

Golder Associates Inc.

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www.golder.com



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063-7591

BUREAU OF AIR REGULATION

February 6, 2007

Florida Department of Environmental Regulation
Air Permitting South Program
2600 Blair Stone Road, MS #5505
Tallahassee, Florida 32399-2400

Attention: Mr. Jeff Koerner, P.E.

**Re: Permit No. 0510003-038-AC/PSD-FL-346A
U. S. Sugar Corporation – Clewiston Sugar Mill and Refinery
New White Sugar Dryer No. 2**

Dear Mr. Koerner:

United States Sugar Corporation (U.S. Sugar) was issued Air Construction Permit No. 0510003-038-AC/PSD-FL-346A, on December 22, 2006. Specific Condition 13 in Section 3 of the permit requires that an additional report be submitted to the Florida Department of Environmental Protection (FDEP). The condition requires that the permittee provide individual cost estimates based on bids and a detailed description of the necessary work for the following:

1. Redesigning and modifying the cyclone system (possibly adding a cyclone) to accept all of the dryer exhaust;
2. Moving the I.D. fan from after the scrubber to between the cyclones and the scrubber; and
3. Removing the mitered elbow and installing a properly sized vertical duct at the scrubber outlet.

Each of the items is addressed below.

Cyclone System

A quotation from CMN Steel Fabricators, Inc. (CMN) to modify the cyclones to accommodate all of the dryer exhaust is provided in Attachment A. Also included are detailed drawings of the modifications. The current problem is that velocity through the cyclone is too high, causing a higher than normal pressure drop across the cyclones. This modification would increase the size of the outlet duct within the cyclone from 2.5 feet to 3.0 feet, thus reducing the gas velocity and, theoretically, the pressure drop. The cost is approximately \$50,000.

It is noted that both the cyclone manufacturer and dryer manufacturer recommended changing the cyclone outlet tube only to correct the high pressure drop problem. Therefore, U.S. Sugar did not obtain a quote to modify the inlet and outlet manifolds.

It is also noted that Mr. Taub's report, submitted to the FDEP in September, stated that bypassing the cyclones with a portion of the flow should have no effect on the overall particulate removal or meeting the PM emission standards, since the wet scrubber has a higher removal efficiency than the cyclones. Therefore, even if these modifications were made at a cost of more than \$50,000, there is no indication that this would solve the current problems with the PM emissions.

As noted in U.S. Sugar's September submittal, the plan view of the scrubbing system submitted with the 2004 application shows that the cyclones are positioned in a corner of the building. There is no physical room to add another cyclone, unless the actual refinery building was modified (i.e., extended outward). This would be at considerable expense, since the cyclones sit about six stories above ground level.

Moving ID Fan and Mitered Elbow

A quotation from CMN to move the I.D. fan from after the scrubber to between the cyclones and scrubber, as well as removing the mitered elbow and installing a vertical duct at the scrubber outlet, is provided in Attachment B. There are two options:

Option 1 involves leaving the location of the ID fan and scrubber intact intact, and rerouting the ductwork only.

Option 2 involves moving the location of the ID fan and scrubber to implement the change. For this option, the scrubber outlet duct and stack would be routed vertically through the roof instead of horizontally out the side of the building.

Also in Attachment B are engineering drawings showing the equipment that would be demolished and the new ducting/equipment to be constructed for these options.

The price quote from CMN is for the first option. The total cost of the project, enumerated in the spreadsheet titled "Option 1", is estimated at \$487,500. The estimated cost of the second option, which involves additional work to relocate the scrubber and fan, is \$1,007,500 (see "Option 2" spreadsheet).

Obviously, these are very high costs for these modifications, and are due to the limited space and configuration of the existing equipment.

The final permit also contains two other conditions, which required U.S. Sugar to take action within 30 days of issuance of the final permit. Condition 11 requires that a drain be installed in the ductwork of the silencer vanes to remove collected water. The drain has been successfully installed by U.S. Sugar.

Condition 12 of the final permit requires U.S. Sugar to operate the wet scrubber system such that sufficient fresh water makeup is added to maintain the sugar content of the recirculating water at 15 brix or less. U.S. Sugar has taken measures to implement this requirement. U.S. Sugar also monitors and records the brix content of the recirculating water in the scrubber system.

The remaining item to be completed under the construction permit is the conducting of stack tests for PM/PM₁₀. These tests have now been scheduled for February 20-21, 2007.

If you have any questions regarding this information, please call me at (352)336-5600 or email me at dbuff@golder.com.

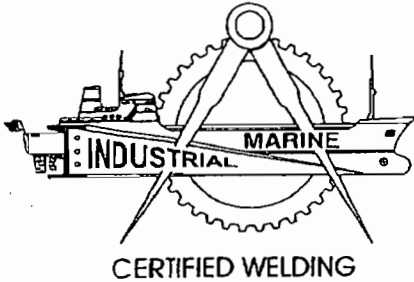
Sincerely,



cc: Mr. Don Griffin, USSC
Mr. Peter Briggs, USSC
Mr. Ron Blackburn, DEP South District Office

Y:\Projects\2006\0637591 USSC White Sugar Dryer RAI\4.1\L020607\L020607-591

ATTACHMENT A



CMN STEEL FABRICATORS, INC.

7993 NW 60th Street • Miami, FL 33166

August 16th, 2006

To: Mr. Bob Lofgren – Valley Engineering
Subject: Quotation for Materials, Fabrication, Installation Cyclones Modification
Quotation Number: Q06-080

Dear Mr. Lofgren,

CMN Steel Fabricators, Inc. is pleased to quote the fabrication, delivery and modification and installation work at the 4 Cyclones in the US Sugar plant in Clewiston, Florida. Listed below is our best pricing to supply all the materials fabricated and rolled to meet the specifications of your supplied prints and work scope. Also included in the pricing is the modification to existing ducts and installation of internal duct piping within each of the 4 Cyclones. CMN shall provide all manpower, supervision and tooling needed along with safety equipment, per diems, hotels and travel to complete this job.

Our best price for providing all needed materials and fabrication to specifications plus delivery to your plant is: **\$9,295.00 plus tax**

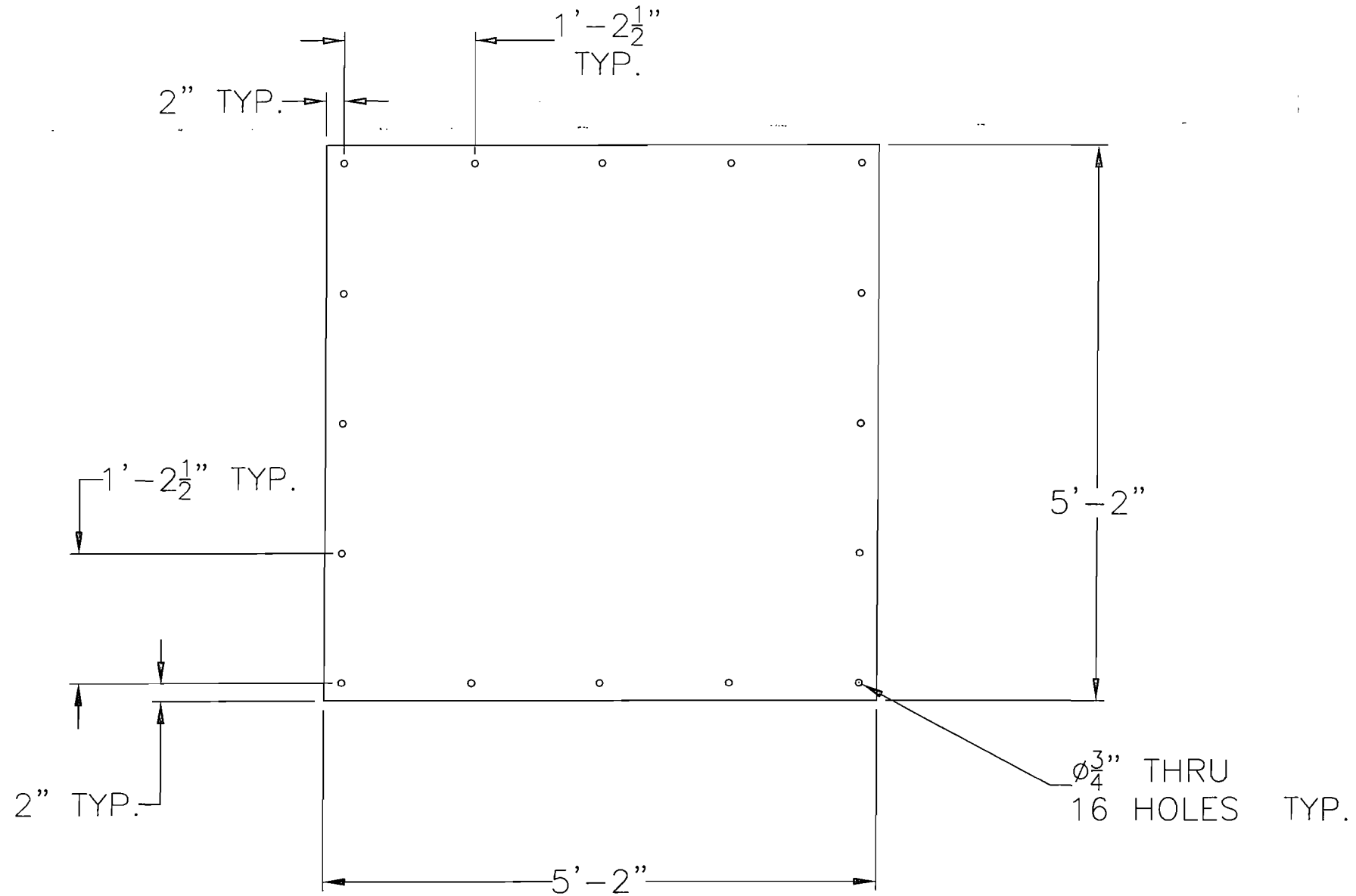
Our best price to supply manpower, supervision, tooling, cutting and welding equipment as well as hotel costs, travel and per diems to complete the modifications and installation work on all 4 Cyclones is: **\$41,585.00**

Grand Total: \$50,880.00

Please contact me with any questions you may have at 305-970-0482.


Sincerely,
CMN Steel Fabricators, Inc.

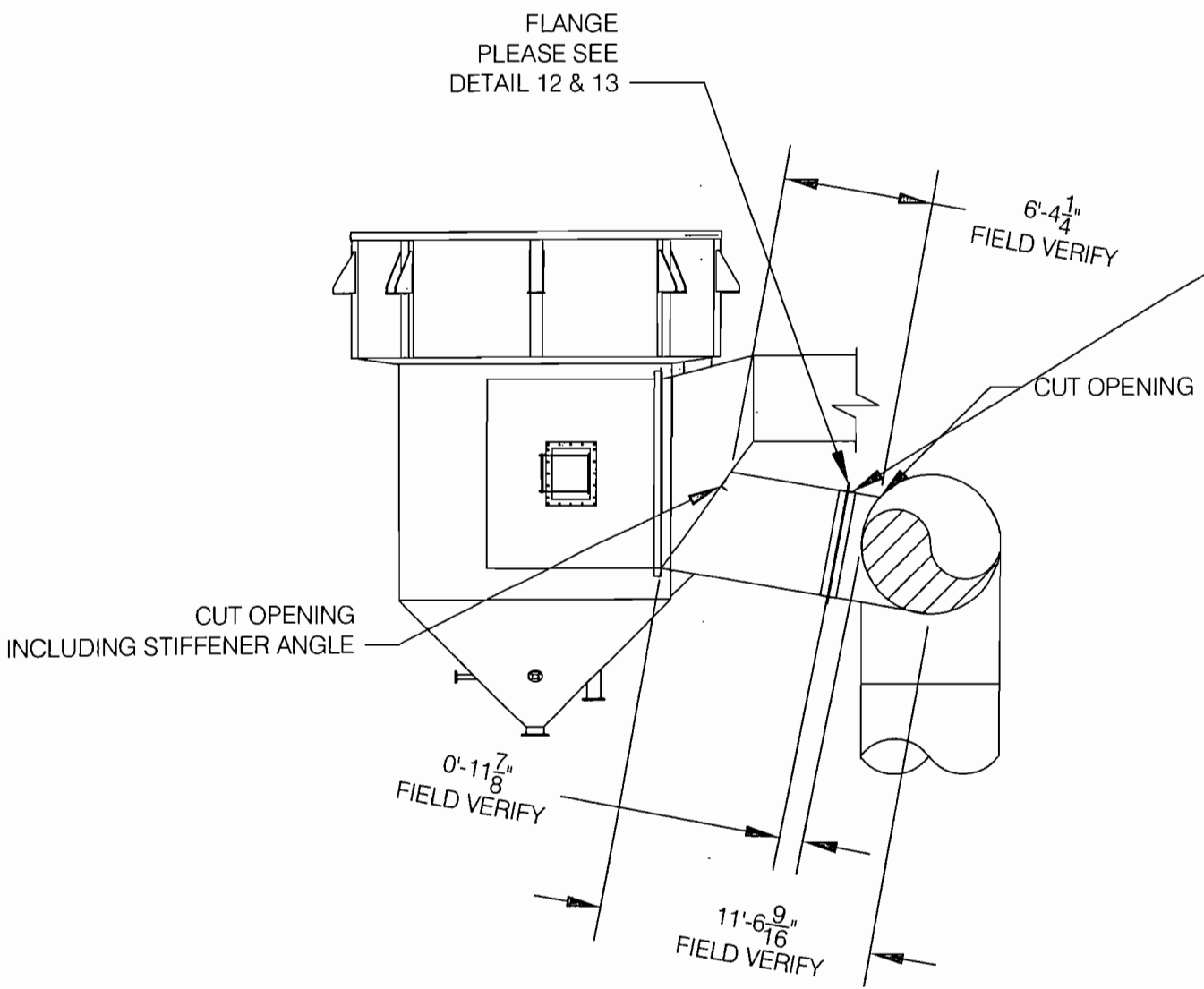
Brice Miller
General Manager



DET-13
 NAME: BLANK OFF PLATE
 MATERIAL: 12 GA. 316L SS
 QTY: 1 REQU'D

△ XX — REVISION NUMBER

					Title		BY PASS DUCTING CYCLONES TO SCRUBBER BLANK OFF PLATE	
					Customer		US SUGAR	
					Date		10/07/2005	
					Chkd By		RJL	
					Dwg By		TP	
					 VALLEY ENGINEERING, Inc. <small>623 East Main Avenue, Suite 208 Fort Totten, North Dakota 58078 (701) 277-8300, Fax: (701) 277-8306 http://www.valley-engineering.com</small>		DETAILS 13	
No.	Date	By	Revision	Ad. No.				



