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CITY OF UNALASKA

FEBRUARY 19, 2014

ADDENDUM 08

TO: ALL PLAN HOLDERS

**SUBJECT: INVITATION TO BID
UNALASKA PYRAMID WATER TREATMENT PLANT – LT2 UPGRADE
PROJECT NUMBER: DPW # 13401**

BID DATE: Thursday, March 13, 2014 2:00 PM (AST)

This addendum consists of: Three (3) 8½” x 11” sheets. Three (3) attachments (1 pg, 4 pgs and 1 sketch respectively).

The following corrections, changes, additions, deletions, revisions, and or clarifications are hereby made a part of the documents for the Unalaska Pyramid Water Treatment Plant – LT2 Upgrade dated December 6, 2013. In case of conflicts between this Addendum and previously issued documents, this Addendum shall take precedence.

Note to Bidders: Bidders are required to acknowledge this addendum on the bid form.

GENERAL CLARIFICATION:

NONE

CHANGES TO SPECIFICATIONS:

1. Section 00300-7 (previously replaced in Addendum 06): Replace Bid Proposal with Attachment 1, “Bid Proposal Form” of this Addendum.
2. Section 01300, 1.06B: Add “If an alternate material and/or method is to be considered for City acceptance, Contractor shall submit sufficient information to demonstrate that the proposed alternate is equivalent or equal to the originally specified item, as required in the General Conditions.”
3. Section 05500, 1.02.A: Delete 1.02.A.
4. Section 15200, 3.09.A: Delete 3.09.A.
5. Section 15260, 2.04.A.3.b: Delete 2.04.A.3.b.



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6. Section 15270 2.05.D.1.f: Add “Pneumatic cylinder shall be provided and installed with the valve.
7. Section 15271: Replace in its entirety with Attachment 2, “Section 15271 - Process - Motor Operated Butterfly Valves Rev1” of this Addendum.
8. Section 16724 2.08: Delete 2.08.

CHANGES TO DRAWINGS:

1. Sheet P1.6: Change “SM-101” to “SM-101, Komax 3-Element Hi-Pass 316 stainless steel mixer with 150 pound flanged ends, or approved equal”
2. Sheet P2.1: Replace Instrument Area A with attached sketch SKP-3
3. Sheet P3.0, Valve and Control Schedule, line items PG101, PG102, PG102B, PG103A, PG103B, PG104A, PG104B, PG105A, PG105B, PG106: Change Model No. to “45-1279SL04LM0/160”
4. Sheet P3.0, Valve and Control Schedule, line items PG107A, PG107B, PG108, PG109, PG110, PG111 and PG112: Change Model No. to “45-1279SL04LM0/300”
5. Sheet P3.0, Valve and Control Schedule, line items V100, V101, V102A, V102B, V103A, V103B and V104: Change Model No. to “HP250II”.
6. Sheet P3.1, Valve and Control Schedule, line items V105A, V105B, V106A, V106B, V107A, V107B, V108A and V108B: Change Model No. to “HP250II”.
7. Sheet P3.1, Valve and Control Schedule, line items V111, V113, V130, V187, V190 and V191: Change Size to “1/4”.
8. Sheet P3.1, Valve and Control Schedule, line item V129: Change Size to “1/4” and Type to “OP/CL”.
9. Sheet P3.1 Valve and Control Schedule, line items V138 and V140: Change Size to “1/2”.
10. Sheet P3.2, Valve and Control Schedule, line items V195, V197, V209 and V224: Change Size to “1/4”.
11. Sheet P3.2, Valve and Control Schedule, line item V225: Change Size to “3/8”.
12. Sheet P3.2, Valve and Control Schedule, line items VG101, VG102, VG103, VG104 and VG105: Change Model No. to “45-1279-SSL-04L 30/0” Hg IMV”.
13. Sheet A1.2, Detail 1: Change “Safety Railing” to “Premanufactured fiberglass guardrail and handrail system to meet OSHA strength and dimension requirements”



