FUEL FARM CONSTRUCTION PHASE

and make recovery more difficult than just changing components. Each of these components is to be provided in the manufactures original packaging. This change is reflected in the revised electrical drawings dated 3-23-05.

5) **Replace metal grating steps with concrete step**
Replace the 10 metal grating steps in the secondary containment area with a 9" high concrete step.

6) **Replace florescent light fixtures with 250 watt metal halide lights**
Replace the florescent light fixtures with low base 250-watt metal halide in two rows on each side of the facility. The low base fixtures cover more area with higher lumens; so fewer fixtures are needed for the same light level. This change is reflected in the revised electrical drawings dated 3-23-05.

7) **Fire protection coating of the canopy rafters**
Do not fire protect coat the shape metal rafters of the canopy structure. A technical review has been performed on the canopy structure performance and the conclusion is that since the proposed shaped rafters are not under load and will be supported in a fire by the rated coated columns of each bent, there is no reason to coat the rafters.

8) **Use horizontal filter/separators**
Use of horizontal filter/separators for this system is acceptable providing you can install them appropriately in the system within the space limitations of the secondary containment area and maintain access for filter changes. The draft tank layout shop drawing indicates the horizontal filter/separator will fit in this layout.

9) **Use of aluminum case mechanical flow meters**
Use of aluminum case mechanical flow meters versus double case steel meters is acceptable based on this application. Systems using two or more large volume storage tanks that would pass all fuel through one or two lines would have a much higher utilization rate and would warrant a double steel case meter. This system dispenses through 14 separate tanks and no single meter will have high volume utilization.

10) **Eliminate canopy gutters, downspouts and associated underground piping**
Eliminate the canopy gutters, downspouts, sidewalk connections and underground PVC drain lines (E & D) and catch basin on the south end of the oil/water separator. Connect the separator outfall line directly to the existing storm sewer system by transitioning to 10" RCP line.

11) **Use the Blackmer XL3B 200 gpm pump**
Pending verification by the manufacturer for this application, use the Blackmer XL3B 200 gpm aviation fuel pump for the AvGas tank and dispensing system.

12) **Modify the 10' & 6' vinyl covered fence structure detail**
Change the 10' fence detail to 8' high with posts set at 7' on center instead of 10' and with top rail and bottom guy wire. The 8' fence remains black vinyl covered chain-link fence fabric with black slats. Change the post setting for the 6' black vinyl covered chain-link fence fabric with black slats and barbwire to 8' on center instead of 10', with top rail and bottom guy wire. Other chain link fencing remains as per plans except add top rail and bottom guy wire. Shop drawings from the subcontractor will be reviewed and the additional cost must be determined.

4-1-05

Addison! Airport

Date: **April 1, 2005**

Subject: **Update on Construction Items and Issues for the Bulk Fuel Storage and Dispensing System, Addison Airport**

Reference S. Lundgren Memo, same subject, dated Mar 18, 2005 and Update report dated Mar 25, 2005:

- Burns and McDonnell issued revised drawings and specification changes that incorporate the addendum and value engineering items on Mar 23, 2005. Between Thielsch Engineering and Washington Group, all equipment items and components have been verified.
- The Construction Technical Change Order #1, covers all value-engineering items, plus the technical issues as of this date. Please note that page 2 was reissued with the confirmed AvGas Pump from Blackmer.
- A scalable, draft tank, equipment and piping layout "shop drawing" for the Jet A and LL AvGas tanks, as installed in the secondary containment structure, was sent to Thielsch Engineering, with an electronic (AutoCAD) version sent to the Thielsch Engineering Cranston RI office for use by their technical drawing section. The shop drawing shows the tanks & equipment in the structure with the catwalk and canopy structure.
  - We have received the Highland Tank Mfg. Shop drawings on the selected tanks for this system, Flow Meter and the Horizontal Filter-Separator selected for this system, which have been forwarded to Cranston to incorporate into the layout drawings. Marked up drawings have been returned to Thielsch.
  - We have details for the relaxation chamber and loading control valves.
  - We are working details for the selected Strainer, Air Eliminators, Air-block/Water Slug Valves and 5 gal Surge Absorber, so the rest of the system equipment items can be incorporated into the layout drawings.
- The Pre-Construction Punch list is complete with the exception of the canopy column detail and structure moments from Schwob Construction, which will be sent once they have notification to proceed. These items will be needed to modify the connections to the structure and to accommodate the center column in each bent.
- Notice to proceed was issued Mar 31, 2005, effective Apr 4, 2005.
- Washington Group will obtain sealed and signed full size copies of all revised drawings and reproduce construction sets for Thielsch (both offices), The Town of Addison and The Airport.
- John Bagnall of Burns & McDonnell has been in discussion with both Thielsch and Washington Group on all mechanical and electrical issues, so

submitted equipment cut sheets and details will be reviewed and returned immediately.

- Mario, the Thielsch Draftsman has started on the tank, equipment and piping shop drawings. Washington Group will work with him on the plan, elevations and isometrics.
- Rick is working to id the make and model of the remaining equipment, issue orders and preparing to occupy the site on Monday April 4, 2005.

Washington Group and Thielsch Engineering are working closely to make sure all system items are incorporated properly and the tank/equipment layout is correct.

Respectfully submitted,

Samuel G. Lundgren, P.E.
Project Engineer
Washington Group International, Inc.

1 Attachment: Technical Change Order Page 2

TOWN OF ADDISON

FINANCE DEPARTMENT/PURCHASING DIVISION 5350 Belt Line Road (972) 450-7089
E-mail ssims@ci.addison.tx.us Facsimile (972) 450-7096 P.O. Box 9010 Addison, Texas 75001

March 30, 2005

Thielsch Engineering
Mr. Richard Normandeau
2111 Dickson Drive, Suite 10
Austin, TX 78704

NOTICE TO PROCEED: Bid 05-02 Fuel Storage and Dispensing System

Dear Mr. Normandeau:

Receipt of this document authorizes your company to provide all labor and materials as outlined in the specifications and under the terms and conditions of the contract documents for Bid 05-02 Construct Bulk Fuel Storage and Dispensing System at Addison Airport beginning on Monday, April 4, 2005. Enclosed is your copy of the signed contract and your bid bond.

The proposed improvements and work shall be completed with the original contract price of $3,885,000.00 and within 210 days as stated on the contract. Please include **Bid No. and Name: 05-02 Bulk Fuel Storage and Dispensing System**, on all monthly invoices or other correspondence to the Town of Addison.

If you have any questions or if I can be of assistance to you, please contact me at 972-450-7089.

