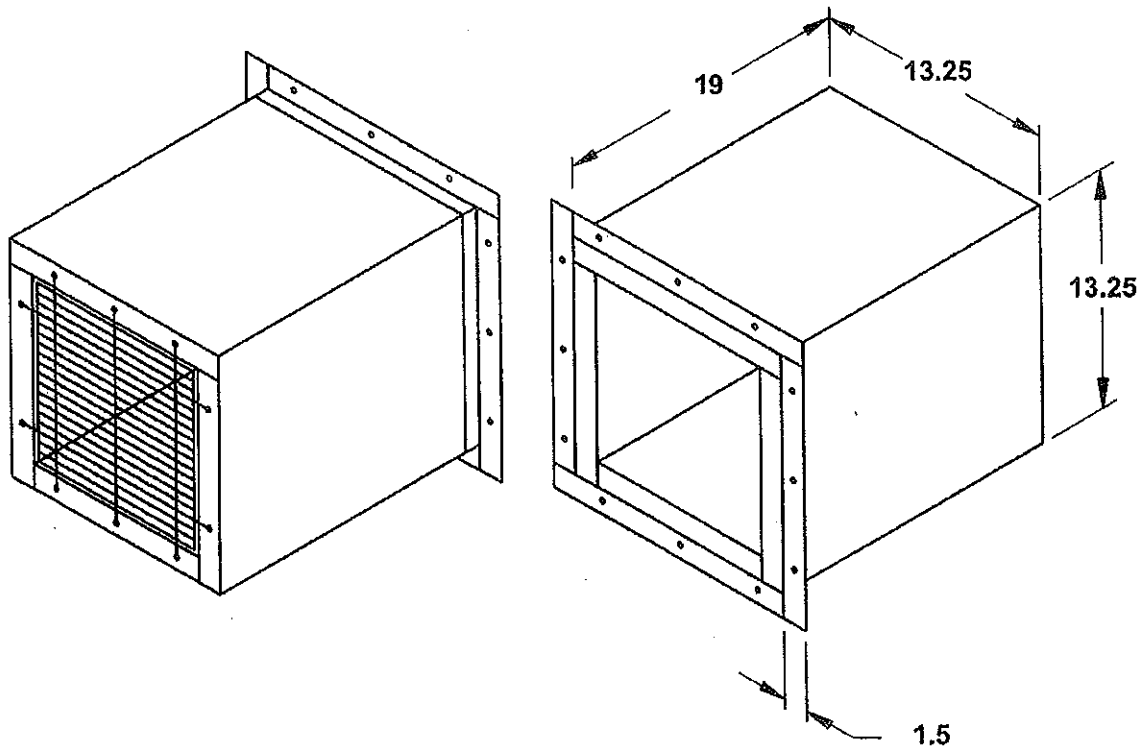


NOTES: All dimensions shown are in units of inches
 Width and height furnished approximately 0.125 in undersize.

