

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS
AGENDA ITEM SUMMARY

Meeting Date: November 19, 2013 Consent [X] Regular []
Public Hearing []

Department: Water Utilities Department

I. EXECUTIVE BRIEF

Motion and Title: Staff recommends motion to approve: Work Authorization No. 5 with Cardinal Contractors, Inc. for installation of Diesel Generator Catalytic Converters in the amount of \$1,456,144.81.

Summary: On January 24, 2012, Palm Beach County Board of County Commissioners approved the Contract for Water, Wastewater and Reclaimed Water Improvements Design/Build Services with Calvin Giordano (R2012-0160). On September 10, 2013 the Contract was assigned from Calvin Giordano to Cardinal Contractors to enable bonding capacity with the same design build team members. Work Authorization No. 5 will install catalytic converters on 13 diesel emergency generators at eight (8) utility sites. This Work Authorization is necessary to comply with the Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines Rule (RICE NESHAP) by the May 2014 deadline. The RICE NESHAP rule applies to diesel generators which are on Florida Power & Light (FPL) interruptible load control rates. The reduced FPL rate for participation in the load control program saves \$600,000 per year. The Small Business Enterprise (SBE) participation goal established by the SBE Ordinance (R2002-0064) is 15% overall. The contract with Cardinal Contractors, Inc. provides for SBE participation of 26% overall. This Authorization includes 34.92% overall participation. The cumulative SBE participation, including this Work Authorization is 31.14% overall. Cardinal Contractors, Inc. is a non local company, however their design team member is a Palm Beach County company. (WUD Project No. 13-075) District 5 (JM)

Background and Justification: Work Authorization No. 5 will provide 13 Catalytic Converters with monitoring equipment, four (4) new exhaust mufflers and nine (9) crankcase air vapor separator systems at five (5) Water Treatment Plants the Southern Region Water Reclamation Facility, the Central Region Operations Center and the Southern Regions Operations Center. The EPA RICE NESHAP rule requires compliance of all diesel generators on interruptible load control rates. Cardinal Contractors, Inc. will provide builders risk insurance prior to commencement of construction.

Attachments:

- 1. Location Map
- 2. Two (2) Original Work Authorizations No. 5

Recommended By: Bob Beards 10/30/13
Department Director Date

Approved By: Sharon R. By 11/12/13
Assistant County Administrator Date

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2014	2015	2016	2017	2018
Capital Expenditures	<u>\$1,456,145</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
External Revenues	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Program Income (County)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
In-Kind Match County	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
NET FISCAL IMPACT	<u>\$1,456,145</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
# ADDITIONAL FTE POSITIONS (Cumulative)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Budget Account No.: Fund 4011 Dept 721 Unit W002 Object 6541

Is Item Included in Current Budget? Yes X No

Reporting Category N/A

B. Recommended Sources of Funds/Summary of Fiscal Impact:

The project will be funded by Water Utility Department user fees.

C. Department Fiscal Review: Delia Morest

III. REVIEW COMMENTS

A. OFMB Fiscal and/or Contract Development and Control Comments:

Laura Nelson 11/1/13
OFMB HN SS
10/31 11/1

Dr. J. Jacobson 11/7/13
Contract Development and Control
11-6-13 Wheeler

B. Legal Sufficiency:

James C. Mize Jr 11/8/13
Assistant County Attorney

C. Other Department Review:

Department Director

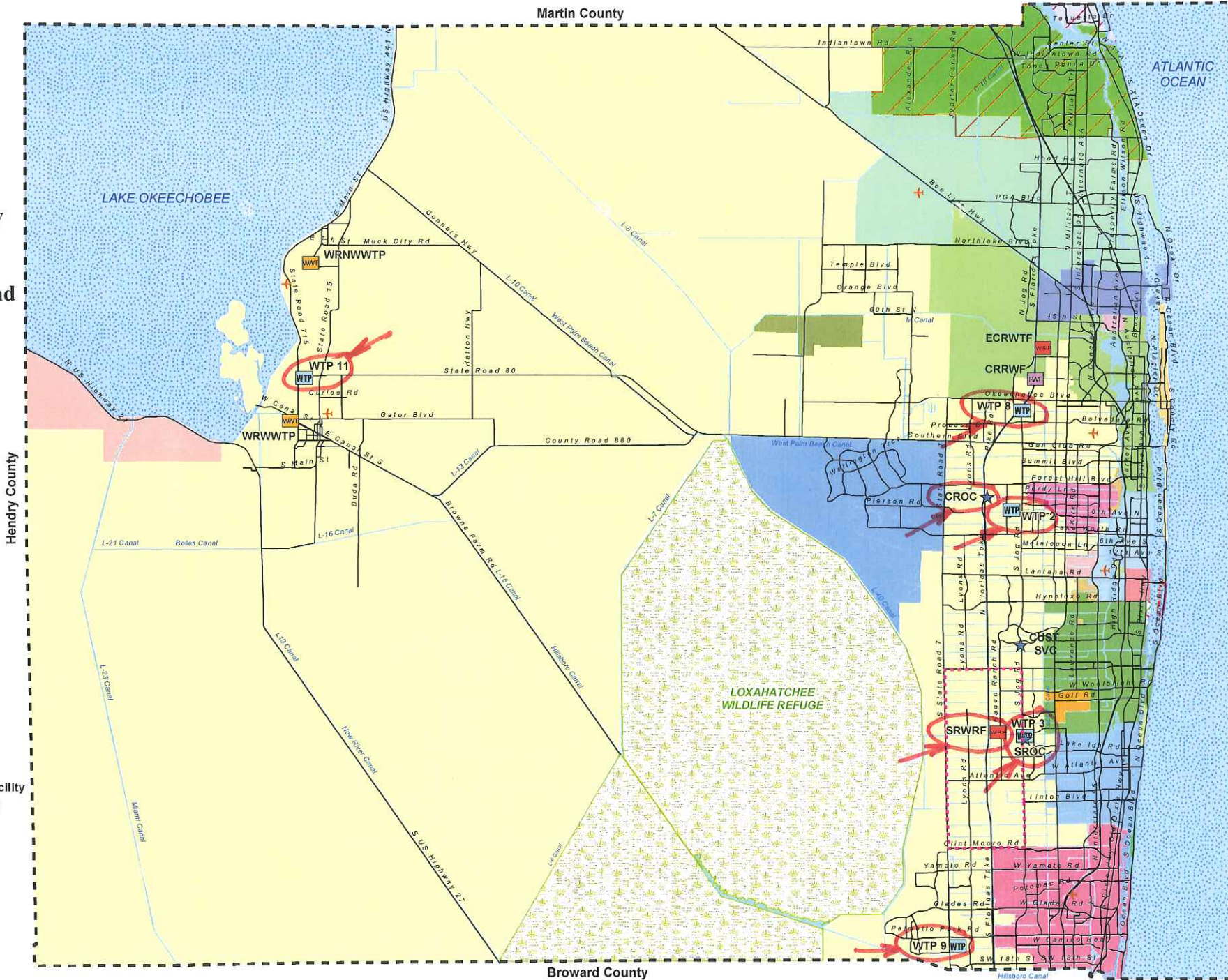
This summary is not to be used as a basis for payment.



**Palm Beach County
Water Utilities
Department
Service Area (SA) and
Major Facilities**

Attachment 1

- Legend**
- ★ Administration
 - WTP Water Treatment Plant
 - SRWF Reclamation Facility
 - WRWF Wastewater Reclamation Facility
 - WWT Wastewater Treatment Plant
 - Mandatory Reclaimed SA
 - - - Palm Beach County Limits
 - P.B.C.W.U.D. Service Area



LOCATION MAP

WORK AUTHORIZATION NO. 05
Palm Beach County Water Utilities Department
Water, Wastewater & Reclaimed Water Services

Project No. WUD 13-075

Districts: 2, 3, 5 and 6

Budget Line Item No. 4011-721-W002-6541

Project Title: Diesel Generator Catalytic Converters (RICE NESHP RULE Compliance)

THIS AUTHORIZATION No. 05 to the Contract for Water, Wastewater & Reclaimed Water Services Design-Build dated January 24, 2012 (R2012-0160), by and between Palm Beach County and the Design Build Entity as assigned to Cardinal Contractors, Inc., is for the Design-Build Services of this Work Authorization. The Contract provides for 26% SBE participation overall. This Work Authorization includes 34.92% overall participation. The cumulative proposed SBE participation, including this authorization is 31.14% overall. Additional authorization will be utilized to meet or exceed the stated overall participation goal.

1. DESIGN-BUILD ENTITY: Cardinal Contractors, Inc.
2. ADDRESS: 10405 Technology Terrace, Lakewood Ranch, FL 34211
3. Description of Services (Scope of Work) to be provided by the Design Build Entity:

See **ATTACHMENT A.**

4. Services completed by the Design Build Entity to date:

See **ATTACHMENT G.**

5. Design Build Entity shall begin work promptly or deliver ordered materials within the following calendar days from the approval date of the Work Authorization:

Substantial Design Completion 60 Calendar Days Calendar Day after receipt of executed Work Authorization and notice to proceed with design.

Substantial Construction Completion 150 Calendar Days after receipt of notice to proceed with construction and in no case less than 60 calendar days after receipt of all permits.

Final Construction Completion 90 Calendar Days after Substantial Construction Completion

Liquidated damages will apply as follows:

\$1,000 per day past substantial completion date.

\$500 per day past final completion date.

(For Liquidated Damages Rates see ATTACHMENT B)

The parties hereby agree and acknowledge that County's actual damages in the event of delay would be difficult or impossible to ascertain and that the foregoing liquidated damages amount represents a liquidated sum of damages agreed upon by the parties as a measure of damages in the event of such delay and not as a penalty.

6. The Contract Price or Guaranteed Maximum Price, as applicable, to be paid to the Design Build Entity for providing the requested services in accordance with the Contract shall be \$1,456,144.81, subject to adjustment in accordance with the terms of the Contract.
7. EXCEPT AS HEREBY AMENDED, CHANGED OR MODIFIED, all other terms, conditions and obligations of the Contract dated 01/24/2012 remain in full force and effect.

WORK AUTHORIZATION NO. 05

Project No. WUD 13-075

Project Title: Diesel Generator Catalytic Converters (RICE NESHAP RULE Compliance)

IN WITNESS WHEREOF, this Authorization is accepted, subject to the terms, conditions and obligations of the aforementioned Contract.

PALM BEACH COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF FLORIDA

Sharon R. Bock, Clerk & Comptroller,
Palm Beach County

Palm Beach County,
Board of County Commissioners

ATTEST:

Signed: _____

Signed: _____

Typed Name: Deputy Clerk

Date

Approved as to Form and Legal
Sufficiency

Palm Beach County,
Water Utilities Department

Signed: _____

Signed: Bevin A. Beaudet
Bevin A. Beaudet, Director

Typed Name: County Attorney

DESIGN BUILD ENTITY:

CARDINAL CONTRACTORS, INC.

ATTEST:

Robin C. Wilson
Witness

William J. McDevitt
(Signature)

Robin C. Wilson, Treasurer
(Name and Title)

William J. McDevitt, President
(Name and Title)

(CORPORATE SEAL)

October 22, 2013
Date

LIST OF ATTACHMENTS

WORK AUTHORIZATION NO. 05

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

ATTACHMENT – A	Scope of Work
ATTACHMENT – B	Rate for Liquidated Damages
ATTACHMENT – C	Public Construction Bond
ATTACHMENT – D	Form of Guarantee
ATTACHMENT – E	Work Authorization Cost Schedule
ATTACHMENT – F	SBE Schedule 1 and Schedule 2
ATTACHMENT – G	Authorization Status Report - Summary and Status of Authorizations
ATTACHMENT – H	Authorization Status Report - Summary of SBE/Minority Business Tracking
ATTACHMENT – I	Location Map
ATTACHMENT – J	Design-Build Criteria
ATTACHMENT – K	Vendor Quotes

ATTACHMENT A

WORK AUTHORIZATION NO. 05

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

SCOPE OF WORK FOR

Diesel Generator Catalytic Converters (RICE NESHAP RULE Compliance)

INTRODUCTION

Palm Beach County (County) entered into an agreement entitled Water, Wastewater & Reclaimed Water Improvements - Palm Beach County Water Utilities Department Project No. WUD 13-075 (CONTRACT) with Calvin, Giordano & Associates, as assigned to Cardinal Contractors, Inc. (DESIGN BUILD ENTITY) to provide design-build services for various general activities on the Water, Wastewater & Reclaimed Water Services Design-Build Contract dated January 24, 2012 (R2012-0160). This Work Authorization will be performed under that CONTRACT.

This Work Authorization encompasses providing services related to design, permitting, and construction of the exhaust system of the emergency generators to meet the EPA RICE NESHAP rule with installation and testing to be substantially completed before the EPA deadline of May 1, 2014.

SCOPE OF SERVICES

Design Build Entity shall perform the Scope of Services as described herein:

Task 1 – Data Collection and Survey

1. Receive NTP for Design & Construction.
2. Review As-Built drawings and Specifications.
3. Confirm catalytic converter inlet temperature for each generator.
4. Perform generator exhaust back pressure analysis for acceptance of the catalytic converters.
5. Confirm generator exhaust flange and piping diameter.
6. Determine mechanical, structural, electrical and instrumentation requirements at each site
7. Coordinate with existing plant SCADA, confirming available I/O.

Task 2 – 60% Design

1. Provide 3 full size and 3 half size drawing sets of plans and specifications to be submitted for PBCWUD review at the 60% design. The submittals will be made separately for each facility upon completion.

Task 3 - 100% Design

1. Provide written response to 60% design comments.
2. Provide (3) full size and (3) half size drawing sets plans and specifications to be submitted for PBCWUD review at the 100% design. The submittals will be made separately for each facility upon completion.
3. Provide separate building permit packages for each facility. Each permit package shall include 3 signed and sealed full size set of plans that have been revised per the 100% design comments received from PBCWUD.
4. Provide building permit applications and permitting fees request to PBCWUD for each facility. PBCWUD to be responsible for the permitting fees and the Design Build Entity shall submit for permits.

Task 4 – Pre-Construction Services

1. Pre-Construction Meeting.
2. Shop drawing review and approval.

Task 5 – Construction Services

1. Construction activities.
2. Start up and testing.

Task 6 – Project Close Out

1. Restore all areas and improvements disturbed by the work to a condition that matches or exceeds its pre-construction condition.
2. Coordinate preparation of final As-Built Plan.
3. Coordinate and provide all required final certifications.
4. Obtain all final inspections and close out all permits. When possible, provide computer print-out from permitting agency evidencing permits have been properly closed.
5. Prepare project close-out documentation package, including signed-off permits, As-Built drawings, and photographs.

ASSUMPTIONS

- 1) Time is not included for any redesign resulting from Task 1 investigations.
- 2) PBCWUD will make available all existing Record Drawings of each site location in PDF and AutoCAD format.
- 3) All permit fees will be paid by PBCWUD.
- 4) PBCWUD reviews will be completed within two weeks.
- 5) PBCWUD will make available all Shop Drawings and O&M manuals to each generator.
- 6) One Notice to Proceed will be provided for the entire project.
- 7) The design and construction of each site will be independent of all other sites.
Construction will begin when the design has been completed, and the permits have been acquired for individual sites.
- 8) The GCS monitors the following: temperature of engine exhaust at inlet to Catalytic Converter, Catalyst inlet/outlet pressure + delta, engine hours.

- 9) All programming at the facility SCADA panels to be completed by PBCWUD.
- 10) PBCWUD will provide access to all sites.
- 11) Startup and training of the GCS panels can be performed in 5 days. If additional training is required, it will be billed at \$3,047 per day. Will not be charged if training is not used.
- 12) One day of catalytic converter training from DCL is included at a cost of \$3,075. Additional training can be provided for an additional cost. Will not be charged if training is not used.
- 13) Exhaust piping is standard wall with plate flanges.
- 14) Flanged accessory sets are 304SS with high temperature gaskets.
- 15) Pipe support and converter support assumptions:
 - a) Fabricated supports will be painted carbon steel
 - b) Unistrut will be 316ss
 - c) Indoor threaded rod will be carbon steel
 - d) Outdoor threaded rod will be 304ss
 - e) Carbon steel vibration isolators
- 16) Electrical Assumptions:
 - a) 120V power to each panel (1 per generator)
 - b) Pricing includes control conduit and wiring from each instrument on CAT converter to GCS panel. GCS is less than 15 feet away from converter.
 - c) Assume any run/stop monitoring will be done via existing signals at PLC.
 - d) Temporary electric on each site to be provided by PBCWUD.
- 17) See below for power, fiber optic and conduit assumptions:
 - a) CROC (1) generator
 - i) f/o cable @ 200'
 - ii) 50' 2" A/G conduit for fiber
 - iii) 50' 3/4" A/G conduit for power
 - b) SROC (1) generator
 - i) f/o cable @ 150'
 - ii) 100' 2" U/G conduit for fiber
 - iii) 50' 2" A/G conduit for fiber
 - iv) 50' 3/4" A/G conduit for power
 - c) WTP 2 (CAT 3508)
 - i) f/o cable @ 100'
 - ii) 50' 2" U/G conduit for fiber
 - iii) 50' 2" A/G conduit for fiber
 - iv) 50' 3/4" A/G conduit for power
 - d) WTP 2 (CAT 3516)
 - i) ETHERNET cable @ 50'
 - ii) 50' 2" A/G conduit for ETHERNET
 - iii) 50' 3/4" A/G conduit for power
 - e) WTP 3
 - i) f/o cable @ 150' (DAISY CHAIN BETWEEN GSC PANELS)
 - ii) 100' 2" U/G conduit for fiber
 - iii) 100' 2" A/G conduit for fiber
 - iv) 50' 3/4" A/G conduit for power (X 2 GENERATORS = 100')
 - f) WTP 8
 - i) ETHERNET cable @ 100'
 - ii) 100' 2" A/G conduit for fiber
 - iii) 50' 3/4" A/G conduit for power
 - g) WTP 9

- i) ETHERNET cable @ 200'
- ii) 200' 2" A/G conduit for ETHERNET
- iii) 200' 3/4" A/G conduit for power
- iv) RELOCATE (2) LIGHT FIXTURES.
- h) SRWRF (4) GENERATORS
 - i) ETHERNET cable @ 150' ea. generator
 - ii) 150' 2" A/G conduit for ETHERNET ea. generator
 - iii) 50' 3/4" A/G conduit for power ea. generator
- i) WTP #11
 - i) f/o cable @ 400'
 - ii) 250' 2" U/G conduit for fiber
 - iii) 150' 2" A/G conduit for fiber
 - iv) 20' 3/4" A/G conduit for power

COMPENSATION

Compensation for this Work Authorization shall not exceed the Guaranteed Maximum Price.

SBE PARTICIPATION

As described in General Provisions Section A.3 of the Contract, SBE participation is included in ATTACHMENT F under this Authorization. The attached Schedule 1 defines the SBE applied to this Authorization/Contract and Schedule 2 establishes the SBE contribution from each subcontractor (Letter of Intent to perform as an SBE).

ATTACHMENT B

WORK AUTHORIZATION NO. 05

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

Rates for Liquidated Damages

Substantial Design Completion 60 Calendar Days after receipt of executed Work Authorization and notice to proceed with design.

Substantial Construction Completion 150 Calendar Days after receipt of notice to proceed with construction and in no case less than 60 days after receipt of all permits.

Final Construction Completion 90 Calendar Days after Substantial Construction Completion

Liquidated damages will apply as follows:

\$1,000 per day past substantial completion date.

\$500 per day past final completion date.

The parties hereby agree and acknowledge that County's actual damages in the event of delay would be difficult or impossible to ascertain and that the foregoing liquidated damages amount represents a liquidated sum of damages agreed upon by the parties as a measure of damages in the event of such delay and not as a penalty.

ATTACHMENT C

WORK AUTHORIZATION NO. 05

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

PUBLIC CONSTRUCTION BOND

BOND NUMBER: 82333269 / 929582323

BOND AMOUNT: \$1,456,144.81

CONTRACT AMOUNT: \$1,456,144.81

CONTRACTOR'S NAME: Cardinal Contractors, Inc.

CONTRACTOR'S ADDRESS: 10405 Technology Terrace
Lakewood Ranch, FL 34211

CONTRACTOR'S PHONE: 941-377-8555

SURETY COMPANY: Federal Insurance Company and Western Surety Company

SURETY'S ADDRESS: Surety Department of Federal Insurance
15 Mountain View Road
Warren, NJ 07059

Western Surety Company
555 Mission Street Suite 200
San Francisco, CA 94105

OWNER'S NAME: PALM BEACH COUNTY

OWNER'S ADDRESS: 8100 Forest Hill Boulevard (P. O. Box 16097)
West Palm Beach, FL 33413

OWNER'S PHONE: (561) 493-6000

DESCRIPTION OF WORK: Design, permitting, and construction for reconstructing the exhaust system of the emergency generators to meet the EPA RICE NESHAP rule with installation and testing to be substantially completed before the EPA deadline of May 1, 2014.

PROJECT LOCATIONS: Northern Region Operations Center
Southern Region Operations Center
Water Treatment Plant No. 2
Water Treatment Plant No. 3
Water Treatment Plant No. 8
Water Treatment Plant No. 9
Water Treatment Plant No. 11
Southern Region Water Reclamation Facility

LEGAL DESCRIPTION:

Northern Region Operations Center
8100 Forest Hill Blvd.
West Palm Beach, FL 33413
PCN 00-42-43-27-05-021-0040

Southern Region Operations Center
13026 South Jog Road
Delray Beach, FL 33446
PCN 00-42-46-10-00-000-1020

Water Treatment Plant No. 2
2956 Pinehurst Drive
West Palm Beach, FL 33413
PCN 00-42-43-27-05-021-0291

Water Treatment Plant No. 3
13026 South Jog Road
Delray Beach, FL 33446
PCN 00-42-46-10-00-000-1020

Water Treatment Plant No. 8
1500 N Jog Road
West Palm Beach, FL 33417
PCN 00-42-43-27-05-004-0053

Water Treatment Plant No. 9
22530 SW 65TH Ave
Boca Raton, FL 33428
PCN 00-42-43-27-05-081-0380

Water Treatment Plant No. 11
39700 Hooker Highway
Belle Glade, FL 33433
PCN

Southern Region Water Reclamation Facility
12751 Hagen Ranch Road
Boynton Beach, FL 33437
PCN 00-42-43-27-05-064-0730

PUBLIC CONSTRUCTION BOND

This Bond is issued in favor of the County conditioned on the full and faithful performance of the Contract.

KNOW ALL MEN BY THESE PRESENTS: that Contractor and Surety, are held and firmly bound unto

Palm Beach County Board of County Commissioners
301 N. Olive Avenue
West Palm Beach, Florida 33401

as Oblige, herein called County, for the use and benefit of claimant as herein below defined, in the amount of

Dollars (\$1,456,144.81)

for the payment whereof Principal and Surety bind themselves, their heirs, personal representatives, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

Principal has by written agreement dated _____, 2013, entered into a contract with the County for

Project Name: Diesel Generator Catalytic Converters (RICE NESHAP RULE Compliance)
Project No.: WUD 13-075
Project Description: Reconstruct the exhaust systems of the emergency generators to meet the EPA RICE NESHAP rule with installation and testing to be completed by April 15, 2014.
Project Locations: Northern Region Operations Center
Southern Region Operations Center
Water Treatment Plant No. 2
Water Treatment Plant No. 3
Water Treatment Plant No. 8
Water Treatment Plant No. 9
Water Treatment Plant No. 11
Southern Region Water Reclamation Facility

in accordance with Design Criteria Drawings and Specifications prepared by

Name of Design Firm: Palm Beach County Water Utilities Department
Location of Firm: 8100 Forest Hill Blvd., West Palm Beach, FL 33416
Phone: (561) 493-6110
Fax: (561) 493-6008


which contract is by reference made a part hereof in its entirety, and is hereinafter referred to as the Contract.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the contract dated _____, 2013, between Principal and County for the design and construction of (*) _____, the contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and

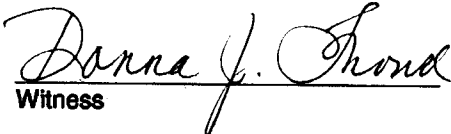
(*)Diesel Generator Catalytic Converters

2. Promptly makes payments to all claimants, as defined in Section 255.05, Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and
3. Pays County all losses, damages (including liquidated damages), expenses, costs, and attorneys' fees, including appellate proceedings, that County sustains because of a default by Principal under the contract; and
4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.
5. Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this bond and Surety waives notice of such changes.
6. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of construction liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against the bond.
7. Principal and Surety expressly acknowledge that any and all provisions relating to consequential, delay and liquidated damages contained in the contract are expressly covered by and made a part of this Performance, Labor and Material Payment Bond. Principal and Surety acknowledge that any such provisions lie within their obligations and within the policy coverage's and limitations of this instrument.
8. Section 255.05, Florida Statutes, as amended, together with all notice and time provisions contained therein, is incorporated herein, by reference, in its entirety. Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes. This instrument regardless of its form, shall be construed and deemed a statutory bond issued in accordance with Section 255.05, Florida Statutes.
9. Any action brought under this instrument shall be brought in the state court of competent jurisdiction in Palm Beach County, Florida and not elsewhere.


Witness

Robin C. Wilson

Print name


Witness

Donna J. Frowd

Print name

Cardinal Contractors, Inc.


 (Seal)

Print name William J. McDevitt

President

Title

Federal Insurance Company
& Western Surety Company

 (Seal)

Print name

Debbie L. Welsh, Attorney-in-Fact

Title

ATTACHMENT C

WORK AUTHORIZATION NO. 05

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

PUBLIC CONSTRUCTION BOND

BOND NUMBER: Federal Insurance Company #82333269 / Western Surety Company #929582323

BOND AMOUNT: One Million Four Hundred Fifty-Six Thousand One Hundred Forty-Four Dollars & 81/100

CONTRACT AMOUNT: \$1,456,144.81

CONTRACTOR'S NAME: Cardinal Contractors, Inc.

CONTRACTOR'S ADDRESS: 10405 Technology Terrace
Lakewood Ranch, FL 34211

CONTRACTOR'S PHONE: 941-377-8555

SURETY COMPANY: Federal Insurance Company and Western Surety Company

SURETY'S ADDRESS: Surety Department of Federal Insurance
15 Mountain View Road
Warren, NJ 07059

Western Surety Company
555 Mission Street Suite 200
San Francisco, CA 94105

OWNER'S NAME: PALM BEACH COUNTY

OWNER'S ADDRESS: 8100 Forest Hill Boulevard (P. O. Box 16097)
West Palm Beach, FL 33413

OWNER'S PHONE: (561) 493-6000

DESCRIPTION OF WORK: Design, permitting, and construction for reconstructing the exhaust system of the emergency generators to meet the EPA RICE NESHAP rule with installation and testing to be substantially completed before the EPA deadline of May 1, 2014.

PROJECT LOCATIONS: Northern Region Operations Center
Southern Region Operations Center
Water Treatment Plant No. 2
Water Treatment Plant No. 3
Water Treatment Plant No. 8
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Water Treatment Plant No. 11
Southern Region Water Reclamation Facility

LEGAL DESCRIPTION:

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PCN 00-42-43-27-05-021-0291

Water Treatment Plant No. 3
13026 South Jog Road
Delray Beach, FL 33446
PCN 00-42-46-10-00-000-1020

Water Treatment Plant No. 8
1500 N Jog Road
West Palm Beach, FL 33417
PCN 00-42-43-27-05-004-0053

Water Treatment Plant No. 9
22530 SW 65TH Ave
Boca Raton, FL 33428
PCN 00-42-43-27-05-081-0380

Water Treatment Plant No. 11
39700 Hooker Highway
Bella Glade, FL 33433
PCN

Southern Region Water Reclamation Facility
12751 Hagen Ranch Road
Boynton Beach, FL 33437
PCN 00-42-43-27-05-064-0730

ATTACHMENT D

WORK AUTHORIZATION NO. 05

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

FORM OF GUARANTEE

GUARANTEE FOR (Contractor and Surety Name) Cardinal Contractors, Inc. and Federal Insurance Company and Western Surety Company

We the undersigned hereby guarantee that the Water, Wastewater & Reclaimed Water Improvements Design/Build Contract R2012-0160, Project Number WUD 13-075, Palm Beach County, Florida, will be constructed and bonded, in accordance with the plans and specifications; that the work constructed will fulfill the requirements of the guaranties included in the Contract Documents. We agree to repair or replace any or all of our work, together with any work of others which may be damaged in so doing, that may prove to be defective in the workmanship or materials within a period of one year from the date of Substantial Completion of all of the above named work by the County of Palm Beach, State of Florida, without any expense whatsoever to said County of Palm Beach, ordinary wear and tear and unusual abuse or neglect excepted by the County. When correction work is started, it shall be carried through to completion.


In the event of our failure to acknowledge notice, and commence corrections of defective work within five (5) calendar days after being notified in writing by the Board of County Commissioners, Palm Beach County, Florida, we, collectively or separately, do hereby authorize Palm Beach County to proceed to have said defects repaired and made good at our expense and we will honor and pay the costs and charges therefore upon demand.