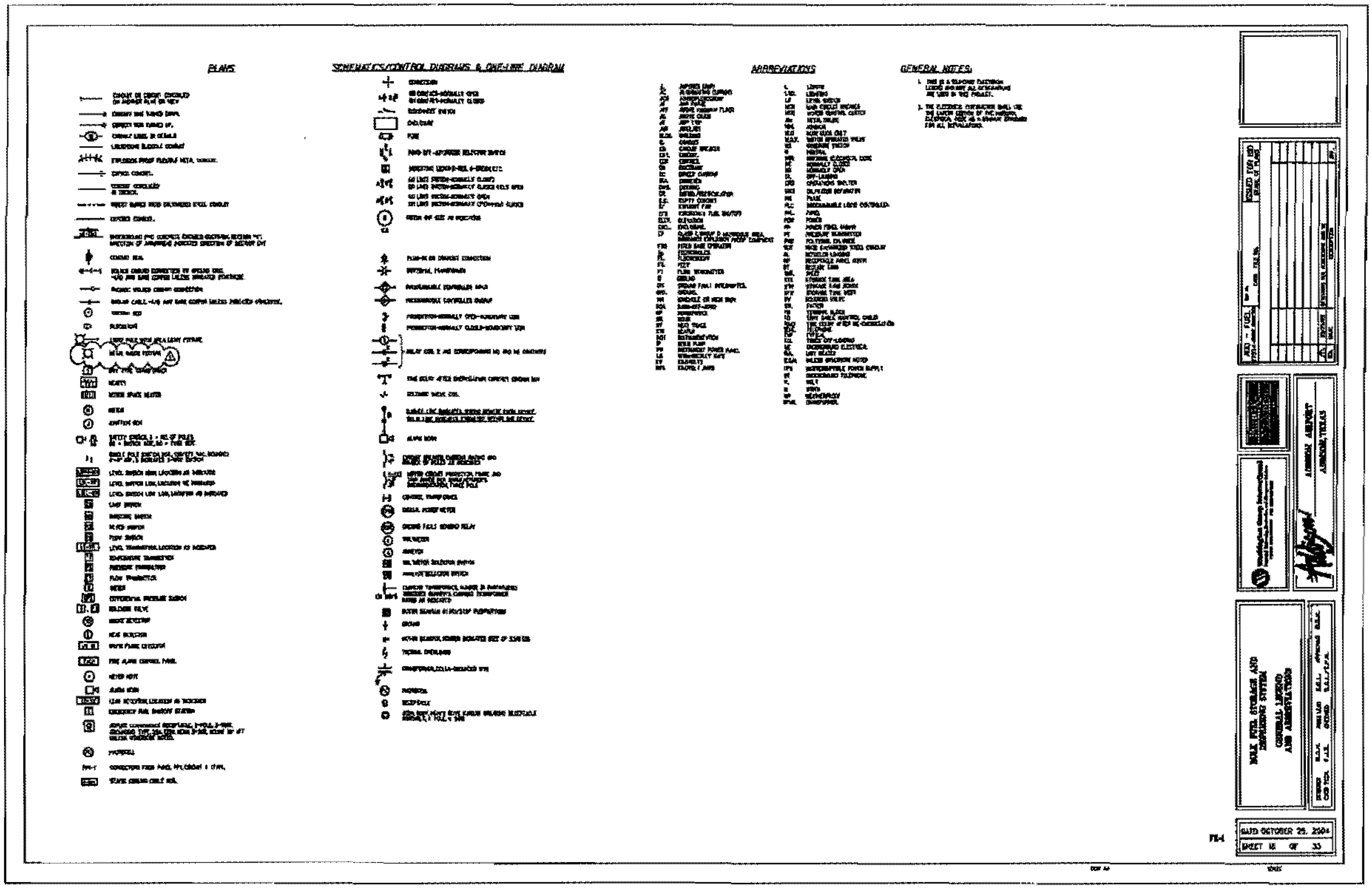
Sincerely,

Shanna N. Sims
Budget and Procurement Manager

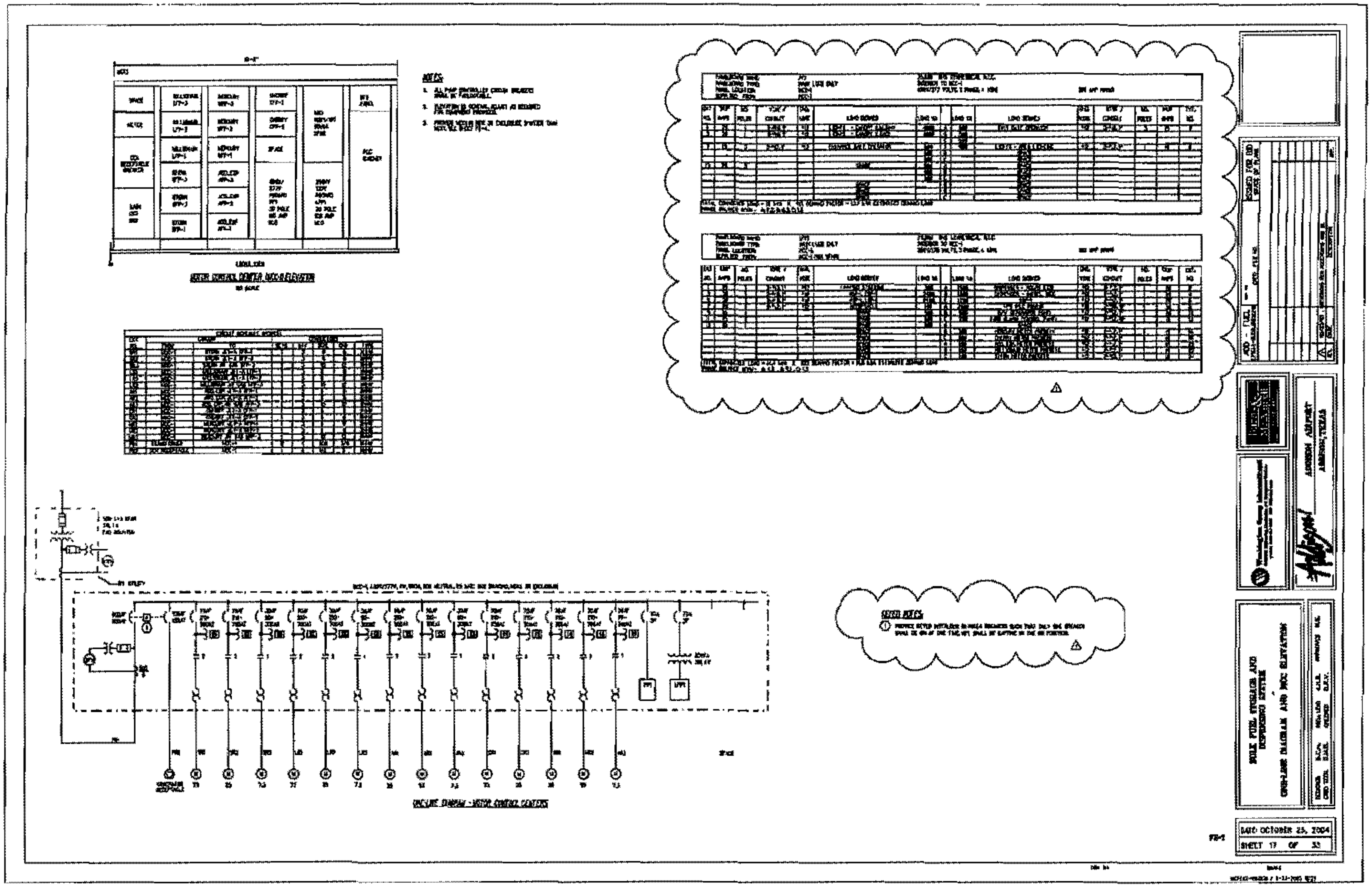
Enclosures

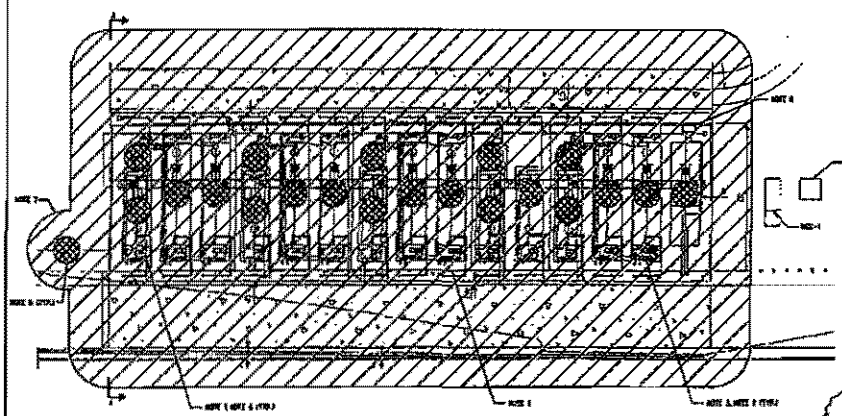
Copy: Jim Pierce
Mark Acevedo

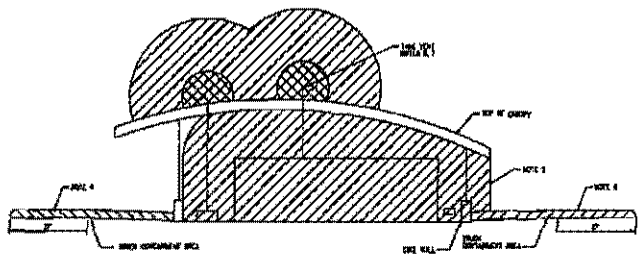
3/29/05



WGFE01-V8.DGN / 3-23-2005 15:28 / DWB


ABILENE AIRPORT
ABILENE, TEXAS
BULK FUEL STORAGE AND DISPENSING SYSTEM
ONE-LINE DIAGRAM AND MCC ELEVATION
DATE: OCTOBER 25, 2004
SHEET 17 OF 33
NOTES:
ONE-LINE DIAGRAM - MOTOR CONTROL CENTERS





ALTERNATE BID ITEM CANOPY

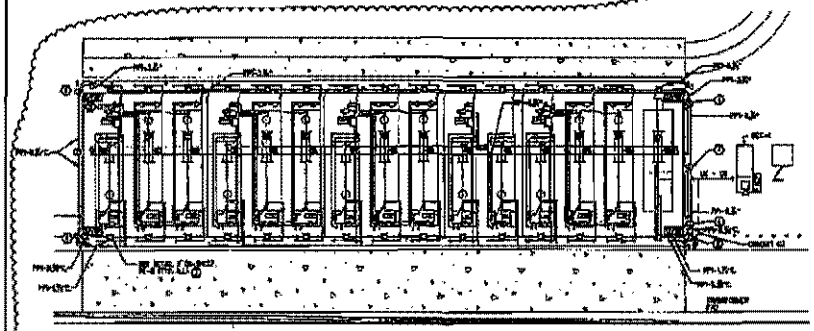
SECTION A

NOTES:

HAZARDOUS AREA PLAN - TANK AREA

SCALE IN FEET

LEGEND:



KEYED NOTES:

ELECTRICAL SITE PLAN - LIGHTING/FIRE ALARM PLAN
(ALTERNATE BID ITEM - CANOPY)

SCALE IN FEET

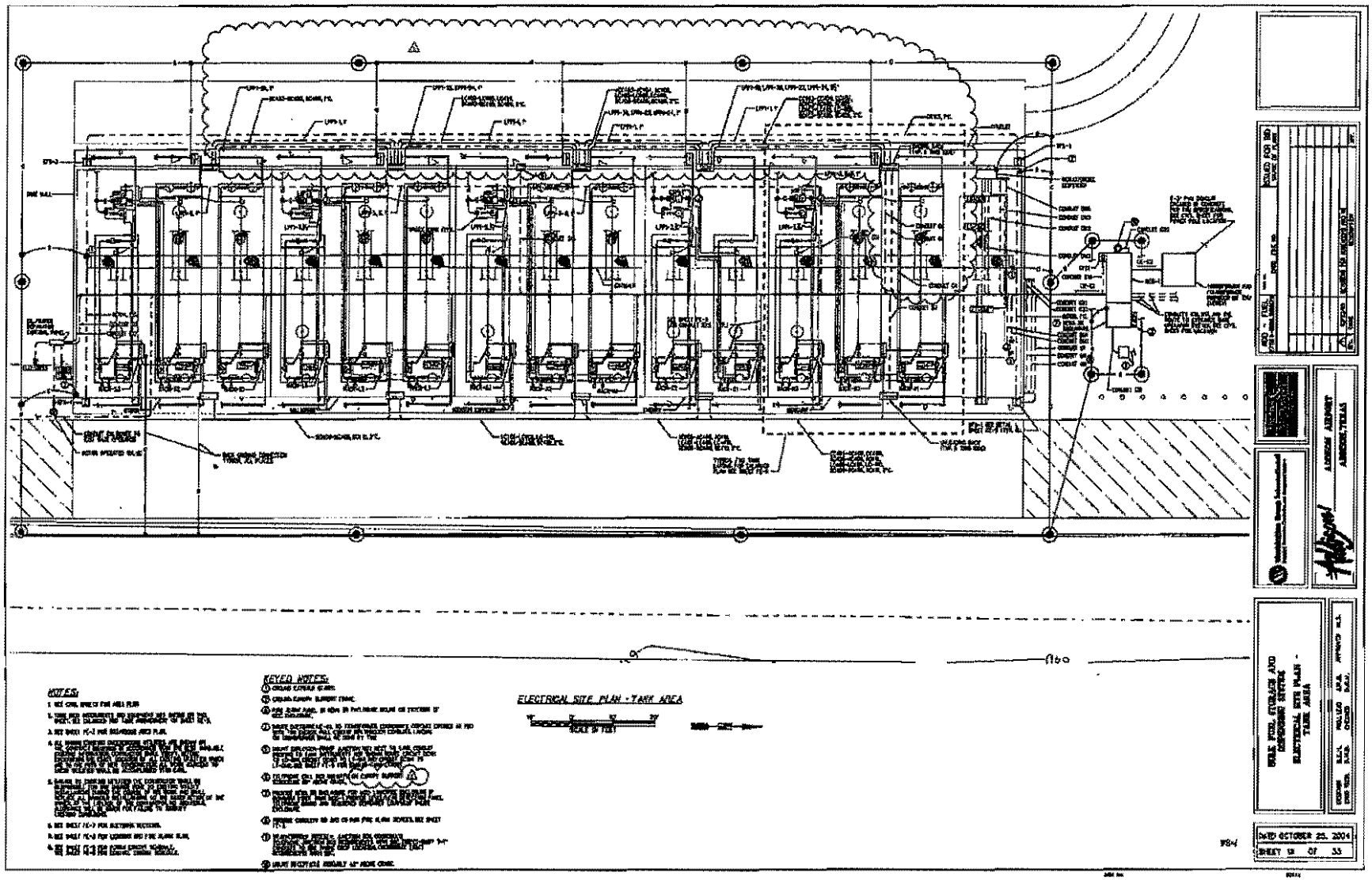
NOTES:

ISSUED FOR BID

DATED OCTOBER 25, 2004

SHEET 19 OF 33

WGFE03-V8.DGN /10-19-2004 14:01 / JLH



NOTES:

KEYED NOTES:

ELECTRICAL SITE PLAN - TANK AREA

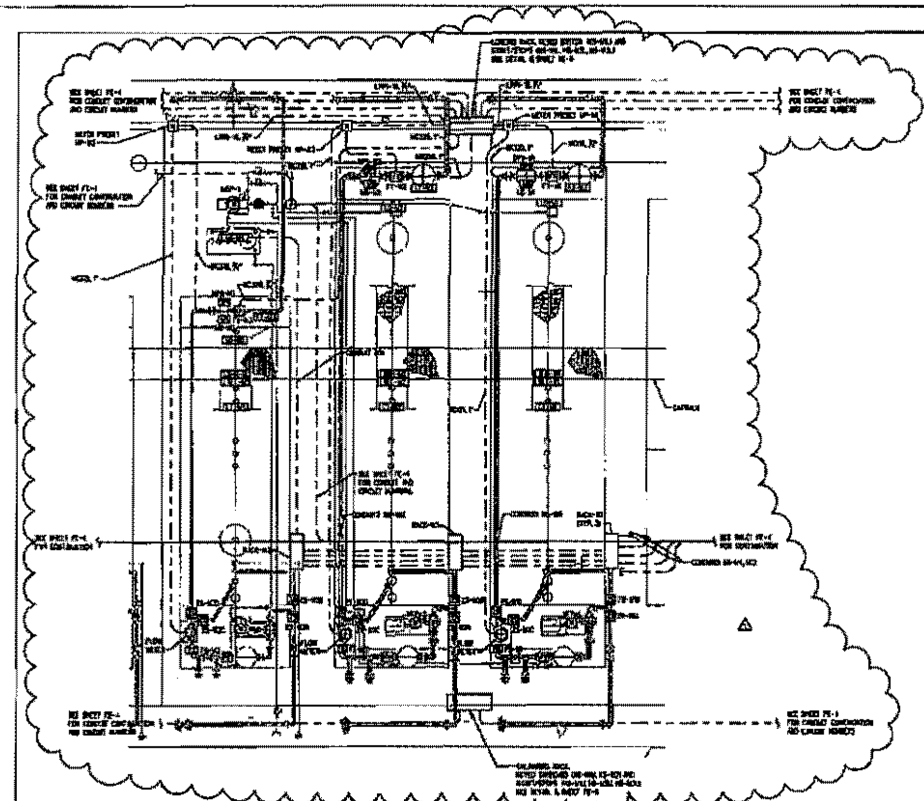
SCALE: 1/16" = 1'-0"

BULK FUEL STORAGE AND DISPENSING SYSTEM
ELECTRICAL SITE PLAN - TANK AREA

DATED OCTOBER 25, 2004

SHEET 19 OF 33

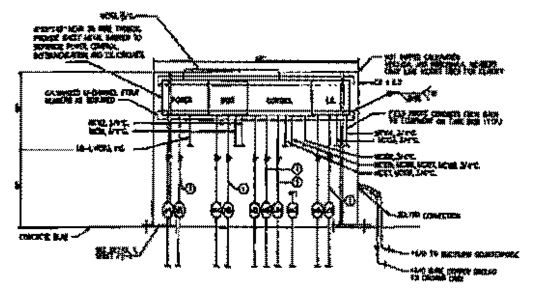
WGFE04-VB.DGN /10-19-2004 14:03 / JLH



ENLARGED PLAN - MERCURY TANK ARRANGEMENT

NOTES:

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]



DETAIL 1 - RACK - M1

KEYED NOTES:

1. [illegible]
2. [illegible]

TABLE OF CORRESPONDING CONDUITS/CIRCUITS AND DEVICES

	[illegible]	[illegible]	[illegible]
CONDUIT	[illegible]	[illegible]	[illegible]
PUMP	MP-1 [illegible]	MP-2 [illegible]	MP-3 [illegible]
[illegible]	[illegible]	[illegible]	[illegible]
LEAK DETECTION	[illegible]	[illegible]	[illegible]
LEVEL SWITCH - TANK	[illegible]	[illegible]	[illegible]
FLOW SWITCH	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
FUEL METER TRANSMITTER	FT-01 [illegible]	FT-02 [illegible]	FT-03 [illegible]
[illegible]	[illegible]	[illegible]	[illegible]
LEVEL SWITCH - SUMP BOX	[illegible]		
START / STOP	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