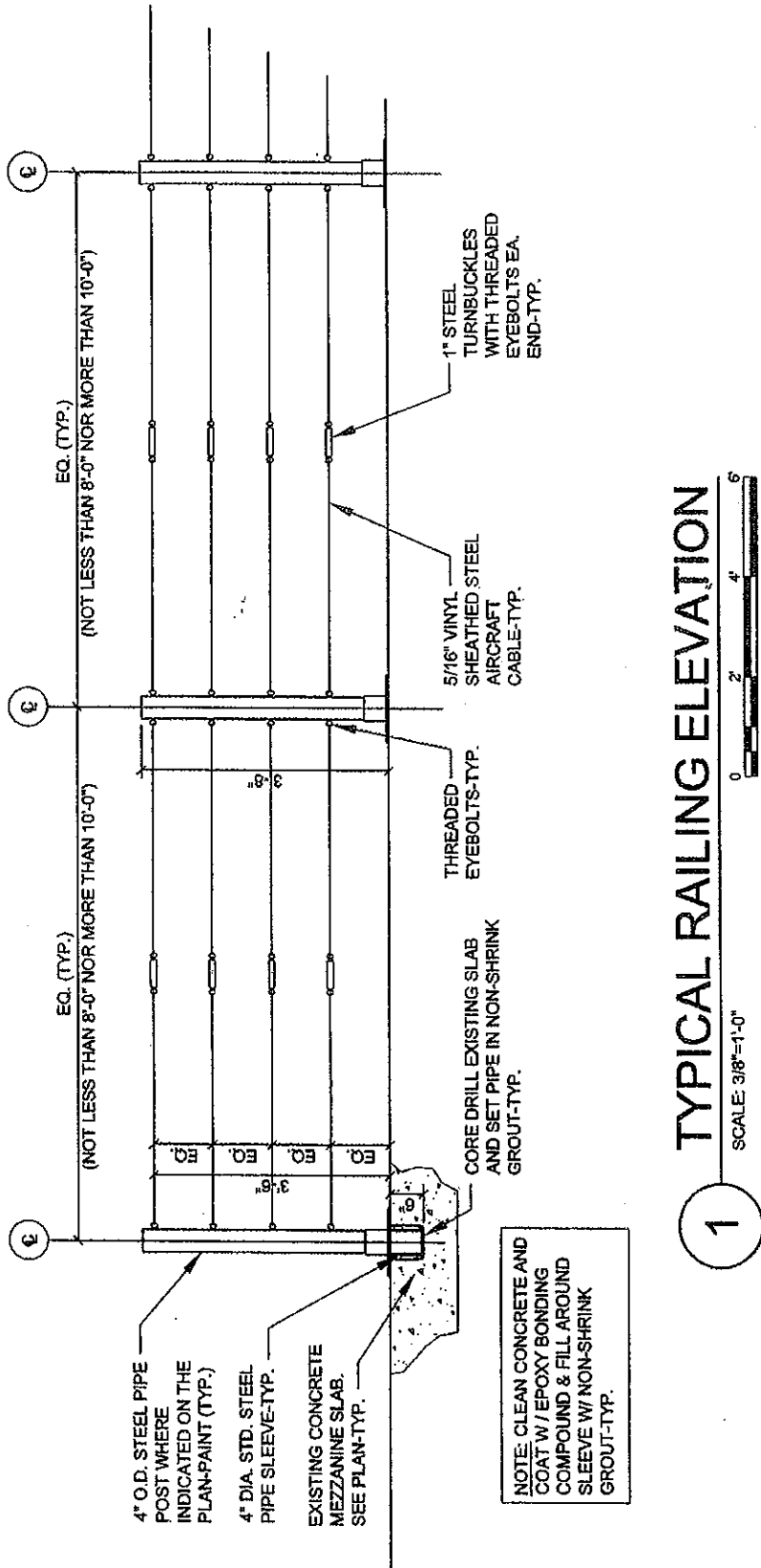
WH Short Wall Housing

STANDARD CONSTRUCTION FEATURES

- Galvanized steel construction
- Heavy gauge mounting flanges
- Pre-punched mounting holes
- Inside flanges allow damper to be mounted
- Overlapping weatherhood flange keeps rain out
- OSHA Protective guard of welded steel wire completely protects the drive side of the wall housing.



NOTES: All dimensions shown are in units of inches



TYPICAL RAILING ELEVATION

1

SCALE: 3/8"=1'-0"



NOTE: CLEAN CONCRETE AND COAT W/ EPOXY BONDING COMPOUND & FILL AROUND SLEEVE W/ NON-SHRINK GROUT-TYP.

GRW PROJECT NO. 3280-45		WVARNG PROJECT NO. 540008A		DESIGNED: DAA
REVISIONS				DRAWN: DAA
NO.	DESCRIPTION	DATE	BY	REVIEWED: DAA
1	ADDENDUM L	7/20/10		APPROVED: DAA
SCALE CHECK: [] THIS MARK SHOULD MEASURE EXACTLY 1/2" WHEN PLOTTED				

TYP. RAILING ELEVATION
 LIVE FIRE EXERCISE SHOOT HOUSE
 PHASE 2-SUPPORTING FACILITIES
 WVARNG-VOLKSTONE TRAINING AREA
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DATE JULY 20, 2010
SCALE 3/8"=1'-0"
SHEET NO. A-105A

7 x 19 Vinyl Coated Cable - Cable Coating - Lexco Cable

8LEX023 2/11/08



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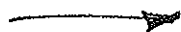
Back



▶ Click for Video

7 x 19 PVC / Vinyl Coated Cable

BARE CABLE DIAM ("")	OUTER VINYL DIAM ("")	GALVANIZED WEIGHT (LBS/1000 FT)	STAINLESS-STEEL WEIGHT (LBS/1000 FT)
1/32	3/64	2.5	2.5
3/64	1/16	5.0	5.0
1/16	3/32	9.5	9.5
1/16	1/8	12.0	12.0
3/32	1/8	20.0	20.0
3/32	5/32	22.0	22.0
3/32	3/16	29.0	29.0
1/8	3/16	40.0	40.0
1/8	1/4	49.0	49.0
5/32	7/32	61.0	61.0
5/32	1/4	65.0	65.0
3/16	1/4	81.0	81.0
3/16	5/16	97.0	97.0
7/32	9/32	106.0	106.0
7/32	5/16	114.0	114.0
1/4	5/16	133.0	133.0
1/4	3/8	152.0	152.0
5/16	3/8	204.0	204.0
5/16	7/16	226.0	226.0



