AGENDA
UTILITY BOARD OF THE CITY OF KEY WEST, FL
REGULAR MEETING 5:00 P.M. - WEDNESDAY, APRIL 24, 2019
1001 JAMES STREET – KEYS ENERGY SERVICES BOARD ROOM

1. Pledge of Allegiance
2. Invocation
3. Mission and Vision
4. Roll Call
5. Set Agenda
6. Recognition and Presentation:
   a) Energy Conservation Calendar Art Contest Winners 2019-2020
   b) Florida Municipal Power Agency (FMPA) Update
7. Informational Items:
   a) Department Staff Report – New FCC Small Wireless Regulations – Nick Batty, Director of Legal & Regulatory Services
   b) Generation Report – March 2019
   c) Quarterly Easement Update
   d) Electrical Reliability Annual Report - 2018
8. Consent Agenda*
   a) Approve Minutes–Regular Utility Board Meeting– April 10, 2019
   b) Approve Disbursements Report
   c) Request for Excused Absence for Steven Wells from the April 10, 2019 Regular Utility Board Meeting
9. Action Items
   a) Approve Extension to Unit Price Contract with Key Iron Works for Underground Trenching and Conduit Services, Bid #11-16
   b) Accept Actuarial Valuation Report as of January 1, 2019, and Approve the Pension Contribution Percentage
   c) Approve Change Order 1 to the contract for the Purchase and Installation of Substation and Critical Facilities Standby Generators, Bid 02-19, C19-0002
10. Public Input / Other Business
11. Adjournment

* Item is considered to be routine and enacted by one motion with no separate discussion, unless requested by a Utility Board Member or citizen, in which event the item will be considered independently.

Peter Batty, Chairman ● Mona Clark, Vice Chair
Timothy Root, Member ● Steven Wells, Member ● Robert Barrios, Member
March 2019 Generation Report

Unit Availability

Goal = 92%

First Starts

Goal = 100%

Notes:

CT 2 had a coupling failure on the shaft for lube oil cooler fan.
CT 4 Turbine Compartment Cooling Fan "B" motor shorted.
EP2 generator instrument current tranformer on phase B neutral failed.
There were no failed starts in March, 2019.
Month:  

March 2019 Generation Report

Monthly Peak Load and Average Generation Available

<table>
<thead>
<tr>
<th>Month</th>
<th>Available</th>
<th>Load</th>
<th>60% Peak</th>
<th>2017-18 On Island Commitment</th>
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<td>Mar-18</td>
<td>109.5</td>
<td>124.6</td>
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<td>Apr-18</td>
<td>118.86</td>
<td>128.5</td>
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<td>May-18</td>
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<td>140.99</td>
<td></td>
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<td>Jun-18</td>
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<td>145.9</td>
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<td>Jul-18</td>
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<td>128.5</td>
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<tr>
<td>Aug-18</td>
<td>108.21</td>
<td>112.07</td>
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<td>Sep-18</td>
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<tr>
<td>Oct-18</td>
<td>117.58</td>
<td>117.58</td>
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<td>Nov-18</td>
<td>118.6</td>
<td>118.6</td>
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<td>Jan-19</td>
<td>118.6</td>
<td>118.6</td>
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<td>Feb-19</td>
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<td>117.58</td>
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<td>118.6</td>
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Inaccessible Facilities Relocation Project
April 2019
Status Update

Executive Summary

Construction
- All KEYS high voltage installation work is complete.
- Removal of the old power lines are ongoing.

Customer Interface
- KEYS continues to have an aggressive outreach program via letters, on-site meetings, dedicated KEYS phone line, website and FAQ’s.
- Current target zone with riser relocations are Fogarty, Staples, Patterson and Harris Avenues; along with Seidenberg and Flagler Avenues.

AT&T, Comcast & City Coordination
- KEYS continues to coordinate with AT&T and Comcast on performing their transfers in accordance with the City’s requirement of a two-year time frame.
  - Letters on the two-year time frame were sent to AT&T and Comcast in January 2013.
    - KEYS has made concerted efforts to have them relocate their facilities.
- City of Key West’s Staff is very helpful and supportive on resolving issues ranging from tree trimming, ADA and pole location concerns on the City’s Rights-of-Ways.
- AT&T, Comcast & the City continue to work together to keep the project moving forward.

Riser Relocations – Key West
- Relocation of risers is taking longer to perform than Staff expected.
- Total of 144-meter relocations to date out of 238. There are 94 meters remaining to relocate.
- The average of the 111 meter rebates processed is $2,081. Thirty-one customers have paid more than the rebate cap of $2,100, with an average of $730 over the maximum.

Riser Relocations – Keys
- Total of 2-meter relocations for the keys to date out of 51. There are 49 meters remaining to relocate.
- The average of the 2 meter rebates processed is $2,100.

Project Cost and Budget
- Project overall funding is on track. There are no issues or concerns at this time.
- KEYS has processed over $235,000 in customer rebates.

Current and Future Issues to Resolve
- KEYS expressed concerns to AT&T and Comcast about their non-conformance to the City resolution of 24 months to transfer to the front.
- AT&T and Comcast relocation required to complete Prado Circle.

Overall Project Summary/Status
- Overall the project is progressing well considering the project’s complexity.
- All KEYS high voltage installation work is complete.
- Customer risers continue to be relocated, but at a slower rate than expected.
- City, AT&T and Comcast are cooperative and helpful. However, local utilities are falling behind on the City’s two-year transfer requirement.
## Inaccessible Easment Update April 2019

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<th>Customers Affected</th>
<th>Meters needing to be modified</th>
<th>Meter Upgrades Completed</th>
<th>Riser Upgrades Completed</th>
<th>Qty of Rebates Paid</th>
<th>Amount of Rebates</th>
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<tr>
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<td><strong>Key West Phase 1 Subtotal</strong></td>
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<td>86%</td>
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<td><strong>156</strong></td>
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<td><strong>51%</strong></td>
<td><strong>56</strong></td>
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<td>1700 Block Catherine &amp; HOB</td>
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<tr>
<td>1600 Block Catherine &amp; HOB</td>
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<td>50%</td>
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<tr>
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<td>1</td>
<td>100%</td>
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<td>$2,100</td>
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<td><strong>Key West Phase 3 Subtotal</strong></td>
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<td><strong>33</strong></td>
<td><strong>17</strong></td>
<td><strong>52%</strong></td>
<td><strong>9</strong></td>
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<td>Warner St - Big Pine</td>
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<td>Sandy Circle - Big Pine</td>
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<td>Poinciana Rd - Big Pine</td>
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<td>1</td>
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<td>0</td>
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<tr>
<td>Hibiscus Ln, Coconut Hwy - Big Pine</td>
<td>22</td>
<td>2</td>
<td>0</td>
<td>0%</td>
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<tr>
<td>5th Ave - Big Pine</td>
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<td>0</td>
<td>100%</td>
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<td>Eden Pines - Big Pine</td>
<td>39</td>
<td>13</td>
<td>2</td>
<td>15%</td>
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<td>$4,200</td>
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<tr>
<td>Caribe St - Sugarloaf</td>
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<td>Prado Circle, US 1 - Big Coppitt</td>
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<td>0</td>
<td>0%</td>
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<td>Balido St, Cross St - Stock Island</td>
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<td>0%</td>
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<td><strong>Keys Subtotal</strong></td>
<td><strong>173</strong></td>
<td><strong>51</strong></td>
<td><strong>2</strong></td>
<td><strong>4%</strong></td>
<td><strong>2</strong></td>
<td><strong>$4,200</strong></td>
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<td><strong>GRAND TOTAL</strong></td>
<td><strong>870</strong></td>
<td><strong>289</strong></td>
<td><strong>146</strong></td>
<td><strong>51%</strong></td>
<td><strong>113</strong></td>
<td><strong>$235,286</strong></td>
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Inaccessible Easment Update April 2019

Riser Upgrades Completed

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Key West Phase 1 Subtotal

Key West Phase 2 Subtotal

Key West Phase 3 Subtotal

Keys Subtotal
Examples of "What We Track"

- Number of Customer Minutes Interrupted
- Total Number of Customers Served
- Total Number of Customer Interruptions
- Sum of All Customer Momentary Events
- Minutes of Interruption
- Total Number of Outages
- Cause of Outages
- Type of Outage - Overhead, Underground

Typical Reasons "Why We Track"

- Meet KEYS goals is to reduce outage minutes
- Identify and Target Problem Areas/Zones
- Identify Faulty Construction Material and Trends
- Assist on Vegetation Management (Tree Trimming)
- Plan for Capital Improvement
- Identify Areas More Susceptible to Weather
- Compare KEYS to Other Utilities
SAIDI WITHOUT BIG PINE KEY MAJOR BRUSH FIRE OUTAGE
### Comparison of the Florida Municipals to the Investor Owned Utilities

#### 2018 Distribution Reliability Indices & APPA 2018

<table>
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<tr>
<th></th>
<th>FL Muni</th>
<th>KEYS</th>
<th>FPL</th>
<th>TECO</th>
<th>DUKE</th>
<th>GULF</th>
<th>FPUC</th>
<th>SE Region</th>
<th>National</th>
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<td><strong>SAIDI</strong></td>
<td>80.8</td>
<td>105.3</td>
<td>79.6</td>
<td>93.2</td>
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<td>96.8</td>
<td>154.4</td>
<td>60.3</td>
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<td>65.2</td>
<td>60.0</td>
<td>80.3</td>
<td>97.3</td>
<td>77.0</td>
<td>106.0</td>
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<td>1.6</td>
<td>1.2</td>
<td>1.0</td>
<td>1.3</td>
<td>1.5</td>
<td>0.8</td>
<td>0.9</td>
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<tr>
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<td>2.3</td>
<td>4.0</td>
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<td>9.7</td>
<td>2.1</td>
<td>N/A</td>
<td>0.3</td>
<td>0.4</td>
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<td><strong>L-Bar</strong></td>
<td>102.9</td>
<td>94.3</td>
<td>199.0</td>
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<td>146.6</td>
<td>116.5</td>
<td>86.3</td>
<td>N/A</td>
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* 79.6 SAIDI IS WITHOUT BIG PINE KEY MAJOR BRUSH FIRE OUTAGE

#### 2018 Indices for FL Munis by Utility Size (Number of Customers)

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<th></th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
<th>Extra Large</th>
<th>Overall</th>
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<tr>
<td></td>
<td>0-10,000 Customers</td>
<td>10,001-25,000 Customers</td>
<td>25,001-50,000 Customers</td>
<td>Greater Than 50,000 Customers</td>
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<td><strong>SAIDI</strong></td>
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<td>5.77</td>
<td>3.16</td>
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<td>105.13</td>
<td>102.9</td>
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****Per Chapter 25-6.0455(3c)- overall MAIFI does not include utilities with fewer than 50,000 customers****

#### Member Categories for 2018

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<th>Medium</th>
<th>Large</th>
<th>Extra Large</th>
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<td>0-10,000 Customers</td>
<td>10,001-25,000 Customers</td>
<td>25,001-50,000 Customers</td>
<td>Greater Than 50,000 Customers</td>
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<td><strong>Alachua</strong></td>
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<tr>
<td><strong>Bartow</strong></td>
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<tr>
<td><strong>Blountstown</strong></td>
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<td><strong>Homestead</strong></td>
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<tr>
<td><strong>Winter Park</strong></td>
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<td><strong>Havana</strong></td>
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<td><strong>OCU</strong></td>
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<td><strong>Newberry</strong></td>
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<tr>
<td><strong>Starke</strong></td>
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<tr>
<td><strong>Vero Beach</strong></td>
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<tr>
<td><strong>Tallahassee</strong></td>
<td></td>
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</tr>
</tbody>
</table>

**SAIDI**- stands for **System Average Interruption Duration Index**.

**CAIDI**- stands for **Customer Average Interruption Duration Index**.

**SAIFI**- stands for **System Average Interruption Frequency Index**.

**MAIFI**- stands for **Momentary Average Interruption event Frequency Index**.
<table>
<thead>
<tr>
<th>TRANSMISSION AND DISTRIBUTION</th>
<th>Statistical Data</th>
<th>% Change</th>
<th>Other Utilities Comparison</th>
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<tbody>
<tr>
<td></td>
<td>2017</td>
<td>2018</td>
<td>2017 - 2018</td>
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<td></td>
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<tr>
<td>TRANSMISSION</td>
<td></td>
<td></td>
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<tr>
<td>QUANTITY</td>
<td>3.0</td>
<td>9.0</td>
<td>200%</td>
</tr>
<tr>
<td>SAIDI(minutes)</td>
<td>9.9</td>
<td>199.6</td>
<td>1917%</td>
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<td>DISTRIBUTION</td>
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<tr>
<td>QUANTITY</td>
<td>35.0</td>
<td>44.0</td>
<td>26%</td>
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<tr>
<td>SAIDI(minutes)</td>
<td>59.0</td>
<td>79.6</td>
<td>35%</td>
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<tr>
<td>MAIFI</td>
<td>2.37</td>
<td>2.26</td>
<td>-5%</td>
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</table>

*SAIDI WITHOUT BIG PINE KEY MAJOR BRUSH FIRE OUTAGE*
## Reliability Indices by Zone

### Key West vs. Keys

Reporting calendar year 2018

<table>
<thead>
<tr>
<th></th>
<th>Key West (City)</th>
<th>Keys</th>
<th>Combination of Key West and Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAIDI (minutes)</strong></td>
<td>34.9</td>
<td>42.8</td>
<td>38.8</td>
</tr>
<tr>
<td><strong>Response Time (minutes)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular Hrs</td>
<td>11</td>
<td>24</td>
<td>20.1</td>
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<tr>
<td>After Hrs</td>
<td>8</td>
<td>19</td>
<td>16.1</td>
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</table>

*SAIDI WITHOUT BIG PINE KEY MAJOR BRUSH FIRE OUTAGE*

### Definition of Districts

- **Keys** – Refers to all outages from Stock Island to Sunshine Key 14,246 Customers (46%)
- **City** – Refers to all outages within the City Limits of Key West 16,644 Customers (54%)
- Response Time- clock starts when crew is assigned to outage to when crew arrives on scene
Recent Reliability Improvements

Transmission System

* Steel pole Painting and Foundation Wrap
* 311 Line Differential - Relay Upgrade
* Transmission Pole Foundation Repair with LifeJacket Protection
* US1 AT2 Upgrade
* 138kv deadend and suspension polymer insulator replacement (in progress)
* Cow Key Channel pole replacements (1 of 2 poles complete)
* 138kv Line 7 reclosing (planned)

Distribution System

* Single Phase Reclosers
* Easement Pole Relocation
* Storm Hardening Pole Replacement Program
* Replaced KWD switchgear building
* Additional Voltage Regulator Installation
* Shrimp Rd Re-conductor
* Remote Engineering Relay Access
* Install Additional Fault Locators
* Spanish Main Road reconductor (in progress)
* Trip Saver lateral fuse replacements (planned)
* BCS transformer bushing replacement (in progress)
* Hurricane Irma temporary pole replacement
* Hurricane Irma down guy replacement
AGENDA ITEM WORDING: Approve the Minutes of the Regular Utility Board Meeting– April 10, 2019

REQUESTED ACTION: Approve the Minutes of the Regular Utility Board Meeting– April 10, 2019
1. Pledge of Allegiance

2. Invocation

3. Mission and Vision

4. Roll Call
   **Present:** Mr. Robert Barrios, Ms. Mona Clark, Mr. Timothy Root, Chairman Batty.
   **Absent:** Mr. Steven Wells.

   **Also present at the meeting:**
   Lynne Tejeda, General Manager/CEO; Jack Wetzler, Finance Director/CFO; Nathan Eden, Board Attorney; Nick Batty, Legal & Regulatory Services Director; Fred Culpepper, Transmission & Distribution Director; Dan Sabino, Engineering & Control Center Director; Joseph Weldon, Generation Director and Erica Zarate, Customer Services Director.

5. Set Agenda

6. Informational Items:
   a) Department Staff Report
      ▶ Potential Pole Replacement Project – Dan Sabino, Engineering & Control Center Director
   b) Power Supply Report – March 2019
   c) Rate Comparison Report – February 2019
   d) Financial and Operational Indicators – February 2019
   e) Pension Workshop Update
   f) Florida Municipal Electric Association (FMEA) Legislative Rally Update
   g) Transmission Outage
   h) KEYS Egg Hunt / Ocean Festival Bucket Truck Rides
   i) 2019-2020 Calendar Contest Winners

7. Consent Agenda*
   a) Approve Minutes–Regular Utility Board Meeting–March 27, 2019
   b) Approve Disbursements Report
   c) Declare Transformers as Surplus after Removal and Proper Disposal

   ▶ **Motion:** To Approve Consent Agenda, **Moved by** Ms. Clark, **Seconded by** Mr. Root.
8. Action Items  
   a) Award Unit Price Contract for Aerial and Visual Transmission Line Inspection and Repairs, Bid 03-19  

   ► **Motion:** To Award Unit Price Contract for Aerial and Visual Transmission Line Inspection and Repairs, as specified in KEYS Bid 03-19, to Haverfield International, Inc. in the estimated amount of $97,399.00 for FY19, $102,025.00 for FY21, and $106,692.00 for FY23, **Moved by Mr. Barrios,** **Seconded by** Mr. Root.  

   ► **Vote:** Motion carried by unanimous roll call vote (**summary:** Yes = 4).  
   **Yes:** Mr. Robert Barrios, Ms. Mona Clark, Mr. Timothy Root, Chairman Batty.

9. Public Input / Other Business  

10. Adjournment  

   ► **Motion:** To Adjourn the Regular Utility Board Meeting of April 10, 2019, at 5:43 p.m., **Moved by** Mr. Root.

   APPROVE:  

   ____________________________________________  
   Peter Batty, Chairman

   ATTEST:  

   ____________________________________________  
   Lynne E. Tejeda, General Manager & CEO

   /ed
MEETING DATE: April 24, 2019
FROM: Jack Wetzler, Assistant General Manager & CFO
AGENDA ITEM #: 8b
PROPOSER: Lynne Tejeda, General Manager & CEO
AGENDA ITEM WORDING: Approve Disbursement Report

BRIEF BACKGROUND:
Payments are processed under Section 11 of Florida Statute 69-1191 and in accordance with Resolution No. 679 approved October 13, 1999. Staff has processed payments from the Operation & Maintenance Fund, from the Renewal & Replacement Fund and the Construction Fund. Check Registers and listings are attached for review.

<table>
<thead>
<tr>
<th>Type of Disbursement</th>
<th>Operation &amp; Maintenance Fund:</th>
<th>Renewal &amp; Replacement Fund:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check Payments</td>
<td>$115,163.29</td>
<td>$114,796.54</td>
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<tr>
<td>EFT Payments</td>
<td>$290,866.09</td>
<td>$256,132.90</td>
</tr>
<tr>
<td>Wire/Debit Payments</td>
<td>1,209,568.48</td>
<td>-</td>
</tr>
<tr>
<td>Voided Checks</td>
<td>(510.09)</td>
<td>-</td>
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<tr>
<td>Voided EFT Payments</td>
<td>-</td>
<td>-</td>
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<tr>
<td><strong>Total Disbursements</strong></td>
<td><strong>$1,615,087.77</strong></td>
<td><strong>$370,929.44</strong></td>
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STAFF RECOMMENDATION:
Approve the Disbursement Report for the Operation & Maintenance Fund, Renewal & Replacement Fund.

DISPOSITION:
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<th>Purpose</th>
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**Total OM EFT** 290,866.09
### OM Wire Payments

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<th>Description</th>
<th>Details</th>
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**Total OM Wires**: 1,209,568.48

### Disbursements from the Operations & Maintenance Fund (Expenses):

<table>
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<th>Wire Number</th>
<th>Date</th>
<th>Amount</th>
<th>Description</th>
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**Total O&M 115,163.29**

**RR EFT Payments**

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**Total EFT R&R 256,132.90**

**RR Payments**

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**Total O&M CK** $510.09

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**Total OM EFT** $0.00

**Total O&M** $510.09

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**Total RR EFT** $0.00

**TOTAL RR** $0.00

**Reason Code:**

A Cust/Vendor did not receive, lost check or staledate, stop payment search performed and ck replaced

B Wrong vendor entered into system and detected when matching check with invoice

C Customer service processed a work ticket requesting check to be voided (i.e. deposit should have been transferred and not refunded, change of name, etc.)

D Wrong amount

E Printed check in error, should not be paid at this time

F Vouched in error

G Research performed on stale dated checks/Abandoned Property

H Other
AGENDA ITEM WORDING: Request for Excused Absence for Steven Wells from the April 10, 2019 Regular Utility Board Meeting.

REQUESTED ACTION: Approve Request for Excused Absence for Steven Wells from the April 10, 2019 Regular Utility Board Meeting.
AGENDA ITEM WORDING: Approve Extension to Unit Price Contract with Key Iron Works for Underground Trenching and Conduit Services, Bid #11-16.

REQUESTED ACTION: Motion to Approve 1st Extension to the Unit Price Contract with Key Iron Works for Underground Trenching and Conduit Services for an estimated annual price of $671,035.00.

DISCUSSION: In FY 2016, underground trenching and conduit services were competitively bid, KEYS Bid 11-16. The Utility Board approved a unit price contract with Key Iron Works on August 28, 2016. The base contract was for 3 years from the date of execution by the Utility Board through September 30, 2019 with the option of 2 additional 1 year extensions, to be approved by the Utility Board.

The requested extension term is October 1, 2019 – September 30, 2020. KEYS will come before the Utility Board again in 2020 for the final extension, if deemed appropriate at that time.

SUPPORTS STRATEGIC PLAN: Goal 1 - Continually improve the Customer Experience regarding Reliability and Service

FINANCIAL IMPACT

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<th>Estimated Annual Cost: $671,035.00</th>
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<tr>
<td>Source of Funds: Capital &amp; MR reimbursement</td>
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AGENDA ITEM WORDING: Approve Unit Price Contract for Underground Trenching & Conduit Services, Bid #11-16.

REQUESTED ACTION: Motion to award Unit Price Contract for Underground Trenching & Conduit Services, Bid #11-16, to Key Iron Works, Inc. for an estimated annual cost of $671,035.00.

DISCUSSION: This bid is for Underground Trenching & Conduit Services as required for various high voltage underground projects. The majority of the high voltage underground projects are for new/ upgraded services, which are requested and reimbursed by KEYS customers. These services include trenching, conduit installation, transformer foundations, manholes and other services as required. The base contract ends on September 30, 2019. If KEYS desires, KEYS and the Contractor can extend the contract at the same unit prices. This extension may be for two (2) additional one (1) year terms.

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<th>Vendor</th>
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<td>ElectriCom, LLC.</td>
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<td>MasTec North America, Inc.</td>
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[1] Key Iron Works, Inc. took exception to the Performance Bond requirement and will not provide one for this contract. Also Key Iron Works, Inc. has done extensive work for KEYS in the recent past with favorable results. The previous RFP for underground trenching, issued in 2011, allowed Key Iron Works to provide a Letter of Credit. A Letter of Credit is acceptable with KEYS Counsel and staff for this current contract.

NOTE: Both ElectriCom, LLC. and MasTec North America, Inc. included the cost of obtaining a performance bond in their pricing.

SUPPORTS STRATEGIC PLAN: Goal #1 - Improve the Customer Experience in regards to Reliability and Service.

ENVIRONMENTAL IMPACT: Placement of high voltage services underground maintains the aesthetic beauty of the environment.

FINANCIAL IMPACT:

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<th>Total Estimated Cost: $671,035.00</th>
<th>Budgeted: Yes</th>
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<td>Source of Funds: Capital &amp; MR reimbursement</td>
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April 16, 2019

Key Iron Works, Inc.
5551 2nd Avenue
Key West, FL 33040

RE: CON A34 – Underground Trenching and Conduit Services

Dear Mr. Henson,

Keys Energy Services’ (KEYS) contract with Key Iron Works for Underground Trenching and Conduit Services is a three year contract, August 28, 2016 – August 27, 2019, with the ability to renew for two additional one year terms. The base contract was previously approved by the Utility Board on August 28, 2016. KEYS would like to give formal notice to extend this agreement for the first renewal period, August 28, 2019 – August 27, 2020. The first renewal period is scheduled to be approved by the Utility Board on April 24, 2019. If in agreement, please sign and return the acknowledgement below.

If you have any questions regarding this matter, please feel free to contact me at (305) 295-1144 or by email at Brittani.Harden@keysenergy.com.

Thank you,

Brittani Harden
Purchasing Supervisor

cc:
L. Tejeda, General Manager and CEO
J. Wetzler, Director of Finance and CFO

File: CONA34

ACKNOWLEDGEMENT

Key Iron Works acknowledge and agree that by signing this, I/we agree to extend the contract for underground trenching and conduit services for the first of two optional renewal periods.

Signature ______________________ Date 04/17/19

Name, Title ________________________________________

DESIGNATED A RELIABLE PUBLIC POWER PROVIDER BY THE AMERICAN PUBLIC POWER ASSOCIATION
CONTRACT

THIS CONTRACT, executed this 28th day of August, 2016 by and between the UTILITY BOARD OF THE CITY OF KEY WEST, Key West, Florida, hereinafter called BUYER, and Key Iron Works, Inc., hereinafter called Key Iron Works, Inc., a business operating in Key West, FL hereinafter called Key Iron Works, Inc.

WITNESSETH:

That for the consideration and under the provisions hereinafter stated and referred to moving from one to the other of said parties respectively, it is mutually understood and agreed as follows:

1. That Key Iron Works, Inc., is the lowest and/or best responsible bidder for supplying the requirements of BUYER’S BID #11-16 Underground Trenching and Conduit Services.

2. Key Iron Works, Inc., agrees to perform all aspects of this Contract in accordance with the specifications set out by the BUYER in its Bid #11-16 Underground Trenching and Conduit Services, (attached hereto and made a part hereof as Exhibit A) and Key Iron Works, Inc. proposal of 08/26/16 (attached hereto and made a part hereof as Exhibit B) and clarifications (attached here to and made a part hereof as Exhibit C).

3. Wherever and whenever the provisions of this Document or attachments hereto conflict with BUYER’S Bid #11-16 Underground Trenching and Conduit Services, Exhibit A the provisions of the specifications for the bid, shall control.

4. On the faithful performance of this Contract by Key Iron Works, Inc., the BUYER will pay Key Iron Works, Inc., in accordance with the terms and conditions stated in said proposal, award, specifications, and the Contract Documents hereinbefore specifically referred to and, by reference, made a part hereof.

IN WITNESS WHEREOF, the parties hereto have duly executed this Contract in triplicate, the day and year first above written.

ATTEST:

[Signatures]

Secretary

Utility Board of the City of Key West /dba/ Keys Energy Services

Utility Board Chairman

[Signatures]

Witness

Key Iron Works, Inc.

President

[Stamp]
EXHIBIT A
(Original Specifications)
CALL FOR BIDS

THE UTILITY BOARD OF THE CITY OF KEY WEST, FLORIDA, herein after called Utility Board, operator of the KEYS, hereby gives notice to prospective bidders that sealed proposals will be received by said UTILITY BOARD, at the Purchasing Department, 6900 Front Street, Extended, Key West, Florida 33040, until 1:30 P.m. on Friday, August 26, 2016 for:

KEYS BID #11-16
SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

The Utility Board has instituted the DemandStar.com system to provide current information to potential bidders. This system allows you to receive bid information quickly and at your convenience 24 hours a day, seven days a week. Specifications may be obtained from their website at (www.demandstar.com) DemandStar website or phone: (954) 577-3915. Registered vendors will be notified automatically of all Request for Proposals. You may also visit (www.keysenergy.com) KeysEnergy.com for links and downloads to the DemandStar website.

All Bidders are required to submit:
One (1) original and three (3) copies of each proposal are to be enclosed in a sealed envelope marked on the outside:

“THE BID OPENING COMMITTEE”
KEYS BID #11-16
SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES
Mail to:
Keys Energy Services
KEYS Bid #11-16
“The Bid Opening Committee”
6900 Front Street Extended
Key West, FL 33040
(CAN NOT receive US Postal Service)

***It is the sole responsibility of each Bidder to deliver its Proposal to KEYS at the place designated for receiving Proposals and prior to the time for opening Proposals last announced to Bidders. Any Proposal received after the time last announced for opening Proposals may be retained by KEYS or returned o the Bidder, but such Proposal shall be rejected as not responsive.

NOTE: Keys will entertain questions for clarification until August 11, 2016. No questions will be answered after that date.

Failure to submit one (1) original and three (3) copies of each proposal may result in non-compliance and bid may be rejected.

Each proposal should be accompanied by a Certified Check or Bid Bond payable to the UTILITY BOARD OF THE CITY OF KEY WEST in an amount not less than five (5%) percent of the amount of the proposal as security.

Each proposal should constitute an offer to the UTILITY BOARD, as outlined therein, and should be irrevocable after the time announced for the opening thereof.

At a meeting of the BID OPENING COMMITTEE to be held in the Purchasing Conference Room, 6900 Front Street Extended, Key West, Florida on Friday, August 26, 2016 at 1:30 p.m. proposals will be opened and publicly read aloud.

THE UTILITY BOARD reserves the right to reject any or all proposals, to waive irregularities and informalities in any or all proposals, and to separately accept or reject any item, items, bid schedule or bid schedules of the proposal which the UTILITY BOARD deems to be in the best interest of the Utility Board.

______________________________
Peggy Walls, Assistant Director of Finance
Utility Board-City of Key West
KEYS Bid #11-16 SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

GENERAL
The Utility Board of the City of Key West “KEYS Energy Services” herein after called KEYS is a municipally owned electric utility serving approximately 29,000 customers in Key West and the Lower Florida Keys.

KEYS and its representatives have exercised due care in preparing this Request for Proposals (RFP). All information contained herein is believed to be substantially correct. However, Proposers should verify information independently if desired. KEYS and its representatives do not warrant the accuracy of information contained herein.

PROJECT DESCRIPTION
KEYS’ is seeking to secure a Utility Service Contract with a contractor to install trenches, conduits, manholes, foundations, etc. as per KEYS' Underground Primary Specifications.

The contract will be based on unit pricing. Quantities for each activity or task are estimated. KEYS' does not guarantee the estimated quantities. Contractor's unit cost shall include all material, overhead, profit, insurance, subcontractors, permits (County/City/DOT), etc. Ninety-five (95%) percent of the work that KEYS will be requesting is non-emergency.

SCHEDULE
The majority of the work will be planned and scheduled by KEYS. The Contractor will be required to complete planned work within three (3) weeks after requested by KEYS. If such work is not completed within the specified time, liquidated damages will be assessed. Emergency work will be started within twenty-four (24) hours of notification and completed within a reasonable amount of time which will be determined by the type of project.

MATERIAL/LABOR
All material costs shall be included in the unit prices (i.e., concrete, rebar, conduit, ground wire, manhole, pads, dewatering and/or deeper or difficult digs, etc.) The unit prices shall also include all overhead, profit, insurance, subcontractor costs, etc. The transformer pads and manholes are to be pre-made by Brooks Products or approved equal. All clearances for trenching shall be obtained by Contractor. Contractor is responsible for calling the state “one call” underground locate organization. The Contractor shall install asphalt in accordance with the City/County/DOT requirements.

The unit price for a transformer foundation pad shall include all the conduits that are within the foundation base, including customer secondary stub outs based on a maximum of eight (8) four inch (4") conduit to terminate approximately four (4") inches outside the transformer foundations. (See construction drawing), as stated on the drawing. The Contractor shall recess all prefabricated transformer foundation pads to elevation shown on plans, with a minimum of six (6") inches below grade.

The Bidder shall be required to take photos (digital or 35mm) of all underground trenching work prior to concrete trench covering. This is required for KEYS’ records. The successful bidder will also be required to provide KEYS with a minimum of twenty-four (24) hours advance notice for inspection prior to concrete trench covering. All as-built drawings and photos are to be submitted to KEYS within one week of underground trenching work. Progress payments will be withheld until photos and detailed as-built drawings are submitted.

CONSTRUCTION SPECS – Open Trench – Primary (15KV) circuits
A. HORIZONTAL RUNS:
   1. Job Plans will show the conduit sizes. Conduits shall be Schedule 40 PVC enveloped in minimum four (4") inches of 3000# concrete with four (4) -#4 continuous re-bar at corners. Re-bar is required in trench only where trench will be subjected to vehicular traffic. (See Job Drawing). Contractor will not be required to install re-bar at other locations. Conduits must be free from all cracks or chips. Conduits must be held firmly in place to prevent displacement. Top of the highest primary conduit shall be minimum thirty (30") inches below finished grade. Install #4/0 bare copper ground wire in bottom of trench (See Construction Details). Splices in ground wire must be Cadweld or equal. This will be measured from riser pole to outside of transformer pad. Additional #4/0 bare copper ground wire may need to be run from transformer pad to the communication conduit if they
are terminated within six (6') feet of the transformer pad. The 4/0 copper wire is an optional price in the trench.

2. **Backfill** shall consist of 57 rocks installed in eight (8") inch lifts and compacted with a vibratory plate compactor. Compacting equipment should be sized as required to avoid damaging the conduits during backfill. Where duct banks are located under asphalt or concrete pavement, the top 8 inches of the backfill shall be 500 PSI flow fill, or the alternate compacted fill specified below.

3. Excavations shall be dewatered (which will be included with your unit pricing for trench LF) for inspection purposes if required by the KEYS' Inspector.

4. All primary conduits must have minimum twelve (12") inches of separation from communication utilities (i.e., AT&T, Comcast). Three (3') feet minimum is recommend from sewer and water.

5. Metallic "Dig warning" tape to be eighteen (18") inches above duct bank.

6. Bends in conduit run shall be done with manufactured bends and fittings compatible with PVC Schedule 40 pipe. PVC 90's shall be three (3') foot radius sweeps. Split couplings and "sliding" couplings are not allowed unless approved by the KEYS' Inspector.

7. The Contractor shall clean and prove each conduit run. Proving shall be done by passing a conduit piston sized for the conduit used, or other methods approved by the KEYS’ Inspector.

8. The Contractor must use #2500lb Mule Tape (Herculine or approved equal).

9. There shall be no more than the equivalent of four (4) 90 degree bends (360 degrees total) between pull points.

**B. MANHOLES:**

1. The plans will specify the size, type and location of manholes.

2. Conduits at manholes shall be terminated with bell end fittings and grouted flush with the inside wall.

3. Each ground wire shall have a six (6') foot tail at each end.

**C. RISER POLES:**

1. Riser poles will be detailed on the job plans. The plans will specify the material of the 90-degree sweeps. They will be PVC schedule 40 unless Rigid Metal Conduit is specified on the plans.

2. The conduits shall be plumb at grade level at the base of the pole. The conduit installation at the riser pole must be inspected by the Keys Energy Inspector before concrete is poured.