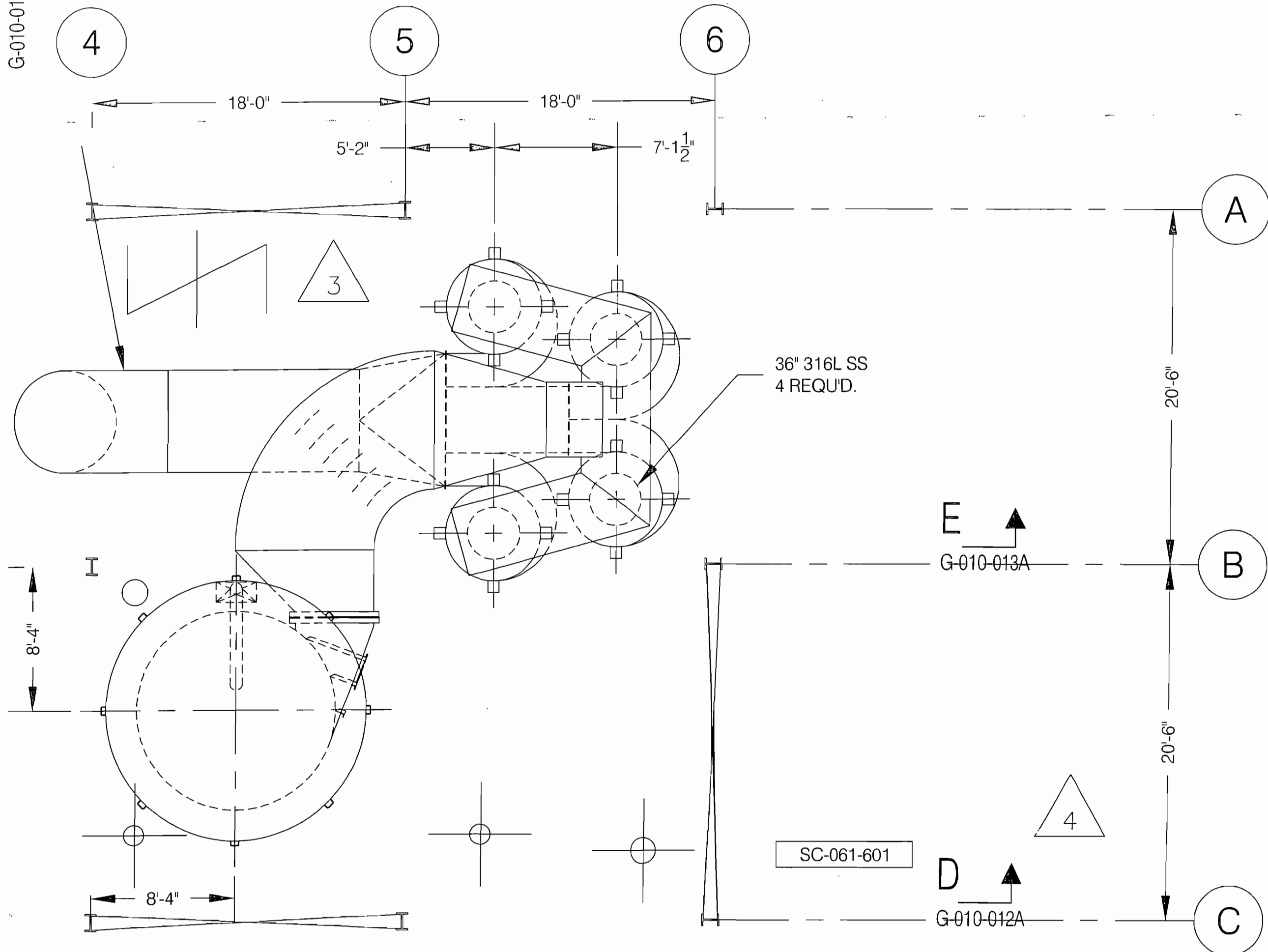
CONSTRUCTION NOTES:

1. CONTRACTOR TO REMOVE EXISTING RESTRICTION PLATE ON BY-PASS DUCT.
2. CONTRACTOR SHALL SUPPLY AND INSTALL BLANK OFF PLATE BETWEEN THE FLANGE ON BY-PASS DUCT.
3. REFER TO DET-13.DWG DRAWING FOR DETAILED ARRANGEMENT OF BLANK OFF PLATE BOLT HOLES PATTERN.

DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:

- A) ALL DUCTWORK UPSTREAM OF SCRUBBER TO BE 12 GAUGE 316L STAINLESS STEEL.
- B) ALL DUCTWORK DOWNSTREAM OF SCRUBBER TO BE 12 GAUGE CARBON STEEL.
- C) ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-36 CARBON STEEL.
- D) CENTERLINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
- E) ALL DUCTWORK TO BE WELDED FABRICATION.
- F) ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
- G) FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
- H) ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
- I) CAULK ALL FLANGES WITH FDA APPROVED SILICONE CAULK.
- J) DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
- K) ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
- L) PAINT ALL CARBON STEEL MATERIAL AS PER OWNER'S SPECIFICATIONS.
- M) ALL DUCTING CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
- N) DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS, GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.

G-010-011A



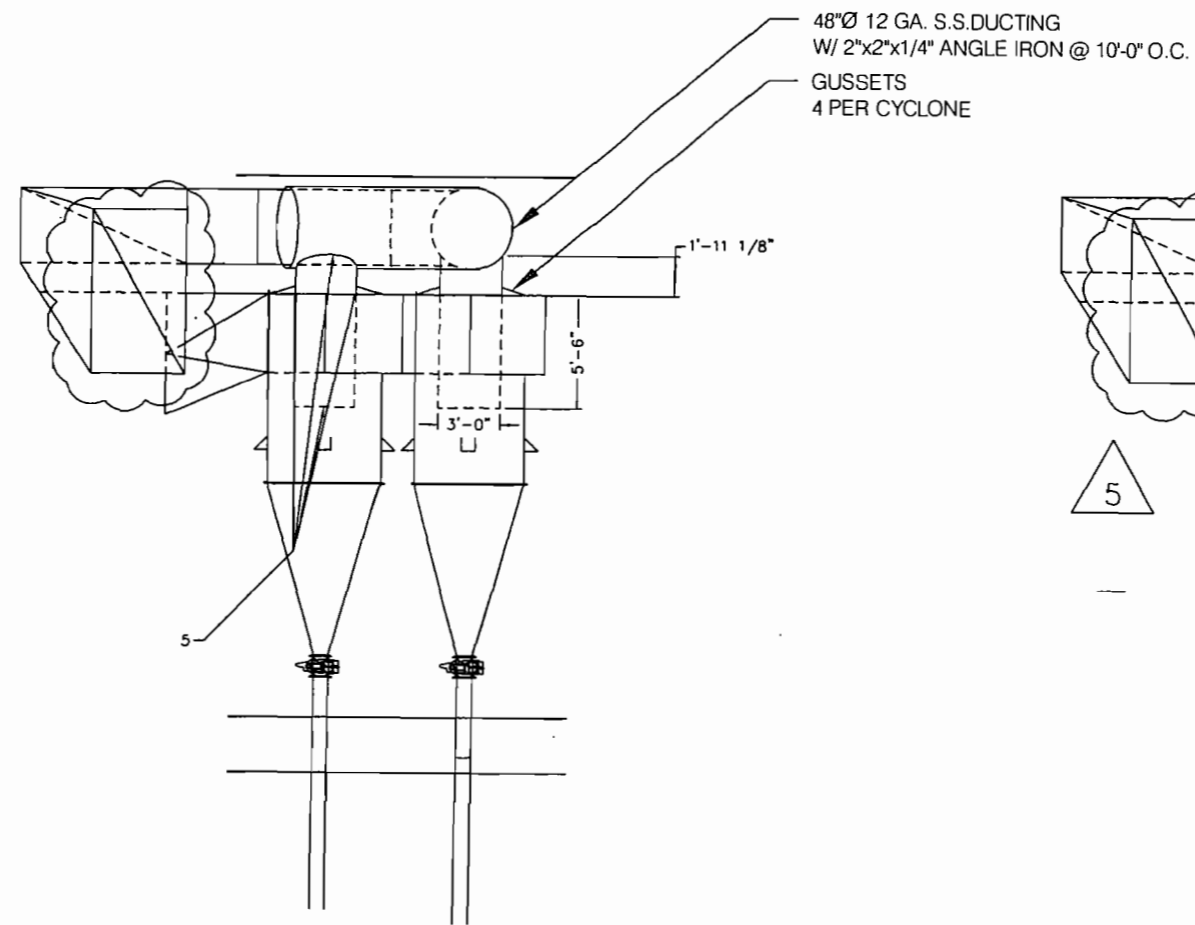
MODIFICATION OF CYCLONE SYSTEM

CONSTRUCTION NOTES:

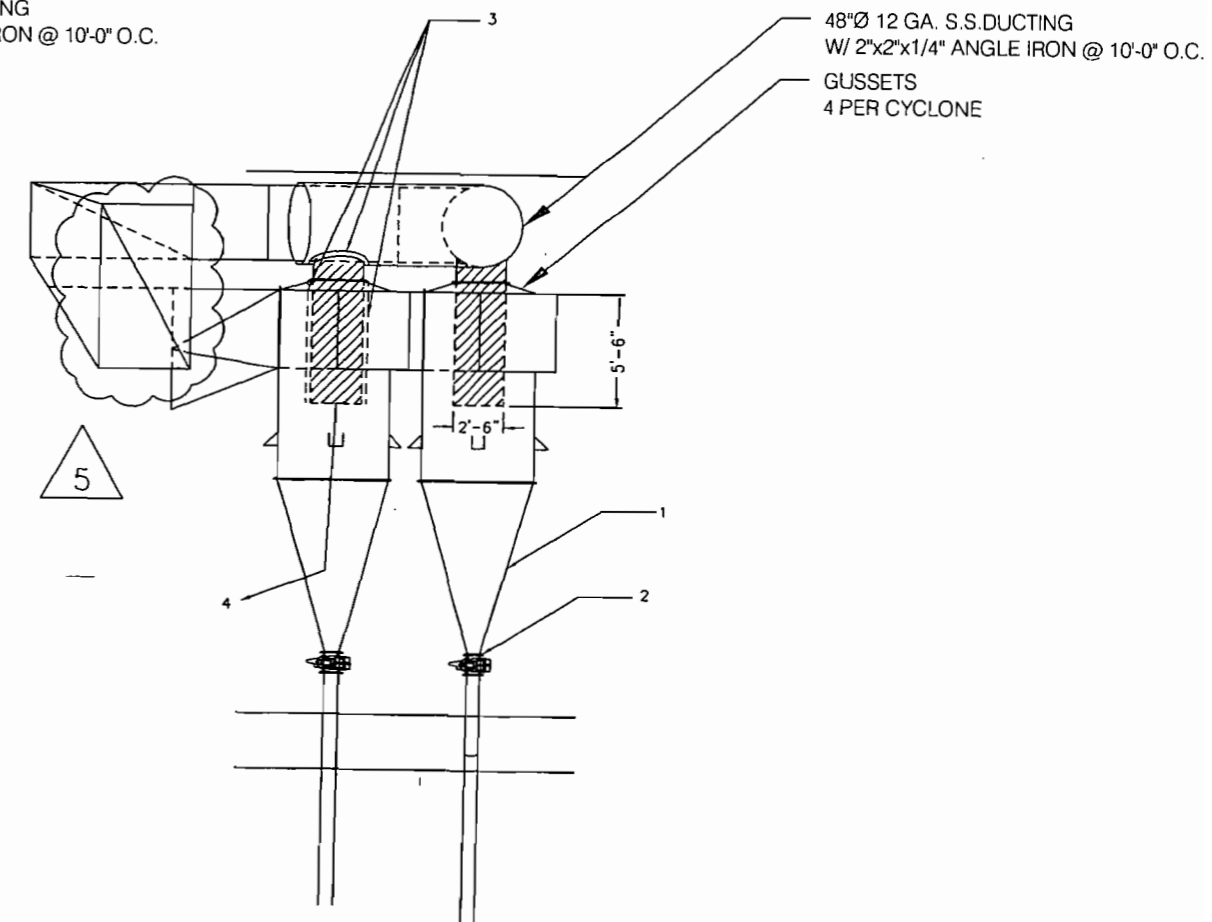
1. CONTRACTOR TO REMOVE 4 CONES LOCATED AT THE BOTTOM OF THE CYCLONES.
2. CONTRACTOR TO TEMPORARILY BLANK OFF 4 AIRLOCK VALVES AFTER THE REMOVAL OF 4 CONES.
3. CONTRACTOR TO CUT 36" PERIMETER OF THE 30" PIPE AND GUSSET. CONTRACTOR TO REMOVE THE INNER TUBINGS THRU THE BOTTOM OF THE CYCLONES.
4. THE REMOVAL OF EXISTING TUBING AND PIPING TO BE DONE 2 DIAGONAL CYCLONES AT A TIME.
5. CONTRACTOR SHALL SUPPLY AND INSTALL NEW 36" 12 GA 316L SS DUCTING. THE NEW DUCTWORK SHALL BE INSTALLED FROM THE BOTTOM UP. WELD IN PLACE AT 48" 12 GA DUCT, WELD GUSSETS BACK TO NEW 36" DUCT FOR SUPPORT.
7. REFER TO G-01-04A DRAWINGS FOR DETAILED ARRANGEMENT OF CYCLONES.
8. CONTRACTOR SHALL REMOVE ALL DEBRIS ASSOCIATED WITH THE WORK.

DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:

- A) ALL DUCTWORK ON CYCLONE TO BE 12 GAUGE 316L STAINLESS STEEL.
- B) ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-36 CARBON STEEL.
- C) CENTERLINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
- D) ALL DUCTWORK TO BE WELDED FABRICATION.
- E) ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
- F) FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
- G) ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
- H) CAULK ALL FLANGES WITH FDA APPROVED SILICONE CAULK.
- I) DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
- J) ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
- K) PAINT ALL CARBON STEEL MATERIAL AS PER OWNER'S SPECIFICATIONS.
- L) ALL DUCTING CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
- M) DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS, GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.

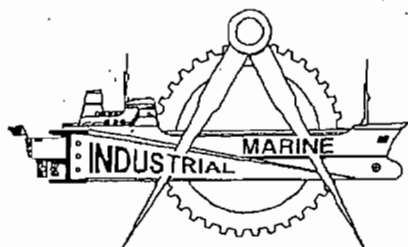


AFTER



BEFORE

ATTACHMENT B



CMN STEEL FABRICATORS, INC.

7993 NW 60th Street • Miami, FL 33166

January 12, 2007

To: Mr. Bob Lofgren – US Sugar
Subject: Budgetary Quotation for Duct Modification
On ID Fan, Scrubber and Cyclone Areas
Quotation Number: Q07-034

Dear Mr. Lofgren,

As per our conversation today, CMN Steel Fabricators, Inc. was able to utilize your provided prints and information from my visit to the site and submit to you a preliminary budget quotation for the modification work needed to the Ductwork at the Scrubber, ID Fan and Cyclones for the Sugar Processing area of the plant. This work shall involve demolition, fabrication, deliveries and installation. CMN shall provide all labor to fabricate new ductwork as well as the demolition of selected ducts and the installation of the new. Also provided is our Supervision, tooling, mobile equipment such as Forklift, crane and operator, (with at least 200' of boom extension) along with any cutting, welding and safety equipment needed to perform this work. Also included within this quotation will be our CMN Shop Drawings and Engineering to complete this job. We realize these drawings are conceptual and vague. Future US Sugar finalized drawings will enable CMN to be more precise to the fabrication and job scope along with our rendering of our own shop drawings. Listed below is an all inclusive budget price to complete all the work involved in this project.

Our pricing to complete this above listed work is: **\$375,000.00 plus applicable taxes**
Our terms are net 30, and payments received beyond terms shall have a 1.5% per month interest until paid in full. If any additional paper work is required besides the invoice from our company, please let us know and once again we appreciate your business.

In order for work to commence we need this quotation signed, and returned to us by fax at 305 592-9789. Also please submit the purchase order number when issued. You may contact me with any additional questions you may have at 305-970-0482. CMN and I look forward to assisting US Sugar in the future.

Print name _____

Signature _____

Sincerely,
CMN Steel Fabricators, Inc.

Brice Miller
Brice Miller

General Manager

WHITE SUGAR DRYER #1 – ADDITIONAL REQUIREMENTS – PM/PM10 REVISION

SCOPE OF WORK:

OPTION 1 – Moving the ID fan from after the scrubber to between the cyclones and the scrubber by rerouting ductwork only (including removing the mitered elbow and installing a vertical duct and the scrubber outlet):

1. Demolish all existing ducting from cyclones to scrubber.
2. Demolish all existing ducting from scrubber to ID fan.
3. Demolish all existing ducting from ID fan to atmosphere.
4. Close opening in wall where ducting from ID fan was demolished.
5. Fabricate and install new ducting from cyclones to ID fan.
6. Fabricate and install new ducting from ID fan to scrubber.
7. Fabricate and install new ducting from scrubber to atmosphere (through roof).
8. Cut opening for ducting through roof and make repair to roof after installation (flashing, etc.).
9. Cut openings as required for new ductwork through floors.
10. Fabricate and install all necessary duct supports.