DATED October 21, 2013

SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY

Cardinal Contractors, Inc. (Seal)

(Contractor)

By: 
(Signature)

William J. McDevitt, President

(Printed Name)

Federal Insurance Company & Western Surety Company (Seal)

(Surety)

By: 
(Signature)

Debbie L. Welsh, Attorney-in-Fact

(Printed Name)

END OF SECTION

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of MARIN

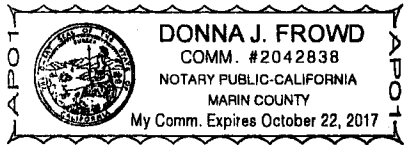
On October 21, 2013 before me, Donna J. Frowd, Notary Public, personally appeared Debbie L. Welsh who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

(seal)

Signature Donna J. Frowd





**Chubb
Surety**

**POWER
OF
ATTORNEY**

**Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company**

**Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059**

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint Donna J. Frowd, Michael Brophy McGowan, Susan J. McGowan, Debbie L. Welsh and Donna L. Welsh of Novato, California

each as their true and lawful Attorney- in- Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this **23rd** day of **November, 2011**.

Kenneth C. Wendel, Assistant Secretary

David B. Norris, Jr., Vice President

STATE OF NEW JERSEY
County of Somerset ss.

On this **23rd** day of **November, 2011** before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel, being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By- Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By-Laws and in deponent's presence.

Notarial Seal



**KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316685
Commission Expires July 16, 2014**

Notary Public

CERTIFICATION

Extract from the By- Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys- in- Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

- (i) the foregoing extract of the By- Laws of the Companies is true and correct,
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this **21st** day of **October, 2013**



Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903- 3493 Fax (908) 903- 3656 e-mail: surety@chubb.com

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Michael Brophy Mc Gowan, Donna L Welsh, Donna J Frowd, Debbie L Welsh, Individually

of Novato, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 20th day of March, 2013.



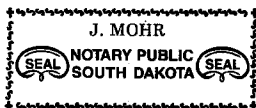
WESTERN SURETY COMPANY

Paul T. Bruflat
Paul T. Bruflat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 20th day of March, 2013, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
June 23, 2015



J. Mohr
J. Mohr, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 21st day of October, 2013.



WESTERN SURETY COMPANY

L. Nelson
L. Nelson, Assistant Secretary

ATTACHMENT E

WORK AUTHORIZATION NO. 05

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

Work Authorization Cost Schedule

(Provide breakdown of materials, labor and subcontractors)

ESTIMATE SUMMARY - COSTS & BID PRICES

Bid#	Client# Bid Description	Quantity	Unit	Manhours	Direct Labor	Perm Matl	Constr Matl	Equip- Ment	Sub- Contr	Direct Total	Indirect Charge	Total Cost	Total Cost Unit Price	Markup	Balanced Bid		Bid Price	Bid Total
															Total	Unit Price		
1	GENERAL CONDITIONS	1.00	LS	568 568.00	38,627		9,469	1,200	520	49,816	1,790	51,606	51,606.33	5,927 11.5%	57,534	57,533.53	57,533.53	57,533.53
5	ENGINEERING SERVICES	1.00	LS						170,891	170,891		170,891	170,891.00	*** PT *** 0%	170,891	170,891.00	170,891.00	170,891.00
10	CONSTRUCTION ALLOWANCE	1.00	LS				25,000			25,000		25,000	25,000.00	*** PT *** 0%	25,000	25,000.00	25,000.00	25,000.00
1000000	CENTRAL REGION OPERATIONS CENT	1.00	LS	508 507.52	16,886	6,277	5,900	158	4,700	33,921	1,219	35,140	35,139.97	4,036 11.5%	39,176	39,175.94	39,175.94	39,175.94
2000000	SOUTHERN REGION OPERATIONS CEN	1.00	LS	508 507.60	18,613	10,218	2,625	6,649	4,185	42,290	1,520	43,809	43,809.41	5,032 11.5%	48,841	48,841.10	48,841.10	48,841.10
3000000	WATER TREATMENT PLANT NO. 2	1.00	LS	1,070 1,069.60	36,479	14,949	11,459	395	9,935	73,217	2,631	75,848	75,848.30	8,712 11.5%	84,560	84,559.80	84,559.80	84,559.80
4000000	WATER TREATMENT PLANT NO. 3	1.00	LS	738 737.60	24,146	10,850	8,232	395	12,600	56,223	2,021	58,244	58,244.05	6,690 11.5%	64,934	64,933.62	64,933.62	64,933.62
5000000	WATER TREATMENT PLANT NO. 8	1.00	LS	505 505.12	19,030	6,171	6,592	158	5,135	37,086	1,333	38,419	38,418.81	4,413 11.5%	42,831	42,831.37	42,831.37	42,831.37
6000000	WATER TREATMENT PLANT NO. 9	1.00	LS	705 705.12	25,416	6,171	9,681	773	9,435	51,476	1,850	53,326	53,325.70	6,125 11.5%	59,450	59,450.38	59,450.38	59,450.38
7000000	SOUTHERN REGION WATER RECLAM	1.00	LS	1,206 1,205.60	40,768	14,478	14,979	474	19,085	89,784	3,227	93,011	93,011.18	10,683 11.5%	103,694	103,693.91	103,693.91	103,693.91
8000000	LAKE REGION WTP #11	1.00	LS	404 403.60	15,318	10,750	2,465	6,649	4,285	39,468	1,418	40,886	40,886.35	4,696 11.5%	45,582	45,582.32	45,582.32	45,582.32
9000000	ITEMIZED WORK COMMON TO ALL SI	1.00	LS	232 232.00	7,873	45,461	8,083		556,506	617,923	22,207	640,130	640,130.20	73,522 11.5%	713,652	713,651.84	713,651.84	713,651.84
Totals:				6,441	243,155	125,323	104,487	16,851	797,276	1,287,094	39,216	1,326,311 [1,326,310]		129,833	1,456,144		1,456,144.81 [9.8 %	

Code between Balanced Bid & Bid Price: U=Unbalanced, F=Frozen, C=Closing Biditem (item to absorb unbalancing differences).
 [bracketed numbers represent adjusted quantities]

Cardinal Contractors, Inc.
 MB-31209-09A RICE-NESHAP RULE Compliance
 Mike Brandao

ESTIMATE SUMMARY - COSTS & BID PRICES

Bid#	Client# Bid Description	Quantity	Unit Manhours	Direct Labor	Perm Matl	Constr Matl	Equip- Ment	Sub- Contr	Direct Total	Indirect Charge	Total Cost	Total Cost Unit Price	Markup	Balanced Bid Total Unit Price	Bid Price	Bid Total
** in front of the Biditem indicates a Non-Additive item																
Markup % is shown as a percentage of cost																
	Builder's Risk		2.3000 % of TC							25,097						
	Bond from Summary Table									14,118						
	Markup on Resource Costs												129,833			
<hr/>																
*****	TOTAL	JOB ==>	6,441	243,155	125,323	104,487	16,851	797,276	1,287,094	39,216	1,326,311		129,833	1,456,144		1,456,144.81

Spread Indirects On TOTAL COST Spread Markups On TOTAL COST Spread Addons&Bonds On TOTAL COST

Bond Calculations
 Selected Bond Table: C Description: Bond Calc Design-

	Contract Amount	Rate per 1000	Bond Amount
First:	\$ 100,000	10.00	\$ 1,000.00
Next:	\$ 400,000	9.85	\$ 3,940.00
Next:	\$ 2,000,000	9.60	\$ 9,178.99
Next:	\$ 2,500,000	9.50	\$ 0.00
Next:	\$ 5,000,000	8.50	\$ 0.00
Remainder:		4.65	\$ 0.00
		Subtotal:	\$ 14,118.99
Time Threshold 1:	0	Extended Time Rate 1: 0.0000 %	\$ 0.00
Time Threshold 2:	0	Extended Time Rate 2: 0.0000 %	\$ 0.00
Length of Job:	10	Total Bond Amount:	\$ 14,118.99

Pass Through Totals
 Total Pass Through Cost: 195,891.00 *(Engineering + Construction Allowance)*
 Total Pass Through Adjustment: 0.00

---Estimate Notes---
 Bid Date: 09/20/2013 Owner: Engineering Firm:
 Estimator in Charge: MB

Desired Bid (if specified)= 0.00 Sort: Hold Acct: N Subitem: N NonAdd: N
 Last Summary on 10/11/2013 at 3:39 PM.
 Last Spread on 10/11/2013 at 3:39 PM.

ATTACHMENT F

SBE Schedules 1 and 2

**SCHEDULE 1
LIST OF PROPOSED SBE-M/WBE PARTICIPATION**

PROJECT NAME OR BID NAME: Diesel Generator Catalytic Converters (RICE NESHAP RULE Compliance) **PROJECT NO. OR BID NO.:** WUD 13-075

NAME OF PRIME BIDDER: Cardinal Contractors, Inc. **ADDRESS:** 560 Village Boulevard, Suite 340, West Palm Beach, Florida 33409

CONTACT PERSON: Michael Brandao

PHONE NO.: 561-684-6161 **FAX NO.:** 561-684-6363

BID OPENING DATE: n/a

USER DEPARTMENT: Water Utilities Department

THIS DOCUMENT IS TO BE COMPLETED BY THE PRIME CONTRACTOR AND SUBMITTED WITH BID PACKET. PLEASE LIST THE NAME, CONTACT INFORMATION AND DOLLAR AMOUNT AND/OR PERCENTAGE OF WORK TO BE COMPLETED BY ALL SBE -M/WBE's ON THIS PROJECT. IF THE PRIME IS AN SBE-M/WBE, PLEASE ALSO LIST THE NAME, CONTACT INFORMATION AND DOLLAR AMOUNT AND/OR PERCENTAGE OF WORK TO BE COMPLETED BY THE PRIME ON THIS PROJECT. THE PRIME AFFIRMS THAT IT WILL MONITOR THE SBES LISTED TO ENSURE THE SBES PERFORM THE WORK WITH ITS OWN WORKFORCE.

Name, Address and Phone Number	(Check one or both Categories)		DOLLAR AMOUNT AND/OR PERCENTAGE OF WORK				
	M/WBE	SBE	Black	Hispanic	Women	Caucasian	Other (Please Specify)
	Minority Business	Small Business					
Electrical Design Associates, Inc. 5300 W. Atlantic Avenue, Suite 408 Delray Beach, FL 33484	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			\$33,873.84		
Powerline of South Florida, Inc. 711 Commerce Way, Suite 6 Jupiter, FL 33458	<input type="checkbox"/>	<input checked="" type="checkbox"/>				\$326,624.25	
Energy Efficient Electric, Inc. 1600 Mercer Ave., Unit 6 West Palm Beach, FL 33401	<input type="checkbox"/>	<input checked="" type="checkbox"/>				\$148,020.00	

(Please use additional sheets if necessary)

Total

\$33,873.84

\$474,644.25

Total Bid Price \$1,456,144.81

Total SBE-M/WBE Participation Dollar Amount and/or Percentage of Work \$508,518.09

I hereby certify that the above information accurate to the best of my knowledge:

Michael Brandao
Signature

PM
Title

- NOTE:**
- The amount listed on this form for a SBE-M/WBE Prime or Subcontractor must be supported by price or percentage listed on the signed Schedule 2 or signed proposal in order to be counted toward goal attainment.
 - Firms may be certified by Palm Beach County as an SBE and/or M/WBE. If firms are certified as both an SBE and M/WBE, please indicate the dollar amount and/or percentage under the appropriate category.
 - M/WBE information is being collected for tracking purposes only.

**OSBA SCHEDULE 2
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE**

This document must be completed by ALL SBE-M/WBE's and submitted with this bid packet. Specify in detail, the particular work items to be performed and the dollar amount and/or percentage for each work item. SBE credit will only be given for items which the SBE-M/WBE's is certified to perform. Failure to properly complete Schedule 2 will result in your SBE participation not being counted.

PROJECT NUMBER: WUD 13-075 PROJECT NAME: Diesel Generator Catalytic Converters (RICE NESHAP RULE Compliance)

TO: Cardinal Contractors, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise XX Minority Business Enterprise _____
Black _____ Hispanic _____ Women _____ Caucasian _____ Other (Please Specify) _____

Date of Palm Beach County Certification: 09-04-2012 to 09-03-2015

The undersigned is prepared to perform the following described work in connection with the above project. Additional Sheets May Be Used As Necessary

Line Item/ Lot No.	Item Description	Qty/Units	Unit Price	Total Price/ Percentage
<u>1</u>	<u>Electrical Subcontractor</u>	<u>1 lump sum</u>	<u>\$148,020.00</u>	<u>\$148,020.00</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

at the following price or percentage \$148,020.00 (SBE Prime or Subcontractor's Quote)

and will enter into a formal agreement for work with you contingent upon your execution of a contract with Palm Beach County.

If undersigned intends to sub-subcontract any portion of this job to a certified SBE-M/WBE or a non-SBE subcontractor, please list the name of that subcontractor and the amount below.

Price or Percentage n/a

The Prime affirms that it will monitor the SBE-M/WBE listed to ensure the SBE-M/WBE perform the work with their own work force. The undersigned SBE-M/WBE Prime or SBE-M/WBE subcontractor affirms that it has the resources necessary to perform the work listed without subcontracting to a non-certified SBE or any other certified SBE subcontractors except as noted above.

The undersigned subcontractor understands that the provision of this form to Prime Bidder does not prevent Subcontractor from providing quotations to other bidders.

Energy Efficient Electric
Print name of
SBE-M/WBE Company

By: 
(Signature)

Rene R. Viau, Vice President
Print name/title of person executing on behalf
of SBE-M/WBE

Date: 10-11-2013

**Palm Beach County
Office of Small Business Assistance**

Certifies That

ENERGY EFFICIENT ELECTRIC, INC.

Vendor # VC0000130772

*is a Small Business Enterprise as prescribed by section 2-80.21 – 2-80.35 of the Palm Beach
County Code for a three year period from September 4 2012 to September 3, 2015*

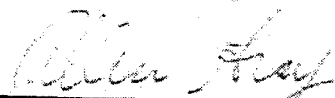
The following Services and/or Products are covered under this certification:

**ELECTRICAL (NEW CONSTRUCTION);
WIRING AND OTHER ELECTRICAL MAINTENANCE AND REPAIR SERVICES**

Palm Beach County Board of County Commissioners

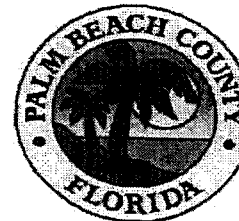
Shelley Vana, Chair
Steven L. Abrams, Vice Chairman
Karen T. Marcus
Paulette Burdick
Burt Aaronson
Jess R. Santamaria
Priscilla A. Taylor

County Administrator
Robert Weisman
Deputy County Administrator
Verdenia C. Baker



Allen F. Gray, Manager

9/4/2012



**OSBA SCHEDULE 2
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE**

This document must be completed by ALL SBE-M/WBE's and submitted with this bid packet. Specify in detail, the particular work items to be performed and the dollar amount and/or percentage for each work item. SBE credit will only be given for items which the SBE-M/WBE's is certified to perform. Failure to properly complete Schedule 2 will result in your SBE participation not being counted.

PROJECT NUMBER: WUD 13-075 PROJECT NAME: Diesel Generator Catalytic Converters (RICE NESHAP RULE Compliance)

TO: Cardinal Contractors, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise Minority Business Enterprise
Black Hispanic Women Caucasian Other (Please Specify) _____

Date of Palm Beach County Certification: May 26, 2012 to May 25, 2015

The undersigned is prepared to perform the following described work in connection with the above project. Additional Sheets May Be Used As Necessary

Line Item/ Lot No.	Item Description	Qty/Units	Unit Price	Total Price/ Percentage
1	Electrical Design	1 lump sum	\$33,873.84	\$33,873.84

at the following price or percentage \$33,873.84 (SBE Prime or Subcontractor's Quote)

and will enter into a formal agreement for work with you contingent upon your execution of a contract with Palm Beach County.

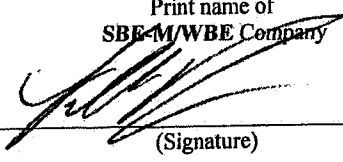
If undersigned intends to sub-subcontract any portion of this job to a certified SBE-M/WBE or a non-SBE subcontractor, please list the name of that subcontractor and the amount below.

Price or Percentage n/a

The Prime affirms that it will monitor the SBE-M/WBE listed to ensure the SBE-M/WBE perform the work with their own work force. The undersigned SBE-M/WBE Prime or SBE-M/WBE subcontractor affirms that it has the resources necessary to perform the work listed without subcontracting to a non-certified SBE or any other certified SBE subcontractors except as noted above.

The undersigned subcontractor understands that the provision of this form to Prime Bidder does not prevent Subcontractor from providing quotations to other bidders.

Electrical Design Associates, Inc.
Print name of
SBE-M/WBE Company

By: 
(Signature)

Lillian M. Reyes, P.E./President
Print name/title of person executing on behalf
of SBE-M/WBE

Date: 10/14/13

**OSBA SCHEDULE 2
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE**

This document must be completed by ALL SBE-M/WBE's and submitted with this bid packet. Specify in detail, the particular work items to be performed and the dollar amount and/or percentage for each work item. SBE credit will only be given for items which the SBE-M/WBE's is certified to perform. Failure to properly complete Schedule 2 will result in your SBE participation not being counted.

PROJECT NUMBER: WUD 13-075 PROJECT NAME: Diesel Generator Catalytic Converters (RICE NESHAP RULE Compliance)

TO: Cardinal Contractors, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise Minority Business Enterprise _____

Black _____ Hispanic _____ Women _____ Caucasian _____ Other (Please Specify) _____

Date of Palm Beach County Certification: 8/6/2011 to 8/5/2014

The undersigned is prepared to perform the following described work in connection with the above project. Additional Sheets May Be Used As Necessary

Line Item/ Lot No.	Item Description	Qty/Units	Unit Price	Total Price/ Percentage
<u>1</u>	<u>Electrical & Controls Subcontractor</u>	<u>1 lump sum</u>	<u>\$326,624.25</u>	<u>\$326,624.25</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

at the following price or percentage \$326,624.25 (SBE Prime or Subcontractor's Quote)

and will enter into a formal agreement for work with you contingent upon your execution of a contract with Palm Beach County.

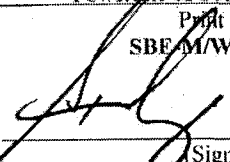
If undersigned intends to sub-subcontract any portion of this job to a certified SBE-M/WBE or a non-SBE subcontractor, please list the name of that subcontractor and the amount below.

Price or Percentage n/a

The Prime affirms that it will monitor the SBE-M/WBE listed to ensure the SBE-M/WBE perform the work with their own work force. The undersigned SBE-M/WBE Prime or SBE-M/WBE subcontractor affirms that it has the resources necessary to perform the work listed without subcontracting to a non-certified SBE or any other certified SBE subcontractors except as noted above.

The undersigned subcontractor understands that the provision of this form to Prime Bidder does not prevent Subcontractor from providing quotations to other bidders.

Powerline of South Florida, Inc.
Print name of
SBE-M/WBE Company

By: 
(Signature)

THOMAS LAESSIG, PRES.
Print name/title of person executing on behalf
of SBE-M/WBE

Date: 12 Oct. 13

ATTACHMENT G

AUTHORIZATION STATUS REPORT

SUMMARY AND STATUS OF
REQUESTS FOR AUTHORIZATIONS

Auth. No.	Description	Status	Project Total Amount	Date Approved	WUD No. Assigned	Consultant Project No.
CONSULTANT SERVICE AUTHORIZATIONS						
CSA-1	Emergency Generator Storage at NROC	Approved	\$11,689.09	4/9/2012	11-012	11-4416.3
CSA-2	WTP 3 Chemical Containment Area and Corrosion Inhibitor Storage	Approved	\$49,987.17	4/30/2012	12-003	11-4416.2
CSA-3	Morikami Reclaimed Water Storage and Pumping Facilities Existing Equipment Evaluation	Approved	\$13,355.28	5/14/2012	11-027	11-4416.1
CSA-4	SCADA System Tower Improvements	Approved	\$92,999.24	10/24/2012	12-022	
	Total CSA's		\$168,030.78			
WORK AUTHORIZATIONS						
WA-1	NROC Emergency Generator Storage	Approved	\$68,860.40	10/11/2012	11-012	11-4416.8
WA-2	SCADA System Tower Improvements	Approved	\$241,597.94	9/10/2013	12-022	31306-5002
WA-3	WTP No. 3 Degasser No. 3 and Odor Scrubber	Approved	\$1,640,915.97	10/1/2013	12-083	31306-5003
WA-4	Central Region Reclaimed Water Facility Improvements	Pending			13-009	
WA-5	RICE NESHAP Rule Compliance	Pending	\$1,456,144.81		13-075	31306-5005
	Total WA's		\$3,407,519.12			
	Total		\$3,575,549.90			

ATTACHMENT H

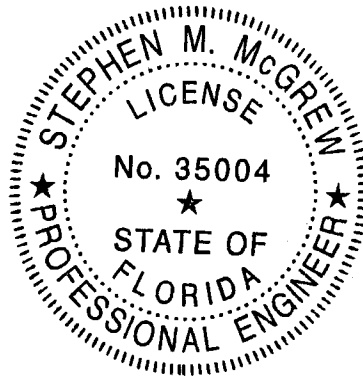
AUTHORIZATION STATUS REPORT

SUMMARY OF
SBE / MINORITY BUSINESS TRACKING SYSTEM
Consultant Services Authorizations and Work Authorizations

WORK AUTHORIZATION NO. 5

	Total	SBE
Current Proposal		
Value of Consultant Service Authorization	\$0.00	
Value of Work Authorization	<u>\$1,456,144.81</u>	
Value of Consultant Service & Work Authorizations	<u>\$1,456,144.81</u>	
Value of SBE Letters of Intent	\$508,518.09	\$508,518.09
Actual Percentage	34.92%	34.92%
Signed / Approved Authorizations		
Value of Consultant Service Authorizations	\$168,030.78	
Value of Work Authorizations	<u>\$1,951,374.31</u>	
Value of Consultant Service & Work Authorizations	<u>\$2,119,405.09</u>	
Total Value of SBE Signed Subcontracts	\$605,231.74	\$605,231.74
Actual Percentage	28.55%	28.55%
Signed / Approved Authorizations plus Current Proposal		
Value of Consultant Service Authorizations	\$168,030.78	
Value of Work Authorizations	<u>\$3,407,519.12</u>	
Value of Consultant Service & Work Authorizations	<u>\$3,575,549.90</u>	
Total Value of Subcontracts & Letters of Intent	\$1,113,749.83	\$1,113,749.83
Actual Percentage	31.14%	31.14%
GOAL	26.00%	

ATTACHMENT J
WORK AUTHORIZATION NO. 05
DESIGN CRITERIA
FOR
Diesel Generator Catalytic Converters (RICE NESHAP RULE Compliance)



A handwritten signature in black ink, appearing to read "Stephen McGrew".

10/23/13

Stephen McGrew, P.E.
State of Florida Professional Engineer No. 35004
Palm Beach County Water Utilities Department
8100 Forest Hill Blvd.
West Palm Beach, FL 33413

WORK AUTHORIZATION NO. 05
DESIGN CRITERIA
FOR
Diesel Generator Catalytic Converters (RICE NESHAP RULE Compliance)

Part 1 General

1.1 Summary of Work

The proposed work to be performed as described below is located at the following facility:

<i>Northern Region Operations Center 8100 Forest Hill Blvd. West Palm Beach, FL 33413 PCN 00-42-43-27-05-021-0040</i>	<i>(1 generator in building)</i>
<i>Southern Region Operations Center 13026 South Jog Road Delray Beach, FL 33446 PCN 00-42-46-10-00-000-1020</i>	<i>(1 generator in enclosure)</i>
<i>Water Treatment Plant No. 2 2956 Pinehurst Drive West Palm Beach, FL 33413 PCN 00-42-43-27-05-021-0291</i>	<i>(2 generators in buildings)</i>
<i>Water Treatment Plant No. 3 13026 South Jog Road Delray Beach, FL 33446 PCN 00-42-46-10-00-000-1020</i>	<i>(2 generators in building)</i>
<i>Water Treatment Plant No. 8 1500 N Jog Road West Palm Beach, FL 33417 PCN 00-42-43-27-05-004-0053</i>	<i>(1 generators in buildings)</i>
<i>Water Treatment Plant No. 9 22530 SW 65TH Ave Boca Raton, FL 33428 PCN 00-42-43-27-05-081-0380</i>	<i>(1 generator in building)</i>
<i>Water Treatment Plant No. 11 39700 Hooker Highway Belle Glade, FL 33433 PCN</i>	<i>(1 generator in building)</i>
<i>Southern Region Water Reclamation Facility 12751 Hagen Ranch Road Boynton Beach, FL 33437 PCN 00-42-43-27-05-064-0730</i>	<i>(4 generators in building)</i>

The proposed work to be performed by the Design/Builder generally includes furnishing all labor, equipment, materials, tools, supervision, and services required to reconstruct the exhaust system of the emergency generators to meet the EPA RICE NESHAP rule with installation and testing to be completed by April 15, 2014. The work includes but is not limited to the following items:

- A. Evaluate existing diesel generators (30 days or less)
 - a. Install thermocouple or similar in existing generator exhaust at proposed location of catalytic converter to determine if temperature is sufficient for minimum 70% CO removal.
 - b. Test engine compression system to and evaluate if additional pressure from catalytic converter is acceptable.
 - c. Measure diameter of piping and flanges, piping lengths and clearances as necessary for proper installation.

- B. Furnish and install DCL International or approved equal catalytic converters as shown on the attached PowerPoint.
 - a. Minimum 70% CO reduction per RICE NESHAP.
 - b. Space for future 2nd catalyst element if regulations change.
 - c. Washable catalyst.
 - d. Pressure drop less than 2" W.C.
 - e. 304 SS Housing without gasket.
 - f. Access cover positioned to allow catalyst removal without obstruction.
 - g. Heavy duty distortion free heat seal lid with floating bolts and replaceable square caged nuts.
 - h. Taps for thermocouple, gas sampling and spare.
 - i. Insulate with 2" thick custom fitted 8 lb/cubic foot removable and reusable ceramic fiber insulation blankets "Durablanket S " with gray 3101 silicone finish as manufactured by Unifraxx LLC or approved equal. Blankets shall incorporate openings for sample taps, sample piping and thermocouple.

- C. Furnish and install a Governor Control Systems, Inc. (GCS) or approved equal continuous catalyst monitor system for each generator (14 total).
 - a. K-type thermocouple with conduit and wiring to GCS monitor
 - b. 3/8" 316 SS exhaust tubing both pre and post catalytic converters with isolation valve assemblies and sampling valves as shown on attached PowerPoint.
 - c. Monitor temperature of engine exhaust at inlet to Catalytic Converter.
 - d. Inlet and outlet pressure taps and tubing to monitor system.
 - e. NESHAP compliant Catalyst inlet/outlet temperature + delta.
 - f. Catalyst inlet/outlet pressure + delta.
 - g. Engine hrs.
 - h. Out of compliance alarm.
 - i. Data logging capability with USB Interface.
 - j. Events and live data are accessible easily through interface.
 - k. Data available via Modbus/Ethernet Converter.
 - l. Monitoring system to be installed in an easily accessible location for

maintenance.

- m. Connect Ethernet cable to PLC. Installations outside of buildings require fiber optic with fiber connections.
- n. Electrician to connect to existing panel board and install 120V breaker and wiring inside conduit to GCS monitor.
- o. Bond all electrical equipment to grounding system per NEC.
- p. Two GCS monitors are required for CROC and WTP 9.
- q. Provide gas testing see paragraph 1.3.

D. Furnish and install crankcase ventilation system to comply with RICE NESHAP rule (11 required)

- a. North generator at WTP 3 is already equipped with crankcase ventilation system.
- b. Crankcase ventilation system shall be installed in compliance with engine manufacturer's recommendations.
- c. Existing crankcase ventilation systems at WTP 3 (north generator and WTP 11 (Lake Region) are good examples of installations.

E. Additional items

- a. All piping to have insulation blankets and sheet metal to match existing.
- b. Replace all exhaust piping and muffler at WTP 2 as shown on the PowerPoint.
- c. SROC relocate existing muffler as shown on the PowerPoint and support for dead load and wind loading.
- d. For purposes of establishing pricing WTP 8 is assumed to have catalytic converter installed after the existing muffler. If temperatures are not adequate after the muffler then a Work Supplement will be issued for additional work as required.
- e. WTP 2 hypochlorite building raise muffler.
- f. WTP 9 raise muffler and relocate existing lighting and roof drain piping.
- g. CROC raise muffler.
- h. Roof penetrations will be performed by original roof company to maintain roof warranty.
- i. Repack any pipe wall or roof penetrations disturbed by construction activities.