3. The 4/0 ground wire shall have a six (6') foot tail at each end.

4. The 90 degree elbows should be strapped to pole using Stainless Steel Unistrut and Stainless Steel Unistrut Straps.

**D. PAD MOUNTS AND SECTIONALIZERS:**

1. The job plans will specify the details of the padmount transformer and sectionalizer cabinet installations. This may also include a maximum of eight (8) four (4") inch conduits stub out for customer's secondary runs. These will terminate approximately twenty-four (24") inches outside the pad base on the drawing provided.

2. Risers at padmount and sectionalizer locations shall be terminated six (6") inches above grade with a bell end fitting or a male adapter with insulated bushing. This may include a maximum of six (6) four (4") inch primary conduits. The layout of the risers shall be as shown on the job plans.

3. Each ground wire shall have a six (6') foot tail at each end.

4. The base material under the concrete pedestal shall be 57 rocks extending on (1') foot outside the pedestal. The duct bank below the pedestal shall not be concreted.

**E. INSPECTIONS REQUIRED (must give 24 Hours notice):**

1. Layout inspection before starting job.

2. Prior to concrete pours.

3. Prior to setting manholes or transformer pads.

4. Upon completion
F. CLEANUP:
   1. Excess excavated material shall be removed from the job. At contractor’s expense.
   2. The job site shall be cleaned and restored.
   3. Restoration of asphalt or concrete shall be as specified on the job plans.

LOCATION
Bidder can assume that all the locations are accessible by vehicles and trenching equipment.

PERMITTING
The contractor may be required to obtain all City of Key West, FDOT and Monroe County applicable permits for a job on private property and for work done on city, county, and DOT right-of-way, the contractor shall be licensed as required by each agency.

DRAWINGS
   A. Base Foundation Pad for 750 kVA Padmount Transformer
   B. Base Foundation Pad for Three Phase Padmount Transformer (all other Three Phase Padmount Transformers)
   C. High Voltage Trench
   D. Single Phase Pad
   E. Three Phase Pad for 750 kVA
   F. Three Phase Pad (all other Three Phase Padmount Transformers)
   G. Large Manhole
   H. Standard Manhole
   I. Single Phase - Underground Specifications
   J. Three Phase - Underground Specifications
   K. Single Phase Padmount Transformer Concrete Work at Platform Slab
   L. Three Phase Padmount Transformer Concrete Work at Platform Slab
EXHIBIT A
(Base Foundation Pad for 750kVA Padmount Transformer)
SCALE: 3/4" = 1'
EXHIBIT B
(Base Foundation Pad for 3Phase Padmount Transformer)
SCALE: 3/4" = 1'

OPENING
EXHIBIT C
(High Voltage Trench)
HIGH VOLTAGE TRENCH

8" MIN. FLOWABLE FILL (ONLY REQUIRED WHERE SUBJECT TO VEHICULAR TRAFFIC) SEE WRITTEN SPECS FOR DETAILS.

DUCTS FOR TELEPHONE AND CABLE TV, CABLE DISTRIBUTION. CONSULT TELEPHONE COMPANY AND CABLE TV COMPANY PLANS FOR EXACT ROUTING AND CONSTRUCTION REQUIREMENTS. WHERE ROUTING COINCIDES WITH POWER DUCTS, TELEPHONE AND TV DUCT MAY BE CONFIGURED INTO DUCT BANK AS SHOWN IN THIS DETAIL.

GROUND LEVEL

DUCT BANK CROSS SECTION

3000# CONCRETE ENCASEMENT, MIN 4" AROUND DUCTS, 3" ON BOTTOM

2-4" PVC DUCTS, MIN. SCHEDULE 40. (POWER, SPARE FOR 1/0 AL. CABLE)
(6" PVC FOR 500-1000 MCM CABLE)

REBAR TYPICAL AT ALL FOUR CORNERS. (ONLY REQUIRED WHERE SUBJECT TO VEHICULAR TRAFFIC)

METALIZED MYLAR WARNING TAPE "DANGER HIGH VOLTAGE"

BACKFILL TO BE 57 ROCK OR "FLOWABLE FILL" SEE WRITTEN SPECS FOR DETAILS

4/0 BARE COPPER GROUND WIRE
ALL SPACES BELOW GRADE TO BE CAWDWELD (OPTIONAL PER KEYS).

4" 4" 4" 4" 4"

SCALE: NONE

TYPICAL UNDERGROUND HIGH VOLTAGE DUCT BANK CROSS SECTION

REVISED 7-27-16 RVS
REVISED 1-28-05 RVS

KEYS ENERGY SERVICES
ENGINEERING DEPT. KEY WEST FL.

UNDERGROUND SPECIFICATIONS
DESIGNED BY: D. FINIGAN
APPROVED BY: 
DATE: 1-01
DRAWN BY: VIN SMITH
SCALE: NONE SHEET 2 OF 5
EXHIBIT D
(Single Phase Pad)
EXHIBIT E
(Three Phase for 750kVA)
EXHIBIT F
(Three Phase Pad)
EXHIBIT G
(Large Manhole)
72" X 72" 60" - Manhole

NOTES:

1. Concrete: 28 Day Compressive Strength f'c = 4,500 psi.

2. Reinforcing: ASTM A-615, Grade 60.

3. Supports an H20 Loading as Indicated by AASHTO.

4. Contractor to Verify Size and Location of All Openings.

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**WALLS** | **PIPE** | **PIPE** | **HOLE** | **HOLE** | **PRODUCTION WEIGHTS** | **REINFORCEMENTS**
---|---|---|---|---|---|---
| SIZE | INVERT | SIZE | UP | YARDAGE | VERT: #4 @ 10" OC | HORIZ: #4 @ 12" OC

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**Oldcastle Precast, East, Inc.**

2140 PONDELLA ROAD □ NORTH FORT Myers, FLORIDA 33903
(239) 574-8896 □ FAX: (239) 574-1419

Drawn: jg  Date: May 11, 2002
Checked:  Date:
Produced:  Shipped:
Str. No: uv 3636  S.O. No:  LN No:

Contractor:  Drawing No:  Project:
EXHIBIT H
(Standard Manhole)
EXHIBIT I
(Single Phase - Underground Specifications)
COORDINATE EACH TRANSFORMER
PAD SIZE WITH UTILITY COMPANY
(SEE ATTACHED TYPICAL TRANSFORMER SIZES)

HEIGHT ABOVE FINISHED GRADE
= FEMA ELEVATION MINUS 1.5'
(BUT NOT LESS THAN 3')

END BELL TYP.

PAD SIZE VARIES (SEE BROOKS DRAWINGS)

FINISHED GRADE

36"

2-4" PVC DUCT/SCHEDULE-40

CONCRETE ENCASED PRIMARY DUCT MINIMUM 36" RADIUS

GROUND ROD
5/8" X 8' COPPERWELD

SECONDARY CONDUITS SIZE/QTY. TO BE DETERMINED BY OWNER/ELECTRICIAN/CONTRACTOR

TYPICAL 1 ØTYPE TRANSFORMER FOUNDATION AND CONDUIT LOCATION

SCALE: NONE

REVISED 8-13-02 RVS
KEYS ENERGY SERVICES
ENGINEERING DEPT. KEY WEST FL.
UNDERGROUND SPECIFICATIONS
DESIGNED BY: D. FINIGAN
APPROVED BY:
DATE: T-01
DRAWN BY: VIN SMITH
SCALE: NONE SHEET 5 OF 5
EXHIBIT J
(Three Phase - Underground Specifications)
COORDINATE EACH TRANSFORMER
PAD SIZE WITH UTILITY COMPANY
(SEE ATTACHED TYPICAL TRANSFORMER SIZES)

MAXIMUM HEIGHT 3' ABOVE GRADE
ACTUAL HEIGHT WILL VARY BASED
ON FEMA ELEVATION REQUIREMENT
(FEMA ELEVATION MINUS 1.5')

FINISHED GRADE
MIN. 6' COMPACTED FILL
UNDERNEATH PAD. 57 ROCK
BACKFILL AS PER SPECS.

2-4" PVC DUCT/SCHEDULE-4D
CONCRETE ENCASED PRIMARY
DUCT MINIMUM 36' RADIUS
(NO CONCRETE UNDER PAD)

END BELL TYP.

PAD SIZE VARIES (SEE BROOKS DRAWINGS)
BASE FOUNDATION PAD REQUIRED ON 3 PHASE LARGE TRANSFORMER
PAD (112 KVA - 750 KVA). NOT REQUIRED ON SINGLE PHASE PADS.
SEE KEYS DWGS M-939 AND M-940.

SECONDARY CONDUITS SIZE/QTY. TO BE
DETERMINED BY OWNER/ELECTRICIAN/CONTRACTOR

GROUND ROD
5/8" X 8' COPPERWELD

TYPICAL 3 ØTYPE TRANSFORMER
FOUNDATION AND CONDUIT LOCATION
SCALE: NONE

REVISED 1-12-05 RVS
KEYS ENERGY SERVICES
ENGINEERING DEPT. KEY WEST FL.
UNDERGROUND SPECIFICATIONS

DESIGNED BY: D. FINIGAN
APPROVED BY:
DATE: 1-01
DRAWN BY: VIN SMITH
SCALE: NONE SHEET 1 OF 5
EXHIBIT K
(Single Phase Padmount Transformer Concrete Work at Platform Slab)
SLAB TO BE REINFORCED WITH WIRE MESH PER CODE

SCALE: 3/4” = 1’
EXHIBIT L
(Three Phase Padmount Transformer Concrete Work at Platform Slab)
SLAB TO BE REINFORCED WITH WIRE MESH PER CODE

SCALE: $\frac{3}{4}'' = 1'$
KEYS ENERGY SERVICES
GENERAL TERMS & CONDITIONS

ADDITIONS/DELETIONS
KEYS reserves the right to add or delete any item from this bid or resulting contract when deemed to be in the best interest of KEYS.

ALTERATIONS IN PROPOSAL
Except as otherwise provided herein, Proposals which are conditional in any way, or which contain erasures or interlineations not authenticated as provided herein, or which contain items not called for, items not in conformity with applicable laws, changes, additions, recapitulations, alternative Proposals, or any other modifications of the Proposal forms which are not specifically called for in the Contract Documents, will be rejected as not responsive unless specifically agreed to in writing by KEYS. Erasures, interlineations or other corrections shall be authenticated by affixing in the margin immediately opposite the correction, the handwritten initials of each person executing the Proposal.

APPLICABLE LAW
This Contract shall be interpreted in accordance with the law of the State of Florida.

ASSIGNMENT
No contract awarded under these terms, conditions, and specifications, may be sold, transferred or assigned in full or part without the written permission of KEYS. Such written permission shall not relieve the Contractor from its obligations and liabilities.

ATTORNEY FEES
The prevailing party in any litigation or mediation relating to the contract shall be entitled to recover it reasonable attorney fees and costs from the other party for all matters, including, but not limited to, appeals.

BASIS OF AWARD
A. The award will be made by KEYS on the basis of the Proposal from the lowest responsive* responsible**, Bidder which, in KEYS’ sole and absolute judgment, will best serve the interest of the KEYS.

B. KEYS reserves the right to accept or reject any or all Proposals, and to waive any informalities and irregularities in said Proposal.

  *Responsive Bidder: Any person, firm, or corporation submitting a bid for the work contemplated whose bid form is complete and regular, free of excisions or special conditions and has no alternative bids for any item unless requested in the technical specifications.

  **Responsible Bidder: Any person, firm, or corporation submitting a bid for the work contemplated who maintains a permanent place of business, has adequate manpower and equipment to do the work properly and within the time limit that is established, has adequate financial status to meet his obligations contingent to the work and has a history of performance of like contracts (acceptable to the KEYS).

C. Evaluation: The lowest evaluated price shall be determined from an analysis which assesses the impact of the contract price, operational and maintenance costs.

BID BOND/CERTIFIED CHECK
Each proposal should be accompanied by a Bid Bond or Certified Check payable to the UTILITY BOARD OF THE CITY OF KEY WEST in an amount not less than five (5%) percent of the amount of the proposal as security.

BID PROPOSAL PRICING
All bid proposals must remain firm for 120 days minimum.

BIDDER QUALIFICATIONS
If a pre-bid meeting is held, please provide the following information at that time If no pre-bid meeting is held, please provide this information in your bid response.

CITY/COUNTY LICENSING
For the term of the contract, Contractor shall maintain City of Key West and Monroe County licenses and/or other requirements to work within the City or County limits. The contractor should provide KEYS with a copy of all licenses.

COMPLETENESS OF PROPOSAL
A. Each Bidder shall respond to all items on Proposal Page. When quoting on all items including optional items, bidders shall insert the words “No Bid” in the space provided for any item for which no offer is made. Failure to do so may result in the Proposal being rejected as not responsive.

B. KEYS will consider alternative, additive, or deductive options with no initial pricing.

C. Each Proposal shall include specific acknowledgment of receipt of all Addenda issued during the bidding period. Failure to do so may result in the Proposal being rejected as not responsive.

D. Each Bidder shall furnish information relating to its experience, facilities, personnel, material, equipment and business as is required by the Proposal form. Failure to do so may result in the Proposal being rejected as not responsive.
E. Additional technical data furnished by a Bidder, but not required by the Request for Proposal (RFP), may at KEYS’ option be considered a part of the Proposal to the extent that it is supplementary to, is consistent with and not contrary to the RFP.

**CONTACT REFERENCES**

KEYS contact for bidding requirements and technical specifications: Supervisor of Purchasing, susan.ham@keysenergy.com.

**CONTRACT DURATION**

The duration of the base contract shall be for three (3) years from the date of execution by the Utility Board through September 30, 2021. If this contract is for a unit price and estimated quantities and if KEYS desires, the Utility Board and the contractor can extend the contract at the same unit. The extension can be for two (2) additional one (1) year terms. Each extension must be mutually agreed upon and approved by the Utility Board. KEYS reserve the right to cancel this contract without cause with 30 days written notice and with cause within 10 days.

**CONTRACT CHANGES**

No changes, over the contract period, shall be permitted unless prior written approval is given by the Utility Board of the City of Key West, Florida. No Contractor shall assign the contract or any rights or obligations there under without the written consent of KEYS. In the event of such approved subcontracting, the Contractor agrees to provide KEYS with written documentation relative to the Subcontractor(s) employed in this contract.

**CONTRACT COMPLIANCE**

All contracts are subject to the terms and conditions of the Fair and Accurate Credit Transactions Act of 2003. The said provisions and compliance therewith are expressly made part of the contract and are binding covenants on the party contracting with KEYS.

**CONTRACTOR LIABILITY**

In the event of default by the Contractor, KEYS reserves the right to utilize the next lowest Bidder as the new Contractor. In the event of this occurrence, the next lowest Bidder, if it wishes the award, shall be required to provide the bid items at the prices as contained on its proposal or bid for this specification.

**CONTRACTOR'S RESPONSIBILITIES**

A. Contractor shall be responsible for all loss, damage, vandalism, theft, etc. for all equipment, tools, materials, etc. left on the job site.

B. Contractor shall be responsible for maintaining the site in a clean condition during installation. Contractor and KEYS at which time the site should be cleaned up will make a final walk down of the sites.

C. Prior to completion of demobilization, Contractor shall remove all construction materials, waste, demolition debris, excess materials, temporary installation, etc. that have not been specifically turned over and accepted by KEYS.

D. Contractor shall be responsible for any and all costs for clean up of oil or gasoline spills which result from his equipment or from any work performed as part of this contract.

E. Permit violations or environmental damage caused by the Contractor shall be mitigated or repaired by the Contractor, at the Contractor's expense, to the satisfaction of the governing authority citing such damage.

F. Items discussed in this section are not intended to be all-inclusive of Federal, State, and Local Laws and Regulations. Information is provided as anticipated minimum requirements. Contractor shall be familiar and comply with all requirements of applicable laws and regulations.

G. The Contractor will assume total responsibility for materials, delivery to/from job site, installation, and testing of system.

**DELIVERY**

A. Delivery, inspection and acceptance - delivery, inspections and acceptance will be at destination, F.O.B. Key West as specified in the RFP, KEYS Warehouse, unless otherwise provided. Until delivery and acceptance and after any rejections, risk of loss will be on the Vendor, unless loss results from negligence of KEYS.

B. Notwithstanding the requirements for any KEYS inspection and test contained in the specifications applicable to this proposal, except where specialized inspections or tests are specified for performance solely by KEYS, the Contractor shall perform or have performed the inspections and tests required to substantiate that the supplies and services provided under this proposal conform to the drawings, specifications and proposal requirements listed herein, including if applicable, the technical requirements for the manufacturer's part numbers specified herein.

C. Delivery of Excess Quantities - The Contractor is responsible for the delivery of each item quantity within allowable variations, if any. If the Contractor delivers and KEYS receives quantities of any item in excess of the quantity called for (after considering any allowable variations of quantity) such excess quantities will be treated as being delivered for the convenience of the Contractor. KEYS may retain such excess quantities without compensating the interests herein. Quantities in excess, will at the option of KEYS, either be returned at the Contractor's expense, or retained and paid for by KEYS at the contract unit price.

D. Deliveries - In the event of failure to deliver material of the quality or within the time specified, KEYS may cancel the order and buy elsewhere. The Contractor will be responsible for any cost differences encountered in the procurement of materials. Failure of KEYS to exercise this option with respect to any installment shall not be deemed a waiver with respect of future installments, if any.

E. Delivery tickets - All shipments under this agreement shall be accompanied with delivery tickets, or packing slips, in triplicate, which shall contain the following minimum information: name of supplier, purchase order number, date of order, date of delivery.
or shipment, itemized list of supplies or services furnished, quantity, unit price, and extension of each line item. Upon delivery, the Warehouse will retain a copy of the related delivery ticket.

F. Inspection, Acceptance and Title - Inspection and acceptance will be at destination, unless otherwise provided. Title and risk of loss or damage to all items shall be the responsibility of the contract supplier until accepted by KEYS in writing.

ENTIRE AGREEMENT
The terms, specifications and/or drawings included in a duly executed contract will constitute the entire agreement between the parties. No modification or waiver of terms of this agreement shall be binding, unless in writing, signed by a duly authorized representative of KEYS.

ERROR IN BID CALCULATION
In the event there is a mathematical error in the bid, KEYS will recalculate using the line items and correct the total.

EXECUTION OF PROPOSAL
If a Proposal is made by a partnership, it shall contain the name and address of each partner and shall be executed in the partnership name, followed by the handwritten signature of a partner authorized to execute the Proposal for the partnership. If a Proposal is made by a corporation, it shall be executed in the name of the corporation, followed by the handwritten signature of an officer authorized to execute the Proposal for the corporation, and the printed or typewritten designation of the office he holds in corporation. Another partner of the partnership or official of the corporation shall attest to the authority of the person executing the Proposal. KEYS may require any Bidder to furnish certified copies of extracts of the minutes of meetings of the governing body of the Bidder authorizing execution of the Proposal and Contract Documents.

FORCE MAJEURE
KEYS shall not be liable in any way to the contractor as a result of an event, circumstance or act of a third party that is beyond a party's reasonable control (e.g. an act of God, and act of the public enemy, an act of a government entity, strikes or other labor disturbances, hurricanes, earthquakes, fires, floods, epidemics, embargoes, war and riots).

LITIGATION SEARCH
KEYS reserve the right to conduct a litigation search on contractor's history of past litigation.

LIQUIDATED DAMAGES
The Liquidated Damages shall be $200.00 per day. The liquidated damage amount specified herein shall apply to damages and expenses that KEYS may incur as a result of a delay in completing the Scope of Work. The commencement date for Liquidated Damages will be three weeks from date that each job is assigned. Any problems conforming to this schedule shall be stated in the proposal. At the end of the three week period for each assigned job, the above-specified damages of $200.00/day will commence.

MODIFICATION OF PROPOSAL
A modification of a proposal already received will be considered only if the modification is received prior to the time last announced for opening Proposals. All modifications shall be made in writing, executed and submitted in the same form and manner as the original proposal, fax or E-mail. Phone modifications will not be considered.

NOTICE TO PROCEED
KEYS will issue the successful bidder a Notice to Proceed after the Performance Bond and Insurance Certificates have been received and reviewed.

OPENING PROPOSALS
At the time and place last announced for opening Proposals, each Proposal which has been received prior to the time last announced for opening Proposals, except those which have been properly withdrawn, will be publicly opened and read aloud, irrespective of any irregularities or informalities in such Proposals.

KEYS INSPECTIONS/MEETINGS
KEYS will make inspections and/or meetings as deemed necessary to ensure that all work is being performed in compliance with these specifications and guarantees.

PAYMENT
Payment will be made after acceptance of services and materials and within 30 days after receipt of invoice. KEYS will hold 10% retention until 30 days after project completion and final acceptance on jobs that require more than one payment request. The Contractor will complete and submit the provided Contractor's Request for Payment form, prior to any payment of draw request. The Contractor's request for payment shall be accompanied by a breakdown of material and labor associated with that particular request. KEYS does not pay service charges on late payments.

PENALTIES
KEYS reserves the right to increase or decrease quantities shown without penalties.

PERFORMANCE BOND
Within ten (10) days after the Contractor receives the Notice of Utility Board Approval and prior to the execution of the Contract, the Contractor shall furnish a Performance and Payment Bond in the form acceptable to KEYS, which form is included in the Contract Documents, with corporate Surety satisfactory to KEYS such bond shall insure the full and faithful performance of the Contract, including the payment of faithful performance of the Contract, including the payment of all obligations arising there under, and shall be in an amount equal to 100 percent of the Total Contract Amount unless otherwise provided in these specifications. Such bond shall further comply in all respects with the laws of the State of Florida.

PERSONNEL
1. The project supervisor must be capable of communicating fluently in English at all times.
2. On a project, the foreman must be capable of communicating fluently in English.
3. All employees of company must be United States Citizens or legally authorized to reside and work in the United States.
4. KEYS may request at any time throughout the contract the following within eight (8) hours:
- proof of citizenship for all employees
- proof of employee's salary is at or above state and federal minimum requirements
- proof of eligibility to legally work in the United States

**POSTPONEMENT OF OPENING**

KEYS reserves the right to postpone the date and time last announced for opening Proposals and such postponement may be made at any time prior to the time last announced for opening Proposals. KEYS will give written or telegraphic notice or post on DemandStar of any such postponement to each party to whom Contract Documents have been issued, followed by issuance of an Addendum confirming the changing of the announced date and time for opening Proposals.

**PRICES**

A. All prices bid shall be firm unless the conditions of the RFP permit price escalation. If an escalation method or indices are specified, the Bidder shall indicate in its bid the specific items subject to escalation, and shall give the method and indices to be used in computing the amount thereof.

B. The vendor shall provide the proposal price in U.S. dollars only.

**PROPOSAL GUARANTEE**

A. The Proposal Guarantee shall be the cashier's check or Bid Bond required in the Notice to Bidders. A bid bond or cashier's check in lieu of a surety bond in the amount of five (5%) % of the proposal shall be submitted with all proposals. This bid bond requirement is to be used as security and will be returned to bidder after KEYS enters into a Contract with the successful bidder. This (five) 5% shall be based on the total bid price. The bid bond or cashier's check shall be valid for a period of no less than 120 days after bid opening date.

B. KEYS may reject all Proposals, and in such event, all cashier checks and Bid Bonds will thereupon be returned to the Bidders.

C. When a Proposal is accepted, all checks and Bid Bonds will thereupon be returned to the bidders, except for the approved proposal. The cashier check or Bid Bond of the approved Bidder will be returned after completion of the requirements in the following paragraph.

D. Within 10 days after delivery of Notice of Utility Board Approval, or such additional time as is allowed by KEYS, the Bidder shall furnish satisfactory Performance and Payment Bond, Insurance Certificate and Insurance Policies.

**PROTESTS**

Any bidder who believes he has been aggrieved in connection with the staff recommendation or award of a contract may protest in writing to the KEYS Purchasing Department. The deadline for filing a protest is prior to the commencement of the Utility Board meeting wherein the award is to be considered. It is the responsibility of the bidder to ascertain the bid award information from KEYS website. Protests shall specifically describe the subject matter and facts giving rise to the protest.

**PUBLIC RECORDS ACT**

Pursuant to F.S. 119.0701 of the Public Records Act, any request to inspect or copy public records relating to a public agency's contract for services must be made directly to the public agency. The contractors is required to comply with public records laws and upon request by the public records custodian, shall provide a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost not to exceed the cost provided in Ch. 119, F.S. or as otherwise provided by law. A contractor who fails to provide the records to the agency within a reasonable time may be subject to penalties as provided in F.S. 119.10

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR’S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:**

KEYS ENERGY SERVICES
P.O. BOX 6100
Key West, FL 33041-6100
(305) 295-1067
Gricel Owens
Email: gricel.owens@keysenergy.com

**PUBLIC ENTITY CRIME CLAUSE**

Any person submitting a bid or proposal in response to this invitation must execute the enclosed form FOR 094, SWORN STATEMENT UNDER SECTION 287.133 (3) (a), FLORIDA STATUTES ON PUBLIC ENTITY CRIMES, including proper check(s), in the space(s) provided, and enclose it with his bid proposal. If you are submitting as bid or proposal on behalf of dealers or suppliers who will ship commodities and receive payment from the resulting contract, it is your responsibility to see that copies of the form are executed by them and are included with your bid or proposal. Corrections to the form will not be allowed after the bid or proposal opening time and date. Failure to complete this form may result in immediate disqualification of your bid or proposal.
QUALITY ASSURANCE PROVISIONS
A system of test and inspection shall be used to insure receipt of the quality and quantity of material(s)/service(s) purchased. Material(s)/service(s) will be promptly inspected and any discrepancies from the purchase order and/or the supplier's invoice shall be reported immediately to the Director of Administration, Compliance & Internal Policies.

RELEASE OF LIENS
The Contractor is to furnish a release of liens for sub-contractual materials and labor prior to each payment. In addition, the Contractor is to furnish the standard form of “Statement Concerning Claims.”

REJECTION
The Utility Board reserves the right to reject any or all proposals, to waive irregularities and informalities in any or all proposals, and to separately accept or reject any item, items, bid schedule or bid schedules of the proposal which the Utility Board deems to be in the best interest of the Utility Board.

RETAINAGE
A 10% retainage fee will be applied to any job requiring multiple payment requests.

SAFETY/MAINTENANCE OF TRAFFIC (MOT)
Contractor is to provide all required Safety and Traffic Control equipment as required by FDOT, City of Key West, or Monroe County MOT. Personnel are required to be trained in MOT as required. Contractor is to provide copies of certification of MOT training.

SAFETY AND PROTECTION
Examination of existing facilities: After the Contract is awarded and before commencement of the work, Contractor and KEYS shall make thorough examination of all existing structures and facilities associated with the project.

Safety requirements: Contractor shall do whatever work is necessary for safety and be solely and completely responsible for conditions of the job site, including safety of all persons (including employees) and property during the project period. This requirement shall apply continuously and not be limited to normal working hours.

Safety provisions shall conform to Federal and State Departments of Labor, Occupational Safety and Health Act (OSHA), and other applicable Federal, State, County, and Local Laws, Ordinances, Codes, requirements set forth herein, and regulations that may be specified in other parts of these specifications. Where these are in conflict, the more stringent requirement shall be followed. Contractor shall become thoroughly familiar with governing safety provisions and shall comply with the obligations set forth therein.

Contractor shall maintain and develop for the duration of the project, a safety program that will effectively incorporate and implement required safety provisions. The Contractor must furnish KEYS Energy Services Environmental/Safety Officer with a written copy of Vendor’s company Safety Program. Contractor shall appoint a qualified employee who is authorized to supervise and enforce compliance with the safety program.

KEYS duty to conduct review of the Contractor's performance is not intended to include a review or approval of the adequacy of Contractor's safety supervisor, safety program, or safety measures taken in, on, or near the site.

SCOPE OF WORK
While KEYS has tried to anticipate all Work required under and during the term of this contract, the parties understand and agree that the Work required herein may require without notice to the Contractor, the performance of Extra Work or the omission of Work previously required. KEYS may at any time and without notice to the Contractor, require changes in the scope of Work under this contract as KEYS may find necessary or desirable. Such changes may include the omission of Work previously required.

A. KEYS shall notify the Contractor of the change in scope work via Change Order, which shall become part of the Contract Documents. If a Change Order directs Contractor to omit Work, the Contractor shall refrain from performing it.

B. The Contractor shall perform Extra Work only pursuant to the issuance by KEYS of Change Order. Records of any Extra Work performed by contractor shall be reviewed daily by the Contractor and KEYS, duplicate copies of accepted records made and signed by both the Contractor or his representative and KEYS, and one (1) copy retained by each.

SECURITY/BACKGROUND CHECK
Keys requires all bids to include a complete listing of employee names, valid driver's license and/or social security numbers of all individuals that will perform work at the various sites. In addition to the D.M.V. references, Keys will run mandatory felony and misdemeanor background checks due to security reasons. The successful bidder must expressly agree to the right for Keys to run the D.M.V. references and the various criminal history background checks. Please do not supply social security numbers and driver's license data until after the award has been made.

KEYS reserve the right to perform background checks during the entire duration of the contractual agreement. The contractor will advise KEYS immediately of any employee staff changes before they are permitted on-site. Non-compliance of security/background check portion of the bid specifications will result in rejection of the proposal or termination of awarded contractual agreement.

SEVERABILITY
If any of these General Terms & Conditions is determined to be invalid, illegal or unenforceable, the remaining provisions of these General Terms & Conditions remain in full force to the extent permitted by law.

SUBCONTRACTORS
Each Bidder shall list on the Proposal form the name of each construction subcontractor who will furnish in excess of 10% of the Project. Failure to do so shall entitle KEYS, at its option, to reject the bid.
SUBMISSION OF PROPOSAL
It is the sole responsibility of each Bidder to deliver its Proposal to KEYS at the place designated for receiving Proposals and prior to the time for opening Proposals last announced to Bidders. Any Proposal received after the time last announced for opening Proposals may be retained by KEYS or returned to the Bidder, but such Proposal shall be rejected as not responsive.

TAX
The prices of materials set forth herein shall not include state sales tax or local option tax. KEYS is generally exempt from state sales tax, (sales tax number 04-00307-00-54), and local option tax. However; any purchases of materials for construction of new electrical transmission and distribution facilities are subject to state sales tax and local option tax.

TERMINATION OF CONTRACT
When deemed to be in the best interest of KEYS, any awards or contracts resulting from this specification may be cancelled by KEYS by the following means: 1) ten (10)-day written notice with cause; or 2) 30-day written notice without cause.

WARRANTY
A. The Contractor warrants to KEYS that the Material and Equipment to be furnished under the Contract shall be designed and fit for the purpose specified when operated in accordance with the Contractor's specific operating instructions or, in the absence thereof, in accordance with generally accepted operating practices; free from defects in material, workmanship, and title; shall meet all specifications, including those relating to performance, contained or incorporated by reference in the Contract; and that the technical direction of installation on KEYS' premises when furnished by the Contractor shall be performed in a competent, diligent manner in accordance with generally accepted professional practices.

B. The foregoing warranties, except as to title, shall apply to defects or deficiencies occurring within a period of 1 year from Final Acceptance provided the same is not unreasonably delayed by the KEYS or others. If, however, during the above 1 year warranty period the Equipment is not available for operation due to a failure to meet such warranties, such time of unavailability shall not be counted as part of the warranty period. The condition of any field tests shall be mutually agreed upon, and the Contractor shall be notified of and may be represented at all tests that may be made.

C. If the equipment and materials furnished hereunder does not meet the warranties specified above when it has normal and proper use and maintenance, KEYS shall promptly notify the Contractor and make the Equipment available for correction. The Contractor shall thereupon within a reasonable time correct all defects, including nonconformance with the Engineering Specifications, by either repairing or replacing any defective or damaged parts of the Equipment.

The cost of Labor, Materials and Equipment components directly associated with such repair or replacement of the Equipment, including removal, loading and unloading, transportation to and from the repair site and reinstallation, shall be borne by the Contractor.

D. Any repaired or replacement part furnished under the foregoing warranty shall carry warranties on the same terms as set forth above for 1 years from the date of its Final Acceptance.

E. The Contractor shall obtain written warranties from its Subcontractors and suppliers of Materials, Labor and Equipment components where such warranties are obtainable and shall deliver the original warranties to KEYS.

F. Neither the final payment, nor any other provision of the Contract, nor partial or entire use of the Material and Equipment by KEYS shall relieve the Contractor of liability with respect to the warranties referred to in the Contract or any other warranties, express or implied.

WITHDRAWAL OF PROPOSAL
Each Proposal shall constitute an offer to KEYS as outlined therein and shall be irrevocable after the time last announced for opening Proposals. Any Bidder may withdraw its Proposal by giving written notice to KEYS at the place such Proposals are to be received and at any time prior to the time last announced for opening Proposals. After the time last announced for opening Proposals and until execution of the Contract, no Bidder will be permitted to withdraw its Proposal for a period exceeding 120 days after the time last announced for opening Proposals.

INSURANCE SECTION

INDEMNITY AND INSURANCE REQUIREMENTS
By the signing of this contract and these indemnity and insurance requirements, the vendor agrees with the provisions shown below.

INDEMNITY
The Contractor shall indemnify, defend and hold harmless KEYS and their officers, partners, agents, employees and servants from and against any and all claims, judgments, liens, loss, damage, cost, charge or expense, including defense costs, court costs and attorneys’ fees, whether direct or indirect, by reason of liability imposed by law or by bodily injuries, including death at any time resulting therefrom, sustained by any person or persons or on account of damages to property, including loss of use thereof, arising out of or in consequence of the performance of the Contract, whether such injuries to or death of persons or damages to property are due or are claimed to be due to operations, errors, omissions, or negligent acts of KEYS or any of their officers, partners, agents, employees or servants, excepting only such injuries or damages as shall have been finally determined to have resulted solely from errors, omissions or negligent acts of KEYS or of their officers, partners, agents, employees or servants or independent contractor directly responsible to KEYS. For this indemnity, the Utility Board of the City of Key West will pay the sum of ten dollars ($10.00). The bidder shall add this amount ($10.00) to their base bid proposal, which will be included in payment to firm.

INSURANCE REQUIREMENTS
The insurance provided by the Vendor pursuant to this Contract shall apply on a primary basis and any other insurance provided by KEYS shall be excess of and not contributory to the insurance provided by the Vendor.
During the term of this agreement, except as specifically provided herein, the Contractor shall provide and maintain, at his sole cost and expense, insurance in the following types and amounts to cover all work under this agreement, including that done by sub-contractors.

The Vendor shall not commence any work on the contract until he has provided KEYS with proof of coverage's required, in the form an original certified Certificate of Insurance properly signed by the authorized agent of the insurance company. The insurance company must be an eligible surplus lines company or a company authorized by the Florida State Department of Insurance to sell the specific insurance required or with respect to Workers’ Compensation authorized as a group self-insurer by Florida Statue 440.57. The agent of the insurance company must be licensed to sell the insurance coverage’s required under this contract. Without limiting any of the other obligations or liabilities of the Vendor, the following insurance coverage’s with indicated limits of liability are mandatory under this contract. Those coverage’s with no limits shown are not required.