OPTION 2 – Moving the ID fan from after the scrubber to between the cyclones and the scrubber by rerouting ductwork as described in items 1 through 10 above and physically moving the ID fan and scrubber

1/12/2007

USSC Scrubber Ductwork Modification
OPTION 1

Level I PROJECT #E04026

Level II	Level III	Level IV	Level V			Cost	6% Tax	Freight	Total Cost
CATEG	AREA	DISCIPLINE	ITEM	EQUIPMENT/MATERIALS		\$	\$	\$	Containment Wall
MNE		A	010				0		0
MNE		A	011				0		0
MNE		A	012				0		0
				Sub-Total		0	0	0	0
CONSTRUCTION									
Civil/Structural/Architectural									
BLD		B	100	Duct modifications to the ID Fan, Scrubber, and Cyclone Areas	CMN Quotation	375,000			375,000
BLD		B	101						0
BLD		B	102						0
				Sub-Total		375,000	0	0	375,000
Mechanical									
BLD		C	200						0
BLD		C	201						0
BLD		C	202						0
				Sub-Total		0	0	0	0
Electrical									
BLD		D	300						0
BLD		D	301						0
BLD		D	302						0
				Sub-Total		0	0	0	0
				Sub-Total Before Other Items		375,000	0	0	375,000
OTHER ITEMS									
UNA		F	400	Contingency (15%)	Sub-Total Before Other Items*0.15				56,250
UNA		F	401	Engineering and Construction Management (15%)	Sub-Total Before Other Items*0.15				56,250
				Sub-Total Other Items		0	0	0	112,500
				TOTAL		375,000	0	0	487,500

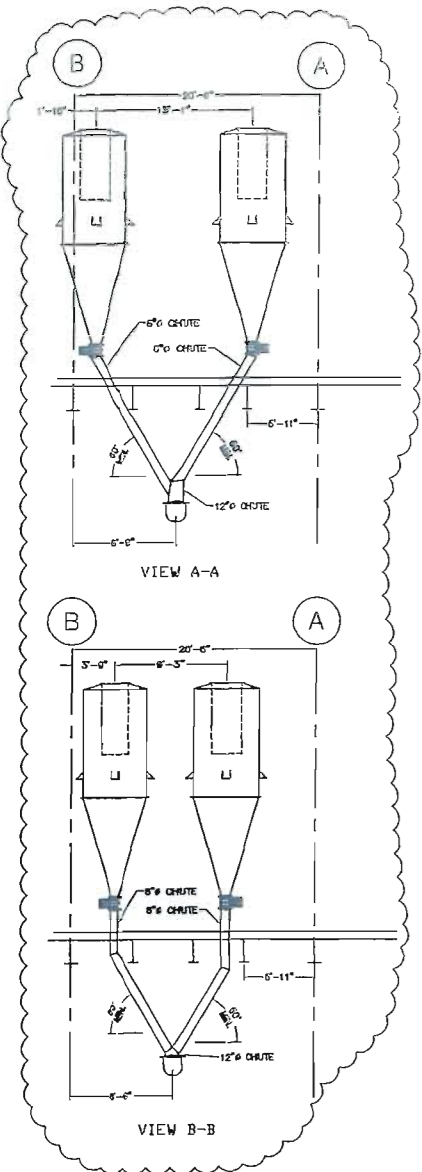
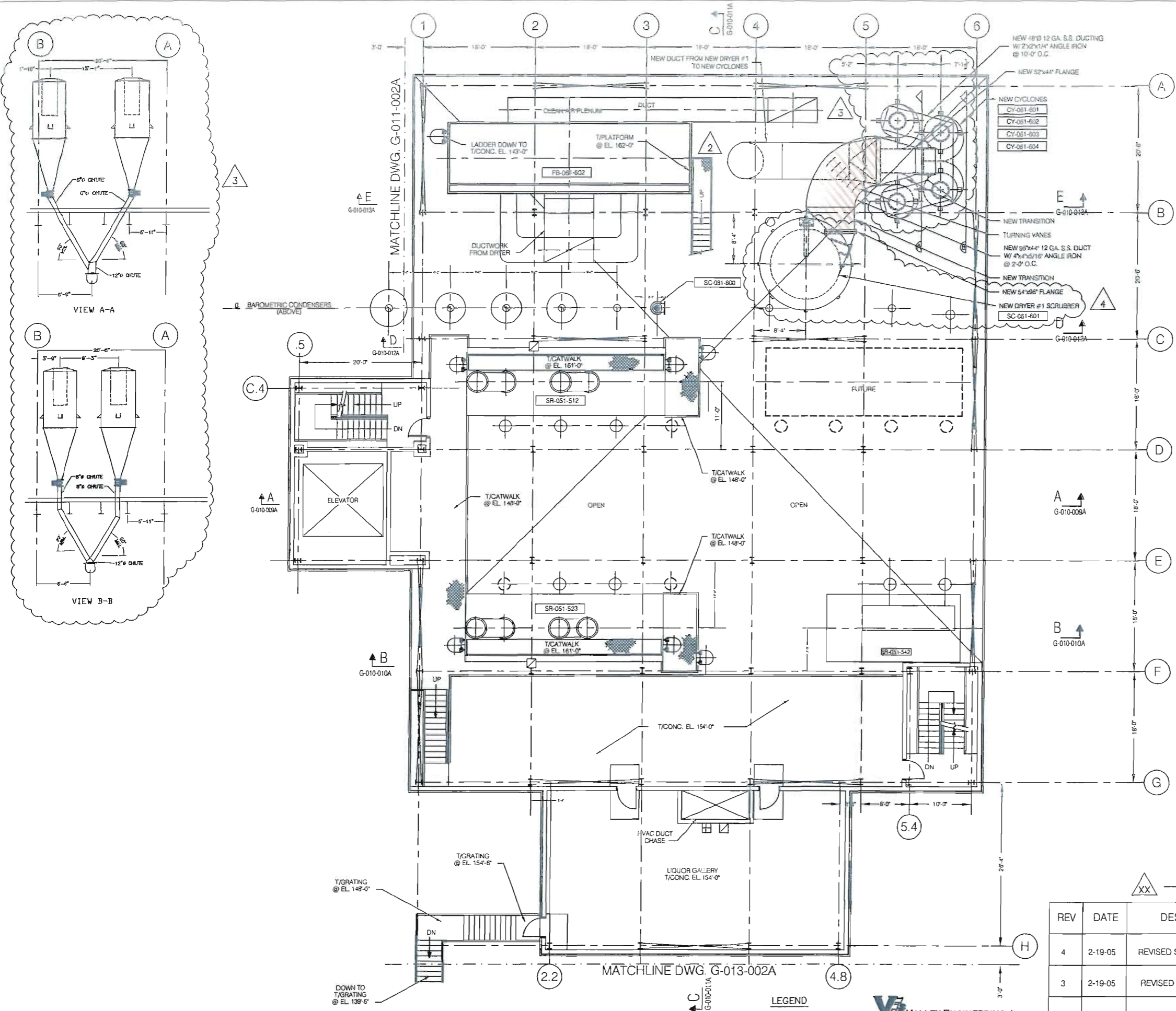
1/12/2007

USSC Scrubber Ductwork Modification
OPTION 2

Level I PROJECT #E04026

Level II	Level III	Level IV	Level V			Cost	6% Tax	Freight	Total Cost
CATEG	AREA	DISCIPLINE	ITEM	EQUIPMENT/MATERIALS		\$	\$	\$	Containment Wall
MNE		A	010				0		0
MNE		A	011				0		0
MNE		A	012				0		0
				Sub-Total		0	0	0	0
CONSTRUCTION									
Civil/Structural/Architectural									
BLD		B	100	Duct modifications to the ID Fan, Scrubber, and Cyclone Areas	CMN Quotation	375,000			375,000
BLD		B	101	Remove and relocate ID fan including steel and concrete	Estimate	150,000			150,000
BLD		B	102	Remove and relocate scrubber and scrubber pumps including steel and concrete	Estimate	200,000			200,000
				Sub-Total		725,000	0	0	725,000
Mechanical									
BLD		C	200	New scrubber recirculation piping		25,000			25,000
BLD		C	201						0
BLD		C	202						0
				Sub-Total		25,000	0	0	25,000
Electrical									
BLD		D	300	Conduit and wire for ID Fan		15,000			15,000
BLD		D	301	Conduit and wire for Scrubber Pumps		10,000			10,000
BLD		D	302						0
				Sub-Total		25,000	0	0	25,000
				Sub-Total Before Other Items		775,000	0	0	775,000
OTHER ITEMS									
UNA		F	400	Contingency (15%)	Sub-Total Before Other Items*0.15				116,250
UNA		F	401	Engineering and Construction Management (15%)	Sub-Total Before Other Items*0.15				116,250
				Sub-Total Other Items		0	0	0	232,500
				TOTAL		775,000	0	0	1,007,500

DRAWINGS-OPTION 1



EQUIPMENT INDEX

CY-051-601	NEW DRYER #1 CYCLONE
CY-051-602	NEW DRYER #1 CYCLONE
CY-051-603	NEW DRYER #1 CYCLONE
CY-051-604	NEW DRYER #1 CYCLONE
FB-051-602	DRYER #2 DUST COLLECTOR
SC-051-601	NEW DRYER #1 SCRUBBER
SC-051-600	WET SCRUBBER
SR-051-512	STRIKE RECEIVER #1
SR-051-523	STRIKE RECEIVER #3
SR-051-542	STRIKE RECEIVER #4

CONSTRUCTION NOTES:

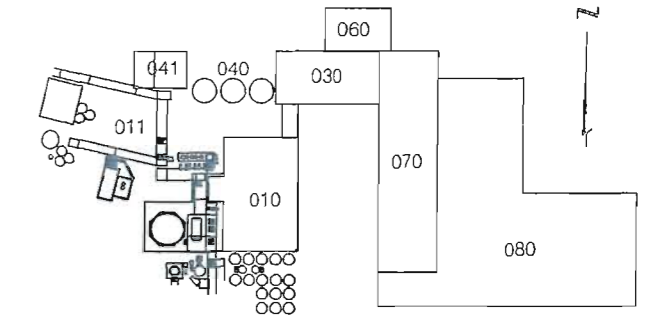
- CONTRACTOR SHALL INSTALL ALL DUCTWORK TO DRYER AND FROM DRYER TO CYCLONES. THIS DUCTWORK WILL BE SUPPLIED BY THE DRYER VENDOR.
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK DOWNSTREAM OF THE CYCLONES.
- REFER TO CONVEYOR VENDOR DRAWINGS FOR DETAILED ARRANGEMENT OF CONVEYORS, ELEVATORS AND CHUTEWORK.
- REFER TO SPECIFICATION SECTION 01001 - DESCRIPTION OF WORK FOR MECHANICAL CONTRACTOR'S SCOPE OF WORK.

DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:

- ALL DUCTWORK UPSTREAM OF SCRUBBER TO BE 12 GAUGE 409 STAINLESS STEEL.
- ALL DUCTWORK DOWNSTREAM OF SCRUBBER TO BE 12 GAUGE CARBON STEEL.
- ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-36 CARBON STEEL.
- CENTERLINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
- ALL DUCTWORK TO BE WELDED FABRICATION.
- ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
- FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
- ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
- CAULK ALL FLANGES WITH FDA APPROVED SILICONE CAULK.
- DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
- ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
- PAINT ALL CARBON STEEL MATERIAL AS PER OWNER'S SPECIFICATIONS.
- ALL DUCTING CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
- DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS. GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.

UTILITY LEGEND

- AIR
- WATER
- WATER & AIR
- SAFETY SHOWER & EYEWASH
- PORTABLE EYEWASH
- MIX MIXING TEE AT THIS STATION



KEY PLAN

XX — REVISION NUMBER

REV	DATE	DESCRIPTION	BY
4	2-19-05	REVISED SCRUBBER LAYOUT	JLW
3	2-19-05	REVISED CYCLONE LAYOUT	JLW
2	1-11-05	CHANGE TO DRYER DUCTING	JLW
1	7-12-04	ADDENDUM #2	JLW

UNITED STATES SUGAR CORPORATION
 REFINERY - CLEWISTON
 SUGAR HOUSE ENGINEER DEPARTMENT

REFINERY EXPANSION
 PROCESS SUPPORT STRUCTURE
 G.A. PLAN @ ELEVATION 148'-0"

DRAWN BY: JLW	SCALE: 1/8" = 1'-0"	DRAWING NO. G-010-004A
COMP NAME: G-010-004A	DATE: 6/25/04	

PLAN - STRIKE RECEIVER MEZZ.
SCALE: 1/8" = 1'-0"

LEGEND

- NEW
- EXIST

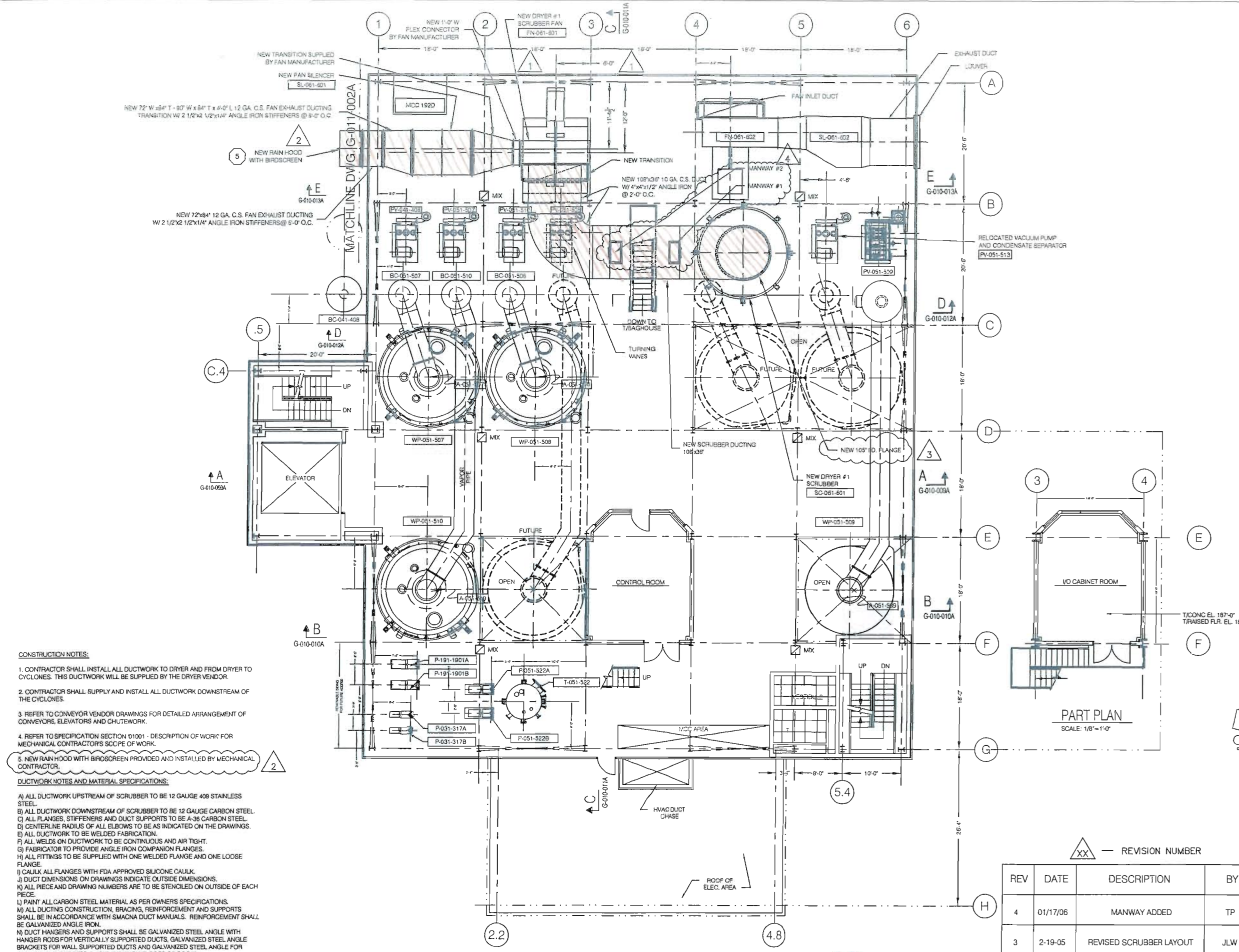
VALLEY ENGINEERING, Inc.
 600 West Holly Avenue, Suite 200
 Fort Payne, Florida 32054 68779
 (701) 877-8100, Fax: (701) 877-8000
 http://www.valley-engineering.com