Submittals

- 1) Provide 3 full sized and 3 half sized plans at 60%, and 100% design. Plans shall show piping modification, location and orientation of catalytic converters, piping supports, demolition and relocation of existing (see additional items "E"), location of GCS monitors and electrical and instrumentation conduits. Respond to all 60% review comments in writing.
- 2) Provide 3 sets of signed and sealed full sized prints for building permits. Each facility will require a separate permit package. County will be responsible for permit fees.
- 3) Coordination meetings will be held at 60%, and 100% design.
- 4) Provide 8 sets of shop drawings within 45 days of notice to proceed.
- 5) Provide record drawings CAD and PDF formats and 3 full size sets.

- 6) As time is of the essence the Notices to Proceed for both design and construction will be issued simultaneously.
- 7) Construction meetings will be held monthly.
- 8) Conform to the Water Utilities Minimum Design and Construction Standards, Engineering Design-Manual and security requirements.

Salvaged Materials

- 1) Scrap metal to be placed in the County's salvage dumpster.
- 2) Non-metal waste such as insulation, concrete, PVC, fiberglass etc to be hauled and legally disposed by Design/Builder.

1.2 Permits and Fees

It shall be the Design/Builder's responsibility to secure all permits required to complete the work under this contract, except permits obtained by the Owner. The Design/Builder shall be responsible for all inspections and requirements to close-out the completed permits. The Owner shall pay all permit fees.

1.3 Tests

The Design/Builder shall pay for all required air quality tests. After installation of the catalytic converters the exhaust for each generator must be measured pre catalytic converter (CO) and post catalytic converter (CO) to verify that CO reduction is at least 70%.

1.4 Site elevations, Lines, and Grades

The Design/Builder shall employ a land surveyor registered in the State of Florida. The Design/Builder shall be responsible to establish elevations, lines, and levels, utilizing recognized engineering survey practices. The Design/Builder shall provide all labor, instruments and stakes, templates, and other materials necessary for marking and maintaining all lines and grades. The Design/Builder shall submit a copy of as-built drawings signed/sealed by the land surveyor that the elevations and locations of the work in Florida State plane coordinates are in conformance with the contract documents.

1.5 Work Area

The Design/Builder shall confine his activities to the site(s) designated by Owner for the work or staging areas for materials storage. All debris, materials, piping, and miscellaneous waste products from the proposed work shall be removed from the project as soon as possible. They shall be disposed of in accordance with applicable federal, state, and local regulations. The Design/Builder shall be responsible for determining these regulations and shall bear all costs or retain any profit associated with disposal of these items.

The Design/Builder shall protect his work throughout its length by the erection of suitable barricades and handrails, where required. The Design/Builder shall further indicate this work at night by the maintenance of suitable lights or flares, especially along or across thorough fares. Wherever it is necessary to cross a public walk, the Design/Builder shall provide suitable safe walkways with hand railings. The Design/Builder shall also comply with all laws or ordinances covering the protection of such work and the safety measures to be employed therein. The Design/Builder shall

carry out his work so as not to deny access to private property. All utility access manholes, valves, and fire hydrants shall be kept accessible at all times. No trenches or holes near walkways, in roadways or road shoulders are to be left open during night hours without the permission of the Owner.

1.6 Underground Utilities

All water pipes, storm drains, force mains, gas or other piping, telephone or power cables or conduits, and all other obstructions, whether or not shown, shall be temporarily removed from or supported across pipeline excavations. Before disconnecting any pipes or cables, the Design/Builder shall obtain permission from the Owner, or shall make suitable arrangements for their disconnection by the Owner. The Design/Builder shall be responsible for any damage to any such pipes, conduits or cables, and shall restore them to service promptly as soon as the work has progressed past the point involved. Approximate locations of known water, sanitary, drainage, power, and telephone installations along route of new pipelines or in vicinity of the work are shown on as-built drawings, but must be verified in the field by the Design/Builder. The Design/Builder shall uncover these pipes, ducts, cables, etc., carefully, by hand, to verify location and depth of cover. Any discrepancies or differences found shall be brought to the attention of the Owner in order that necessary changes may be made. Where fences, walls or other man made obstructions exist illegally in the public right-of-way, the Owner will have them removed upon adequate prior notice by the Design/Builder.

All excavation activity shall comply with Florida Statute 553.851 regarding notification of existing gas and oil pipeline company Owners and shall also notify "SUNSHINE STATE" at 1 (800)-432 4770 at least forty-eight (48) hours prior to excavating. Evidence of such notice shall be furnished to the Owner prior to excavating. Provide independent locate firm within plant and pump station boundaries.

Protect existing chemical trench and chemical piping.

1.7 Maintenance of Operations

The Design/Builder's activities or any partial SCADA shutdowns shall minimize disruption to the treatment facilities and conveyance. The Design/Builder shall schedule and perform the proposed work in a manner such that the Owner can keep the existing treatment and conveyance facilities in continuous dependable operation. Operation of all existing valves, gates, and equipment shall be performed by Owner.

1.8 Plant Shutdowns

Owner shall approve all shutdowns including emergency generators. Where a facility has multiple emergency generators only one shall be removed from service at a time.

1.9 Project Coordination

Design/Builder shall be solely responsible for coordination of all of the proposed work. He shall supervise, direct, and cooperate fully with all sub-contractors, manufacturers, fabricators, suppliers, distributors, installers, testing agencies and all others whose services, materials or equipment are required to ensure completion of the proposed work within the contract time.

Design/Builder shall cooperate with and coordinate his work with the work of any other contractor, utility service company, or Owner's employees performing additional work related to the project at the site. Design/Builder shall not be responsible for damage done by Design/Builders not under his jurisdiction. Design/Builder shall not be liable for any such loss or damage unless it is through the negligence of Design/Builder. Design/Builder shall also coordinate his work with the work of others to assure compliance with schedules.

Design/Builder shall attend and participate in all project coordination or progress meetings and report on the progress of all work and compliance with schedules. The Design/Builder shall provide and maintain a field office with telephone facilities where he or a responsible representative of his organization may be reached at any time while work is in progress.

Part 2 Acceptance Test Requirements

The Design/Builder shall be responsible for coordinating and completing the overall system startup and testing. The Design/Builder is responsible for providing all labor, equipment, and materials for conducting systems startup and testing.

2.1 Starting and Placing Equipment in Operation

Design/Builder shall initially start-up and place all equipment installed into successful operation according to manufacturer's written instructions and as instructed by manufacturer's field representative. Design/Builder shall provide all material, labor, tools, equipment, chemicals, lubricants, and expendables required to complete start-up. No system or subsystem shall be started up for continuous operation unless all components of that system or subsystem, including instrumentation, have been tested and proven to be operable as required for proposed work

General system startup activities include: cleaning; removing temporary protective coatings; flushing and replacing greases and lubricants, where required by manufacturer; lubrication, checking shaft, and coupling alignments and resetting where required; checking and setting motor, pump and other equipment rotation, safety interlocks, and belt tensions; checking and correcting if necessary leveling plates, grout, bearing plates, anchor bolts, fasteners, and alignment of piping which may put stress on pumping equipment; performing any adjustments; providing chemicals and lubricants and all other required operating fluids; providing fuel, electricity, water, filters, and other expendables required for start-up of equipment.

Owner shall provide sufficient personnel to assist Design/Builder in the start-up, but the prime responsibility for proper mechanical operation shall belong to Design/Builder. Manufacturer's representatives shall be present during initial start-up and operation. Owner shall assume responsibility for operation of the equipment upon completion of start-up and placing equipment in operation.

2.2 Minimum Start-Up Requirements

- A. After system has been placed in operation the Design/Builder shall clean strainers, drives, pockets, orifices, valve seats and headers in fluid system to

assure freedom from foreign materials. He shall remove rust, scale, and foreign materials from equipment and renew defaced surfaces. All visible leakage shall be repaired.

- B. The Design/Builder shall check each electrical control circuit to assure that operation complies with regulations and requirements of proposed work and to provide desired performance. The Design/Builder shall vent gasses trapped in any part of systems and verify that liquids are drained from all parts of gas or air systems.
- C. The Design/Builder shall inspect for cleanliness, and clean and remove all foreign materials, verify alignment, replace defective bearings and those, which run rough or noisy, and grease as necessary and in accord with manufacturer's recommendations.
- D. The Design/Builder shall adjust tension in V-belt drives, and adjust varipitch sheaves and drives for proper equipment speed, adjust drives for alignment of sheaves and V-belts, and clean and remove foreign materials before starting operation.
- E. The Design/Builder shall check each motor for comparison to amperage nameplate value and correct conditions which produce excessive current flow and exist due to equipment malfunction.
- F. The Design/Builder shall check glands and seals for cleanliness and adjustment before running pump; inspect shaft sleeves for scoring; inspect mechanical faces, chambers, and seal rings, and replace if defective; and verify that piping system is free of dirt and scale before circulating liquid through the pump.

2.3 Equipment Startup and Performance Testing

The Design/Builder shall be responsible for performance testing during startup of all mechanical, electrical, instrumentation, and piping equipment and systems.

- A. Provide a testing plan setting forth the sequence in which all testing work required for the proposed upgrades will be implemented.
- B. A documentation the results of all equipment and system tests and submit to the Owner. Provide calibration tags for all equipment certifying the date of calibration.

2.4 Instruction of Operations and Maintenance Personnel

Training shall be provided prior to turning the operation of a system, unit process, or piece of equipment. Training shall be scheduled for each plant staff work shift accordingly. No system, unit process or any piece of equipment shall be started up for continuous operation without the approved operation and maintenance manuals being turned over to Owner.

Design/Builder shall provide services of supplier's operation and maintenance training specialists to instruct Owner's personnel in recommended operation and maintenance

procedures for products and equipment. Supplier may be required to provide a combination of classroom and field training. All training shall be conducted at the site, unless otherwise stated in the Specifications. Owner reserves the right to videotape training sessions.

Training of plant's personnel shall commence only after acceptable preliminary operation and maintenance data have been provided and starting and placing equipment in operation and equipment and system startup and performance testing, has been completed. Provide written documentation and checklists outlining important training items. Provide spreadsheets needed to document new processes for input by operators.

Part 3 Technical Requirements

3.1 Plant Site / Civil Requirements

The Design/Builder shall be responsible for becoming completely familiar with the site conditions in connection with developing the final site plan including all site investigations, analysis of subsurface conditions, geotechnical conditions, and soil borings.

3.2 Demolitions

Design/Builder shall be responsible for all labor, materials, equipment, and incidentals required for demolitions and pay for all disposal fees. Design/Builder shall not start removals without the permission of the Owner. At least 48 hours prior to commencement of any demolition activities, the Design/Builder shall advise the Owner, in writing, of the proposed schedule.

Design/Builder shall carry out operations so as to avoid interference with Owner's operations and work in the existing facilities. Design/Builder shall perform all demolition and removal work so as not to interfere with the use and safe passage to and from adjacent structures and shall prevent damage or injury to structures, occupants, and adjacent features, which might result from falling debris or other causes. Design/Builder shall erect and maintain barriers, lights, sidewalk sheds, and other necessary protective devices. The Design/Builder is responsible for repairing damage to the Owner's property or facilities.

Design/Builder shall not bring explosives on site nor use explosives without written consent of authorities having jurisdiction. Design/Builder shall use water sprinkling, temporary enclosures, and other suitable methods for dust control within the lowest practical level in compliance with governing regulations.

Surfaces of walls, floors, ceilings, or other areas, which are exposed by any of the removals, and which will remain as architecturally finished surfaces shall be repaired and re-finished by Design/Builder with the same or matching materials as the existing adjacent surface. Adjacent structures, facilities, and improvements of dust, dirt, and

debris caused by demolition operations shall be cleaned and returned to pre-construction conditions.

Where piping that is to be removed passes through existing walls, the piping shall be cut off and properly capped on each side of the wall. When underground piping is to be altered or removed, the remaining piping shall be properly capped. Abandoned underground piping may be left in place and grouted under major structures/roadways, unless it interferes with the work. Any changes to potable water piping work shall be made in conformance with all applicable codes and under the same requirements as other underground piping.

All materials and equipment removed from existing work shall become the property of Design/Builder, except for those which Owner has identified and marked for their use. All materials and equipment marked by the Owner for its use shall be carefully removed by Design/Builder so as not to be damaged, and shall be cleaned and stored in a protected location specified by the Owner. Design/Builder shall dispose of all demolition materials, equipment, debris, and all other items not marked by the Owner, off the work site and in conformance with all existing applicable laws and regulations. Upon completion of the work, all materials, equipment, waste, and debris of every sort shall be removed and premises shall be left, clean, neat, and orderly.

3.3 Excavation and Backfill

Design/Builder shall furnish all labor, materials, equipment, and incidentals required to perform all excavating, backfilling and disposing of earth materials required for the purpose of constructing structures, conduits, pipelines, grading, and other facilities required to complete the work in every respect.

Design/Builder shall be solely responsible for designing, installing, operating and maintaining whatever system is required to satisfactorily accomplish all necessary sheeting, bracing, protection, underpinning and dewatering.

Design/Builder shall be responsible for all field test data and shall submit to Owner copies of the following test reports from his testing laboratory.

Design/Builder shall perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction. Design/Builder shall obtain all necessary permits for work in roads, rights of way, etc. He shall also obtain permits as required by local, state, and federal agencies for discharging water from excavations. The use of explosives will not be permitted.

Data on subsurface conditions will be made available by Owner for the convenience of Design/Builder. The reports are not intended as a representation or warranty of continuity of such conditions between soil borings. Owner will not be responsible for interpretations or conclusions drawn by Design/Builder. Additional test borings and other exploratory operations may be made by Design/Builder at no cost to Owner.

Drawings from existing records showing certain surface and underground structures adjacent to the work will be made available by Owner. It is not guaranteed to be correct or complete and is shown for the convenience of the Design/Builder. Design/Builder shall explore ahead of the required excavation to determine the exact location of all structures. They shall be supported and protected from injury by the Design/Builder. If they are broken or injured, they shall be restored immediately by the Design/Builder at its expense.

Design/Builder shall locate existing underground utilities in the areas of work. If utilities are to remain in place, Design/Builder shall provide adequate means of protection during earthwork operations. If uncharted or incorrectly charted piping or other utilities are encountered during excavation, Design/Builder shall consult the Owner immediately for directions as to procedure. Design/Builder shall cooperate with Owner and utility companies in keeping respective services and facilities in operation. Design/Builder shall repair damaged utilities to the satisfaction of Owner.

Design/Builder shall not interrupt existing utilities serving facilities occupied and used by Owner or others, except when permitted in writing by Owner and then only after acceptable temporary utility services have been provided.

3.4 Cast-In-Place Concrete

Design/Builder shall be responsible for providing concrete consisting of Portland cement, fine and coarse aggregate, water, and approved admixtures; then combined, mixed, transported, placed, finished and cured to accommodate the proposed work. All admixtures, curing compounds, etc. used in concrete or the curing and repair of concrete, which can contact potable water, shall be certified as conforming to the requirements of ANSI/NSF 61 for contact with potable water when in the finished concrete.

3.5 Miscellaneous Metals

All metals shall be non-ferrous except of steel reinforcing and as approved by the Owner. All bolt, nuts, and washers shall be 316 stainless steel the nuts shall be coated to prevent galling. Anchor bolts shall be 316 stainless steel. Stanchions, pipe supports, equipment bases, braces, and straps shall be 316 stainless steel or aluminum.

3.6 Painting

Design/Builder shall provide all labor, materials, tools, equipment, and incidentals as required to furnish and apply paint systems for surface preparation and painting of all new and existing interior and exterior items and surfaces throughout the project areas. Mechanical and process items to be painted include new and existing walls, floors, piping, mechanical equipment, supports, and any pertinent accessory items or area damaged by the construction activity. Owner's approval shall be required for all components of the surface preparation, selection of colors, and paint system application before start of proposed work.

Part 4 Electrical Requirements

4.1 Basic Requirements

Design/Builder shall design and provide all labor, materials, equipment, and incidentals to complete the electrical work. All systems shall be properly grounded. Exterior systems shall have lightning protection.

4.2 Codes

Material and equipment shall be installed in accordance with the current standards and recommendations of the National Electrical Code, the National Electrical Safety Code, and with local codes, which apply. Where discrepancies arise between codes, the most restrictive regulation shall apply.

4.3 Area Classifications

A. Wet Locations

The following areas shall be considered wet locations:

1. All outdoor areas.
2. All indoor areas below grade unless otherwise specified.
3. Materials, equipment and incidentals in areas identified as wet locations shall meet NEC and NEMA requirements for wet locations. Enclosures shall meet NEMA 4 requirements as a minimum. Conduits shall be terminated at enclosures with watertight, threaded hubs.

B. Corrosive Locations

All chemical storage and pumping areas or rooms. Materials, equipment, and incidentals in areas identified as corrosive shall meet NEC and NEMA requirements for corrosive locations. Conduit systems shall be PVC and enclosures shall meet NEMA 4X requirements. Conduits shall be terminated at enclosures with watertight hubs. Independent supports shall be PVC-coated galvanized steel, or fiberglass-reinforced epoxy struts.

4.4 Electrical Equipment

All new electrical equipment shall be capable of operating successfully at full-rated load, without failure, with an ambient outside air temperature of 0 degrees F to 122 degrees F and an elevation of 400 feet (MSL). All electrical devices and equipment shall have ratings based on 75 degrees C terminations. All electrical equipment enclosures at a minimum shall meet NEMA 12 requirements.

4.5 Schematic Diagrams

Schematic diagrams shall be prepared by the Design/Builder to act as guidance in fulfilling the operational intent of the conceptual documents. It shall be the Design/Builder's responsibility to meet all safety and electrical codes, and to provide all equipment, appurtenances, and specialty items required to provide for complete and operable systems. Review of control schemes submitted by Design/Builder shall not relieve Design/Builder of their contractual responsibility to provide complete and successfully operating systems.

4.6 Raceway Systems

Design/Builder shall furnish and install conduit and fittings to form complete, coordinated, and grounded raceway systems. Design/Builder shall provide for the proper installation of all conduits for each system.

- A. Rigid aluminum conduit for exposed indoor conduit runs in non-corrosive areas and rigid aluminum at all other sites.
- B. PVC Schedule 80 for individual conduit runs direct buried in earth and PVC coated rigid steel at all other sites (minimum 24-inch burial depth).
- C. Schedule 40 PVC for conduit runs embedded in or under structural concrete slabs or in concrete ductbanks (all sites).
- D. PVC schedule 80 conduit for exposed indoor and outdoor runs in corrosive areas and PVC coated rigid steel at all other sites.
- E. Flexible conduit for connections to motors and equipment.

4.7 Inspections, Testing and Adjustments

Accompany the normal installation tests with inspections to demonstrate to the satisfaction of the required judicial authorities the following:

- A. Connections: All circuits are properly connected in accordance with the drawings and applicable approved shop drawings.
- B. Operation: All circuits and devices are operable.
- C. Identification: All conductors are properly identified at each terminal.

Test each electrical circuit after permanent cables are in place to demonstrate that the circuit and connected equipment perform satisfactorily and that they are free from improper grounds and short circuits. Individually test 600-volt cables for insulation resistance between phases and from each phase to ground. Test after cables are installed and before they are put in service with a Megger whose rating is suitable for the tested circuit. Tests shall meet with the applicable specifications of ICEA S 66 524 and NEMA WC7 1971. The insulation resistance for any given conductor shall not be less than 1 megohm for 600 volt and less service. Any cable not meeting this value or which fails when tested under full load conditions shall be replaced with a new cable for the full length.

Test shielded instrumentation cable shields with an ohmmeter for continuity along the full length of the cable and for shield continuity to ground. Connect shielded instrumentation cables to a calibrated 4-20 milliamp DC signal transmitter and receiver. Test at 4, 12, and 20 milliamp transmitter settings.

Test the completed ground systems for continuity and for resistance to ground using an electrical ground resistance tester. Ground system resistance must be less than 5 ohms. Add up to two additional rods, spaced at 20 feet minimum from other electrodes, until resistance is less than 5 ohms.

Operate all starters, circuit breakers and associated equipment to demonstrate suitability and compliance with Specifications and reference standards, except for short circuit interrupting rating or other inherent design features covered by shop tests. Test all motors for direction of rotation and reverse connections if necessary. Check control circuits to determine that operation and sequence are correct and adjust limit switches, pressure switches, float switches, timers, and other devices to give proper operation.

Part 5 Instrumentation and Control Requirements

5.1 General

Design/Builder shall provide all labor, materials, equipment and incidentals as shown, specified and required to furnish, install, calibrate, test, start-up and place in satisfactory operation a complete and operating system for proposed work, including programming of the PLC, SCADA, and all required wire terminations. Tag number, equipment number, and description shall match the Owners numbering convention standards.

5.2 Calibration, Start-Up and Testing

Field verify the calibration and performance of each instrument prior to start-up of the associated equipment, and document on a separate sheet for each.

5.3 System Check-Out and Start-Up Responsibilities

Design/Builder shall retain the services of the system supplier to supervise and/or perform check out and start up of all system components. As part of these services, the system supplier shall coordinate and include check-out and start-up for those equipment items not manufactured or provided by him. The services of an authorized manufacturer's representative to check the equipment installation and place the equipment in operation may be required. The manufacturer's representative shall be thoroughly knowledgeable about the installation, operation and maintenance of the equipment.

Check and approve the installation of all instrumentation and control system components and all cable and wiring connections between the various system components prior to placing the various processes and equipment into operation. Conduct a complete system checkout and adjustment, including calibration of all instruments, tuning of control loops, checking operation functions, and testing of final control actions. When there are future operational functions included in this work, they should be included in the system checkout. All problems encountered shall be promptly corrected to prevent any delays in start up of the various unit processes.

System supplier shall provide all test equipment necessary to perform the testing during system checkout and start up. Design/Builder and system supplier shall be responsible for initial operation of monitoring and control system and shall make any required changes, adjustment, or replacements for operation, monitoring, and control of the various processes and equipment necessary to perform the functions intended.

Design/Builder shall furnish to the Owner certified calibration reports for field instruments and panel mounted devices specified in this Section as soon as calibration is completed. Design/Builder shall furnish Owner an installation inspection report certifying that all equipment has been installed correctly and is operating properly. The report shall be signed by authorized representatives of both Design/Builder and the system supplier.

5.4 Instrumentation and Control System Field Test

Following the plant monitoring and control system checkout and initial operation, system supplier, under the supervision of the Design/Builder, shall perform a complete system

test to verify that all equipment and programmed software is operating properly as a fully integrated system, and that the intended monitoring and control functions are fully implemented and operational. Any defects or problems found during the test shall be corrected by system supplier, and then retested to demonstrate proper operation. Following demonstration of all system functions, the plant monitoring and control system including field sensors/transducers and instruments, and telemetry system shall be running and fully operational for a continuous 72 hour period.

5.5 Control Panels and Enclosures

Control panels located inside control or electrical room areas shall be NEMA 12 rated unless differently noted on drawings. All others shall be stainless steel or non-metallic NEMA 4 except in corrosive areas, which shall be NEMA 4X. Provide panel ventilation or air conditioning if required by ambient conditions. Use pan type construction for doors. Door widths shall not exceed 36-inches. Exterior panel with displays shall face north. Exterior control panels shall be 316 stainless steel with powder coated white epoxy exterior finish with sunshield.

5.6 Surge Protection

Surge protection shall be provided to protect all electronic instrumentation from surges propagating along the signal, telephone, and power supply lines. Locate the suppression device as close as possible to the load device. The protection systems shall be such that the protection level shall not interfere with normal operation, but shall be lower than the instrument surge withstand level, and be maintenance free and self-restoring. Instruments shall be housed in suitable metallic cases, properly grounded. Ground wires for all surge protectors shall be connected to a good earth ground and where practical each ground wire run individually and insulated from each other.

5.7 Lightning Protection

Furnish and install UL certified lightning protection system including grounding system. Grounding grid resistance shall be 5 ohms or less.

ATTACHMENT K
SUPPORTING DOCUMENTATION

List of generators expected to be effected by RICE Rule

ID	Location	Manufacture	Model	Has Crank Case Ventilation System Installed	Fiber Optic (F/O) or Ethernet (E)	Generator Horse Power	kW	Installation Date	Engine Manufacture Date	Avg Hours Used/Year	Avg Hours Emergency Used/year	Oxidation Catalyst	Exhaust Gas		Emission (g/bhp-Hr)			
													Flow (m ³ /m)	Temp. (Celsius)	No.	CO	HC	PM
1	CROC Admin	Cummins	QSK60-G6	NO	F/O	2924	2180	2003	May-00	35	9	NO	429	455	?	?	?	?
2	SROC Deep Injection Well @3	Catepillar	3508	NO	F/O	2151	1500	2003	1995	100	52	?	360	505	?	?	?	?
3	WTP #2	Plant Catepillar	3512	NO	F/O	1280	680-750	1985	1985	65.8	4	NO	167.5-185	505-530	?	?	?	?
4	WTP #2	Plant Catepillar	3508	NO	E	1000	1100	2006	?	62.3	4	NO	258.9	524	8.92	1.3	0.16	0.236
5	WTP #3	Plant Catepillar	3516	YES	F/O	2885	2000	2003	2003	100	52	NO	454	514.4	?	?	?	?
6	WTP #3	Plant Catepillar	3516	YES	F/O	2885	2000	2003	2003	100	52	NO	454	514.4	?	?	?	?
7	WTP #8	Plant Catepillar	3516	YES	E	2884	?	2006	2005	81.66	21.66	NO	?	?	?	?	?	?
8	WTP #9	Plant Catepillar	3516	NO	E	2876	?	Nov-05	?	60.5	3.5	YES	454	514.4	?	?	?	?
9	SRWRF	Plant Detroit Diesel	9163-7416	NO	E	1696	1499-1745	May-97	?	?	?	?	436-385	466-450	9.1-9.5	7.6-6.4	0.16-0.13	?
10	SRWRF	Plant Detroit Diesel	9163-7416	NO	E	1696	1499-1745	May-97	?	?	?	?	436-385	466-450	9.1-9.5	7.6-6.4	0.16-0.13	?
11	SRWRF	Plant Detroit Diesel	9163-7416	NO	E	1696	1499-1745	May-97	?	?	?	?	436-385	466-450	9.1-9.5	7.6-6.4	0.16-0.13	?
12	SRWRF	Plant Catepillar	3516	NO	E	1467	?	Sep-99	?	?	?	?	?	?	?	?	?	?
13	WTP #11	Plant Catepillar	3516	YES	F/O	2880	2000	Oct-06	5/1/2006	92	1	?	438.1	453	6.9	8.5	1	0.4

CROC

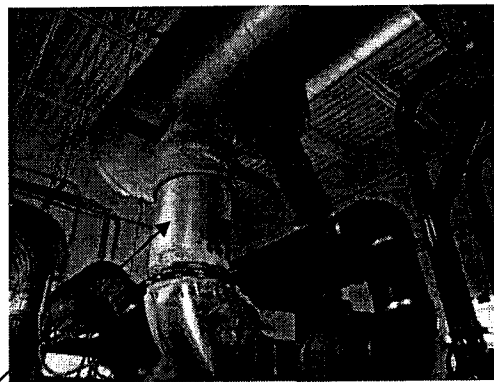
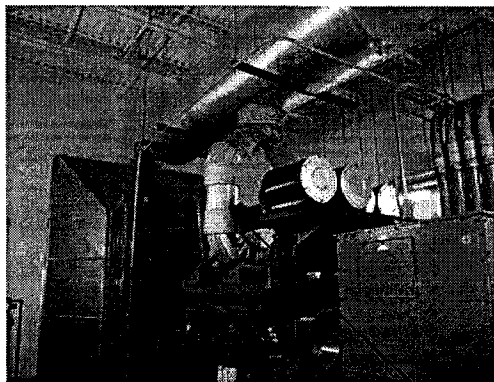
Engine Information:

Engine Model	Cummins QSK60-G6
Power	2924 bhp @ 1800 rpm
Exhaust Flow	424 m ³ /min (25,740 m ³ /hr)
Exhaust Temp	455°C
Flange Size	10"

Converter Specs:

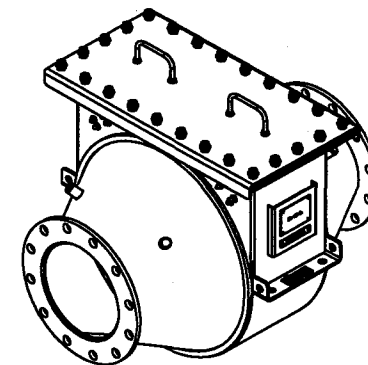
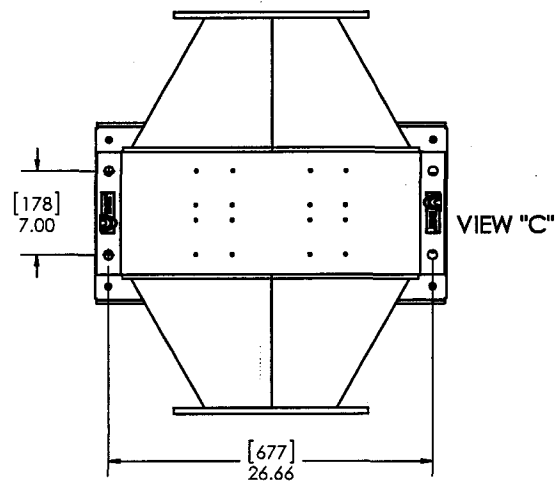
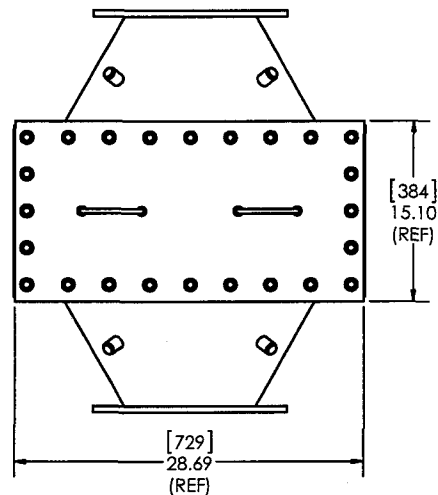
Model	DC64
# of Units Required	2 (one per exhaust bank)
Design Drawing	1000-A3S-4X64-X1
Cells per Square Inch	100 cpsi
Approx Weight	325 lbs

Solution Description: The flex is in the wye. The converter is to go as indicated below in vertical position between two existing 10" flanges. Current length between these flanges is ~24" and converter required is approx. 30" long. The entire silencer will need to be lifted a min of 6" in order to incorporate the converters where indicated below. One converter per exhaust bank. The silencer exhaust outlet is directed through the building wall. It will either have to be mitred back to use the same exit hole or a new hole must be created in the wall. Seeing as how the converters will be installed pre-flex, their support must either come from the engine or if from a rigid structure, must be dampened in some manner.