**VENDOR’S ENVIRONMENTAL IMPAIRMENT RESPONSIBILITY**

A. The Vendor acknowledges that the performance of this contract is, or may be, subject to Federal, State, and Local laws and regulations enacted for the purpose of protecting, preserving, or restoring the environment. The Vendor shall, at his sole cost, will be responsible for full compliance with any such laws or regulations.

B. The Vendor’s performance under this contract shall include, but not be limited to:

1. Performance in a manner to minimize disturbance of or damage to the environment.
2. To the extent caused by the performance of this contract by or on behalf of the Vendor, the clean-up, repair or restoration of the environment to the extent required by any Federal, State, or Local laws or regulations.

C. The Vendor shall be responsible for any fines, penalties, damage, or assessments made against the Vendor or KEYS resulting from the performance of this contract by or on behalf of the Vendor.

D. The Vendor’s obligation under paragraph B and C above shall survive the contract and shall not be limited in any manner by acceptances of final payments.

**WORKERS COMPENSATION--EMPLOYER’S LIABILITY INSURANCE**

Shall provide benefits consistent that will respond to all benefits as prescribed by Florida Statues. To include employers Liability Insurance shall be provided in accordance with statutes of the Florida Workers Compensation Act, the Federal Longshore and Harbor Workers Act, Maritime including the Jones Act, Federal Employers Liability Act and any other applicable federal or state laws. Customarily provided under the standard Workers Compensation Policy shall provide the following limits:

- Each Accident $100,000.00
- Disease-Policy Limit $100,000.00
- Disease-Each Employee $100,000.00

**COMMERCIAL GENERAL LIABILITY INSURANCE**

This insurance shall cover those sources of liability which would be covered by the latest edition of the standard Commercial General Liability Coverage Form as published by the Insurance Services Office (ISO) as filed for use in Florida without the attachment of restrictive endorsements other than the elimination of medical payments and fire damage legal liability.

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<th>Coverage</th>
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<tr>
<td>General Aggregate</td>
<td>$2,000,000.00</td>
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<tr>
<td>Limit of Insurance per project</td>
<td></td>
</tr>
<tr>
<td>Products/Completed Operation (Coverage for 3 yrs. after contract completion)</td>
<td>$2,000,000.00</td>
</tr>
<tr>
<td>Personal &amp; Advertising Injury</td>
<td>$1,000,000.00</td>
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<tr>
<td>Each Occurrence</td>
<td>$1,000,000.00</td>
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</tbody>
</table>

**BUSINESS AUTOMOBILE POLICY**

This insurance shall cover those sources of liability which would be covered by Part IV of the latest edition of the standard business auto policy form (ISO) as filed for use in Florida without attachments of restrictive endorsements. Coverage’s shall include owned, non-owned, and hired autos.

- Each Occurrence Bodily Injury and Property Damage Liability Combined: $1,000,000.00

**ADDITIONAL NAMED I INSURED**

The Utility Board of the City of Key West shall be included as an additional named insured for Comprehensive General Liability Form (ISO) and Business Automobile coverage’s.

**WAIVER OF SUBROGATION**

The Contractor’s Workers Compensation, Commercial General Liability and Business Automobile insurance shall include a Waiver of Transfer of RIGHTS OF Recovery against others to KEYS ‘(ISO Form). The Utility Board of the City of Key West must be named in the schedule for the specific project involved.
**INSURANCE AGENT’S STATEMENT**

I have reviewed the above requirements with the bidder named below. The following deductibles apply to the corresponding policy for the following company:

**DATE:** _______________  **FIRM NAME:** __________________________

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<thead>
<tr>
<th>POLICY (Type / Number)</th>
<th>DEDUCTIBLES</th>
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Acknowledgement of the additional insured and waiver of subrogation requirements: ________  Initials

Liability policies are _______Occurrence  ______ Claims Made

____________________________  ______________________________
Name of Insurance Agency  Signature of Insurance Agent

SUBMITTED BY: __________________________  
Print Name & Title

**NOTE:** EACH BIDDER SHALL PROVIDE A COPY OF COMPLETED CERTIFICATE OF INSURANCE COMPLYING WITH THE AFOREMENTIONED INSURANCE REQUIREMENTS OR SIGN AND DATE THE ABOVE INSURANCE AGENT’S STATEMENT AND AGREE TO PROVIDE A VALID CERTIFICATE OF INSURANCE UPON NOTIFICATION OF CONTRACT AWARD.
BI DDER’S STATEMENT

In consideration of this contract, if awarded, the Vendor agrees without reservation to KEYS’ Terms & Conditions, Indemnification Clause, and insurance clause herein. Which will become a part of the contract, the signing of this statement confirms the Vendor’s acceptance.

DATE: __________________

FIRM NAME: ___________________________ EMAIL: ___________________________

SUBMITTED BY: ___________________________  
Print Name & Title

SIGNATURE: __________________________________________

WITNESS: __________________________________________

NOTICE: THIS SIGNATURE PERTAINS TO THE ACKNOWLEDGEMENT AND ACCEPTANCE OF THE ENTIRE TERMS & CONDITIONS. ANY EXCEPTIONS TO THIS AGREEMENT SHOULD BE NOTED SEPARATELY.

FAILURE TO COMPLETE ABOVE NOTED DOCUMENT WILL RESULT IN NON-COMPLIANCE WITH THESE SPECIFICATIONS.
DRUG-FREE WORKPLACE STATEMENT

Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids which are equal with respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

The undersigned vendor in accordance with Florida Statues Section 287.087 hereby certifies that

_________________      ___________________ does:

(Name of Business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in Subsection 1.

4. In the statement specified in Subsection 1, notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contender to, any violation of Chapter 1893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Print Name____________________________________

Vendor's Signature____________________________

Date: ______________________________________
SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to ______________________________________
   (print name of public entity)

   by________________________________________________________
   (print individual’s name and title)

   for________________________________________________________
   (print name of entity submitting sworn statement)

   whose business address is_______________________________________

   and (if applicable) its Federal Employer Identification Number (FEIN) is _____________

   If the entity has no FEIN, include the Social Security Number of the individual signing sworn
   statement:________________________________________________________

2. I understand that a “public entity crime” as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that “convicted” or “conviction” as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an “affiliate” as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
   a. A predecessor or successor of a person convicted of a public entity crime; or
   b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term “affiliate” includes those officers, directors, executives, partners, shareholders, employee, members, and agents who are active in the management of an affiliate. The KEYSship by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value an arm’s length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a “person’ as defined in Paragraph 287.133(1)(e), Florida Statutes, means:
   a. any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity.
   b. The term “person” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.
6. Based on information and belief, the statement, which I have marked below, is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies):

_____ Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with the convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer, determined that is was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. (Attach a copy of the final order).

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IN PARAGRAPH ONE (1) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDE IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

______________________________
(Signature)                              (Date)

STATE OF _________________________

COUNTY OF ________________________

PERSONALLY APPEARED BEFORE ME, the undersigned authority, __________________________ who, after first being sworn by me, affixed his/her signature in the space provided above on this _______ day of ___________________ of 20_____.

______________________________
NOTARY PUBLIC

My Commission Expires:

FOR-094                             Revised: 11/01/02
PAYMENT & PROCEDURES FORMS

Partial-Progress Payments:
KEYS may require release of liens. Contractor will submit the following documents:
- “Contractor’s Request For Payment”
- “Sworn Statement Concerning Claims”
- “Release Of Lien”

A sample of each of these forms is attached.

“Contractor’s Affidavit and Request for Payment”: Form #FOR-216
Complete this form for work completed to date. Attach appropriate documentation to support this request. Retainage of not less than 10% will be deducted until final inspection by KEYS has been completed and all items are satisfactory. It must be signed by a corporate official, contain the raised corporate seal, be notarized and signed by the notary.

“Sworn Statement Concerning Claims”: Form #FOR-213
The prime contractor must complete this form for each sub contractor. This must be done each time a request for payment is made. It must be signed by a corporate official, contain the raised corporate seal, be notarized and signed by the notary.

“Release Of Lien”: Form #FOR-212
The prime contractor is responsible for obtaining and forwarding a release of lien for every sub contractor on the job. The release of lien must be unconditional and must contain a date from the sub contractor, which coincides with the date of the payment request. It must be signed by a corporate official, contain the raised corporate seal, be notarized and signed by the notary.

Final Payments:
Contractor is required to submit the following documents:
- “Contractor’s Request For Payment”
- “Sworn Statement Concerning Claims”
- “Final Release Of Lien”
- “Contractor’s Affidavit Of Contract Completion”

A sample of each of these forms is attached.

“Contractor’s Affidavit and Request for Payment”: Form #FOR-216
Complete this form. Attach appropriate documentation to support this request.

“ Final Release Of Lien”: Form #FOR-214
The prime contractor is responsible for obtaining and forwarding a final release of lien for every sub contractor on the job. The release of lien must be unconditional. It must signed by a corporate official, contain the raised corporate seal, be notarized and signed by the notary.

“Contractor’s Affidavit Of Contract Completion”: Form #FOR-215
The prime contractor must complete this form. It must signed by a corporate official, contain the raised corporate seal, be notarized and signed by the notary.
**CONTRACTOR’S REQUEST FOR PAYMENT**

**TO BE COMPLETED BY CONTRACTOR:**

| KEYS: UTILITY BOARD OF THE CITY OF KEY WEST | PAYMENT NO: _______ | DATE: _______ |
| CONTRACTOR: _____________________________ | CONTRACT NO: _______ | PAGE: _______ | OF _______ |

**PROJECT:** Underground Trenching | **BID NO:** #11-11

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<tr>
<td>% OF BALANCE: __________</td>
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<tr>
<td>TOTAL: ________________</td>
<td>PERIOD AMOUNT DUE: ________________</td>
</tr>
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</table>

**AMOUNTS APPROVED**

| W.O.# _______ | P.O.# _______ |

**TO BE COMPLETED BY KEYS PROJECT MANAGER**

**KEYS:**

**UTILITY BOARD OF THE CITY OF KEY WEST**

**PAYMENT REQUESTED:**

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<th>THIS REQUEST: $</th>
<th>TOTAL TO DATE: $</th>
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<td>PAYMENT REQUESTED:</td>
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**REPRESENTATION:**

WE HEREBY REPRESENT THAT THE ABOVE CONTRACTOR’S REQUEST IS A TRUE ESTIMATE OF WORK COMPLETED UNDER THE ABOVE CONTRACT TO DATE AND HEREBY RELEASE THE KEYS FROM ANY CLAIMS FOR MATERIALS OR LABOR FURNISHED OR EXPENSE INCURRED TO DATE WHICH IS NOT INCLUDED IN REQUESTS AND PAYMENT TO DATE, EXCEPT FOR INTEGRATED UNITS OF CONSTRUCTION PARTIALLY COMPLETED FOR WHICH NO REQUEST FOR PAYMENT HAS BEEN MADE.

**CONTRACTOR:** ____________________________  **BY:** ____________________________

**DATE:** ____________________________  **PRINT NAME:** ____________________________

**TITLE:** ____________________________

**KEYS’ CONTRACT COORDINATOR USE ONLY:**

**NOTICE TO KEYS RECEIVED**

**RELEASE OF LIEN RECEIVED (Yes/No)**

**SURWORN STATEMENT CONCERNING CLAIMS:**  (Yes/No)

**CONTRACTOR’S AFFIDAVIT OF CONSTRUCTION COMPLETION (Yes/No)**

**ROUTING:** 1. Contractor  2. KEYS Project Manager  3. Finance/Budget  4. Purchasing  5. Finance/Accounts Payable

**FOR-216**

**Revised: 04/19/04**
KEYS Bid #11-16 SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

UTILITY BOARD OF THE CITY OF KEY WEST

SWORN STATEMENT CONCERNING CLAIMS

PROJECT AND TITLE:_____________________________________________________________

SUB-CONTRACTOR:______________________________________________________________

CONTRACT FOR:_________________________________________________________________

CONTRACT DATE:__________________________ CONTRACT AMOUNT: $__________________

To: Utility Board of the City of Key West ("Keys Energy Services")

Post Office Box 6100 Key West, Florida 33041

In response to your demand, the undersigned contractor or material man___________________

_____________________________ submits the following statement of account for:

(Sub Contractor Name)____________________________________________________________

Labor performed to date consists of the following: ______________________________________

______________________________________________________________________________.

Material furnished to date consists of the following: _____________________________________

______________________________________________________________________________.

Labor still to be performed consists of the following: ____________________________________

______________________________________________________________________________.

Material still to be furnished consists of the following: ___________________________________

______________________________________________________________________________.

Amount paid on account to date: $______________, Amount now due: $______________,

Amount to become due: $______________.

______________________________________________________________________________

[Signature] [Date]

The State of ___________________

County of _____________________

________________________________, being first duly sworn, deposes and states that ______[he or she] is the lien

holder named in the forgoing statement of account; that ______[he or she] has read the statement of account

and has knowledge of its contents; that the statements contained in the statement of account are true; and

that the sum of $__________ as set forth in the statement of account is due and owing to lien holder.

Contractor(s), who, being by me duly sworn, subscribed to the foregoing affidavit in my presence.

________________________________ (Notary Public)

Print Name: ______________________________

My Commission Expires:_________________

FOR-213 Revised: 04/22/02
UTILITY BOARD OF THE CITY OF KEY WEST
RELEASE OF LIEN

PROJECT AND TITLE: ________________________________________________________________

SUB -CONTRACTOR: ________________________________________________________________

CONTRACT FOR: ________________________________________________________________

CONTRACT DATE: ________________________ CONTRACT AMOUNT: $__________________

To: Utility Board of the City of Key West (“Keys Energy Services”)
Post Office Box 6100  Key West, Florida  33041

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, for and in consideration of payment of the sum $__________________
and __________ ($______________) paid by ________________________________ the prime
contractor, receipt of which is hereby acknowledged, hereby releases and quit claims to The Utility Board of
the City of Key West, the KEYS, all liens, lien rights, claims or demands of any kind whatsoever, which the
undersigned now has or might have against the project on account of labor performed and/or material
furnished by the undersigned in the construction of said project have been fully paid for.

In witness whereof, I have hereunto set my seal this _____day of _________________.20____.
Witness:

_________________________  ______________________________(SEAL)

_________________________  by __________________________________

The State of ___________________
County of ____________________

_________________________ , being first duly sworn, deposes and states that ______[he or she] is the lien
holder named in the forgoing statement of account; that ______[he or she] has read the statement of account
and has knowledge of its contents; that the statements contained in the statement of account are true; and
that the sum of $__________ as set forth in the statement of account is due and owing to lien holder.

Contractor(s), who, being by me duly sworn, subscribed to the foregoing affidavit in my presence.

____________________________________  (Notary Public)
Print Name:____________________________
My Commission Expires:__________________

FOR-212                       Revised: 04/22/02
UTILITY BOARD OF THE CITY OF KEY WEST
**FINAL** RELEASE OF LIEN

PROJECT AND TITLE:_____________________________________________________________

SUB -CONTRACTOR:_____________________________________________________________

CONTRACT FOR:_________________________________________________________________

CONTRACT DATE:__________________________ CONTRACT AMOUNT: $__________________

To: Utility Board of the City of Key West (“Keys Energy Services”)

Post Office Box 6100 Key West, Florida 33041

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, for and in consideration of payment of the sum $ __________________
and ___________ ($______________) paid by ____________________________________ the prime
contractor, receipt of which is hereby acknowledged, hereby releases and quit claims to The Utility Board of
the City of Key West, the KEYS, all liens, lien rights, claims or demands of any kind whatsoever, which the
undersigned now has or might have against the project on account of labor performed and/or material
furnished by the undersigned in the construction of said project have been fully paid for.

In witness whereof, I have hereunto set my seal this _____day of _________________,20____.

Witness:

_________________________  ______________________________(SEAL)

_________________________  by __________________________________

The State of _________________

County of ___________________

_________________________ , being first duly sworn, deposes and states that ______[he or she] is the lien
holder named in the forgoing statement of account; that ______[he or she] has read the statement of account
and has knowledge of its contents; that the statements contained in the statement of account are true; and
that the sum of $__________ as set forth in the statement of account is due and owing to lien holder.

Contractor(s), who, being by me duly sworn, subscribed to the foregoing affidavit in my presence.

____________________________________
(Notary Public)
Print Name:___________________________
My Commission Expires:_______________

FOR-214 Revised: 04/22/02
UTILITY BOARD OF THE CITY OF KEY WEST

KEYS ENERGY SERVICES
CONTRACTOR’S AFFIDAVIT OF CONTRACT COMPLETION

PROJECT AND TITLE:__________________________________________________________

CONTRACTOR:________________________________________________________________

CONTRACT FOR:______________________________________________________________

CONTRACT DATE:_______________________ CONTRACT AMOUNT:_________________

CONTRACTOR’S AFFIDAVIT

I solemnly swear and affirm: That the work under the above named Contract and all amendments thereto have been completed in accordance with the requirements of said Contract; that all costs incurred for equipment, materials, labor, and services against the project have been paid; that no liens have been attached against the project; that no suits are pending by reason of work on the project under the Contract; that all Workmen’s Compensation claims are covered by Workmen’s Compensation insurance as required by law; that all public liability claims are adequately covered by insurance, and that the Contractor shall save, protect, defend, indemnify and hold the KEYSs harmless from and against any and all claims which arise as a direct or indirect result of any transaction, event or occurrence related to performance of the work contemplated under said Contract.

CONTRACTOR:

________________________________________(SEAL)

Title:____________________________________

Date:____________________________________

STATE OF ________________________________

COUNTY OF ______________________________

Personally appeared before me this ________ day of __________________ 20____,

___________________________________known (or made known) to me to be the:

____________________________________

(Print Name)

My Commission Expires:_________________

(Notary Public)

(Name of Contractor(s))

Contractor(s), who, being by me duly sworn, subscribed to the foregoing affidavit in my presence.

____________________________________

(Print Name)

My Commission Expires:_________________

Per attached Sworn Statement(s) Concerning Claims

FOR-215
Pursuant to and in compliance with your advertisement for bids and other contract documents relating thereto, the undersigned bidder, having familiarized himself with the terms and conditions affecting the performance of the contract contained in the specifications, hereby proposes and agrees to perform within the contract documents, schedules, and specifications for the following amounts.

**KEYS Reserves the right to increase or decrease any quantities.**
Pursuant to and in compliance with your advertisement for bids and other contract documents relating thereto, the undersigned bidder, having familiarized himself with the terms and conditions affecting the performance of the contract contained in the specifications, hereby proposes and agrees to perform within the contract documents, schedules, and specifications for the following amounts.

INDEMNITY FEE $ 10.00

TOTAL ESTIMATED YEARLY CONTRACT AMOUNT - $

Estimated Contract Amount = Extended pricing for (items #1, #2, #6, #10, #11, #12, #13, #14, #15, #16, #17, + Indemnity Fee)

TOTAL BID PRICE IN WORDS: ____________________________________________________________

______________________________
COMPANY: ____________________________ E-MAIL: ________________________________

______________________________
TELEPHONE: ____________________________ FAX: ________________________________

______________________________
ADDRESS: ________________________________

______________________________
SUBMITTED BY: ________________________________

PRINT/TITLE

______________________________
SIGNATURE

Check One

______ BID BOND ENCLOSED  _______ CASHIER'S CHECK ENCLOSED $ __________

**** Keys Energy Services reserves the right to accept and/or reject any proposal or any portion of a proposal. Bidder shall submit with the proposal any constraints, if any.
STATEMENT OF NO BID
KEYS Bid #11-16

If you are not bidding on this service/commodity, please complete and return this form to:

KEYS Energy Services
Attn: Purchasing Dept.
6900 Front Street Extended
Key West, FL 33040

Failure to respond may result in deletion of Vendor’s name from the qualified bidders list for KEYS Energy Services.

COMPANY NAME: ____________________________________________

ADDRESS: __________________________________________________

TELEPHONE: _________________________________________________

SIGNATURE: _________________________________________________

DATE: _______________________________________________________

We, the undersigned have declined to bid on ____________ for the following reason(s):

_______ Unable to meet insurance requirements.

_______ Insufficient time to respond to the Invitation to Bid.

_______ We do not offer this product or its equivalent.

_______ Our product schedule would not permit us to perform.

_______ Unable to meet specifications.

_______ Unable to meet bond requirements.

_______ Specifications unclear (explain below).

_______ Other (specify below).

Remarks: _____________________________________________________

                                                                
                                                                
                                                                

EXHIBIT B
(Vendor’s Proposal)
Official Check

Date: 8/25/16
Branch: 0006
VOID AFTER 90 DAYS

REMITTER: KEY IRON WORKS, INC

PAY EXACTLY **33,551 AND 25/100 DOLLARS

TO THE ORDER OF UTILITY BOARD OF THE CITY OF KEY WEST KEYS BID # 11-16

SIGNED:

$33,551.25

Official Check

Date: 8/25/16
Branch: 0006

REMITTER: KEY IRON WORKS, INC

PAY EXACTLY **33,551 AND 25/100 DOLLARS

TO THE ORDER OF UTILITY BOARD OF THE CITY OF KEY WEST KEYS BID # 11-16

SIGNED:

$33,551.25
KEYS Bid #11-16 SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

CALL FOR BIDS

THE UTILITY BOARD OF THE CITY OF KEY WEST, FLORIDA, herein after called Utility Board, operator of the KEYS, hereby gives notice to prospective bidders that sealed proposals will be received by said UTILITY BOARD, at the Purchasing Department, 6900 Front Street, Extended, Key West, Florida 33040, until 1:30 P.m. on Friday, August 26, 2016 for:

KEYS BID #11-16
SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

The Utility Board has instituted the DemandStar.com system to provide current information to potential bidders. This system allows you to receive bid information quickly and at your convenience 24 hours a day, seven days a week. Specifications may be obtained from their website at (www.demandstar.com) DemandStar website or phone: (954) 577-3915. Registered vendors will be notified automatically of all Request for Proposals. You may also visit (www.keysenergy.com) KeysEnergy.com for links and downloads to the DemandStar website.

All Bidders are required to submit:
One (1) original and three (3) copies of each proposal are to be enclosed in a sealed envelope marked on the outside:

"THE BID OPENING COMMITTEE"
KEYS BID #11-16
SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES
Mail to:
Keys Energy Services
KEYS Bid #11-16
"The Bid Opening Committee"
6900 Front Street Extended
Key West, FL 33040
(CAN NOT receive US Postal Service)

***It is the sole responsibility of each Bidder to deliver its Proposal to KEYS at the place designated for receiving Proposals and prior to the time for opening Proposals last announced to Bidders. Any Proposal received after the time last announced for opening Proposals may be retained by KEYS or returned to the Bidder, but such Proposal shall be rejected as not responsive.

NOTE: Keys will entertain questions for clarification until August 11, 2016. No questions will be answered after that date.

Failure to submit one (1) original and three (3) copies of each proposal may result in non-compliance and bid may be rejected.

Each proposal should be accompanied by a Certified Check or Bid Bond payable to the UTILITY BOARD OF THE CITY OF KEY WEST in an amount not less than five (5%) percent of the amount of the proposal as security.

Each proposal should constitute an offer to the UTILITY BOARD, as outlined therein, and should be irrevocable after the time announced for the opening thereof.

At a meeting of the BID OPENING COMMITTEE to be held in the Purchasing Conference Room, 6900 Front Street Extended, Key West, Florida on Friday, August 26, 2016 at 1:30 p.m. proposals will be opened and publicly read aloud.

THE UTILITY BOARD reserves the right to reject any or all proposals, to waive irregularities and informalities in any or all proposals, and to separately accept or reject any item, items, bid schedule or bid schedules of the proposal which the UTILITY BOARD deems to be in the best interest of the Utility Board.

Peggy Walls, Assistant Director of Finance
Utility Board-City of Key West
KEYS Bid #11-16 SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

GENERAL
The Utility Board of the City of Key West "KEYS Energy Services" herein after called KEYS is a municipally owned electric utility serving approximately 29,000 customers in Key West and the Lower Florida Keys.

KEYS and its representatives have exercised due care in preparing this Request for Proposals (RFP). All information contained herein is believed to be substantially correct. However, Proposers should verify information independently if desired. KEYS and its representatives do not warrant the accuracy of information contained herein.

PROJECT DESCRIPTION
KEYS’ is seeking to secure a Utility Service Contract with a contractor to install trenches, conduits, manholes, foundations, etc. as per KEYS’ Underground Primary Specifications.

The contract will be based on unit pricing. Quantities for each activity or task are estimated. KEYS’ does not guarantee the estimated quantities. Contractor’s unit cost shall include all material, overhead, profit, insurance, subcontractors, permits (County/City/DOT), etc. Ninety-five (95%) percent of the work that KEYS will be requesting is non-emergency.

SCHEDULE
The majority of the work will be planned and scheduled by KEYS. The Contractor will be required to complete planned work within three (3) weeks after requested by KEYS. If such work is not completed within the specified time, liquidated damages will be assessed. Emergency work will be started within twenty-four (24) hours of notification and completed within a reasonable amount of time which will be determined by the type of project.

MATERIAL/LABOR
All material costs shall be included in the unit prices (i.e., concrete, rebar, conduit, ground wire, manhole, pads, dewatering and/or deeper or difficult digs, etc.) The unit prices shall also include all overhead, profit, insurance, subcontractor costs, etc. The transformer pads and manholes are to be pre-made by Brooks Products or approved equal. All clearances for trenching shall be obtained by Contractor. Contractor is responsible for calling the state “one call” underground locate organization. The Contractor shall install asphalt in accordance with the City/County/DOT requirements.

The unit price for a transformer foundation pad shall include all the conduits that are within the foundation base, including customer secondary stub outs based on a maximum of eight (8) four inch (4") conduit to terminate approximately four (4") inches outside the transformer foundations. (See construction drawing), as stated on the drawing. The Contractor shall recess all prefabricated transformer foundation pads to elevation shown on plans, with a minimum of six (6") inches below grade.

The Bidder shall be required to take photos (digital or 35mm) of all underground trenching work prior to concrete trench covering. This is required for KEYS’ records. The successful bidder will also be required to provide KEYS with a minimum of twenty-four (24) hours advance notice for inspection prior to concrete trench covering. All as-built drawings and photos are to be submitted to KEYS within one week of underground trenching work. Progress payments will be withheld until photos and detailed as-built drawings are submitted.

CONSTRUCTION SPECS – Open Trench – Primary (15KV) circuits

A. HORIZONTAL RUNS:
1. Job Plans will show the conduit sizes. Conduits shall be Schedule 40 PVC enveloped in minimum four (4") inches of 3000# concrete with four (4) -#4 continuous re-bar at corners. Re-bar is required in trench only where trench will be subjected to vehicular traffic. (See Job Drawing). Contractor will not be required to install re-bar at other locations. Conduits must be free from all cracks or chips. Conduits must be held firmly in place to prevent displacement. Top of the highest primary conduit shall be minimum thirty (30") inches below finished grade. Install #4/0 bare copper ground wire in bottom of trench (See Construction Details). Splices in ground wire must be Cadweld or equal. This will be measured from riser pole to outside of transformer pad. Additional #4/0 bare copper ground wire may need to be run from transformer pad to the communication conduit if they
are terminated within six (6') feet of the transformer pad. The 4/0 copper wire is an optional price in the trench.

2. **Backfill** shall consist of 57 rocks installed in eight (8") inch lifts and compacted with a vibratory plate compactor. Compacting equipment should be sized as required to avoid damaging the conduits during backfill. Where duct banks are located under asphalt or concrete pavement, the top 8 inches of the backfill shall be 500 PSI flow fill, or the alternate compacted fill specified below.

3. Excavations shall be dewatered (which will be included with your unit pricing for trench LF) for inspection purposes if required by the KEYS' Inspector.

4. All primary conduits must have minimum twelve (12") inches of separation from communication utilities (i.e., AT&T, Comcast). Three (3') feet minimum is recommend from sewer and water.

5. Metallic "Dig warning" tape to be eighteen (18") inches above duct bank.

6. Bends in conduit run shall be done with manufactured bends and fittings compatible with PVC Schedule 40 pipe. PVC 90's shall be three (3') foot radius sweeps. Split couplings and "sliding" couplings are not allowed unless approved by the KEYS' Inspector.

7. The Contractor shall clean and prove each conduit run. Proving shall be done by passing a conduit piston sized for the conduit used, or other methods approved by the KEYS' Inspector.

8. The Contractor must use #2500lb Mule Tape (Herculine or approved equal).

9. There shall be no more than the equivalent of four (4) 90 degree bends (360 degrees total) between pull points.

**B. MANHOLES:**

1. The plans will specify the size, type and location of manholes.

2. Conduits at manholes shall be terminated with bell end fittings and grouted flush with the inside wall.

3. Each ground wire shall have a six (6') foot tail at each end.

**C. RISER POLES:**

1. Riser poles will be detailed on the job plans. The plans will specify the material of the 90-degree sweeps. They will be PVC schedule 40 unless Rigid Metal Conduit is specified on the plans.

2. The conduits shall be plumb at grade level at the base of the pole. The conduit installation at the riser pole must be inspected by the Keys Energy Inspector before concrete is poured.

3. The 4/0 ground wire shall have a six (6') foot tail at each end.

4. The 90 degree elbows should be strapped to pole using Stainless Steel Unistrut and Stainless Steel Unistrut Straps.

**D. PAD MOUNTS AND SECTIONALIZERS:**

1. The job plans will specify the details of the padmount transformer and sectionalizer cabinet installations. This may also include a maximum of eight (8) four (4") inch conduits stub out for customer's secondary runs. These will terminate approximately twenty-four (24") inches outside the pad base on the drawing provided.

2. Risers at padmount and sectionalizer locations shall be terminated six (6") inches above grade with a bell end fitting or a male adapter with insulated bushing. This may include a maximum of six (6) four (4") inch primary conduits. The layout of the risers shall be as shown on the job plans.

3. Each ground wire shall have a six (6') foot tail at each end.

4. The base material under the concrete pedestal shall be 57 rocks extending on (1') foot outside the pedestal. The duct bank below the pedestal shall not be concreted.

**E. INSPECTIONS REQUIRED (must give 24 Hours notice):**

1. Layout inspection before starting job.

2. Prior to concrete pours.

3. Prior to setting manholes or transformer pads.

4. Upon completion
F. CLEANUP:
   1. Excess excavated material shall be removed from the job. At contractor’s expense.
   2. The job site shall be cleaned and restored.
   3. Restoration of asphalt or concrete shall be as specified on the job plans.

LOCATION
Bidder can assume that all the locations are accessible by vehicles and trenching equipment.

PERMITTING
The contractor may be required to obtain all City of Key West, FDOT and Monroe County applicable permits for a job on private property and for work done on city, county, and DOT right-of-way, the contractor shall be licensed as required by each agency.

DRAWINGS
A. Base Foundation Pad for 750 kVA Padmount Transformer
B. Base Foundation Pad for Three Phase Padmount Transformer (all other Three Phase Padmount Transformers)
C. High Voltage Trench
D. Single Phase Pad
E. Three Phase Pad for 750 kVA
F. Three Phase Pad (all other Three Phase Padmount Transformers)
G. Large Manhole
H. Standard Manhole
I. Single Phase - Underground Specifications
J. Three Phase – Underground Specifications
K. Single Phase Padmount Transformer Concrete Work at Platform Slab
L. Three Phase Padmount Transformer Concrete Work at Platform Slab
EXHIBIT A
(Base Foundation Pad for 750kVA Padmount Transformer)
SCALE: 3/4" = 1'
EXHIBIT B
(Base Foundation Pad for 3Phase Padmount Transformer)
SCALE: 3/4" = 1'

KEYS ENERGY SERVICES
ENGINEERING DEPT. KEY WEST FL.

BASE FOR KEYS 48" X 78" VAULT

DESIGNED BY: D. GERSTENKORN
DRAWN BY: VIN SMITH/5-29-03

M-940
SCALE: NONE SHEET 1 OF 1
EXHIBIT C
(High Voltage Trench)
HIGH VOLTAGE TRENCH

DUCTS FOR TELEPHONE AND CABLE TV, CABLE DISTRIBUTION. CONSULT TELEPHONE COMPANY AND CABLE TV COMPANY. PLANS FOR EXACT ROUTING AND CONSTRUCTION REQUIREMENTS, WHERE ROUTING COINCIDES WITH POWER DUCTS, TELEPHONE AND TV DUCT MAY BE CONFIGURED INTO DUCT BANK AS SHOWN IN THIS DETAIL.

METALIZED MYLAR WARNING TAPE "DANGER HIGH VOLTAGE"
BACKFILL TO BE 57 ROCK OR "FLOWABLE FILL" SEE WRITTEN SPECS FOR DETAILS

3000# CONCRETE ENCASEMENT, MIN 4" AROUND DUCTS, 3" ON BOTTOM
2-4" PVC DUCTS, MIN. SCHEDULE 40. (POWER, SPARE FOR 1/0 AL CABLE)
(6" PVC FOR 500-1000 MCW CABLE)

REBAR TYPICAL AT ALL FOUR CORNERS. (ONLY REQUIRED WHERE SUBJECT TO VEHICULAR TRAFFIC)
4/0 BARE COPPER GROUND WIRE
ALL SPICES BELOW GRADE TO BE CADWELD (OPTIONAL PER KEYS)
EXHIBIT D
(Single Phase Pad)
EXHIBIT E
(Three Phase for 750kVA)
EXHIBIT F
(Three Phase Pad)
TRANSFORMER PAD 3Ø 112 KVA-500 KVA

TOP VIEW

SECTION A-A

HEIGHT WILL VARY DEPENDING ON LOCATION. OWNER TO SPECIFY

ISOMETRIC VIEW

NOTES:
1. HANDLING DEVICES TO BE GRAUTED OVER AFTER INSTALLATION
2. MARK 2 WALLS PERMANENTLY AS FOLLOWS:

KEYS DANGER HIGH VOLTAGE KEEP OUT

THIS DOCUMENT AND ITS CONTENTS ARE CONFIDENTIAL AND EXCLUSIVE PROPERTY OF BROOKS/OLDCASTLE PRECAST, INC. THEY MAY NOT BE COPIED, REPRODUCED OR DISCLOSED TO ANYONE IN ANY MANNER, WITHOUT WRITTEN PERMISSION FROM BROOKS/OLDCASTLE PRECAST, INC.
EXHIBIT G
(Large Manhole)
72" X 72" 60" - Manhole

NOTES:

1. Concrete: 28 Day Compressive Strength f'c = 4,500 psi.

2. Reinforcing: ASTM A-615, Grade 60.

3. Supports an H2O Loading as Indicated by AASHTO.

4. Contractor to Verify Size and Location of All Openings.

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<th>PIPE SIZE</th>
<th>PIPE INVERT</th>
<th>HOLE SIZE</th>
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Oldcastle Precast, East, Inc.
2140 PONDELLA ROAD, NORTH FORT MYERS, FLORIDA 33903
(239) 574-8896  FAX: (239) 574-1419

Contractor:
Project:

Drawn: [Signature]  Date: May 11, 2002
Checked: [Signature]  Date:  
Produced: [Signature]  Shipped:  
Str. No.: 3638  S.O. No.:  
LN No.:  
Drawing No.:  
EXHIBIT H
(Standard Manhole)
EXHIBIT I
(Single Phase – Underground Specifications)
COORDINATE EACH TRANSFORMER
PAD SIZE WITH UTILITY COMPANY
(SEE ATTACHED TYPICAL TRANSFORMER SIZES)

HEIGHT ABOVE FINISHED GRADE
= FEMA ELEVATION MINUS 1.5'
(BUT NOT LESS THAN 3')

FINISHED GRADE

3'-0" DEEP

SECONDARY CONDUITS SIZE/QTY. TO BE
DETERMINED BY OWNER/ELECTRICIAN/CONTRACTOR

2-4" PVC DUCT/SCHEDULE-40

CONCRETE ENCASED PRIMARY
DUCT MINIMUM 36" RADIUS

GROUND ROD
5/8" X 8' COPPERWELD

END BELL TYP.