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14. Sheet A4.1, Detail 5: Delete notes “2x4 top rail”, “1x6 horizontals”, “4x4 posts” and “2x4 toe kick”. Add note “Premanufactured fiberglass guardrail and handrail system to meet OSHA strength and dimension requirements”.
15. Sheet S1.0, Design Criteria: Replace “International Building Code (IBC) 2006” with “International Building Code (IBC) 2009”.
16. Sheet S1.0, Design Criteria: Replace “Importance Factor - 1.15” with “Importance Factor - 1.25”.
17. Sheet S1.1: Delete Note regarding foundation design.
18. Sheet E2.2, Detail 1: Delete the note “Connection to sprinkler pre-action panel”
19. Sheet E3.1, Panel ‘UV’ circuits 8, 10 & 12: Change circuit breaker Amps to “15”, Service to “V100, V101, V102(A) & (B)”.
20. Sheet E3.1, Panel ‘UV’ circuits 20, 22 & 24: Change circuit breaker Amps to “15”, Pole to “3”, Service to “V104, V105(A) & (B)”.

RESPONSES TO CONTRACTOR QUESTIONS:

Q.1. 8 diaphragm seals with fill fluid ... we need to attach to a gauge to be able to fill. Are we to assume that 8 of the 10 pcs. P/N: 45-1279SL04LMF 0/160 are to be attached?

A. Yes.

Q.2. Multiple sections refer to 09900, however I can find no 9900 in the specifications. Should these be referring to 09960 instead?

A. Yes, see *Changes to the Specifications Above.*

ATTACHMENTS:

- Attachment 1. Bid Proposal Form
- Attachment 2. Section 15271 - Process - Motor Operated Butterfly Valves Rev1
- SKP3 – INSTRUMENT AREA A ARRANGEMENT

BID PROPOSAL
City of Unalaska
PYRAMID WATER TREATMENT PLANT - LT2 UPGRADE

ITEM NO.	ESTIMATED QUANTITY	DESCRIPTION (Write Unit Bid Price in Words)
1	Lump Sum	All work necessary for a complete functional Water Treatment Plant as described in these documents except what is described below as an Alternate. _____ Per lump sum
Alternate A	Lump Sum	Buried Pipe Portion of the Discharge Water Line. Includes all work associated with installation of the buried 24" diameter ductile iron pipe between Station 0+50 and 1+50 as described on Drawing C1.3, Buried Discharge Water Line Plan and Profile. _____ Per lump sum
Alternate B	Lump Sum	Above Ground Pipe Portion of the Discharge Water Line. Includes all work associated with installation of the above ground 24" diameter ductile iron pipe between Station 0+50 and 1+50 as described on Drawing C1.4, Above Ground Discharge Water Line Plan and Profile. _____ Per lump sum

Item No. 1 Price: \$ _____

Item No. 1 Price (in words): _____

Alternate A Price: \$ _____

Alternate A Price (in words): _____

Alternate B Price: \$ _____

Alternate B Price (in words): _____

Bidding Company: _____

Name (Printed): _____

Signature: _____ Date: _____

Contractors License No. _____ Business License No. _____

SECTION 15271
PROCESS - MOTOR OPERATED BUTTERFLY VALVES Rev1

PART 1 GENERAL**1.01 SUMMARY**

- A. Motor Operated valve and operators, mechanical design and motor controls.
- B. Valve & Actuator Assembly & Testing
- C. Installation & Testing.

1.02 REFERENCES

- A. American Water Works Association (ANSI/AWWA C540-02 Power-Actuating Devices for Valves and Slide Gates)
- B. National Electrical Manufacturer's Association (NEMA)
- C. NSF/ANSI – 61 Drinking Water System Components – Health Effects.
- D. ASTM A48 – Standard Specifications for Gray Iron Castings.
- E. ASTM A126 – Standard Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
- F. ASTM A240 – Standard Specification for Heat-Resisting Chromium and Chromium Nickel Steel Plate, Sheet, and Strip for Pressure Vessels.
- G. ASTM A536 – Standard Specification for Ductile Iron Castings.
- H. AWWA C504 – Rubber Seated Butterfly Valves.
- I. AWWA C550 – Protective Epoxy Interior Coatings for Valves and Hydrants..