BULK FUEL STORAGE AND DISPENSING SYSTEM

ENLARGED AREA PLAN

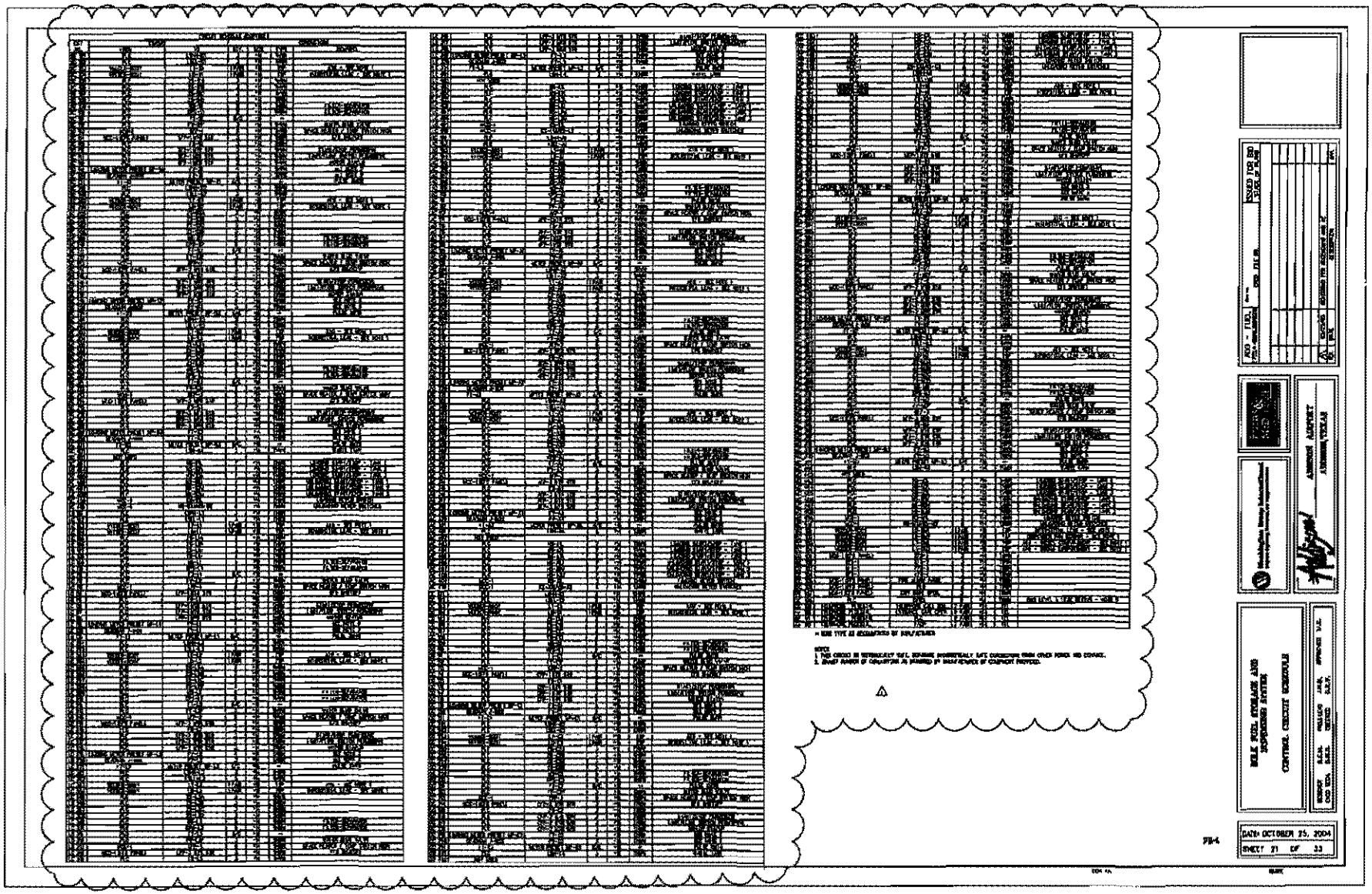
AIRPORT, TEXAS

DATE OCTOBER 25, 2004

SHEET 10 OF 33

FP-5

WGFE05-V8.DGN /10-19-2004 15:02 / JLH



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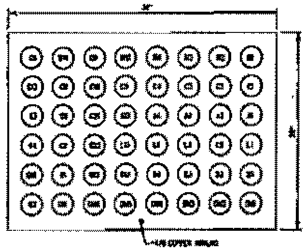
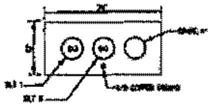
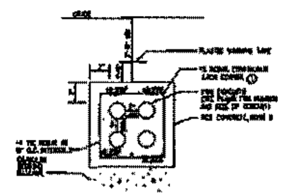


DUCTBANK UE-01



DUCTBANK UE-02

NOTES:



KEYED NOTES:

TYPICAL DUCTBANK CONSTRUCTION

CONDUIT SCHEDULE

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

BULK FUEL STORAGE AND DISPENSING SYSTEM

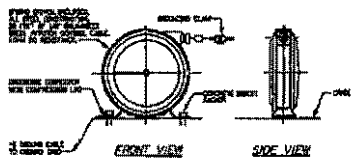
DUCTBANK SECTIONS AND CONDUIT SCHEDULE

[illegible] AIRPORT

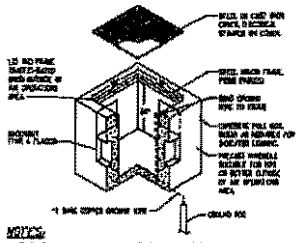
[illegible], TEXAS

DATE: OCTOBER 25, 2004

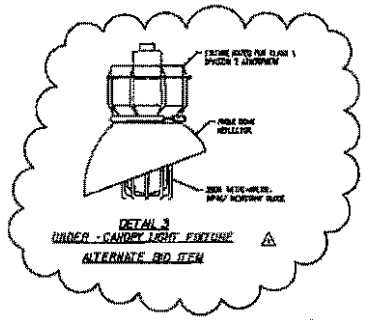
SHEET 22 OF 33



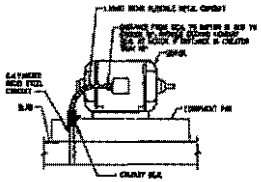
DETAIL 1
STATIC GROUND CABLE REEL



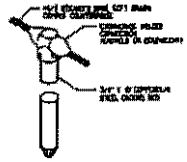
DETAIL 2
HANDHOLE



DETAIL 3
UNDER - CANOPY LIGHT FIXTURE
ALTERNATE BID ITEM



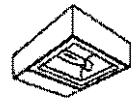
TYPICAL FLOOR-FED CONDUIT
FEEDER FOR MOTORS