PAD SIZE VARIES (SEE BROOKS DRAWINGS)

FINISHED GRADE

TYPICAL 1 Ø TYPE TRANSFORMER
FOUNDATION AND CONDUIT LOCATION

SCALE: NONE

REVISED 8-13-02 RVS
KEYS ENERGY SERVICES
ENGINEERING DEPT. KEY WEST FL.

UNDERGROUND SPECIFICATIONS

DESIGNED BY: D. FINIGAN
APPROVED BY:
DATE: 1-01
DRAWN BY: VIN SMITH
SCALE: NONE | SHEET 5 OF 5
EXHIBIT J
(Three Phase – Underground Specifications)
TYPICAL 3 Ø TYPE TRANSFORMER FOUNDATION AND CONDUIT LOCATION

SCALE: NONE

COORDINATE EACH TRANSFORMER PAD SIZE WITH UTILITY COMPANY (SEE ATTACHED TYPICAL TRANSFORMER SIZES)

MAXIMUM HEIGHT 3' ABOVE GRADE. ACTUAL HEIGHT WILL VARY BASED ON FEMA ELEVATION REQUIREMENT (FEMA ELEVATION MINUS 1.5')

FINISHED GRADE

MIN. 6" COMPACTED FILL UNDERNEATH PAD. 57 ROCK BACKFILL AS PER SPECS.

2-4" PVC DUCT/SCHEDULE 40

CONCRETE ENCASED PRIMARY DUCT MINIMUM 36" RADIUS (NO CONCRETE UNDER PAD)

GROUND ROD 5/8" X 8' COPPERWELD

PAD SIZE VARIES (SEE BROOKS DRAWINGS)

BASE FOUNDATION PAD REQUIRED ON 3 PHASE LARGE TRANSFORMER PAD (112 KVA - 750 KVA). NOT REQUIRED ON SINGLE PHASE PADS. SEE KEYS DWGS M-939 AND M-940.

SECONDARY CONDUITS SIZE/QTY. TO BE DETERMINED BY OWNER/ELECTRICIAN/CONTRACTOR

FINISHED GRADE

REVISED 1-12-05 RVS
KEYS ENERGY SERVICES
ENGINEERING DEPT. KEY WEST FL

UNDERGROUND SPECIFICATIONS
DESIGNED BY: D. FINIGAN
APPROVED BY:
DATE: 1-01
DRAWN BY: VIN SMITH
SCALE: NONE SHEET 1 OF 5

M-729
EXHIBIT K
(Single Phase Padmount Transformer Concrete Work at Platform Slab)
SLAB TO BE REINFORCED WITH WIRE MESH PER CODE

SCALE: 3/4" = 1'

KEYS ENERGY SERVICES
ENGINEERING DEPT. KEY WEST FL

CONCRETE WORK PLATFORM SLAB
FOR SINGLE PHASE PADMOUNT XFMR

DESIGNED BY: MATTHEW ALFONSO
DRAWN BY: VIN SMITH/6-27-16
SCALE: NONE
SHEET I OF I
EXHIBIT L
(Three Phase Padmount Transformer Concrete Work at Platform Slab)
SCALE: 3/4" = 1'

SLAB TO BE REINFORCED WITH WIRE MESH PER CODE
KEYS ENERGY SERVICES
GENERAL TERMS & CONDITIONS

ADDITIONS/DELETIONS
KEYS reserves the right to add or delete any item from this bid or resulting contract when deemed to be in the best interest of KEYS.

ALTERATIONS IN PROPOSAL
Except as otherwise provided herein, Proposals which are conditional in any way, or which contain erasures or interlineations not authenticated as provided herein, or which contain items not called for, items not in conformity with applicable laws, changes, additions, recapturations, alternative Proposals, or any other modifications of the Proposal forms which are not specifically called for in the Contract Documents, will be rejected as not responsive unless specifically agreed to in writing by KEYS. Erasures, interlineations or other corrections shall be authenticated by affixing in the margin immediately opposite the correction, the handwritten initials of each person executing the Proposal.

APPLICABLE LAW
This Contract shall be interpreted in accordance with the law of the State of Florida.

ASSIGNMENT
No contract awarded under these terms, conditions, and specifications, may be sold, transferred or assigned in full or part without the written permission of KEYS. Such written permission shall not relieve the Contractor from its obligations and liabilities.

ATTORNEY FEES
The prevailing party in any litigation or mediation relating to the contract shall be entitled to recover reasonable attorney fees and costs from the other party for all matters, including, but not limited to, appeals.

BASIS OF AWARD
A. The award will be made by KEYS on the basis of the Proposal from the lowest responsive* responsible**, Bidder which, in KEYS' sole and absolute judgment, will best serve the interest of the KEYS.

B. KEYS reserves the right to accept or reject any or all Proposals, and to waive any informalities and irregularities in said Proposal.

*Responsive Bidder: Any person, firm, or corporation submitting a bid for the work contemplated whose bid form is complete and regular, free of excisions or special conditions and has no alternative bids for any item unless requested in the technical specifications.

**Responsible Bidder: Any person, firm, or corporation submitting a bid for the work contemplated who maintains a permanent place of business, has adequate manpower and equipment to do the work properly and within the time limit that is established, has adequate financial status to meet his obligations contingent to the work and has a history of performance of like contracts (acceptable to the KEYS).

C. Evaluation: The lowest evaluated price shall be determined from an analysis which assesses the impact of the contract price, operational and maintenance costs.

BID BOND/CERTIFIED CHECK
Each proposal should be accompanied by a Bid Bond or Certified Check payable to the UTILITY BOARD OF THE CITY OF KEY WEST in an amount not less than five (5%) percent of the amount of the proposal as security.

BID PROPOSAL PRICING
All bid proposals must remain firm for 120 days minimum.

BIDDER QUALIFICATIONS
If a pre-bid meeting is held, please provide the following information at that time. If no pre-bid meeting is held, please provide this information in your bid response.

CITY/COUNTY LICENSING
For the term of the contract, Contractor shall maintain City of Key West and Monroe County licenses and/or other requirements to work within the City or County limits. The contractor should provide KEYS with a copy of all licenses.

COMPLETENESS OF PROPOSAL
A. Each Bidder shall respond to all items on Proposal Page. When quoting on all items including optional items, bidders shall insert the words "No Bid" in the space provided for any item for which no offer is made. Failure to do so may result in the Proposal being rejected as not responsive.

B. KEYS will consider alternative, additive, or deductive options with no initial pricing.

C. Each Proposal shall include specific acknowledgment of receipt of all Addenda issued during the bidding period. Failure to do so may result in the Proposal being rejected as not responsive.

D. Each Bidder shall furnish information relating to its experience, facilities, personnel, material, equipment and business as is required by the Proposal form. Failure to do so may result in the Proposal being rejected as not responsive.
KEYS Bid #11-16 SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

E. Additional technical data furnished by a Bidder, but not required by the Request for Proposal (RFP), may at KEYS' option be considered a part of the Proposal to the extent that it is supplementary to, is consistent with and not contrary to the RFP.

CONTACT REFERENCES
KEYS contact for bidding requirements and technical specifications: Supervisor of Purchasing, susan.ham@keysersrvy.com.

CONTRACT DURATION
The duration of the base contract shall be for three (3) years from the date of execution by the Utility Board through September 30, 2021. If this contract is for a unit price and estimated quantities and if KEYS desires, the Utility Board and the contractor can extend the contract at the same unit. The extension can be for two (2) additional one (1) year terms. Each extension must be mutually agreed upon and approved by the Utility Board. KEYS reserve the right to cancel this contract without cause with 30 days written notice and with cause within 10 days.

CONTRACT CHANGES
No changes, over the contract period, shall be permitted unless prior written approval is given by the Utility Board of the City of Key West, Florida. No Contractor shall assign the contract or any rights or obligations there under without the written consent of KEYS. In the event of such approved subcontracting, the Contractor agrees to provide KEYS with written documentation relative to the Subcontractor(s) employed in this contract.

CONTRACT COMPLIANCE
All contracts are subject to the terms and conditions of the Fair and Accurate Credit Transactions Act of 2003. The said provisions and compliance therewith are expressly made part of the contract and are binding covenants on the party contracting with KEYS.

CONTRACTOR LIABILITY
In the event of default by the Contractor, KEYS reserves the right to utilize the next lowest Bidder as the new Contractor. In the event of this occurrence, the next lowest Bidder, if it wishes the award, shall be required to provide the bid items at the prices as contained on its proposal or bids for this specification.

CONTRACTOR'S RESPONSIBILITIES
A. Contractor shall be responsible for all loss, damage, vandalism, theft, etc. for all equipment, tools, materials, etc. left on the job site.
B. Contractor shall be responsible for maintaining the site in a clean condition during installation. Contractor and KEYS at which time the site should be cleaned up will make a final walk down of the sites.
C. Prior to completion of demolition, Contractor shall remove all construction materials, waste, demolition debris, excess materials, temporary installation, etc. that have not been specifically turned over and accepted by KEYS.
D. Contractor shall be responsible for any and all costs for clean up of oil or gasoline spills which result from his equipment or from any work performed as part of this contract.
E. Permit violations or environmental damage caused by the Contractor shall be mitigated or repaired by the Contractor, at the Contractor's expense, to the satisfaction of the governing authority citing such damage.
F. Items discussed in this section are not intended to be all-exclusive of Federal, State, and Local Laws and Regulations. Information is provided as anticipated minimum requirements. Contractor shall be familiar and comply with all requirements of applicable laws and regulations.
G. The Contractor will assume total responsibility for materials, delivery to/from job site, installation, and testing of system.

DELIVERY
A. Delivery, inspection and acceptance - delivery, inspections and acceptance will be at destination, F.O.B. Key West as specified in the RFP, KEYS Warehouse, unless otherwise provided. Until delivery and acceptance and after any rejections, risk of loss will be on the Vendor, unless loss results from negligence of KEYS.
B. Notwithstanding the requirements for any KEYS inspection and test contained in the specifications applicable to this proposal, except where specialized inspections or tests are specified for performance solely by KEYS, the Contractor shall perform or have performed the inspections and tests required to substantiate that the supplies and services provided under this proposal conform to the drawings, specifications and proposal requirements listed herein, including, if applicable, the technical requirements for the manufacturer's part numbers specified herein.
C. Delivery of Excess Quantities – The Contractor is responsible for the delivery of each item quantity within allowable variations, if any. If the Contractor delivers and KEYS receives quantities of any item in excess of the quantity called for (after considering any allowable variations of quantity) such excess quantities will be treated as being delivered for the convenience of the Contractor. KEYS may retain such excess quantities without compensating the interests herein. Quantities in excess, will at the option of KEYS, either be returned at the Contractor's expense, or retained and paid for by KEYS at the contract unit price.
D. Deliveries – In the event of failure to deliver material of the quality or within the time specified, KEYS may cancel the order and buy elsewhere. The Contractor will be responsible for any cost differences encountered in the procurement of materials. Failure of KEYS to exercise this option with respect to any installment shall not be deemed a waiver with respect of future installments, if any.
E. Delivery tickets – All shipments under this agreement shall be accompanied with delivery tickets, or packing slips, in triplicate, which shall contain the following minimum information: name of supplier, purchase order number, date of order, date of delivery
KEYS Bid #11-16 SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

or shipment, itemized list of supplies or services furnished, quantity, unit price, and extension of each line item. Upon delivery, the Warehouse will retain a copy of the related delivery ticket.

F. Inspection, Acceptance and Title – Inspection and acceptance will be at destination, unless otherwise provided. Title and risk of loss or damage to all items shall be the responsibility of the contract supplier until accepted by KEYS in writing.

ENTIRE AGREEMENT
The terms, specifications and/or drawings included in a duly executed contract will constitute the entire agreement between the parties. No modification or waiver of terms of this agreement shall be binding, unless in writing, signed by a duly authorized representative of KEYS.

ERROR IN BID CALCULATION
In the event there is a mathematical error in the bid, KEYS will recalculate using the line items and correct the total.

EXECUTION OF PROPOSAL
If a Proposal is made by a partnership, it shall contain the name and address of each partner and shall be executed in the partnership name, followed by the handwritten signature of a partner authorized to execute the Proposal for the partnership. If a Proposal is made by a corporation, it shall be executed in the name of the corporation, followed by the handwritten signature of an officer authorized to execute the Proposal for the corporation, and the printed or typewritten designation of the office he holds in corporation. Another partner of the partnership or officer of the corporation shall attest to the authority of the person executing the Proposal. KEYS may require any Bidder to furnish certified copies of extracts of the minutes of meetings of the governing body of the Bidder authorizing execution of the Proposal and Contract Documents.

FORCE MAJEURE
KEYS shall not be liable in any way to the contractor as a result of an event, circumstance or act of a third party that is beyond a party’s reasonable control (e.g. an act of God, and act of the public enemy, an act of a government entity, strikes or other labor disturbances, hurricanes, earthquakes, fires, floods, epidemics, embargoes, war and riots).

LITIGATION SEARCH
KEYS reserve the right to conduct a litigation search on contractor’s history of past litigation.

LIQUIDATED DAMAGES
The Liquidated Damages shall be $200.00 per day. The liquidated damage amount specified herein shall apply to damages and expenses that KEYS may incur as a result of a delay in completing the Scope of Work. The commencement date for Liquidated Damages will be three weeks from date that each job is assigned. Any problems conforming to this schedule shall be stated in the proposal. At the end of the three week period for each assigned job, the above-specified damages of $200.00/day will commence.

MODIFICATION OF PROPOSAL
A modification of a proposal already received will be considered only if the modification is received prior to the time last announced for opening Proposals. All modifications shall be made in writing, executed and submitted in the same form and manner as the original proposal, fax or E-mail. Phone modifications will not be considered.

NOTICE TO PROCEED
KEYS will issue the successful bidder a Notice to Proceed after the Performance Bond and Insurance Certificates have been received and reviewed.

LETTER OF CREDIT ON FILE AND AFTER BID ACCEPTED AND ON FILE.

OPENING PROPOSALS
At the time and place last announced for opening Proposals, each Proposal which has been received prior to the time last announced for opening Proposals, except those which have been properly withdrawn, will be publicly opened and read aloud, irrespective of any irregularities or informalities in such Proposals.

KEYS INSPECTIONS/MEETINGS
KEYS will make inspections and/or meetings as deemed necessary to ensure that all work is being performed in compliance with these specifications and guarantees.

PAYMENT
Payment will be made after acceptance of services and materials and within 30 days after receipt of invoice. KEYS will hold 10% retention until 30 days after project completion and final acceptance on jobs that require more than one payment request. The Contractor will complete and submit the provided Contractor’s Request for Payment form, prior to any payment of draw request. The Contractor’s request for payment shall be accompanied by a breakdown of material and labor associated with that particular request. KEYS does not pay service charges on late payments.

PENALTIES
KEYS reserves the right to increase or decrease quantities shown without penalties.

PERFORMANCE BOND
Within ten (10) days after the Contractor receives the Notice of Utility Board Approval and prior to the execution of the Contract, the Contractor shall furnish a Performance and Payment Bond in the form acceptable to KEYS, which form is included in the Contract Documents, with corporate Surety satisfactory to KEYS such bond shall insure the full and faithful performance of the Contract, including the payment of faithful performance of the Contract, including the payment of all obligations arising there under, and shall be in an amount equal to 100 percent of the Total Contract Amount unless otherwise provided in these specifications. Such bond shall further comply in all respects with the laws of the State of Florida.

PERSONNEL
1. The project supervisor must be capable of communicating fluently in English at all times.
2. On a project, the foreman must be capable of communicating fluently in English.
3. All employees of company must be United States Citizens or legally authorized to reside and work in the United States.
4. KEYS may request at any time throughout the contract the following within eight (8) hours:
KEYS Bid #11-16 SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

- proof of citizenship for all employees
- proof of employee’s salary is at or above state and federal minimum requirements
- proof of eligibility to legally work in the United States

POSTPONEMENT OF OPENING
KEYS reserves the right to postpone the date and time last announced for opening Proposals and such postponement may be made at any time prior to the time last announced for opening Proposals. KEYS will give written or telegraphic notice or post on DemandStar of any such postponement to each party to whom Contract Documents have been issued, followed by issuance of an Addendum confirming the changing of the announced date and time for opening Proposals.

PRICES
A. All prices bid shall be firm unless the conditions of the RFP permit price escalation. If an escalation method or indices are specified, the Bidder shall indicate in its bid the specific items subject to escalation, and shall give the method and indices to be used in computing the amount thereof
B. The vendor shall provide the proposal price in U.S. dollars only.

PROPOSAL GUARANTEE
A. The Proposal Guarantee shall be the cashiers check or Bid Bond required in the Notice to Bidders. A bid bond or cashier’s check in lieu of a surety bond in the amount of (five) 5% of the proposal shall be submitted with all proposals. This bid bond requirement is to be used as security and will be returned to bidder after KEYS enters into a Contract with the successful bidder. This (five) 5% shall be based on the total bid price. The bid bond or cashier’s check shall be valid for a period of no less than 120 days after bid opening date.
B. KEYS may reject all Proposals, and in such event, all cashiers checks and Bid Bonds will thereupon be returned to the Bidders.
C. When a Proposal is accepted, all checks and Bid Bonds will thereupon be returned to the bidders, except for the approved proposal. The cashiers check or Bid Bond of the approved Bidder will be returned after completion of the requirements in the following paragraph.
D. Within 14 days after delivery of Notice of Utility Board Approval, or such additional time as is allowed by KEYS, the Bidder shall furnish satisfactory Performance and Payment Bond, Insurance Certificate and Insurance Policies.

PROTESTS
Any bidder who believes he has been aggrieved in connection with the staff recommendation or award of a contract may protest in writing to the KEYS Purchasing Department. The deadline for filing a protest is prior to the commencement of the Utility Board meeting wherein the award is to be considered. It is the responsibility of the bidder to ascertain the bid award information from KEYS website. Protests shall specifically describe the subject matter and facts giving rise to the protest.

PUBLIC RECORDS ACT
Pursuant to F.S. 119.0701 of the Public Records Act, any request to inspect or copy public records relating to a public agency’s contract for services must be made directly to the public agency. The contractors is required to comply with public records laws and upon request by the public records custodian, shall provide a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost not to exceed the cost provided in Ch. 119, F.S. or as otherwise provided by law. A contractor who fails to provide the records to the agency within a reasonable time may be subject to penalties as provided in F.S. 119.10

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR’S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:
KEYS ENERGY SERVICES
P.O. BOX 6100
Key West, FL 33041-6100
(305) 295-1067
Gracel Owens
Email: gracel.owens@keysenergy.com

PUBLIC ENTITY CRIME CLAUSE
Any person submitting a bid or proposal in response to this invitation must execute the enclosed form FOR 094, SWORN STATEMENT UNDER SECTION 287.133 (3) (a), FLORIDA STATUTES ON PUBLIC ENTITY CRIMES, including proper check(s), in the space(s) provided, and enclose it with its bid proposal. If you are submitting as bid or proposal on behalf of dealers or suppliers who will ship commodities and receive payment from the resulting contract, it is your responsibility to see that copies of the form are executed by them and are included with your bid or proposal. Corrections to the form will not be allowed after the bid or proposal opening time and date. Failure to complete this form may result in immediate disqualification of your bid or proposal.
KEYS Bid #11-16 SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

QUALITY ASSURANCE PROVISIONS
A system of test and inspection shall be used to insure receipt of the quality and quantity of material(s)/service(s) purchased. Material(s)/service(s) will be promptly inspected and any discrepancies from the purchase order and/or the supplier’s invoice shall be reported immediately to the Director of Administration, Compliance & Internal Policies.

RELEASE OF LIENS
The Contractor is to furnish a release of liens for sub-contractual materials and labor prior to each payment. In addition, the Contractor is to furnish the standard form of “Statement Concerning Claims.”

REJECTION
The Utility Board reserves the right to reject any or all proposals, to waive irregularities and informalities in any or all proposals, and to separately accept or reject any item, items, bid schedule or bid schedules of the proposal which the Utility Board deems to be in the best interest of the Utility Board.

RETAI NAGE
A 10% retainer fee will be applied to any job requiring multiple payment requests.

SAFETY/MAINTENANCE OF TRAFFIC (MOT)
Contractor is to provide all required Safety and Traffic Control equipment as required by FDOT, City of Key West, or Monroe County MOT. Personnel are required to be trained in MOT as required. Contractor is to provide copies of certification of MOT training.

SAFETY AND PROTECTION
Examination of existing facilities: After the Contract is awarded and before commencement of the work, Contractor and KEYS shall make thorough examination of all existing structures and facilities associated with the project.

Safety requirements: Contractor shall do whatever work is necessary for safety and be solely and completely responsible for conditions of the job site, including safety of all persons (including employees) and property during the project period. This requirement shall apply continuously and not be limited to normal working hours.

Safety provisions shall conform to Federal and State Departments of Labor, Occupational Safety and Health Act (OSHA), and other applicable Federal, State, County, and Local Laws, Ordinances, Codes, requirements set forth herein, and regulations that may be specified in other parts of these specifications. Where these are in conflict, the more stringent requirement shall be followed. Contractor shall become thoroughly familiar with governing safety provisions and shall comply with the obligations set forth therein.

Contractor shall develop and maintain for the duration of the project, a safety program that will effectively incorporate and implement required safety provisions. The Contractor must furnish Keys Energy Services Environmental/Safety Officer with a written copy of Vendor’s company Safety Program. Contractor shall appoint a qualified employee who is authorized to supervise and enforce compliance with the safety program.

KEYS duty to conduct review of the Contractor’s performance is not intended to include a review or approval of the adequacy of Contractor’s safety supervisor, safety program, or safety measures taken in, on, or near the site.

SCOPE OF WORK
While KEYS has tried to anticipate all Work required under and during the term of this contract, the parties understand and agree that the Work required herein may require without notice to the Contractor, the performance of Extra Work or the omission of Work previously required. KEYS may at any time and without notice to the Contractor, require changes in the scope of Work under this contract as KEYS may find necessary or desirable. Such changes may include the omission of Work previously required.

A. KEYS shall notify the Contractor of the change in scope work via Change Order, which shall become part of the Contract Documents. If a Change Order directs Contractor to omit Work, the Contractor shall refrain from performing it.

B. The Contractor shall perform Extra Work only pursuant to the issuance by KEYS of Change Order. Records of any Extra Work performed by contractor shall be reviewed daily by the Contractor and KEYS, duplicate copies of accepted records made and signed by both the Contractor or his representative and KEYS, and one (1) copy retained by each.

SECURITY/BACKGROUND CHECK
Keys requires all bids to include a complete listing of employee names, valid driver’s license and/or social security numbers of all individuals that will perform work at the various sites. In addition to the D.M.V. references, Keys will run mandatory felony and misdemeanor background checks due to security reasons. The successful bidder must expressly agree to the right for Keys to run the D.M.V. references and the various criminal history background checks. Please do not supply social security numbers and driver’s license data until after the award has been made.

KEYS reserve the right to perform background checks during the entire duration of the contractual agreement. The contractor will advise KEYS immediately of any employee staff changes before they are permitted on-site. Non-compliance of security/background check portion of the bid specifications will result in rejection of the proposal or termination of awarded contractual agreement.

SEVERABILITY
If any of these General Terms & Conditions is determined to be invalid, illegal or unenforceable, the remaining provisions of these General Terms & Conditions remain in full force to the extent permitted by law.

SUBCONTRACTORS
Each Bidder shall list on the Proposal form the name of each construction subcontractor who will furnish in excess of 10% of the Project. Failure to do so shall enable KEYS, at its option, to reject the bid.
KEYS Bid #11-16 SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

SUBMISSION OF PROPOSAL
It is the sole responsibility of each Bidder to deliver its Proposal to KEYS at the place designated for receiving Proposals and prior to the time for opening Proposals last announced to Bidders. Any Proposal received after the time last announced for opening Proposals may be retained by KEYS or returned to the Bidder, but such Proposal shall be rejected as not responsive.

TAX
The prices of materials set forth herein shall not include state sales tax or local option tax. KEYS is generally exempt from state sales tax, (sales tax number 04-00307-00-54), and local option tax. However; any purchases of materials for construction of new electrical transmission and distribution facilities are subject to state sales tax and local option tax.

TERMINATION OF CONTRACT
When deemed to be in the best interest of KEYS, any awards or contracts resulting from this specification may be cancelled by KEYS by the following means: 1) ten (10-day) written notice with cause; or 2) 30-day written notice without cause.

WARRANTY
A. The Contractor warrants to KEYS that the Material and Equipment to be furnished under the Contract shall be designed and fit for the purpose specified when operated in accordance with the Contractor's specific operating instructions or, in the absence thereof, in accordance with generally accepted operating practices; free from defects in material, workmanship, and title; shall meet all specifications, including those relating to performance, contained or incorporated by reference in the Contract; and that the technical direction of installation on KEYS' premises when furnished by the Contractor shall be performed in a competent, diligent manner in accordance with generally accepted professional practices.

B. The foregoing warranties, except as to title, shall apply to defects or deficiencies occurring within a period of 1 years from Final Acceptance provided the same is not unreasonably delayed by the KEYS or others. If, however, during the above 1 year warranty period the Equipment is not available for operation due to a failure to meet such warranties, such time of unavailability shall not be counted as part of the warranty period. The condition of any field tests shall be mutually agreed upon, and the Contractor shall be notified of and may be represented at all tests that may be made.

C. If the equipment and materials furnished hereunder does not meet the warranties specified above when it has normal and proper use and maintenance, KEYS shall promptly notify the Contractor and make the Equipment available for correction. The Contractor shall thereupon within a reasonable time correct all defects, including nonconformance with the Engineering Specifications, by either repairing or replacing any defective or damaged parts of the Equipment.

D. Any repaired or replacement part furnished under the foregoing warranty shall carry warranties on the same terms as set forth above for 1 years from the date of its Final Acceptance.

E. The Contractor shall obtain written warranties from its Subcontractors and suppliers of Materials, Labor and Equipment components where such warranties are obtainable and shall deliver the original warranties to KEYS.

F. Neither the final payment, nor any other provision of the Contract, nor partial or entire use of the Material and Equipment by KEYS shall relieve the Contractor of liability with respect to the warranties referred to in the Contract or any other warranties, express or implied.

WITHDRAWAL OF PROPOSAL
Each Proposal shall constitute an offer to KEYS as outlined therein and shall be irrevocable after the time last announced for opening Proposals. Any Bidder may withdraw its Proposal by giving written notice to KEYS at the place such Proposals are to be received and at any time prior to the time last announced for opening Proposals. After the time last announced for opening Proposals and until execution of the Contract, no Bidder will be permitted to withdraw its Proposal for a period exceeding 120 days after the time last announced for opening Proposals.

INSURANCE SECTION

INDEMNITY AND INSURANCE REQUIREMENTS

INDEMNITY

The Contractor shall indemnify, defend and hold harmless KEYS and their officers, partners, agents, employees and servants from and against any and all claims, judgments, liens, losses, damage, cost, charge or expense, including defense costs, court costs and attorneys' fees, whether direct or indirect, by reason of liability imposed by law or by bodily injuries, including death at any time resulting therefrom, sustained by any person or persons or on account of damages to property, including loss of use thereof, arising out of or in consequence of the performance of the Contract, whether such injuries to or death of persons or damages to property are due or are claimed to be due to operations, errors, omissions, or negligent acts of KEYS or any of their officers, partners, agents, employees or servants, excepting only such injuries or damages as shall have been finally determined to have resulted solely from errors, omissions or negligent acts of KEYS or of their officers, partners, agents, employees or servants or independent contractor directly responsible to KEYS. For this indemnity, the Utility Board of the City of Key West will pay the sum of ten dollars ($10.00). The bidder shall add this amount ($10.00) to their base bid proposal, which will be included in payment to firm.

INSURANCE REQUIREMENTS

The insurance provided by the Vendor pursuant to this Contract shall apply on a primary basis and any other insurance provided by KEYS shall be excess of and not contributory to the insurance provided by the Vendor.
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During the term of this agreement, except as specifically provided herein, the Contractor shall provide and maintain, at his sole cost and expense, insurance in the following types and amounts to cover all work under this agreement, including that done by sub-contractors.

The Vendor shall not commence any work on the contract until he has provided KEYS with proof of coverage's required, in the form of an original certified Certificate of Insurance properly signed by the authorized agent of the insurance company. The insurance company must be an eligible surplus lines company or a company authorized by the Florida State Department of Insurance to sell the specific insurance required or with respect to Workers' Compensation authorized as a group self-insurer by Florida Statue 440.57. The agent of the insurance company must be licensed to sell the insurance coverage's required under this contract. Without limiting any of the other obligations or liabilities of the Vendor, the following insurance coverage's with indicated limits of liability are mandatory under this contract. Those coverage's with no limits shown are not required.

VENDOR'S ENVIRONMENTAL IMPAIRMENT RESPONSIBILITY
A. The Vendor acknowledges that the performance of this contract is, or may be, subject to Federal, State, and Local laws and regulations enacted for the purpose of protecting, preserving, or restoring the environment. The Vendor shall, at his sole cost, will be responsible for full compliance with any such laws or regulations.

B. The Vendor's performance under this contract shall include, but not be limited to:
   1. Performance in a manner to minimize disturbance or damage to the environment.
   2. To the extent caused by the performance of this contract by or on behalf of the Vendor, the clean-up, repair or restoration of the environment to the extent required by any Federal, State, or Local laws or regulations.

C. The Vendor shall be responsible for any fines, penalties, damage, or assessments made against the Vendor or KEYS resulting from the performance of this contract by or on behalf of the Vendor.

D. The Vendor's obligation under paragraph B and C above shall survive the contract and shall not be limited in any manner by acceptance of final payments.

WORKERS COMPENSATION--EMPLOYER'S LIABILITY INSURANCE
Shall provide benefits consistent that will respond to all benefits as prescribed by Florida Statutes. To include employers Liability Insurance shall be provided in accordance with statutes of the Florida Workers Compensation Act, the Federal Longshore and Harbor Workers Act, Maritime including the Jones Act, Federal Employers Liability Act and any other applicable federal or state laws. Customarily provided under the standard Workers Compensation Policy shall provide the following limits:

•Each Accident $100,000.00
•Disease-Policy Limit $100,000.00
•Disease-Each Employee $100,000.00

COMMERCIAL GENERAL LIABILITY INSURANCE
This insurance shall cover those sources of liability which would be covered by the latest edition of the standard Commercial General Liability Coverage Form as published by the Insurance Services Office (ISO) as filed for use in Florida without the attachment of restrictive endorsements other than the elimination of medical payments and fire damage legal liability.

General Aggregate $2,000,000.00
Limit of Insurance per project
Products/Completed Operation $2,000,000.00
(coverage for 3 yrs. after contract completion)
Personal & Advertising Injury $1,000,000.00
Each Occurrence $1,000,000.00

BUSINESS AUTOMOBILE POLICY
This insurance shall cover those sources of liability which would be covered by Part IV of the latest edition of the standard business auto policy form (ISO) as filed for use in Florida without attachments of restrictive endorsements. Coverage's shall include owned, non-owned, and hired autos.

The policy shall be endorsed to include coverage as required by Section 29 and 30 of the Motor Carrier Act of 1980 (MCS 90).

Each Occurrence Bodily Injury and Property Damage Liability Combined: $1,000,000.00

ADDITIONAL NAMED INSURED
The Utility Board of the City of Key West shall be included as an additional named insured for Comprehensive General Liability Form (ISO) and Business Automobile coverage's.

WAIVER OF SUBROGATION
The Contractor's Workers Compensation, Commercial General Liability and Business Automobile insurance shall include a Waiver of Transfer of RIGHTS OF Recovery against others to KEYS" (ISO Form). The Utility Board of the City of Key West must be named in the schedule for the specific project involved.
# INSURANCE AGENT’S STATEMENT

I have reviewed the above requirements with the bidder named below. The following deductibles apply to the corresponding policy for the following company:

<table>
<thead>
<tr>
<th>POLICY (Type /Number)</th>
<th>DEDUCTIBLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIGHT DUTY VEHICLES ACP BAPD 5954789688</td>
<td>$ 500.00</td>
</tr>
<tr>
<td>General Liability TEN16707</td>
<td></td>
</tr>
<tr>
<td>Workers Comp ZAWCT4107600</td>
<td></td>
</tr>
<tr>
<td>Inland Marine SML93027064</td>
<td>$ 1,000.00</td>
</tr>
</tbody>
</table>

Acknowledgement of the additional insured and waiver of subrogation requirements:_______

Initials

Liability policies are ____x____ Occurrence ______ Claims Made

USI Insurance Services, LLC ____________________________
Name of Insurance Agency ____________________________
Signature of Insurance Agent

SUBMITTED BY: CATHERINE D. PEACE, Office Manager

Print Name & Title

NOTE: EACH BIDDER SHALL PROVIDE A COPY OF COMPLETED CERTIFICATE OF INSURANCE COMPLYING WITH THE AFOREMENTIONED INSURANCE REQUIREMENTS OR SIGN AND DATE THE ABOVE INSURANCE AGENT’S STATEMENT AND AGREE TO PROVIDE A VALID CERTIFICATE OF INSURANCE UPON NOTIFICATION OF CONTRACT AWARD.
BIDDER’S STATEMENT

In consideration of this contract, if awarded, the Vendor agrees without reservation to KEYS’ Terms & Conditions, Indemnification Clause, and insurance clause herein. Which will become a part of the contract, the signing of this statement confirms the Vendor’s acceptance.

DATE: 08/12/16

FIRM NAME: Key Iron Works, Inc. EMAIL: ogeneral@kiw-keywest.com

SUBMITTED BY: Steve R. Henson, President

Print Name & Title

SIGNATURE: [Signature]

WITNESS: [Signature]

NOTICE: THIS SIGNATURE PERTAINS TO THE ACKNOWLEDGEMENT AND ACCEPTANCE OF THE ENTIRE TERMS & CONDITIONS. ANY EXCEPTIONS TO THIS AGREEMENT SHOULD BE NOTED SEPARATELY.