EQUIPMENT INDEX

A-051-507	PAN #1 AGITATOR
A-051-503	PAN #2 AGITATOR
A-051-510	PAN #5 AGITATOR
BC-041-408	EVAPORATOR BAROMETRIC CONDENSER
BC-051-507	PAN #1 BAROMETRIC CONDENSER
BC-051-503	PAN #2 BAROMETRIC CONDENSER
BC-051-510	PAN #5 BAROMETRIC CONDENSER
FN-061-601	NEW DRYER #1 SCRUBBER FAN
FN-061-602	DRYER #2 DUST COLLECTOR FAN
F-051-522A/B	FINAL SPRAY WASH PUMPS
P-031-317A/B	POLISHING FILTER SLUICE PUMPS
P-191-1901A/B	HOT PROCESS WATER PUMPS #1 & #2
PV-041-406	EVAPORATOR VACUUM PUMP
PV-051-507	PAN #1 VACUUM PUMP
PV-051-508	PAN #2 VACUUM PUMP
PV-051-509	PAN #7 VACUUM PUMP
PV-051-510	PAN #5 VACUUM PUMP
PV-051-513	RELOCATED PAN SPARE VACUUM PUMP
SC-061-601	NEW DRYER #1 SCRUBBER
SL-061-601	NEW DRYER #1 DUST COLLECTOR ID FAN SILENCER
SL-061-602	DRYER #2 DUST COLLECTOR SILENCER
T-051-522	FINAL SPRAY WASH TANK
WP-051-507	PAN #1
WP-051-508	PAN #2
WP-051-509	PAN #7
WP-051-510	PAN #5

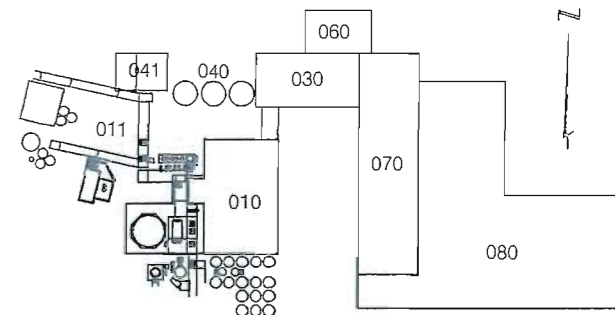
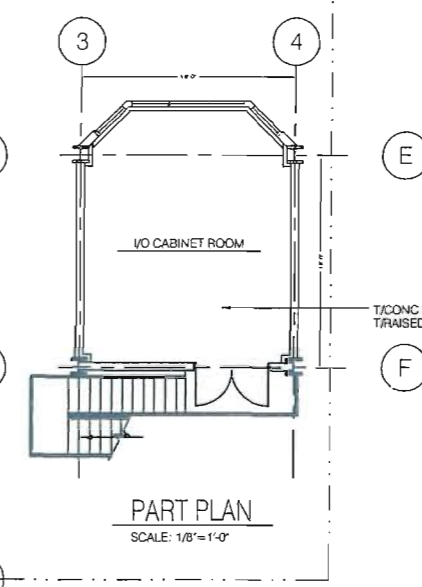
UTILITY LEGEND

	AIR
	WATER
	WATER & AIR
	SAFETY SHOWER & EYEWASH
	PORTABLE EYEWASH
	MIX MIXING TEE AT THIS STATION



- CONSTRUCTION NOTES:**
- CONTRACTOR SHALL INSTALL ALL DUCTWORK TO DRYER AND FROM DRYER TO CYCLONES. THIS DUCTWORK WILL BE SUPPLIED BY THE DRYER VENDOR.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK DOWNSTREAM OF THE CYCLONES.
 - REFER TO CONVEYOR VENDOR DRAWINGS FOR DETAILED ARRANGEMENT OF CONVEYORS, ELEVATORS AND CHUTEWORK.
 - REFER TO SPECIFICATION SECTION 01001 - DESCRIPTION OF WORK FOR MECHANICAL CONTRACTOR'S SCOPE OF WORK.
 - NEW RAIN HOOD WITH BIROSCREEN PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR.

- DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:**
- ALL DUCTWORK UPSTREAM OF SCRUBBER TO BE 12 GAUGE 409 STAINLESS STEEL.
 - ALL DUCTWORK DOWNSTREAM OF SCRUBBER TO BE 12 GAUGE CARBON STEEL.
 - ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-36 CARBON STEEL.
 - CENTERLINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
 - ALL DUCTWORK TO BE WELDED FABRICATION.
 - ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
 - FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
 - ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
 - CAULK ALL FLANGES WITH FDA APPROVED SILICONE CAULK.
 - DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
 - ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
 - PAINT ALL CARBON STEEL MATERIAL AS PER OWNER'S SPECIFICATIONS.
 - ALL DUCTING CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
 - DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS. GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.



△△ — REVISION NUMBER

REV	DATE	DESCRIPTION	BY
4	01/17/06	MANWAY ADDED	TP
3	2-19-05	REVISED SCRUBBER LAYOUT	JLW
2	12-23-04	FAN DISCHARGE DUCT CHANGE	JLW
1	7-12-04	ADDENDUM #2	JLW

UNITED STATES SUGAR CORPORATION
REFINERY - CLEWISTON
SUGAR HOUSE ENGINEER DEPARTMENT

REFINERY EXPANSION
PROCESS SUPPORT STRUCTURE
G.A. PLAN @ ELEVATION 172'-0"

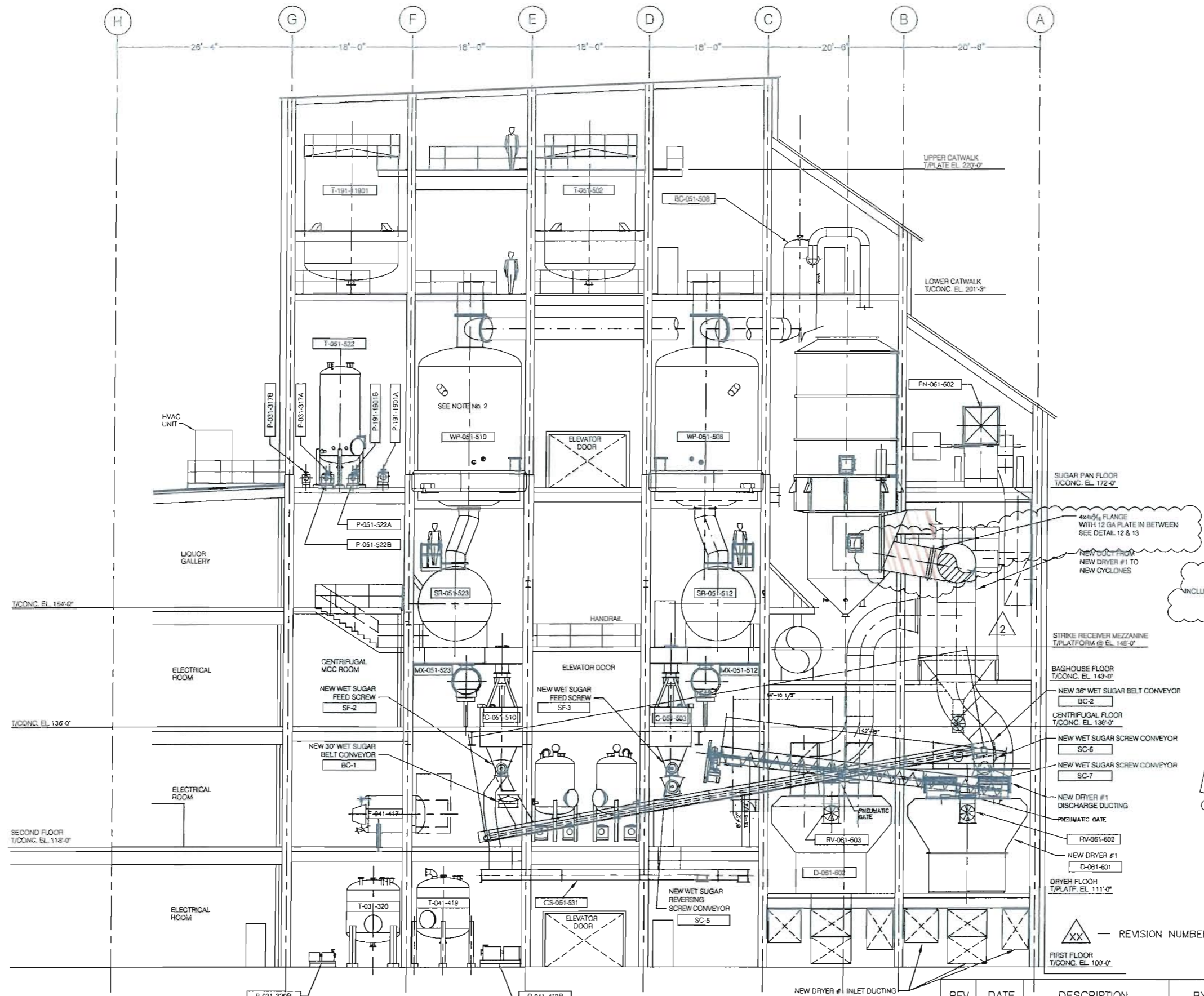
DRAWN BY: JLW	SCALE: 1/8"=1'-0"	DRAWING No.
COMP NAME: G-010-005A	DATE: 6/25/04	G-010-005A

PLAN - SUGAR PAN FLOOR
SCALE: 1/8"=1'-0"

LEGEND

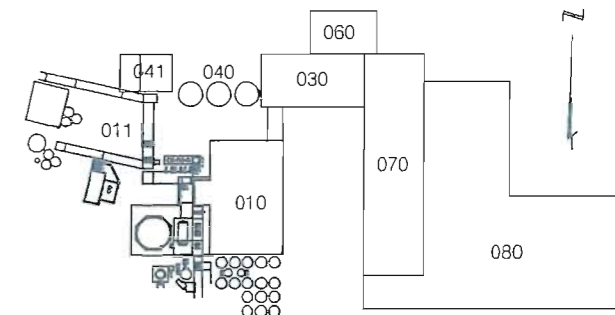
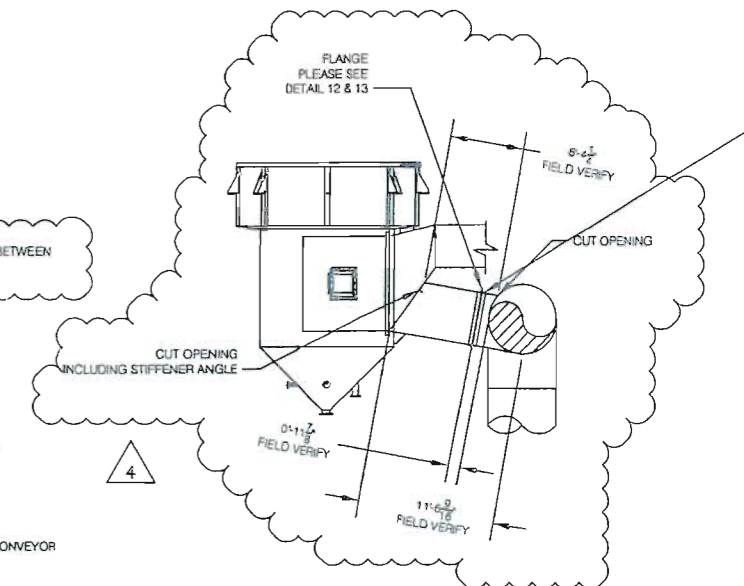
NEW _____
EXIST _____

VALLEY ENGINEERING, Inc.
685 West Main Avenue, Suite 200
Fort Worth, Texas 76102 (817) 877-8888, Fax (817) 877-8888
http://www.valley-engineering.com



- CONSTRUCTION NOTES:**
1. CONTRACTOR SHALL INSTALL ALL DUCTWORK TO DRYER AND FROM DRYER TO CYCLONES. THIS DUCTWORK WILL BE SUPPLIED BY THE DRYER VENDOR.
 2. CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK DOWNSTREAM OF THE CYCLONES.
 3. REFER TO CONVEYOR VENDOR DRAWINGS FOR DETAILED ARRANGEMENT OF CONVEYORS, ELEVATORS AND CHUTEWORK.
 4. REFER TO PLAN DRAWINGS FOR EQUIPMENT INDEX.
 5. REFER TO SPECIFICATION SECTION 01001 - DESCRIPTION OF WORK FOR MECHANICAL CONTRACTORS SCOPE OF WORK.

- DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:**
- A) ALL DUCTWORK UPSTREAM OF SCRUBBER TO BE 12 GAUGE 304 STAINLESS STEEL.
 - B) ALL DUCTWORK DOWNSTREAM OF SCRUBBER TO BE 12 GAUGE CARBON STEEL.
 - C) ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-36 CARBON STEEL.
 - D) CENTERLINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
 - E) ALL DUCTWORK TO BE WELDED FABRICATION.
 - F) ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
 - G) FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
 - H) ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
 - I) CALK ALL FLANGES WITH FDA APPROVED SILICONE CALK.
 - J) DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
 - K) ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
 - L) PAINT ALL CARBON STEEL MATERIAL AS PER OWNERS SPECIFICATIONS.
 - M) ALL DUCTING CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
 - N) DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS. GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.