TYPICAL GROUND ROD CONNECTION

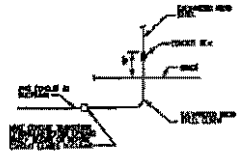
LUMINAIRE REQUIREMENTS

DETAIL 4
AREA FLOODLIGHT

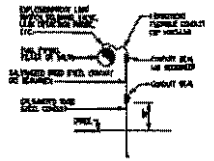


LUMINAIRE REQUIREMENTS

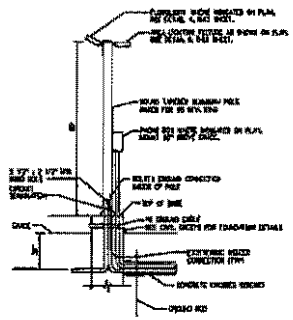
DETAIL 5
ROADWAY AND AREA LIGHT



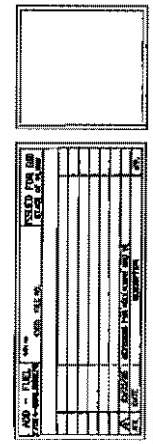
TYPICAL DUCTBANK TO DIRECT-
BURIED CONDUIT TRANSITION

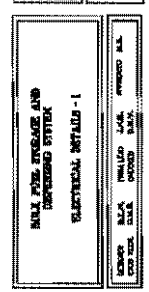


TYPICAL EQUIPMENT CONNECTIONS



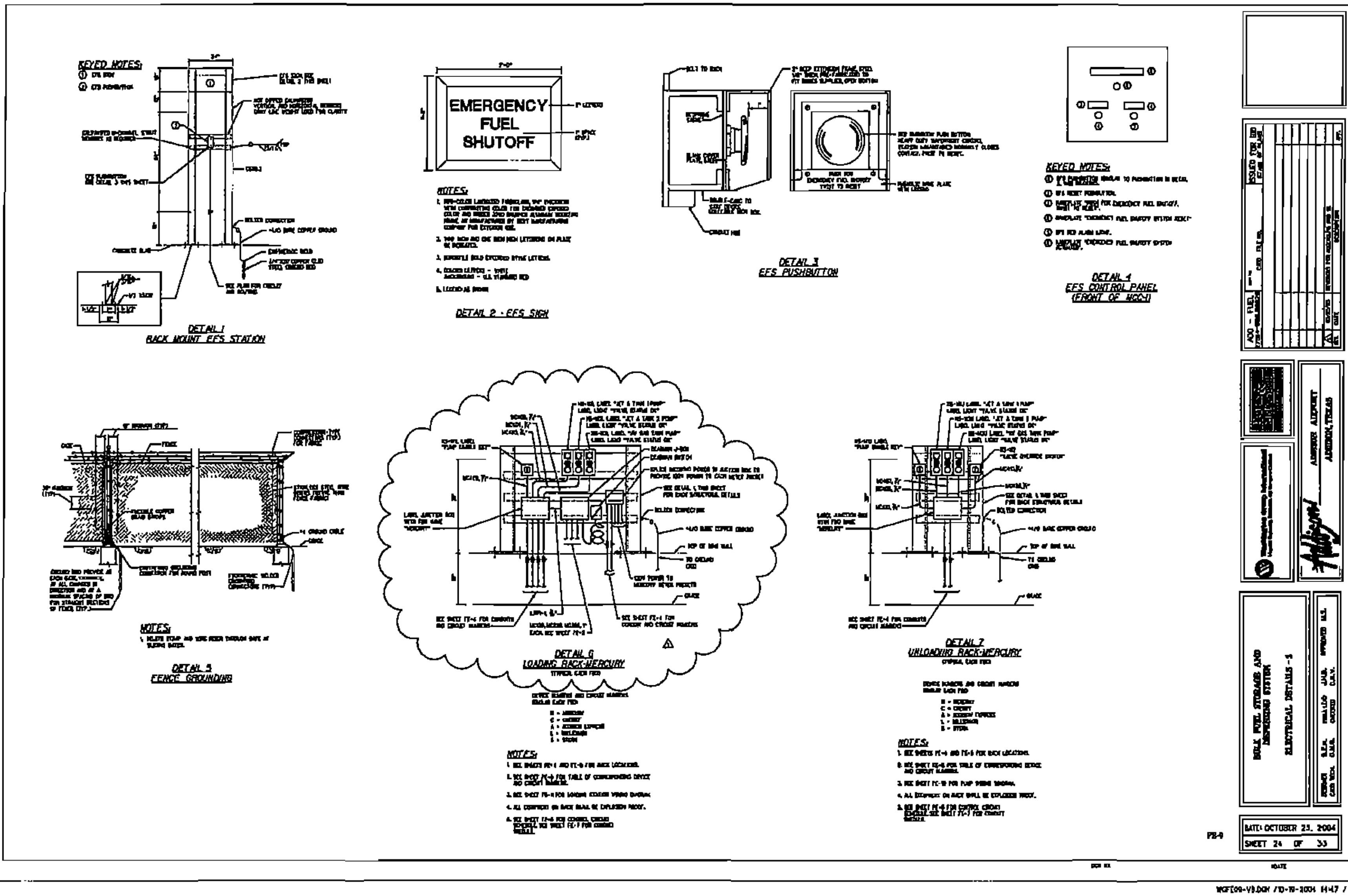
DETAIL 6
LIGHT POLE

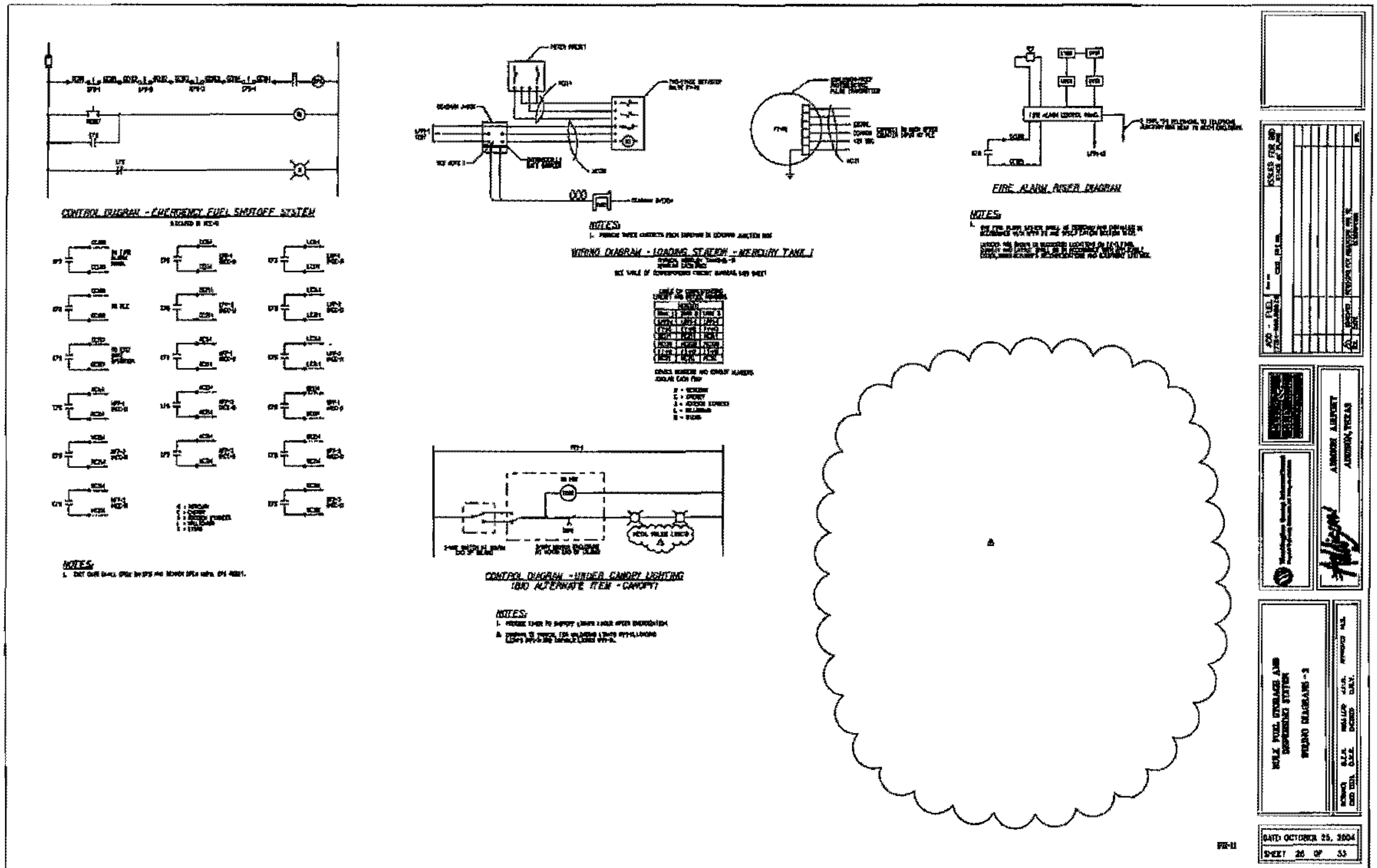




DATE: OCTOBER 29, 2004
SHEET 23 OF 35

WGFE08-V8.DGN / 3-23-2005 15:53 / DMB


KEYED NOTES:
DETAIL 1
RACK MOUNT EFS STATION
EMERGENCY
FUEL
SHUTOFF
NOTES:
DETAIL 2 - EFS SIGN
DETAIL 3
EFS PUSHBUTTON
KEYED NOTES:
DETAIL 4
EFS CONTROL PANEL
(FRONT OF MCC-1)
NOTES:
DETAIL 5
FENCE GROUNDING
DETAIL 6
LOADING RACK-MERCURY
NOTES:
DETAIL 7
UNLOADING RACK-MERCURY
NOTES:
ADD - FUEL
ISSUED FOR BID
ABERNATHY AIRPORT
ABERNATHY, TEXAS
BULK FUEL STORAGE AND
DISPENSING SYSTEM
ELECTRICAL DETAILS - 5
DATE: OCTOBER 23, 2004
SHEET 24 OF 33
FE-9
WCFT09-V9.DGN / 10-19-2004 14:47 / JLH



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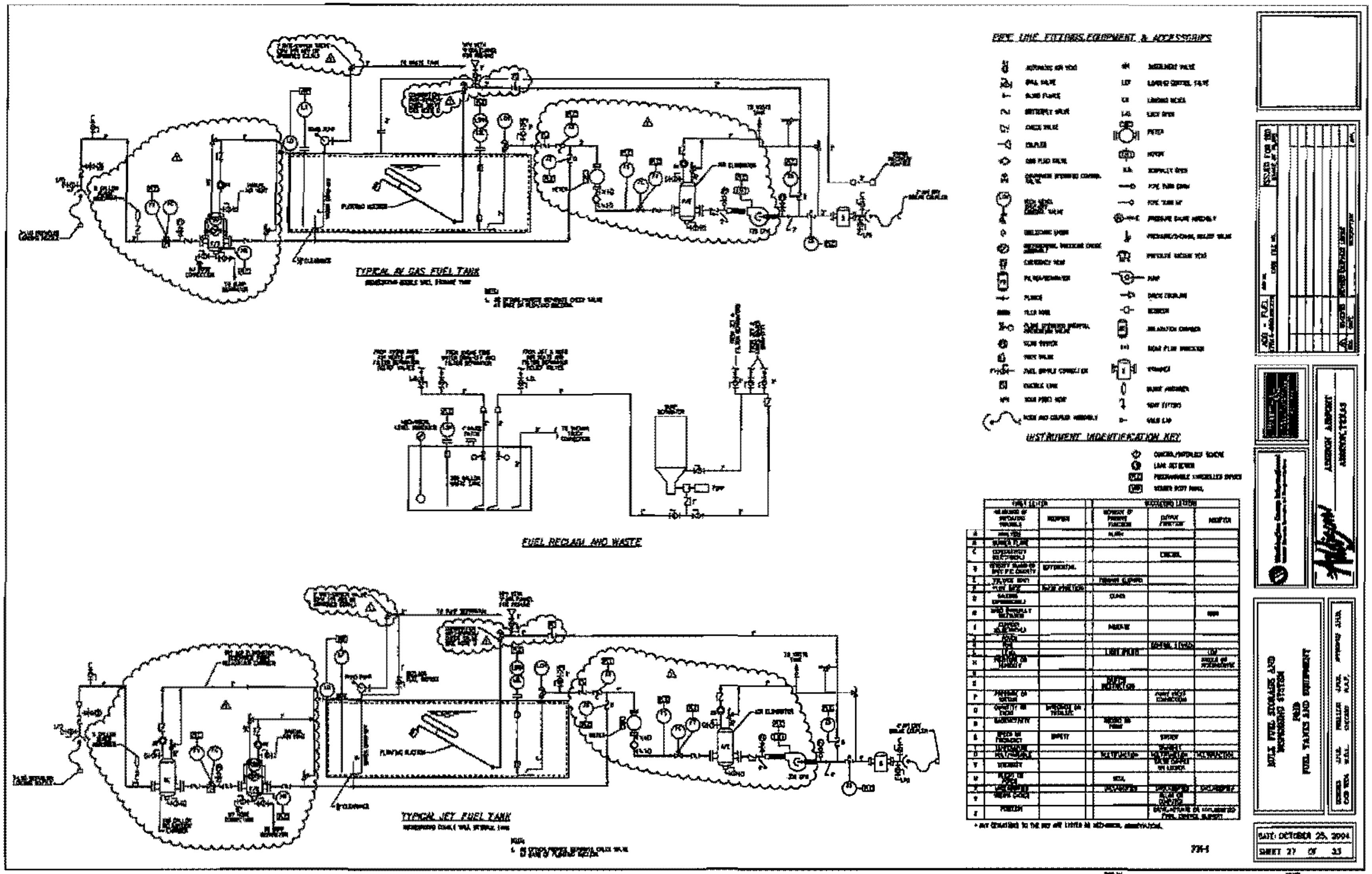
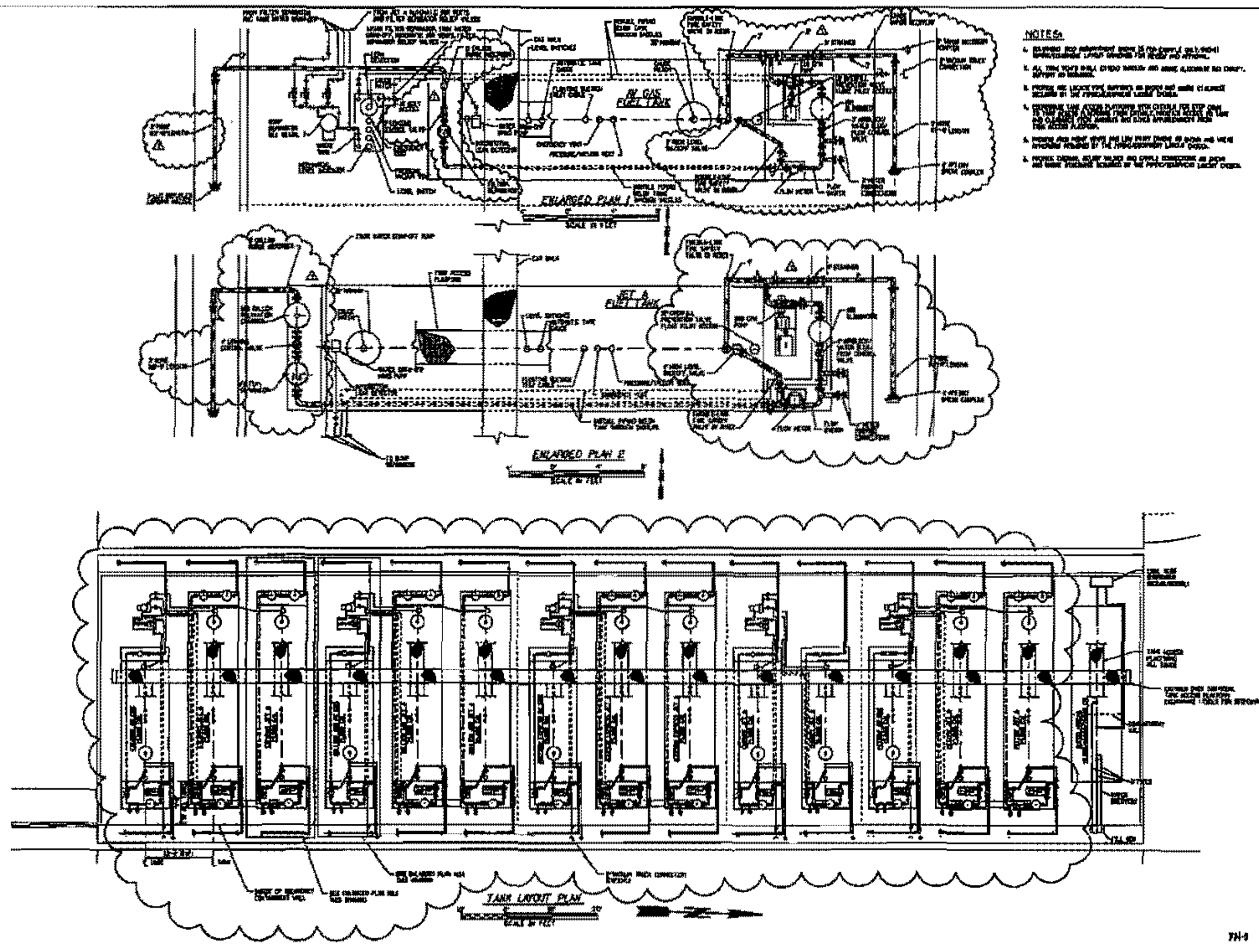

TYPICAL AV GAS FUEL TANK
FUEL RECLAIM AND WASTE
TYPICAL JET FUEL TANK
PIPE LINE FITTINGS, EQUIPMENT & ACCESSORIES
INSTRUMENT IDENTIFICATION KEY
FUEL TANKS AND EQUIPMENT
DATE: OCTOBER 25, 2004
SHEET 27 OF 33

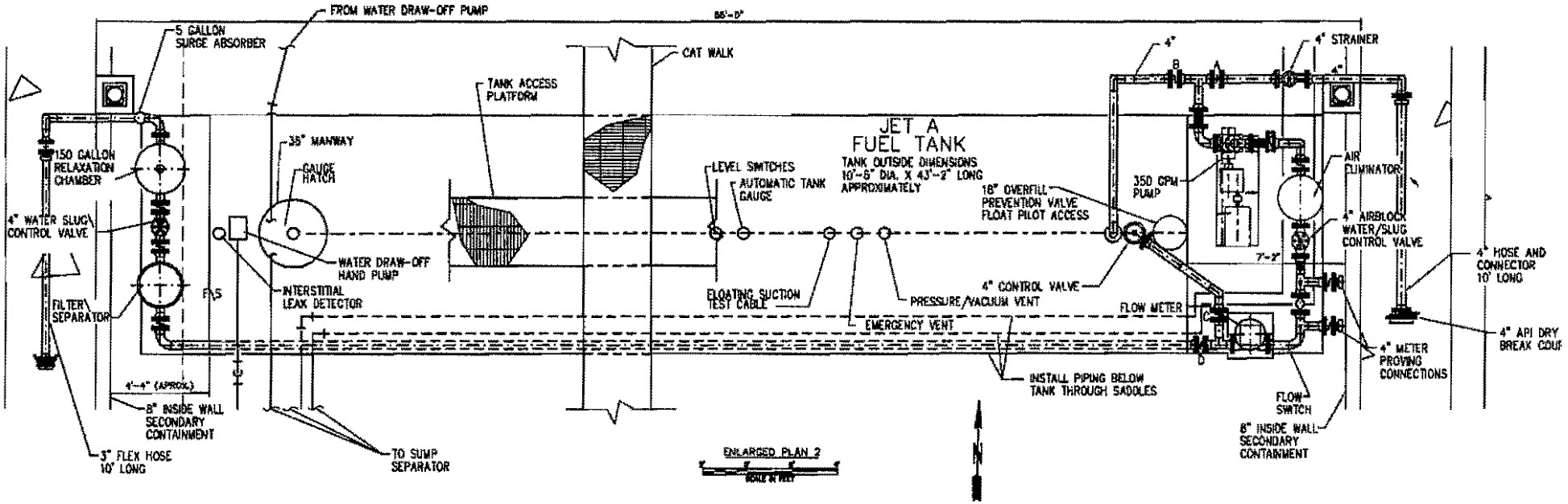


BULK FUEL STORAGE AND DISPENSING SYSTEM

TANK LAYOUT PLANS

DATE OCTOBER 25, 2004

SHEET 28 OF 33


FROM WATER DRAW-OFF PUMP
5 GALLON SURGE ABSORBER
150 GALLON RELAXATION CHAMBER
4" WATER SLUG CONTROL VALVE
FILTER SEPARATOR
4'-4" (APPROX.)
8" INSIDE WALL SECONDARY CONTAINMENT
3" FLEX HOSE 10' LONG
35" MANWAY
GAUGE HATCH
WATER DRAW-OFF HAND PUMP
INTERSTITIAL LEAK DETECTOR
TO SUMP SEPARATOR
TANK ACCESS PLATFORM
CAT WALK
JET A FUEL TANK
TANK OUTSIDE DIMENSIONS 10'-6" DIA. X 43'-2" LONG APPROXIMATELY
LEVEL SWITCHES
AUTOMATIC TANK GAUGE
FLOATING SUCTION TEST CABLE
PRESSURE/VACUUM VENT
EMERGENCY VENT
18" OVERFILL PREVENTION VALVE FLOAT PILOT ACCESS
4" CONTROL VALVE
FLOW METER
INSTALL PIPING BELOW TANK THROUGH SADDLES
ENLARGED PLAN 2
350 GPM PUMP
4" STRAINER
AIR ELIMINATOR
4" AIRBLOCK WATER/SLUG CONTROL VALVE
4" HOSE AND CONNECTOR 10' LONG
4" API DRY BREAK COUP
4" METER PROVING CONNECTIONS
FLOW SWITCH
8" INSIDE WALL SECONDARY CONTAINMENT
N

3-29-05

Date: March 28, 2005

Subject: **Construction Technical Change Order for the Bulk Fuel Storage and Dispensing System, Addison Airport**

To: **Thielsch Engineering, Inc.**
2111 Dickson Dr. Suite 10
Austin, TX 78704
Attn: Mr. Rick Normandeau

Mr. Normandeau,

You are hereby ordered to make the following technical changes in the plans and /or specifications for the above-designated project.