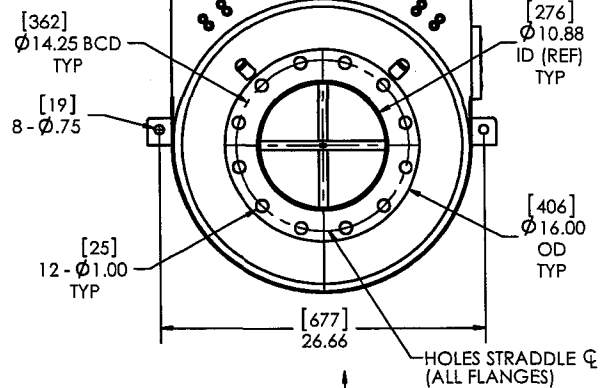
Converters to go here in vertical position.

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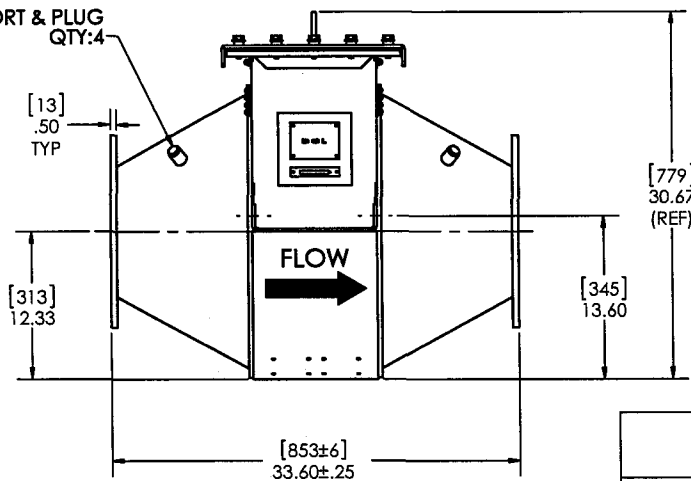


EMPTY HOUSING WEIGHT: APPROX. ~ 270 LB
WEIGHT OF CATALYST: APPROX. ~ 55 LB

HANDLE NOT FOR LIFTING ENTIRE CONVERTER



1/2" NPT PORT & PLUG QTY: 4



P/N: 1000-A3-4264-?1
CPSI CODE
COATING CODE



UNLESS OTHERWISE NOTED 1. REMOVE ALL BURRS AT 90 SHARP EDGES 2. DRILL HOLES ARE 1/8 INCHES 3. (1) DRILL HOLES ARE IN MILLIMETERS TOLERANCES X .02 [] .05 XX .10 [X] .25 XXX .040 [XXX] .150 ANGULAR TOLERANCE ±2°		DCL INTERNATIONAL INC. RESERVES PROPRIETARY RIGHTS TO THE DRAWING AND THE DATA SHOWN THEREON AND SUBMITS IT IN CONFIDENCE ONLY. SAID DATA AND/OR DRAWING ARE NOT TO BE USED OR REPRODUCED FOR ANY PURPOSE WITHOUT THE EXPRESS CONSENT OF DCL INTERNATIONAL INC.		ORIG. P/N:
TITLE: DC64/74-10 CATALYTIC CONVERTER, Q6		APPLICATION:		ENGINE:
DATE: 12/03/13	DRAWN BY: PC	CHECKED BY:	PART NO.:	SEE ABOVE
PAPER SIZE:	SCALE:	FILE NAME:	1000-A3S-4X64-X1	

NO	REVISION	DRAWN BY	DATE	CHK'D BY
0	INITIAL RELEASE	PC	12/03/13	



WTP#3 – Caterpillar 3508 (SROC)

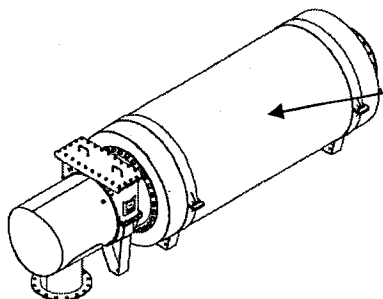
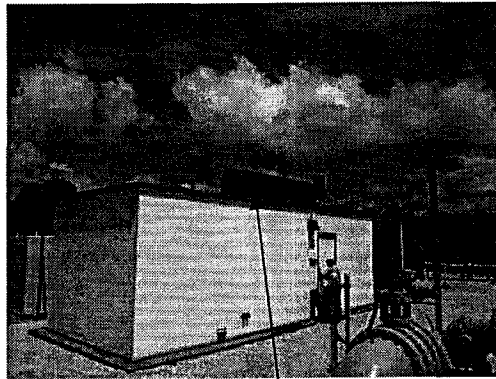
Engine Information:

Engine Model	Caterpillar 3508
Power	2151 bhp @ 1800 rpm
Exhaust Flow	360 m ³ /min (21,600 m ³ /hr)
Exhaust Temp	505°C
Flange Size	Unknown

Converter/Silencer Specs:

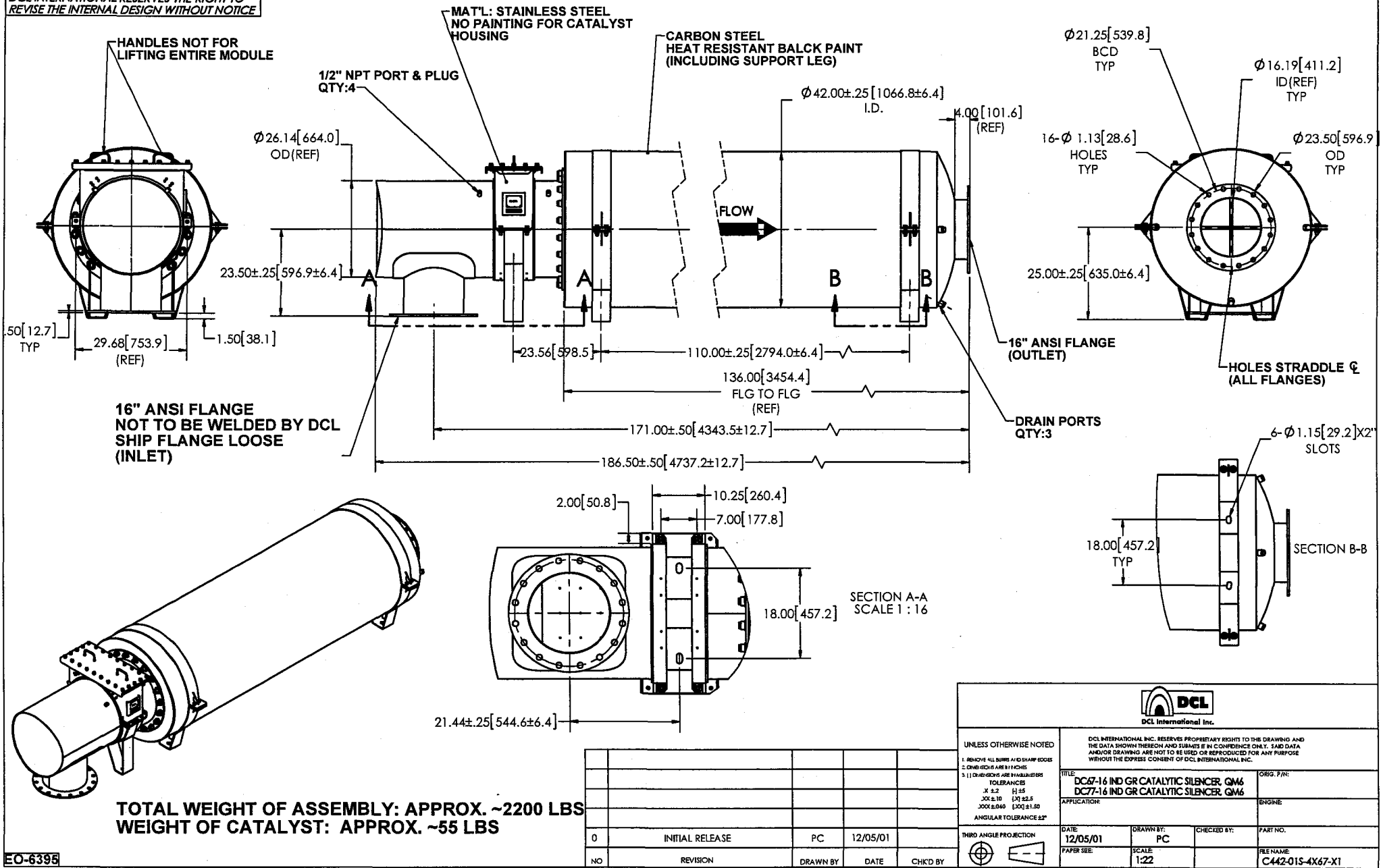
Model	DC64.5-16 IGS
# of Units Required	1
Design Drawing	C442-A3S-4X67-X1 (assumed)
Cells per Square Inch	200 cpsi
Approx. Weight	2200 lbs
Approx. Backpressure	12" w.c.

Solution Description: There is no room to install a converter inside the enclosure. The existing silencer must be removed and a combination converter/silencer be put in its place. Existing silencer grade is not known and needs to be determined along with the roof flange size. Eventually mounting support locations, center-to-centers for bolt holes etc. need to be finalized but this can happen later on.



Combination converter/silencer to be installed on-top of generator in place of existing silencer

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EO-6395

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UNLESS OTHERWISE NOTED 1. REMOVE ALL BURRS AND SHARP EDGES 2. DRIB HOLES ARE BY 1/16 INCHES 3. () DIMENSIONS ARE IN MILLIMETERS TOLERANCES .X ±.2 .1 ±.5 .XX ±.10 .1X ±2.5 .XXX ±.040 .1X ±1.00 ANGULAR TOLERANCE ±2°	
DCL INTERNATIONAL INC. RESERVES PROPRIETARY RIGHTS TO THE DRAWING AND THE DATA SHOWN THEREON AND SUBMITS IT IN CONFIDENCE ONLY. SAID DATA AND/OR DRAWINGS ARE NOT TO BE USED OR REPRODUCED FOR ANY PURPOSE WITHOUT THE EXPRESS CONSENT OF DCL INTERNATIONAL INC.	
TITLE: DC67-16 IND GR CATALYTIC SILENCER, QM6 DC77-16 IND GR CATALYTIC SILENCER, QM6	ORIG. P/N: ENGINE:
APPLICATION:	DATE: 12/05/01
THRD ANGLE PROJECTION 	DRAWN BY: PC
PAPER SIZE: 1:22	CHECKED BY: PART NO. FILE NAME: C442-01S-4X67-X1
NO. REVISION DRAWN BY DATE CHKD BY	0 INITIAL RELEASE PC 12/05/01

WTP#2 – Caterpillar 3508

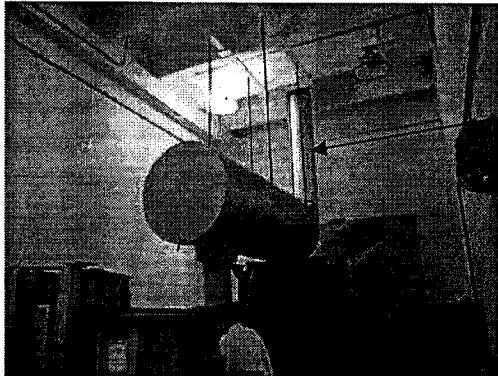
Engine Information:

Engine Model	Caterpillar 3508
Power	1106 bhp @ 1800 rpm
Exhaust Flow	173 m ³ /min (10,361 m ³ /hr) (assumed)
Exhaust Temp	400°C (assumed)
Flange Size	10" ANSI

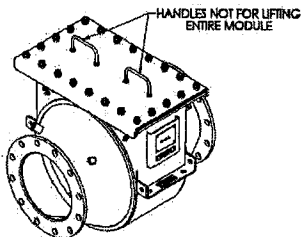
Converter Specs:

Model	DC63-10 CC
# of Units Required	1
Design Drawing	1000-A3S-4X63-X1
Cells per Square Inch	200 cpsi
Approx. Weight	240 lbs
Approx. Backpressure	4.4" w.c.

Solution Description: Existing pipe size is 10". Silencer to be raised by ~ 27" in order to fit a standard DC63 converter unit. A portion of the exhaust outlet will need to be removed to accommodate the silencer lift. Support for the ~240 lbs converter will need to be determined.

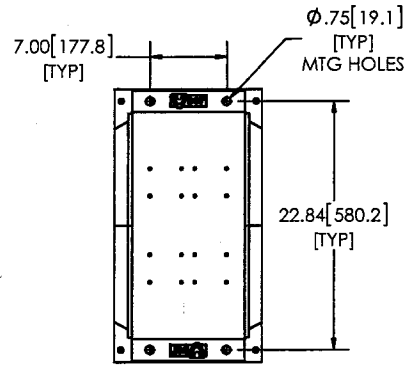
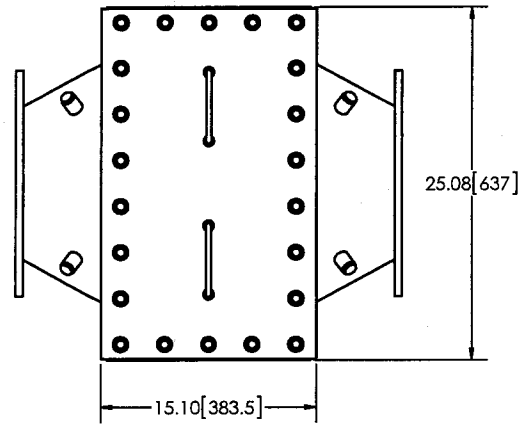


Exhaust portion to be removed on this vertical

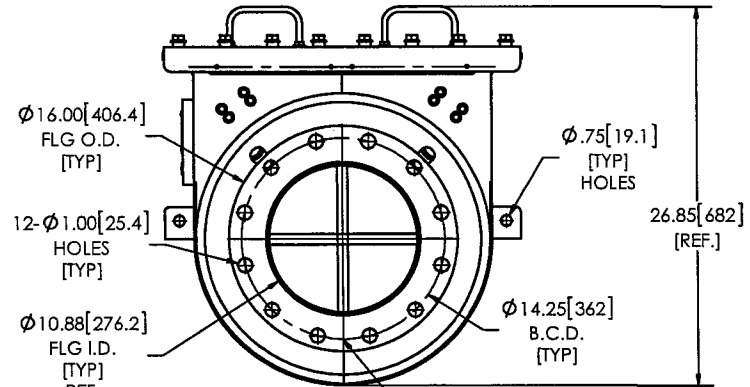
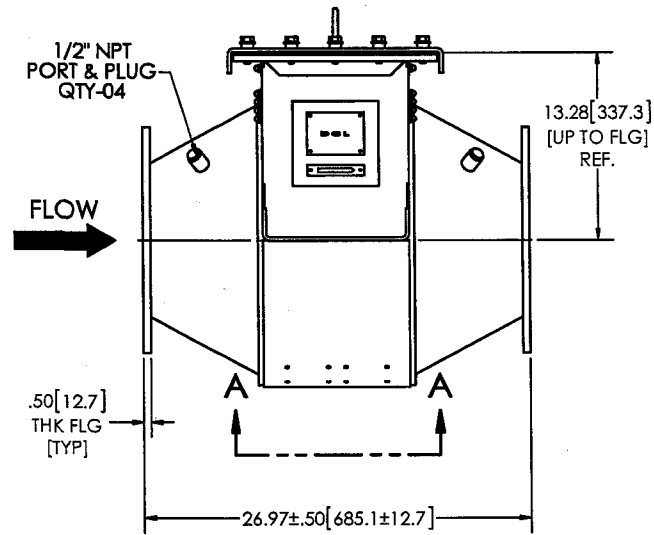
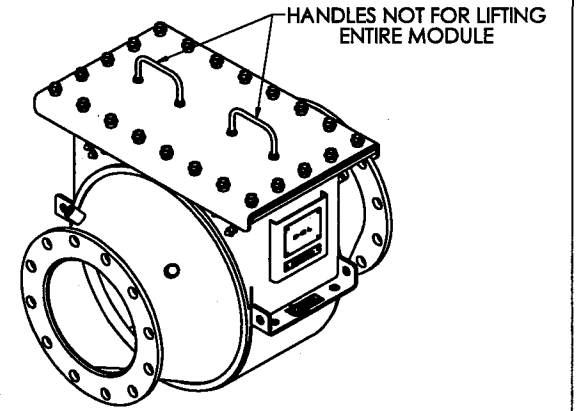


Unit to be installed here.

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SECTION A-A
SCALE 1:11



FLG HOLES STRADDLE C [TYP]

P/N:
1000-A3-4?63-?1
CPSI CODE
COATING CODE

- NOTES:
1) APPRX. WEIGHT OF HOUSING : 200 Lbs.
2) APPRX. WEIGHT OF CATALYST ELEMENT : 40 Lbs.

UNLESS OTHERWISE NOTED 1. FINISH ALL SURF AND SHARP EDGES 2. DIMS DECIMALS ARE IN INCHES 3. DIMENSIONS ARE IN MILLIMETERS	
TOLERANCES X .25 [] .25 XX ± .10 [] .25 ± .10 XXX ± .050 [] .25 ± .10	
ANGULAR TOLERANCE 32°	
THIRD ANGLE PROJECTION	
DATE: 12/03/20	
DRAWN BY: PC	
CHECKED BY:	
PART NO. SEE ABOVE	
PAPER SIZE: SCALE: FILENAME: 1000-A3S-4X63-X1	

0	INITIAL RELEASE	PC	12/03/20
NO	REVISION	DRAWN BY	YY/MM/DD
		CHK'D BY	

WTP#2 – Caterpillar 3512

Engine Information:

Engine Model	Caterpillar 3512
Power	1330 bhp @ 1800 rpm
Exhaust Flow	185 m ³ /min (11,100 m ³ /hr)
Exhaust Temp	530°C
Flange Size	10" ANSI

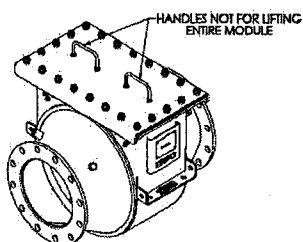
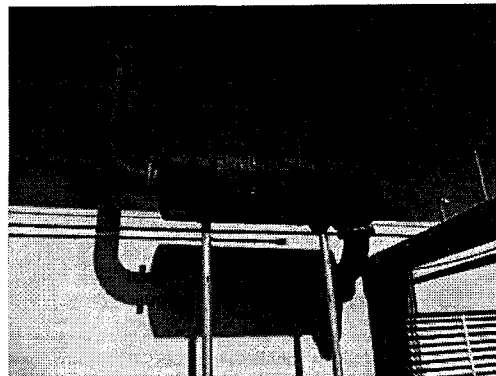
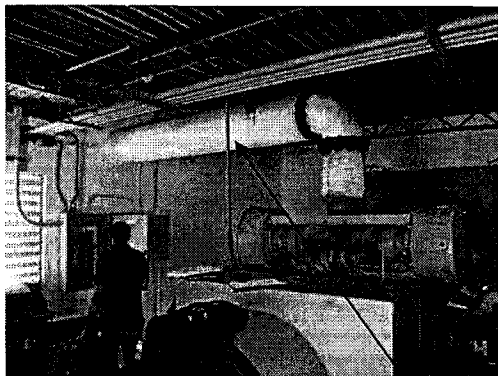
Converter Specs:

Model	DC63-10 CC
# of Units Required	1
Design Drawing	1000-A3S-4X63-X1
Cells per Square Inch	200 cpsi
Approx. Weight	240 lbs
Approx. Backpressure	4.8" w.c.

Silencer Specs:

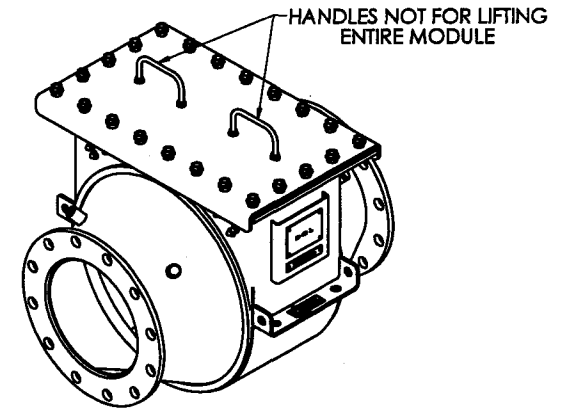
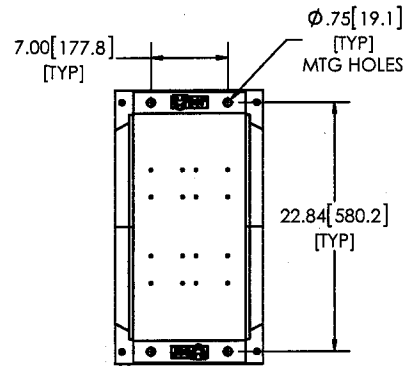
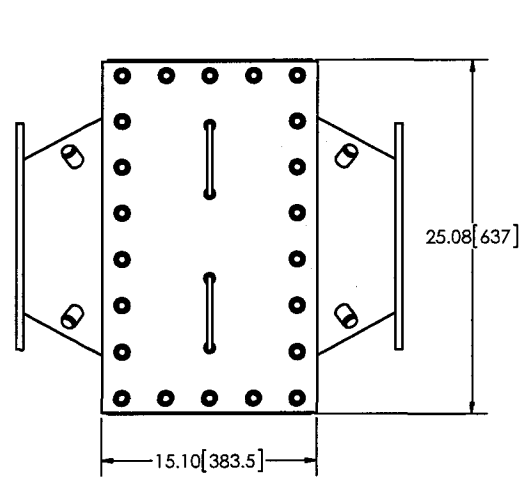
Model	TBD
# of Units Required	1
Silencing Grade	Industrial
Approx Dimensions	30" dia x 90" length
Approx. Weight	450 lbs
Approx. Backpressure	7" w.c.

Solution Description: Flex exists after the exhaust manifold before it 90's into straight pipe before existing the building. Plenty of room exists in this straight pip section to install the converter with access lid parallel to the ground. Tubing/flanges measured at 10". Silencer on outside of building to be replaced. Existing silencer dimensions approx. 30" dia. x 90" long and silencing grade is unknown.

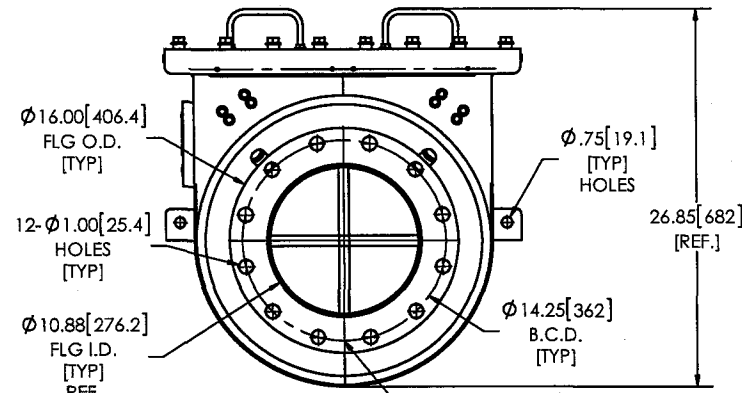
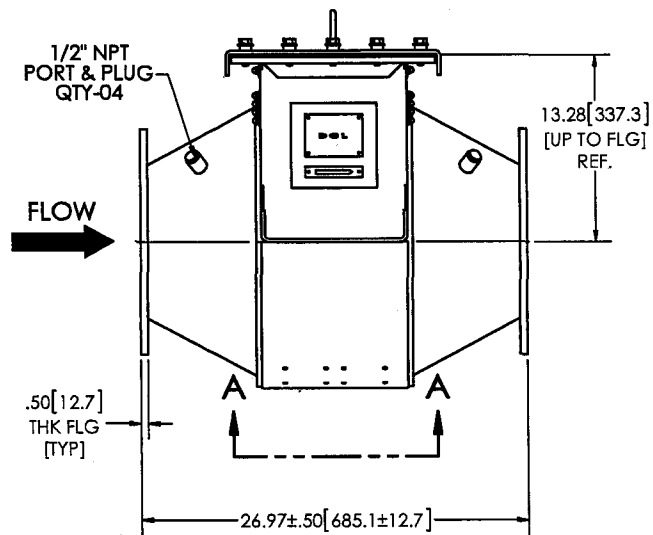


Unit to be installed here.

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SECTION A-A
SCALE 1:11



FLG HOLES STRADDLE ϕ [TYP]

P/N:
1000-A3-4?63-?1
CPSI CODE
COATING CODE

NOTES:
1) APPRX. WEIGHT OF HOUSING : 200 Lbs.
2) APPRX. WEIGHT OF CATALYST ELEMENT : 40 Lbs.

UNLESS OTHERWISE NOTED 1. REMOVE ALL BURRS AND SHARP EDGES 2. DIMENSIONS ARE IN INCHES 3. DIMENSIONS ARE IN MILLIMETERS TOLERANCES X .25 [±.05] X .10 [±.025] X .040 [±.010]	
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TITLE DC63/73-10 CATALYTIC CONVERTER . Q6	ORG. P/N:
APPLICATION:	ENGINE:
DATE 12/03/20	DRAWN BY: PC
PAPER SIZE:	CHECKED BY:
SCALE:	PART NO. SEE ABOVE
FILE NAME 1000-A3S-4X63-X1	

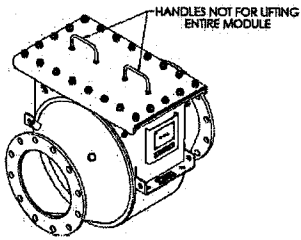
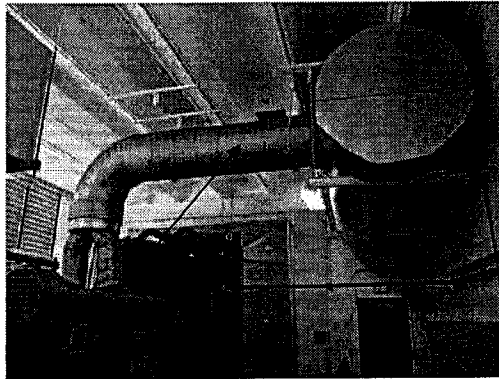
0	INITIAL RELEASE	PC	12/03/20	
NO	REVISION	DRAWN BY	YY/MM/DD	CHKD BY

WTP#3 – Caterpillar 3516 – North & South

Engine Information:	
Engine Model	Caterpillar 3516
Power	2885 bhp @ 1800 rpm
Exhaust Flow	454 m ³ /min (27,240 m ³ /hr)
Exhaust Temp	514°C
Flange Size	Unknown

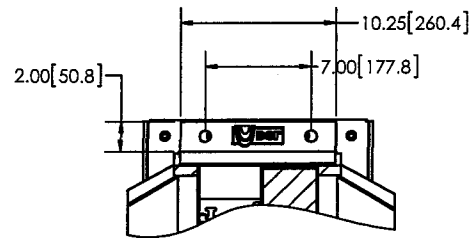
Converter Specs:	
Model	DC65-16 CC
# of Units Required	1
Design Drawing	1600-A3S-4X66-X1 (assumed)
Cells per Square Inch	200 cpsi
Approx. Weight	445 lbs
Approx. Backpressure	5.4" w.c.

Solution Description: Exhaust pipe size is unknown. Converter (DC65) to be installed in section of straight pipe as indicated below. Support to come from the ceiling. Unit can be oriented such that element access is either towards viewer or away from viewer in reference to below pictures. North and South generators in this building are nearly mirror image identicals.