KEY PLAN

UNITED STATES SUGAR CORPORATION
REFINERY - CLEWISTON
SUGAR HOUSE ENGINEER DEPARTMENT

REFINERY EXPANSION
PROCESS SUPPORT STRUCTURE
G.A. SECTION C-C

DRAWN BY: JLW
SCALE: 1/8" = 1'-0"
COMP NAME: G-010-011A
DATE: 6/25/04
DRAWING No. G-010-011A

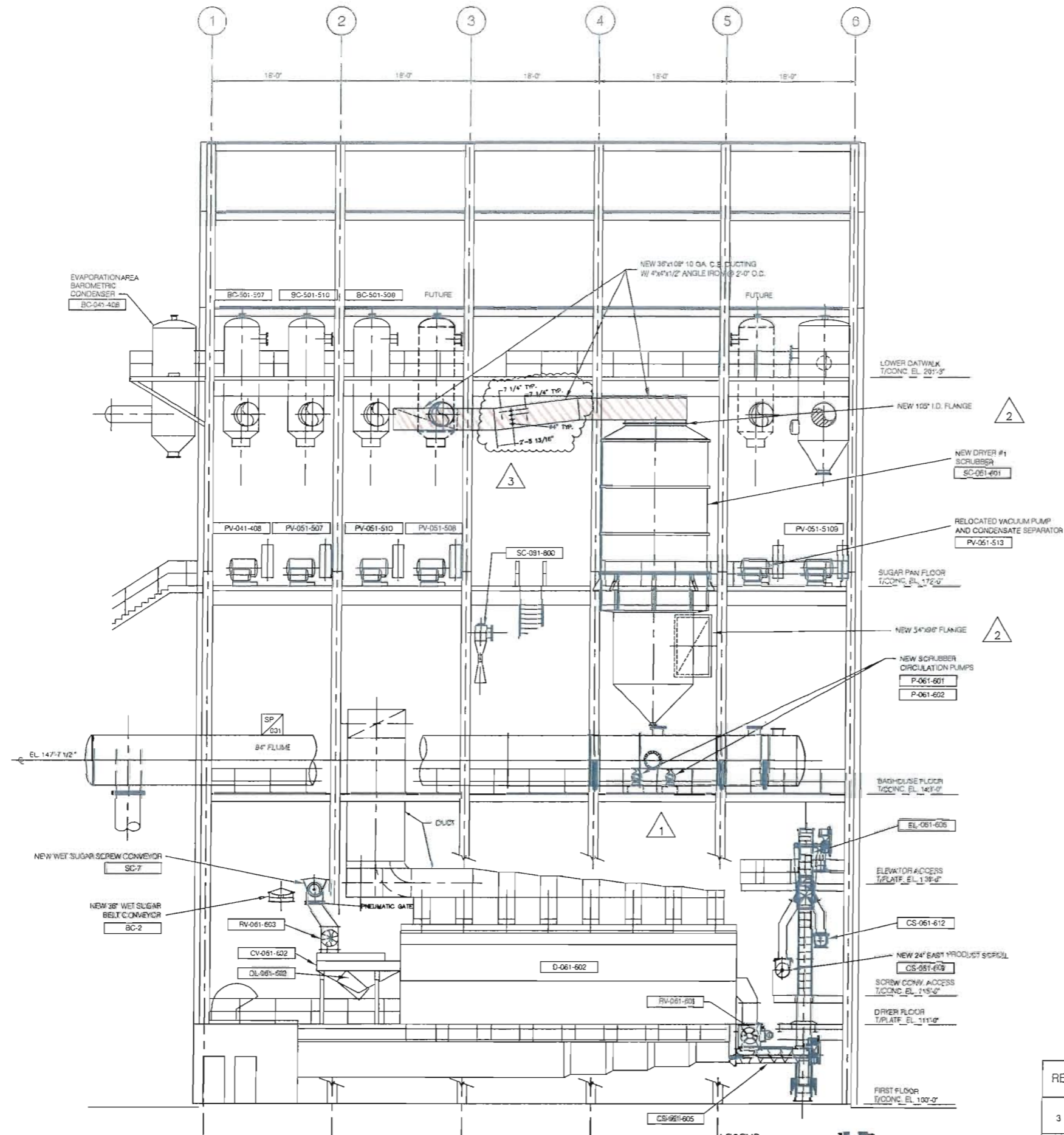
REV	DATE	DESCRIPTION	BY
3	6-7-05	REVISED BELT CONVEYOR TAG #'S	FJL
2	1-11-05	CHANGE TO DRYER DUCTING	JLW
1	7-12-04	ADDENDUM #2	JLW

REV	DATE	DESCRIPTION	BY
4	12-22-2005	BY-PASS DUCT ADDED	TP

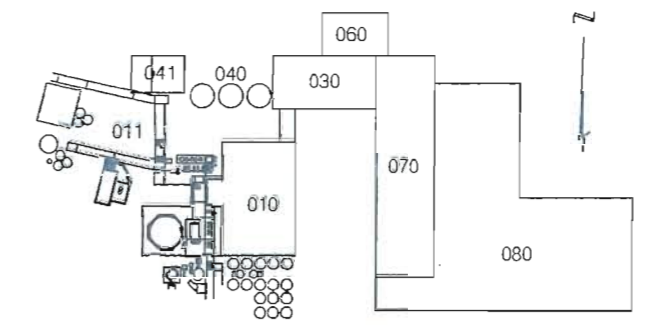
SECTION C
SCALE: 1/8" = 1'-0"

LEGEND
NEW _____
EXIST _____

VALLEY ENGINEERING, inc.
400 West Main Avenue, Suite 200
Tulsa, Oklahoma 74103
(918) 577-8800, Fax (918) 577-8808
http://www.valley-engineering.com



- CONSTRUCTION NOTES:**
1. CONTRACTOR SHALL INSTALL ALL DUCTWORK TO DRYER AND FROM DRYER TO CYCLONES. THIS DUCTWORK WILL BE SUPPLIED BY THE DRYER VENDOR.
 2. CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK DOWNSTREAM OF THE CYCLONES.
 3. REFER TO CONVEYOR VENDOR DRAWINGS FOR DETAILED ARRANGEMENT OF CONVEYORS, ELEVATORS AND CHUTEWORK.
 4. REFER TO PLAN DRAWINGS FOR EQUIPMENT INDEX.
 5. REFER TO SPECIFICATION SECTION 01001 - DESCRIPTION OF WORK FOR MECHANICAL CONTRACTORS SCOPE OF WORK.
- DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:**
- A) ALL DUCTWORK UPSTREAM OF SCRUBBER TO BE 12 GAUGE 409 STAINLESS STEEL.
 - B) ALL DUCTWORK DOWNSTREAM OF SCRUBBER TO BE 12 GAUGE CARBON STEEL.
 - C) ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-36 CARBON STEEL.
 - D) CENTERLINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
 - E) ALL DUCTWORK TO BE WELDED FABRICATION.
 - F) ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
 - G) FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
 - H) ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
 - I) CAULK ALL FLANGES WITH FDA APPROVED SILICONE CAULK.
 - J) DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
 - K) ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
 - L) PAINT ALL CARBON STEEL MATERIAL AS PER OWNER'S SPECIFICATIONS.
 - M) ALL DUCTING, CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
 - N) DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS. GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.



KEY PLAN

△△ — REVISION NUMBER

SECTION D
SCALE: 1/8"=1'-0"

LEGEND
NEW
EXIST

VALLEY ENGINEERING, INC.
500 West 10th Avenue, Suite 1100
Bozeman, Montana 59717
(406) 592-8200, Fax (406) 592-8000
http://www.valley-engineering.com

REV	DATE	DESCRIPTION	BY
3	1220-2005	4" SAMPLE PORTS ADDED	TP
2	2-19-05	REVISED SCRUBBER LAYOUT	JLW
1	2-7-05	REVISED PUMP SIZE	JLW

UNITED STATES SUGAR CORPORATION
REFINERY - CLEWISTON
SUGAR HOUSE ENGINEER DEPARTMENT

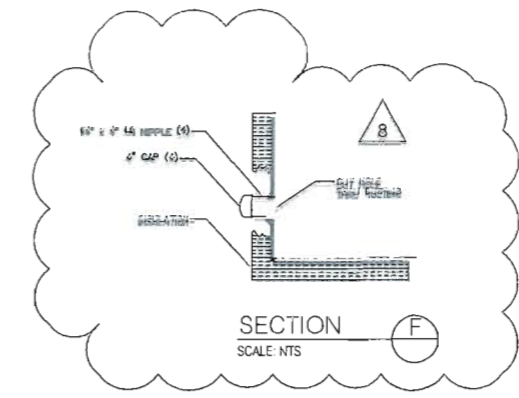
REFINERY EXPANSION
PROCESS SUPPORT STRUCTURE
G.A. SECTION D-D

DRAWN BY: JLW
SCALE: 1/8" = 1'-0"
DRAWING No. G-010-012A

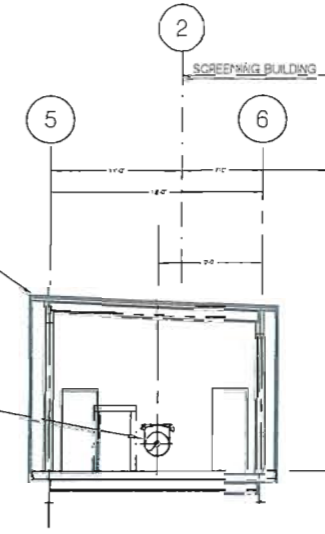
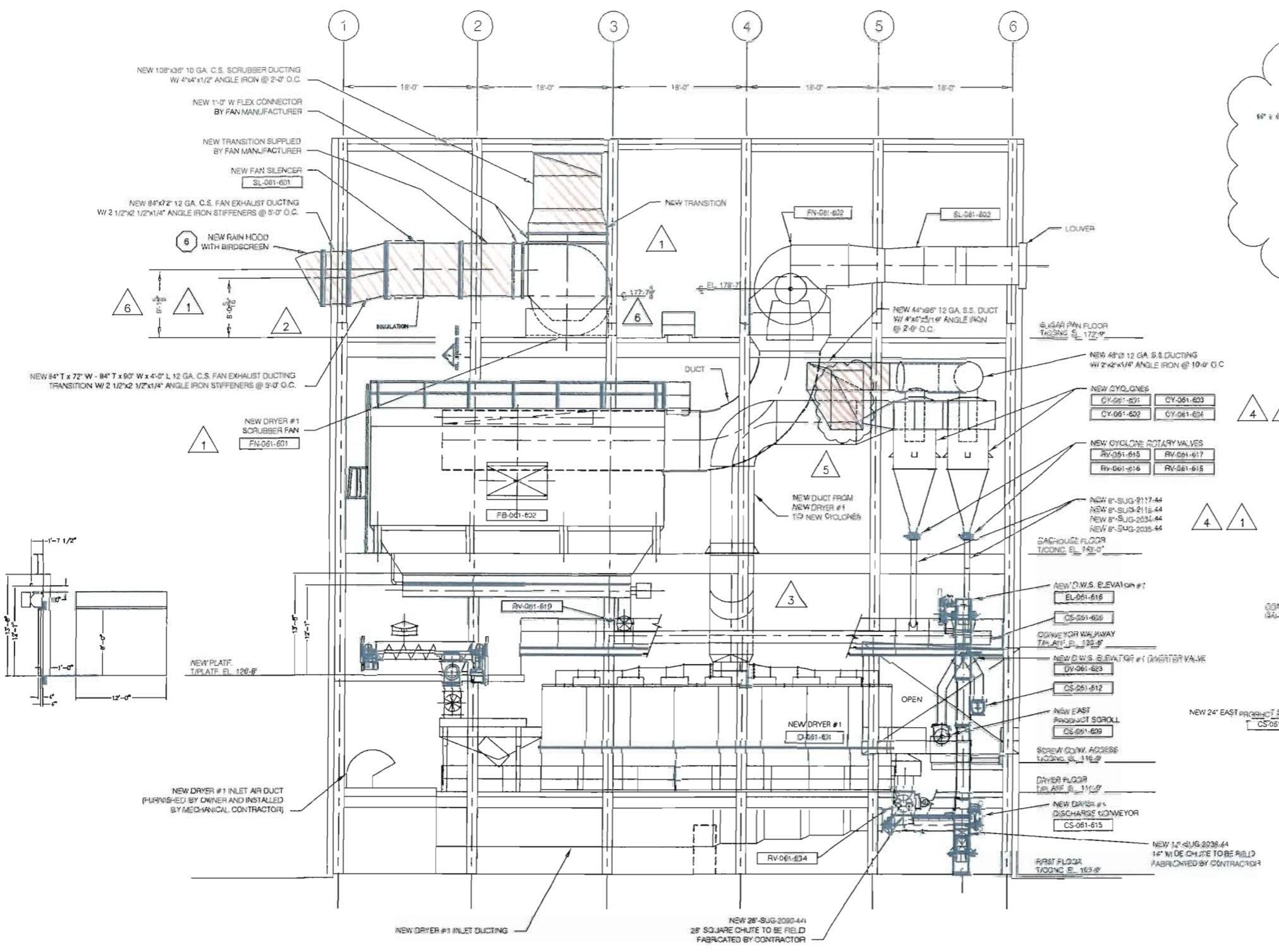
COMP NAME: G-010-012A
DATE: 6/25/04

- CONSTRUCTION NOTES:**
- CONTRACTOR SHALL INSTALL ALL DUCTWORK TO DRYER AND FROM DRYER TO CYCLONES. THIS DUCTWORK WILL BE SUPPLIED BY THE DRYER VENDOR.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK DOWNSTREAM OF THE CYCLONES.
 - REFER TO CONVEYOR VENDOR DRAWINGS FOR DETAILED ARRANGEMENT OF CONVEYORS, ELEVATORS AND CHUTEWORK.
 - REFER TO PLAN DRAWINGS FOR EQUIPMENT INDEX.
 - REFER TO SPECIFICATION SECTION 01001 - DESCRIPTION OF WORK FOR MECHANICAL CONTRACTOR'S SCOPE OF WORK.
 - NEW RAIN HOOD WITH BIRDSCREEN PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR.

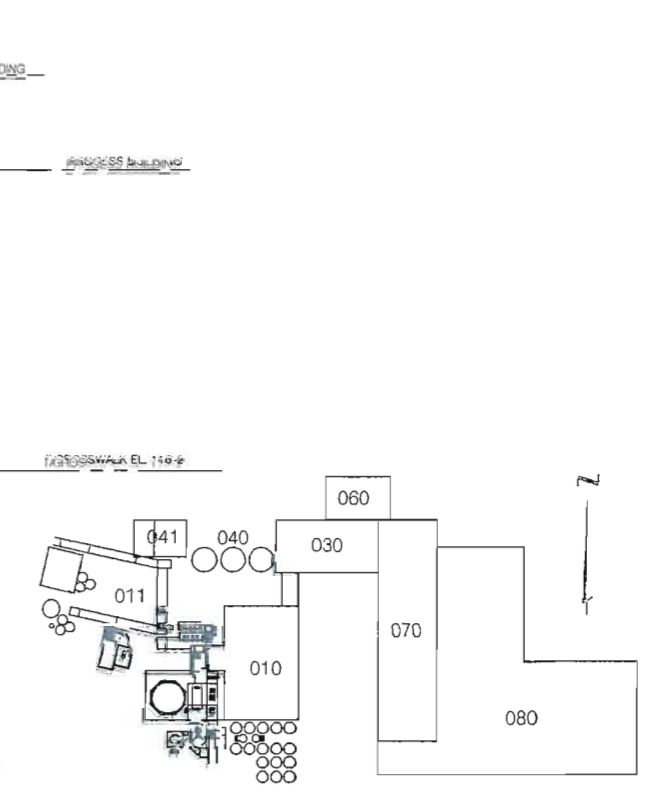
- DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:**
- ALL DUCTWORK UPSTREAM OF SCRUBBER TO BE 12 GAUGE 409 STAINLESS STEEL.
 - ALL DUCTWORK DOWNSTREAM OF SCRUBBER TO BE 12 GAUGE CARBON STEEL.
 - ALL FLANGES, STIFFENERS AND RIGID SUPPORTS TO BE A-36 CARBON STEEL.
 - CENTRELINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
 - ALL DUCTWORK TO BE WELDED FABRICATION.
 - ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
 - FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
 - ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
 - CALCULATE ALL FLANGES WITH FBA APPROVED SILICONE CAULK.
 - DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
 - ALL PIECE AND DRAWING NUMBERS ARE TO BE STAMPED ON OUTSIDE OF EACH PIECE.
 - PAINT ALL CARBON STEEL MATERIAL AS PER OWNER'S SPECIFICATIONS.
 - ALL DUCTING CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SUGAR DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
 - DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH LARGER RODS FOR VERTICALLY SUPPORTED DUCTS. GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.