1.03 SUBMITTALS

- A. Design Data: Submit operating torque calculations for each valve size and class. Show minimum and maximum rated torque output for the operators supplied. Size operators for 2 times the maximum valve seating/unseating torque.
- B. Manufacturer's catalog information, descriptive literature, and specifications.
- C. Electrical wiring diagrams, for each assembly.
- D. Manufacturer's Installation & Operating Instructions
- E. Equipment Assembly: Make, model, and weight of each assembly.
- F. Certification that supplied products meet or exceed the requirements of all referenced specifications.

1.04 QUALITY ASSURANCE

- A. All manufacturers must have at least 10 years of experience with the specified product.
- B. Special shipping, storage and protection, and handling instructions.
- C. Certificate of Proper Installation & Operation
- D. Test each valve body under test pressure equal to twice its design water-working pressure unless otherwise specified.
- E. Provide records of tests performed on valves or component parts thereof that are required by AWWA Valve Standard specified in these Specifications if requested by Engineer within one-year period after acceptance.
- F. Provide Affidavit of Compliance with specified AWWA Valve Standard or section 1.4 of AWWA C550 for each lot of valve size furnished for work.

1.05 OPERATION AND MAINTENANCE MANUALS

- A. Submit operation and maintenance (O&M) instructions for each unit supplied. O&M instructions shall be submitted after all submittals specified in paragraph 1.03 have been

returned "No exceptions taken" or "Make corrections as noted." O&M instructions shall reflect the approved materials and equipment.

PART 2 PRODUCTS

2.01 ELECTRIC ACTUATOR

- A. Manufacturer:
 - 1. AUMA, or engineer approved equal
- B. Electric Actuator Design:
 - 1. Actuator Sizing
 - a. The actuator shall be sized for an operating torque equal to twice the maximum required valve operating torque under the specified flow conditions.
 - b. The operating speed shall provide valve closing and opening at approximately 60 seconds for quarter turn valves. Actuator shall have an Interface Board for pulse control to extend the stroke time as programmed/controlled from the PLC.
 - c. Isolation service actuators shall have 60 start/stops per hour rating and modulating service valves shall have up to 1200 start/stops per hour rating
 - 2. Environmental
 - a. Actuators shall be suitable for indoor and outdoor use. The actuator shall be capable of functioning in an ambient temperature ranging from -20°F to +140°.
 - 3. Enclosure
 - a. Actuators shall be o-ring sealed, watertight and weatherproof CSA-US Type 4 enclosure. All external fasteners shall be of stainless steel. All gear cases shall be cast iron.
 - 4. Motor
 - a. Motor Voltage shall be 480/3/60. The electric motor shall be Class F insulated, with a duty rating of at least 15 minutes at 104°F (40°C). Motor shall be specifically designed and built by the actuator manufacturer for electric actuator service. Commercially available motors shall not be acceptable. Electrical disconnection of the motor shall be by means of a plug and socket and motor removal shall be possible without loss of lubricant.
 - 5. Motor Protection
 - a. The following criteria shall be provided for motor protection: The motor shall be de-energized in the event of an over torque condition; A minimum of three thermal devices imbedded in the motor windings shall be provided to de-energize the motor in case of overheating.
 - 6. Gearing
 - a. The actuator gearing shall be totally enclosed in a grease-filled cast iron gear case suitable for operation in any orientation. Actuator gearing shall be hardened steel with alloy bronze worm wheel. Where required per application, electric actuators will be provided with worm gearboxes. The worm gearboxes shall be supplied with full
 - b. 360° bronze worm wheels and end-of-travel mechanical stops on the worm shaft. Designs with segmented worm gears and end-of-travel stops in the gearbox housing will not be permitted.
 - 7. Manual Operation
 - a. Manual operation shall be by handwheel. Manual operation shall utilize the actuator worm shaft/worm wheel to maintain self-locking gearing and to facilitate changeover from motor to manual operation when the actuator is under load. The declutching from motor operation shall be at the motor shaft to minimize declutching effort. Return from manual to electric mode of operation will be automatic upon motor operation. A seized or inoperable motor shall not prevent manual operation.
 - 8. Valve Position Switches
 - Limit switches shall be furnished at each end of travel. Limit switch adjustment shall not be altered by manual operation. Limit switch drive shall be by counter-gear. Limit