FAILURE TO COMPLETE ABOVE NOTED DOCUMENT WILL RESULT IN NON-COMPLIANCE WITH THESE SPECIFICATIONS.
DRUG-FREE WORKPLACE STATEMENT

Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids which are equal with respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

The undersigned vendor in accordance with Florida Statues Section 287.087 hereby certifies that

---

Key Iron Works, Inc.  
(Name of Business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in Subsection 1.

4. In the statement specified in Subsection 1, notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 1893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Print Name: [Signature]

Vendor's Signature: [Signature]

Date: 08/12/16
KEYS Bid #11-16 SPECIFICATIONS FOR UNDERGROUND TRENCHING & CONDUIT SERVICES

SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to Keys Energy Services
   (print name of public entity)

   by Steve R. Henson, President
   (print individual’s name and title)

   for Key Iron Works, Inc.
   (print name of entity submitting sworn statement)

   whose business address is 5551 2nd Avenue, Key West, Florida 33040

   and (if applicable) its Federal Employer Identification Number (FEIN) is 59-2235368

   If the entity has no FEIN, include the Social Security Number of the individual signing sworn statement:

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that “convicted” or “conviction” as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
   a. A predecessor or successor of a person convicted of a public entity crime; or
   b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term “affiliate” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The KEYShip by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value an arm’s length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a “person” as defined in Paragraph 287.133(1)(e), Florida Statutes, means:
   a. any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity.
   b. The term “person” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.
6. Based on information and belief, the statement, which I have marked below, is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies):

X Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with the convicted of a public entity crime subsequent to July 1, 1989.

[ ] The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of public entity crime subsequent to July 1, 1989.

[ ] The entity submitting this sworn statement, or one or more of its officers, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer, determined that is not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. (Attach a copy of the final order).

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IN PARAGRAPH ONE (1) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDE IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

[Signature] [Date] 08/17/16

STATE OF FLORIDA

COUNTY OF MONROE

PERSONALLY APPEARED BEFORE ME, the undersigned authority, Steve R. Henson who, after first being sworn by me, affixed his/her signature in the space provided above on this 17th day of August of 2016.

[Signature] KERRY L. HIGHSWIT
NOTARY PUBLIC
My Commission Expires:

FOR-094 Revised: 11/01/02
PAYMENT & PROCEDURES FORMS

**Partial Progress Payments:**
KEYS may require release of liens.
Contractor will submit the following documents:
- "Contractor’s Request For Payment"
- "Sworn Statement Concerning Claims"
- "Release Of Lien"

A sample of each of these forms is attached.

*"Contractor’s Affidavit and Request for Payment": Form #FOR-216*
Complete this form for work completed to date. Attach appropriate documentation to support this request. Retainage of not less than 10% will be deducted until final inspection by KEYS has been completed and all items are satisfactory. It must be signed by a corporate official, contain the raised corporate seal, be notarized and signed by the notary.

*"Sworn Statement Concerning Claims": Form #FOR-213*
The prime contractor must complete this form for each sub contractor. This must be done each time a request for payment is made. It must be signed by a corporate official, contain the raised corporate seal, be notarized and signed by the notary.

*"Release Of Lien": Form #FOR-212*
The prime contractor is responsible for obtaining and forwarding a release of lien for every sub contractor on the job. The release of lien must be unconditional and must contain a date from the sub contractor, which coincides with the date of the payment request. It must be signed by a corporate official, contain the raised corporate seal, be notarized and signed by the notary.

**Final Payments:**
Contractor is required to submit the following documents:
- "Contractor’s Request For Payment"
- "Sworn Statement Concerning Claims"
- "Final Release Of Lien"
- "Contractor’s Affidavit Of Contract Completion"

A sample of each of these forms is attached.

*"Contractor’s Affidavit and Request for Payment": Form #FOR-216*
Complete this form. Attach appropriate documentation to support this request.

*"Final Release Of Lien": Form #FOR-214*
The prime contractor is responsible for obtaining and forwarding a final release of lien for every sub contractor on the job. The release of lien must be unconditional. It must be signed by a corporate official, contain the raised corporate seal, be notarized and signed by the notary.

*"Contractor’s Affidavit Of Contract Completion": Form #FOR-215*
The prime contractor must complete this form. It must be signed by a corporate official, contain the raised corporate seal, be notarized and signed by the notary.
**CONTRACTOR'S REQUEST FOR PAYMENT**

**KEYS**: Utility Board of the City of Key West  
**PAYMENT NO:** _______  
**DATE:** _______

**CONTRACTOR:** _______  
**CONTRACT NO:** _______  
**PAGE:** _______  
**OF:** _______

**PROJECT:** Underground Trenching  
**BID NO:** #11-11

<table>
<thead>
<tr>
<th>ESTIMATED CONTRACT</th>
<th>PREVIOUSLY APPROVED</th>
<th>THIS REQUEST</th>
<th>TOTAL TO DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

- **LESS RETAINED AMOUNT:** 
- **TOTAL:** 
- **SUBTOTAL:** 
- **PLUS SALES TAX**  
  (Include tax on retained amount when applicable)  
- **SUBTOTAL:** 
- **LESS TOTAL DEDUCTIONS:** 
- **SUBTOTAL:** 
- **LESS PREVIOUS PAYMENTS:** 
- **SUBTOTAL:** 

**PAYMENT REQUESTED:** 

**RETIRED AMOUNT DETAIL**  
**SALES TAX DETAIL**

<table>
<thead>
<tr>
<th>% OF FIRST</th>
<th>TOTAL TO DATE</th>
<th>% OF BALANCE</th>
<th>LESS AMOUNT PAID</th>
<th>PERIOD AMOUNT DUE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We hereby represent that the above contractor's request is a true estimate of work completed under the above contract to date and hereby release the keys from any claims for materials or labor furnished or expenses incurred to date which is not included in requests and payment to date, except for integrated units of construction partially completed for which no request for payment has been made.

**CONTRACTOR:** _______  
**BY:** _______  
**Signature:** _______

**DATE:** _______  
**PRINT NAME:** _______
**TITLE:** _______

**QUANTITIES VERIFIED**
**REQUEST VERIFIED**
**KEYS Project Manager/Date**
**Accountant & Financial Analyst Date**
**Supervisor – Purchasing – Date**

---

**KEYS' CONTRACT COORDINATOR USE ONLY:**

|---------|---------------|-------------------------|------------------|--------------|-----------------------------|

**FOR-216**

**REVISED: 04/19/04**
UTILITY BOARD OF THE CITY OF KEY WEST
SWORN STATEMENT CONCERNING CLAIMS

PROJECT AND TITLE: ____________________________________________

SUB-CONTRACTOR: ____________________________________________

CONTRACT FOR: ____________________________________________

CONTRACT DATE: ____________________ CONTRACT AMOUNT: $__________

To: Utility Board of the City of Key West ("Keys Energy Services")

Post Office Box 6100
Key West, Florida 33041

In response to your demand, the undersigned contractor or material man ____________________________________________ submits the following statement of account for:

(Sub Contractor Name) ____________________________________________

Labor performed to date consists of the following: ____________________________________________

Material furnished to date consists of the following: ____________________________________________

Labor still to be performed consists of the following: ____________________________________________

Material still to be furnished consists of the following: ____________________________________________

Amount paid on account to date: $__________, Amount now due: $__________,

Amount to become due: $__________.

__________________________________________  ____________________________
[Signature]  [Date]

The State of __________________________

County of __________________________

being first duly sworn, deposes and states that ______ [he or she] is the lien holder named in the forgoing statement of account; that ______ [he or she] has read the statement of account and has knowledge of its contents; that the statements contained in the statement of account are true; and that the sum of $__________ as set forth in the statement of account is due and owing to lien holder.

Contractor(s), who, being by me duly sworn, subscribed to the foregoing affidavit in my presence.

__________________________________________
(Notary Public)
Print Name: ____________________________________________
My Commission Expires: __________________________
Revised: 04/22/02
UTILITY BOARD OF THE CITY OF KEY WEST
RELEASE OF LIEN

PROJECT AND TITLE: ____________________________________________

SUB -CONTRACTOR: ____________________________________________

CONTRACT FOR: ______________________________________________

CONTRACT DATE: _____________ CONTRACT AMOUNT: $ _____________

To: Utility Board of the City of Key West ("Keys Energy Services")

Post Office Box 6100 Key West, Florida 33041

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, for and in consideration of payment of the sum $ _________________

and __________________ ($______) paid by __________________, the prime contractor, receipt of which is hereby acknowledged, hereby releases and quit claims to The Utility Board of the City of Key West, the KEYS, all liens, lien rights, claims or demands of any kind whatsoever, which the undersigned now has or might have against the project on account of labor performed and/or material furnished by the undersigned in the construction of said project have been fully paid for.

In witness whereof, I have hereunto set my seal this _____ day of _______________, 20____.

Witness:

____________________                  ______________________(SEAL)

____________________                  by _______________________

The State of ______________________

County of _______________________

____________________, being first duly sworn, deposes and states that ______[he or she] is the lien holder named in the foregoing statement of account; that ______[he or she] has read the statement of account and has knowledge of its contents; that the statements contained in the statement of account are true; and that the sum of $____________ as set forth in the statement of account is due and owing to lien holder.

Contractor(s), who, being by me duly sworn, subscribed to the foregoing affidavit in my presence.

________________________________________
(Notary Public)

Print Name: ______________________________

My Commission Expires: ____________________

FOR-212

Revised: 04/22/02

Keys Energy Services
UTILITY BOARD OF THE CITY OF KEY WEST
**FINAL** RELEASE OF LIEN

PROJECT AND TITLE: ___________________________________________

SUB - CONTRACTOR: ___________________________________________

CONTRACT FOR: ___________________________________________

CONTRACT DATE: ___________________ CONTRACT AMOUNT: $_________

To: Utility Board of the City of Key West ("Keys Energy Services")
    Post Office Box 6100 Key West, Florida 33041

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, for and in consideration of payment of the sum $______________ and $________ (______) paid by ______, the prime contractor, receipt of which is hereby acknowledged, hereby releases and quit claims to The Utility Board of the City of Key West, the KEYS, all liens, lien rights, claims or demands of any kind whatsoever, which the undersigned now has or might have against the project on account of labor performed and/or material furnished by the undersigned in the construction of said project have been fully paid for.

In witness whereof, I have hereunto set my seal this ___ day of ______________, 20__.

Witness:

___________________________________________ (SEAL)

___________________________________________

The State of __________________________

County of __________________________

______________________________, being first duly sworn, deposes and states that ______ [he or she] is the lien holder named in the forgoing statement of account; that ______ [he or she] has read the statement of account and has knowledge of its contents; that the statements contained in the statement of account are true; and that the sum of $________ as set forth in the statement of account is due and owing to lien holder.

Contractor(s), who, being by me duly sworn, subscribed to the foregoing affidavit in my presence.

___________________________________________

(Notary Public)

Print Name: ___________________________

My Commission Expires: ________________

FDR-214

Revised: 04/22/02
UTILITY BOARD OF THE CITY OF KEY WEST

KEYS ENERGY SERVICES

CONTRACTOR’S AFFIDAVIT OF CONTRACT COMPLETION

PROJECT AND TITLE: ________________________________

CONTRACTOR: ________________________________

CONTRACT FOR: ________________________________

CONTRACT DATE: ________________ CONTRACT AMOUNT: ________________

CONTRACTOR’S AFFIDAVIT

I solemnly swear and affirm: That the work under the above named Contract and all amendments thereto have been completed in accordance with the requirements of said Contract; that all costs incurred for equipment, materials, labor, and services against the project have been paid; that no liens have been attached against the project; that no suits are pending by reason of work on the project under the Contract; that all Workmen’s Compensation claims are covered by Workmen’s Compensation insurance as required by law; that all public liability claims are adequately covered by insurance, and that the Contractor shall save, protect, defend, indemnify and hold the KEYSs harmless from and against any and all claims which arise as a direct or indirect result of any transaction, event or occurrence related to performance of the work contemplated under said Contract.

CONTRACTOR:

_______________________________(SEAL)

Title: ________________________________

Date: ________________________________

STATE OF ________________________________

COUNTY OF ________________________________

Personally appeared before me this ______ day of _______________________ 20____, ________________________________ known (or made known) to me to be the:

_______________________________ (KEYS) (Partner) (Corporate Officer-Title)

______________________________ (Name of Contractor(s))

Contractor(s), who, being by me duly sworn, subscribed to the foregoing affidavit in my presence.

______________________________ (Notary Public)

Print Name: ________________________________

My Commission Expires: ________________________________

Per attached Sworn Statement(s) Concerning Claims

FOR-215
<table>
<thead>
<tr>
<th>TYPE</th>
<th>DESCRIPTION</th>
<th>Qty</th>
<th>Unit Price Per Unit</th>
<th>Extended Price (using Est Qty X Unit Price)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRENCH</td>
<td>Open Trench for two (2) four inch (4&quot;) PVC, 57 Rock, non-traffic area</td>
<td>4,000</td>
<td>$81.70</td>
<td>$326,800.00</td>
</tr>
<tr>
<td>1</td>
<td>Adder for Traffic Area (re-bar plus flow fill)</td>
<td>500</td>
<td>$27.00</td>
<td>$13,500.00</td>
</tr>
<tr>
<td>2</td>
<td>Adder for two (2) six inch (6&quot;) PVC in place of two (2) four inch (4&quot;)</td>
<td>0</td>
<td>$20.00</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Adder for an additional four inch (4&quot;) PVC Primary</td>
<td>500</td>
<td>$25.00</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Adder for an additional six inch (6&quot;) PVC Primary</td>
<td>0</td>
<td>$30.00</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Adder for two (2) communication conduits, each to be Four inch (4&quot;)</td>
<td>500</td>
<td>$24.00</td>
<td>$12,000.00</td>
</tr>
<tr>
<td>6</td>
<td>Adder for 4/0 copper ground wire in trench (price is per linear foot)</td>
<td>200</td>
<td>$15.00</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Adder for a concrete slab in front of transformer foundation boxes – single phase</td>
<td>10</td>
<td>$2,400.00</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Adder for a concrete slab in front of transformer foundation boxes – three phase</td>
<td>5</td>
<td>$2,800.00</td>
<td></td>
</tr>
<tr>
<td>TRANSFORMER FOUNDATION (Brooks Products or KEYS approved Equal)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Type 1 (Size of 4'W - 4'D - 4'H)</td>
<td>15</td>
<td>$4,025.00</td>
<td>$60,375.00</td>
</tr>
<tr>
<td>11</td>
<td>Type 2 (Size of 7.5'W - 5'D - 4'H)</td>
<td>15</td>
<td>$5,700.00</td>
<td>$85,500.00</td>
</tr>
<tr>
<td>12</td>
<td>Type 3 (Size of 7'W - 7'D - 4'H)</td>
<td>2</td>
<td>$9,375.00</td>
<td>$18,750.00</td>
</tr>
<tr>
<td>MANHOLES</td>
<td>Manhole Type (48&quot; by 48&quot;)</td>
<td>5</td>
<td>$8,370.00</td>
<td>$41,850.00</td>
</tr>
<tr>
<td>13</td>
<td>Manhole Type (72&quot; by 72&quot;)</td>
<td>2</td>
<td>$9,775.00</td>
<td>$18,750.00</td>
</tr>
<tr>
<td>OTHER TASK</td>
<td>Trench – Asphalt Restoration</td>
<td>200</td>
<td>$45.00</td>
<td>$9,000.00</td>
</tr>
<tr>
<td>15</td>
<td>Trench - Sidewalk Restoration</td>
<td>100</td>
<td>$87.00</td>
<td>$8,700.00</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Crew Hours – Rate per hour*</td>
<td>200 hrs</td>
<td>$375.00</td>
<td>$75,000.00</td>
</tr>
<tr>
<td></td>
<td><strong>(for other types of concrete trench, digging, etc. for which no unit price has been established). Price is for a 3-man crew and typical trenching equipment and tools.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**KEYS Reserves the right to increase or decrease any quantities.**
Pursuant to and in compliance with your advertisement for bids and other contract documents relating thereto, the undersigned bidder, having familiarized himself with the terms and conditions affecting the performance of the contract contained in the specifications, hereby proposes and agrees to perform within the contract documents, schedules, and specifications for the following amounts.

**INDEMNITY FEE**: $10.00

**TOTAL ESTIMATED YEARLY CONTRACT AMOUNT** - $671,035.00

*Estimated Contract Amount = Extended pricing for (items #1, #2, #6, #10, #11, #12, #13, #14, #15, #16, #17, + Indemnity Fee)*

**TOTAL BID PRICE IN WORDS**: SIX HUNDRED SEVENTY-ONE THOUSAND AND THIRTY-FIVE DOLLARS.

**COMPANY**: Key Iron Works, Inc.  
**E-MAIL**: general@kiw-keywest.com

**TELEPHONE**: 305.294.0277  
**FAX**: 305.296.4460

**ADDRESS**: 5551 2nd Avenue  
Key West, Florida 33040

**SUBMITTED BY**: Steve R. Henson, President

---

**PRINT/TITLE**

---

**SIGNATURE**

---

Check One

---

**BID BOND ENCLOSED**  
**X** **CASHIER'S CHECK ENCLOSED**: $33,551.25

---

****Keys Energy Services reserves the right to accept and/or reject any proposal or any portion of a proposal. Bidder shall submit with the proposal any constraints, if any.****
The GENERAL CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2018

HENSON, STEVE ROY
KEY IRON WORKS INC
5551 2ND AVE STOCK ISLAND
KEY WEST FL 33040

ISSUED: 08/14/2016 DISPLAY AS REQUIRED BY LAW

SEQ # L1608140003734
CITY OF KEY WEST, FLORIDA

Regulatory Permit / License
Certificate of Competency

P.O. Box 1409, Key West, FL 33041

Business Name: HENSON STEVE
Location Addr: 5551 2ND AVE
Lic NBR/Class: 17-00029361 COMPETENCY CARD
Issue Date: July 28, 2015 Expiration Date: September 30, 2017
License Fee: $30.00
Add. Charges: $0.00
Penalty: $0.00
Total: $30.00

Comments: COMP CARD #472 FOR ENGINEERING CLASS I

KEY WEST FL 33040
CITY OF KEY WEST, FLORIDA
Business Tax Receipt
This Document is a business tax receipt
Holder must meet all City zoning and use provisions.
P.O. Box 1409, Key West, Florida 33040 (305) 809-3955

Business Name    KEY IRON WORKS INC (ENG)     CtrlNbr:0015597
Location Addr    5551 2ND AVE
Lic NBR/Class    17-00019176 CONTRACTOR - REG ENGINEERING I
Issue Date:      July 20, 2016 Expiration Date: September 30, 2017
License Fee       $325.00
Add. Charges      $0.00
Penalty           $0.00
Total             $325.00
Comments:

This document must be prominently displayed.

KEY IRON WORKS INC
5551 2ND AVE

KEY WEST FL 33040

Oper:  KEWLED      Type: CC  Drawer: 1
Date:  7/21/16 55   Receipt no:  29110
OR LIC OCCUPATIONAL RENEWAL
Trans number:    1.00   $325.00
OK CHECK       20227   $325.00
Trans date:     7/21/16  Time: 10:57:21
CITY OF KEY WEST, FLORIDA
Business Tax Receipt
This Document is a business tax receipt
Holder must meet all City zoning and use provisions.
P.O. Box 1409, Key West, Florida 33040 (305) 809-3955

Business Name  KEY IRON WORKS INC (CGC)  CtrlNbr: 0003396
Location Addr  SECOND   STOCK ISLAND AVE
Lic NBR/Class  17-00003408 CONTRACTOR - CERT GENERAL CONTRACTOR
Issue Date:  July 20, 2016 Expiration Date: September 30, 2017
License Fee  $325.00
Add. Charges  $0.00
Penalty  $0.00
Total  $325.00
Comments: _______________________________________________________________________

This document must be prominently displayed.
KEY IRON WORKS INC

KEY IRON WORKS INC (CGC)
5551-2ND AVE
STOCK ISLAND
KEY WEST FL 33040

Printed: 7/21/16 56 Receipt no: 29111
CR: LIC OCCUPATIONAL RENEWAL
Order: 2026 $325.00

Trans number: 300745
OK CHECK

Trans date:  7/21/16 Time: 10:53:20
# Monroe County Business Tax Receipt

**2015 / 2016**  
**Monroe County Business Tax Receipt**  
**Expires September 30, 2016**

**Business Name:** KEY IRON WORKS  
**Owner Name:** ROY & STEVE HENSON  
**Mailing Address:**  
5551 2ND AVE STOCK ISLAND  
KEY WEST, FL  33040  
**Business Location:**  
5551 2ND AVE  
KEY WEST, FL  33040  
**Business Phone:**  
**Business Type:** MISCELLANEOUS SERVICE (WELDING SERVICE)

<table>
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<tr>
<th>Tax Amount</th>
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**Paid 122-14-00003041  07/23/2015  22.00**

**State License:** CB0004175
CERTIFICATE OF LIABILITY INSURANCE

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
USI Insurance Services, LLC
1715 N. Westshore Blvd. #700
Tampa, FL 33607
813 321-7500

INSURED
Key Iron Works Inc
5551 2nd Avenue
Stock Island
Key West, FL 33040

CONTACT NAME
Kim Alford
PHONE (Area No. Ext): 813 321-7500
FAX (Area No. Ext): 813 321-7525
E-MAIL: Kim.Alford@usi.biz

INSPR S# AFFORDING COVERAGE
NAC #
First Mercury Insurance Company
10657

INSPR B
Arch Insurance Group
433

INSPR C
Depositors Insurance Company
42587

INSPR D
AGCS Marine Insurance Company
22837

INSPR E
Signal Mutual Indemnity Assn
A56517

COVERAGES
CERTIFICATE NUMBER:

This is to certify that the policies of insurance listed below have been issued to the insured named above for the policy period indicated. notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain. The insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies. Limits shown may have been reduced by paid claims.

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<thead>
<tr>
<th>INSURER</th>
<th>TYPE OF INSURANCE</th>
<th>ADD'L SUBSCR INSUR VY</th>
<th>POLICY NUMBER</th>
<th>POLICY EFF IMMUNITY</th>
<th>POLICY EXP IMMUNITY</th>
<th>LIMITS</th>
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<tr>
<td>A</td>
<td>GENERAL LIABILITY</td>
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<td>12/08/2016</td>
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<td>DAMAGE TO RENTED PREMISES: $100,000</td>
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<td>MED EXP: (Any one person): $5,000</td>
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<td>PERSONAL &amp; ADV INJURY: $1,000,000</td>
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<td>GENERAL AGGREGATE: $2,000,000</td>
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<td>PRODUCTS COM/POP AGG: $2,000,000</td>
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<td>B</td>
<td>AUTOMOBILE LIABILITY</td>
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<td>12/14/2016</td>
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<td>BODILY INJURY (Per person): $</td>
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<td>BODILY INJURY (Per accident): $</td>
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<td>X NON-OWNED AUTOS</td>
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<td></td>
<td>UMBRELLA LIABILITY</td>
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<td></td>
<td>EACH OCCURRENCE: $</td>
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<tr>
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<td>EXCESS LIABILITY</td>
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<td></td>
<td></td>
<td></td>
<td>AGGREGATE: $</td>
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<td></td>
<td>X OCCUR CLAMS-MADE</td>
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<td></td>
</tr>
<tr>
<td>B</td>
<td>WORKERS COMPENSATION AND EMPLOYERS LIABILITY</td>
<td>ZAWCI4107600</td>
<td>07/07/2016</td>
<td>07/07/2017</td>
<td>X</td>
<td>INC STAUTORY LIMITS: $1,000,000</td>
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<td>ANY PROPRIETOR/ARTIC/EXECUTIVE OFFICER/MEMBER EXCLUDING</td>
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<td></td>
<td></td>
<td></td>
<td>E.L. DISEASE + E.A.Employees: $1,000,000</td>
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<tr>
<td></td>
<td>(Mandatory in NH)</td>
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<td></td>
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<td>E.L. DISEASE - POLICY LIMIT: $1,000,000</td>
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<tr>
<td>D</td>
<td>Inland Marine</td>
<td>SML93027064 N71260</td>
<td>12/13/2015</td>
<td>12/13/2016</td>
<td>$358,308 / $1,000 ded</td>
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<tr>
<td>E</td>
<td>USL&amp;H</td>
<td></td>
<td>7/7/2016</td>
<td>7/7/2017</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
This Certificate of Insurance is issued as a matter of information only and confers no rights upon the holder and does not amend, extend or alter the coverage afforded by policies designated on the Certificate.
As respects General Liability certificate holder is listed as additional insured as required by written contract.

CERTIFICATE HOLDER
Keys Energy Service Material
Supervisor Material Serv
Po Box 6100
Key West, FL 33040-0000

CANCELLATION
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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# ACORD Certificate of Liability Insurance

**Client #: 126333**  
**KEYIRONW**  
**DATE (MM/DD/YYYY): 07/08/2016**

**Insured:**  
Key Iron Works Inc  
5551 2nd Avenue  
Stock Island  
Key West, FL 33040

**Producer:**  
USI Insurance Services, LLC  
1715 N. Westshore Blvd. #700  
Tampa, FL 33607  
813 321-7500

**Contact:**  
Kim Alford  
PHONE: 813 321-7500  
FAX: 813 321-7525  
E-MAIL: Kim.Alford@usil.biz

**Insurer A:**  
First Mercury Insurance Company  
10657

**Insurer B:**  
Arch Insurance Group  
433

**Insurer C:**  
Depositors Insurance Company  
42587

**Insurer D:**  
AGCS Marine Insurance Company  
22837

**Insurer E:**  
Signal Mutual Indemnity Assn  
A56517

**Certificate Number:**

**Coverage:**

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not affirmatively or negatively amend, extend or alter the coverage afforded by the policies below. This certificate of insurance does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder.

**Important:** If the certificate holder is an additional insured, the policy(ies) must be endorsed. If subrogation is waived, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

## Coverages

<table>
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<tr>
<th>Insr. No</th>
<th>Type of Insurance</th>
<th>Add. Substr.</th>
<th>Policy Number</th>
<th>Policy Eff</th>
<th>Policy Exp</th>
<th>Limits</th>
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<tr>
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<td>TEN16707</td>
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<td>12/08/2016</td>
<td>Each Occurrence</td>
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<td>B</td>
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<td>12/14/2016</td>
<td>Covered Single Limit (Per Accident)</td>
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<tr>
<td>C</td>
<td>Workers Compensation and Employers' Liability</td>
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<td>ZAWCI4107600</td>
<td>07/07/2016</td>
<td>07/07/2017</td>
<td>E.L. Each Accident</td>
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<td>D</td>
<td>Inland Marine</td>
<td></td>
<td>SML93027064</td>
<td>12/13/2015</td>
<td>12/13/2016</td>
<td>$358,308 / $1,000 ded</td>
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<tr>
<td>E</td>
<td>USL&amp;H</td>
<td></td>
<td>N71260</td>
<td>7/7/2016</td>
<td>7/7/2017</td>
<td></td>
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</table>

**Description of Operations/Locations/Vehicles:** (Attach ACORD 101, Additional Remarks Schedule. If more space is required)

**CANCELLATION**

**Certificate Holder:**  
Keys Energy Services  
PO Box 6100  
Key West, FL 33041-0000

**Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.**

**Authorized Representative:**

**©1988-2010 ACORD Corporation. All rights reserved. KXAEW**

The ACORD name and logo are registered marks of ACORD.
The General Liability, Auto Liability and Workers Compensation includes a Waiver of Subrogation endorsement in favor of the Certificate Holder as referenced above as required by written contract.

General Liability policy includes Per Project General Aggregate
Experience

1. Description and Location(s) of Work: KEYS T&D Building and KEYS Administration Building Reconstruction; Site Work, Environmental Clean-Up and Underground Drainage and Utilities
   - Contract Amount: $700,000.00
   - Date Work was Performed: 2013-2015
   - Contact Person: Tony Jenkins
   - Owner: Utility Board of the City of Key West
   - Contractor: Biltmore Construction
   - Name of Contractor’s Contact Person: Tony Jenkins 727.638.0937

2. Description and Location of Work: Plantation Key School, Site Work and Utilities
   - Contract Amount: $250,000.00
   - Date Work was Performed: 2016 - Current
   - Contact Person: John O’Connor
   - Owner: Monroe County School Board
   - Contractor: Biltmore Construction
   - Name of Contractor’s Contact Person: John O’Connor 727.638.1662

3. Description and Location of Work: Fort Zachary Taylor, Site Work and Utilities
   - Contract Amount: $525,000.00
   - Date Work was Performed: 2016 - Current
   - Contact Person: Tony Jenkins
   - Owner: State of Florida
   - Contractor: Biltmore Construction
   - Name of Contractor’s Contact Person: Tony Jenkins 727.638.0937

4. Description and Location of Work: KEYS Energy Contractor for Underground Trenching and Conduit Services
   - Contract Amount: $5,000,000.00
   - Date Work was Performed: 2006 - Current
   - Contact Person: Dale Finigan, Director of KEYS Engineering Department 305.295.1042
EXHIBIT C
(Clarifications)
Exhibit “C”

KEYS Bid #11-16
Specifications for Underground Trenching & Conduit Services

CHANGES:

FROM:

PERFORMANCE BOND
Within ten (10) days after the Contractor receives the Notice of Utility Board Approval and prior to the execution of the Contract, the Contractor shall furnish a Performance and Payment Bond in the form acceptable to KEYS, which form is included in the Contract Documents, with corporate Surety satisfactory to KEYS such bond shall insure the full and faithful performance of the Contract, including the payment of faithful performance of the Contract, including the payment of all obligations arising there under, and shall be in an amount equal to 100 percent of the Total Contract Amount unless otherwise provided in these specifications. Such bond shall further comply in all respects with the laws of the State of Florida.

TO:

IRREVOCABLE STANDBY LETTER OF CREDIT
Within ten (10) days after the Contractor receives Notice of Utility Board Approval and prior to the start date of the Contract, the Contractor shall furnish an Irrevocable Standby Letter of Credit in lieu of a Performance and Payment Bond in the form acceptable to KEYS, which shall be in an amount equal to 100 percent of the Total Contract Amount. The Irrevocable Standby Letter of Credit shall further comply in all respects with the laws of the State of Florida.

KEYS and Key Iron Works, Inc. are in agreement to change the Performance Bond requirement for this contract to an Irrevocable Standby Letter of Credit. The Irrevocable Standby Letter of Credit shall remain enforce throughout duration of the contract.

Key Iron Works, Inc.

[Signature]
Owner

Utility Board of the City of Key West, Florida

[Signature]
Chairman

Attest

[Signature]
Witness

Attest

[Signature]
Secretary
AGENDA ITEM WORDING: Accept Actuarial Valuation Report as of January 1, 2019, and Approve the Pension Contribution Percentage.

REQUESTED ACTION: Motion to Accept Actuarial Valuation Report as of January 1, 2019, and Approve the Pension Contribution Percentage of 43.3%.

DISCUSSION: The attached Actuarial Valuation Report as of January 1, 2019, calculates a minimum payment for the calendar year of 2019 of $4,365,609 (43.3% of covered payroll) compared to $4,079,176 (44.3% of covered payroll) in the prior year. The level percentage of payroll method is used to determine this calculation.

During 2018:
- the plan experienced an actuarial loss of $2,093,983
- pay increases averaged 5.4% compared to an assumption of 5.8%
- there was no member turnover in 2018
- investments had a smoothed actuarial value return of 5.2% against the 7.5% assumption

<table>
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<th>Funding based upon:</th>
<th>Current Valuation 1/1/19</th>
<th>Valuation Statement 1/1/18</th>
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<td>Market Value of Assets/Actuarial Accrued Liability</td>
<td>72.7%</td>
<td>78.6%</td>
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<td>Smoothed Actuarial Value of Assets/Actuarial Accrued Liability</td>
<td>76.5%</td>
<td>76.9%</td>
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<td>Vested Benefit Security Ratio:</td>
<td>78.3%</td>
<td>85.1%</td>
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<td>Plan Fiduciary Net Position</td>
<td>Projected 12/31/19</td>
<td>Actual 12/31/18</td>
</tr>
<tr>
<td>As a %age of Total Pension Liability</td>
<td>73.9%</td>
<td>72.6%</td>
</tr>
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</table>

The FY19 budget is sufficient to fund the required contribution.

A true-up credit is required in the amount $30,357.29, for the period 1/1/19 – 4/13/19, during which the contribution rate was based on the prior year rate of 44.3% rather than the updated contribution rate of 43.3%.

FINANCIAL IMPACT:

<table>
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<th>Total Cost CY 19: $4,365,609</th>
<th>Budgeted: YES</th>
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</thead>
<tbody>
<tr>
<td>FMPA to reimburse KEYS: $373,151</td>
<td>Source of Funds: O&amp;M</td>
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</tbody>
</table>
April 8, 2019

Pension Board
c/o Mr. Jack Wetzler
Assistant General Manager and
    Chief Financial Officer
Utility Board of the City of Key West
1001 James Street
Key West, Florida  33041-6100

Re:  January 1, 2019 Actuarial Valuation

Dear Jack:

As requested, we are pleased to enclose the January 1, 2019 Actuarial Valuation Report for the Retirement System for General Employees of the Utility Board of the City of Key West.

We appreciate the opportunity to work with the Board on this important project. We look forward to presenting the key financial results of our Actuarial Valuation Report at an upcoming Pension Board Meeting. Please let us know the date and time.

Upon Board approval of the Actuarial Valuation Report, we will upload an electronic copy of the Actuarial Valuation Report along with the required disclosure information to the State portal as required by the State.

If you should have any questions concerning the above, please do not hesitate to contact us.

Sincerest regards,

Lawrence F. Wilson, A.S.A.
Senior Consultant and Actuary

Enclosures

cc:  Mr. Harry L. Bethel, Chairman
RETIREMENT SYSTEM FOR GENERAL EMPLOYEES OF THE UTILITY BOARD OF THE CITY OF KEY WEST

Actuarial Valuation as of January 1, 2019

This Valuation Determines the Annual Contribution for the System Year January 1, 2019 through December 31, 2019 to be Paid in the Calendar Year Ending December 31, 2019

April 8, 2019
# Retirement System for General Employees of the Utility Board of the City of Key West

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<th>Page</th>
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<td>II. Comparison of Cost Data of Current and Prior Valuations</td>
<td>12</td>
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<td>VIII. Accounting Disclosure Exhibit</td>
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<td>X. Actuarial Assumptions and Actuarial Cost Methods Used</td>
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<tr>
<td>XVI. State Required Exhibit</td>
<td>44</td>
</tr>
<tr>
<td>XVII. Glossary</td>
<td>48</td>
</tr>
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</table>
April 8, 2019

Board of Trustees
c/o Mr. Jack Wetzler
Assistant General Manager and
Chief Financial Officer
Utility Board of the City of Key West
1001 James Street
Key West, Florida 33041-6100

Re: Retirement System for General Employees of the Utility Board of the City of Key West

Dear Trustees:

We are pleased to present our January 1, 2019 Actuarial Valuation Report for the Retirement System for General Employees of the Utility Board of the City of Key West (System). The purpose of this Report is to indicate appropriate contribution levels, comment on the actuarial stability of the System and to satisfy State requirements. Gabriel, Roeder, Smith & Company (GRS), as System actuary, is authorized by the Board of Trustees to prepare an annual actuarial valuation under Section 8.04(f) of the System.