SECTION F
SCALE: NTS



SECTION E
SCALE: 1/8\"/>



KEY PLAN

XX — REVISION NUMBER

SECTION E
SCALE: 1/8\"/>

LEGEND

NEW _____
EXIST _____

VE VALLEY ENGINEERING, INC.
400 East Main Avenue, Suite 200
New Prague, MN 56070
(953) 877-4444 Fax: (953) 877-4444
http://www.valley-engineering.com

REV	DATE	DESCRIPTION	BY
5	2-19-05	REVISED SCRUBBER LAYOUT	JLW
4	2-19-05	REVISED CYCLONE LAYOUT	JLW
3	1-11-05	CHANGE TO DRYER DUCTING	JLW
7	6-7-05	REVISED BELT CONVEYOR TAG #'S	RJL
2	12-23-04	FAN DISCHARGE DUCT CHANGE	JLW
6	3-10-05	LOWER DRYER #1 SCRUBBER FAN & WAS AT EL 178'-7"	TOP

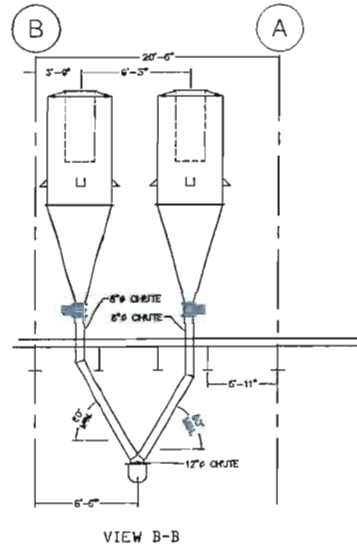
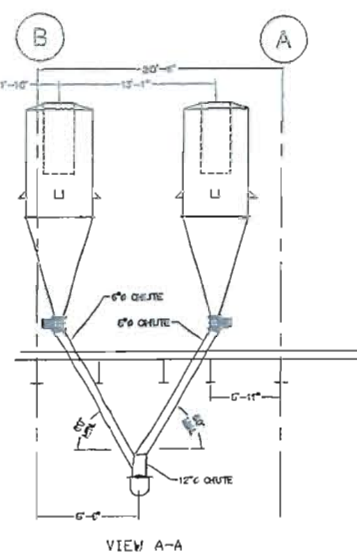
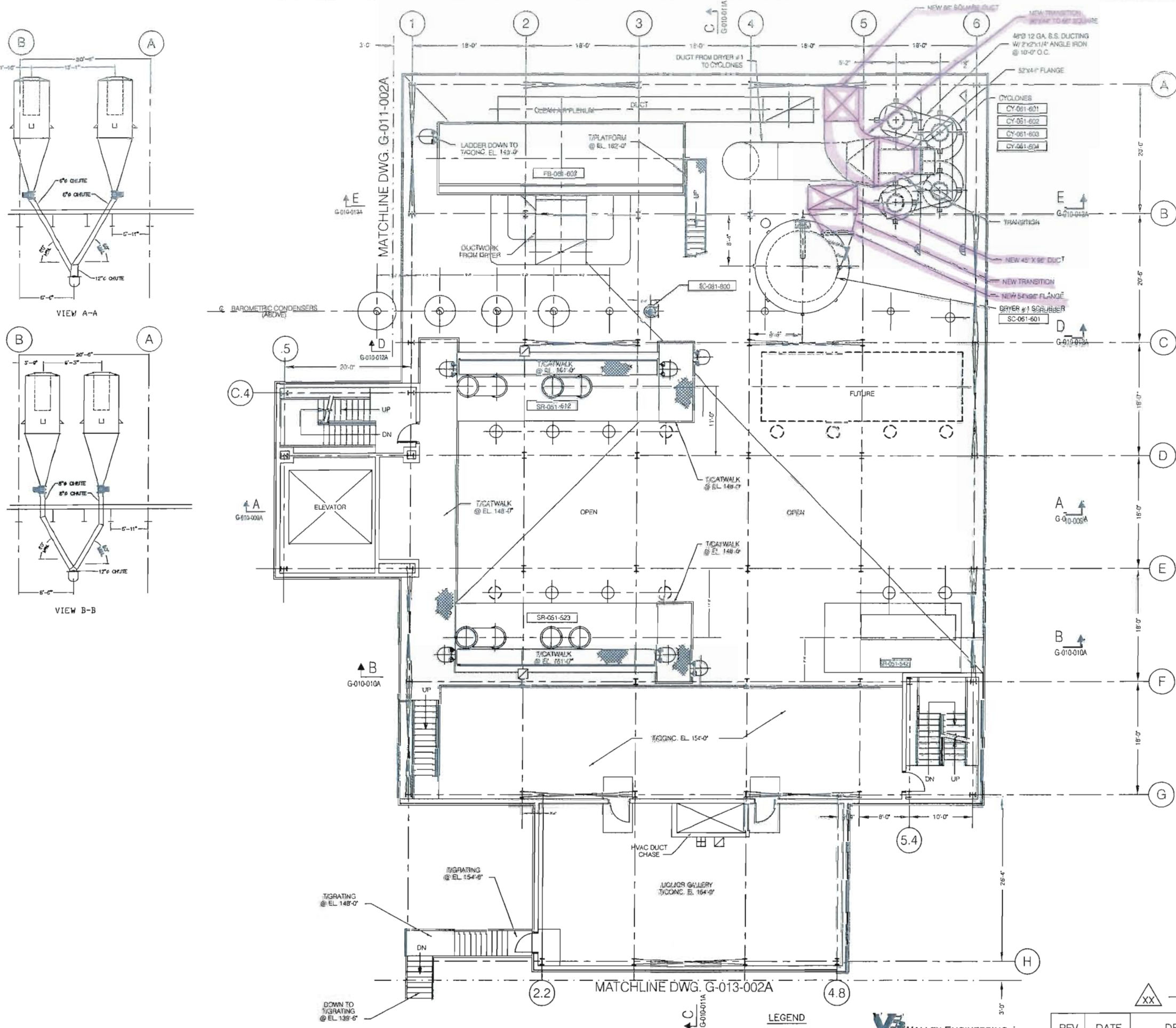
UNITED STATES SUGAR CORPORATION
REFINERY - CLEWISTON
SUGAR HOUSE ENGINEER DEPARTMENT

REFINERY EXPANSION
PROCESS SUPPORT STRUCTURE
G.A. SECTION E-E

DRAWN BY: JLW
SCALE: 1/8\"/>

COMP NAME: G-010-013A
DATE: 6/25/04

DRAWING No. G-010-013A



EQUIPMENT INDEX

SY-051-601	DRYER #1 CYCLONE
CY-061-602	DRYER #1 CYCLONE
CY-061-603	DRYER #1 CYCLONE
CY-061-604	DRYER #1 CYCLONE
FB-061-602	DRYER #2 DUST COLLECTOR
SC-061-601	DRYER #1 SCRUBBER
SC-061-600	WET SCRUBBER
SR-051-512	STRIKE RECEIVER #1
SR-051-523	STRIKE RECEIVER #2
SR-051-542	STRIKE RECEIVER #1

CONSTRUCTION NOTES:

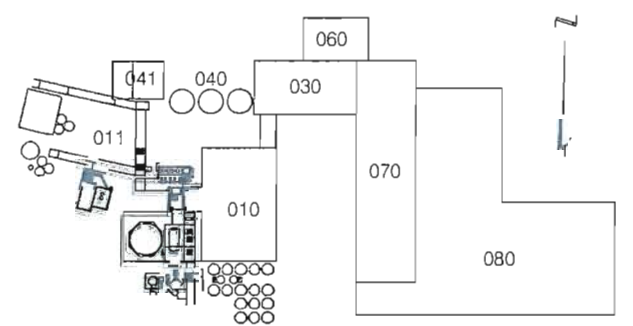
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM CYCLONES TO ID FAN.
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM ID FAN TO SCRUBBER.
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM SCRUBBER TO ATMOSPHERE.
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY DUCT SUPPORTS.
- CONTRACTOR SHALL MAKE ALL FLOOR AND ROOF PENETRATIONS SHOWN. CONTRACTOR SHALL INSTALL SLEEVE OR CURBING AROUND FLOOR PENETRATIONS. CONTRACTOR SHALL FLASH AROUND ROOF PENETRATIONS.

DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:

- ALL DUCTWORK SHALL BE 12 GAUGE 409 STAINLESS STEEL.
- ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE AS SHOWN CARBON STEEL.
- CENTERLINE RADIUS OF ALL ELBOWS TO BE AS SHOWN ON THE DRAWINGS.
- ALL DUCTWORK TO BE WELDED TO PENETRATION.
- ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
- FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
- ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
- CALL ALL FLANGES WITH FDA APPROVED SILICONE GASKETS.
- DUCT DIMENSIONS ON DRAWINGS INDICATE GUNDRILL DIMENSIONS.
- ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
- PAINT ALL CARBON STEEL MATERIAL AS PER OWNER'S SPECIFICATIONS.
- ALL DUCTWORK BRACING, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMAGNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
- ALL DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGERS FOR WALL SUPPORTED DUCTS, GALVANIZED STEEL ANGLE WITH BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE WITH VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.

UTILITY LEGEND

- AIR
- WATER
- WATER & AIR
- SAFETY SHOWER & EYEWASH
- PORTABLE EYEWASH
- MIX MIXING TEE AT THIS STATION



KEY PLAN

UNITED STATES SUGAR CORPORATION
REFINERY - CLEWISTON
SUGAR HOUSE ENGINEER DEPARTMENT

REFINERY EXPANSION
PROCESS SUPPORT STRUCTURE
G.A. PLAN @ ELEVATION 148'-0"

REV	DATE	DESCRIPTION	BY	DRAWN BY: RJL	SCALE: 1/8"=1'-0"	DRAWING No. G-010-004A
				COMP NAME:	DATE: 11/9/06	PERMIT

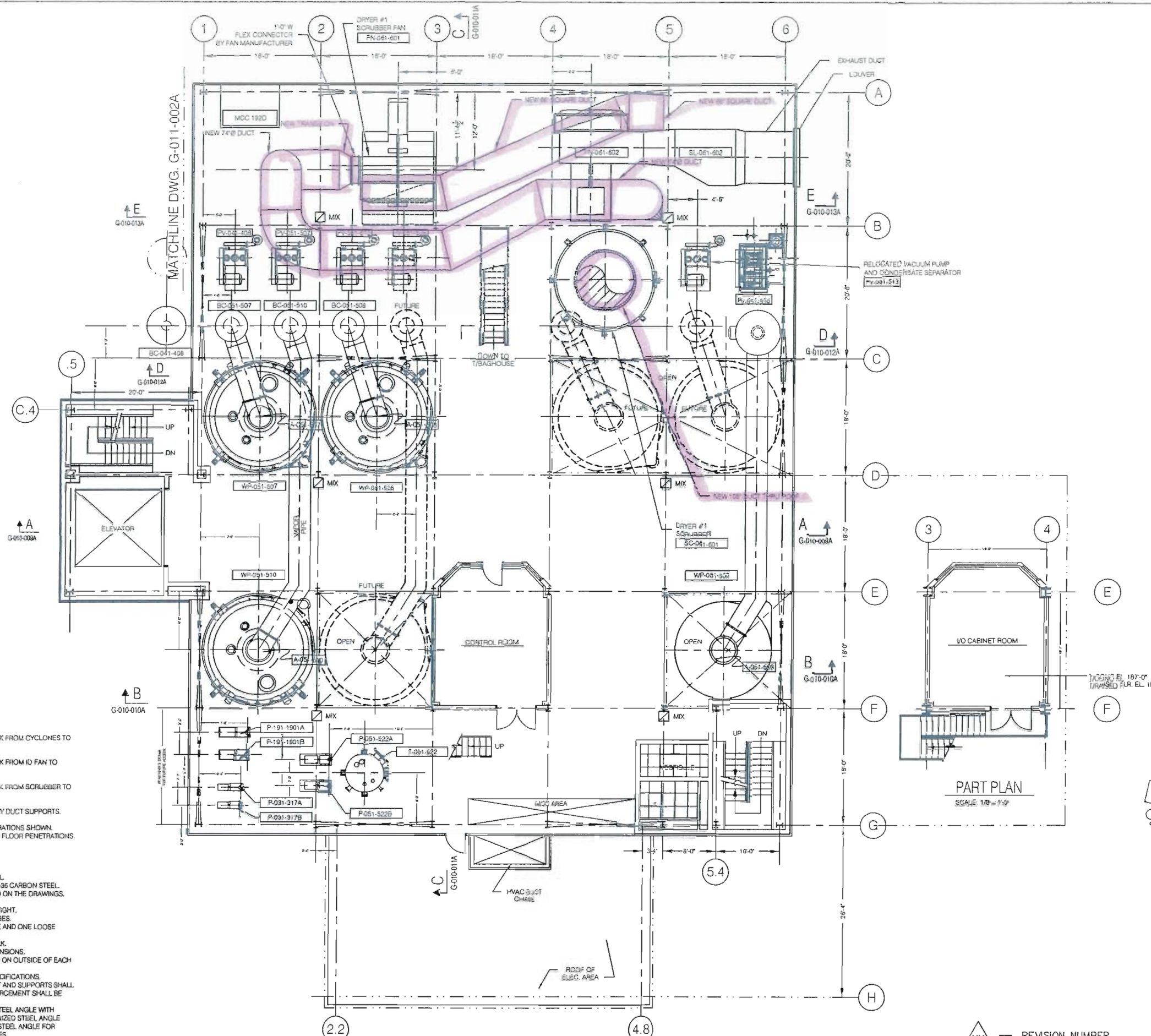
PLAN - STRIKE RECEIVER MEZZ.
SCALE: 1/8"=1'-0"



LEGEND

- NEW
- EXIST

△ XX — REVISION NUMBER



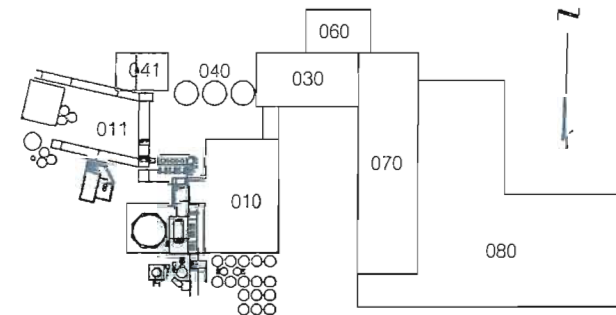
EQUIPMENT INDEX

A-051-507	PAN #1 AGITATOR
A-051-508	PAN #2 AGITATOR
A-051-510	PAN #6 AGITATOR
BC-041-408	EVAPORATOR BAROMETRIC CONDENSER
BC-051-507	PAN #1 BAROMETRIC CONDENSER
BC-051-508	PAN #2 BAROMETRIC CONDENSER
BC-051-510	PAN #6 BAROMETRIC CONDENSER
FN-051-501	DRYER #1 SCRUBBER FAN
FN-051-502	DRYER #2 DUST COLLECTOR FAN
P-001-522A/B	FINAL SPRAY WASH PUMPS
P-031-317A/B	POLISHING FILTER SLUDGE PUMPS
P-191-1901A/B	HOT PROCESS WATER PUMPS #1 & #2
PV-051-507	EVAPORATOR VACUUM PUMP
PV-051-508	PAN #1 VACUUM PUMP
PV-051-509	PAN #2 VACUUM PUMP
PV-051-510	PAN #7 VACUUM PUMP
PV-051-513	PAN #5 VACUUM PUMP
RELOCATED PAN RAFFE VACUUM PUMP	RELOCATED PAN RAFFE VACUUM PUMP
SC-041-601	DRYER #1 SCRUBBER
SL-051-501	DRYER #1 DUST COLLECTOR FAN SILENCER
SL-051-502	DRYER #2 DUST COLLECTOR FAN SILENCER
T-051-522	FINAL SPRAY WASH TANK
WP-051-507	PAN #1
WP-051-508	PAN #2
WP-051-509	PAN #7
WP-051-510	PAN #5

UTILITY LEGEND

	AIR
	WATER
	WATER & AIR
	SAFETY SHOWER & EYE WASH
	PORTABLE EYE WASH
	MIXING TEE AT THIS STATION

- CONSTRUCTION NOTES:**
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM CYCLONES TO ID FAN.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM ID FAN TO SCRUBBER.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM SCRUBBER TO ATMOSPHERE.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY DUCT SUPPORTS.
 - CONTRACTOR SHALL MAKE ALL FLOOR AND ROOF PENETRATIONS SHOWN. CONTRACTOR SHALL INSTALL SLEEVE OR CURBING AROUND FLOOR PENETRATIONS. CONTRACTOR SHALL FLASH AROUND ROOF PENETRATION.
- DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:**
- ALL DUCTWORK SHALL BE 12 GAUGE 409 STAINLESS STEEL.
 - ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-36 CARBON STEEL.
 - CENTERLINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
 - ALL DUCTWORK TO BE WELDED FABRICATION.
 - ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
 - FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
 - ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
 - CAULK ALL FLANGES WITH FDA APPROVED SILICONE CAULK.
 - DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
 - ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
 - PAINT ALL CARBON STEEL MATERIAL AS PER OWNERS SPECIFICATIONS.
 - ALL DUCTWORK CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
 - DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS, GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.