1) **Modify the catwalk to be supported from the tanks.**
Install the catwalk only over each of the FBO tanks with separate ladder at each FBO. The transverse walkway and catwalk will be attached directly to the tank and the catwalk will span the tanks in each FBO area with a separate ladder to the floor of the containment. Attachment pads are to be welded to the tanks by the tank manufacturer and the walkway stanchions attached to the pads by bolting or welding in the field. Shop drawings on the catwalk structure, details and attachments have been provided.
2) **Use one mechanical flow meter with electronic remote displays.**
Install one mechanical flow meter at the pump and use remote displays to indicate pumped fuel quantity at the dispense and off-load stations. The dispense display must still allow stage down of flow through the "ClaValve" or similar for filling Jet A airport refuelers. The cost reduction is the difference between the cost of the 2nd meter at each tank unit and the electronic display installation. This change is reflected in the revised mechanical and electrical drawings dated 3-23-05.
3) **Eliminate concrete encasement of conduit (duct bank) under slab.**
Do not encase the electric cable duct bank under the secondary containment structure. Only the duct bank from the transformer pad to the containment slab needs encasement, along with ducts from the power pole drop and from the transformer to the MCC. The conduits must be spaced and bedded in suitable backfill.
4) **Eliminate redundant control units in system control panel.**
Eliminate the redundant complete PLC on the tank overflow monitoring system and provide a spare CPU and at least one of each I/O cards to serve as a backup control unit if the PLC were to fail. Since the system is designed to fail closed (or off), one preprogrammed CPU, a spare power supply and a spare of one of each type of I/O cards used in the system will provide sufficient backup and immediate response in case of failure, and reduce the adverse impact to the system from a lighting strike in the area which could eliminate the programming on both systems

and make recovery more difficult that just changing components. Each of these components is to be provided in the manufactures original packaging. This change is reflected in the revised electrical drawings dated 3-23-05.

5) **Replace metal grating steps with concrete step.**
Replace the 10 metal grating steps in the secondary containment area with a 9" high concrete step.

6) **Replace florescent light fixtures with 250 watt metal halide lights.**
Replace the florescent light fixtures with low base 250-watt metal halide in two rows on each side of the facility. The low base fixtures cover more area with higher lumens; so fewer fixtures are needed for the same light level. This change is reflected in the revised electrical drawings dated 3-23-05.

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Do not fire protect coat the shape metal rafters of the canopy structure. A technical review has been performed on the canopy structure performance and the conclusion is that since the proposed shaped rafters are not under load and will be supported in a fire by the rated coated columns of each bent, there is no reason to coat the rafters.

8) **Use horizontal filter/separators**
Use of horizontal filter/separators for this system is acceptable providing you can install them appropriately in the system within the space limitations of the secondary containment area and maintain access for filter changes. The draft tank layout shop drawing indicates the horizontal filter/separator will fit in this layout.

9) **Use of aluminum case mechanical flow meters**
Use of aluminum case mechanical flow meters versus double case steel meters is acceptable based on this application. Systems using two or more large volume storage tanks that would pass all fuel through one or two lines would have a much higher utilization rate and would warrant a double steel case meter. This system dispenses through 14 separate tanks and no single meter will have high volume utilization.

10) **Eliminate canopy gutters, downspouts and associated underground piping**
Eliminate the canopy gutters, downspouts, sidewalk connections and underground PVC drain lines (E & D) and catch basin on the south end of the oil/water separator. Connect the separator outfall line directly to the existing storm sewer system by transitioning to 10" RCP line.

11) **Use the Blackmer X2.5B 150 gpm pump**
Pending verification by the manufacturer for this application, use the Blackmer X2.5B 150 gpm aviation fuel pump for the AvGas tank and dispensing system.

12) **Modify the 10' & 6' vinyl covered fence structure detail**
Change the 10' fence detail to 8' high with posts set at 7' on center instead of 10' and with top rail and bottom guy wire. The 8' fence remains black vinyl covered chain-link fence fabric with black slats. Change the post setting for the 6' black vinyl covered chain-link fence fabric with black slats and barbwire to 8' on center instead of 10'. Other chain link fencing remains as per plans. Shop drawings from the subcontractor will be reviewed and the additional cost must be determined.

13) **Thicken the concrete pavement or structure floor 1"**
Instead of the 12" hydrated lime stabilized subgrade, the concrete structure and pavement may be increased in thickness by 1". Subgrade must be compacted per specifications and the aggregate base course (ABC) thickness and compaction requirements remain the same. (Per verbal direction by ECS)

14) **Add a relaxation chamber to Jet A system**
Addendum #2 directed deletion of the relaxation chamber from the Jet A system; however, the revised drawings and specifications indicate a 150 gallon relaxation chamber is required. After verification by Burns & McDonnell, shop drawings from the subcontractor will be reviewed and the additional cost must be determined.

15) **Delete Butterfly Valves**
Delete the butterfly valves shown in front (upstream) of the horizontal filter separator and in front (upstream) of the 150-gallon relaxation chamber

Remaining Items to address for start of construction:

1. Canopy Steel column details, including center column footing (from Schwob)
2. Final Cost of Canopy
3. Identify the manufacturer and model number of the following items:
   a. 3" and 4" Strainer
   b. Air Eliminator
   c. 3" and 4"Airblock/water slug/flow control valve
   d. 3" and 4" Double Block and Bleed (DBB) Plug valve
   e. 3" and 4" Loading control valve (2 stage ClaValve type)
   f. 150-gallon relaxation chamber.
4. Cost of modified Fence
5. Cost of installation of relaxation chambers
6. Deletion of several butterfly valves

Your assistance and consideration on these items is greatly appreciated. We expect Notice to proceed to be issued on or about Mar 31, 2005

Recommended By: _____
Washington Group International Title Date

Approved By: _____
Town of Addison Title Date

Agreed To By: _____
Thielsch Engineering Title Date

Attachments: Modified Drawings & Specifications

3-28-04

Bulk Fuel Storage and Dispensing System
Addison Airport

Specifications Changes from Addendums and Value Engineering, dated 3-23-05

SPECIFICATIONS:

1. Section 13065:
   1. Paragraph 2.03, Add the following paragraph:

      "J. Provide a thermal shut-off actuator with the butterfly valves designated as "fusible link" on the project drawings.
         1. The thermal shut-off actuator shall be provided with a 165°F thermal link which shall close the valve upon a fire or other hazard.
         2. The actuator shall provide sufficient closing torque to close and maintain the valve drip tight with a differential pressure of 20 psi at 500°F.
         3. Operator shall be "fail safe" closed.
         4. Provide an Essex Industries operator or approved equal."

   B. Paragraph 2.06.E, Delete in entirety.

   C. Paragraph 2.08.D.1, Revise to read:

      "1. Water slug/air block valve - Shall be located as indicated and close by one of two electric signals from the PLC: 1) upon detection of water by the water detection probe contained within the filter/separator or 2) upon detection of excess air in the air eliminator vessel. Provide the following trim and accessories:
         a. Explosion proof, 24 Vdc control solenoid, with maintained position type manual override.
         b. ~~Rate-of-flow pilot with orifice plate at valve entrance and sensing lines completely piped and self-contained on valve.~~ (Not required)
         c. Opening speed adjustment.
         d. Integral check feature."

   D. Paragraph 2.08.D, Add the following paragraph:

      "4. Anti-siphon valve – Angle-type construction, hydraulically operated. Shall be located on Jet A and AvGas tank suction nozzles to prevent inadvertent siphoning of fuel out of tank. If provided with check feature, check valve at base of floating suction can be eliminated.

2. Section 13067:

   A. Paragraph 2.01.A.1, add the following paragraphs:

"19. Air Eliminators:
A. Smith Meter
B. Brodie
C. Approved Equal

20. Flexible Connectors:
a. Flexonics
b. Metraflex
c. Approved Equal."

B. Paragraph 2.13.B.6, Change "4-inch diameter" to "flanged".

C. Paragraph 2.13.B.7, Revise to read "Provide with resettable totalizer and pulse transmitter."

D. Part 2, Add the following paragraphs:

"2.20 BULK AIR ELIMINATORS:
5. Air eliminator vessel shall be a vertical deaerator, capable of 150 psig working pressure, with ANSI 150-pound, raised-face flange connections of size indicated.
6. Flowrate shall be 350 gpm for Jet A and 120 gpm for AvGas.
7. Vessel shall have bottom drain connection with a plugged ball valve.
8. Air release head shall be dual electric float switch type operating in a 24 Vdc circuit, which upon detection of air shall electrically signal the downstream air block valve to close through the PLC. Floats, tubing and fittings shall be stainless steel.
9. Epoxy coat all interior vessel surfaces per MIL-C_4556 to a dry film thickness of 6 mils.

2.21 FLEXIBLE CONNECTORS:
A. Flexible connectors for fuel pumps shall be inner stainless steel corrugated metal hose restrained by a double braided outer stainless steel cover, capable of 150 psig working pressure.
B. Provide with ANSI 150-pound, raised-face flanges.
C. Connectors shall be 9-inches minimum length."

3. Section 13069:

A. Paragraph 2.01.a.1, Revise to read:

"1. Positive Displacement Pumps:
A. Blackmer
B. Approved Equal."

B. Paragraph 2.02, Replace with:

"POSITIVE DISPLACEMENT PUMPS:

A. General Requirements: Pumps shall be self-priming and manufactured to handle jet fuel or aviation gasoline. Pumps shall be complete with pump gear reduction, drive motor, coupling, mounting base, accessories, and all other parts and materials necessary for a complete installation.

B. Construction:

1. Furnish with mechanical seals.
2. Ductile iron construction with 150-pound ANSI flanged inlet and outlet.
3. Base plate shall be manufacturer standard.
4. Furnish with built-in relief valve capable of maintaining a constant discharge pressure with the full capacity of the pump being bypassed.
5. Gear reducer shall be commercial grade, independently bolted to base plate with coupling connections to driver and pump. Assembly shall feature hardened steel gears, immersed in oil, mounted on shafts supported on both ends by ball bearings, and enclosed in a weatherproof housing.

C. Operating Conditions:

Pump	Jet A	Avgas
Capacity (GPM)	350	120
Total Dynamic Head (feet)	140	110
Specific Gravity	0.81	0.67
Maximum Motor Speed	1800	1800
Maximum Motor Horsepower	25	7.5

D. Motors: Motors shall be explosion proof. Provide with motor winding temperature sensors and 120Vac space heaters. Motors shall be suitable for an outdoor installation in Addison, Texas.

E. Manufacturer's Service Engineer: Provide the services of an experienced service engineer on the jobsite to verify proper installation, assist in start-up and testing, and instruct Owner's operating personnel.

F. Pumps used in design:

Jet A:	AvGas:
Blackmer X4B-N	Blackmer XL4B"

4. SECTION 13071: Paragraph 2.02.B, Change "120 gpm" to "200 gpm".

5. SECTION 13201: Paragraph 2.02.J.2, Revise first sentence to read: "Provide suction nozzle with a floating suction assembly (4-inch for Jet A, 4-inch for Avgas with 4" by 3" reducer at tank nozzle)."

6. SECTION 16512:

A. Paragraph 1.01.B.1, insert the following line item: "b. Metal Halide (MH)."

B. Paragraph 1.01.B.2, delete line item in its entirety.

C. Paragraph 1.02.A .4, delete the following line items in their entireties:
" e. 935 – Fluorescent-Lamp Ballasts.
g. 1570 – Fluorescent Lighting Fixtures."