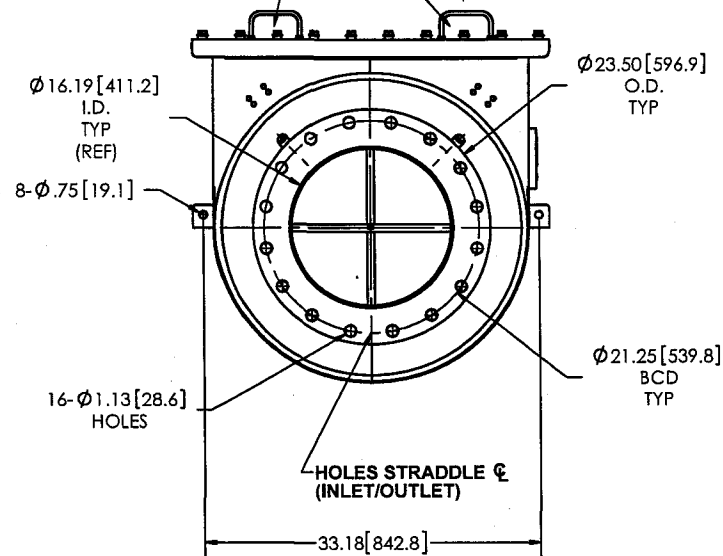
Units to be installed here.

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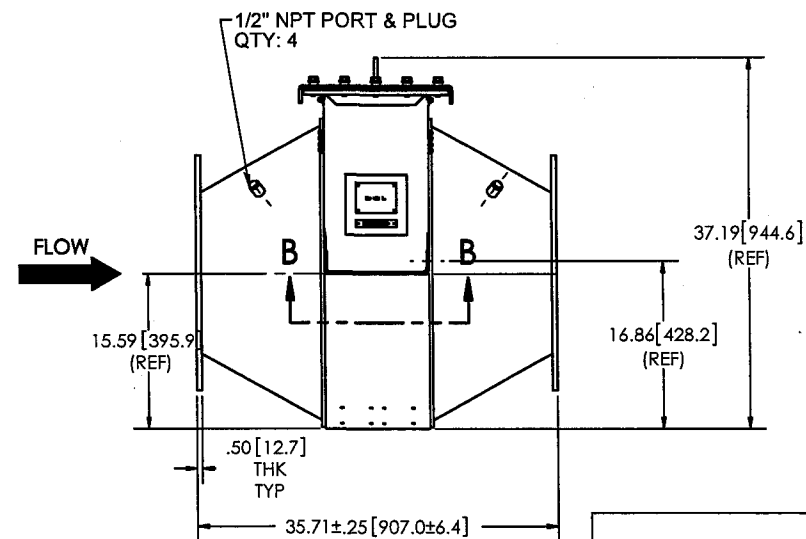
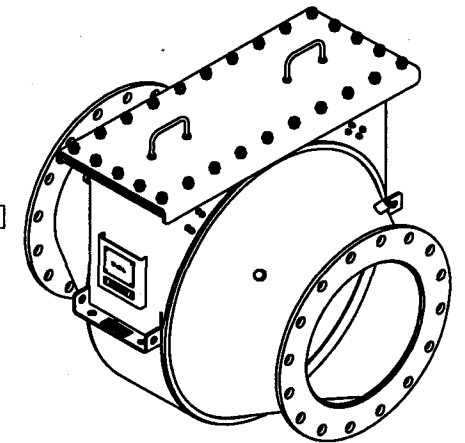
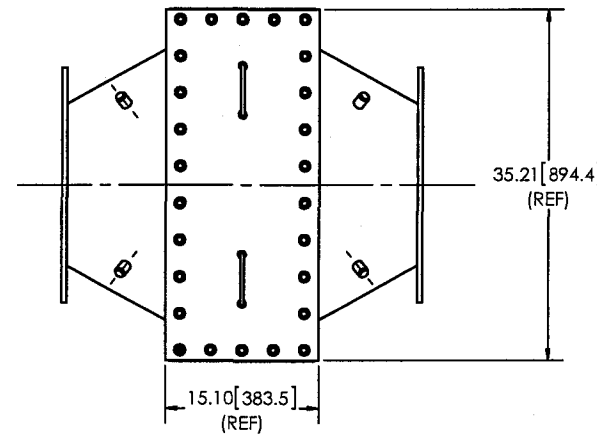
SECTION B-B
SCALE 1 : 8

HANDLE NOT FOR LIFTING ENTIRE CONVERTER



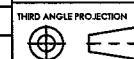
EMPTY HOUSING WEIGHT: APPROX.~ 360 LBS
WEIGHT OF CATALYST:~85LBS

EO6499



NO	REVISION	DRAWN BY	DATE	CHKD BY
0	INITIAL RELEASE	PC	12/05/23	

DCL DCL International Inc.			
UNLESS OTHERWISE NOTED 1. REMOVE ALL SHARP EDGES 2. DIMENSIONS ARE IN INCHES 3. () DIMENSIONS ARE IN MILLIMETERS TOLERANCES X ±.2 (H ±.5) XX ±.10 (XX ±.5) XXX ±.010 (XXX ±.15) ANGULAR TOLERANCE ±.5°			
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TITLE DC65/75-16 CATALYTIC CONVERTER.Q6	ORIG. P/N:		
APPLICATION:	ENGINE:		
DATE 12/05/23	DRAWN BY: PC	CHECKED BY:	PART NO.
PAPER SIZE:	SCALE: 1:12	FILE NAME: 1600-A3S-4X65-X1	



WTP#8 – Caterpillar 3516

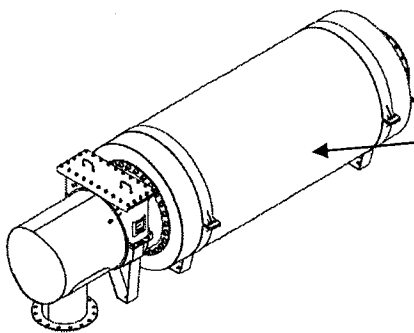
Engine Information:

Engine Model	Caterpillar 3516
Power	2884 bhp @ 1800 rpm
Exhaust Flow	454 m ³ /min (27,240 m ³ /hr)
Exhaust Temp	514°C
Flange Size	Unknown

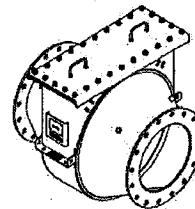
Converter Specs:

	Option 1	Option 2
Model	DC65-20 IGS	DC65-18 CC
# of Units Required	1	1
Design Drawing	C4D4-A3S-4X65-X1	1800-A3S-4X65-X1
Silencer Grade	TBD	N/A
Sound Attenuation	TBD	N/A
Cells per Square Inch	200 cpsi	200 cpsi
Approx. Weight	2300 lbs	445 lbs

Solution Description: The standard catalyst required for this engine (DC65) is approximately 3' long. I believe it was determined that the silencer could not be lifted 3' due to interference with the ceiling. As such, two options were discussed. The silencer can be replaced by a combination unit. Mounting would be from the ceiling. Flange size at the inlet would be required. With the addition of the catalyst section, the silencer would protrude further along and either a new hole the building wall would have to be created or the exhaust could be mitred back to use the existing exit. ~~The second option would be to install a standard end-in, end-out converter after the existing silencer. Exhaust temp would need to be measured under loaded condition at this point in order to establish that it will be >600°F.~~

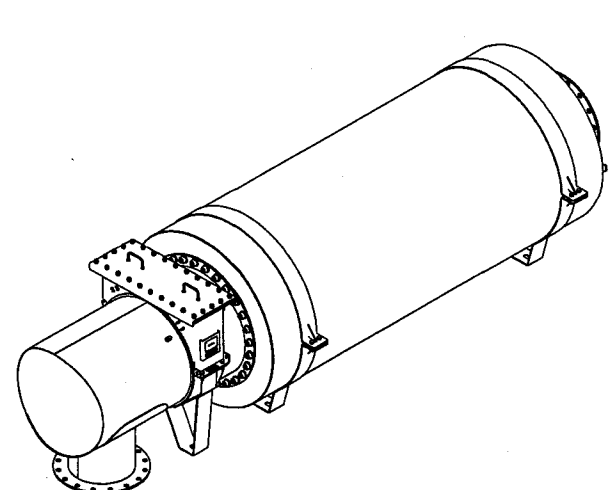
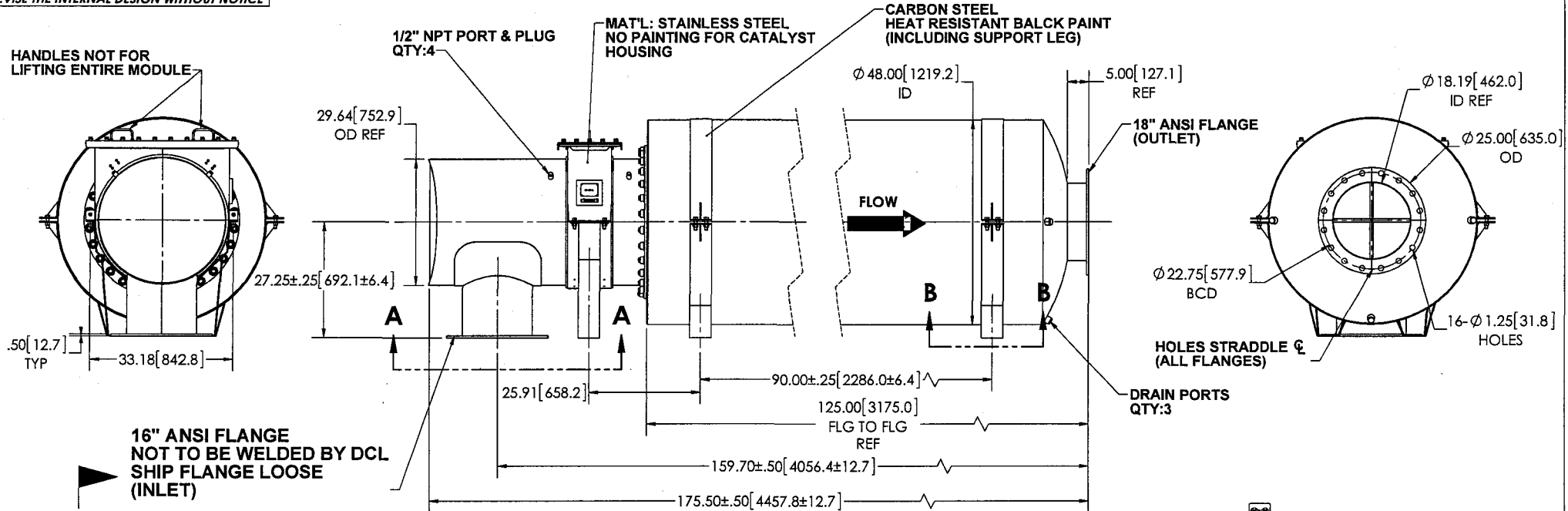


Converter-silencer combination unit. Catalyst access can be rotated 90 degrees. Sound attenuation needs to be established.

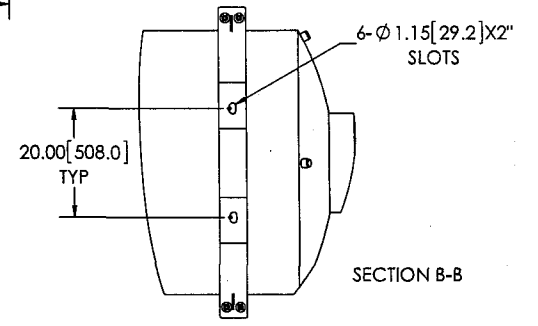
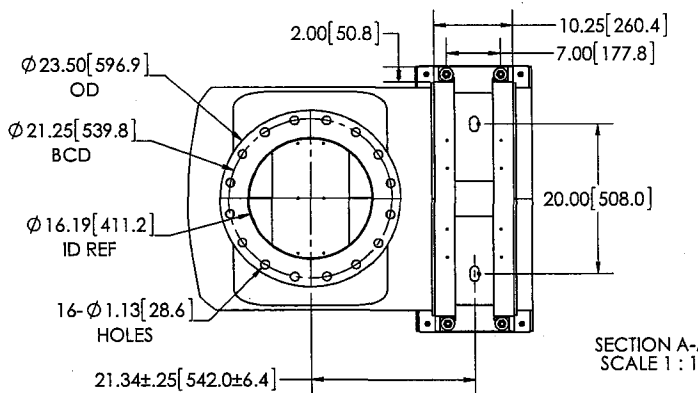


~~Standard unit could go here if appropriate exhaust temps are established.~~

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TOTAL WEIGHT OF ASSEMBLY: APPROX. ~2300 LBS
WEIGHT OF CATALYST: APPROX. ~85 LBS



EO-7112

NO	REVISION	DRAWN BY	DATE	CHK'D BY
0	INITIAL RELEASE	IW	12/09/25	

UNLESS OTHERWISE NOTED 1. REMOVE ALL BURRS & SHARP EDGES 2. DIMENSIONS ARE IN INCHES 3. (1) DIMENSIONS ARE IN MILLIMETERS TOLERANCES X .25 ±.05 X .10 ±.025 XXX ±.040 [X] ±1.50 ANGULAR TOLERANCE ±2°			
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TITLE: DC65-16/18 IND GR CATALYTIC SILENCER, QM6	ORIG. P/N:		
APPLICATION:	ENGINE:		
DATE: 12/09/25	DRAWN BY: IW	CHECKED BY:	PART NO.:
PAPER SIZE:	SCALE: 1:22	FILE NAME: C4D4-015-4X65-X1	

WTP#9 – Caterpillar 3516

Engine Information:

Engine Model	Caterpillar 3516
Power	2876 bhp @ 1800 rpm
Exhaust Flow	454 m ³ /min (27,240 m ³ /hr)
Exhaust Temp	514°C
Flange Size	Unknown

Converter Specs:

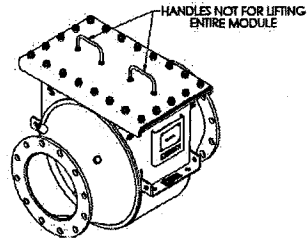
Option 1

Model	DC65
# of Units Required	1
Design Drawing	1600-A3-4X65-X1 (assumed)
Cells per Square Inch	200 cpsi
Approx. Weight	445 lbs
Approx. Backpressure	5.4" w.c.

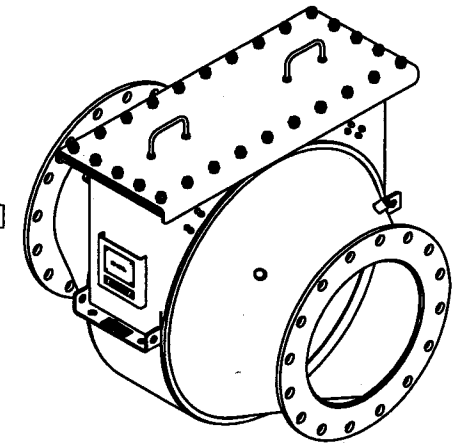
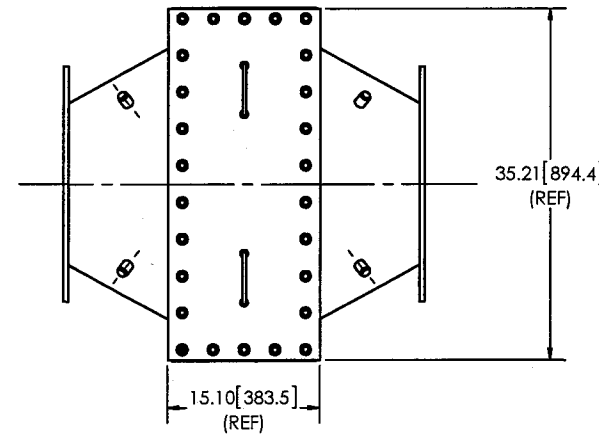
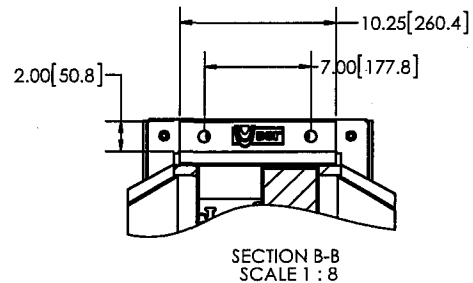
Solution Description: Install in the vertical position a DC65. This will require the silencer to be lifted approx. 36". Currently in the way are two rain-water pipes which would have to be relocated. There is also the potential that two lights would have to be relocated as well. Flange size is currently unknown.



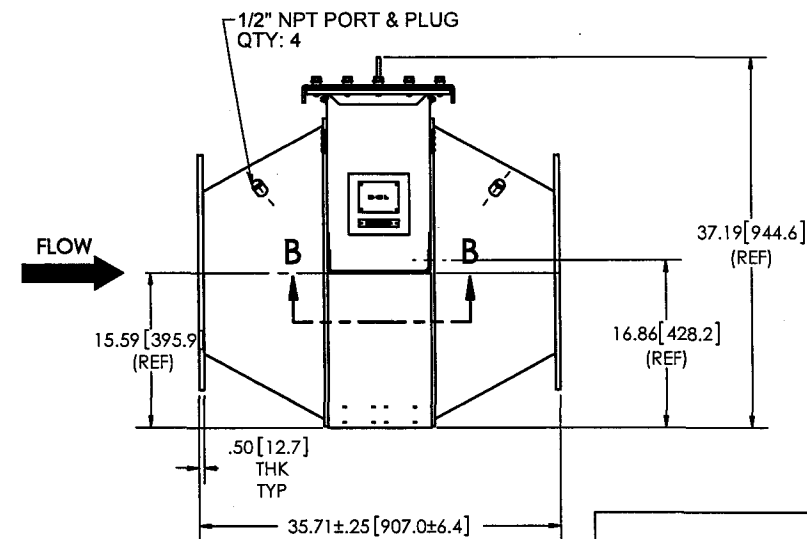
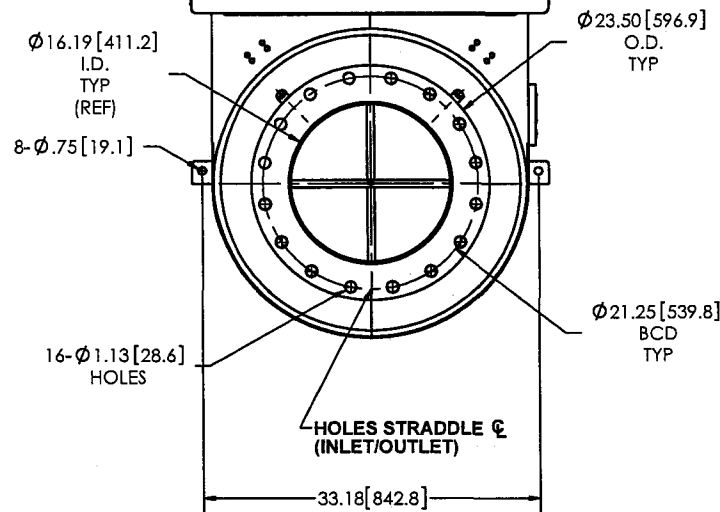
Install standard unit in vertical sections.



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HANDLE NOT FOR LIFTING ENTIRE CONVERTER



EMPTY HOUSING WEIGHT: APPROX.~ 360 LBS
WEIGHT OF CATALYST:~85LBS

EO6499

<small>UNLESS OTHERWISE NOTED 1. REMOVE ALL BURRS AND SHARP EDGES 2. DIMS HERE ARE IN INCHES 3. DIMS HERE ARE IN MILLIMETERS TOLERANCES .X ±.2 .1 ±.25 .XX ±.10 .0X ±.25 .XXX ±.040 .0XX ±1.00 ANGULAR TOLERANCE ±.2°</small>	
<small>DCL INTERNATIONAL INC. RESERVES PROPRIETARY RIGHTS TO THIS DRAWING AND THE DATA SHOWN THEREON AND SUBMITS IT IN CONFIDENCE ONLY. SAID DATA AND/OR DRAWING ARE NOT TO BE USED OR REPRODUCED FOR ANY PURPOSE WITHOUT THE EXPRESS CONSENT OF DCL INTERNATIONAL INC.</small>	
<small>TITLE</small> DC65/75-16 CATALYTIC CONVERTER.Q6	<small>ORIG. P/N:</small>
<small>APPLICATION:</small>	<small>ENGINE:</small>
<small>DATE</small> 12/05/23	<small>DRAWN BY:</small> PC
<small>PAPER SIZE:</small>	<small>CHECKED BY:</small>
<small>THIRD ANGLE PROJECTION</small> 	<small>SCALE</small> 1:12
<small>NO</small>	<small>FILE NAME</small> 1600-A35-4X65-X1

NO	REVISION	DRAWN BY	DATE	CHK'D BY
0	INITIAL RELEASE	PC	12/05/23	

SRWRF – Cat 3516

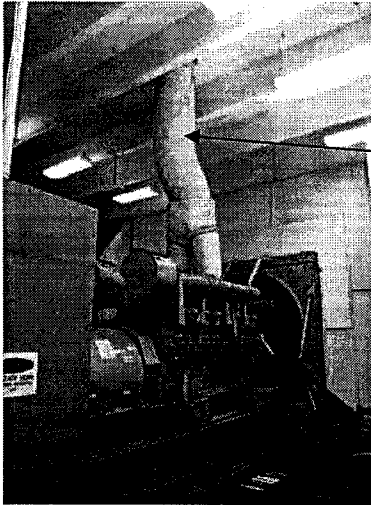
Engine Information:

Engine Model	Caterpillar 3516
Power	1967 bhp @ 1800 rpm
Exhaust Flow	307 m ³ /min (18,426 m ³ /hr) (assumed)
Exhaust Temp	400°C (assumed)
Flange Size	Unknown

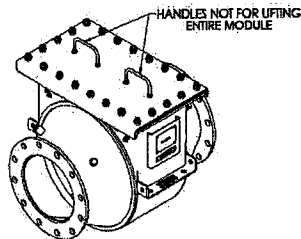
Converter Specs:

Model	DC64.5
# of Units Required	1
Design Drawing	1400-A3S-4X67-X1 (assumed)
Cells per Square Inch	200 cpsi
Approx. Weight	390 lbs
Approx. Backpressure	4.2" w.c.

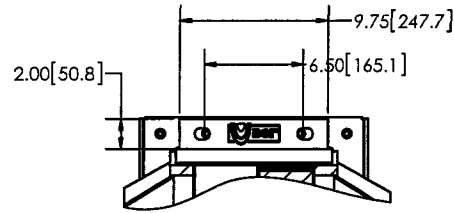
Solution Description: Standard DC64.5 converter to sit in vertical position after exhaust mitre. Pipe size is unknown. Support likely to come from ceiling.



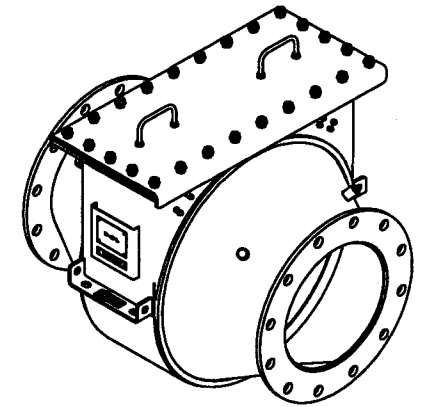
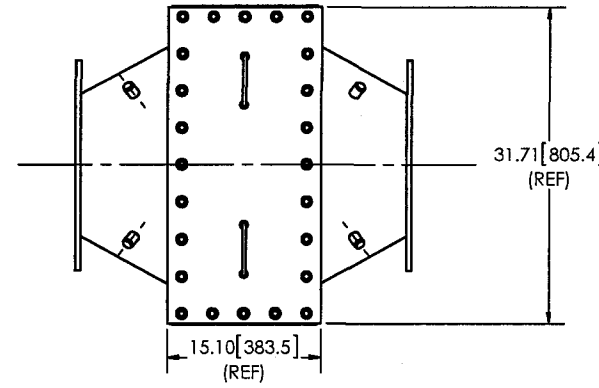
Unit to be installed vertically here.



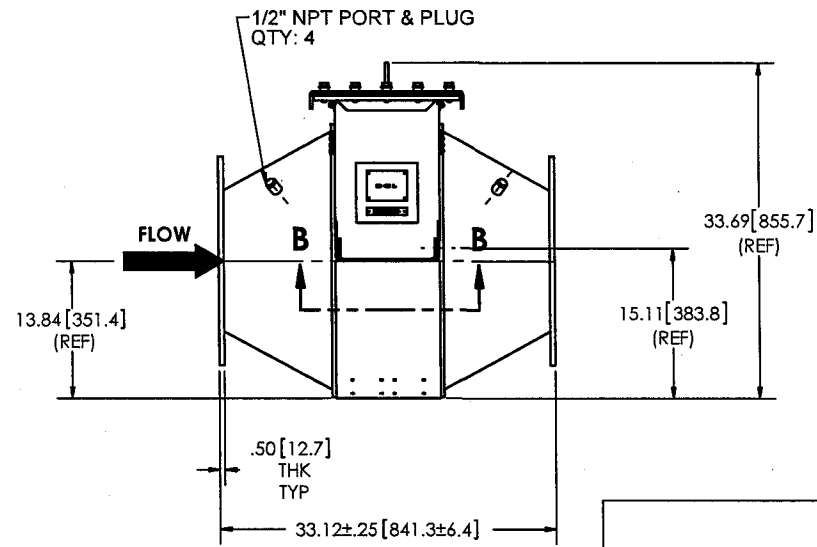
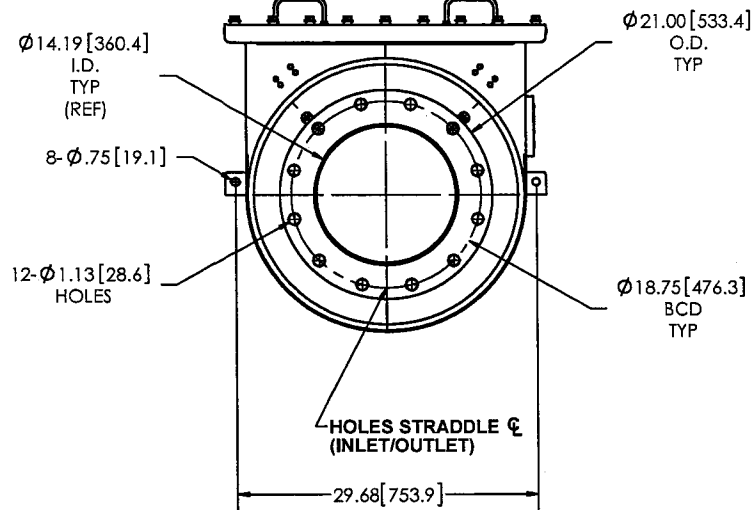
DCL INTERNATIONAL RESERVES THE RIGHT TO REVISE THE INTERNAL DESIGN WITHOUT NOTICE



SECTION B-B
SCALE 1 : 8



HANDLE NOT FOR LIFTING ENTIRE CONVERTER



EO8108

EMPTY HOUSING WEIGHT: APPROX.~ 305 LBS
WEIGHT OF CATALYST:~85LBS



UNLESS OTHERWISE NOTED
1. REMOVE ALL BURRS AT 90 SHARP EDGES
2. DIMS IN INCHES ARE IN INCHES
3. DIMS IN MILLIMETERS ARE IN MILLIMETERS
TOLERANCES
X ±.2 [±.5]
XX ±.10 [±.25]
XXX ±.040 [±.1.0]
ANGULAR TOLERANCE ±2°

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TITLE: DC64.5/74.5-14 CATALYTIC CONVERTER,Q6

APPLICATION: ENGINE:

DATE: 13/04/12 DRAWN BY: PC CHECKED BY: PART NO.:

PAPER SIZE: 1:12 SCALE: 1:12 FILE NAME: 1400-A35-1X67-X1

NO	REVISION	DRAWN BY	DATE	CHKD BY
0	INITIAL RELEASE	PC	13/04/12	



SRWRF – DD 9163-7416

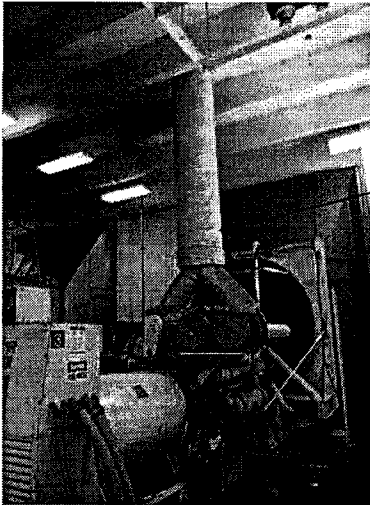
Engine Information:

Engine Model	Detroit Diesel 9163-7416
Power	2222 bhp @ 1800 rpm (assumed)
Exhaust Flow	436 m ³ /min (26,160 m ³ /hr)
Exhaust Temp	466°C
Flange Size	Unknown

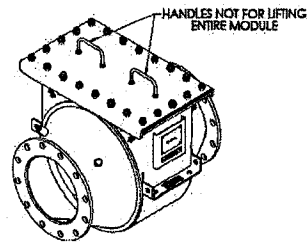
Converter Specs:

Model	DC65
# of Units Required	1
Design Drawing	1600-A3S-4X65-X1 (assumed)
Cells per Square Inch	200 cpsi
Approx. Weight	445 lbs
Approx. Backpressure	5.0" w.c.