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All Categories > Turnbuckles > Galvanized Drop Forged Turnbuckles > Hot Dip Galvanized Drop Forged Stub End Turnbuckles > Item # TB386SEHDG

Item # TB386SEHDG, Stubs
QUOTE

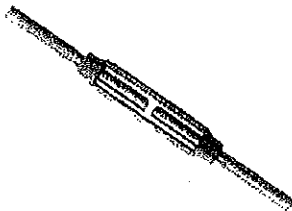
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CENTER TURNBUCKLES

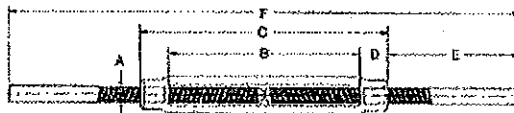


[larger image](#)

Stubs
Low-Cost Forged

Conforms To Federal Specification FF-T-791b, Type 1, Form 1 - Class 3

Dimensions, approx



* Sold colored

[Click Here to View Turnbuckle FAQ's](#)

Specifications	
Thread Dia & Take Up (in.)	3/8 x 6
Working Load Limit (lbs)	1200
Weight	0.75
A	0.38
B	6
C	7.13
D	0.56
E	4.44
F	16

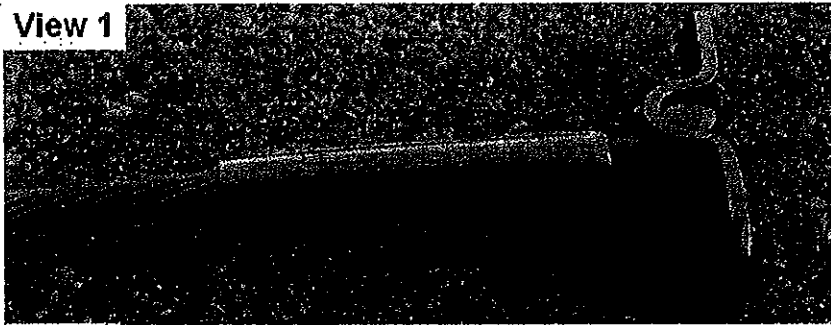
Architectural Railing Assemblies - Lexco Cable

• Application - To secure the turnbuckle to a post

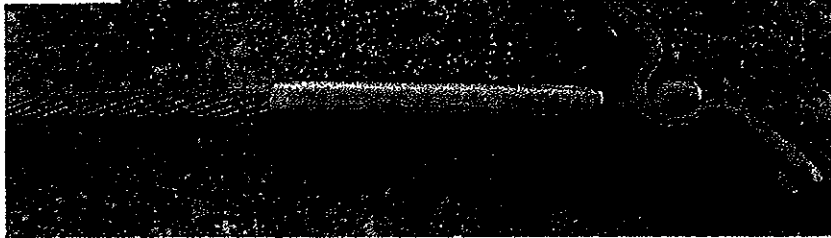
Cable Railing Terminal Ends (non tensioning)

Deck Terminal

View 1



View 2



- Description - Deck terminal (#25-314-1T) machine swaged to 3/16" 1x19 stainless steel cable
- Application - Mounts to any surface; can be through-bolted by its two tabs; toggles 140 degrees.

Button Terminal



- Description - Button terminal (#25-306-5F) machine swaged to 3/16" 1x19 stainless steel cable
- Application - Secures via through-post termination

Toggle Jaw



- Description - Toggle jaw (#25-314) machine swaged onto 3/16" 1x19 stainless steel cable
- Application - The turnbuckle jaw easily attaches to eyes, tabs or in a channel. The cable is terminated internally; swage terminal is not visible.



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CABLE ENDS @
POST - (3/8" DIA)

MARK	SERVICE	LOCATION	FLOW RATE CFM	VELOCITY FPM	FREE AREA SF	PRESS LOSS IN WG	LVR SIZE HMMO - IN 420/246 18-18/6	TYPE	MATERIAL	FINISH	NOTES
L-1	EF-5A	MEZZANINE	6500	600	11.00	0.025	18-18/6	STATIONARY	ALUM	KYNAR	1.1
L-2	FGU-3.4	AIR WALL	420	500	0.84	0.06	18-18/6	STATIONARY	ALUM	KYNAR	1.2 1.3