KEY PLAN

UNITED STATES SUGAR CORPORATION
REFINERY - CLEWISTON
SUGAR HOUSE ENGINEER DEPARTMENT

REFINERY EXPANSION
PROCESS SUPPORT STRUCTURE
G.A. PLAN @ ELEVATION 172'-0"

REV	DATE	DESCRIPTION	BY	DRAWN BY: R/JL	SCALE: 1/8" = 1'-0"	DRAWING No. G-010-005A
				COMP NAME:	DATE: 11/9/06	PERMIT

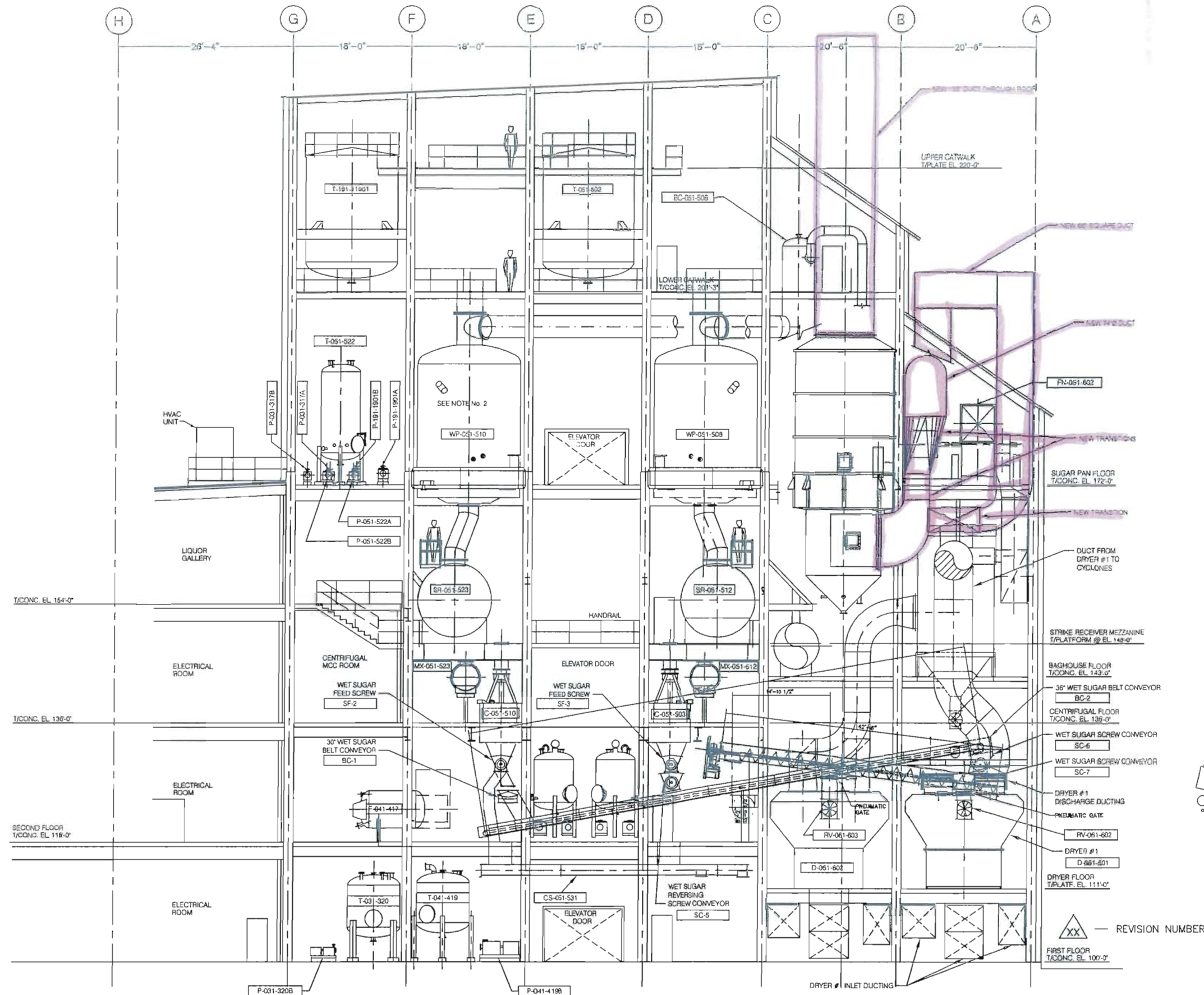
PLAN - SUGAR PAN FLOOR
SCALE: 1/8" = 1'-0"

LEGEND

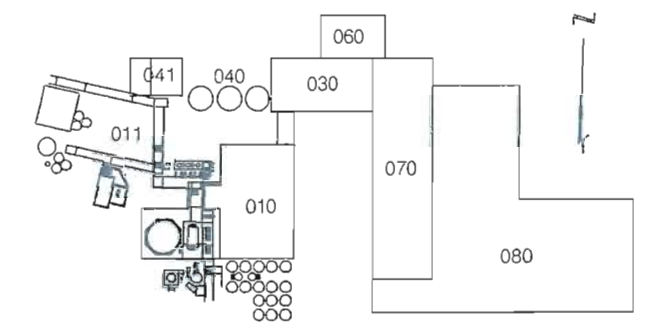
NEW	_____
EXIST	_____

VALLEY ENGINEERING, Inc.
588 West Hill Street, Suite 200
West Palm Beach, Florida 33411
(561) 877-1111, Fax (561) 877-2000
http://www.valley-engineering.com

XX — REVISION NUMBER



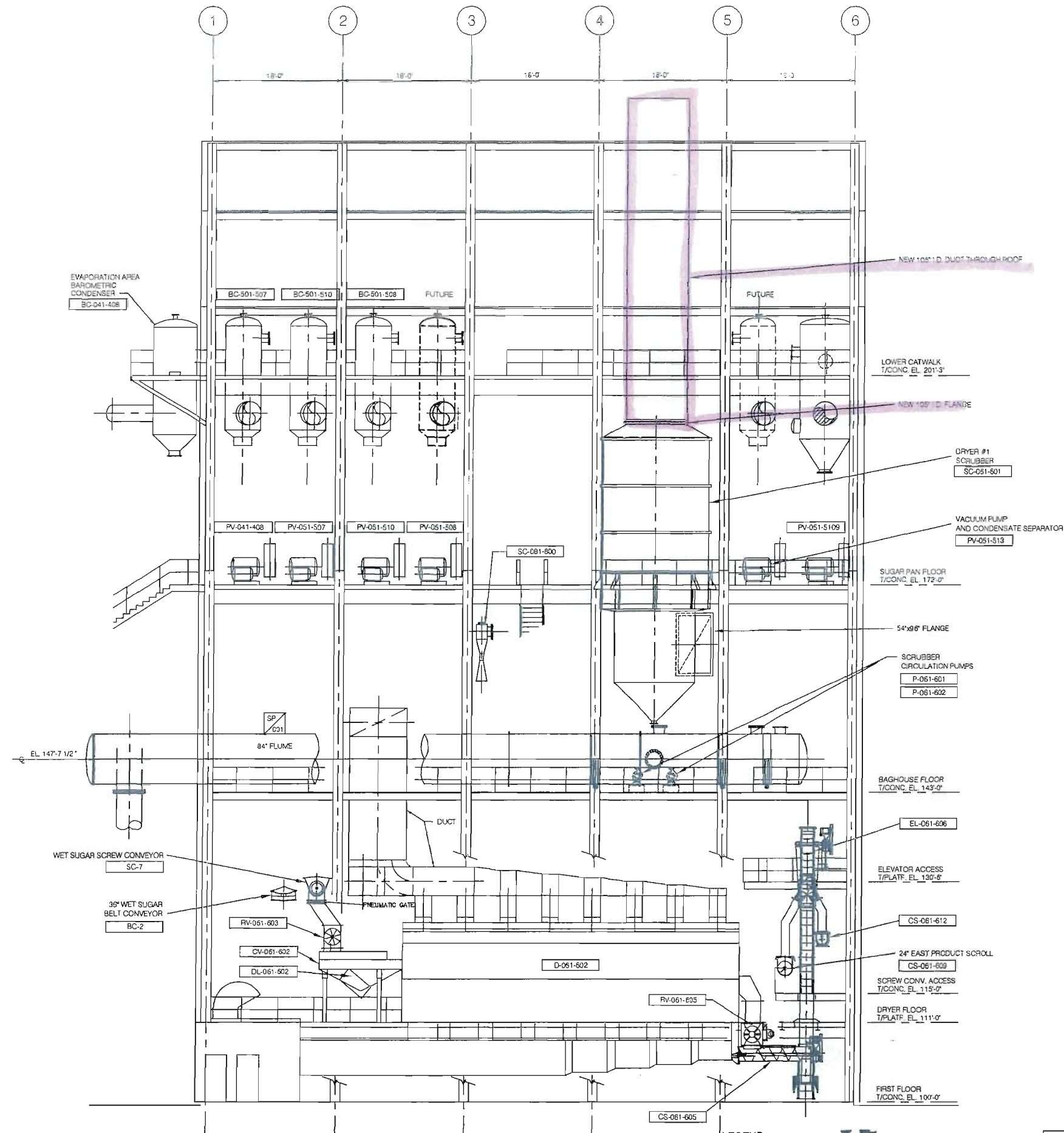
- CONSTRUCTION NOTES:**
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM CYCLONES TO ID FAN.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM ID FAN TO SCRUBBER.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM SCRUBBER TO ATMOSPHERE.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY DUCT SUPPORTS.
 - CONTRACTOR SHALL MAKE ALL FLOOR AND ROOF PENETRATIONS SHOWN. CONTRACTOR SHALL INSTALL SLEEVE OR CURBING AROUND FLOOR PENETRATIONS. CONTRACTOR SHALL FLASH AROUND ROOF PENETRATION.
- DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:**
- ALL DUCTWORK SHALL BE 12 GAUGE 409 STAINLESS STEEL.
 - ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-36 CARBON STEEL.
 - CENTERLINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
 - ALL DUCTWORK TO BE WELDED FABRICATION.
 - ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
 - FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
 - ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
 - CAULK ALL FLANGES WITH FDA APPROVED SILICONE CAULK.
 - DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
 - ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
 - PAINT ALL CARBON STEEL MATERIAL AS PER OWNER'S SPECIFICATIONS.
 - ALL DUCTWORK CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
 - DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS, GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.



UNITED STATES SUGAR CORPORATION
REFINERY - CLEWISTON
SUGAR HOUSE ENGINEER DEPARTMENT

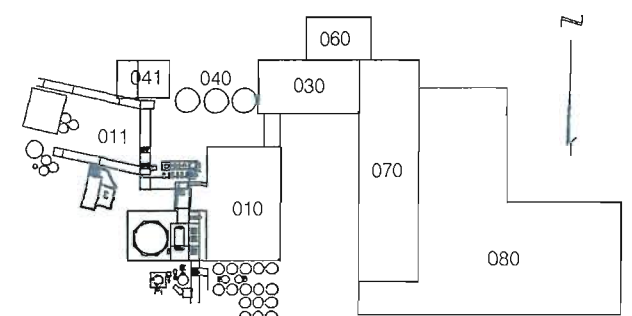
REFINERY EXPANSION
PROCESS SUPPORT STRUCTURE
G.A. SECTION C-C

REV	DATE	DESCRIPTION	BY	DRAWN BY:	SCALE:	DRAWING No.
				RJL	1/8" = 1'-0"	G-010-011A
				COMP NAME:	DATE:	PERMIT
					11/19/06	



- CONSTRUCTION NOTES:**
1. CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM CYCLONES TO ID FAN.
 2. CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM ID FAN TO SCRUBBER.
 3. CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM SCRUBBER TO ATMOSPHERE.
 4. CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY DUCT SUPPORTS.
 5. CONTRACTOR SHALL MAKE ALL FLOOR AND ROOF PENETRATIONS SHOWN. CONTRACTOR SHALL INSTALL SLEEVE OR CURBING AROUND FLOOR PENETRATIONS. CONTRACTOR SHALL FLASH AROUND ROOF PENETRATIONS.

- DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:**
- A) ALL DUCTWORK SHALL BE 12 GAUGE 409 STAINLESS STEEL.
 - B) ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-36 CARBON STEEL.
 - C) CENTERLINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
 - D) ALL DUCTWORK TO BE WELDED FABRICATION.
 - E) ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
 - F) FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
 - G) ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
 - H) CAULK ALL FLANGES WITH FDA APPROVED SILICONE CAULK.
 - I) DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
 - J) ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
 - K) PAINT ALL CARBON STEEL MATERIAL AS PER OWNERS SPECIFICATIONS.
 - L) ALL DUCTING CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
 - M) DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS, GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.



KEY PLAN

UNITED STATES SUGAR CORPORATION
 REFINERY - CLEWISTON
 SUGAR HOUSE ENGINEER DEPARTMENT

REFINERY EXPANSION
 PROCESS SUPPORT STRUCTURE
 G.A. SECTION D-D

DRAWN BY: RJL	SCALE: 1/8" = 1'-0"	DRAWING No. G-010-012A
COMP NAME:	DATE: 11/22/06	PERMIT

XX — REVISION NUMBER

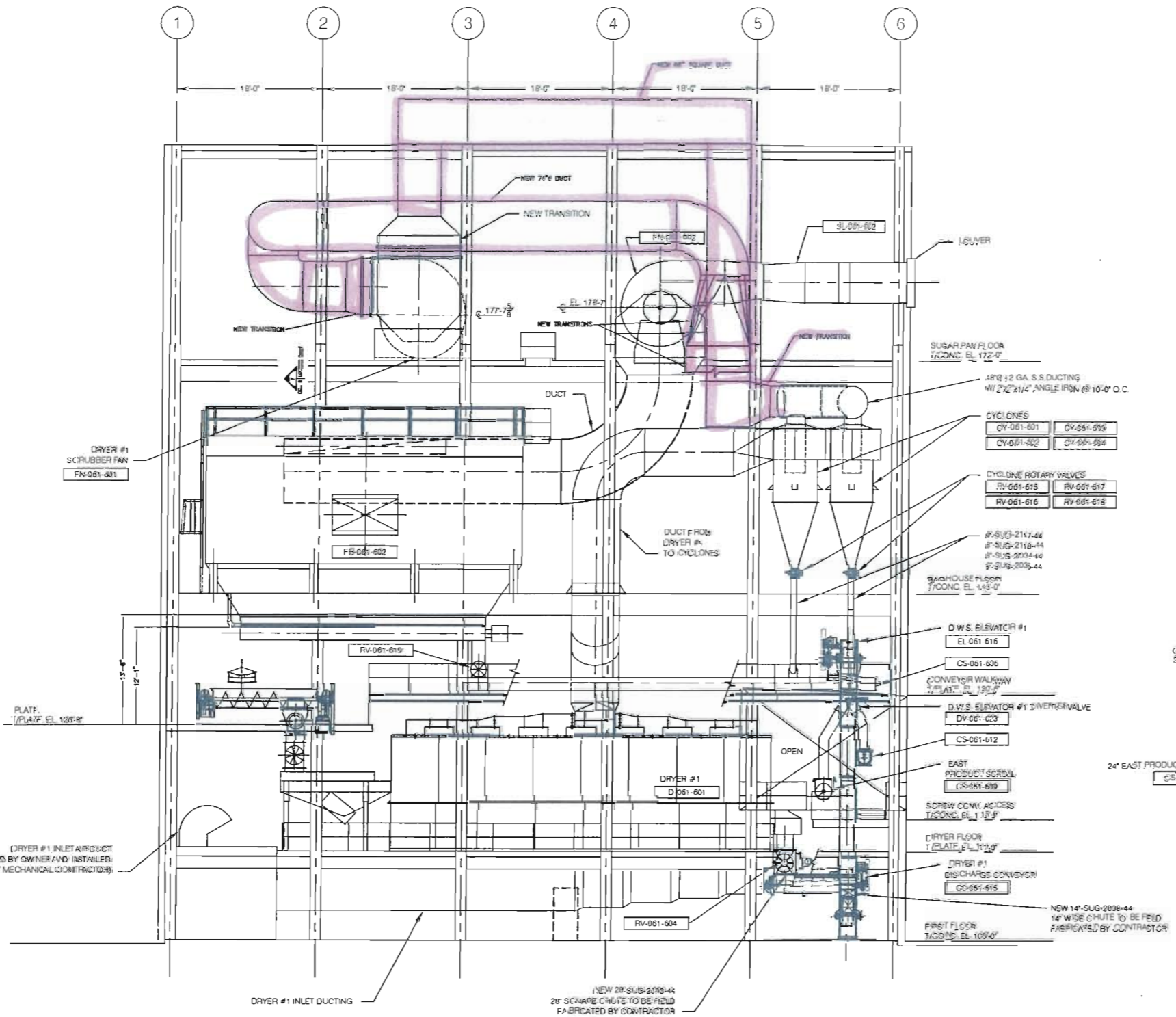
SECTION D
 SCALE: 1/8" = 1'-0"