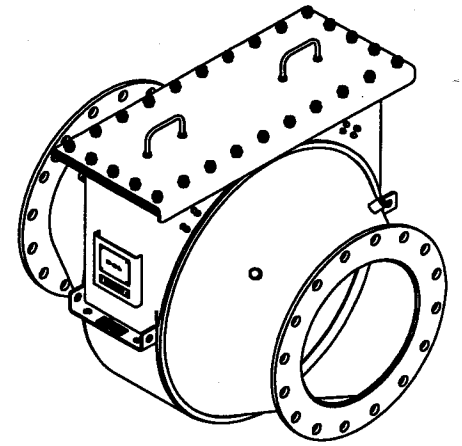
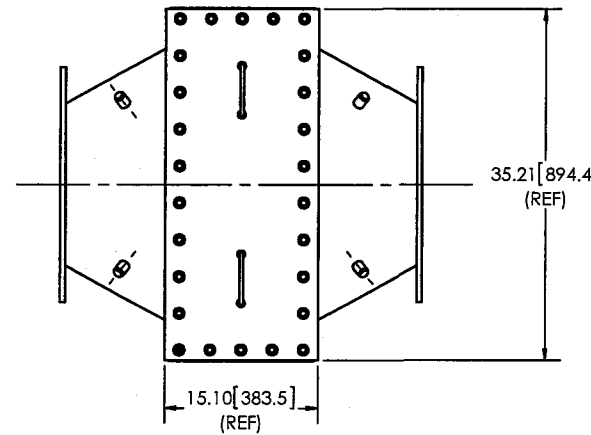
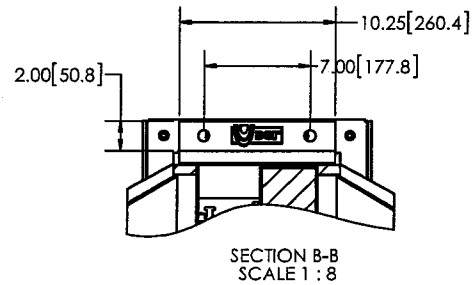
Solution Description: All three of these DD engines as this facility are identical. They will required a DC65 each situated in the vertical position after the wye. Flange size is unknown and will need to be measured. Units will need to be supported likely from above.



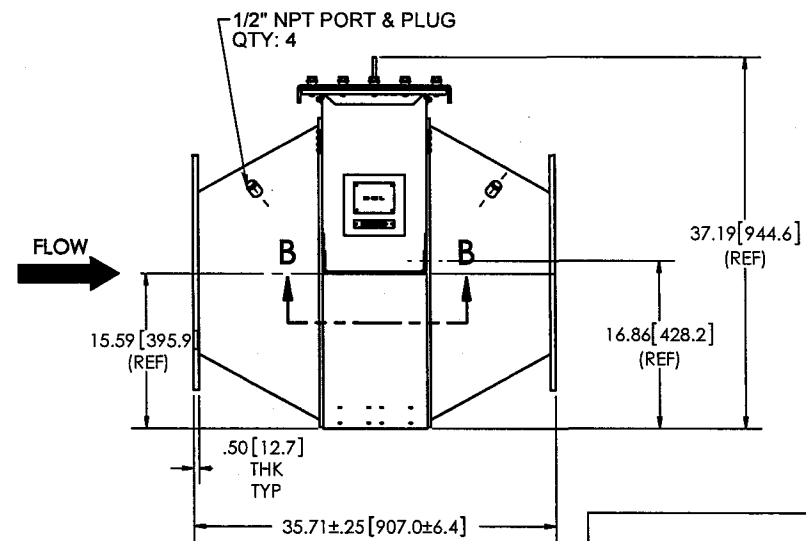
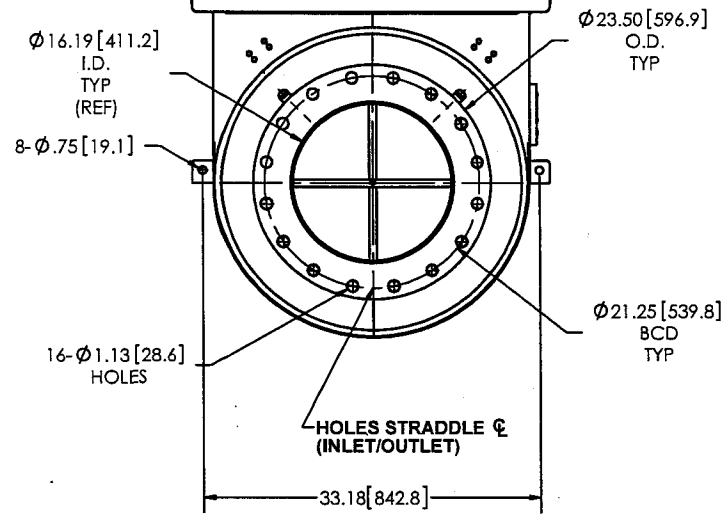
Converters to be installed in vertical position here



DCL INTERNATIONAL RESERVES THE RIGHT TO REVISE THE INTERNAL DESIGN WITHOUT NOTICE



HANDLE NOT FOR LIFTING ENTIRE CONVERTER



EMPTY HOUSING WEIGHT: APPROX.~ 360 LBS
WEIGHT OF CATALYST:~85LBS

EO6499

UNLESS OTHERWISE NOTED 1. REMOVE ALL BURS AT 90 SHARP EDGES 2. DIMENSIONS ARE IN INCHES 3. () DIMENSIONS ARE IN MILLIMETERS			
TOLERANCE X .25 ±.05 X .10 ±.025 .0008.040 ±.001 ±.00			
ANGULAR TOLERANCE ±2°			
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TITLE DC65/75-16 CATALYTIC CONVERTER, Q6	ORIG. P/N:		
APPLICATION:	ENGINE:		
DATE: 12/05/23	DRAWN BY: PC	CHECKED BY:	PART NO.:
PAPER SIZE:	SCALE: 1:12	FILE NAME: 1600-A3S-4X65-X1	

NO	REVISION	DRAWN BY	DATE	CHKD BY
0	INITIAL RELEASE	PC	12/05/23	



WTP#11 – Cat 3516

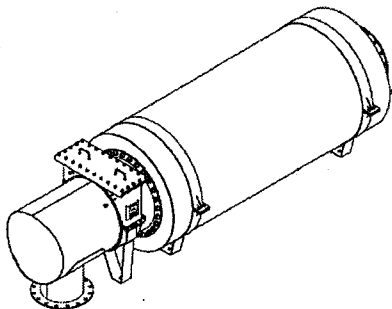
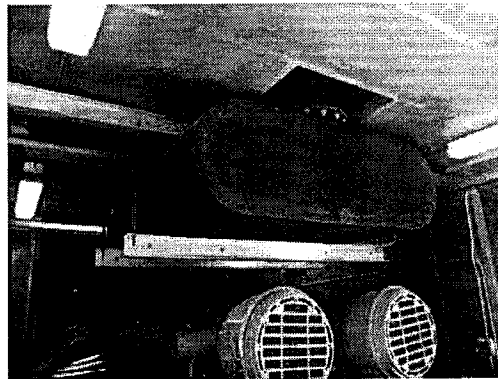
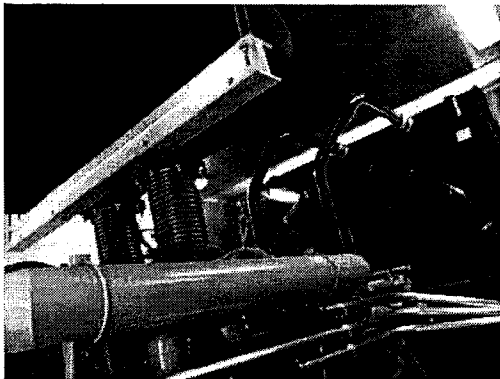
Engine Information:

Engine Model	Caterpillar 3516
Power	2880 bhp @ 1800 rpm
Exhaust Flow	438 m ³ /min (26,280 m ³ /hr)
Exhaust Temp	453°C
Flange Size	Unknown

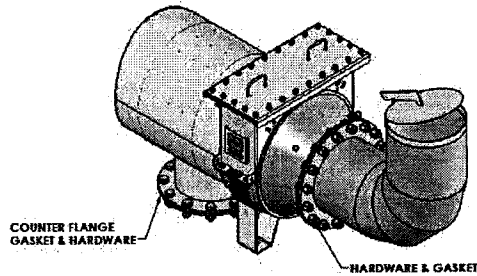
Converter Specs:

	Option 1	Option 2
Model	DC65-18 IGS	DC65-18 CC
# of Units Required	1	1
Design Drawing	C4D7-01S-4X67-X1 (assumed)	C4U9-01S-4X67-X1 (assumed)
Cells per Square Inch	200 cpsi	200 cpsi
Approx. Weight	2200 lbs	700 lbs
Approx. Backpressure	12" w.c.	5" w.c.

Solution Description: There are two solutions proposed. The silencer inside the container can be removed and the exhaust outlets from the turbos can be wye'd together before heading out of a new hole that would be created in the container roof. The exhaust would then go into a converter/silencer combination unit as shown below. ~~The second option is to take a temperature measurement of the exhaust were it currently exits the enclosure to determine whether under general loading (what is typical load for this engine), the exhaust is >600F at this point. If that is the case then a converter only can be installed at this point similar to the design drawing shown below.~~

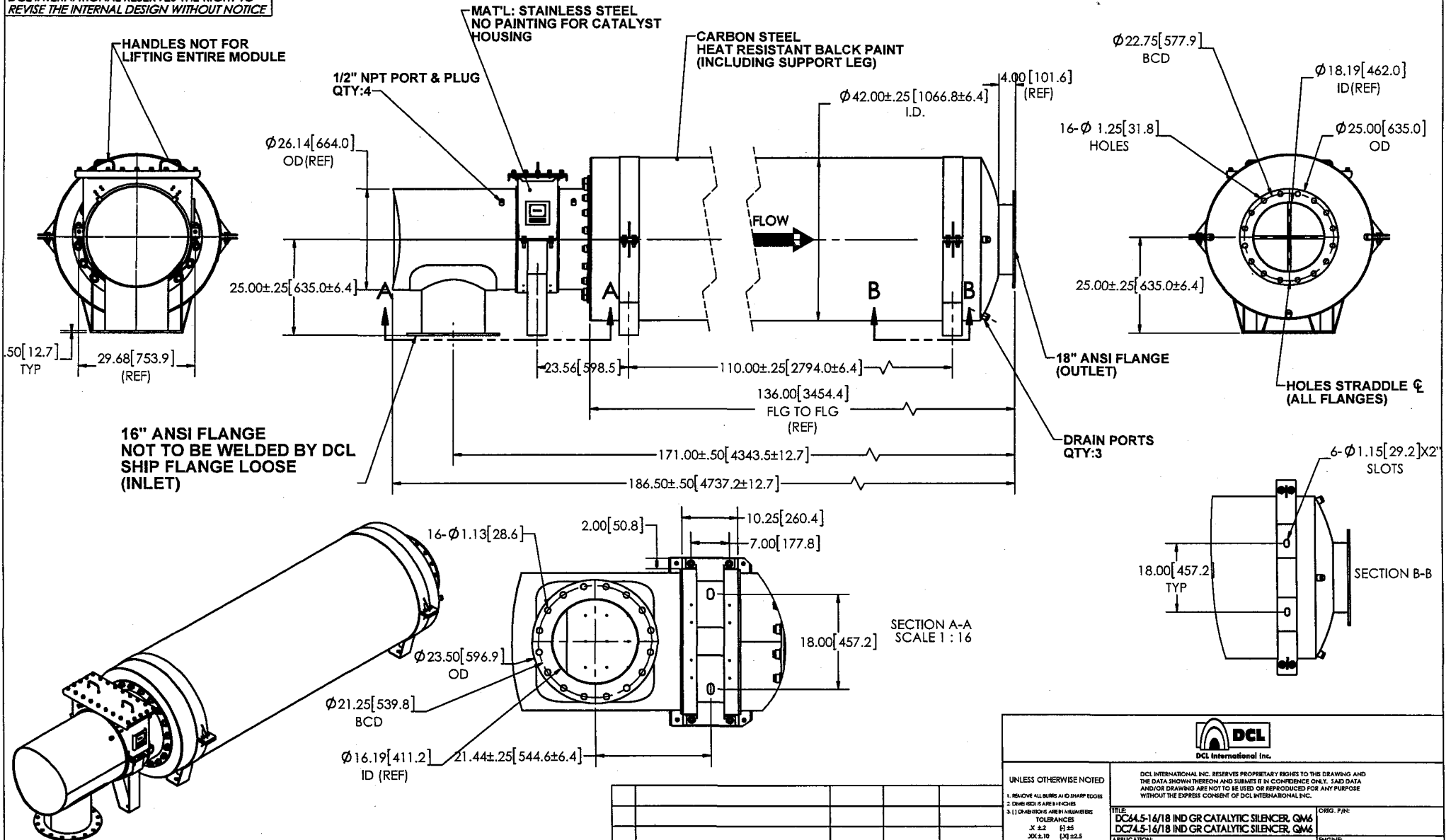


Roof-top combination unit solution



Roof-top converter only unit solution

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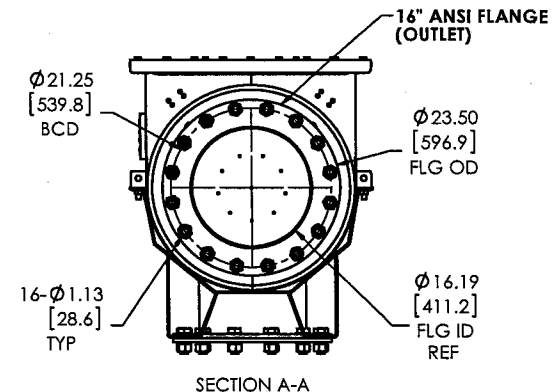
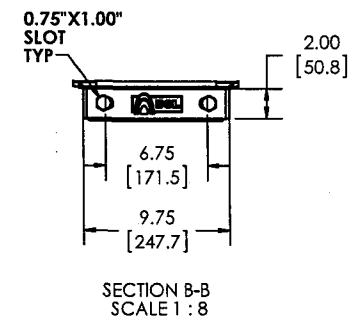
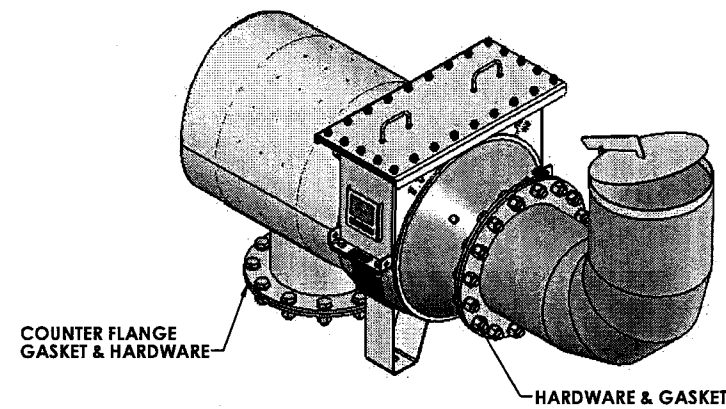
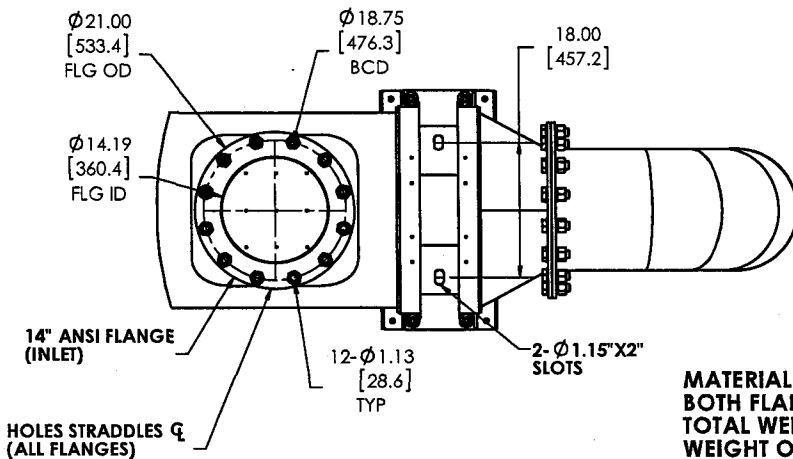
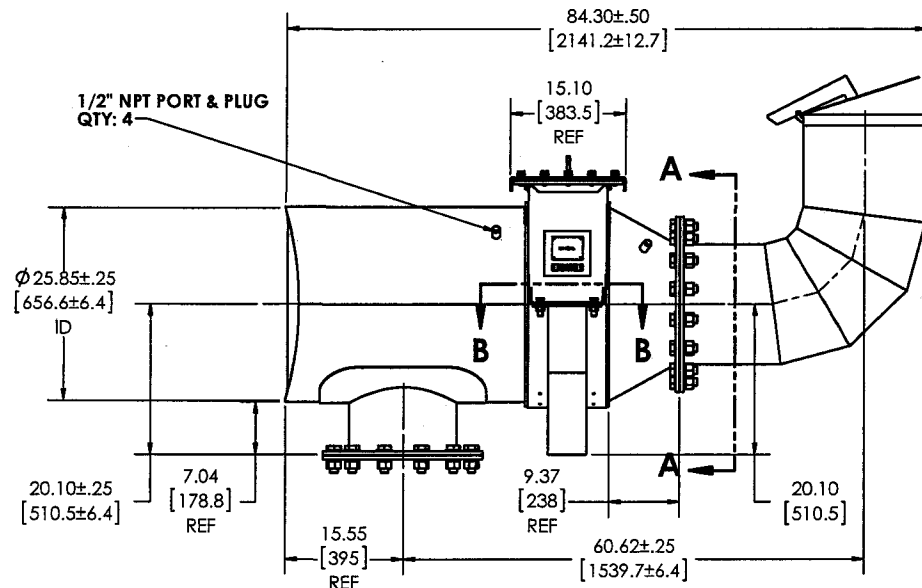
TOTAL WEIGHT OF ASSEMBLY: APPROX. ~2200 LBS
WEIGHT OF CATALYST: APPROX. ~55 LBS

EO-7115

UNLESS OTHERWISE NOTED	
1. REMOVE ALL BURRS AT SHARP EDGES 2. DIMS ARE IN INCHES 3. () DIMS ARE IN MILLIMETERS TOLERANCES X .25 () .25 X .50 () .50 X 1.00 () 1.00 X 2.00 () 2.00 X 5.00 () 5.00 X 10.00 () 10.00 ANGULAR TOLERANCE ± 2°	
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TITLE	DC74.5-16/18 IND GR CATALYTIC SILENCER, QM6
APPLICATOR:	ENGINE
DATE	12/09/25
DRAWN BY:	PC
CHECKED BY:	
PART NO.	
PAPER SIZE:	SCALE: 1:22
PREPARED BY:	C4D7-01S-4X67-X1

0	INITIAL RELEASE	PC	12/09/25	
NO	REVISION	DRAWN BY	DATE	CHKD BY

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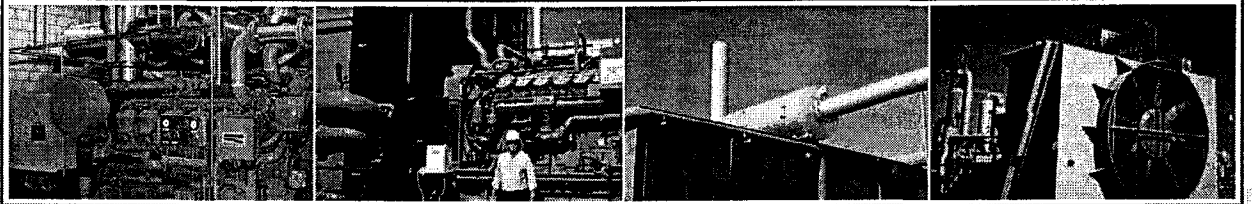
MATERIAL: ALL STAINLESS STEEL INCLUDING BOTH FLANGES
TOTAL WEIGHT OF ASSEMBLY: APPROX. 690 LBS
WEIGHT OF CATALYST: APPROX. 145 LBS

NO	REVISION	DRAWN BY	CHK'D BY
A	COUNTER FLG, GASKET, HARDWARE TO INLET	JS	13/07/05
D	INITIAL RELEASE	JS	13/06/28

<small>UNLESS OTHERWISE NOTED 1. REMOVE ALL BURRS AND SHARP EDGES 2. DIMS IN INCHES ARE IN PARENTS 3. (1) DIMENSIONS ARE IN PARENTS TOLERANCES .X .2 ± .01 .X .10 ± .005 .X .001 ± .0005 ANGULAR TOLERANCE ± 2°</small>			
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TITLE: DC64.5-14/16 CATALYTIC CONVERTER, Q6	ORIG. P/N:		
APPLICATION:	ENGINE:		
DATE: 13/06/28	DRAWN BY: JS	CHECKED BY:	PART NO.:
PAPER SIZE:	SCALE: 1:16	FILE NAME: C4U9-015-4X67-X1	

EO-8534
EO-8255

Industrial Catalytic Converters



QUICK-LID™

Power Generation Co-Generation Gas Compression Fluid Pumping



QUICK-LID™

A New Generation of Catalyst Housing Technology

With DCL's latest generation of the QUICK-LID™ catalytic converter, operation and maintenance is quicker and easier than ever, lowering your service hours and cost of ownership. The new generation QUICK-LID™ effectively reduce emissions from rich-burn natural gas, lean-burn natural gas and diesel stationary engines used in gas compression, power generation, and other industrial applications. As the industry standard for reliable, long life operation, every QUICK-LID™ is backed with a performance guarantee for emissions, providing you worry free compliance for even the most stringent environmental operating permit.

1 304L Stainless Steel Housing

Designed for long life in the most extreme duty applications, rated for 1.5 atmospheres pressure, and space for additional catalyst element.

2 Advanced Design Catalyst Element

Metal foil substrate with rigid supports and patented C-channel provides long life under the most extreme conditions. Also available in a variety of cell densities to optimize back pressure and performance.

3 Mounting Brackets

Accommodates both horizontal and vertical mounting.

4 Connecting Flanges

Available in a variety of connection types, including ANSI and DIN bolt pattern flanges.

5 Cover Plate

Allows easy access for servicing of catalyst element.

6 Retaining Bars

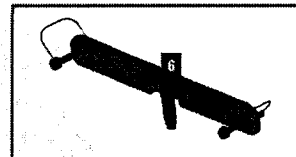
Holds catalyst element securely in place while allowing quick removal of catalyst element in seconds.

7 Catalyst Element Handles

Ideal for easy installation and maintenance.

8 Flanged Lock Bolts and Nuts

Eliminates the need for lock washers.



Options For Every Engine Type

Three-Way Catalysts

Three-way catalysts are used in rich-burn or stoichiometric engines for simultaneous conversion of oxides of nitrogen (NO_x), carbon monoxide (CO), hydrocarbons (HC), and formaldehyde (CH_2O) and other EPA classified Hazardous Air Pollutants (HAPs). A closed loop air-fuel ratio controller is required for the three-way catalyst to work effectively.

Rich-Burn



Oxidation Catalysts

Oxidation catalysts are effective for the control of carbon monoxide (CO), non-methane hydrocarbons (NMHC), volatile organic compounds (VOC), and formaldehyde (CH_2O) and other EPA classified Hazardous Air Pollutants (HAPs) from natural gas and LPG lean-burn engines.

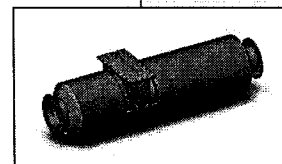
Lean-Burn



Diesel Oxidation Catalysts

Diesel oxidation catalysts (DOCs) are effective for the control of carbon monoxide (CO), hydrocarbons (HC), odor causing compounds, and the soluble organic fraction (SOF) of particulate matter (PM_{10} and $\text{PM}_{2.5}$).

Diesel

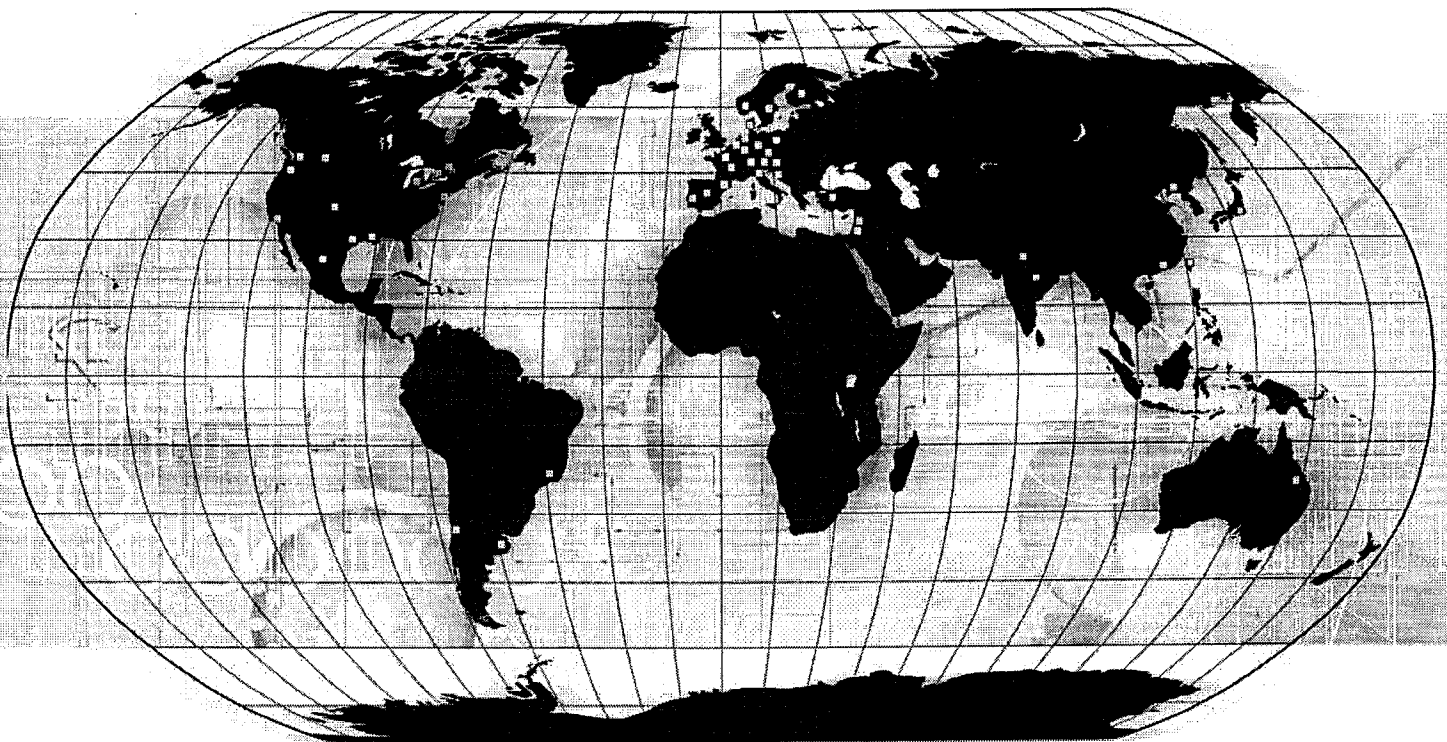


The new generation QUICK-LID™ is also available as a catalytic silencer combination for industrial, critical and hospital grade silencing.

DCL International Inc. – Preserving and Improving the Quality of the Air We Breathe

DCL International Inc. is a global leader in the engineering, manufacturing and supporting of advanced emissions control technology for stationary and mobile industrial engines. Our products – which include oxidation and three-way catalysts, silencers, particulate filters, SCR systems and accessories – are used worldwide in the material handling, construction, mining, gas compression and power generation markets.

DCL's dedicated industrial focus is unique in the emissions control industry. To meet the specialized needs of the industrial market, we adopt an integrated approach, bringing together product development, design, manufacturing and testing all under one roof. This single-source capability enables us to provide better engineered emissions solutions that deliver outstanding performance, longer life and lower cost of ownership. Our superior product quality has made DCL the choice of customers around the world.



■ *Manufacturing Facilities*

■ *Representatives*

GOVERNOR CONTROL SYSTEMS INC
(954) 462-7404, (877) 659-6328
WWW.GOVCONSYS.COM



DCL International Inc.