This Report consists of this commentary, detailed Tables I through XV, the State Required Exhibit on Table XVI and Technical Definitions on Table XVII. The Tables contain basic System cost figures plus significant details on the benefits, liabilities and experience of the System. We suggest you thoroughly review the Report at your convenience and contact us with any questions that may arise.

Pension System Costs

The minimum payment consists of payment of annual normal costs and amortization of the components of the unfunded actuarial accrued liability over various periods as prescribed by law. The minimum payment for fiscal year ending December 31, 2019 is 43.3% ($4,365,609) of covered payroll. The figure in parentheses is the System cost expressed as the percentage of covered annual payroll applied to projected covered payroll as of January 1, 2019 ($10,080,796).

Changes in Actuarial Assumptions, Methods and System Benefits

System benefits remain unchanged from the System benefits considered for the January 1, 2018 Actuarial Valuation. System benefits are summarized on Table IX.

Certain charge (positive) and credit (negative) amortization bases have been combined as provided under Internal Revenue Service Regulation 1.412(b)-1.
Assumed investment return, withdrawal rates, salary increase factors and retirement rates were updated based on the results of our Experience Study for the five years ended December 31, 2017. The remaining actuarial assumptions and methods are unchanged from the January 1, 2018 Actuarial Valuation. The actuarial assumptions and methods are outlined on Table X.

**Comparison of January 1, 2018 and January 1, 2019 Valuation Results**

Table II of our Report provides information of a comparative nature. The right columns of the Table indicate the costs as calculated for the January 1, 2018 Actuarial Valuation. The middle columns indicate the costs as calculated for January 1, 2019, prior to the update in actuarial assumptions. The left columns indicate the costs as calculated for January 1, 2019, after the update in actuarial assumptions.

Comparing the right and middle columns of Table II shows the effect of System experience during the year. The number of active participants and covered payroll increased by approximately 5% and 9%, respectively. Total normal cost, unfunded actuarial accrued liability and the minimum funding requirement decreased as a percentage of covered payroll but increased as a dollar amount.

Comparing the left and middle columns of Table II shows the effect of the update of actuarial assumptions. Total normal cost, unfunded actuarial accrued liability and the minimum funding requirement decreased both as a percentage of covered payroll and as a dollar amount.

The present value of vested accrued benefits exceeds the market value of System assets. The Vested Benefit Security Ratio is 78.3% (78.6% prior to update in actuarial assumptions). This is a decrease from 85.1% as of the January 1, 2018 Actuarial Valuation. The Vested Benefit Security Ratio is based upon the market value of assets.

Table VII provides figures on recent System payroll growth experience. Recent System covered payroll growth experience indicates actual payroll growth averaged approximately 0.3% annually for the ten (10) fiscal years ended December 31, 2018. The payroll growth assumption is 3.0%, not in excess of the ten (10) year average annual payroll growth assumption. The cap on payroll growth assumption is provided under Florida Statute. The increase in payroll growth assumption from 0.0% to 0.3% decreased current year amortization payments.

**Actuarial Gains / (Losses)**

The System experienced an actuarial loss of **$2,093,983** for 2018. Our Actuarial Valuation Report tracks the actual experience in three areas that are very significant in determining whether a gain or loss occurs. Table XIV presents compensation experience, tracks employee turnover and provides information on investment return.
Table XIV provides statistics on increases in pay enjoyed by active System Members. During 2018, pay increases to active Members averaged 5.4%. Pay increases were slightly below the average pay increase assumption of 5.8% (prior assumptions). This suggests pay increases were generally an offsetting source of actuarial gain this year. Three, five and ten-year average annual pay increases are 4.3%, 4.9% and 4.5%, respectively.

In addition, Table XIV provides statistics for active System Members terminating service in comparison to the number of active System Members who were assumed to terminate under the withdrawal assumptions. There was no Member turnover during 2018. This suggests employee turnover was generally a source of actuarial loss this year. Three, five and ten-year average termination experience is 20%, 50% and 50% of expected turnover (prior assumptions), respectively.

Table XIV also provides comparative statistics on the investment experience for the System. During 2018, the System experienced a smoothed investment return of approximately 5.2%. Smoothed investment return was below the 7.5% (prior assumption) anticipated rate of return. Smoothed investment return was a major source of actuarial loss this year. The average smoothed actuarial value rate of return over the last three, five and ten-years is 7.2%, 8.0% and 7.3%, respectively. The corresponding one, three, five and ten-year average market value rates of return are -2.2%, 6.5%, 4.7% and 8.7%, respectively.

**Member Census and Financial Data**

The Utility Board submitted the Member census data as of January 1, 2019 used for this actuarial valuation to us. This information contains name, Social Security number, date of birth, date of hire, current rate of pay and actual salary paid in 2018. Dates of termination and retirement are provided where applicable. The Utility Board updated information on inactive participants including retirees, beneficiaries and vested terminees. Name, Social Security number and January 1, 2019 monthly benefit payment were provided for these members.

The Utility Board also supplied information on the assets of the System as of December 31, 2018.

We do not audit the Member census data and asset information provided to us; however, we perform certain reasonableness checks. The System is responsible for the accuracy of the census data and asset information.

**Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution**

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future
experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the System’s funded status); and changes in System provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the System’s future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Asset/Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the System’s funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and the actuarially determined contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and the actuarially determined contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the actuarially determined contribution can be expected to increase (or decrease). Likewise if
longevity is improving (or worsening), increases (or decreases) in the actuarially determined contribution can be anticipated.

The actuarially determined contribution rate shown on page one may be considered as a minimum contribution rate that complies with the Board’s funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the system. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

System Maturity Measures

Risks facing a pension system evolve over time. A young system with virtually no investments and paying few benefits may experience little investment risk. An older system with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted system maturity measures include the following:

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of the market value of assets to total payroll</td>
<td>9.95</td>
<td>8.68</td>
</tr>
<tr>
<td>Ratio of actuarial accrued liability to payroll</td>
<td>12.66</td>
<td>11.93</td>
</tr>
<tr>
<td>Ratio of actives to retirees and beneficiaries</td>
<td>0.63</td>
<td>0.66</td>
</tr>
<tr>
<td>Ratio of net cash flow to market value of assets</td>
<td>-2.4%</td>
<td>-2.4%</td>
</tr>
<tr>
<td>Duration of the actuarial accrued liability</td>
<td>12.86</td>
<td>12.80</td>
</tr>
</tbody>
</table>

**Ratio of Market Value of Assets to Payroll**

The relationship between assets and payroll is a useful indicator of the potential volatility of the actuarially determined contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in the actuarially determined contributions as a percentage of payroll.

**Ratio of Actuarial Accrued Liability to Payroll**

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of the actuarially determined contributions for a fully funded system. A funding policy that
targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also the actuarially determined contributions) as a percentage of payroll.

**Ratio of Actives to Retirees and Beneficiaries**

A young system with many active members and few retirees will have a high ratio of active to retirees. A mature open system may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed system may have significantly more retirees than actives resulting in a ratio below 1.0.

**Ratio of Net Cash Flow to Market Value of Assets**

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature system or a need for additional contributions.

**Duration of Actuarial Accrued Liability**

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

**Additional Risk Assessment**

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

**Summary**

In our opinion the benefits currently provided for under the System will be sufficiently funded through the payment of the amount as indicated in this and future Actuarial Valuation Reports.
will continue to update you on the future payment requirements for the System through our actuarial Reports. These Reports will also continue to monitor the future experience of the System.

The actuarial assumptions used in this Actuarial Valuation are as adopted by the Board of Trustees. The demographic actuarial assumptions are based on the results of an actuarial experience study for the five-year period ended December 31, 2017. The mortality assumptions are prescribed by statute. Each assumption represents an estimate of future System experience.

If all actuarial assumptions are met and if all future minimum required contributions are paid, System assets will be sufficient to pay all System benefits, future contributions are expected to remain relatively stable as a percentage of payroll and the funded status of the System is expected to improve. System minimum required contributions are determined in compliance with the requirements of the Florida Protection of Public Employee Retirement Benefits Act with normal cost determined as a level percent of covered payroll and a level percent amortization payment using an initial amortization period of 30 years.

The Unfunded Actuarial Accrued Liability (UAAL) may not be appropriate for assessing the sufficiency of System assets to meet the estimated cost of settling benefit obligations but may be appropriate for assessing the need for or the amount of future contributions. The UAAL would be different if it reflected the market value of assets rather than the actuarial value of assets.

The Unfunded Actuarial Present Value of Vested Accrued Benefits and the corresponding Vested Benefit Security Ratio may be appropriate for assessing the sufficiency of System assets to meet the estimated cost of settling benefit obligations but may not be appropriate for assessing the need for or the amount of future contributions. The Unfunded Actuarial Present Value of Vested Accrued Benefits and the corresponding Vested Benefit Security Ratio are based upon the market value of assets.

The GASB Net Pension Liability and System Fiduciary Net Position as a Percentage of Total Pension Liability may not be appropriate for assessing the sufficiency of System assets to meet the estimated cost of settling benefit obligations but may be appropriate for assessing the need for or the amount of future contributions. The GASB Net Pension Liability and System Fiduciary Net Position as a Percentage of Total Pension Liability are based upon the market value of assets.

This Report should not be relied on for any purpose other than the purpose described in the primary communication. Determinations of the financial results associated with the benefits described in this Report in a manner other than the intended purpose may produce significantly different results.

This Report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this
Report is accurate and fairly presents the actuarial position of the System as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

This Report may be provided to parties other than the Board only in its entirety and only with the permission of an approved representative of the Board.

The signing actuaries are independent of the System and Utility Board.

The undersigned are Members of the American Academy of Actuaries and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinions contained in this Report. We are available to respond to any questions with regards to matters covered in this Report.

Very truly yours,

Lawrence F. Wilson, A.S.A., E.A.
Senior Consultant and Actuary

Jennifer M. Borregard, E.A.
Consultant and Actuary
### Table I

#### Summary of Retirement Plan Costs

<table>
<thead>
<tr>
<th></th>
<th>Current Assumptions</th>
<th>Prior Assumptions</th>
<th>Total Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hired after May 31, 2010</td>
<td>Hired before June 1, 2010</td>
<td>Total January 1, 2019</td>
</tr>
<tr>
<td></td>
<td>Cost</td>
<td>% of Payroll</td>
<td>Cost</td>
</tr>
<tr>
<td>A. Participant Data Summary (Table III)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Active Employees</td>
<td>45</td>
<td>N/A</td>
<td>78</td>
</tr>
<tr>
<td>2. Terminated Vested</td>
<td>0</td>
<td>N/A</td>
<td>22</td>
</tr>
<tr>
<td>3. Receiving Benefits</td>
<td>0</td>
<td>N/A</td>
<td>186</td>
</tr>
<tr>
<td>4. Total Participants</td>
<td>45</td>
<td>N/A</td>
<td>286</td>
</tr>
<tr>
<td>5. Annual Payroll of Active Employees</td>
<td>$3,349,446</td>
<td>100.0%</td>
<td>$6,731,350</td>
</tr>
<tr>
<td>B. Total Normal Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Age Retirement Benefits</td>
<td>$271,721</td>
<td>8.1%</td>
<td>$963,625</td>
</tr>
<tr>
<td>2. Deferred Vesting Benefits</td>
<td>35,689</td>
<td>1.1%</td>
<td>116,797</td>
</tr>
<tr>
<td>3. Death Benefits</td>
<td>26,472</td>
<td>0.8%</td>
<td>60,662</td>
</tr>
<tr>
<td>4. Disability Benefits</td>
<td>11,038</td>
<td>0.3%</td>
<td>47,027</td>
</tr>
<tr>
<td>5. Subtotal</td>
<td>$344,920</td>
<td>10.3%</td>
<td>$1,188,111</td>
</tr>
<tr>
<td>6. Administrative Expenses</td>
<td>N/A</td>
<td>N/A</td>
<td>64,422</td>
</tr>
<tr>
<td>7. Total Annual Normal Costs</td>
<td>N/A</td>
<td>N/A</td>
<td>$1,597,453</td>
</tr>
</tbody>
</table>

#### January 1, 2019 Assumptions

- **Current Assumptions**
  - Hired after May 31, 2010
  - Hired before June 1, 2010
  - Total January 1, 2019

- **Prior Assumptions**
  - Total January 1, 2018

- **Summary of Retirement Plan Costs**
  - Total May 31, 2010
  - June 1, 2010

- **Hired after May 31, 2010**
  - Active Employees
  - Terminated Vested
  - Receiving Benefits
  - Total Participants

- **Hired before June 1, 2010**
  - Active Employees
  - Terminated Vested
  - Receiving Benefits
  - Total Participants

- **Total January 1, 2019**
  - Active Employees
  - Terminated Vested
  - Receiving Benefits
  - Total Participants

- **Total May 31, 2010**
  - Active Employees
  - Terminated Vested
  - Receiving Benefits
  - Total Participants

- **Total June 1, 2010**
  - Active Employees
  - Terminated Vested
  - Receiving Benefits
  - Total Participants

- **Total January 1, 2018**
  - Active Employees
  - Terminated Vested
  - Receiving Benefits
  - Total Participants
### Table I
(Cont’d)

#### Summary of Retirement Plan Costs

<table>
<thead>
<tr>
<th>Category</th>
<th>Current Assumptions January 1, 2019</th>
<th>Prior Assumptions January 1, 2019</th>
<th>January 1, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cost</td>
<td>% of Payroll</td>
<td>Cost</td>
</tr>
<tr>
<td>C. Total Actuarial Accrued Liability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Age Retirement Benefits Active Employees</td>
<td>$31,902,446</td>
<td>316.5%</td>
<td>$32,555,057</td>
</tr>
<tr>
<td>2. Deferred Vested Benefits Active Employees</td>
<td>150,475</td>
<td>1.5%</td>
<td>151,152</td>
</tr>
<tr>
<td>3. Death Benefits Active Employees</td>
<td>585,211</td>
<td>5.8%</td>
<td>567,264</td>
</tr>
<tr>
<td>4. Disability Benefits Active Employees</td>
<td>895,320</td>
<td>8.9%</td>
<td>919,929</td>
</tr>
<tr>
<td>5. Retired or Terminated Vested Participants Receiving Benefits</td>
<td>77,479,424</td>
<td>768.6%</td>
<td>77,090,421</td>
</tr>
<tr>
<td>6. Terminated Vested Participants Entitled to Future Benefits</td>
<td>1,832,429</td>
<td>18.2%</td>
<td>1,816,102</td>
</tr>
<tr>
<td>7. Deceased Participants Whose Beneficiaries are Receiving Benefits</td>
<td>5,612,780</td>
<td>55.7%</td>
<td>5,584,294</td>
</tr>
<tr>
<td>8. Disabled Participants Receiving Benefits</td>
<td>1,841,942</td>
<td>18.3%</td>
<td>1,834,387</td>
</tr>
<tr>
<td>9. Total Actuarial Accrued Liability</td>
<td>$120,300,027</td>
<td>1193.4%</td>
<td>$120,518,606</td>
</tr>
<tr>
<td>D. Market Value of Assets (Table IV)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$87,492,294</td>
<td>867.9%</td>
<td>$87,492,294</td>
</tr>
<tr>
<td>E. Smoothed Actuarial Value of Assets (Table V)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$92,062,389</td>
<td>913.2%</td>
<td>$92,062,389</td>
</tr>
<tr>
<td>F. Unfunded Actuarial Accrued Liability (C-E)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$28,237,638</td>
<td>280.1%</td>
<td>$28,456,217</td>
</tr>
<tr>
<td>G. Minimum Required Contribution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Total Normal Cost</td>
<td>$1,597,453</td>
<td>15.8%</td>
<td>$1,659,516</td>
</tr>
<tr>
<td>2. Amortization of Unfunded Liability</td>
<td>2,611,377</td>
<td>25.9%</td>
<td>2,636,550</td>
</tr>
<tr>
<td>3. Interest Adjustment</td>
<td>156,779</td>
<td>1.6%</td>
<td>161,102</td>
</tr>
<tr>
<td>4. Total Payment</td>
<td>$4,365,609</td>
<td>43.3%</td>
<td>$4,457,168</td>
</tr>
<tr>
<td>H. Actuarial Gain / (Loss) (Table VI)</td>
<td>$ (2,093,983)</td>
<td>(20.8%)</td>
<td>$ (2,093,983)</td>
</tr>
</tbody>
</table>
### Summary of Retirement Plan Costs

<table>
<thead>
<tr>
<th>I. Actuarial Present Value of Vested Accrued Benefits</th>
<th>January 1, 2019</th>
<th>Prior Assumptions January 1, 2019</th>
<th>January 1, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Retired, Terminated Vested, Beneficiaries, Disabled Receiving Benefits</td>
<td>$84,934,146</td>
<td>$84,509,102</td>
<td>$81,281,428</td>
</tr>
<tr>
<td>2. Terminated Vested Participants Entitled to Future Benefits</td>
<td>1,832,429</td>
<td>1,816,102</td>
<td>2,177,928</td>
</tr>
<tr>
<td>3. Active Participants Entitled to Future Benefits</td>
<td>24,925,491</td>
<td>24,927,380</td>
<td>24,233,076</td>
</tr>
<tr>
<td>4. Total Actuarial Present Value of Vested Accrued Benefits</td>
<td>$111,692,066</td>
<td>$111,252,584</td>
<td>$107,692,432</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>J. Unfunded Actuarial Present Value of Vested Accrued Benefits (I.4 - D., not less than zero)</th>
<th>January 1, 2019</th>
<th>Prior Assumptions January 1, 2019</th>
<th>January 1, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>$24,199,772</td>
<td>$23,760,290</td>
<td>$16,062,955</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>78.3%</td>
<td>N/A</td>
<td>78.6%</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Current Assumptions January 1, 2019</td>
<td>Prior Assumptions January 1, 2019</td>
<td>January 1, 2018</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------</td>
<td>------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td><strong>A. Participants</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Active Employees</td>
<td>$1,080,796 100.0%</td>
<td>$1,080,796 100.0%</td>
<td>$9,210,384 100.0%</td>
</tr>
<tr>
<td>2. Terminated Vested</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3. Receiving Benefits</td>
<td>$186</td>
<td>N/A</td>
<td>$187</td>
</tr>
<tr>
<td>4. Annual Payroll of Active Employees</td>
<td>$10,080,796</td>
<td>$10,080,796</td>
<td>$9,210,384</td>
</tr>
<tr>
<td><strong>B. Total Normal Costs</strong></td>
<td>$1,597,453 15.8%</td>
<td>$1,659,516 16.5%</td>
<td>$1,575,303 17.1%</td>
</tr>
<tr>
<td><strong>C. Total Actuarial Accrued Liability</strong></td>
<td>$120,300,027 1193.4%</td>
<td>$120,518,606 1195.5%</td>
<td>$116,627,607 1266.3%</td>
</tr>
<tr>
<td><strong>D. Smoothed Actuarial Value of Assets</strong></td>
<td>$92,062,389 913.2%</td>
<td>$92,062,389 913.2%</td>
<td>$89,650,519 973.4%</td>
</tr>
<tr>
<td><strong>E. Unfunded Actuarial Accrued Liability</strong></td>
<td>$28,237,638 280.1%</td>
<td>$28,456,217 282.3%</td>
<td>$26,977,088 292.9%</td>
</tr>
<tr>
<td><strong>F. Net Minimum Funding Payment</strong></td>
<td>$4,365,609 43.3%</td>
<td>$4,457,168 44.2%</td>
<td>$4,079,176 44.3%</td>
</tr>
<tr>
<td><strong>G. Actuarial Gain / (Loss)</strong></td>
<td>$(2,093,983) (20.8%)</td>
<td>$(2,093,983) (20.8%)</td>
<td>$628,492 6.8%</td>
</tr>
<tr>
<td><strong>H. Unfunded Actuarial Present Value of Vested Accrued Benefits</strong></td>
<td>$24,199,772 240.1%</td>
<td>$23,760,290 235.7%</td>
<td>$16,062,955 174.4%</td>
</tr>
<tr>
<td><strong>I. Vested Benefit Security Ratio</strong></td>
<td>78.3%</td>
<td>78.6%</td>
<td>85.1%</td>
</tr>
</tbody>
</table>
Table III

**Characteristics of Participants in**

**Actuarial Valuation as of January 1, 2019**

A. **Active Plan Participants Summary**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Active participants as of beginning of prior year</td>
<td>117</td>
</tr>
<tr>
<td>2. New entrants during prior year</td>
<td>11</td>
</tr>
<tr>
<td>3. Exits during prior year</td>
<td>(5)</td>
</tr>
<tr>
<td>4. Active participants as of beginning of year</td>
<td>123</td>
</tr>
<tr>
<td>5. Active participants fully vested</td>
<td>69</td>
</tr>
<tr>
<td>6. Active participants partially vested</td>
<td>17</td>
</tr>
<tr>
<td>7. Active participants non-vested</td>
<td>37</td>
</tr>
<tr>
<td>8. Annual payroll of active participants</td>
<td>$10,080,796</td>
</tr>
<tr>
<td>9. Average pay</td>
<td>$81,958</td>
</tr>
<tr>
<td>10. Average hire age</td>
<td>32.65 years</td>
</tr>
<tr>
<td>11. Average attained age</td>
<td>44.24 years</td>
</tr>
<tr>
<td>12. Percent female</td>
<td>31.7%</td>
</tr>
</tbody>
</table>

B. **Characteristics of Inactive Participants**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inactives as of beginning of prior year</td>
<td>212</td>
</tr>
<tr>
<td>2. Newly inactive during prior year</td>
<td>5</td>
</tr>
<tr>
<td>3. Exits during prior year</td>
<td>(9)</td>
</tr>
<tr>
<td>4. Inactives as of beginning of year</td>
<td>208</td>
</tr>
<tr>
<td>5. Age retirees</td>
<td>159</td>
</tr>
<tr>
<td>6. Projected annual benefits for age retirees</td>
<td>$5,870,806</td>
</tr>
<tr>
<td>7. Beneficiaries of deceased participants</td>
<td>19</td>
</tr>
<tr>
<td>8. Projected annual benefits for beneficiaries</td>
<td>$456,385</td>
</tr>
<tr>
<td>9. Disabled participants receiving benefits</td>
<td>8</td>
</tr>
<tr>
<td>10. Projected annual benefits for disabled participants</td>
<td>$180,358</td>
</tr>
<tr>
<td>11. Terminated vested due deferred benefits</td>
<td>22</td>
</tr>
<tr>
<td>12. Projected annual benefits for terminated vested participants</td>
<td>$194,112</td>
</tr>
</tbody>
</table>
## Table IV

### Statement of Assets as of January 1, 2019 *

<table>
<thead>
<tr>
<th>Assets</th>
<th>Market Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investments at Market Value</strong></td>
<td></td>
</tr>
<tr>
<td>Cash and Cash Equivalents</td>
<td>$ 2,773,886</td>
</tr>
<tr>
<td>Bonds</td>
<td>9,990,638</td>
</tr>
<tr>
<td>Mutual Funds</td>
<td></td>
</tr>
<tr>
<td>- Asset Allocation Fund</td>
<td>4,400,916</td>
</tr>
<tr>
<td>- Vanguard Domestic Stock Mutual Fund</td>
<td>14,257,806</td>
</tr>
<tr>
<td>- Vanguard International Stock Mutual Fund</td>
<td>4,768,508</td>
</tr>
<tr>
<td>- Global Bond Mutual Fund</td>
<td>3,932,256</td>
</tr>
<tr>
<td>- International Growth Mutual Fund</td>
<td>5,317,754</td>
</tr>
<tr>
<td>International Equities</td>
<td>0</td>
</tr>
<tr>
<td>Common Stocks</td>
<td>33,218,968</td>
</tr>
<tr>
<td>Real Estate</td>
<td>8,426,726</td>
</tr>
<tr>
<td><strong>Total Investments</strong></td>
<td>$ 87,087,458</td>
</tr>
<tr>
<td><strong>Receivables</strong></td>
<td></td>
</tr>
<tr>
<td>Accrued Interest</td>
<td>$ 83,775</td>
</tr>
<tr>
<td>Pending Trades</td>
<td>98,042</td>
</tr>
<tr>
<td>Utility Board Contributions</td>
<td>7,347</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>666</td>
</tr>
<tr>
<td><strong>Total Receivables</strong></td>
<td>$ 189,830</td>
</tr>
<tr>
<td><strong>Other - Prepaid Benefits and Expenses</strong></td>
<td>$ 523,461</td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td></td>
</tr>
<tr>
<td>Accrued Benefits and Expenses</td>
<td>$ 33,356</td>
</tr>
<tr>
<td>Accounts Payable</td>
<td>56,198</td>
</tr>
<tr>
<td>Pending Trades</td>
<td>218,901</td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>$ 308,455</td>
</tr>
<tr>
<td><strong>Net Assets Available for Benefits</strong></td>
<td>$ 87,492,294</td>
</tr>
</tbody>
</table>

* As reported on financial statements prepared by the Utility Board.
### Reconciliation of Plan Assets *

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount (in $)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Market Value of Assets as of January 1, 2018</strong></td>
<td>$ 91,629,477</td>
</tr>
<tr>
<td><strong>B. Receipts During Year</strong></td>
<td></td>
</tr>
<tr>
<td>1. Utility Board contributions</td>
<td>$ 4,175,289</td>
</tr>
<tr>
<td>2. Interest, dividends and other</td>
<td></td>
</tr>
<tr>
<td>(a) Dividends, interest and other</td>
<td>$ 3,100,542</td>
</tr>
<tr>
<td>(b) Investment fees</td>
<td>$ 420,860</td>
</tr>
<tr>
<td>(c) Net dividends, interest and other [(a)-(b)]</td>
<td>$ 2,679,682</td>
</tr>
<tr>
<td>3. Realized gains / (losses)</td>
<td>$ 5,485,541</td>
</tr>
<tr>
<td>4. Unrealized gains / (losses)</td>
<td>$(10,126,290)</td>
</tr>
<tr>
<td>5. Net receipts during year</td>
<td>$ 2,214,222</td>
</tr>
<tr>
<td><strong>C. Disbursements During Year</strong></td>
<td></td>
</tr>
<tr>
<td>1. Pension benefit payments</td>
<td>$ 6,275,076</td>
</tr>
<tr>
<td>2. Contribution refunds</td>
<td>0</td>
</tr>
<tr>
<td>3. Administrative expenses paid</td>
<td>$ 76,329</td>
</tr>
<tr>
<td>4. Total disbursements during year</td>
<td>$ 6,351,405</td>
</tr>
<tr>
<td><strong>D. Market Value of Assets as of December 31, 2018</strong></td>
<td>$ 87,492,294</td>
</tr>
</tbody>
</table>

* As reported on financial statements prepared by the Utility Board.
### Development of Smoothed Actuarial Value of Assets as of December 31

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Preliminary smoothed actuarial value from prior year</td>
<td>$84,366,073</td>
<td>$89,650,519</td>
<td>$92,062,389</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Market value end of year</td>
<td>91,629,477</td>
<td>87,492,294</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Market value beginning of year</td>
<td>80,916,572</td>
<td>91,629,477</td>
<td>87,492,294</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Non-investment net cash flow</td>
<td>(1,921,634)</td>
<td>(2,176,116)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Investment return</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Total market value return: B. - C. - D.</td>
<td>12,634,539</td>
<td>(1,961,067)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Amount for immediate recognition (7.5%)</td>
<td>5,996,682</td>
<td>6,790,606</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Amount for phased-in recognition: E.1. - E.2.</td>
<td>6,637,857</td>
<td>(8,751,673)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Phased-in recognition of investment return</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Current year: 20% of E.3.</td>
<td>1,327,571</td>
<td>(1,750,335)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. First prior year</td>
<td>(130,890)</td>
<td>1,327,571</td>
<td>(1,750,335)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Second prior year</td>
<td>(1,289,693)</td>
<td>(130,890)</td>
<td>1,327,571</td>
<td>(1,750,335)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Third prior year</td>
<td>(359,272)</td>
<td>(1,289,693)</td>
<td>(130,890)</td>
<td>1,327,571</td>
<td>(1,750,335)</td>
<td></td>
</tr>
<tr>
<td>5. Fourth prior year</td>
<td>1,661,682</td>
<td>(359,273)</td>
<td>(1,289,693)</td>
<td>(130,889)</td>
<td>1,327,573</td>
<td>(1,750,333)</td>
</tr>
<tr>
<td>6. Total phased-in recognition of investment return</td>
<td>1,209,398</td>
<td>(2,202,620)</td>
<td>(1,843,347)</td>
<td>(553,653)</td>
<td>(422,762)</td>
<td>(1,750,333)</td>
</tr>
<tr>
<td>G. Smoothed actuarial value end of year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Preliminary smoothed actuarial value end of year:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. + D. + E.2. + F.6.</td>
<td>89,650,519</td>
<td>92,062,389</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Upper corridor limit:120% of B.</td>
<td>109,955,372</td>
<td>104,990,753</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Lower corridor limit: 80% of B.</td>
<td>73,303,582</td>
<td>69,993,835</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Smoothed actuarial value end of year:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.1., not more than G.2., nor less than G.3.</td>
<td>89,650,519</td>
<td>92,062,389</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Difference between market value and smoothed actuarial value</td>
<td>1,978,958</td>
<td>(4,570,095)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Smoothed actuarial value rate of return</td>
<td>8.6%</td>
<td>5.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. Market value rate of return</td>
<td>15.8%</td>
<td>(2.2%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table VI

**Actuarial Gain / (Loss) for**

**System Year Ended December 31, 2018**

**A. Derivation of Actuarial Gain / (Loss)**

1. Normal cost previous actuarial valuation $1,575,303
2. Unfunded actuarial accrued liability previous actuarial valuation 26,977,088
3. Utility Board contributions 4,175,289
4. Interest on:
   (a) Normal cost $118,148
   (b) Unfunded actuarial accrued liability 2,023,282
   (c) Utility Board contributions 156,298
   (d) Net total: (a) + (b) - (c) $1,985,132
5. Increase / (decrease) in unfunded actuarial accrued liability due to assumption change $218,579
6. Expected unfunded actuarial accrued liability current year: $26,143,655
7. Actual unfunded actuarial accrued liability current year 28,237,638
8. Actuarial gain / (loss): (6. - 7.) $2,093,983

**B. Approximate Portion of Gain / (Loss) due to Investments**

1. Smoothed actuarial value of assets previous year $89,650,519
2. Contributions during year 4,175,289
3. Benefits and administrative expenses during year 6,351,405
4. Expected appreciation for period 6,641,909
5. Expected smoothed actuarial value of assets current year: $94,116,312
6. Actual smoothed actuarial value of assets current year $92,062,389
7. Approximate gain / (loss) due to investments: (6. - 5.) $2,053,923

**C. Approximate Portion of Gain / (Loss) due to Liabilities: A.8. - B.7.** $40,060
### Amortization of Unfunded Actuarial Accrued Liability

**A. Amortization of Unfunded Accrued Liability**

<table>
<thead>
<tr>
<th>Date</th>
<th>Unfunded Liability</th>
<th>Amortization Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1, 2019</td>
<td>$28,237,638</td>
<td>$2,611,377</td>
</tr>
<tr>
<td>January 1, 2020</td>
<td>$27,535,419</td>
<td>$2,619,211</td>
</tr>
<tr>
<td>January 1, 2021</td>
<td>$26,772,464</td>
<td>$2,627,068</td>
</tr>
<tr>
<td>January 1, 2022</td>
<td>$25,944,228</td>
<td>$2,634,947</td>
</tr>
<tr>
<td>January 1, 2023</td>
<td>$25,045,821</td>
<td>$2,642,849</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>January 1, 2049</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

**B. Covered Payroll History**

<table>
<thead>
<tr>
<th>Date</th>
<th>Covered Payroll</th>
<th>Annual Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1, 2019</td>
<td>$10,080,796</td>
<td>9.5%</td>
</tr>
<tr>
<td>January 1, 2018</td>
<td>$9,210,384</td>
<td>(4.7%)</td>
</tr>
<tr>
<td>January 1, 2017</td>
<td>$9,667,989</td>
<td>4.5%</td>
</tr>
<tr>
<td>January 1, 2016</td>
<td>$9,247,710</td>
<td>2.2%</td>
</tr>
<tr>
<td>January 1, 2015</td>
<td>$9,046,826</td>
<td>(1.9%)</td>
</tr>
<tr>
<td>January 1, 2014</td>
<td>$9,226,528</td>
<td>(3.5%)</td>
</tr>
<tr>
<td>January 1, 2013</td>
<td>$9,558,105</td>
<td>(1.1%)</td>
</tr>
<tr>
<td>January 1, 2012</td>
<td>$9,667,272</td>
<td>(3.4%)</td>
</tr>
<tr>
<td>January 1, 2011</td>
<td>$10,005,398</td>
<td>(0.2%)</td>
</tr>
<tr>
<td>January 1, 2010</td>
<td>$10,024,867</td>
<td>2.5%</td>
</tr>
<tr>
<td>January 1, 2009</td>
<td>$9,782,010</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Ten-Year Average Annual Increase 0.3%
### Table VIII

