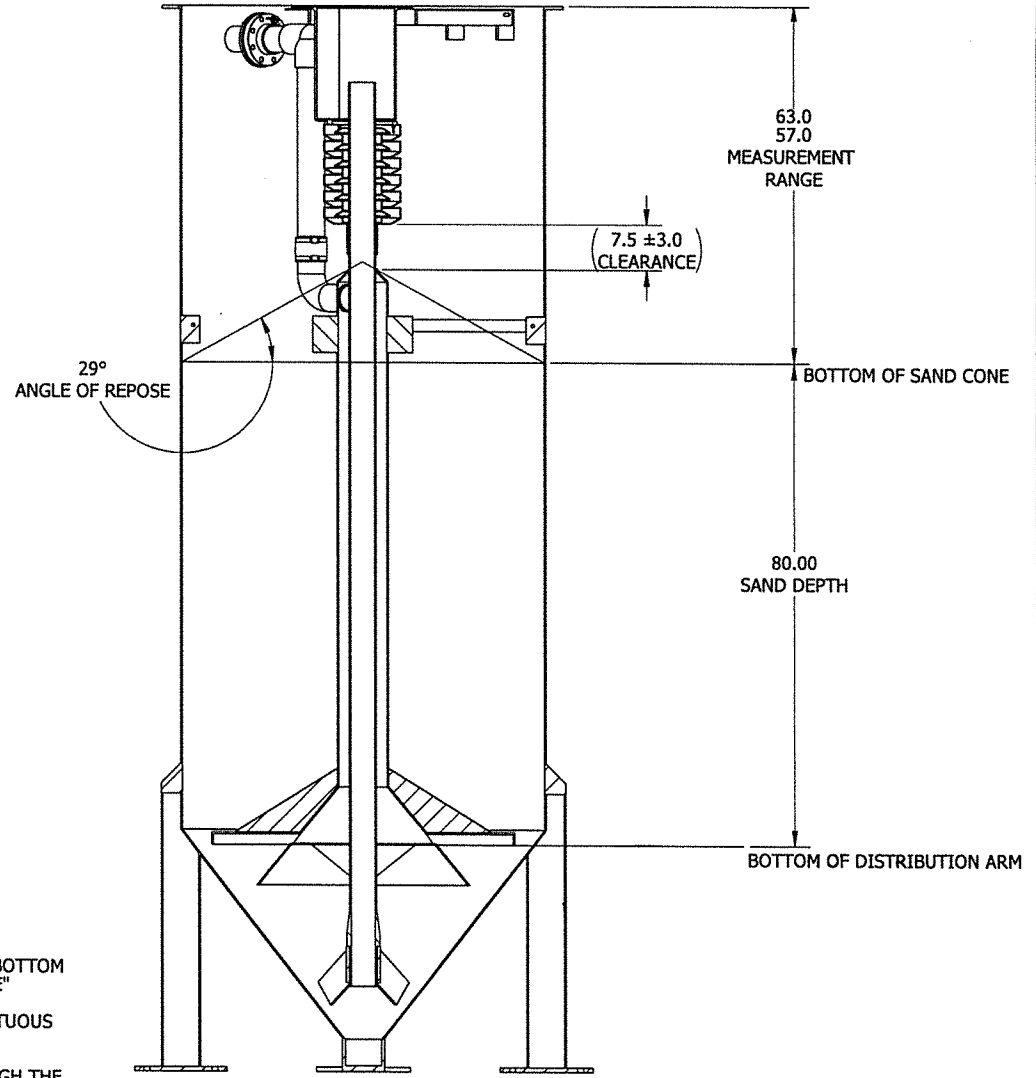
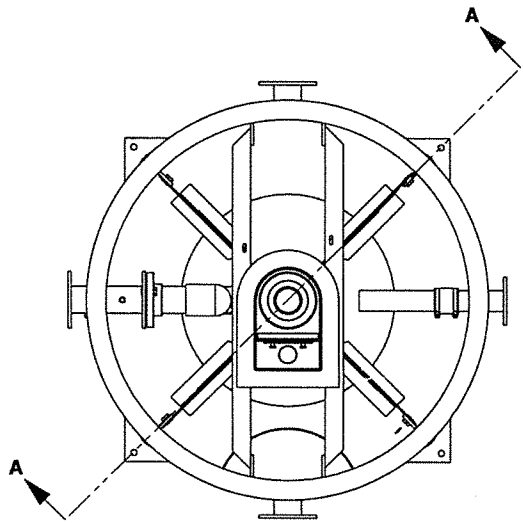


MATERIALS OF CONSTRUCTION

Tank	Carbon Steel - Coated 1/4" minimum thickness
Connections	(J,K,M) - 8" 150# FF Flange (Influent, Effluent, Overflow) (L) - 3" 150# FF Flange (Reject) (AA) - 2" Screwed Coupling (Level Cont.) (S) - 1/2" Coupling (Headloss)
Airlift	Type 304 Stainless Steel
Filtrate Chambers	Polypropylene Wedgewire
Washbox	Type 304 Stainless Steel
Washbox Weir	Type 304 Stainless Steel
Upper Deflector Cone	Type 304 Stainless Steel
Central Feed Chamber	Type 304 Stainless Steel
Feed Chamber Supports	Type 304 Stainless Steel
Washbox Supports	Type 304 Stainless Steel
Platform and Handrails	Aluminum (Existing)
Caged Ladder	n/a