DCL International Inc.
Corporate Headquarters
P.O. Box 90
Concord, Ontario
L4K 1B2, Canada

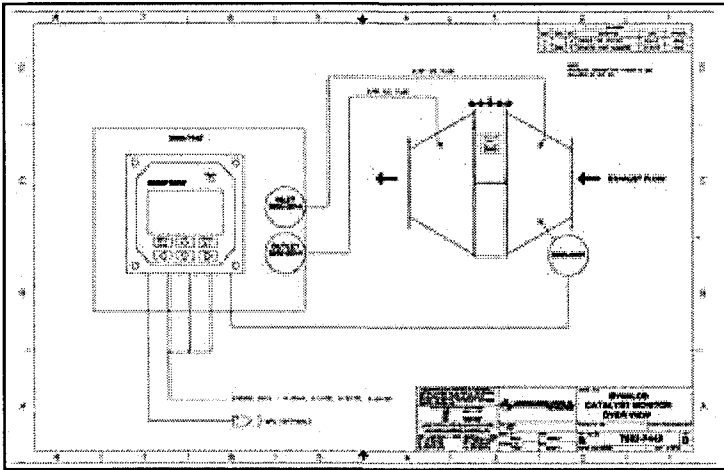
1-800-872-1968

Phone: (905) 660-6450
Fax: (905) 660-6435
e-mail: info@dcl-inc.com
web: www.dcl-inc.com

ISO 9001:2000 Registered

GCS Continuous Emissions Catalyst Monitoring System

The EPA requires that each Catalyst have a Continuous Parameter Monitoring System (CPMS) that monitors the inlet temperature and differential pressure of the catalyst. GCS developed a turnkey CPMS in a pre-wired NEMA enclosure utilizing the DYNALCO Catalyst Monitor, which is configured for monitoring, maintaining and data logging specific parameters as required by RICE NESHAP*.



p/n 2865-7442



Specifications:

- Pre-wired NEMA enclosure, 12" high x 10" wide x 6" deep
- Inlet / Outlet 0-1 PSI Pressure Transmitters
- K-Type Thermal Couple w/ extension wire
- Fully configurable
- Capable of monitoring up to three additional variables (J or K thermocouple, 4-20mA, 0-1VDC, 0-5 VDC, 0-10VDC)
- Accuracy of the current, thermocouple, and voltage inputs is +/- 0.2% of full scale
- Historic data may be stored or viewed real time through Modbus 485 communication
- Displays Differential readings
- On-Board Data Logging to flash memory
- Monitors Catalyst Inlet Temp based on 4-hour average
- Configurable Run / Stop alarm inhibit
- Modbus RS-485 Communications Protocol
- Downloadable to PC using DYNALCO host software
- Logs monitored values with date / time stamp
- On-board flash memory stores up to 500,000 values in non-volatile flash memory
- No backup battery required

DYNALCO

Value-Added Services

Insulation Blankets

The exhaust and catalysts must be properly insulated to maintain internal temperature and ensure optimal performance and burn-off. Removable insulation blankets are a cost-effective means of reaching and maintaining high exhaust temperatures. The blankets may be removed to allow access to components during periodic maintenance and replacement.

Catalyst Maintenance

GCS offers catalyst replacement, chemical washing and repair for all makes and models of catalysts and substrates. Custom manufactured metal substrates, brazed and non-brazed designs available in any customer shape and size. Maintenance service must be performed at regular intervals to keep your catalyst elements in compliance with emissions regulations.

Let our RICE NESHAP* experts save you time and money. GCS provides engineered emissions control and monitoring solutions for power generation, oil, gas, and industrial markets.

Visit www.govconsys.com/emissions_control_solutions.html to learn more or contact your local GCS office.

GCS is part of the MSHS Group, providing turn-key solutions for prime movers.

Southeast

3101 SW 3rd Avenue, Fort Lauderdale, FL 33315
Phone: 954-462-7404
Toll Free: 877-659-6328
Fax: 954-761-8768

Gulf Coast

2022 Tamvest Court, Mandeville, LA 70448
Phone: 985-626-8707
Toll Free: 888-GCS-GULF
Fax: 985-626-8732

Mid-Atlantic

3120 Arizona Avenue, Norfolk, VA 23513
Phone: 757-852-5808
Toll Free: 877-659-6328
Fax: 757-852-5809



www.govconsys.com

EKI-1221

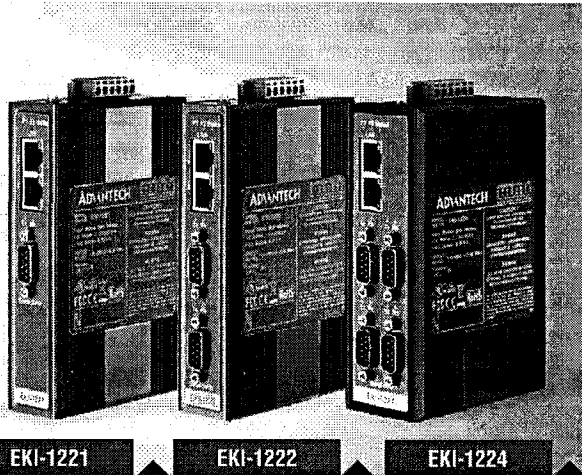
EKI-1222

EKI-1224

1-port Modbus Gateway

2-port Modbus Gateway

4-port Modbus Gateway



EKI-1221

EKI-1222

EKI-1224



Features

- Provides 2 x 10/100 Mbps Ethernet ports for LAN redundancy
- Integration of Modbus TCP and Modbus RTU/ASCII networks
- Supports up to 921.6 kbps, and any baud rate setting
- Supports up to 16 connections and 32 requests simultaneously
- Easy-managing Advantech Serial Device Server Configuration Utility for Windows 2000/XP/Vista/7
- Auto searching slave ID over configuration utility
- Software selectable RS-232/422/485 communication
- Mounts on DIN-rail and Wall mount
- Built-in 15 KV ESD protection for all serial signals
- Automatic RS-485 data flow control

Introduction

The EKI-1200 series Modbus gateways are bi-directional gateways for integrating new and existing Modbus/RTU and Modbus/ASCII serial devices to newer TCP/IP networked-based devices. The EKI-1221/1222/1224 feature two independent Ethernet ports and MAC addresses to provide a redundant networking mechanism to guarantee Ethernet networking reliability. They provide a simple and cost-effective way to bring the advantage of remote management and data accessibility to thousand of devices that can not connect to a network. The EKI-1221/1222/1224 provide a feature that can allow users to select master or slave operation mode for each serial port. They not only allow an Ethernet master to control serial slaves, but also allow serial masters to control Ethernet slaves.

Specifications

Ethernet Communications

- **Compatibility** IEEE 802.3, IEEE 802.3u
- **Speed** 10/100 Mbps
- **No. of Ports** 2
- **Port Connector** 8-pin RJ45
- **Protection** Built-in 1.5 KV magnetic isolation

Serial Communications

- **Port Type** RS-232/422/485, software selectable
- **No. of Ports** EKI-1221: 1
EKI-1222: 2
EKI-1224: 4
- **Port Connector** DB9 male
- **Data Bits** 7, 8
- **Stop Bits** 1, 2
- **Parity** None, Odd, Even, Space, Mark
- **Flow Control** XON/XOFF, RTS/CTS, DTR/DSR
- **Baud Rate** 50 bps ~ 921.6 kbps, any baud rate setting
- **Serial Signals** RS-232: TxD, RxD, CTS, RTS, DTR, DSR, DCD, RI, GND
RS-422: TxD+, TxD-, RxD+, RxD-, GND
RS-485: Data+, Data-, GND
- **Protection** 15 KV ESD for all signals

Software

- **OS Support** 32-bit/64-bit Windows 2000/XP/Vista/7 and Windows Server 2003/2008
- **Utility Software** Advantech Serial Device Server Configuration Utility
- **Operation Modes** Modbus RTU Master/Slave mode
Modbus ASCII Master/Slave mode
- **Configuration** Windows Utility, Web Browser
- **Protocols** Modbus RTU, Modbus TCP, Modbus ASCII

General

- **LED Indicators** System: Power, System Status
LAN: Speed, Link/Active
Serial: Tx, Rx
- **Reboot Trigger** Built-in WDT (watchdog timer)

Mechanics

- **Dimensions (W x H x D)** EKI-1221/1222: 37 x 140 x 95 mm (1.46" x 5.51" x 3.74")
EKI-1224: 55 x 140 x 95 mm (2.17" x 5.51" x 3.74")
- **Enclosure** Metal with solid mounting hardware
- **Mounting** DIN-rail, Wall
- **Weight** EKI-1221: 0.592 Kg
EKI-1222: 0.6 Kg
EKI-1224: 0.668 Kg

Power Requirements

- **Power Input** 12 ~ 48 V_{oc}, redundant dual inputs
- **Power Connector** Terminal block
- **Power Consumption** EKI-1221: 2 W
EKI-1222: 2.5 W
EKI-1224: 4 W

Environment

- **Operating Temperature** -10 ~ 60°C (14 ~ 140°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Operating Humidity** 5 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class A)
- **Safety** UL/cUL 60950-1
- **Hazardous Location** Class I, Division 2

Ordering Information

- **EKI-1221** 1-port Modbus Gateway
- **EKI-1222** 2-port Modbus Gateway
- **EKI-1224** 4-port Modbus Gateway
- **OPT1-DB9** D-Sub9 to Terminal Converter

Online Download www.advantech.com/products

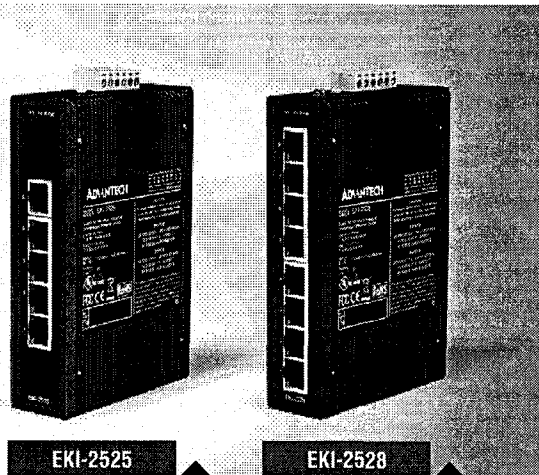
ADVANTECH

EKI-2525/I

EKI-2528/I

5-port Unmanaged Industrial Ethernet Switch

8-port Unmanaged Industrial Ethernet Switch



EKI-2525

EKI-2528



Features

- Provides 5/8 Fast Ethernet ports with Auto MDI/MDI-X
- Supports 10/100 Mbps Auto-Negotiation
- Provides broadcast storm protection
- Provides compact size with DIN-rail/Wall mount, and IP30 metal mechanism
- Supports redundant 12 ~ 48 V_{DC} power input and P-Fail relay
- Supports wide operating temperatures from -40 to 75°C (EKI-2525I/EKI-2528I)

Introduction

The EKI-2525/2528 supports a Fast Ethernet solution. The power is a +12 ~ 48 V_{DC} redundant input design, and is secured with a double protection mechanism: Power Polarity Reverse Protect and an Overload Current Resettable Fuse. The former tolerates reverse power wiring while the later secures the system from overload currents. As the power supply turns normal, EKI-2525/2528 will automatically get back to work. Each port of EKI-2525/2528 has 2 LED's to show the link status transmission speed and collision status. It also provides a relay output for an event alarm. In the event of a power failure, the built-in LED will activate the alarm to notify administrators. Engineers can simply verify the hardware status by checking the LED, and have troubleshooting easy and quick. EKI-2525/2528 comes with compact metal housing that rates IP30 to help against from dusty industrial environments.

Specifications

Communications

- **Standard** IEEE 802.3, 802.3u, 802.3x
- **LAN** 10/100Base-T (X)
- **Transmission Distance** Up to 100 m
- **Transmission Speed** Up to 100 Mbps

Interface

- **Connectors** 8 x RJ45 (EKI-2528) or 5 x RJ45 (EKI-2525)
6-pin removable screw terminal (power & relay)
- **LED Indicators** P1, P2, P-Fail
10/100T (X): Link/Activity, Duplex/Collision

Power

- **Power Consumption** EKI-2528: Max. 5 W
EKI-2525: Max. 3 W
- **Power Input** 12 ~ 48 V_{DC}, redundant dual inputs
- **Fault Output** 1 Relay Output

Mechanism

- **Dimensions (W x H x D)** 37 x 140 x 95 mm (1.46" x 5.51" x 3.74")
- **Enclosure** IP30, Metal shell with solid mounting kits
- **Mounting** DIN-rail, Wall

Protection

- **Reverse Polarity** Present
- **Overload current** Present

Environment

- **Operating Temperature** -10 ~ 60°C (14 ~ 140°F)
-40 ~ 75°C (-40 ~ 167°F), (EKI-2525I and EKI-2528I)
- **Storage Temperature** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity** 5 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)
- **MTBF** 689,000 hours (EKI-2528)
412,590 hours (EKI-2525)

Certifications

- **Safety** UL 60950-1, CAN/CSA-C22.2 No.60950
Class I, Division 2
- **EMI** FCC Part 15 Subpart B Class A, EN 55022 Class A
- **EMS** EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8
- **Shock** IEC 60068-2-27
- **Freefall** IEC 60068-2-32
- **Vibration** IEC 60068-2-6

Ordering Information

- **EKI-2525** 5-port Ethernet Switch
- **EKI-2525I** 5-port Ethernet Switch w/ Wide Temp
- **EKI-2528** 8-port Ethernet Switch
- **EKI-2528I** 8-port Ethernet Switch w/ Wide Temp



GOVERNOR CONTROL SYSTEMS, INC.

authorized sales & service center

www.govconsys.com
MSHS Group

Company: Cardinal Contractors
Attn: Mr. Michael Brandao
Address: 5365 Stirling Road
City/State: Davie, FL 33314
Email: mbrandao@cardinalco.com

Reference: Quote #TLE-201308-0007 Rev A-1
Sales Rep: Terry Lee
Date: 10/3/2013
Phone: 954-587-0520
Fax:

Item	Qty.	Description	Unit Cost	Extended
1	2	Station CROC -Cummins QSK60-G6: DCL Quick-Lid Model DC-64 Catalytic Converter	\$8,771.00	\$17,542.00
2	1	Station SRWRF -CAT 3516: DCL Quick-Lid Model DC-64.5 Catalytic Converter	\$10,719.00	\$10,719.00
3	3	Station SRWRF -DD 9163-7416: DCL Quick-Lid Model DC-65 Catalytic Converter	\$12,044.00	\$36,132.00
4	1	WPT#2 -CAT 3508: DCL Quick-Lid Model DC-63 Catalytic Converter	\$7,217.00	\$7,217.00
5	1	WPT#2 -CAT 3512: DCL Quick-Lid Model DC-63 Catalytic Converter	\$6,739.00	\$6,739.00
6	1	Industrial Grade Silencer for Item 5 [if required]. DCL Part No. DCGE3-12, Carbon steel construction, high heat black paint. Silencer dim: 30" dia x 90" body length	\$3,096.00	\$3,096.00
7	1	WPT#3 -CAT 3508 [SROC] DCL Quick-Lid/Silencer Combination Model DC64.51GS Catalytic Converter w/ Hospital Grade Silencer Part No. DCG3-16, 304 stainless steel construction, Silencer dim: 42" dia x 108" body length.	\$45,575.00	\$45,575.00
8	1	WPT#3 -CAT 3516 [North]: DCL Quick-Lid Model DC-65 Catalytic Converter	\$11,999.00	\$11,999.00
9	1	WTP#3 -CAT 3516 [South]: DCL Quick-Lid Model DC-65 Catalytic Converter	\$11,999.00	\$11,999.00

PLEASE NOTE THAT OUR CURRENT TERMS & CONDITIONS APPLY TO ALL SERVICES AND SUPPLIES RENDERED

Page 1 of 3



3101 SW 3rd Avenue, Ft. Lauderdale, FL 33315 Phone: +1 954-462-7404 Fax: +1 954-761-8768 Toll free: 1 877-659-6328
2022 Tamvest Court, Mandeville, LA 70448 Phone: +1 985-626-8707 Fax: +1 985-626-8732 Toll free: 1 888-427-4853
3120 Arizona Avenue, Norfolk, VA 23513 Phone: +1 757-852-5808 Fax: +1 757-852-5809 Toll free: 1 877-659-6328
1100 NW 51st Street, Seattle, WA 98107 Phone: +1 206-297-0300 Fax: +1 206-297-0302

10	1	WPT#8 –CAT 3516: DCL Combination Quick-Lid Catalytic Converter Model DC-65 CC with Industrial Grade Silencer Part No. DCGE3-20, carbon steel construction, high heat black paint. Silencer dim: 48” dia x 120” body length per customers instructions to fit in existing building.	\$20,199.00	\$20,199.00
11	1	WTP#9 –CAT 3516: DCL Quick-Lid Model DC-65 Catalytic Converter	\$12,635.00	\$12,635.00
12	1	WTP#11 –CAT 3516: DCL Quick-Lid DC-65 Catalytic Converter with integrated industrial grade silencer. Silencer is industrial grade, high heat paint, carbon steel. 48” dia, 120” body length.	\$29,198.00	\$29,198.00
14	14	Governor Control System’s RICE-NESHAP compliant Continuous Parameter Monitoring System. Includes pre-assembled 12”x10”x6” NEMA enclosure with data logger, 120Vac to 24Vdc power supply, inlet/outlet pressure transducers, and (1) 12” K type thermocouple with 50 feet of thermocouple wire and thermowell. Data out via RS485 Modbus communication. (Full spec sheet attached) OPTIONAL: Additional hardware required to allow communication between Catalyst Monitors and individual station’s DCS:	\$2,762.00	\$38,668.00
15	7	RS485 Modbus to Ethernet converter	\$498.46	\$3,489.22
16	13	Ethernet Switch (one per station)	\$200.77	\$2,610.01
17	7	RS485 Modbus to Fiber Optic converter [price is for two each, one for transmission, one for reception] Note: Customer will be responsible for installation of the additional hardware and software development for integration into the DCS system.	\$525.40	\$3,677.80
18		Training Option: Cost for Governor Control Systems Engineer to go to site in W Palm Beach, FL to perform start-up/commissioning and training services on for the GCS Catalyst Monitors. Cost includes five ten hour days on site plus two hours of travel to and from site [\$3,047/day]. Cost includes expenses [milage/per diem]. Cost based on GCS Engineereing 2013 Rates Level 4 which are attached.		\$15,235.00

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19	<p>On-Site DCL Training. Principles, operation and maintenance of DCL catalytic converters. Cost includes all travel expenses for DCL engineer to come to site for four hours [morning or afternoon].</p> <p>Note 1: All connecting flanges on all catalyst are stainless steel.</p> <p>Note 2: DCL can provide a performance bond to provide a maximum coverage of 10% of the catalyst/silencers total cost.</p>		\$3,075.00
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Terms: 20% upon receipt of order, 20% upon drawing approval, balance due upon shipping.

F.O.B.: Ft. Lauderdale, Florida

Validity: 30 Days from invoice date

Delivery: FOB Ontario, CA, Initial units can be shipped 4-6 weeks after drawing approval. Please refer to reference number above

By: Terry Lee
 Email: Terry.Lee@govconsys.com

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Corporate: 3101 SW 3rd Avenue, Fort Lauderdale, FL 33315 Phone: +1 954-467-7404 Toll Free: 877-659-6328 Fax: 954-761-8768
 Locations In - Southeast • Gulf Coast • Mid-Atlantic • Pacific Northwest

TERMS AND CONDITIONS

(also available at <http://www.govconsys.com/termsandconditions.htm>)

These terms and condition represent the final and complete agreement of the parties, and no modification shall be binding upon Governor Control Systems, Inc. ("GCS") unless made in writing and signed and approved by an officer of GCS. No modification of these terms shall be deemed made or accepted by GCS shipping goods or performing services following receipt of a purchase order or other documents containing terms and conditions additional to or in conflict with the terms and conditions herein. GCS does not agree to the accident, indemnity, and insurance provisions, if any, contained in the buyer's or customer's invitation or specifications, and in such cases GCS accepts only such liability as is imposed upon GCS by law and as limited by this contract. Receipt of goods or services by the buyer or customer shall be deemed conclusive proof of irrevocable acceptance of these terms and of the conformity of the goods or services provided; similarly these terms and conditions shall be deemed irrevocably accepted upon commencement of work by GCS at GCS' facility or at any other location.

GENERAL: GCS' contracts for furnishing repairs, parts and services are solely on the basis of the insured limited liabilities and specific warranties set forth below. GCS shall not be liable for any injury or death resulting from its provision of repairs, parts or services, and the purchaser or customer agrees to indemnify, defend and hold GCS harmless for any such claims brought against GCS by or on behalf of any person other than a GCS employee. When GCS provides parts, repairs or services to any vessel, GCS shall not be liable, directly or indirectly, in contract, tort or otherwise, to the vessel's owners, charterers, underwriters, lienholders or other party in interest for any damages to such vessel or to its appurtenances, cargo, equipment or moveable stores, or for any consequence thereof, unless such damage is caused solely by GCS' gross negligence or intentional tort, and in no event shall GCS' aggregate liability under this contract (with the exception of the specific warranty as set forth in "WARRANTY" below) exceed the sum of \$50,000.00 or the value of the vessel, whichever figure is the lesser. In no event shall GCS be liable for any consequential or special damages including but without limitation, for faulty or negligent design or manufacture, delay, loss of revenue, detention, wharfage, demurrage, tug expense, pilotage, crew wages, salvage or loss of use. For all sales or services provided, whether vessel related or non-vessel related, GCS shall not be liable for incidental, special or consequential damages or losses arising directly or indirectly from the purchase and sale of goods or provision of services, or for any other cause, and GCS' sole liability shall be as set forth under "warranty" below. The buyer or customer agrees to indemnify, defend and hold GCS harmless with respect to all liabilities to all parties in interest exceeding the amounts herein stated.

FORCE MAJEURE: GCS shall not be liable in any event for any loss, damage or delay caused by strikes, labor difficulties,

accidents, delays in delivery of materials, acts of God, war, restraint of princes, including, but not limited to, restraint by local, state or federal authorities, or causes or any kind beyond GCS' control, including, but not limited to, tropical storms, hurricanes, lightning or rain.

WARRANTY: GCS warrants that its parts and services are provided in accordance with industry standards and parts supplied are free from defects in material and workmanship. Buyer or customer agree that the sole remedy for breach of any warranty, express or implied shall be limited, at GCS sole discretion, to the replacement of parts, repair of parts, return or crediting of purchase price, or referral of the claim to the original manufacturer for manufacturer's warranty review. GCS makes no warranty and specifically disclaims all liability for design of any items supplied. **THE FOREGOING WARRANTY IS NON ASSIGNABLE AND IS IN LIEU OF AND SPECIFICALLY EXCLUDES ALL OTHER WARRANTIES NOT ACTUALLY SET FORTH HEREIN, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS OR THOSE IMPLIED BY THE COMMON LAW OF BAILOR AND BAILEE.** No agent or employee of GCS has authority to bind GCS to any other or expanded warranty, and any representation to that effect shall not be deemed to become a part of this contract and shall be unenforceable. The specific warranty provided by this section shall be deemed expired and all right of the buyer or customer irrevocably waived unless the claimed defect is submitted to GCS in writing within sixty days of receipt of the relevant part or service (or the redelivery of the vessel, whichever occurs first). This period shall govern whether the alleged defect is latent or patent and shall not be deemed to be tolled or to arise at any future time as a result of the discovery of a latent defect. Remedies for latent defects not discovered and submitted to GCS within the 60 day period shall be exclusively those available from the manufacturer, if any. All warranties are contingent upon, and do not arise until, full payment is received by GCS, and the provision of repairs or replacement of parts by GCS shall not be deemed a waiver of this provision.

FORUM AND CHOICE OF LAW: This contract shall be deemed to have been executed and fully performed within the State of Florida, and shall be interpreted and construed in accordance with and subject to the federal maritime law of the United States (excluding its conflict of law rules) or, should no such law exist on any particular issue, the laws of the State of Florida, to the exclusion of the laws of any other state or country. The prevailing party in any legal action shall be awarded reasonable attorneys fees and costs. Moreover: (1) for U.S. buyers or customers: any dispute arising under, in connection with or incident to this contract shall be litigated before either a federal court of competent jurisdiction located in the Southern District of Florida, or a state court of competent

PLEASE NOTE THAT OUR CURRENT TERMS & CONDITIONS APPLY TO ALL SERVICES AND SUPPLIES RENDERED Page 4 of 3

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Locations In - Southeast • Gulf Coast • Mid-Atlantic • Pacific Northwest

jurisdiction located in the State of Florida, County of Broward, to the exclusion of the courts of any other state or country, and buyer or customer hereby irrevocably consent to the jurisdiction of such court; (2) for non-U.S. buyers and customers: any dispute arising under, in connection with or incident to this contract shall be referred to three persons at New York, New York, one to be appointed by each of the parties hereto, and the third by the two so chosen; their decision or that of any two of them shall be final and, for the purpose of enforcing any award, this contract may be made a rule of the court. Should a party fail to appoint an arbitrator within ten days of notice of demand for arbitration, the demanding party may appoint the second arbitrator with the same force and effect as if appointment by the second party. Should the two arbitrators be unable to agree on the appointment of a third arbitrator within 14 days after appointment of the second arbitrator, the President of the Society of Maritime Arbitrators, Inc. shall make the appointment upon the request of either party without further notice. The proceedings shall be conducted in accordance with the Rules of the Society of Maritime Arbitrators, Inc., including Section 2 "Consolidation". The arbitrators shall be commercial men and not practicing attorneys. The arbitrators shall consider this Agreement an honorable engagement rather than merely a legal obligation; they are relieved from all judicial formalities and may abstain from following the strict rules of law. The arbitrators shall award reasonable attorneys fees and costs to the prevailing party. The parties irrevocably stipulate to the jurisdiction of the United States District Court for the Southern District of New York for purposes of compelling arbitration or confirming an arbitration award. This stipulation shall not be deemed consent to the jurisdiction of the courts of New York for any other purpose or evidence of any presence within New York. With regard to petitions to compel arbitration or to confirm an arbitration award, the parties consent to service of process by certified mail, certified international mail, fax, e mail, Federal Express or DHL courier service to the parties at any of the addresses or other contact information set forth in the GCS purchase order, quotation, or elsewhere in this contract, and irrevocably waive and right to personal service of these documents.

PAYMENT AND PRICE: Prices quoted and product availability stated are valid for ten days only unless designated as firm for a specific other period in writing by an officer of GCS. Payment in all cases is net upon receipt of invoice, 1.5% per month to be added to the invoice amount if full payment is not received by GCS within thirty days of presentation of the invoice. All returns (other than for defective goods under the WARRANTY section hereof) shall be subject to a 25% restocking fee, consent to payment of which is hereby given by customer or buyer, and no returns will be accepted for special order goods, goods supplied pursuant to an incorrect part

number provided by the customer, or goods with damaged packing or labels. All returns must be accompanied by a returned goods authorization number provided by GCS. GCS may place any account not paid within thirty days into the hands of attorneys for collection and the buyer or customer agrees to pay the reasonable fees and costs of the attorneys, without regard to whether suit is filed or arbitration commenced. All payments must be made in Florida at 3190 SW 4th Avenue, Fort Lauderdale, Florida 33315 or by wire as set forth below. It is agreed that wires are to be deemed payments made in Florida. For payment for work done on or materials furnished to any vessel, whether authorized orally, or by letter, or written contract, and whether GCS is the general contractor or a subcontractor, GCS looks to both vessel and owner.

Wire Transfer: City National Bank of Florida
Fort Lauderdale, FL 33301
Account: 2005697395 **ABA:** 066004367

VESSEL WARRANTIES: The vessel, its owners, charterers, underwriters, lienholders, and all parties in interest, shall indemnify and hold GCS harmless from all liability arising under any state or federal air or water quality statute or regulation unless the liability shall arise solely from the gross negligence or intentional tort of GCS' own employees. Owners, or other parties in interest, warrant that a valid and current U.S. Coast Guard Certificate of Financial Responsibility (Water Pollution) (Form CG-5358-10) shall be kept in force at all times while GCS is furnishing repairs, parts or services.

BUYER AND CUSTOMER'S RIGHT TO PURCHASE FURTHER WARRANTIES: Different or more extensive liabilities will be accepted if an agreement in writing stating the nature and extent thereof is entered into before work is commenced by GCS, and if the price is adjusted to include the cost of appropriate additional insurance. The terms contained in this contract or as set forth by an addendum thereto shall in no way be interpreted to hold GCS as an insurer.

MISCELLANEOUS: Nothing herein shall be deemed to constitute a waiver of GCS' maritime lien. Invalidity of any one or more provisions of this contract shall not affect nor impair the remaining provisions. This contract may not be changed orally.

Governor Control Systems, Inc. is an Equal Employment Opportunity/Affirmative Action Employer.

07/12

PLEASE NOTE THAT OUR CURRENT TERMS & CONDITIONS APPLY TO ALL SERVICES AND SUPPLIES RENDERED Page 5 of 3

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W WOODWARD

DYNALCO

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Power Pro-Tech Services, Inc.

The American Generator Company
PPT Electrical Services
PPT Solar

377 Maitland Ave., Suite 1010 Tel: (770) 721-7111
Altamonte Springs, FL 32701 Fax: (407) 628-8919

TOLL FREE: 1-800-437-4474

www.Generator.com - www.PPTElectrical.com
www.PPTSolar.com

Jupiter Regional Office
1445 Jupiter Park Drive #5
Jupiter, FL. 33458
(561) 744-1478

ESTIMATE: PBCWUD NESHAP

October 14, 2013

To: Cardinal Contractors, Inc.