- switches must be capable of quick adjustment requiring no more than five (5) turns of the limit switch adjustment spindle.
- a. Motor Control: One set of normally open and one set of normally closed contacts shall be furnished at each end of travel.
 - b. Position Indication: One set of normally open and one set of normally closed contacts shall be furnished at each end of travel.
 - c. Intermediate Positions: Two set of normally open and two set of normally closed contacts shall be furnished for intermediate positions, where indicated.
9. Torque Switches
- a. Mechanically operated torque switches shall be furnished at each end of travel. Torque switches will trip when the valve load exceeds the torque switch setting. The torque switch adjustment device must be calibrated directly in engineering units of torque in foot pounds.
10. Position Transmitter
- a. The actuator shall have an RWG position transmitter with 4 - 20 mA output and be
 - b. internally powered with 24 VDC.
11. Motor Controls
- All actuators shall be furnished with Auma AM01.2 Electromechanical Motor Controls. The use of microprocessor programmable motor controls shall not be acceptable. Motor controls shall include:
- a. Reversing Starters - Mechanically & Electrically Interlocked
 - b. Control Transformer
 - c. 24 VDC Interface Board (pulse control)
 - d. Control Inputs: OPEN / CLOSE
 - e. Collective Fault Relay (potential-free NO/NC contact max. 250 VAC / 0.5A) for (torque fault, phase failure, motor thermal switch tripped)
 - f. 4 potential-free NO contacts with one common (max 250 VAC / 0.5 A) configured as follows: CLOSED position reached; OPEN position reached; selector switch in REMOTE; selector switch in LOCAL
 - g. Local Controls with 3 Push Buttons, Selector Switch and 3 Pilot Lights
12. Wiring and terminals
- a. Internal wiring shall be tropical grade insulated stranded cable of appropriate size for the control and 3-phase power. All external wiring shall terminate in a removable plug and socket head, which allows easy disconnection of all power and control voltages.
 - b. A double seal shall be included to protect against the ingress of water and/or dust.
13. The actuator shall be the Auma SA07.6-54B/GS100.3/VZ4.3/AM01.2 or Auma as supplied by Specialty Controls Inc, Duvall, WA or approved equal.

2.02 BUTTERFLY VALVES

- A. Manufacturer and model:
 1. Pratt HP250II
 2. Engineer approved equal.
- B. Butterfly Valve Design
 1. All butterfly valves shall be of the tight-closing, rubber-seated type, conforming to the design standards of ANSI/AWWA C504 latest revision, except where noted herein. Valves shall be bubble-tight at the rated pressure in either direction and shall be suitable for a maximum of 16 fps flow. Maximum operating non-shock shut-off pressure and maximum operating non-shock line pressure is 150 psi.
 2. All items shall have the name or symbol of the manufacturer, the nominal size, date of manufacture, and the working pressure for which they are designed, cast, stamped, or permanently marked on the body.
 3. The disc shall utilize an on-center shaft and symmetrical design, cast from Ductile Iron ASTM A536 Gr. 65-45-12. The disc edge shall be stainless steel type 316. Disc shall be retained by pins that extend through the full diameter of the shaft. The pin material shall be

the same as the shaft material. Torque plugs or tangential fasteners shall not be allowed. For valve sizes 3" through 20" the rubber seat shall be of one piece construction, simultaneously molded and bonded directly into the body. The seat material shall be either Buna-N or EPDM rubber. For valves larger than 20", the rubber seat shall be located in the body in a machined dovetail groove retained by an epoxy injection system. Seats shall not be located on the disc or retained in the body by segments and/or screws.

4. Valves shall be coated with Amercoat 370 or engineer approved equal.
5. The resilient seat shall be Buna-N or EPDM for valves 3" - 24" and shall be simultaneously bonded and vulcanized to body of the valve. All interior surfaces in contact with water, excluding stainless steel and disc, shall be completely epoxy coated using two coats of Ammercoat 370 or engineer approved equivalent. Seats for valves 3"-24" shall be designed so that they will require no internal adjustment or maintenance to seat against a pressure differential of 150 psi on either side of the valve.
6. All bearings shall be of the self-lubricating, corrosion-resistant, sleeve type. Bearings shall be designed for horizontal and/or vertical shaft loading. The valve assembly shall be furnished with a factory set two-way thrust bearing designed to center the valve disc in the valve seat at all times.
7. Shaft packing shall be of the V-type, self-adjusting type and suitable for pressure and vacuum service.
8. The exterior surfaces shall be cleaned and sandblasted and coating shall be applied in accordance with the Manufacturer's instructions. The coating material shall be Amercoat 370, or engineer approved equal. The coating material shall be applied in a minimum of two coats, at 4-5 mils per coat; the total dry thickness shall be 8- 10 mils.