**Accounting Disclosure Exhibit**

<table>
<thead>
<tr>
<th>Current Assumptions 01/01/2019</th>
<th>Prior Assumptions 01/01/2019</th>
<th>01/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Number of System Members</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Retirees and beneficiaries receiving benefits</td>
<td>186</td>
<td>186</td>
</tr>
<tr>
<td>2. Terminated System members entitled to but not yet receiving benefits</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>3. Active System members</td>
<td>123</td>
<td>123</td>
</tr>
<tr>
<td>4. Total</td>
<td>331</td>
<td>331</td>
</tr>
<tr>
<td><strong>II. Financial Accounting Standards Board Allocation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As of January 1, 2019</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Statement of Accumulated System Benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Actuarial present value of accumulated vested System benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Participants currently receiving benefits</td>
<td>$84,934,146</td>
<td>$84,509,102</td>
</tr>
<tr>
<td>b. Other participants</td>
<td>26,757,920</td>
<td>26,743,482</td>
</tr>
<tr>
<td>c. Total</td>
<td>$111,692,066</td>
<td>$111,252,584</td>
</tr>
<tr>
<td>2. Actuarial present value of accumulated non-vested System benefits</td>
<td>$803,023</td>
<td>$798,573</td>
</tr>
<tr>
<td>3. Total actuarial present value of accumulated System benefits</td>
<td>$112,495,089</td>
<td>$112,051,157</td>
</tr>
<tr>
<td>B. Statement of Change in Accumulated System Benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Actuarial present value of accumulated System benefits as of January 1, 2018</td>
<td>$108,436,063</td>
<td></td>
</tr>
<tr>
<td>2. Increase / (decrease) during year attributable to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. System amendment</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>b. Change in actuarial assumptions</td>
<td>443,932</td>
<td></td>
</tr>
<tr>
<td>c. Benefits paid</td>
<td>(6,275,076)</td>
<td></td>
</tr>
<tr>
<td>d. Other, including benefits accumulated, increase for interest due to decrease in the discount period</td>
<td>9,890,170</td>
<td></td>
</tr>
<tr>
<td>e. Net increase</td>
<td>$4,059,026</td>
<td></td>
</tr>
<tr>
<td>3. Actuarial present value of accumulated System benefits as of January 1, 2019</td>
<td>$112,495,089</td>
<td></td>
</tr>
<tr>
<td>C. Significant Matters Affecting Calculations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Assumed rate of return used in determining actuarial present values</td>
<td>7.45%</td>
<td></td>
</tr>
<tr>
<td>2. Change in System provisions</td>
<td>None.</td>
<td></td>
</tr>
<tr>
<td>3. Change in actuarial assumptions</td>
<td>See Table X. Item L.</td>
<td></td>
</tr>
</tbody>
</table>
### III. Net Pension Liability and Related Ratios (GASB No. 67 & No. 68)

#### A. Total Pension Liability

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Total Pension Liability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Cost</td>
<td>$1,533,031</td>
<td>$1,513,840</td>
<td>$1,653,371</td>
<td>$1,689,246</td>
<td>$1,615,566</td>
<td>$1,688,924</td>
</tr>
<tr>
<td>Interest</td>
<td>8,831,638</td>
<td>8,625,293</td>
<td>8,313,210</td>
<td>8,043,700</td>
<td>7,503,157</td>
<td>7,233,694</td>
</tr>
<tr>
<td>Benefit Changes</td>
<td>0</td>
<td>0</td>
<td>132,646</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference Between Actual and Expected Experience</td>
<td>26,942</td>
<td>333,184</td>
<td>(756,398)</td>
<td>465,515</td>
<td>(399,487)</td>
<td>(552,616)</td>
</tr>
<tr>
<td>Assumption Changes</td>
<td>(218,579)</td>
<td>0</td>
<td>113,197</td>
<td>2,800,797</td>
<td>0</td>
<td>3,883,996</td>
</tr>
<tr>
<td>Benefit Payments, including Refunds of Member Contributions</td>
<td>(6,575,162)</td>
<td>(6,275,076)</td>
<td>(5,723,180)</td>
<td>(5,462,925)</td>
<td>(5,040,021)</td>
<td>(4,673,833)</td>
</tr>
</tbody>
</table>

#### B. System Fiduciary Net Position

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B. System Fiduciary Net Position</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributions - System Sponsor</td>
<td>$4,365,609</td>
<td>$4,175,289</td>
<td>$3,860,513</td>
<td>$3,986,227</td>
<td>$3,653,199</td>
<td>$3,511,645</td>
</tr>
<tr>
<td>Contributions - Member</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Net Investment Income</td>
<td>6,433,470</td>
<td>(1,961,067)</td>
<td>12,634,539</td>
<td>5,090,087</td>
<td>(550,552)</td>
<td>3,909,304</td>
</tr>
<tr>
<td>Benefit Payments, including Refunds of Member Contributions</td>
<td>(6,575,162)</td>
<td>(6,275,076)</td>
<td>(5,723,180)</td>
<td>(5,462,925)</td>
<td>(5,040,021)</td>
<td>(4,673,833)</td>
</tr>
<tr>
<td>Administrative Expenses</td>
<td>(64,422)</td>
<td>(76,329)</td>
<td>(58,967)</td>
<td>(57,971)</td>
<td>(67,452)</td>
<td>(75,519)</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Net Change in System Fiduciary Net Position</td>
<td>$4,159,495</td>
<td>(4,137,183)</td>
<td>$10,712,905</td>
<td>$3,555,418</td>
<td>(2,004,826)</td>
<td>$2,671,597</td>
</tr>
</tbody>
</table>

#### C. Net Pension Liability (NPL) - (end of year): (A) - (B)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C. Net Pension Liability (NPL) - (end of year): (A) - (B)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$32,437,745</td>
<td>$32,999,370</td>
<td>$24,664,946</td>
<td>$31,645,005</td>
<td>$27,664,090</td>
<td>$21,980,049</td>
<td></td>
</tr>
</tbody>
</table>

#### D. System Fiduciary Net Position as a Percentage of TPL: (B) / (A)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>D. System Fiduciary Net Position as a Percentage of TPL: (B) / (A)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>73.86 %</td>
<td>72.61 %</td>
<td>78.79 %</td>
<td>71.89 %</td>
<td>73.66 %</td>
<td>78.31 %</td>
<td></td>
</tr>
</tbody>
</table>

#### E. Covered Employee Payroll **

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>**E. Covered Employee Payroll **</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10,808,796</td>
<td>$9,425,032</td>
<td>$9,462,044</td>
<td>$9,291,906</td>
<td>$9,319,386</td>
<td>$8,958,281</td>
<td></td>
</tr>
</tbody>
</table>

#### F. NPL as a Percentage of Covered Employee Payroll: (C) / (E)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F. NPL as a Percentage of Covered Employee Payroll: (C) / (E)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>321.78 %</td>
<td>350.12 %</td>
<td>260.67 %</td>
<td>340.57 %</td>
<td>296.84 %</td>
<td>245.36 %</td>
<td></td>
</tr>
</tbody>
</table>

#### G. Notes to Schedule:

- **Valuation Date**: 01/01/2019
- **Reporting Date (GASB No. 68)**: 09/30/2020
- Update procedures used to roll forward TPL to the measurement dates.
- See Notes to Schedule of Contributions for a history of assumption changes and benefit changes.

*Projected - actual amounts will be available after System year end
**Reported payroll on which contributions to the System are based as provided under GASB No. 82
## Table VIII (Cont’d)

### IV. Schedule of Employer Contributions (GASB No. 67)

<table>
<thead>
<tr>
<th>Fiscal Year Ended 12/31</th>
<th>Actuarially Determined Contribution</th>
<th>Actual Contribution</th>
<th>Contribution Deficiency (Excess)</th>
<th>Covered Payroll ¹</th>
<th>Actual Contribution as a % of Covered Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>$3,318,721</td>
<td>$3,318,721</td>
<td>$0</td>
<td>$9,790,423</td>
<td>33.90%</td>
</tr>
<tr>
<td>2010</td>
<td>3,045,252</td>
<td>3,103,795</td>
<td>(58,543)</td>
<td>9,729,240</td>
<td>31.90%</td>
</tr>
<tr>
<td>2011</td>
<td>3,174,884</td>
<td>3,174,884</td>
<td>0</td>
<td>9,562,205</td>
<td>33.20%</td>
</tr>
<tr>
<td>2012</td>
<td>3,356,361</td>
<td>3,356,361</td>
<td>0</td>
<td>9,312,610</td>
<td>36.04%</td>
</tr>
<tr>
<td>2013</td>
<td>3,628,209</td>
<td>3,628,209</td>
<td>0</td>
<td>9,162,598</td>
<td>39.04%</td>
</tr>
<tr>
<td>2014</td>
<td>3,511,645</td>
<td>3,511,645</td>
<td>0</td>
<td>8,958,281</td>
<td>39.20%</td>
</tr>
<tr>
<td>2015</td>
<td>3,653,199</td>
<td>3,653,199</td>
<td>0</td>
<td>9,319,386</td>
<td>39.20%</td>
</tr>
<tr>
<td>2016</td>
<td>3,986,227</td>
<td>3,986,227</td>
<td>0</td>
<td>9,291,906</td>
<td>42.90%</td>
</tr>
<tr>
<td>2017</td>
<td>3,860,513</td>
<td>3,860,513</td>
<td>0</td>
<td>9,462,044</td>
<td>40.80%</td>
</tr>
<tr>
<td>2018</td>
<td>4,175,289</td>
<td>4,175,289</td>
<td>0</td>
<td>9,425,032</td>
<td>44.30%</td>
</tr>
<tr>
<td>2019 ²</td>
<td>4,365,609</td>
<td>4,365,609</td>
<td>0</td>
<td>10,080,796</td>
<td>43.31%</td>
</tr>
</tbody>
</table>

¹ Reported payroll on which contributions to the System are based as provided under GASB No. 82

² Projected - actual amounts will be available after year end
# Accounting Disclosure Exhibit

## V. Schedule of Employer Contributions (GASB No. 68)

<table>
<thead>
<tr>
<th>Fiscal Year End 9/30</th>
<th>Actuarially Determined Contribution</th>
<th>Actual Contribution</th>
<th>Contribution Deficiency (Excess)</th>
<th>Covered Payroll</th>
<th>Actual Contribution as a % of Covered Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>$3,123,367</td>
<td>$3,123,367</td>
<td>$0</td>
<td>$9,618,836</td>
<td>32.47%</td>
</tr>
<tr>
<td>2010</td>
<td>3,113,619</td>
<td>3,172,162</td>
<td>(58,543)</td>
<td>9,744,536</td>
<td>32.55%</td>
</tr>
<tr>
<td>2011</td>
<td>3,142,476</td>
<td>3,142,476</td>
<td>0</td>
<td>9,603,964</td>
<td>32.72%</td>
</tr>
<tr>
<td>2012</td>
<td>3,310,992</td>
<td>3,310,992</td>
<td>0</td>
<td>9,375,009</td>
<td>35.32%</td>
</tr>
<tr>
<td>2013</td>
<td>3,560,247</td>
<td>3,560,247</td>
<td>0</td>
<td>9,200,101</td>
<td>38.70%</td>
</tr>
<tr>
<td>2014</td>
<td>3,540,786</td>
<td>3,540,786</td>
<td>0</td>
<td>9,009,360</td>
<td>39.30%</td>
</tr>
<tr>
<td>2015</td>
<td>3,617,811</td>
<td>3,617,811</td>
<td>0</td>
<td>9,229,110</td>
<td>39.20%</td>
</tr>
<tr>
<td>2016</td>
<td>3,902,970</td>
<td>3,902,970</td>
<td>0</td>
<td>9,298,776</td>
<td>41.97%</td>
</tr>
<tr>
<td>2017</td>
<td>3,891,942</td>
<td>3,891,942</td>
<td>0</td>
<td>9,419,510</td>
<td>41.32%</td>
</tr>
<tr>
<td>2018</td>
<td>4,096,595</td>
<td>4,096,595</td>
<td>0</td>
<td>9,434,285</td>
<td>43.42%</td>
</tr>
<tr>
<td>2019&lt;sup&gt;2&lt;/sup&gt;</td>
<td>4,318,029</td>
<td>4,318,029</td>
<td>0</td>
<td>9,916,855</td>
<td>43.54%</td>
</tr>
</tbody>
</table>

1. Based on prorated calendar year pay
2. Projected - actual amounts will be available after fiscal year end
VI. Notes to Schedule of Contributions (GASB No. 67 & No. 68)

**Valuation Date:** Actuarially determined contributions are calculated using a valuation date as of the beginning of the plan year (each January 1st).

**Methods and Assumptions Used to Determine Contribution Rates:**

- **Actuarial Cost Method** Entry Age
- **Amortization Method** Level Percentage of Pay, Closed
- **Amortization Period** 30 years
- **Asset Valuation Method** 5-year smoothed market
- **Inflation** 2.75%
- **Salary Increases** 4.5% - 10.0%
- **Investment Rate of Return** 7.5%
- **Payroll Growth Assumption** 3.0% per year, but limited to average annual increase over most recent ten years (0.0%).
- **Retirement Age** Experience-based table of rates that are specific to the type of eligibility condition
- **Mortality**
  - For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.
  - For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.
  - For disabled male participants, RP 2000 Disabled Male Mortality Table, setback four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

- **Cost-of-Living Increases** 3.0%
VI. Notes to Schedule of Contributions (GASB No. 67 & No. 68) (cont'd)

**Other Information:**

Benefit Changes

2017: Effective October 25, 2017 for Members under Career Average Compensation and on January 1, 2020 for Members under Final Average Compensation, Compensation means a Member’s base compensation (hourly rate in effect each pay period multiplied by the corresponding hours earned during that pay period). However, Compensation shall not include overtime (except as necessary to not penalize Members assigned to work 12-hour shifts), commissions, bonuses, expense allowances and any hours that are considered leave without pay. For Members under Final Average Compensation, effective January 1, 2020, the average annual Compensation earned by a Member during the highest 10,440 hours out of the last 20,880 hours of service (which shall be determined using the highest 130.5 payroll periods of the last 261 payroll periods) immediately preceding termination of service or retirement. 2011: New benefit structure added for employees hired on or after June 1, 2010 including career average earnings and 2.0% multiplier. 2009: Normal retirement eligibility updated to attainment of age 60 and completion of 10 years of credited service from attainment of age 60 if member enters System after November 13, 2008; pre-retirement death benefit for child beneficiaries end date extended from 21 years of age to 25 years of age provided the child is a full-time student in college or disabled under Social Security; actuarially equivalent joint and survivor with pop-up optional form of payment added.

Assumption Changes

2017: Pre-retirement mortality was updated. 2016: Mortality rates updated. 2014: Investment return updated from 8.0% to 7.5%; withdrawal, salary increase and retirement rates updated. 2009: Mortality, withdrawal, salary increase and retirement rates updated; assumption for child beneficiaries added for pre-retirement death benefits.

VII. Discount Rate (GASB No. 67 & No. 68)

Discount rates of 7.5% and 7.45% were used to measure the December 31, 2018 TPL and the December 31, 2019 TPL, respectively. These discount rates were based on the expected rate of return on System investments of 7.5% and 7.45%. The projection of cash flows used to determine these discount rates assumed member contributions will be made at the current contribution rate and employer contributions will be made at rates equal to the difference between actuarially determined current contribution rates and the member contribution rate. Based on these assumptions, the pension System’s fiduciary net position was projected to be available to make all projected future expected benefit payments of current System members. Therefore, the long-term expected rate of return on System investments was applied to all periods of projected benefit payments to determine the TPL.
## Accounting Disclosure Exhibit

### VIII. Sensitivity of the NPL to the Discount Rate Assumption (GASB No. 67 & No. 68) (cont'd)

#### Measurement date: December 31, 2018

<table>
<thead>
<tr>
<th>Discount Rate</th>
<th>1% Decrease</th>
<th>Current Discount Rate</th>
<th>1% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPL</td>
<td>6.5%</td>
<td>7.5%</td>
<td>8.5%</td>
</tr>
<tr>
<td></td>
<td>$48,299,233</td>
<td>$32,999,370</td>
<td>$20,401,433</td>
</tr>
</tbody>
</table>

#### Measurement date: December 31, 2019 *

<table>
<thead>
<tr>
<th>Discount Rate</th>
<th>1% Decrease</th>
<th>Current Discount Rate</th>
<th>1% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPL</td>
<td>6.45%</td>
<td>7.45%</td>
<td>8.45%</td>
</tr>
<tr>
<td></td>
<td>$48,130,625</td>
<td>$32,437,745</td>
<td>$19,507,482</td>
</tr>
</tbody>
</table>

* Projected - actual amounts will be available after System year end
**Accounting Disclosure Exhibit**

IX. **Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions - Reporting Date (GASB No. 68)**

Pension Expense for Fiscal Year Ending September 30, 2019: $6,562,213

Summary of Outstanding Deferred Inflows and Outflows of Resources as of September 30, 2019

<table>
<thead>
<tr>
<th>Differences between actual and expected experience on liabilities</th>
<th>Deferred Outflows of Resources</th>
<th>Deferred Inflows of Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>$247,236</td>
<td>$297,974</td>
<td></td>
</tr>
<tr>
<td>Changes of assumptions or other inputs</td>
<td>134,941</td>
<td>0</td>
</tr>
<tr>
<td>Net difference between projected and actual earnings on System investments</td>
<td>4,570,095</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>$4,952,272</td>
<td>$297,974</td>
</tr>
</tbody>
</table>

Projected Deferred Outflows for Utility Board Contributions to Be Recognized in Pension Expense for Fiscal Year Ending September 30, 2020: $3,274,207

Summary of Deferred Outflows and Inflows of Resources to be Recognized in Pension Expense in Future Years

<table>
<thead>
<tr>
<th>Year ending 30-Sep</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>$1,854,767</td>
</tr>
<tr>
<td>2021</td>
<td>596,147</td>
</tr>
<tr>
<td>2022</td>
<td>453,051</td>
</tr>
<tr>
<td>2023</td>
<td>1,750,333</td>
</tr>
<tr>
<td>2024</td>
<td>0</td>
</tr>
<tr>
<td>Thereafter</td>
<td>0</td>
</tr>
</tbody>
</table>
**Accounting Disclosure Exhibit**

The following information is not required to be disclosed but is provided for informational purposes.

X. **Components of Pension Expense (GASB No. 68)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Cost</td>
<td>$ 1,533,031</td>
<td>$ 1,513,840</td>
<td>$ 1,653,371</td>
<td>$ 1,689,246</td>
<td>$ 1,615,566</td>
<td>$ 1,688,924</td>
</tr>
<tr>
<td>Interest on Total Pension Liability</td>
<td>8,831,638</td>
<td>8,625,293</td>
<td>8,313,210</td>
<td>8,043,700</td>
<td>7,503,157</td>
<td>7,233,694</td>
</tr>
<tr>
<td>Current-Period Benefit Changes</td>
<td>0</td>
<td>0</td>
<td>132,646</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Contributions - Member</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Projected Earnings on System Investments</td>
<td>(6,433,470)</td>
<td>(6,790,606)</td>
<td>(5,996,682)</td>
<td>(5,744,536)</td>
<td>(5,897,913)</td>
<td>(5,705,665)</td>
</tr>
<tr>
<td>Administrative Expenses</td>
<td>64,422</td>
<td>76,329</td>
<td>58,967</td>
<td>57,971</td>
<td>67,452</td>
<td>75,519</td>
</tr>
<tr>
<td>Other Changes in System Fiduciary Net Position</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Recognition of Beginning Deferred Outflows / (Inflows) due to Liabilities</td>
<td>(40,374)</td>
<td>934,737</td>
<td>1,036,752</td>
<td>1,938,318</td>
<td>884,669</td>
<td>1,009,509</td>
</tr>
<tr>
<td>Recognition of Beginning Deferred Outflows / (Inflows) due to Assets</td>
<td>1,843,347</td>
<td>2,202,620</td>
<td>452,284</td>
<td>1,779,855</td>
<td>1,648,965</td>
<td>359,272</td>
</tr>
<tr>
<td>Total Pension Expense</td>
<td>$ 5,798,594</td>
<td>$ 6,562,213</td>
<td>$ 5,650,548</td>
<td>$ 7,764,554</td>
<td>$ 5,821,896</td>
<td>$ 4,661,253</td>
</tr>
</tbody>
</table>

* Projected - actual amounts will be available after measurement date
## Accounting Disclosure Exhibit

The following information is not required to be disclosed but is provided for informational purposes.

### XI. Recognition of Deferred Outflows and (Inflows) due to Liabilities - Measurement Date (GASB No. 68)

#### Recognition of Deferred Outflows due to Differences Between Actual and Expected Experience on Liabilities

<table>
<thead>
<tr>
<th>Established</th>
<th>Initial Balance</th>
<th>Initial Recognition Period</th>
<th>Remaining Recognition Period as of 12/31/2018</th>
<th>Recognition Amount for 2018</th>
<th>Balance as of 12/31/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$0</td>
<td>3.2</td>
<td>0.0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>2016</td>
<td>465,515</td>
<td>3.1</td>
<td>0.1</td>
<td>150,166</td>
<td>15,017</td>
</tr>
<tr>
<td>2017</td>
<td>0</td>
<td>3.3</td>
<td>1.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2018</td>
<td>333,184</td>
<td>3.3</td>
<td>2.3</td>
<td>100,965</td>
<td>232,219</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$251,131</strong></td>
<td></td>
<td><strong>$251,131</strong></td>
<td><strong>$247,236</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Recognition of Deferred (Inflows) due to Differences Between Actual and Expected Experience on Liabilities

<table>
<thead>
<tr>
<th>Established</th>
<th>Initial Balance</th>
<th>Initial Recognition Period</th>
<th>Remaining Recognition Period as of 12/31/2018</th>
<th>Recognition Amount for 2018</th>
<th>Balance as of 12/31/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$0</td>
<td>3.2</td>
<td>0.0</td>
<td>$24,967</td>
<td>$0</td>
</tr>
<tr>
<td>2016</td>
<td>2,800,797</td>
<td>3.1</td>
<td>0.1</td>
<td>903,483</td>
<td>90,348</td>
</tr>
<tr>
<td>2017</td>
<td>113,197</td>
<td>3.3</td>
<td>1.3</td>
<td>34,302</td>
<td>44,593</td>
</tr>
<tr>
<td>2018</td>
<td>0</td>
<td>3.3</td>
<td>2.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$254,179</strong></td>
<td></td>
<td><strong>$254,179</strong></td>
<td><strong>$297,974</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Recognition of Deferred Outflows due to Changes of Assumptions or Other Inputs on Liabilities

<table>
<thead>
<tr>
<th>Established</th>
<th>Initial Balance</th>
<th>Initial Recognition Period</th>
<th>Remaining Recognition Period as of 12/31/2018</th>
<th>Recognition Amount for 2018</th>
<th>Balance as of 12/31/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$0</td>
<td>3.2</td>
<td>0.0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>2016</td>
<td>2,800,797</td>
<td>3.1</td>
<td>0.1</td>
<td>903,483</td>
<td>90,348</td>
</tr>
<tr>
<td>2017</td>
<td>113,197</td>
<td>3.3</td>
<td>1.3</td>
<td>34,302</td>
<td>44,593</td>
</tr>
<tr>
<td>2018</td>
<td>0</td>
<td>3.3</td>
<td>2.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$937,785</strong></td>
<td></td>
<td><strong>$937,785</strong></td>
<td><strong>$134,941</strong></td>
<td></td>
</tr>
</tbody>
</table>
**Accounting Disclosure Exhibit**

The following information is not required to be disclosed but is provided for informational purposes.

**XI. Recognition of Deferred Outflows and (Inflows) Due to Liabilities - Measurement Date (GASB No. 68) (cont’d)**

Recognition of Deferred (Inflows) due to Changes of Assumptions or Other Inputs on Liabilities

<table>
<thead>
<tr>
<th>Established</th>
<th>Initial Balance</th>
<th>Remaining Recognition Period as of 12/31/2018</th>
<th>Recognition Amount for 2018</th>
<th>Balance as of 12/31/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$</td>
<td>3.2 0.0</td>
<td>$</td>
<td>0</td>
</tr>
<tr>
<td>2016</td>
<td>0</td>
<td>3.1 0.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2017</td>
<td>0</td>
<td>3.3 1.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2018</td>
<td>0</td>
<td>3.3 2.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$</td>
<td>0 $</td>
<td>0 $</td>
<td>0</td>
</tr>
</tbody>
</table>

**XII. Recognition of Deferred Outflows / (Inflows) due to Assets - Measurement Date (GASB No. 68)**

Recognition of Deferred Outflows / (Inflows) due to Differences Between Projected and Actual Earnings on Pension Plan Investments

<table>
<thead>
<tr>
<th>Established</th>
<th>Initial Balance</th>
<th>Remaining Recognition Period as of 12/31/2018</th>
<th>Recognition Amount for 2018</th>
<th>Balance as of 12/31/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>$ 1,796,361</td>
<td>5 0</td>
<td>$ 359,273</td>
<td>$ 1,289,693</td>
</tr>
<tr>
<td>2015</td>
<td>6,448,465</td>
<td>5 1</td>
<td>1,289,693</td>
<td>1,289,693</td>
</tr>
<tr>
<td>2016</td>
<td>654,449</td>
<td>5 2</td>
<td>130,890</td>
<td>261,779</td>
</tr>
<tr>
<td>2017</td>
<td>(6,637,857)</td>
<td>5 3</td>
<td>(1,327,571)</td>
<td>(3,982,715)</td>
</tr>
<tr>
<td>2018</td>
<td>8,751,673</td>
<td>5 4</td>
<td>1,750,335</td>
<td>7,001,338</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$ 2,202,620</td>
<td>$ 4,570,095</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table IX

Outline of Principal Provisions of the Retirement Plan

A. Effective Date:

April 9, 1954, as amended and restated as of October 25, 2017.

B. Eligibility Requirements:

All regular and permanent employees of the Utility Board shall become members of the Plan immediately upon completion of probationary period. All regular and permanent employees of the Utility Board employed prior to October 2, 2003 became members of the Plan immediately upon employment. Elected Utility Board officials become members of the Plan immediately upon election.

C. Member Contributions:

Eliminated effective October 1, 1985 (October 1, 1983 for management members).

D. Utility Board Contributions:

The Utility Board shall contribute an amount which will be determined annually by decision of the Utility Board.

E. Credited Service:

Credited service is service performed subject to a maximum of 30 years. However, any member with more than 30 years of credited service as of November 20, 1998 will be grandfathered under the prior 35 year cap.

F. Final Average Compensation:

Final average compensation (FAC) equals the average annual pensionable earnings earned during a period of the five highest years out of the last ten years of service immediately preceding retirement. Pensionable earnings are calculated using the member's base hourly rate each pay period, multiplied by 80 hours, less any hours that are considered leave without pay.

Effective January 1, 2020, FAC equals the average of the pensionable earnings earned by a member during the highest 10,440 hours out of the last 20,880 hours of service (which shall be determined using the highest 130.5 payroll periods of the last 261 payroll periods) immediately preceding termination of service or retirement. Pensionable earnings are calculated using the member's base hourly rate in effect each pay period, multiplied by the corresponding hours earned during that pay period, less any hours that are considered leave without pay or are otherwise excluded from pensionable earnings.
Outline of Principal Provisions of the Retirement Plan

G. Career Average Compensation:

Career average compensation (CAC) means the average of the pensionable earnings earned by a member from date of participation to termination of service. Pensionable earnings are calculated using the member’s base hourly rate in effect each pay period, multiplied by the corresponding hours earned during that pay period, less any hours that are considered leave without pay or are otherwise excluded from pensionable earnings.

H. Normal Retirement:

1. Eligibility:

   Earlier of:
   (a) Attainment of age 60 and completion of 10 years of credited service, attainment of age 60 if a Plan Member on or before November 13, 2008.
   (b) Completion of 30 years of credited service.

2. Benefit:

   For employees hired on or before May 31, 2010, 2.4% times FAC times years of credited service. For employees hired on or after June 1, 2010, 2.0% times CAC times years of credited service.

I. Early Retirement:

1. Eligibility:

   Earliest of:
   (a) Attainment of age 55 with completion of 10 years of credited service.
   (b) Completion of 20 years of credited service.

2. Benefit:

   Benefit as calculated for normal retirement based on credited service and FAC or CAC as of early retirement date. The member may elect to defer receipt of the benefit until the normal retirement date or alternatively, may elect a benefit reduced 5% for each year the benefit commencement date precedes normal retirement date.

J. Disability Retirement:

1. Eligibility:

   Totally and permanently disabled as defined under the Plan and completion of 10 years of credited service as of date of disability.
2. **Benefit:**

   For employees hired on or before May 31, 2010, benefit as calculated for normal retirement based on credited service and average basic compensation during the three years immediately preceding disability, minimum benefit of 20% of final three year average basic compensation at date of disability.

   For employees hired on or after June 1, 2010, benefit as calculated for normal retirement based on credited service and CAC as of date of disability, minimum benefit of 20% of CAC at date of disability.

   These benefits will be offset by any benefits payable under Workers' Compensation or similar injury or disability benefit payments.

K. **Pre-Retirement Death Benefit:**

   In the case of death of a member while currently employed, the amount of the projected benefit which such member would have received had the member continued employment until normal retirement date at the current rate of pay shall be determined. Each Plan Member may elect survivor payment under Option 1 or Option 2, however, Option 2 is only available if the Plan Member has children under 21 years of age (25 years of age provided the child is a full-time student in college or disabled under Social Security).

   Option 1, 75% of the benefit calculated above payable during the remaining lifetime of the spouse or domestic partner.

   Option 2, 100% of the benefit calculated above payable until the youngest child is 21 years of age (25 years of age provided the child is a full-time student in college or disabled under Social Security). Upon attainment of age 21 (age 25 provided the child is a full-time student in college or disabled under Social Security) by the youngest child, 60% of the benefit calculated above payable during the remaining lifetime of the surviving spouse or domestic partner.

   Notwithstanding the above, the minimum death benefit paid shall not be less than the accumulated employee contributions, if any, as of date of death.

L. **Termination Benefit:**

   Upon termination prior to normal or early retirement date a member shall be entitled to choose (1) or (2) below, where:

   (1) is a refund of employee contributions plus 1% if termination with 5 years or less of service, or 3% if termination after 5 years of service; and,
Outline of Principal Provisions of the Retirement Plan

(2) is (a) x (b), where (a) is the benefit as calculated for normal retirement, based on FAC or CAC and credited service at date of termination, and (b) is a percentage as shown on the following table:

<table>
<thead>
<tr>
<th>Years of Credited Service</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5</td>
<td>0%</td>
</tr>
<tr>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>6</td>
<td>30%</td>
</tr>
<tr>
<td>7</td>
<td>40%</td>
</tr>
<tr>
<td>8</td>
<td>60%</td>
</tr>
<tr>
<td>9</td>
<td>80%</td>
</tr>
<tr>
<td>10 or more</td>
<td>100%</td>
</tr>
</tbody>
</table>

If this option is selected, unreduced vested benefits commence as of the terminated employees' normal retirement date. Alternatively, the member may elect to commence receiving a reduced vested benefit any time after early retirement eligibility requirements are met. Such benefit is reduced by 5% for each year that commencement of benefits precedes the date which the member would have been eligible for normal retirement.

M. **Normal Form of Payment:**

Monthly life annuity with final payment due in month in which death occurs. Effective January 1, 1986, monthly benefits are increased 2% per annum. Effective January 1, 2001, monthly benefits are increased 3% per annum.

N. **Changes Since Previous Valuation**

None.
Table X

**Actuarial Assumptions and Actuarial Cost Methods**

*Used in the Valuation*

A. **Mortality**

For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For disabled male participants, RP 2000 Disabled Male Mortality Table, setback four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

<table>
<thead>
<tr>
<th>Sample Ages (2019)</th>
<th>Pre-retirement Future Life Expectancy (Years)</th>
<th>Post-retirement Future Life Expectancy (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>55</td>
<td>30.64</td>
<td>33.66</td>
</tr>
<tr>
<td>60</td>
<td>25.71</td>
<td>28.64</td>
</tr>
<tr>
<td>62</td>
<td>23.81</td>
<td>26.68</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample Ages (2039)</th>
<th>Pre-retirement Future Life Expectancy (Years)</th>
<th>Post-retirement Future Life Expectancy (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>55</td>
<td>32.78</td>
<td>35.50</td>
</tr>
<tr>
<td>60</td>
<td>27.88</td>
<td>30.47</td>
</tr>
<tr>
<td>62</td>
<td>25.97</td>
<td>28.49</td>
</tr>
</tbody>
</table>

B. **Interest to be Earned by Fund**

7.45%, net of investment expenses, compounded annually - includes inflation of 2.60%.
Table X
(Cont’d)

**Actuarial Assumptions and Actuarial Cost Methods**

*Used in the Valuation*

C. **Allowances for Expenses or Contingencies**

Average of actual administrative expenses during prior three (3) years.

D. **Employee Withdrawal Rates**

Withdrawal rates were used in accordance with tables per the following illustrative example:

<table>
<thead>
<tr>
<th>Service</th>
<th>Unisex Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9.0%</td>
</tr>
<tr>
<td>1</td>
<td>8.1%</td>
</tr>
<tr>
<td>2</td>
<td>7.2%</td>
</tr>
<tr>
<td>3</td>
<td>5.4%</td>
</tr>
<tr>
<td>4</td>
<td>3.6%</td>
</tr>
<tr>
<td>5+</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

E. **Salary Increase Factors**

Current salary was assumed to increase according to the following table.

<table>
<thead>
<tr>
<th>Age</th>
<th>Assumed Wage Inflation</th>
<th>Promotion &amp; Seniority</th>
<th>Total Current Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 35</td>
<td>3.25%</td>
<td>3.75%</td>
<td>7.00%</td>
</tr>
<tr>
<td>35 - 49</td>
<td>3.25%</td>
<td>1.75%</td>
<td>5.00%</td>
</tr>
<tr>
<td>50 &amp; After</td>
<td>3.25%</td>
<td>0.75%</td>
<td>4.00%</td>
</tr>
</tbody>
</table>

F. **Disability Benefits**

Class (01) Inter-Company modified disability rates for males were used. Rates for females were doubled. No Workers' Compensation benefits are assumed to be payable.
Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation

G. Assumed Retirement Age

Employees are assumed to retire at the rates shown in the following table.

<table>
<thead>
<tr>
<th>Age</th>
<th>Rate of Retirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30 Years of Service</td>
<td></td>
</tr>
<tr>
<td>&lt; 55</td>
<td>6.5%</td>
</tr>
<tr>
<td>55 - 58</td>
<td>15.0%</td>
</tr>
<tr>
<td>59 - 60</td>
<td>30.0%</td>
</tr>
<tr>
<td>61 - 69</td>
<td>5.0%</td>
</tr>
<tr>
<td>70 +</td>
<td>100.0%</td>
</tr>
<tr>
<td>30 Years of Service</td>
<td></td>
</tr>
<tr>
<td>&lt; 50</td>
<td>50.0%</td>
</tr>
<tr>
<td>50 +</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

H. Death Benefits

1. The assumed incidence of deaths is 90% service incurred and 10% as non-service incurred.
2. 10% of participants are assumed to designate a child as beneficiary eligible for future children's benefits.
3. 90% of participants are assumed to be married.

I. Valuation of Assets

The method used for determining the smoothed actuarial value of assets phases in the deviation between the expected and actual return on assets at the rate of 20% per year. The smoothed actuarial value of assets will be further adjusted to the extent necessary to fall within the corridor whose lower limit is 80% of the fair market value of System assets and whose upper limit is 120% of the fair market value of System assets.
**Table X**  
(Cont’d)

### Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation

J. **Increase in Covered Payroll**

3.0% per year, but limited to average annual increase over most recent ten years (0.3%).

K. **Cost Method**

*Normal Retirement, Termination, Disability, and Death Benefits: Entry-Age-Actuarial Cost Method.*  
Under this method the normal cost for each active employee is the amount which is calculated to be a level percentage of pay that would be required annually from his age at hire to his assumed retirement age to fund his estimated benefits, assuming the System had always been in effect. The normal cost for the System is the sum of such amounts for all employees. The actuarial accrued liability as of any valuation date for each active employee or inactive employee who is eligible to receive benefits under the System is the excess of the actuarial present value of estimated future benefits over the actuarial present value of current and future normal costs. The unfunded actuarial accrued liability as of any valuation date is the excess of the actuarial accrued liability over the smoothed actuarial value of assets of the System.