Attn.: Michael Brandao

Project: PBC WUD Crankcase Air Vapor Separators

This estimate is for the supply and installation of Walker Engineering Enterprises Crankcase Vapor Separators for nine Water Utilities (9) units listed below. This partial list was supplied by your office. The Detroit Model numbers have been corrected.

	<u>Location</u>	<u>Manufacture</u>	<u>Model</u>	<u>Ventilation</u>
1	WTP #2 Plant	Caterpillar	3512	N
2	WTP #2 Plant	Caterpillar	3508	N
5	WTP #3 Deep Inj. Well	Caterpillar	3508	N
7	WTP #9 Plant	Caterpillar	3516	N
8	SRWRF Plant	Detroit Diesel	16V149	N
9	SRWRF Plant	Detroit Diesel	16V149	N
10	SRWRF Plant	Detroit Diesel	16V149	N
11	SRWRF Plant	Caterpillar	3516	N
12	CROC Admin	Cummins	QSK60-G6	N

The remaining three (3) units on the list have Walker units already installed by us.

3	WTP #3 Plant	Caterpillar	3516 Plant	Y
4	WTP #3 Plant	Caterpillar	3516 Plant	Y
6	WTP #8 Plant	Caterpillar	3516 Plant	Y

Installation includes all parts, labor and testing

Note: This estimate proposed with no specifications or drawings provided.

Con't

If you have any further questions please feel free to contact me. If you wish to see an installation of this product visit the three that already have been installed including WTP 11 in Belle Glades.

Price: Not to Exceed: \$ 62,862.80 Plus applicable sales tax.

Payment Terms: Deposit 50%, Balance upon completion of Installation

Thank You

Randy Porras | Project Engineering | randy.porras@generator.com

Advantage Generator & Switch, A Division of

Power Pro-Tech Services, Inc. | The American Generator Company

Phone: 561-744-1478 Extension 302 | Fax: 561-746-0291

Corporate Office:

377 Maitland Ave., Ste 1010
Altamonte Springs, FL 32701
Phone: 1-800-437-4474

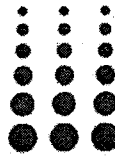
Operations Office:

1445 Jupiter Park Dr., #5
Jupiter, FL 33478

\$ 15400
+ 3600
FOR LRWTP

\$ 19000 ✓
MB

TAXABLE? NO



SOUTH FLORIDA ENVIRONMENTAL SERVICES
Air Quality Specialists

October 1, 2013

Mr. Daniel Alonso
Cardinal Contractor, Inc.
5365 Stirling Road
Ft. Lauderdale, FL 33314

RE: South Florida Environmental Services - Proposal for RICE MACT Compliance Testing on 12 Diesel Engines at Palm Beach County Water Utility

Dear Mr. Alonso:

South Florida Environmental Services, LLC is pleased to submit **Proposal Number 13-556** to Cardinal Contractor, Inc. to conduct air emissions testing for carbon Monoxide (CO) at several locations throughout the Palm Beach County Water Utility in Palm Beach County, FL. We are confident that our extensive testing experience at similar facilities, the demonstrated capabilities of our technical staff, and our unblemished reputation with the Florida Department of Environmental Protection (FDEP) and Palm Beach County air quality officials, uniquely qualifies us to carry out the program as proposed here.

BACKGROUND

Cardinal Contractor, Inc is being required to determine the Oxygen (O₂) and Carbon Monoxide (CO) concentrations of several internal combustion engines at facilities owned and operated by Palm Beach County Water Utility. Specifically, a total of twelve (12) engines will be tested at seven (7) different locations. Catalytic converters are being installed in the exhaust of each of these engines. The purpose of this testing is to show compliance with the newly promulgated RICE (Reciprocating Internal Combustion Engine) MACT (Maximum Achievable Control Technology) rule set forth by the United States Environmental Protection Agency (USEPA). Compliance with the RICE MACT regulations will be accomplished through the simultaneous measurements of O₂ and CO at the inlet and outlet locations of each engine's catalytic converter. This rule states that the (CO) emissions should be reduced by at least 70%.

SCOPE OF WORK

South Florida Environmental will provide the necessary labor and equipment to complete the compliance RICE MACT testing on the 12 engines at all 7 locations. Testing on each engine will consist of 3-1 hour runs consisting of the following:

2257 VISTA PARKWAY / SUITE 25 / WEST PALM BEACH, FLORIDA 33411
tel 561.687.5300 / fax 561.687.3676 / www.sfenviroservices.com

An Eastmount Company

- 1) Measure oxygen (O₂) and carbon monoxide (CO) emissions at the "inlet"
- 2) Measure oxygen (O₂) and carbon monoxide (CO) emissions at the "outlet"

SFES will utilize two O₂ analyzers and two CO analyzers for the sampling. The data from these analyzers at the inlet and outlet will be used to determine the destruction efficiency rate for CO. See Table 1 for the test parameters.

Table 1 – Compliance Test Parameters

Parameter	EPA Test Method	Locations	Run Duration	Number of runs per unit
Oxygen (O ₂)	3A	Inlet/Outlet	60 minutes	3
Carbon monoxide (CO)	10	Inlet/Outlet	60 minutes	3

Specifically, South Florida Environmental will perform the following:

Test Protocol

If required, a Test Protocol will be prepared and submitted to Cardinal Contractor, Inc. for review and approval prior to the commencement of testing. The document will summarize the project objectives and will provide details of facility operation, test methods, equipment and procedures.

Pre-Test Preparation

South Florida will prepare all test equipment necessary to complete the proposed program. This includes the proper calibration of all sampling apparatus according to EPA procedures, and obtaining the proper calibration gas standards for instrument analysis. The South Florida field team will transport all testing equipment to the plant and set up at the sampling location(s).

Emissions Testing

All performance testing will be conducted in accordance with 40 CFR Part 60 test procedures. All testing will be conducted by the methods listed in Tables 1 as well as per the schedule presented in Table 2. Throughout testing, South Florida Environmental will continuously monitor progress and notify the facility in a timely manner if an undesired outcome is anticipated.

Data Reduction

Following testing, all data will be reduced on template spreadsheets developed in accordance with the equations found in the individual methods. The CO emission test results will be reported as concentration in ppmvd @ 15 percent O₂ and % (R).



Final Report

South Florida will submit a Draft Test Report Cardinal Contractor, Inc. within 21-days of test completion for review and comment. Following their review, South Florida will make any necessary edits and forward copies of the Final Report to Cardinal Contractor, Inc. Four hard copies and four electronic (PDF) file on CD of each report will be submitted to the client. Incremental charges of \$100 per report will apply for additional hard copies.

The Report will summarize the results of the test program, including details on process operations, test and analytical methodologies and all supporting data in a format acceptable to the client and the Palme Beach County / FDEP. The Report Appendices will also include copies of all equipment calibrations, gas cylinder certification sheets and facility process data pertinent to each aspect of the test program, as applicable.

SCHEDULE

The test program will be carried out over a 6 day period with day 1 being a setup day as indicated below in Table 2

Table 2 - Proposed Test Schedule

Day	Task Description	Onsite Staff
1	<ul style="list-style-type: none"> • Setup at Hagen Ranch Road facility 	1
2	<ul style="list-style-type: none"> • Conduct compliance testing on two engines 	1
3	<ul style="list-style-type: none"> • Conduct compliance testing on two engines 	1
4	<ul style="list-style-type: none"> • Setup at Plant No. 9 • Conduct compliance testing one engine • Setup at Plant No. 8 • Conduct compliance testing one engine 	1
5	<ul style="list-style-type: none"> • Setup at Plant No. 3 • Conduct compliance testing on two engines 	1
6	<ul style="list-style-type: none"> • Setup at Plant No. 2 • Conduct compliance testing on two engines 	1
7	<ul style="list-style-type: none"> • Setup at Southern Region Operation Center • Conduct compliance testing one engine • Setup at Northern Region Operation Center • Conduct compliance testing one engine 	1
8	LRWTP # 11	1

MB

CLIENT RESPONSIBILITIES



The client will be responsible for providing the following accommodations throughout the test program:

- Installation of adequate and functional sampling ports
- Safe access to all sampling ports and locations
- Maintenance of operations throughout the test program
- Collection of pertinent process data
- Adequate power to operate testing and support equipment. This will consist of a single 50-amp circuit of 208 VAC service for the mobile CEMS trailer and two 15-amp 110VAC circuits at each testing location.

SAFETY

South Florida Environmental will abide by all safety rules and worker protection policies set forth by the client/facility, and will attend safety meetings as required to gain access to the plant. All test personnel will be equipped with hard hats, safety glasses, work gloves, boots, fall protection, hearing protection and respirators, as required. All such safety equipment will meet OSHA and /or other applicable regulations.

A copy of South Florida's **Employee Safety Manual** will be provided upon request. It will contain all of the company's latest safety policies and practices including our Emergency Response Plan and Safety Programs.

STAFFING

This project will be carried out by a Team of qualified, senior environmental professionals with extensive compliance testing experience at industrial/combustion facilities and in-depth knowledge of EPA/FDEP emissions testing requirements. The proposed test crew will be led by Mr. Francis Morlu.

- **Francis Morlu, QSTI** - Mr. Morlu will serve as the overall Project Manager for this effort, responsible for managing the entire effort, including developing protocols, attending meetings, managing the field effort, assisting in the field laboratory, reducing all data, and preparing the Final Report. He has over 20 years of air quality testing experience and currently serves as South Florida's Vice President of Technical Services. He has been assigned to this effort based on his vast knowledge and experience in completing testing programs such as this one. He is thoroughly familiar with all of the required test methods referenced in this proposal, and has conducted hundreds of tests for criteria pollutants similar to this program. He will be accountable to Cardinal Contractor officials and South Florida's President for the successful, timely and cost-effective implementation of the proposed effort.

Across his 20 plus year career as an air quality test professional, Mr. Morlu has established an untarnished reputation with both Florida DEP and USEPA regulatory officials.



QUALITY ASSURANCE

As the majority of our emissions testing work is done for compliance, operational or research purposes, strict Quality Control (QC) procedures are incorporated into our everyday work performance. The following quality considerations will be adhered to throughout the program:

- Sampling will be conducted by trained personnel with extensive experience in EPA Reference Method testing. The Program Manager is QSTI-certified with respect to the methods being utilized on this program.
- All sampling and analysis will be conducted in strict accordance with EPA test procedures. The applicable quality control procedures found in the "EPA Quality Assurance Handbook for Air Pollution Measurement Systems (Vol. III)" will be followed at all times.
- All calculations will be conducted in strict accordance with the equations found in the individual methods, and will be checked by a senior staff member to ensure accuracy.

Eastmount Environmental (South Florida Environmental's parent company) has established and implements a Quality Management System that conforms to all of the requirements of the ASTM D 7036-04 quality standard entitled "Standard Practice for Competence of Air Emission Testing Bodies (AETB)". The policies and procedures established within the company's Quality Management System will be applied to this program.

PROJECT COSTING

The cost to conduct the emissions test program as described herein is presented below. These costs include all equipment preparation, travel, setup, field-testing, breakdown, data reduction, final report preparation, and associated project expenses (per diem, calibration gases, mileage and miscellaneous charges) for the entire program.

Compliance Testing Services (O₂ & CO on 12 Diesel Engines) \$ 15,400 + 3,600

FOR LBWTP

The costing for this program is based on completing the testing over a 6 day period (as outlined in Table 2) time period. If additional testing is required or requested, the following cost will be added for the crew size:

MR

	1-person	2-person
Hourly Rate / per hour ¹ :	\$ 150	\$ 300

¹ Based on a specified-person crew and does not include project expendables or the analysis of additional samples.



Daily Rate²: \$1,500 \$ 3,050

The above-quoted costs will not be exceeded provided that there are no delays or changes in the scope of work. Out-of-scope services, additional testing requested by the client or delays beyond the control of South Florida Environmental personnel will be invoiced in accordance with the listed incremental hourly and/or daily rates and billed at the completion of the field program.

CONDITIONS OF ENGAGEMENT

Billing for services is based on the Scope of Work as presented above. Invoices will be submitted in accordance with the following milestone schedule unless mutually agreed to otherwise.

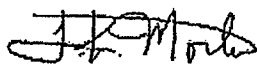
<u>Milestone</u>	<u>Invoice Amount</u>
Completion of Field Program	100%

All work conducted by South Florida Environmental Services on this program will be invoiced, unless mutually agreed to otherwise, in accordance with our "Terms & Conditions", a copy of which is attached.

South Florida Environmental appreciates this opportunity to help support Cardinal Contractor's air quality management and control programs. We hope that this proposal adequately meets your needs and requirements; and provides the necessary information upon which to evaluate our overall proposed program. If you have any questions regarding this proposal or require additional information, please do not hesitate to call me at (561) 687-5300 or on my cell phone at (561) 644 7979. We look forward to working with you on this program.

Sincerely,

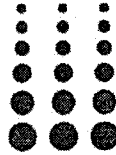
SOUTH FLORIDA Environmental Services, LLC



Francis K Morlu, QSTI
Vice President / Technical Services

² Based on an 8-hour day and includes per diem, travel costs, and equipment charges; does not include project expendables or the analysis of additional samples.





SOUTH FLORIDA ENVIRONMENTAL SERVICES
Air Quality Specialists

TERMS & CONDITIONS

Expenses – All expenditures incurred on behalf of the client will be invoiced including, but not limited to, subcontracted services, expendable materials, chemicals, reagents and supplies, hardware, lumber, ice, etc.

Equipment – All equipment used will be charged per Eastmount's equipment rates (see Proposal).

Laboratory Services – All laboratory services performed will be charged according to Eastmount's laboratory services rates (see Proposal).

Travel – Travel expenses incurred on behalf of the client will be invoiced as follows: Automobiles at the rate of 75 cents per mile plus tolls; vans at a rate of \$1.00 per mile plus tolls; trucks and mobile laboratories at the rate of \$1.25 per mile and \$150.00 per day plus tolls; public transportation, airfare, taxi, parking, etc., will be billed at cost.

Lodging and Meals – Lodging will be invoiced at local motel rates—Holiday Inn or comparable. Meals will be invoiced at a rate of \$50.00 per day per person.

Administrative Charge – All of the above expenses (excluding labor) will be invoiced at Eastmount Environmental's cost plus a 20% administrative charge.

Test Site Requirements – The client will provide safe access to test locations. It is the client's responsibility to provide the necessary scaffolding, electrical outlets, test ports, test equipment support systems, and access to port sites. Operational data, fuel samples, process information, etc., required during testing will be provided by plant personnel.

Postponements and Cancellations – All expenditures and services performed on behalf of the client prior to the postponements or cancellation of scheduled work are subject to the rate and expense schedule specified above and will be invoiced accordingly. All subsequent expenditures and services associated with rescheduling, additional equipment preparation, travel, etc., will be invoiced according to the rate and expense schedule specified above. In addition, penalty charges will be assessed if postponement or cancellation occurs within 5 work days of the scheduled test date. When scheduled work is postponed or cancelled, the work that falls within the 5 work day period will be invoiced at full rates.

Delays – Delays will be subject to invoicing at the "Rate Schedule" (see Proposal) to a maximum of eight hours per day, unless actual time at the facility exceeds that amount. Then actual time will be invoiced. Client request for equipment or manpower to remain available on an "on call" basis will be subject to full hourly rate invoicing.

Payment Terms – Invoices are prepared on a monthly basis and are due upon receipt. Invoices are past due 30 days after the invoice date. Past due balances will be charged an interest rate of 1.5% per month, compounded monthly. Delinquent accounts will be turned over to a collection agency or assigned to an attorney for collection. Both collection costs and reasonable attorney fees will be added to the original amount past due and interest will continue to accrue.

Authorization – Authorization to proceed, whether written or verbal, constitutes the client's acceptance of the terms and conditions specified in these General Parameters.

Duration of Proposal – The proposal accompanying these terms is valid for 60 days from the proposal date. Estimated costs, schedules for completion, personnel commitments, and overall scope of work may be renegotiated should acceptance and authorization to proceed not be received within 60 days

.Effective 1-1-13

2257 VISTA PARKWAY / SUITE 25 / WEST PALM BEACH, FLORIDA 33411
tel 561.687.5300 / fax 561.687.3676 / www.sfenviroservices.com

An Eastmount Company

Energy Efficient Electric, Inc.
1600 Mercer Ave. Unit 6
West Palm Beach, FL. 33401
Phone (561) 655-7211 Fax (561) 655-9661
Mobile (561) 722-1381
E-Mail Address: rene@energyeff.com
State License #EC 0001096

October 16, 2013
Electrical Scope of Work
PBC RICE NESHAP Compliance
Revised Budget # 5

We are pleased to provide your firm with our scope and proposal for the necessary electrical work on the above referenced project. Our scope and proposal is based on a scope of work produced by Michael Brandao.

Included:

1. Install a total of 12 GCS control panels furnished by others.
2. Furnish and install conduit and wire for 120 volts to each of the GCS control panels per revised assumptions.
3. Furnish and install conduit and wire from the GCS control panel to the (4) instruments on the cat converters.
4. Furnish and install conduit and ethernet cables from the existing PLC to the GCS panels where generators are located in the same building as the PLC.
5. Furnish and install conduit and fiber optic from the existing PLC to the GCS panels where the generators are located outside the buildings as the PLC.
6. Redo existing lightning protection at Lake Region and SROC for relocated mufflers.

Excluded:

1. Permit fees.
2. F/O convertors.
3. PLC and scada programming.
4. Concrete and asphalt cutting and patching.
5. Housekeeping pads.

<u>Northern Region Operation Center (1 Gen)</u>	<u>\$15,145</u>
<u>Southern Region Operation Center (1 Gen)</u>	<u>\$13,637</u>
<u>WTP 2 (2 Gen)</u>	<u>\$22,265</u>
<u>WTP 3 (2 Gen)</u>	<u>\$24,382</u>
<u>WTP 8 (1 Gen)</u>	<u>\$12,191</u>
<u>Southern Region Water Reclamation Facility (4 Gen)</u>	<u>\$44,433</u>
<u>Lake Region (1 Gen)</u>	<u>\$15,967</u>
<u>Lump Sum</u>	<u>\$148,020</u>

We appreciate the opportunity to quote your organization on this project. If you have any questions, please call me at the office.

Thank You Very Kindly,

Rene Viau

Vice President

Residential ----- Lighting Systems ----- Commercial ----- Industrial



Calvin, Giordano & Associates, Inc.
 EXCEPTIONAL SOLUTIONS
 560 Village Blvd., Suite 340, West Palm Beach, Florida 33409
 Phone: 561.684.6161 • Fax: 561.684.6360

**ATTACHMENT E - WORK AUTHORIZATION
 SCHEDULE OF BID ITEMS**

Certificate of Authorization No. 514		DATE October 10, 2013
Project Title	CGA PROJECT NO.	
Emergency Generator RICE NESHAP Rule Compliance	11-4416.17	
WA Number	PBC WUD Project No.	
WA-5	13-075	

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #1	Data Collection and Survey			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	0	\$ 190.00	\$ -
	Director, Engineering (V)	0	\$ 165.00	\$ -
	Project Manager (IV)	103	\$ 145.00	\$ 14,935.00
	Project Engineer (III)	0	\$ 125.00	\$ -
	Engineer (II)	101	\$ 105.00	\$ 10,605.00
	CADD Technician (Engineering)	0	\$ 95.00	\$ -
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	204.00		\$ 25,540.00
	Subconsultants (10% Markup)	Fee	Markup (10%)	
	EDA (Electrical) SBE	\$ 5,233.80	\$ 523.38	\$ 5,757.18
	RADISE (Geotech) SBE	\$ -	\$ -	\$ -
	AGA (Structural) SBE	\$ -	\$ -	\$ -
	Colome' (Architectural) SBE	\$ -	\$ -	\$ -
	Cardinal (Contractor)	\$ -	\$ -	\$ -
	Engineering Task Subconsultant Subtotal	\$ 5,233.80	\$ 523.38	\$ 5,757.18
			Task #1 Total	\$ 31,297.18

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #2	60% Design Submittal			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	10	\$ 190.00	\$ 1,900.00
	Director, Engineering (V)	0	\$ 165.00	\$ -
	Project Manager (IV)	130	\$ 145.00	\$ 18,850.00
	Project Engineer (III)	0	\$ 125.00	\$ -
	Engineer (II)	150	\$ 105.00	\$ 15,750.00
	CADD Technician (Engineering)	0	\$ 95.00	\$ -
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	290.00		\$ 36,500.00
	Subconsultants (10% Markup)	Fee	Markup (10%)	
	EDA (Electrical) SBE	\$ 11,817.52	\$ 1,181.75	\$ 12,999.27
	RADISE (Geotech) SBE	\$ -	\$ -	\$ -
	AGA (Structural) SBE	\$ -	\$ -	\$ -
	Colome' (Architectural) SBE	\$ -	\$ -	\$ -
	Cardinal (Contractor)	\$ -	\$ -	\$ -
	Engineering Task Subconsultant Subtotal	\$ 11,817.52	\$ 1,181.75	\$ 12,999.27
			Task #2 Total	\$ 49,499.27

Work Activity	Employee Classification	Hours	Hourly Rate	Total
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Task #3 100% Design Submittal

Engineering Services

Calvin, Giordano & Associates

Associate, Engineering (VI)	10	\$	190.00	\$	1,900.00
Director, Engineering (V)	0	\$	165.00	\$	-
Project Manager (IV)	78	\$	145.00	\$	11,310.00
Project Engineer (III)	0	\$	125.00	\$	-
Engineer (II)	78	\$	105.00	\$	8,190.00
CADD Technician (Engineering)	0	\$	95.00	\$	-
CADD Technician (Surveying)	0	\$	95.00	\$	-
Senior Registered Surveyor	0	\$	145.00	\$	-
Registered Surveyor	0	\$	130.00	\$	-
Survey Crew	0	\$	135.00	\$	-
Soft Dig (per hole)	0	\$	480.00	\$	-
Utility Locates (per hour)	0	\$	205.00	\$	-

Engineering Task Labor Subtotal 166.00 **\$ 21,400.00**

Subconsultants (10% Markup)

		Fee		Markup (10%)	
EDA (Electrical)	SBE	\$ 6,486.48	\$	648.65	\$ 7,135.13
RADISE (Geotech)	SBE	\$ -	\$	-	\$ -
AGA (Structural)	SBE	\$ -	\$	-	\$ -
Colome' (Architectural)	SBE	\$ -	\$	-	\$ -
Cardinal (Contractor)		\$ -	\$	-	\$ -

Engineering Task Subconsultant Subtotal \$ 6,486.48 **\$ 648.65** **\$ 7,135.13**

Task #4 Total \$ 28,535.13

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #4	Pre-Construction Meeting and Shop Drawing Review			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	0	\$ 190.00	\$ -
	Director, Engineering (V)	0	\$ 165.00	\$ -
	Project Manager (IV)	74	\$ 145.00	\$ 10,730.00
	Project Engineer (III)	0	\$ 125.00	\$ -
	Engineer (II)	36	\$ 105.00	\$ 3,780.00
	CADD Technician (Engineering)	0	\$ 95.00	\$ -
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	110.00		\$ 14,510.00

Subconsultants (10% Markup)		Fee	Markup (10%)	Total
EDA (Electrical)	SBE	\$ 4,524.52	\$ 452.45	\$ 4,976.97
RADISE (Geotech)	SBE	\$ -	\$ -	\$ -
AGA (Structural)	SBE	\$ -	\$ -	\$ -
Colome' (Architectural)	SBE	\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -
	Engineering Task Subconsultant Subtotal	\$ 4,524.52	\$ 452.45	\$ 4,976.97

Engineering Task Total \$ 19,486.97

Construction Services

Cardinal Construction		Fee	Markup (0%)	Total
Guaranteed Maximum Price (Excluding subcontractors below)		\$ -	0%	\$ -
Subcontractors (10% Markup)		Fee	Markup (10%)	Total
1	SBE	\$ -	\$ -	\$ -
2	SBE	\$ -	\$ -	\$ -
3	SBE	\$ -	\$ -	\$ -
4	SBE	\$ -	\$ -	\$ -
	Subcontractor Subtotal	\$ -	\$ -	\$ -
	Construction Task Total	\$ -	\$ -	\$ -

Task #6 Total \$ 19,486.97

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #5	Construction Services			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	0	\$ 190.00	\$ -
	Director, Engineering (V)	0	\$ 165.00	\$ -
	Project Manager (IV)	100	\$ 145.00	\$ 14,500.00
	Project Engineer (III)	0	\$ 125.00	\$ -
	Engineer (II)	108	\$ 105.00	\$ 11,340.00
	CADD Technician (Engineering)	0	\$ 95.00	\$ -
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	208.00	\$	25,840.00

Subconsultants (10% Markup)	Fee	Markup (10%)	Total
EDA (Electrical) SBE	\$ 5,233.80	\$ 523.38	\$ 5,757.18
RADISE (Geotech) SBE	\$ -	\$ -	\$ -
AGA (Structural) SBE	\$ -	\$ -	\$ -
Colome' (Architectural) SBE	\$ -	\$ -	\$ -
Engineering Task Subconsultant Subtotal	\$ 5,233.80	\$ 523.38	\$ 5,757.18

Engineering Task Total \$ 31,597.18

Construction Services		Fee	Markup	Total
Cardinal Construction	Guaranteed Maximum Price (Excluding subcontractors below)		0%	\$0.00
Subcontractors (10% Markup)		Fee	Markup (10%)	Total
1	SBE	\$ -	\$ -	\$0.00
2	SBE	\$ -	\$ -	\$0.00
3	SBE	\$ -	\$ -	\$0.00
4	SBE	\$ -	\$ -	\$0.00
	Subcontractor Subtotal	\$ -	\$ -	\$0.00
	Construction Task Total	\$ -	\$ -	\$ -

Task #7 Total \$ 31,597.18

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #6	Project Close-Out			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	0	\$ 190.00	\$ -
	Director, Engineering (V)	0	\$ 165.00	\$ -
	Project Manager (IV)	36	\$ 145.00	\$ 5,220.00
	Project Engineer (III)	0	\$ 125.00	\$ -
	Engineer (II)	44	\$ 105.00	\$ 4,620.00
	CADD Technician (Engineering)	0	\$ 95.00	\$ -
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	80.00		\$ 9,840.00

Subconsultants (10% Markup)		Fee	Markup (10%)	Total
EDA (Electrical)	SBE	\$ 577.72	\$ 57.77	\$ 635.49
RADISE (Geotech)	SBE	\$ -	\$ -	\$ -
AGA (Structural)	SBE	\$ -	\$ -	\$ -
Colome' (Architectural)	SBE	\$ -	\$ -	\$ -
Engineering Task Subconsultant Subtotal		\$ 577.72	\$ 57.77	\$ 635.49

Engineering Task Total \$ 10,475.49

Construction Services		Fee	Markup	Total
Cardinal Construction				
Guaranteed Maximum Price (Excluding subcontractors below)			0%	\$0.00

Subcontractors (10% Markup)		Fee	Markup (10%)	Total
1	SBE	\$ -	\$ -	\$0.00
2	SBE	\$ -	\$ -	\$0.00
3	SBE	\$ -	\$ -	\$0.00
4	SBE	\$ -	\$ -	\$0.00
Subcontractor Subtotal		\$ -	\$ -	\$0.00

Construction Task Total \$ -

Task #8 Total \$ 10,475.49

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Totals				
Engineering Services				
Calvin, Giordano & Associates				
	Associate, Engineering (VI)	20	\$ 190.00	\$ 3,800.00
	Director, Engineering (V)	0	\$ 165.00	\$ -
	Project Manager (IV)	521	\$ 145.00	\$ 75,545.00
	Project Engineer (III)	0	\$ 125.00	\$ -
	Engineer (II)	517	\$ 105.00	\$ 54,285.00
	CADD Technician (Engineering)	0	\$ 95.00	\$ -
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
Engineering Project Labor Subtotal		1058.00	\$	133,630.00

Subconsultants (10% Markup)		Fee	Markup (10%)	Total
EDA (Electrical)	SBE	\$ 33,873.84	\$ 3,387.38	\$ 37,261.22
RADISE (Geotech)	SBE	\$ -	\$ -	\$ -
AGA (Structural)	SBE	\$ -	\$ -	\$ -
Colome' (Architectural)	SBE	\$ -	\$ -	\$ -
Engineering Project Subconsultant Subtotal		\$ 33,873.84	\$ 3,387.38	\$ 37,261.22

Engineering Task Total **\$ 170,891.22**

Construction Services

Cardinal Construction	Fee	Markup	Total
Guaranteed Maximum Price (Excluding subcontractors below)		0%	\$ -

Subcontractors (10% Markup)		Fee	Markup (10%)	Total
1	SBE	\$ -	\$ -	\$ -
2	SBE	\$ -	\$ -	\$ -
3	SBE	\$ -	\$ -	\$ -
4	SBE	\$ -	\$ -	\$ -
Subcontractor Subtotal		\$ -	\$ -	\$ -

Construction Project Total **\$ -**

Construction Total	\$ -
Engineering Total	\$ 170,891.22
Project Sub-Total	\$ 170,891.22

WA GRAND TOTAL **\$ 170,891.22**