2.03 VALVE & ACTUATOR ASSEMBLY & SHOP TESTING

2.04 ASSEMBLY

- A. The actuator vendor shall assembly and calibrate the valve and actuator assembly in his shop prior to shipment.
- B. The assembly shall be bench tested with cycle times as indicated in this specification. Factory authorized vender shall be Specialty Controls Inc. Duvall, WA or approved equal.

EXECUTION

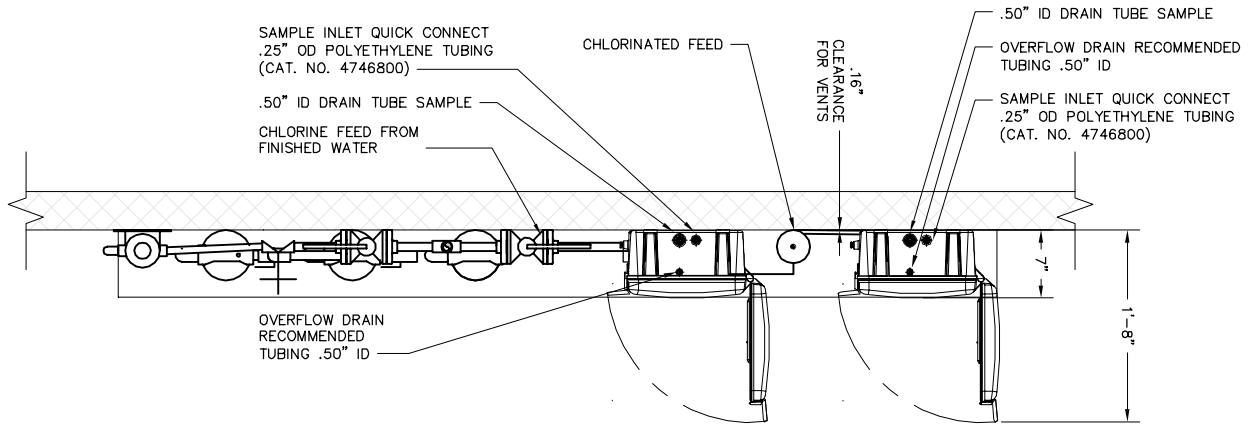
3.01 INSTALLATION

- A. Installation shall be in strict accordance with the Manufacturer's printed recommendations, and the Contract Documents. Valve shaft shall be horizontal as indicated.
- B. Four (4) copies of Final Operations and Maintenance Manuals are to be provided. The manuals shall include but not be limited to the following: installations and adjustment instructions; maintenance procedures and operation parameters; wiring diagrams; control diagrams; and parts list.