D. Paragraph 2.01.A.2, delete paragraph in its entirety.

E. Paragraph 2.02.B, delete paragraph in its entirety.

F. Paragraph 2.02.D, delete line item 2 in its entirety and replace with the following:

"2. Clear coated metal halide lamps in wattages indicated."

7. SECTION 16621 – DIESEL GENERATOR SETS: Delete this section in its entirety.

8. SECTION 16901:

A. Paragraph 1.01.A, insert the following line item: "12. Electronic Preset."

B. Paragraph 2.01.G, insert the following line item: "2. Or approved equal."

C. Paragraph 2.05.B, delete line item 1 in its entirety.

D. Paragraph 2.05.C, delete line item 1 in its entirety.

E. Paragraph 2.05.D, delete line item 1 in its entirety.

F. After Paragraph 2.13, insert the following paragraph in its entirety:
"2.14 ELECTRONIC PRESET
A. Provide explosion-proof, electronic preset rated for Class 1, Division 1 atmosphere. Electronic preset shall operate at 120Vac input.
B. Provide electronic preset with two, optically-isolated solid-state digital meter signal pulse inputs; one analog two-wire 4-20mA input.
C. Provide electronic preset with four AC digital outputs; two DC digital outputs.
D. Unit shall be Smith Meter microLoad or approved equal."

G. Paragraph 3.10, delete this paragraph in its entirety and replace with the following:

"3.10 ELECTRONIC PRESET

A. Electronic preset shall receive flow meter pulse input from associated tank flow meter.

B. Operator shall input meter stop volume preset. Electronic preset shall be configured to operate two-stage control valve for loading."

9. SECTION 16902:

A. Paragraph 2.01.A.5, delete paragraph in its entirety.

B. Paragraph 2.01.A.6, revise line item to read "PLC and peripherals shall be located in the PLC cabinet in MCC enclosure."

C. Paragraph 2.01.E.1, delete the word "PLCs" and replace with "PLC"

D. After paragraph 2.04, insert the following in its entirety:

"2.05 SPARE PARTS:

A. Provide one spare processor of equal type and equal programming to one described in this section.

B. Provide one spare power supply equal to one described in this section.

C. Provide one spare I/O card of each type used in PLC.

D. Provide storage cabinet or enclosure for spare parts. Parts shall be stored in PLC cabinet in MCC enclosure."

END OF DOCUMENT

Mark Acevedo

From: rnormandeau@thielsch.com
Sent: Monday, March 28, 2005 7:13 AM
To: Mark Acevedo
Cc: samuel.lundgren@wgint.com; PKennefick@thielsch.com; TLent@Thielsch.com; neil.rood@wgint.comd
Subject: Notice to Proceed 3/28/05

Mark, I received a lot of drawing and specification information on Friday afternoon from Sam. It took a while to review it and understand what was included. After better understanding the information, I don't agree that the pre-construction items are complete and request the notice to proceed not be issued yet.

One example is with regard to the horizontal filter/separators. The change order states "...providing you can install them appropriately in the system and within the space limitations of the secondary containment area and..." I expected from the value engineering and pre-construction meetings that they were approved by engineering and would be shown on the drawing instead of the vertical filter/separator. I expected the necessary pipe routing changes would also be included. The other question is the cost and who pays for them. There may still be hope that they can be excluded from the design without compromising system performance or safety.

On the draft change order, it was initially indicated that the additional cost to strengthen the fence was to be taken from the construction credits from the Feb. 11, 2005. I didn't agree. Now it says the additional cost must be determined. Cost is a significant issue that must be resolved before we start work in the field.

There are only a few other technical issues that Sam and I have been working closely on and we're both willing to continue to do so. We are close to resolving them, but I think we need to get the engineering, construction, and Town of Addison decision makers on a conference call, or in the same room, assign action items, due dates, and resolve them. If we all work together, we can finalize where we need to be to get started on the right foot.

I believe it's possible that these issues can be resolved in a short time and be able to start construction very soon.

Rick Normandeau
Thielsch Engineering, Inc.
2111 Dickson Dr. Suite 10
Austin, Texas 78704

Mark Acevedo

From: rnormandeau@thielsch.com
Sent: Monday, March 28, 2005 7:34 AM
To: Mark Acevedo
Cc: samuel.lundgren@wgint.com; PKennefick@thielsch.com; TLent@Thielsch.com
Subject: Clarification to Notice to Proceed 3/28/05

Mark, I need to clarify that I should have said the *relaxation chambers* may still be able to be eliminated. Also, I was referring to the Feb. 11, 2005 value engineering meeting we had in Addison. I'm sorry for omission.

Rick Normandeau
Thielsch Engineering, Inc.
2111 Dickson Dr. Suite 10
Austin, Texas 78704

Date: **March 25, 2005**

Subject: **Update on Pre-Construction Items and Issues for the Bulk Fuel Storage and Dispensing System, Addison Airport**

1. Reference S. Lundgren Memo, same subject, dated Mar 18, 2005:
   - Burns and McDonnell issued revised drawings and specification changes that incorporate the addendum and value engineering items on Mar 23, 2005.
   - The attached Construction Constructive Change Order covers all value-engineering items, plus the technical issues verbally as agreed to at the March 8, 2005 Pre-Construction meeting.
   - The Pre-Construction Punch list is complete with the exception of the canopy column detail and structure moments from Schwob Construction, which will be sent once they have notification to proceed. These items will be needed to modify the connections to the structure and to accommodate the center column in each bent.
   - All items from Rick Normandeau's E-Mails of Mar 13 and 17 have been answered.
   - I will obtain sealed and signed full size copies of all revised drawings and reproduce construction sets for Thielsch (both offices), The Town of Addison and The Airport.

2. Washington Group and Thielsch Engineering are working closely to make sure that nothing will delay construction of this project. Recommend a conference call with Washington Group, Burns and McDonnell, Thielsch Engineering and The Town of Addison to confirm that all items have been resolved and to issue the Notice to Proceed (NTP) to Thielsch Engineering.

Respectfully submitted,

Samuel G. Lundgren, P.E.
Project Engineer
Washington Group International, Inc.

1 Attachment: Construction Change Order, dated Mar 25, 2005

Date: March 25, 2005

Subject: Construction Constructive Credit Change Order for the Bulk Fuel Storage and Dispensing System, Addison Airport

To: Thielsch Engineering, Inc.
2111 Dickson Dr. Suite 10
Austin, TX 78704
Attn: Mr. Rick Normandeau

Mr. Normandeau,

You are hereby ordered to make the following changes in the plans and /or specifications for the above-designated project as constructive credit against the current contract amount, which is summarized at the end of this document.

1) **Modify the catwalk to be supported from the tanks.**
Install the catwalk only over each of the FBO tanks with separate ladder at each FBO. The transverse walkway and catwalk will be attached directly to the tank and the catwalk will span the tanks in each FBO area with a separate ladder to the floor of the containment. Attachment pads are to be welded to the tanks by the tank manufacturer and the walkway stanchions attached to the pads by bolting or welding in the field. Shop drawings on the catwalk structure, details and attachments have been provided. This change results in $15,600.00 of constructive credit for the contract.
2) **Use one mechanical flow meter with electronic remote displays.**
Install one mechanical flow meter at the pump and use remote displays to indicate pumped fuel quantity at the dispense and off-load stations. The dispense display must still allow stage down of flow through the "ClaValve" or similar for filling Jet A airport refuelers. The cost reduction is the difference between the cost of the 2nd meter at each tank unit and the electronic display installation. This change is reflected in the revised mechanical and electrical drawings dated 3-23-05, and results in $50,400.00 of constructive credit for the contract.
3) **Eliminate concrete encasement of conduit (duct bank) under slab.**
Do not encase the electric cable duct bank under the secondary containment structure. Only the duct bank from the transformer pad to the containment slab needs encasement, along with ducts from the power pole drop and from the transformer to the MCC. The conduits must be spaced and bedded in suitable backfill. This change results in $9,000.00 of constructive credit for the contract.
4) **Eliminate redundant control units in system control panel.**
Eliminate the redundant complete PLC on the tank overflow monitoring system and provide a spare CPU and at least one of each I/O cards to serve as a backup control unit if the PLC were to fail. Since the system is designed to fail closed (or off), one preprogrammed CPU, a spare power supply and a spare of one of each

type of I/O cards used in the system will provide sufficient backup and immediate response in case of failure, and reduce the adverse impact to the system from a lighting strike in the area which could eliminate the programming on both systems and make recovery more difficult that just changing components. Each of these components is to be provided in the manufactures original packaging. This change is reflected in the revised electrical drawings dated 3-23-05 and results in $18,000.00 of constructive credit for the contract.

5) **Replace metal grating steps with concrete step.**
Replace the 10 metal grating steps in the secondary containment area with a 9" high concrete step. This change results in $1,600.00 of constructive credit for the contract.

6) **Replace florescent light fixtures with 250 watt metal halide lights.**
Replace the florescent light fixtures with low base 250-watt metal halide in two rows on each side of the facility. The low base fixtures cover more area with higher lumens; so fewer fixtures are needed for the same light level. This change is reflected in the revised electrical drawings dated 3-23-05 and results in $15,000.000 of constructive credit for the contract.

7) **Fire protection coating of the canopy rafters**
Do not fire protect coat the shape metal rafters of the canopy structure. A technical review has been performed on the canopy structure performance and the conclusion is that since the proposed shaped rafters are not under load and will be supported in a fire by the rated coated columns of each bent, there is no reason to coat the rafters. This item has no constructive credit change for the contract.

8) **Use horizontal filter/separators**
Use of horizontal filter/separators for this system is acceptable providing you can install them appropriately in the system within the space limitations of the secondary containment area and maintain access for filter changes. This item has no constructive credit change for the contract.

9) **Use of aluminum case mechanical flow meters**
Use of aluminum case mechanical flow meters versus double case steel meters is acceptable based on this application. Systems using two or more large volume storage tanks that would pass all fuel through one or two lines would have a much higher utilization rate and would warrant a double steel case meter. This system dispenses through 14 separate tanks and no single meter will have high volume utilization. This change results in $36,660.00 of constructive credit for the contract.

10) **Eliminate canopy gutters, downspouts and associated underground piping**
Eliminate the canopy gutters, downspouts, sidewalk connections and underground PVC drain lines (E & D) and catch basin on the south end of the oil/water separator. Connect the separator outfall line directly to the existing storm sewer system by transitioning to 10" RCP line. This change results in $18,145.00 of constructive credit for the contract.

11) **Use the Blackmer X2.5B 150 gpm pump**
Pending verification by the manufacturer for this application, use the Blackmer X2.5B 150 gpm aviation fuel pump for the AvGas tank and dispensing system. This change results in $9,876.00 of constructive credit for the contract.

12) **Modify the 10' & 6' vinyl covered fence structure detail**
Change the 10' fence detail to provide 4" diameter posts instead of 3", and set the posts at 7' on center, with top and middle rails and bottom guy wire. The 10' fence remains black vinyl covered chain-link fence fabric with black slats. Change the post setting for the 6' black vinyl covered chain-link fence fabric with black slats and barbwire to 8' on center instead of 10'. Other chain link fencing remains as per plans. Shop drawings from the subcontractor will be reviewed and the additional cost must be determined.

13) **Thicken the concrete pavement or structure floor 1"**
Instead of the 12" hydrated lime stabilized subgrade, the concrete structure and pavement may be increased in thickness by 1". Subgrade must be compacted per specifications and the aggregate base course (ABC) thickness and compaction requirements remain the same. (Per verbal direction by ECS) This item has no constructive credit change for the contract.

14) **Add a relaxation chamber to Jet A system**
Addendum #2 directed deletion of the relaxation chamber from the Jet A system; however, the revised drawings and specifications indicate a 150 gallon relaxation chamber is required. After verification by Burns & McDonnell, shop drawings from the subcontractor will be reviewed and the additional cost must be determined.

Remaining Construction Start Punch List Items:

1. Canopy Steel column details, including center column footing (from Schwob)

Constructive Credit Summary:

1. Modify the catwalk to be supported from the tanks	-	$15,600.00
2. One flow meter with electronic remote displays	-	$50,400.00
3. Eliminate concrete encasement of duct bank under slab	-	$9,000.00
4. Eliminate redundant control units in system control panel	-	$18,000.00
5. Replace metal grating steps with concrete step	-	$1,600.00
6. Replace Florescent Lights with 250-Watt Metal Halide	-	$15,000.00
9. Use of aluminum case mechanical flow meters	-	$36,660.00
10. Eliminate canopy gutters, downspouts and U/G piping	-	$18,145.00
11. Use the Blackmer X2.5B 150 GPM Pump	-	$9,876.00
Total		$174,281.00

Recommended By: _____
Washington Group International Title Date

Approved By: _____
Town of Addison Title Date

Agreed To By: _____
Thielsch Engineering Title Date

Attachments: Modified Drawings & Specifications

Bulk Fuel Storage and Dispensing System
Addison Airport

Specifications Changes from Addendums and Value Engineering, dated 3-23-05

SPECIFICATIONS:

1. Section 13065:
   1. Paragraph 2.03, Add the following paragraph:

      "J. Provide a thermal shut-off actuator with the butterfly valves designated as "fusible link" on the project drawings.
         1. The thermal shut-off actuator shall be provided with a 165°F thermal link which shall close the valve upon a fire or other hazard.
         2. The actuator shall provide sufficient closing torque to close and maintain the valve drip tight with a differential pressure of 20 psi at 500°F.
         3. Operator shall be "fail safe" closed.
         4. Provide an Essex Industries operator or approved equal."