L. **Changes Since Previous Valuation**

1. **Interest to be Earned by Fund was:**

   7.50%, net of investment expenses, compounded annually - includes inflation of 2.75%.

2. **Employee Withdrawal Rates were:**

   Withdrawal rates were used in accordance with tables per the following illustrative example:

<table>
<thead>
<tr>
<th>Service</th>
<th>Unisex Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10.0%</td>
</tr>
<tr>
<td>1</td>
<td>9.0%</td>
</tr>
<tr>
<td>2</td>
<td>8.0%</td>
</tr>
<tr>
<td>3</td>
<td>6.0%</td>
</tr>
<tr>
<td>4</td>
<td>4.0%</td>
</tr>
<tr>
<td>5+</td>
<td>3.5%</td>
</tr>
</tbody>
</table>
L. Changes Since Previous Valuation (cont'd)

3. Salary Increase Factors were:

Salary was assumed to increase according to the following table.

<table>
<thead>
<tr>
<th>Age</th>
<th>Assumed Wage Inflation</th>
<th>Promotion &amp; Seniority</th>
<th>Total Current Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 25</td>
<td>3.5%</td>
<td>6.5%</td>
<td>10.0%</td>
</tr>
<tr>
<td>25 - 34</td>
<td>3.5%</td>
<td>4.0%</td>
<td>7.5%</td>
</tr>
<tr>
<td>35 - 44</td>
<td>3.5%</td>
<td>2.5%</td>
<td>6.0%</td>
</tr>
<tr>
<td>45 - 54</td>
<td>3.5%</td>
<td>1.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>55 &amp; After</td>
<td>3.5%</td>
<td>1.0%</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

4. Assumed Retirement Age was:

Employees were assumed to retire at the rates shown in the following table.

<table>
<thead>
<tr>
<th>Age</th>
<th>Rate of Retirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 55</td>
<td>5%</td>
</tr>
<tr>
<td>55 - 58</td>
<td>15%</td>
</tr>
<tr>
<td>59 - 60</td>
<td>30%</td>
</tr>
<tr>
<td>61 - 62</td>
<td>10%</td>
</tr>
<tr>
<td>63 - 69</td>
<td>15%</td>
</tr>
<tr>
<td>70 +</td>
<td>100%</td>
</tr>
</tbody>
</table>

Employees who attain age 50 with 30 years of service after the valuation date are assumed to retire no later than age 50 with 30 years of service. Employees who have reached age 70 or age 50 with 30 years of service as of the valuation date are assumed to remain employed for an additional year.
## Reconciliation of System Participants

### A. Active Participants

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active participants previous year</td>
<td>117</td>
</tr>
<tr>
<td>Retired during year</td>
<td>(5)</td>
</tr>
<tr>
<td>Deceased during year</td>
<td>0</td>
</tr>
<tr>
<td>Disabled during year</td>
<td>0</td>
</tr>
<tr>
<td>Terminated during year</td>
<td>0</td>
</tr>
<tr>
<td>New active participants</td>
<td>11</td>
</tr>
<tr>
<td>Rehired participants</td>
<td>0</td>
</tr>
<tr>
<td>Active participants</td>
<td>123</td>
</tr>
</tbody>
</table>

### B. Participants Receiving Benefits

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants receiving benefits previous year</td>
<td>187</td>
</tr>
<tr>
<td>New retired participants</td>
<td>5</td>
</tr>
<tr>
<td>New terminated vested receiving benefits</td>
<td>3</td>
</tr>
<tr>
<td>New disabled receiving benefits</td>
<td>0</td>
</tr>
<tr>
<td>New beneficiaries receiving benefits</td>
<td>0</td>
</tr>
<tr>
<td>Deceased or ceased payment during year</td>
<td>(9)</td>
</tr>
<tr>
<td>Retired or terminated vested receiving benefits</td>
<td>186</td>
</tr>
</tbody>
</table>

### C. Terminated Vested Participants Entitled to Future Benefits

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminated vested entitled previous year</td>
<td>25</td>
</tr>
<tr>
<td>Deceased during year</td>
<td>0</td>
</tr>
<tr>
<td>Commenced receiving benefits during year</td>
<td>(3)</td>
</tr>
<tr>
<td>New terminated vested</td>
<td>0</td>
</tr>
<tr>
<td>Terminated vested paid lump sum</td>
<td>0</td>
</tr>
<tr>
<td>Terminated vested rehired during year</td>
<td>0</td>
</tr>
<tr>
<td>Adjustment</td>
<td>0</td>
</tr>
<tr>
<td>Terminated vested entitled current year</td>
<td>22</td>
</tr>
</tbody>
</table>
## Distribution by Attained Age Groups and Service Groups as of January 1, 2019

<table>
<thead>
<tr>
<th>Attained Age Group</th>
<th>0 - 4</th>
<th>5 - 9</th>
<th>10 - 14</th>
<th>15 - 19</th>
<th>20 - 24</th>
<th>25 - 29</th>
<th>30 &amp; Over</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 25</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>25 - 29</td>
<td>6</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>30 - 34</td>
<td>14</td>
<td>5</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>25</td>
</tr>
<tr>
<td>35 - 39</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>40 - 44</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>14</td>
</tr>
<tr>
<td>45 - 49</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>3</td>
<td>1</td>
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<td>-</td>
<td>11</td>
</tr>
<tr>
<td>50 - 54</td>
<td>4</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>55 - 59</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>-</td>
<td>14</td>
</tr>
<tr>
<td>60 - 64</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>65 - 69</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>70 &amp; Over</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>37</td>
<td>17</td>
<td>36</td>
<td>11</td>
<td>6</td>
<td>15</td>
<td>1</td>
<td>123</td>
</tr>
</tbody>
</table>

**Average Attained Age**
- **01/01/2018**: 44.37 years
- **01/01/2019**: 44.24 years

**Average Hire Age**
- **01/01/2018**: 32.10 years
- **01/01/2019**: 32.65 years

**Average Pay**
- **01/01/2018**: $78,721
- **01/01/2019**: $81,958

**Percent Female**
- **01/01/2018**: 34.2%
- **01/01/2019**: 31.7%
Table XIII

Statistics for Participants Entitled to Deferred Benefits
and Participants Receiving Benefits

A. Entitled to Deferred Benefits

<table>
<thead>
<tr>
<th>Current Age Group</th>
<th>Count</th>
<th>Total Annual Benefit</th>
<th>Average Annual Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 50</td>
<td>14</td>
<td>$128,157</td>
<td>$9,154</td>
</tr>
<tr>
<td>50 - 54</td>
<td>5</td>
<td>36,794</td>
<td>7,359</td>
</tr>
<tr>
<td>55 - 59</td>
<td>3</td>
<td>29,161</td>
<td>9,720</td>
</tr>
<tr>
<td>60 - 64</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>65 - 69</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>70 &amp; Over</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>22</td>
<td>$194,112</td>
<td>$8,823</td>
</tr>
</tbody>
</table>

B. Receiving Benefits

<table>
<thead>
<tr>
<th>Current Age Group</th>
<th>Count</th>
<th>Total Annual Benefit</th>
<th>Average Annual Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 50</td>
<td>4</td>
<td>$170,557</td>
<td>$42,639</td>
</tr>
<tr>
<td>50 - 54</td>
<td>19</td>
<td>825,232</td>
<td>43,433</td>
</tr>
<tr>
<td>55 - 59</td>
<td>30</td>
<td>1,081,578</td>
<td>36,053</td>
</tr>
<tr>
<td>60 - 64</td>
<td>32</td>
<td>965,587</td>
<td>30,175</td>
</tr>
<tr>
<td>65 - 69</td>
<td>25</td>
<td>803,112</td>
<td>32,124</td>
</tr>
<tr>
<td>70 - 74</td>
<td>28</td>
<td>851,195</td>
<td>30,400</td>
</tr>
<tr>
<td>75 - 79</td>
<td>25</td>
<td>1,067,650</td>
<td>42,706</td>
</tr>
<tr>
<td>80 - 84</td>
<td>15</td>
<td>575,282</td>
<td>38,352</td>
</tr>
<tr>
<td>85 - 89</td>
<td>8</td>
<td>167,356</td>
<td>20,920</td>
</tr>
<tr>
<td>90 &amp; Over</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>186</td>
<td>$6,507,549</td>
<td>$34,987</td>
</tr>
<tr>
<td>Calendar Year</td>
<td>Compensation</td>
<td>Termination</td>
<td>Investment Return</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------</td>
<td>-------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>% Increase (Decrease)</td>
<td>Assumed Increase</td>
<td>Ratio of Actual to Expected</td>
</tr>
<tr>
<td>2018</td>
<td>5.4%</td>
<td>5.8%</td>
<td>0.0</td>
</tr>
<tr>
<td>2017</td>
<td>5.5%</td>
<td>5.6%</td>
<td>0.2</td>
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<tr>
<td>2016</td>
<td>2.0%</td>
<td>5.6%</td>
<td>0.3</td>
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<tr>
<td>2015</td>
<td>9.7%</td>
<td>5.6%</td>
<td>0.9</td>
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<tr>
<td>2014</td>
<td>2.3%</td>
<td>5.6%</td>
<td>1.2</td>
</tr>
<tr>
<td>2013</td>
<td>3.1%</td>
<td>7.2%</td>
<td>1.2</td>
</tr>
<tr>
<td>2012</td>
<td>3.8%</td>
<td>7.2%</td>
<td>0.4</td>
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<tr>
<td>2011</td>
<td>4.4%</td>
<td>7.4%</td>
<td>0.9</td>
</tr>
<tr>
<td>2010</td>
<td>2.5%</td>
<td>7.3%</td>
<td>0.5</td>
</tr>
<tr>
<td>2009</td>
<td>6.3%</td>
<td>7.2%</td>
<td>0.3</td>
</tr>
<tr>
<td>Last 3 Years</td>
<td>4.3%</td>
<td>5.7%</td>
<td>0.2</td>
</tr>
<tr>
<td>Last 5 Years</td>
<td>4.9%</td>
<td>5.6%</td>
<td>0.5</td>
</tr>
<tr>
<td>Last 10 Years</td>
<td>4.5%</td>
<td>6.4%</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Table XIV

Recent Compensation, Termination and Investment Return Experience
### Table XV

#### Utility Board Contribution Information

<table>
<thead>
<tr>
<th>Valuation Date</th>
<th>Fiscal Year End</th>
<th>Minimum Required Utility Board Contributions</th>
<th>Actual Utility Board Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/2019</td>
<td>12/31/2019</td>
<td>$4,365,609 *</td>
<td>N/A</td>
</tr>
<tr>
<td>01/01/2018</td>
<td>12/31/2018</td>
<td>$4,175,289</td>
<td>$4,175,289</td>
</tr>
<tr>
<td>01/01/2017</td>
<td>12/31/2017</td>
<td>$3,860,513</td>
<td>$3,860,513</td>
</tr>
<tr>
<td>01/01/2016</td>
<td>12/31/2016</td>
<td>$3,986,227</td>
<td>$3,986,227</td>
</tr>
<tr>
<td>01/01/2015</td>
<td>12/31/2015</td>
<td>$3,653,199</td>
<td>$3,653,199</td>
</tr>
<tr>
<td>01/01/2014</td>
<td>12/31/2014</td>
<td>$3,511,645</td>
<td>$3,511,645</td>
</tr>
<tr>
<td>01/01/2013</td>
<td>12/31/2013</td>
<td>$3,628,209</td>
<td>$3,628,209</td>
</tr>
<tr>
<td>01/01/2012</td>
<td>12/31/2012</td>
<td>$3,356,361</td>
<td>$3,356,361</td>
</tr>
<tr>
<td>01/01/2011</td>
<td>12/31/2011</td>
<td>$3,174,884</td>
<td>$3,174,884</td>
</tr>
<tr>
<td>01/01/2010</td>
<td>12/31/2010</td>
<td>$3,045,252</td>
<td>$3,103,795</td>
</tr>
<tr>
<td>01/01/2009</td>
<td>12/31/2009</td>
<td>$3,318,721</td>
<td>$3,318,721</td>
</tr>
<tr>
<td>01/01/2008</td>
<td>12/31/2008</td>
<td>$2,537,303</td>
<td>$2,537,303</td>
</tr>
<tr>
<td>01/01/2007</td>
<td>12/31/2007</td>
<td>$2,462,847</td>
<td>$2,462,847</td>
</tr>
<tr>
<td>01/01/2006</td>
<td>12/31/2006</td>
<td>$2,208,905</td>
<td>$2,208,905</td>
</tr>
</tbody>
</table>

* 43.3% of expected 2019 covered payroll - $10,080,796
### A. Participant Data

1. **Active participants**
   - 01/01/19: 123
   - 01/01/18: 117

2. **Retired participants and beneficiaries receiving benefits**
   - 01/01/19: 178
   - 01/01/18: 179

3. **Disabled participants receiving benefits**
   - 01/01/19: 8
   - 01/01/18: 8

4. **Terminated vested participants**
   - 01/01/19: 22
   - 01/01/18: 25

5. **Annual payroll of active participants**
   - 01/01/19: $10,080,796
   - 01/01/18: $9,210,384

6. **Annual benefits payable to those currently receiving benefits**
   - 01/01/19: $6,507,549
   - 01/01/18: $6,288,058

### B. Smoothed Actuarial Value of Assets

- 01/01/19: $92,062,389
- 01/01/18: $89,650,519

### C. Liabilities

1. **Actuarial present value of future expected benefit payments for active members**
   - a. Retirement benefits
     - 01/01/19: $41,659,899
     - 01/01/18: $41,397,998
   - b. Vesting benefits
     - 01/01/19: 1,788,163
     - 01/01/18: 1,772,565
   - c. Death benefits
     - 01/01/19: 1,144,603
     - 01/01/18: 1,047,781
   - d. Disability benefits
     - 01/01/19: 1,144,119
     - 01/01/18: 1,139,663
   - e. Total
     - 01/01/19: $45,736,784
     - 01/01/18: $45,358,007

2. **Actuarial present value of future expected benefit payments for terminated vested members**
   - 01/01/19: $1,832,429
   - 01/01/18: $2,177,928

3. **Actuarial present value of future expected benefit payments for members currently receiving benefits**
   - a. Service retired
     - 01/01/19: $77,479,424
     - 01/01/18: $73,502,686
   - b. Disability retired
     - 01/01/19: 1,841,942
     - 01/01/18: 1,822,227
   - c. Beneficiaries
     - 01/01/19: 5,612,780
     - 01/01/18: 5,956,515
   - d. Total
     - 01/01/19: $84,934,146
     - 01/01/18: $81,281,428
### Actuarial Valuation as of January 1, 2019

#### State Required Exhibit

<table>
<thead>
<tr>
<th>Current Assumptions</th>
<th>Prior Assumptions</th>
<th>01/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/2019</td>
<td>01/01/2019</td>
<td>01/01/2019</td>
</tr>
</tbody>
</table>

4. Total actuarial present value of future expected benefit payments
   - Current Assumptions: $132,503,359
   - Prior Assumptions: $133,443,140
   - 01/01/2018: $128,817,363

5. Actuarial accrued liability
   - Current Assumptions: $120,300,027
   - Prior Assumptions: $120,518,606
   - 01/01/2018: $116,627,607

6. Unfunded actuarial accrued liability
   - Current Assumptions: $28,237,638
   - Prior Assumptions: $28,456,217
   - 01/01/2018: $26,977,088

#### D. Statement of Accumulated System Benefits

1. Actuarial present value of accumulated vested benefits
   - a. Participants currently receiving benefits
      - Current Assumptions: $84,934,146
      - Prior Assumptions: $84,509,102
      - 01/01/2018: $81,281,428
   - b. Other participants
      - Current Assumptions: $26,757,920
      - Prior Assumptions: $26,743,482
      - 01/01/2018: $26,411,004
   - c. Total
      - Current Assumptions: $111,692,066
      - Prior Assumptions: $111,252,584
      - 01/01/2018: $107,692,432

2. Actuarial present value of accumulated non-vested System benefits
   - Current Assumptions: $803,023
   - Prior Assumptions: $798,573
   - 01/01/2018: $743,631

3. Total actuarial present value of accumulated System benefits
   - Current Assumptions: $112,495,089
   - Prior Assumptions: $112,051,157
   - 01/01/2018: $108,436,063

#### E. Statement of Change in Accumulated System Benefits

1. Actuarial present value of accumulated System benefits as of January 1, 2018
   - Current Assumptions: $108,436,063

2. Increase (decrease) during year attributable to:
   - a. System amendment
      - Current Assumptions: $0
   - b. Change in actuarial assumptions
      - Current Assumptions: $443,932
   - c. Benefits paid
      - Current Assumptions: $(6,275,076)
   - d. Other, including benefits accumulated and increase for interest due to decrease in the discount period
      - Current Assumptions: $9,890,170
   - e. Net increase
      - Current Assumptions: $4,059,026

3. Actuarial present value of accumulated System benefits as of January 1, 2019
   - Current Assumptions: $112,495,089
### Table XVI

#### (Cont'd)

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>01/01/2019</th>
<th>01/01/2019</th>
<th>01/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F. Pension Cost</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Total normal cost</td>
<td>$1,597,453</td>
<td>$1,659,516</td>
<td>$1,575,303</td>
</tr>
<tr>
<td>2. Payment required to amortize unfunded liability</td>
<td>2,611,377</td>
<td>2,628,032</td>
<td>2,356,433</td>
</tr>
<tr>
<td>3. Interest adjustment</td>
<td>156,779</td>
<td>161,102</td>
<td>147,440</td>
</tr>
<tr>
<td>4. Total required contribution</td>
<td>$4,365,609</td>
<td>$4,448,650</td>
<td>$4,079,176</td>
</tr>
<tr>
<td>5. Item 4 as a percentage of payroll</td>
<td>43.3%</td>
<td>44.1%</td>
<td>44.3%</td>
</tr>
<tr>
<td>6. Estimated employee contributions</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>7. Item 6 as a percentage of payroll</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>8. Net amount payable by Utility Board</td>
<td>$4,365,609</td>
<td>$4,448,650</td>
<td>$4,079,176</td>
</tr>
<tr>
<td>9. Item 8 as a percentage of payroll</td>
<td>43.3%</td>
<td>44.1%</td>
<td>44.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>G. Past Contributions</strong></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total contribution required (% of actual payroll)</td>
<td>$4,365,609</td>
<td>$4,448,650</td>
<td>$4,175,289</td>
</tr>
<tr>
<td>2. Actual contributions made</td>
<td>N/A</td>
<td>N/A</td>
<td>$4,175,289</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>H. Net Actuarial Gain / (Loss)</strong></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$ (2,093,983)</td>
<td>$(2,093,983)</td>
<td>$628,492</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>I. Disclosure of Following Items:</strong></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Actuarial present value of future salaries - attained age</td>
<td>$86,836,551</td>
<td>$89,068,906</td>
<td>$80,376,898</td>
</tr>
<tr>
<td>2. Actuarial present value of future employee contributions - attained age</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>3. Actuarial present value of future contributions from other sources</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4. Amount of active members' accumulated contributions</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>5. Actuarial present value of future salaries and future benefits at entry age</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>6. Actuarial present value of future employee contributions at entry age</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Table XVI (Cont’d)

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Unfunded Actuarial Accrued Liabilities</th>
<th>Current Assumption Amortization</th>
<th>Prior Assumption Amortization</th>
<th>Remaining Funding Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/2003</td>
<td>Actuarial Loss / (Gain)</td>
<td>8,588,099</td>
<td>923,743</td>
<td>926,064</td>
<td>14 years</td>
</tr>
<tr>
<td>01/01/2003</td>
<td>Method Change</td>
<td>(7,414,946)</td>
<td>(797,558)</td>
<td>(799,562)</td>
<td>14 years</td>
</tr>
<tr>
<td>01/01/2003</td>
<td>Assumption Change</td>
<td>(468,837)</td>
<td>(50,429)</td>
<td>(50,555)</td>
<td>14 years</td>
</tr>
<tr>
<td>01/01/2004</td>
<td>Actuarial Loss / (Gain)</td>
<td>1,863,964</td>
<td>192,590</td>
<td>193,104</td>
<td>15 years</td>
</tr>
<tr>
<td>01/01/2005</td>
<td>Retiree Benefit Corrections</td>
<td>(1,224,525)</td>
<td>(122,033)</td>
<td>(122,377)</td>
<td>16 years</td>
</tr>
<tr>
<td>01/01/2006</td>
<td>Actuarial Loss / (Gain)</td>
<td>2,405,181</td>
<td>232,011</td>
<td>232,700</td>
<td>17 years</td>
</tr>
<tr>
<td>01/01/2007</td>
<td>Plan Amendment</td>
<td>46,464</td>
<td>4,352</td>
<td>4,365</td>
<td>18 years</td>
</tr>
<tr>
<td>01/01/2007</td>
<td>Actuarial Loss / (Gain)</td>
<td>1,664,363</td>
<td>155,885</td>
<td>156,371</td>
<td>18 years</td>
</tr>
<tr>
<td>01/01/2009</td>
<td>Actuarial Loss / (Gain)</td>
<td>(376,473)</td>
<td>(34,330)</td>
<td>(34,441)</td>
<td>19 years</td>
</tr>
<tr>
<td>01/01/2009</td>
<td>Assumption Change</td>
<td>1,840,332</td>
<td>163,779</td>
<td>164,334</td>
<td>20 years</td>
</tr>
<tr>
<td>01/01/2009</td>
<td>Plan Amendment</td>
<td>34,567</td>
<td>3,076</td>
<td>3,087</td>
<td>20 years</td>
</tr>
<tr>
<td>01/01/2010</td>
<td>Actuarial Loss / (Gain)</td>
<td>(2,189,989)</td>
<td>(190,617)</td>
<td>(191,288)</td>
<td>21 years</td>
</tr>
<tr>
<td>01/01/2011</td>
<td>Actuarial Loss / (Gain)</td>
<td>2,246,149</td>
<td>191,579</td>
<td>192,277</td>
<td>22 years</td>
</tr>
<tr>
<td>01/01/2012</td>
<td>Actuarial Loss / (Gain)</td>
<td>2,665,082</td>
<td>223,127</td>
<td>223,967</td>
<td>23 years</td>
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<tr>
<td>01/01/2013</td>
<td>Actuarial Loss / (Gain)</td>
<td>3,305,119</td>
<td>272,038</td>
<td>273,095</td>
<td>24 years</td>
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<tr>
<td>01/01/2014</td>
<td>Actuarial Loss / (Gain)</td>
<td>(3,427,131)</td>
<td>(277,703)</td>
<td>(278,813)</td>
<td>25 years</td>
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<tr>
<td>01/01/2014</td>
<td>Assumption Change</td>
<td>3,917,968</td>
<td>317,476</td>
<td>318,745</td>
<td>25 years</td>
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<td>01/01/2015</td>
<td>Actuarial Loss / (Gain)</td>
<td>(2,451,770)</td>
<td>(195,831)</td>
<td>(196,636)</td>
<td>26 years</td>
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<td>01/01/2016</td>
<td>Actuarial Loss / (Gain)</td>
<td>293,716</td>
<td>23,151</td>
<td>23,249</td>
<td>27 years</td>
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<tr>
<td>01/01/2016</td>
<td>Assumption Change</td>
<td>2,782,937</td>
<td>219,359</td>
<td>220,282</td>
<td>27 years</td>
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<td>01/01/2017</td>
<td>Actuarial Loss / (Gain)</td>
<td>(1,131,917)</td>
<td>(88,138)</td>
<td>(88,519)</td>
<td>28 years</td>
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<tr>
<td>01/01/2017</td>
<td>Assumption Change</td>
<td>112,188</td>
<td>8,736</td>
<td>8,773</td>
<td>28 years</td>
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<tr>
<td>01/01/2017</td>
<td>Plan Amendment</td>
<td>131,462</td>
<td>10,236</td>
<td>N/A</td>
<td>28 years</td>
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<tr>
<td>01/01/2018</td>
<td>Combined Bases *</td>
<td>(620,208)</td>
<td>(47,753)</td>
<td>(47,963)</td>
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<td>01/01/2019</td>
<td>Combined Bases *</td>
<td>1,944,101</td>
<td>259,916</td>
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<td>01/01/2019</td>
<td>Actuarial Loss / (Gain)</td>
<td>2,093,983</td>
<td>159,558</td>
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<td>(218,579)</td>
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<td>TOTAL</td>
<td></td>
<td>$28,237,638</td>
<td>$2,611,377</td>
<td>$2,636,550</td>
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* Combined per Internal Revenue Code Regulation 1.412(b)-1

This actuarial valuation and/or cost determination was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the Plan and/or paid from the Plan’s assets for which liabilities or current costs have not been established or otherwise provided for in the valuation. All known events or trends which may require material increase in Plan costs or required contribution rates have been taken into account in the valuation.

Enrollment Number: 17-02802
Dated: April 8, 2019

Lawrence F. Wilson, A.S.A.
Glossary

**Actuarial Accrued Liability.** The difference between the Actuarial Present Value of Future Benefits and the Actuarial Present Value of Future Normal Costs.

**Actuarial Assumptions.** Assumptions about future plan experience that affect costs or liabilities, such as: mortality, withdrawal, disablement, and retirement; future increases in salary; future rates of investment earnings; future investment and administrative expenses; characteristics of members not specified in the data, such as marital status; characteristics of future members; future elections made by members and other items.


**Actuarial Equivalent.** Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.

**Actuarial Present Value of Future Benefits.** The Actuarial Present Value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits and inactive, non-retired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

**Actuarial Valuation.** The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB No. 67.

**Actuarial Value of Assets.** The value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially required contribution.

**Amortization Method.** A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the rate at which total covered payroll of all active members is assumed to increase.
Glossary

Amortization Payment. That portion of the plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Amortization Period. The period used in calculating the Amortization Payment.

Annual Required Contribution. The employer’s periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The annual required contribution consists of the Employer Normal Cost and Amortization Payment plus interest adjustment.

Closed Amortization Period. A specific number of years that is reduced by one each year, and declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc.

Employer Normal Cost. The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.

Equivalent Single Amortization Period. For plans that do not establish separate amortization bases (separate components of the UAAL), this is the same as the Amortization Period. For plans that do establish separate amortization bases, this is the period over which the UAAL would be amortized if all amortization bases were combined upon the current UAAL payment.

Experience Gain/Loss. A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two actuarial valuations. To the extent that actual experience differs from that assumed, Unfunded Actuarial Accrued Liabilities emerge which may be larger or smaller than projected. Gains are due to favorable experience, e.g., the assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. Losses are the result of unfavorable experience, i.e., actual results that produce Unfunded Actuarial Accrued Liabilities which are larger than projected.

Funded Ratio. The ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability.

GASB. Governmental Accounting Standards Board.
**Glossary**

**GASB No. 67 and GASB No. 68.** These are the governmental accounting standards that set the accounting rules for public retirement plans and the employers that sponsor or contribute to them. Statement No. 67 sets the accounting rules for the plans themselves, while Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement plans.

**Normal Cost.** The annual cost assigned, under the Actuarial Cost Method, to the current plan year.

**Open Amortization Period.** An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.

**Unfunded Actuarial Accrued Liability.** The difference between the Actuarial Accrued Liability and Actuarial Value of Assets.

**Valuation Date.** The date as of which the Actuarial Present Value of Future Benefits are determined. The benefits expected to be paid in the future are discounted to this date.
AGENDA ITEM WORDING: Approve Change Order 1 to the contract for the Purchase and Installation of Substation and Critical Facilities Standby Generators, Bid 02-19, C19-0002

REQUESTED ACTION: Motion to Approve Change Order 1 to the contract for the Purchase and Installation of Substation and Critical Facilities Standby Generators, Bid 02-19, C19-0002, to Williams Industrial Services, LLC in the amount of $186,535.00.

DISCUSSION: Hurricane Irma caused damage to KEYS’ tieline that took 3 days to repair and restore. Currently, KEYS’ substations are only designed to run 24 hours on batteries. The extended tieline outage caused battery banks to fail in the substations, which lengthened restoration time to critical equipment and customers. The tieline outage also caused a loss of power to the Ralph Garcia Steam Plant (RGSP) and Warehouse. Both locations are critical facilities to KEYS. To eliminate the outage experienced after Irma, Staff recommends the installation of diesel back-up generators at critical substations and KEYS’ facilities.

Utility Board previously approved the unit price contract with Williams Industrial Services (WIS) on January 9, 2019. WIS made the assumption in their pricing that pilings or piers would not be needed for the generators. Williams contracted a geotechnical firm during the engineering phase of the contract. The geotechnical reports show there is a need for pilings at each location to meet the wind load ratings of the lower Florida Keys. The construction of the pilings will result in an added cost to KEYS.

SUPPORTS STRATEGIC PLAN: Goal 1 - Continually improve the Customer Experience regarding Reliability and Service.

FINANCIAL IMPACT

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<th>Description</th>
<th>Amount</th>
<th>Budgeted:</th>
<th>Source of Funds</th>
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<tr>
<td>Original Contract Cost:</td>
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<td>Yes</td>
<td>1-60-107360-50-19018</td>
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<tr>
<td>Change Order #1:</td>
<td>$186,535</td>
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<td></td>
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<tr>
<td>Total Cost:</td>
<td>$1,198,665</td>
<td></td>
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</table>
UTILITY BOARD - CITY OF KEY WEST, FLORIDA

CHANGE ORDER

BID NUMBER: 02-19                      DATE: April 24, 2019
CONTRACTOR: Williams Industrial Services, LLC

WORK ORDER #:____________________

CHANGE ORDER #: 1                    P.O. #: 19-0374

CHANGE ORDER DESCRIPTION: WIS made the assumption in their pricing that pilings or piers would not be needed for the generators. Williams contracted a geotechnical firm during the engineering phase of the contract. The geotechnical reports show there is now a need for pilings at each location to meet the wind load ratings of the lower Florida Keys. The construction of the pilings will result in an added cost to KEYS.

<table>
<thead>
<tr>
<th>Without Tax</th>
<th>With Tax (If Applicable)</th>
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<tbody>
<tr>
<td>ORIGINAL CONTRACT COST: $1,012,140.00</td>
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</tr>
<tr>
<td>PREVIOUS CHANGE ORDERS: __________________</td>
<td>__________________</td>
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<tr>
<td>THIS CHANGE ORDER: $186,535.00</td>
<td>__________________</td>
</tr>
<tr>
<td>ADJUSTED CONTRACT COST: $1,198,675.00</td>
<td>__________________</td>
</tr>
</tbody>
</table>

ACCEPTED BY CONTRACTOR:

BY: __________________________
TITLE: ________________________
DATE: ________________________

APPROVED:
UTILITY BOARD - CITY OF KEY WEST

BY: ________________________
TITLE: ______________________
DATE: ______________________
April 19, 2019

Keys Energy Services  
6900 Front Street Extended  
Key West, FL  33040

Attention:  Brittani Harden / Purchasing Supervisor  Submitted via email: Brittni.Harden@KeysEnergy.com
Rob DePhillips / Project Engineer

Subject:  Project Status Update  
Purchase and Installation of Substation and Critical Facilities Standby Generators  
Williams / Mesa Proposal No. 11766 – Change Order #1

Good afternoon Brittani, Rob,

In follow up to our recent conference call together 4/9/19 - between Keys Energy, Williams and Mesa - and your email also dated 4/9, this letter is to document and request approval for Change Order 1 as follows.

Three of the four sub-stations (Big Pine, US1 and Kennedy Drive) are proceeding, however, because of recent Geotech surveys, all three now require pilings to be installed below the pad to a depth of twenty (20) feet for each. We’d contacted five different pilings subcontractors to get quotes, but we only received a response from one of them (apparently the others could only sink pilings to a maximum depth of six feet, which is insufficient, where only one would agree to a twenty foot piling depth). Ralph Garcia Steam Plant (RGSP) site activity is currently on hold, while Keys considers the re-location of the generator and conduit/electrical, as well as revised (higher kw) generator specifications.

To address the net changes per this Change Order request, please note:

Additions to scope of work

• Williams’ incremental work, includes: $118,735
  o Pilings at Big Pine, US1 and Kennedy Drive stations

• Mesa’s incremental work, includes $67,800
  o Additional Mesa re-engineering expenses
  o Additional drill shafts for Geotech drill and analysis
  o Redundant mobilizations for Geotech survey activities, as initial Geotech survey trip from Miami to Key West wasn’t attended by Keys’ representative(s), so that survey was called off and rescheduled subsequently.

$186,535
In our proposal we assumed one survey drill location would be required per site, where multiple drill locations per site became required, because of real-time survey results – which ultimately concluded the need for 20 foot deep pilings.

The Kennedy Drive Control location actually had two houses on site. An A and a B, where only one house was originally identified in RFP specs and in our bid.

Subtractions to scope of work

(None - $87,794 for (Williams’) RGSP construction expenses are included in new revised total)

With these scope changes, the contract price goes from $1,012,130 to 1,198,665

Also, in your email you asked what the last day is to cancel the RGSP generator (presumably to calculate any cancellation charges at this point in time). We understand that if we are to cancel the order now, we’d incur a 20% charge, however, presuming that we’d cancel the original specified generator for RGSP and in parallel order a new generator at a higher kw capacity, we’d have that 20% applied to the purchase price of the new generator - which Rob and Mesa are planning for. We ask that Keys finalize the decision by NLT Friday 4/26/19 on new specification RGSP generator, fuel tank and transfer switch (the latter two items will also need to be cancelled and re-ordered to be compatible with the larger RGSP generator) so we can negotiate the best pricing for you, given the RGSP generator scope change. If the Keys’ decision extends beyond 4/26, we face a 50% cancellation charge exposure, with an unknown % of that fee to be potentially applied to a replacement generator placed on order.

As we’d discussed, we’d anticipate the next Change Order request (#2) to consist of net changes in new Keys’ specified RGSP generator, fuel tank and transfer switch (approximately 2x the price of the original RGSP Keys’ specified), along with incremental Mesa engineering expenses and Williams’ RGSP construction costs (which were removed within this Change Order #1).

In consideration of these Change Order requests from associated scope changes, we’ll request a contract completion date extension beyond 6/12/19 for all four substation generator installations, as soon as we get Keys’ approval for these, and can re-schedule the overall project completion date via concrete piling installation, new RGSP equipment order/acquisition/installation (new generator, fuel tank, transfer switch), and any other associated engineering or construction changes, to be determined. Likewise, we’ll also request that liquidated damages be extended beyond 6/12/19 to some further prospective date (to be determined) as these scope changes were beyond our control.

If you have any questions or need further information, please contact me at your convenience.

Sincerely,

Matt Morgan
Williams – Vice President
(912) 269-3291

CC: Danny Saye