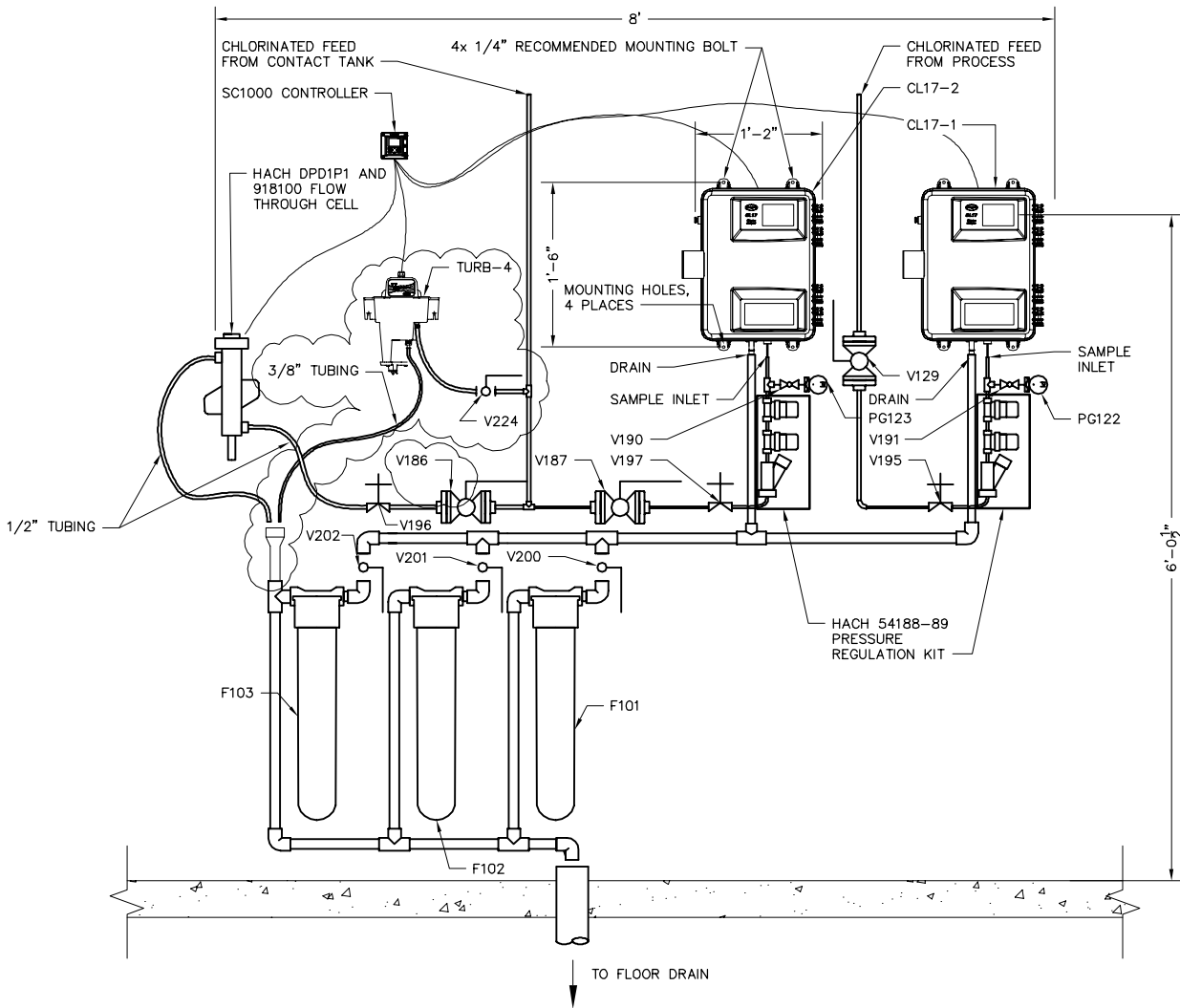
3.02 FIELD QUALITY CONTROL

- A. Upon completion of installation of the motor operated butterfly valves, an acceptance test shall be conducted to verify the satisfactory operation of the valves. The valves must perform in a manner acceptable to the Engineer before final acceptance will be made by the owner.
- B. Start-Up & Training - Actuator Representative Services
 1. The factory authorized actuator representative shall provide start-up services to include; Installation Review, Programming and Cycle Acceptance Testing. In addition, provide a Certificate or Proper Installation & Operation.
 2. Training shall be provided to the water treatment plant personnel to provide for basic operation and maintenance.
 3. One site visit shall be included for 2 days to provide for the above.

END OF SECTION



PLAN VIEW



ELEVATION VIEW

F:\CIVIL PROJECTS\850.01_UNALASKA_WTP\DWG\SKETCHES\850.01_SKC_INSTRUMENT AREA.DWG

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CITY OF UNALASKA
 PYRAMID WTP
 INSTRUMENT AREA A ARRANGEMENT
 (FROM SHEET P2.1)

DESIGNED BY:	DM
DRAWN BY:	CS
DATE:	02/13/14
JOB NO:	850.01
RFI NO:	SHEET NO:
-	SKP3