   B. Paragraph 2.06.E, Delete in entirety.

   C. Paragraph 2.08.D.1, Revise to read:

      "1. Water slug/air block valve - Shall be located as indicated and close by one of two electric signals from the PLC: 1) upon detection of water by the water detection probe contained within the filter/separator or 2) upon detection of excess air in the air eliminator vessel. Provide the following trim and accessories:
         a. Explosion proof, 24 Vdc control solenoid, with maintained position type manual override.
         b. ~~Rate-of-flow pilot with orifice plate at valve entrance and sensing lines completely piped and self-contained on valve~~. (Not required)
         c. Opening speed adjustment.
         d. Integral check feature."

   D. Paragraph 2.08.D, Add the following paragraph:

      "4. Anti-siphon valve – Angle-type construction, hydraulically operated. Shall be located on Jet A and AvGas tank suction nozzles to prevent inadvertent siphoning of fuel out of tank. If provided with check feature, check valve at base of floating suction can be eliminated.

2. Section 13067:

   A. Paragraph 2.01.A.1, add the following paragraphs:

"19. Air Eliminators:
A. Smith Meter
B. Brodie
C. Approved Equal

20. Flexible Connectors:
a. Flexonics
b. Metraflex
c. Approved Equal."

B. Paragraph 2.13.B.6, Change "4-inch diameter" to "flanged".

C. Paragraph 2.13.B.7, Revise to read "Provide with resettable totalizer and pulse transmitter."

D. Part 2, Add the following paragraphs:

"2.20 BULK AIR ELIMINATORS:
5. Air eliminator vessel shall be a vertical deaerator, capable of 150 psig working pressure, with ANSI 150-pound, raised-face flange connections of size indicated.
6. Flowrate shall be 350 gpm for Jet A and 120 gpm for AvGas.
7. Vessel shall have bottom drain connection with a plugged ball valve.
8. Air release head shall be dual electric float switch type operating in a 24 Vdc circuit, which upon detection of air shall electrically signal the downstream air block valve to close through the PLC. Floats, tubing and fittings shall be stainless steel.
9. Epoxy coat all interior vessel surfaces per MIL-C_4556 to a dry film thickness of 6 mils.

2.21 FLEXIBLE CONNECTORS:
A. Flexible connectors for fuel pumps shall be inner stainless steel corrugated metal hose restrained by a double braided outer stainless steel cover, capable of 150 psig working pressure.
B. Provide with ANSI 150-pound, raised-face flanges.
C. Connectors shall be 9-inches minimum length."

3. Section 13069:

A. Paragraph 2.01.a.1, Revise to read:

"I. Positive Displacement Pumps:
A. Blackmer
B. Approved Equal."

B. Paragraph 2.02, Replace with:

"POSITIVE DISPLACEMENT PUMPS:

A. General Requirements: Pumps shall be self-priming and manufactured to handle jet fuel or aviation gasoline. Pumps shall be complete with pump gear reduction, drive motor, coupling, mounting base, accessories, and all other parts and materials necessary for a complete installation.

B. Construction:

1. Furnish with mechanical seals.
2. Ductile iron construction with 150-pound ANSI flanged inlet and outlet.
3. Base plate shall be manufacturer standard.
4. Furnish with built-in relief valve capable of maintaining a constant discharge pressure with the full capacity of the pump being bypassed.
5. Gear reducer shall be commercial grade, independently bolted to base plate with coupling connections to driver and pump. Assembly shall feature hardened steel gears, immersed in oil, mounted on shafts supported on both ends by ball bearings, and enclosed in a weatherproof housing.

C. Operating Conditions:

Pump	Jet A	Avgas
Capacity (GPM)	350	120
Total Dynamic Head (feet)	140	110
Specific Gravity	0.81	0.67
Maximum Motor Speed	1800	1800
Maximum Motor Horsepower	25	7.5

D. Motors: Motors shall be explosion proof. Provide with motor winding temperature sensors and 120Vac space heaters. Motors shall be suitable for an outdoor installation in Addison, Texas.

E. Manufacturer's Service Engineer: Provide the services of an experienced service engineer on the jobsite to verify proper installation, assist in start-up and testing, and instruct Owner's operating personnel.

F. Pumps used in design:

Jet A:	AvGas:
Blackmer X4B-N	Blackmer XL4B"

4. SECTION 13071: Paragraph 2.02.B, Change "120 gpm" to "200 gpm".

5. SECTION 13201: Paragraph 2.02.J.2, Revise first sentence to read: "Provide suction nozzle with a floating suction assembly (4-inch for Jet A, 4-inch for Avgas with 4" by 3" reducer at tank nozzle)."

6. SECTION 16512:

A. Paragraph 1.01.B.1, insert the following line item: "b. Metal Halide (MH)."

B. Paragraph 1.01.B.2, delete line item in its entirety.

C. Paragraph 1.02.A .4, delete the following line items in their entireties:
" e. 935 – Fluorescent-Lamp Ballasts.
g. 1570 – Fluorescent Lighting Fixtures."

D. Paragraph 2.01.A.2, delete paragraph in its entirety.

E. Paragraph 2.02.B, delete paragraph in its entirety.

F. Paragraph 2.02.D, delete line item 2 in its entirety and replace with the following:

"2. Clear coated metal halide lamps in wattages indicated."

7. SECTION 16621 – DIESEL GENERATOR SETS: Delete this section in its entirety.

8. SECTION 16901:

A. Paragraph 1.01.A, insert the following line item: "12. Electronic Preset."

B. Paragraph 2.01.G, insert the following line item: "2. Or approved equal."

C. Paragraph 2.05.B, delete line item 1 in its entirety.

D. Paragraph 2.05.C, delete line item 1 in its entirety.

E. Paragraph 2.05.D, delete line item 1 in its entirety.

F. After Paragraph 2.13, insert the following paragraph in its entirety:
"2.14 ELECTRONIC PRESET
A. Provide explosion-proof, electronic preset rated for Class 1, Division 1 atmosphere. Electronic preset shall operate at 120Vac input.
B. Provide electronic preset with two, optically-isolated solid-state digital meter signal pulse inputs; one analog two-wire 4-20mA input.
C. Provide electronic preset with four AC digital outputs; two DC digital outputs.
D. Unit shall be Smith Meter microLoad or approved equal."

G. Paragraph 3.10, delete this paragraph in its entirety and replace with the following:

"3.10 ELECTRONIC PRESET

A. Electronic preset shall receive flow meter pulse input from associated tank flow meter.

B. Operator shall input meter stop volume preset. Electronic preset shall be configured to operate two-stage control valve for loading."

9. SECTION 16902:

A. Paragraph 2.01.A.5, delete paragraph in its entirety.

B. Paragraph 2.01.A.6, revise line item to read "PLC and peripherals shall be located in the PLC cabinet in MCC enclosure."

C. Paragraph 2.01.E.1, delete the word "PLCs" and replace with "PLC"

D. After paragraph 2.04, insert the following in its entirety:

"2.05 SPARE PARTS:

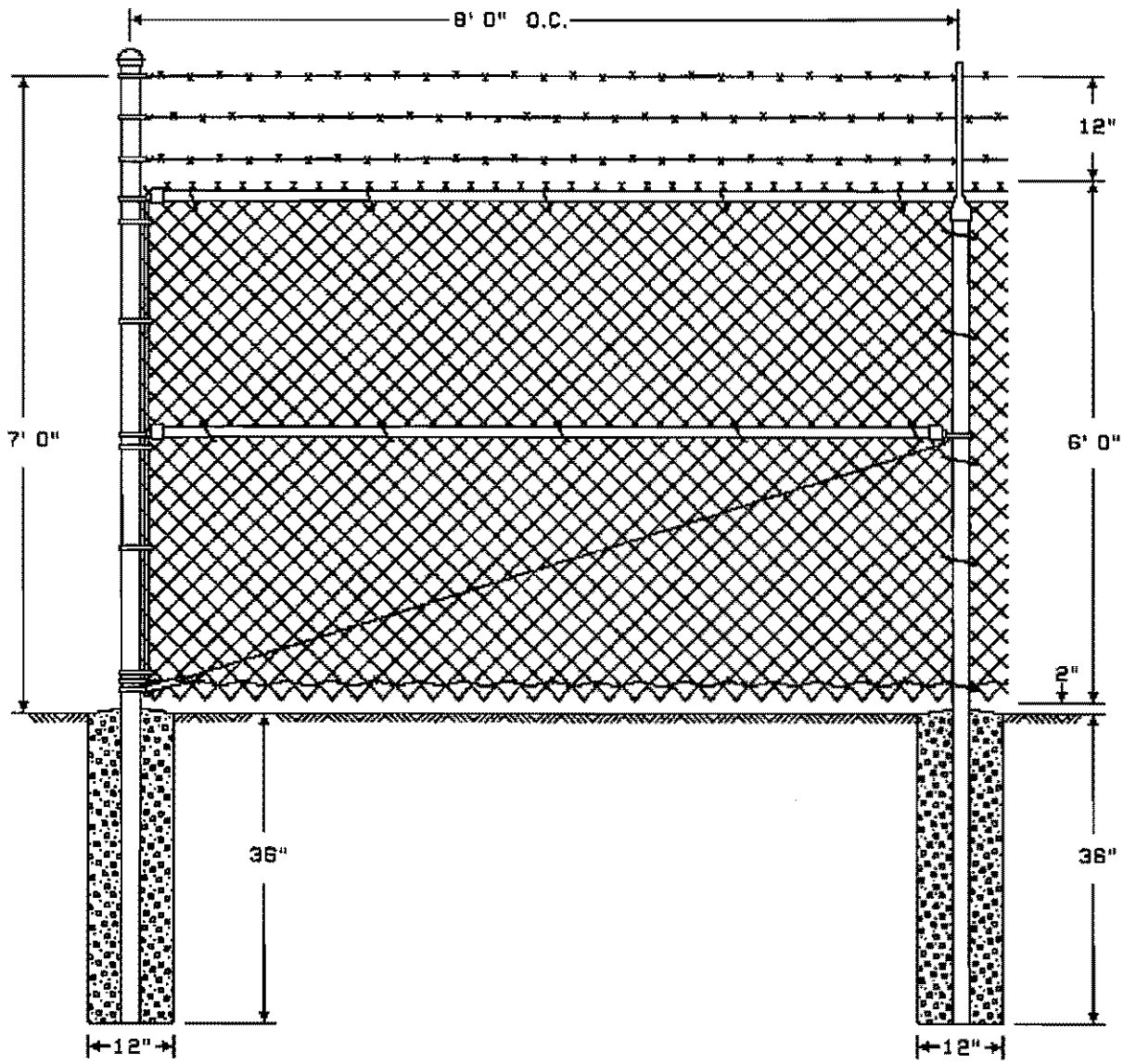
A. Provide one spare processor of equal type and equal programming to one described in this section.

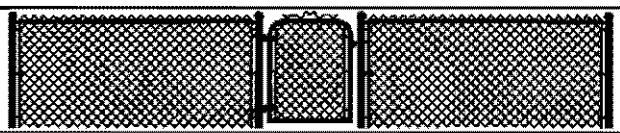
B. Provide one spare power supply equal to one described in this section.