LEGEND
 NEW (pink line)
 EXIST (black line)

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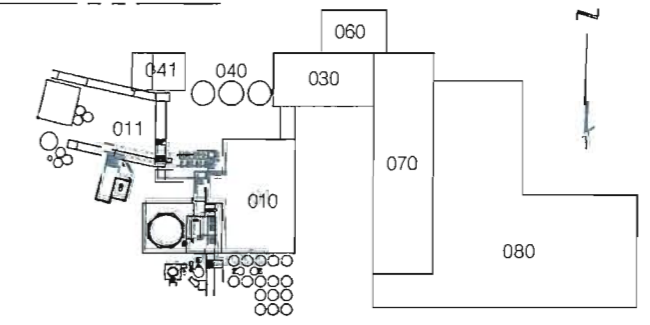
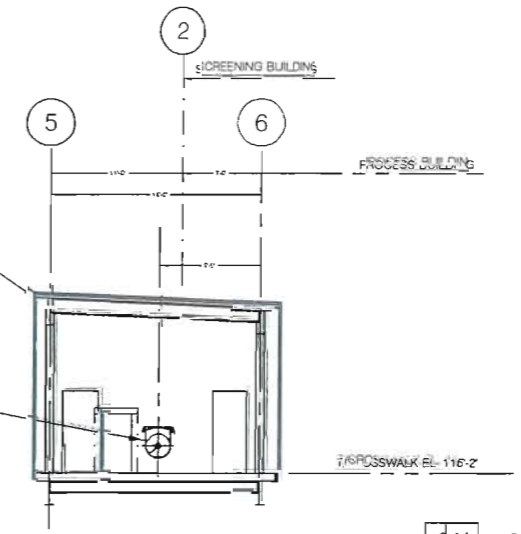
REV	DATE	DESCRIPTION	BY

DRAWINGS-OPTION 2



- CONSTRUCTION NOTES:**
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM CYCLONES TO D FAN.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM D FAN TO SCRUBBER.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM SCRUBBER TO ATMOSPHERE.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY DUCT SUPPORTS.
 - CONTRACTOR SHALL MAKE ALL FLOOR AND ROOF PENETRATIONS SHOWN. CONTRACTOR SHALL INSTALL SLEEVES OR CURBING AROUND FLOOR PENETRATIONS. CONTRACTOR SHALL FLASH AROUND ROOF PENETRATIONS.

- DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:**
- ALL DUCTWORK SHALL BE 12 GAUGE 409 STAINLESS STEEL.
 - ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-36 CARBON STEEL.
 - CENTERLINE RADII OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
 - ALL DUCTWORK TO BE WELDED FABRIC.
 - ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
 - FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
 - ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
 - CHALK ALL FLANGES WITH FDA APPROVED SILICONE CHALK.
 - DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
 - ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
 - PAINT ALL CARBON STEEL MATERIAL AS PER OWNERS SPECIFICATIONS.
 - ALL DUCTING CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMAGNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
 - DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS. GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.



SECTION E
SCALE: 1/8"=1'-0"

SECTION E
SCALE: 1/8"=1'-0"

LEGEND

NEW _____

EXIST _____

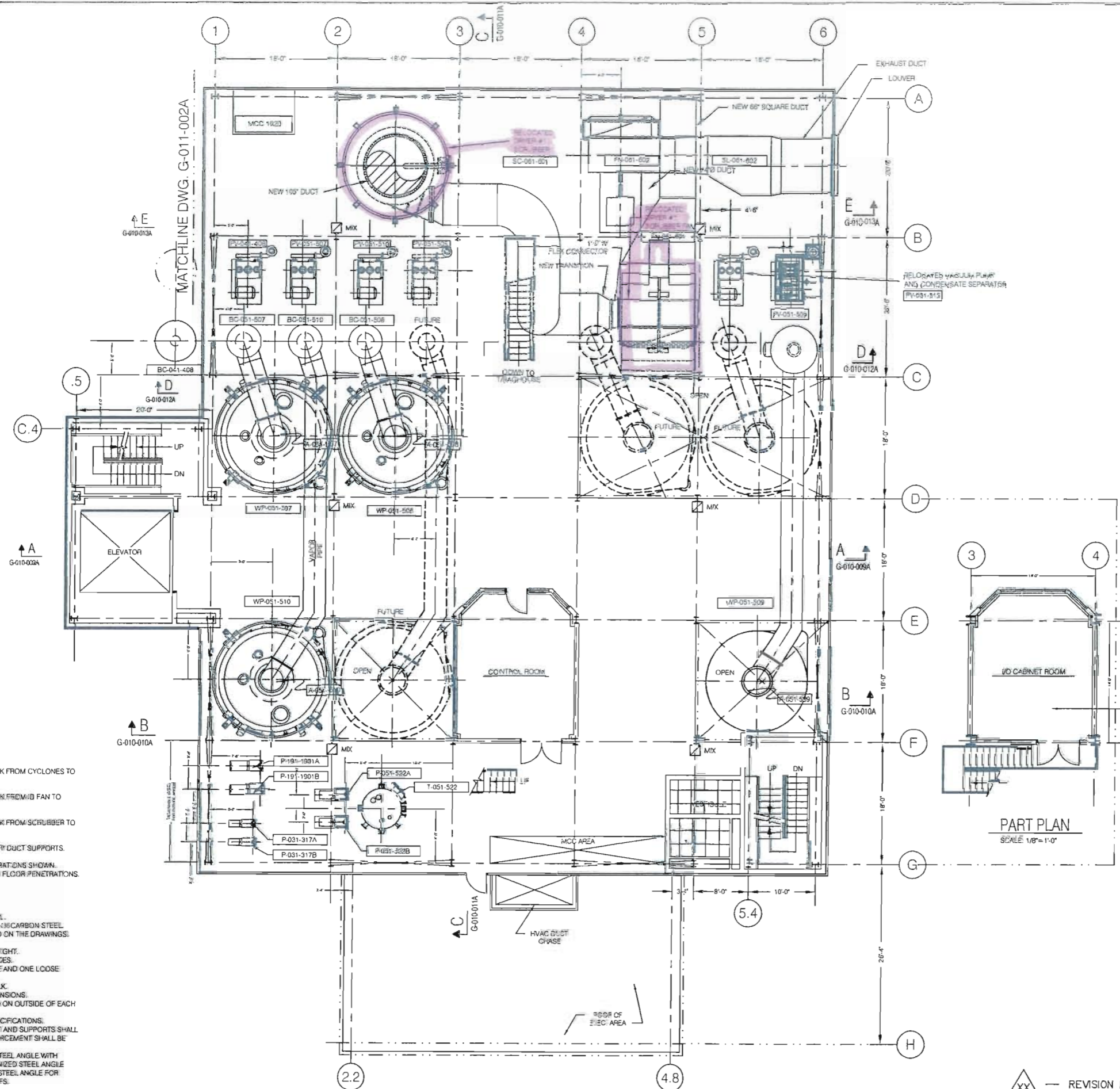
VALLEY ENGINEERING, Inc.
 1101 West 10th Street, Suite 200
 Fort Worth, Texas 76102
 (817) 857-7744, Fax (817) 857-4500
<http://www.valley-engineering.com>

△ XX — REVISION NUMBER

REV	DATE	DESCRIPTION	BY	DRAWN BY:	SCALE:	DRAWING No.
				RJL	1/8" = 1'-0"	G-010-013A
				COMP NAME:	DATE:	PERMIT
					11/9/06	

UNITED STATES SUGAR CORPORATION
 REFINERY - CLEWISTON
 SUGAR HOUSE ENGINEER DEPARTMENT

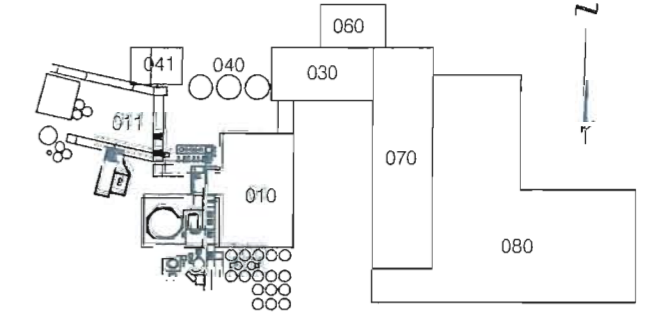
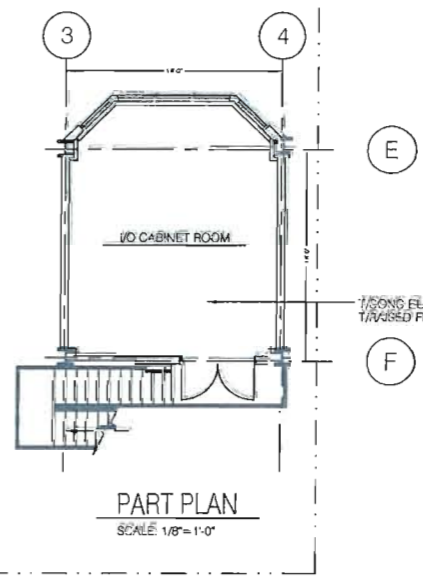
REFINERY EXPANSION
 PROCESS SUPPORT STRUCTURE
 G.A. SECTION E-E



EQUIPMENT INDEX	
A-051-507	PAN #1 AGITATOR
A-051-508	PAN #2 AGITATOR
A-051-510	PAN #5 AGITATOR
BC-051-408	EVAPORATOR BAROMETRIC CONDENSER
BC-051-507	FAN #1 BAROMETRIC CONDENSER
BC-051-508	FAN #2 BAROMETRIC CONDENSER
BC-051-510	FAN #5 BAROMETRIC CONDENSER
FN-051-501	DRYER #1 SCRUBBER FAN
FN-051-502	DRYER #2 DUST COLLECTOR FAN
P-051-505A/B	FINAL STRAY WASH PUMPS
P-051-507A/B	POLISHING FILTER SLURRY PUMPS
P-191-1901A/B	HOT PROCESS WATER PUMPS #1 & #2
PV-051-408	EVAPORATOR VACUUM PUMP
PV-051-507	PAN #1 VACUUM PUMP
PV-051-508	PAN #2 VACUUM PUMP
PV-051-509	PAN #3 VACUUM PUMP
PV-051-510	PAN #5 VACUUM PUMP
PV-051-513	RELOCATED PAN STRAY VACUUM PUMP
SC-051-501	DRYER #1 SCRUBBER
SL-051-501	DRYER #1 DUST COLLECTOR IS FAN SILENCER
SL-051-502	DRYER #2 DUST COLLECTOR SILENCER
T-051-522	FINAL STRAY WASH TANK
WP-051-507	PAN #1
WP-051-508	PAN #2
WP-051-509	PAN #3
WP-051-510	PAN #5

UTILITY LEGEND	
	AIR
	WATER
	WATER & AIR
	SAFETY SHOWER & EYEWASH
	PORTABLE EYEWASH
	MIXING TEE AT THIS STATION

OPTION 2
RELATION OF SCRUBBER AND ID FAN IN ADDITION TO NEW DUCTWORK



KEY PLAN

- CONSTRUCTION NOTES:**
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM CYCLONES TO ID FAN.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM ID FAN TO SCRUBBER.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL DUCTWORK FROM SCRUBBER TO ATMOSPHERE.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY DUCT SUPPORTS.
 - CONTRACTOR SHALL MAKE ALL FLOOR AND ROOF PENETRATIONS SHOWN. CONTRACTOR SHALL INSTALL SLEEVE OR CURBING AROUND FLOOR PENETRATIONS. CONTRACTOR SHALL FLASH AROUND ROOF PENETRATIONS.
- DUCTWORK NOTES AND MATERIAL SPECIFICATIONS:**
- ALL DUCTWORK SHALL BE 12 GAUGE 409 STAINLESS STEEL.
 - ALL FLANGES, STIFFENERS AND DUCT SUPPORTS TO BE A-1 CARBON STEEL.
 - CENTERLINE RADIUS OF ALL ELBOWS TO BE AS INDICATED ON THE DRAWINGS.
 - ALL DUCTWORK TO BE WELDED FABRICATION.
 - ALL WELDS ON DUCTWORK TO BE CONTINUOUS AND AIR TIGHT.
 - FABRICATOR TO PROVIDE ANGLE IRON COMPANION FLANGES.
 - ALL FITTINGS TO BE SUPPLIED WITH ONE WELDED FLANGE AND ONE LOOSE FLANGE.
 - CAULK ALL FLANGES WITH FDA APPROVED SILICONE CAULK.
 - DUCT DIMENSIONS ON DRAWINGS INDICATE OUTSIDE DIMENSIONS.
 - ALL PIECE AND DRAWING NUMBERS ARE TO BE STENCILED ON OUTSIDE OF EACH PIECE.
 - PAIN ALL CARBON STEEL MATERIAL AS PER OWNERS SPECIFICATIONS.
 - ALL DUCTING CONSTRUCTION, BRACING, REINFORCEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT MANUALS. REINFORCEMENT SHALL BE GALVANIZED ANGLE IRON.
 - DUCT HANGERS AND SUPPORTS SHALL BE GALVANIZED STEEL ANGLE WITH HANGER RODS FOR VERTICALLY SUPPORTED DUCTS, GALVANIZED STEEL ANGLE BRACKETS FOR WALL SUPPORTED DUCTS AND GALVANIZED STEEL ANGLE FOR VERTICALLY SUPPORTED DUCTS THROUGH FLOORS OR ROOFS.

PLAN - SUGAR PAN FLOOR

LEGEND	
	NEW
	EXIST

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REV	DATE	DESCRIPTION	BY
XX		REVISION NUMBER	

UNITED STATES SUGAR CORPORATION
 REFINERY - CLEWISTON
 SUGAR HOUSE ENGINEER DEPARTMENT

REFINERY EXPANSION
 PROCESS SUPPORT STRUCTURE
 G.A. PLAN @ ELEVATION 172'-0"

DRAWN BY: R.J.L.	SCALE: 1/8" = 1'-0"	DRAWING No. G-010-005A
COMP NAME:	DATE: 11/9/06	PERMIT-2