NOTES:
1. BIRD SCREEN

2. COLOR SELECTION BY ARCHITECT

DRW PROJECT NO. 9260-45 WVARNG PROJECT NO. 640000A

REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	ADD COLUMN 1	7/09/10	AAT

DESIGNED	AAT
DRAWN	EGR
REVIEWED	AAT
APPROVED	AAT

MECHANICAL SCHEDULES
LIVE FIRE EXERCISE SHOOT HOUSE
PHASE 2-SUPPORTING FACILITIES
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DATE: JULY 20, 2010
 SCALE: NONE
 SHEET NO. **M-601B**

MARK	SERVICE	LOCATION	CFM	ELECTRICAL			ELECT COIL		NOTES
				VOLTS	PH	KW	EAT F db	LAT F db	
EH-1	WOMEN'S ROOM	RM 116	160	230	1	3.0	5	65	1, 2, 3, 4, 5
EH-2	MEANS ROOM	RM 123	160	230	1	3.0	5	65	1, 2, 3, 4, 5
EH-3	MECH ROOM	RM 122	160	230	1	3.0	5	65	1, 2, 3, 4, 5

NOTES:

- 1. PROVIDE DISCONNECT
- 2. WALL TYPE SURFACE MOUNTED
- 3. SINGLE POINT ELECTRICAL CONNECTION
- 4. INTEGRAL THERMASTAT
- 5. INDEECO WAI SERIES MODEL 983U0400V OR APPROVED EQUAL

GRW PROJECT NO. 3780-46		VWARNG PROJECT NO. 540006A		DESIGNED AAT
REVISIONS				DRAWN EGR
NO.	DESCRIPTION	DATE	BY	REVIEWED AAT
1	ADD SCHEDULE	7/20/10	AAT	APPROVED AAT

MECHANICAL SCHEDULES
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DATE	JULY 20, 2010
SCALE	NONE
SHEET NO.	M-601A

**Pre-Bid Conference
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Request for Proposal No: DEFK 10022 / PH I LFSHDate: 20 JULY 2010

<u>Representative & Firm Name</u>	<u>Mailing Address</u>	<u>Telephone & Fax Number Email Address</u>
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1. Phillip Smith GRW ENGINEERS	801 Corporate Dr Lexington, Ky 40503	T: 859-223-3999 F: 859-223-9419 Email: PSMITH@GRW INC.COM
2. DALE ADAMS GRW ENGINEERS	801 Corporate Dr. Lexington, KY 40503	T: 859-223-3999 F: 859-223-9089 Email: dadams@grwinc.com
3. Allen Tucker GRW ENGINEERS	801 Corporate Dr Lexington, KY 40503	T: 859-223-3999 F: 859-223-9419 Email: atucker@grwinc.com
4. BRIAN + BEAU HENDERSON	RT 2 BOX 285 CLARKSBURG WV 26301	T: 304-623-2573 F: 304-326-2069 Email: beauh@wudsc-npt
5. JOE PALLONE MOD SPACE	1117 CEDAR OAK ALEXANDRIA, VA 22308	T: 703 417-9412 F: Email: joe.pallone@modspace.com
6. STEVE DEAN MASTER SERVICE Mid-ATLANTIC	1945 Harrison Ave SINKINS, WV 26241	T: 304-636-8170 F: 304-636-8206 Email: ssdean2@mac.com
7. Rob Lang Green River Group		T: 304-594-3991 F: Email: rlang@greenriverllc.net
8. WAYNE HUFFMAN	HUFFMAN CORPORATION 415-A BEVERSON DRIVE BEVERSON, WV 26030	T: 304 842-8500 F: 304 842-8526 Email: HUFFMAN@GEPD AXL.COM
9. Chuck Sheridan Jim Jamison	CITY DEAN, INC. 822 Fairmont Rd mgt, 26501	T: 304-225-2056 F: 304-225-2059 Email: caco1@citydean.com

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3. RICH STRALEY SARGE CONSTR CO	1549 Tulip Ln Fairmont WV 26554	T: (304) 366-9697 F: (304) 366-9607 Email: RICHARD@SARGECONSTRWV.COM
4. Don McClain Veritas Contracting LLC	P.O. Box 1395 Martinsburg WV 26157	T: 304-598-2280 F: 304-598-2287 Email: veritascontracting@aol.com
5. LTC Bill Simer CAMP Dawson	CAMP Dawson	T: _____ F: _____ Email: _____
6. LT Don Weaver CPDWV	CPDWV	T: _____ F: _____ Email: _____
7. _____	_____	T: _____ F: _____ Email: _____
8. _____	_____	T: _____ F: _____ Email: _____
9. _____	_____	T: _____ F: _____ Email: _____

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