C. Provide one spare I/O card of each type used in PLC.

D. Provide storage cabinet or enclosure for spare parts. Parts shall be stored in PLC cabinet in MCC enclosure."

END OF DOCUMENT

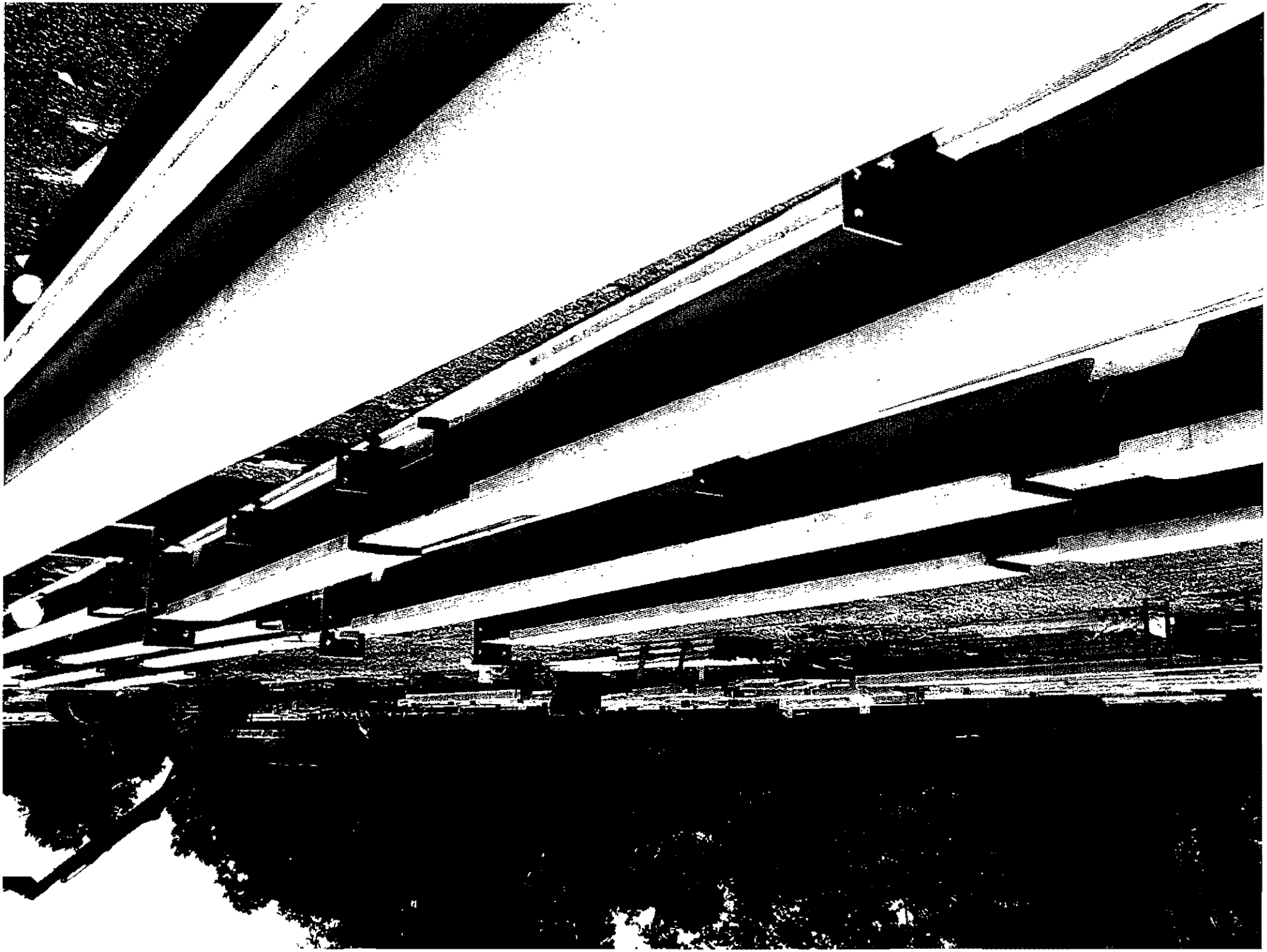




THE ANCHOR GROUP, INC.
9765 Harry Hines Blvd.
DALLAS, TEXAS 75220
(214) 350-1900

Fence 6' b/w
post 8' on center

DRAWN BY: TM 12/16/04	SCALE: NONE	PAGE:
REVISED: TM 02/17/05	FILE: Fence 6'	1 of 1



Meeting with Thielsch 2-11-05

Tom Lout, R. Normandeax Mark R. Joe Louis E

Signed contract on Monday. Will be sent to us Monday. by Fed Ex

Project Cost Reduction Item

ok 1. Precast did not pan out, 5,000 ~~steel~~ tank will produce a cost savings of $8,000

ok 2. Modify cat walk — $15,600 Includes a ladder up

ok 3. } Install one meter on discharge of
4. } pump and install 2 remote displays — $50,400. Meter is mechanical

ok 5. Eliminate conc encasement & conduit — $9,000

6. Do not delete the intercom box

7. Eliminate Double redundancy in the control center. Sam & Norm will check with their electrical people & verify. — $18,000 Will resolve by wed 2/16/05

8. This item is N.A. Project was bid this way No deduction.

9. Use coated pipe — No deduction.

$103,200 10. Substitute concrete steps for steel — $1,600

11. Could be a reduction with a change in lighting

Canopy – Fabritec Quote too high –
Did not include Fabutech's Quote in the bid. Included everything but fire protection. Could not come up with a less costly canopy design.
Thielsch is proposing to fire proof columns but not fire proof the overhead structure
@ 388,000 cost w/o fire proofing
80,000 – 120,000 is fire proofing cost
Discuss with Fire Dept. ...
Rafter is a 14WF beam Columns are also WF. T will give us better documentation to go to the Fire Dept.

* Get a sketch to Rick on the gas main
T will propose

Washington Group International
Integrated Engineering, Construction, and Management Solutions

Draft for Discussion

Bulk Fuel Storage and Dispensing System For Addison Airport
Value Engineering Considerations and Recommendations

For Consideration By Addison Airport and FBOs

Project Cost Reduction or Value Engineering Items:

1. Install a 5000 gal oil/water sep and use a pre-cast concrete unit (-$10,000)
2. Modify the cat walk to rest on the fuel tanks, with access by FBO (-$15,000)
3. Use electronic meters vs mechanical flow meters on the system (-$14,000)
4. Delete the meters on the off-load side and use one meter for both operation and just have a remote display on the transport off-load side ($7000 per tank, total -$98,000)
5. Eliminate concrete encasement of conduit (duct bank) under slab for (-$15,000)
6. Delete the intercom box at gate and just use PIN pad (truck use call box or cell phone) (-$3000)
7. Eliminate double redundant control units in system control panel (-$18,000)
8. Use horizontal versus vertical filter separators ($1000 each, -$14,000)
9. Use Schedule 40 Stainless Steel Piping (-$3,000)
10. Coordinate with General Contractor, equipment supplier (fuel system) and end users for additional savings ideas

    - These items would not significantly impact the operation or priorities for the system
    - Estimate cost reduction if all items: $190,000
    - Thielsch Engineering must verify all costs and estimates.

Recommendations:

- Review options and prepare a contract modification reflecting desired options

Other Considerations:

- Separate stem wall from slab for ease of construction and use water-stop expansion material at stem wall/slab joint.

- Go +/- 30' span on canopy, i.e. South to North the steel frame "bents" would be: 27'-6", 30'-0", 30'-0", 30'-0", 30'-0", 30'-0", 30'-0", 17'-6" with edge of concrete to column centerline 4'-4" on south side and 1'-5" on north side.

30' span on Canopy will not work

Washington Group International
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Draft for Discussion

Bulk Fuel Storage and Dispensing System For Addison Airport
Value Engineering Considerations and Recommendations

For Consideration By Addison Airport and FBOs

Project Cost Reduction or Value Engineering Items:

1. Install a 5000 gal oil/water sep and use a pre-cast concrete unit (-$10,000)
2. Modify the cat walk to rest on the fuel tanks, with access by FBO (-$15,000)
3. Delete the MoGas/Diesel tank and pump (-$75,000)
4. Use electronic meters vs mechanical flow meters on the system (-$14,000)
5. Delete the meters on the off-load side and use one meter for both operation and just have a remote display on the transport off-load side ($7000 per tank, total -$98,000)
6. Eliminate concrete encasement of conduit (duct bank) under slab for (-$15,000)
7. Delete the intercom box at gate and just use PIN pad (truck use call box or cell phone) (-$3000)
8. Eliminate double redundant control units in system control panel (-$18,000)
9. Use horizontal versus vertical filter separators ($1000 each, -$14,000)
10. Remove the over the tank cat walk, leaving only the on the tank walkway (-$30,000)
11. Use Schedule 40 Stainless Steel Piping (-$3,000)
12. Coordinate with equipment supplier (fuel system) and end users for additional savings ideas

Not on 1-27-05 List

- These items would not significantly impact the operation or priorities for the system
- Estimate cost reduction if all items: $295,000
- Thielsch Engineering must verify all costs and estimates.

Recommendations:

- Review options and prepare a contract modification reflecting desired options

2/11/05 VALVE ENGR MTG

NAME	FIRM	PHONE #
SAM LUNDGREN	WGI	303-843-3596
Tom Lent	Thielsch	401-467-6454
Rick Normandeau	Thielsch	512 912 9941
Luis Elguezabal	Addison Airport	972-392-4850
Jim Pierce	Town of Addison	972-450-2879
MARK ACEVEDO	TOWN OF ADDISON	972-450-2848

Jim Pierce

From: Lundgren, Samuel [Samuel.Lundgren@wgint.com]
Sent: Friday, February 04, 2005 11:25 AM
To: Jim Pierce
Cc: Normandeau Rick (E-mail); Elguezabal, Luis
Subject: Preconstruction Meeting for Fuel System

Jim,

In reference to our planned Value Engineering and Contract Review meeting for Feb 11, at 10:00 AM, I was thinking of a follow on Preconstruction meeting for Feb 21, at 1:30 PM, since I will be visiting ADS for the AAAE meeting Sunday and Monday AM. Rick thinks he may be ready with the construction schedule, plans to occupy the site, coordination offices, communications, utilities marking, traffic management, etc.; however, Luis is tied up with the AAAE meetings and will not be available that afternoon. Do you have a good date for the Preconstruction meeting? I am scheduled on leave from Feb 25 to Mar 6, so if we can work around those dates I would be most appreciative.

Respectfully,

Samuel Lundgren, P.E.
Program Manager
Washington Group International, Inc.
7800 E. Union Avenue, Suite 100
Denver, CO 80237
Phone (303) 843-3596, Fax (303) 843-3133, Cell (720) 530-7315

Organization or Company	Name & Title/Function	Phone	Email: Office, Home
ADS Bulk Fuel System Design Personnel Contact List			
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Burns & McDonnell	Mel Sehrt Project Manager	W: 816-822-3058 Cell: 816-679-6270	msehrt@burnsmcd.com
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Town of Addison	Gordon Robbins Deputy Fire Chef	W: 972-450-7220 Cell:	grobbins@ci.addison.tx.us
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Mercury	Bob Wernersbach Manager	W: 972-735-7905 Cell:	bwernersbach@MercuryAir.com
Cherry Air	Kenny Donaldson Manager	W: 972-248-1707 Cell:	kenny@cherryair.com

Addison Express	Kevin Lacey Manager	W: 972-713-7707 Cell:	av8nkev@airmail.net
Stern First Air	Julie Kurt Schmidt	W: 972-980-2833 W: 607-742-9532	
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David C. Baldwin, LA	Raquel Morton	W: 972-509-1266	Raquel@davidcbaldwin.net
Thielsch Engineering	Rick Normandeau, Office Mgr	W: 512-912-9941 Cell: 512-791-9550	rnormandeau@thielsch.com
Thielsch Engineering	Project Superintendent	W:	

Record of Phone Call

Date: 2/4/05
From: Rick Normandeau
To: Jim Pierce
Subject: Advanced information for next week's Value Engineering meeting.

Discussion:

I called Jim to discuss some items that we were going to address in the Value Engineering meeting on Friday Feb. 11, 2005.

I wanted him to understand why we weren't ready for the Value Engineering meeting originally scheduled for yesterday in Addison and asked for a postponement.

I reminded Jim of how we have been working with our subs and suppliers evaluating the proposed value engineering changes to determine how much they would affect the overall project cost. In that process, we discovered certain proposals wouldn't work. We then pursued other alternatives to those proposals. That has caused us and our subs to look at things several times. Even now, there are other configurations being considered regarding the elimination of the one fuel meter. This review is dynamic and that's why we weren't going to be ready for Thursday's meeting.

Jim said he was definitely going to make sure the spec included an "or equal" to allow flexibility.

I said this evaluation is definitely the right thing to do so no one's complaining even though it is taking a lot of man-hours. Sam Lundgren has preliminarily estimated the changes to be worth $190,000. I told Jim when all associated activities are considered, the actual amount will be closer to $120,000.

I also told JIM another reason we've wanted to talk with him before the meeting is to inform him of a situation we find ourselves in regarding the canopy.

I said, first, let me say there is no problem with the base bid even though we were the low bidder by more than a half million dollars.

I mentioned that, as he knows, we've been working hard to come up with a less expensive canopy than FabriTec's. That effort has not been fruitful to date. We've tried in-house and even worked with other companies to make happen.

The problem is compounded by the fact that, in our haste to prepare the bid, we mistakenly thought the canopy quote from FabriTec was for a complete canopy. When we looked closer at doing the actual design, we realized they did not include the fireproofing which costs between $100,000 and $125,000. We now know why they left it out.

I told him we were able to come up with a design for about $50,000 less -- excluding the fireproofing. The actual number is not yet available.

I told Jim we're asking him to consider applying the estimated design change savings to the cost of the canopy and to eliminate the requirement for fireproofing. There is a very good argument for not needing it. This will dramatically diminish our expected losses on the canopy.

Jim had to go to another meeting but he said he would definitely work with us within reason.

I told him we look forward to seeing him Friday at the meeting.

cc Mark Reeves

TOWN OF ADDISON
FINANCE DEPARTMENT/PURCHASING DIVISION 5350 Belt Line Road (972) 450-7089
E-mail ssims@ci.addison.tx.us Facsimile (972) 450-7096 P.O. Box 9010 Addison, Texas 75001

January 26, 2005

Thielsch Engineering
Mr. Richard Normandeau
2111 Dickson Drive, Suite 10
Austin, TX 78704

NOTICE OF AWARD: Bid 05-02 Bulk Fuel Storage and Dispensing System

Dear Mr. Normandeau:

Receipt of this document authorizes your company to provide all labor and materials as outlined in the specifications, and under the terms and conditions of the contract documents for Bid No: 05-02 Bulk Fuel Storage and Dispensing System.

Enclosed please find four completed copies of the contract to be signed by an authorized officer or principal of your firm.

Please send the signed contracts along with the necessary insurance certificates and bonds as soon as possible, but no later than February 6, 2005. Once we receive these items a Notice to Proceed will be issued.

If you have any questions or if I can be of assistance to you, please contact me at 972-450-7089.

Sincerely,

Shanna N. Sims
Budget and Procurement Manager

Enclosures

Copy: Jim Pierce
Mark Acevedo