REV.	DESCRIPTION	DATE	ECO
01		2/16/2012	



NOTES:

- TO DETERMINE THE SAND DEPTH MEASURE FROM THE TOP OF THE TANK TO THE BOTTOM OF THE SAND CONE AT THE WALL. SEE DIMENSION LABLED "MEASUREMENT RANGE"
- IF THE CLEARANCE FROM THE TOP OF THE SAND CONE TO THE BOTTOM OF THE TORTUOUS PATH BECOMES LESS THAN 4" THERE IS A POSSIBILITY OF THE TORTUOUS PATH CLOGGING.

THIS MAY RESULT IN AN INCREASED REJECT RATE AND THE LOSS OF SAND THROUGH THE REJECT.

SECTION A-A

PROJECT: 910074- Conemaugh, PA DESCRIPTION: Sand Depth Determination		DWG SIZE: B SCALE: 1:20 PAGE: 1 of 1
DRAWING NUMBER: 910074-SK1 REV: 01		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: ONE PLACE DECIMAL ±.02 TWO PLACE DECIMAL ±.010 THREE PLACE DECIMAL ±.005 ANGULAR ±.2° THIRD ANGLE PROJECTION		
COMPANY CONFIDENTIAL ALL INFORMATION CONTAINED ON THIS DRAWING IS THE PROPERTY OF BLUE WATER TECHNOLOGIES, INC. AND IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF BLUE WATER TECHNOLOGIES, INC. THE INFORMATION CONTAINED HEREON IS UNCLASSIFIED AND IS NOT SUBJECT TO EXPORT CONTROL REGULATIONS. THE INFORMATION CONTAINED HEREON IS UNCLASSIFIED AND IS NOT SUBJECT TO EXPORT CONTROL REGULATIONS. THE INFORMATION CONTAINED HEREON IS UNCLASSIFIED AND IS NOT SUBJECT TO EXPORT CONTROL REGULATIONS.		
BLUE WATER TECHNOLOGIES 18450 N. AIRPORT RD. HAYDEN, ID 83835	2012.02.16 F. Collier 2012.02.16 K. Kracher 2012.02.16 B. Messerschmidt	DATE: 2012.02.16 DATE: 2012.02.16 DATE: 2012.02.16

IMPRINT MUST SHOW TO BE VALID

Centra-flo™ Gravity Sand Filter

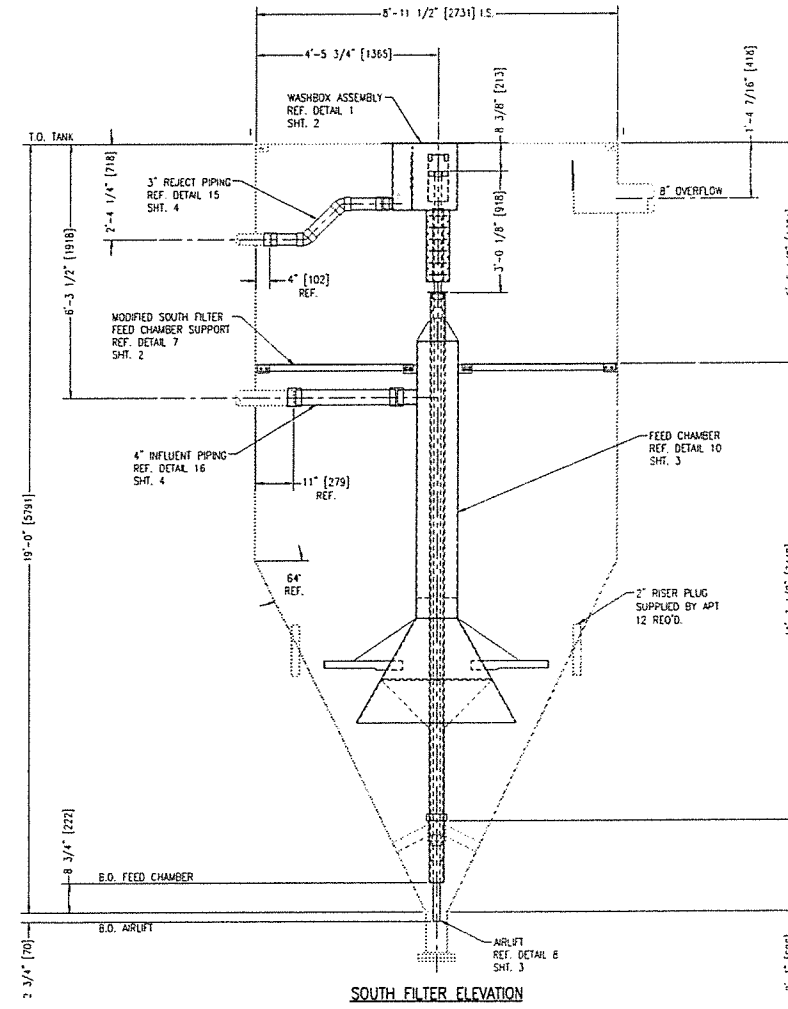
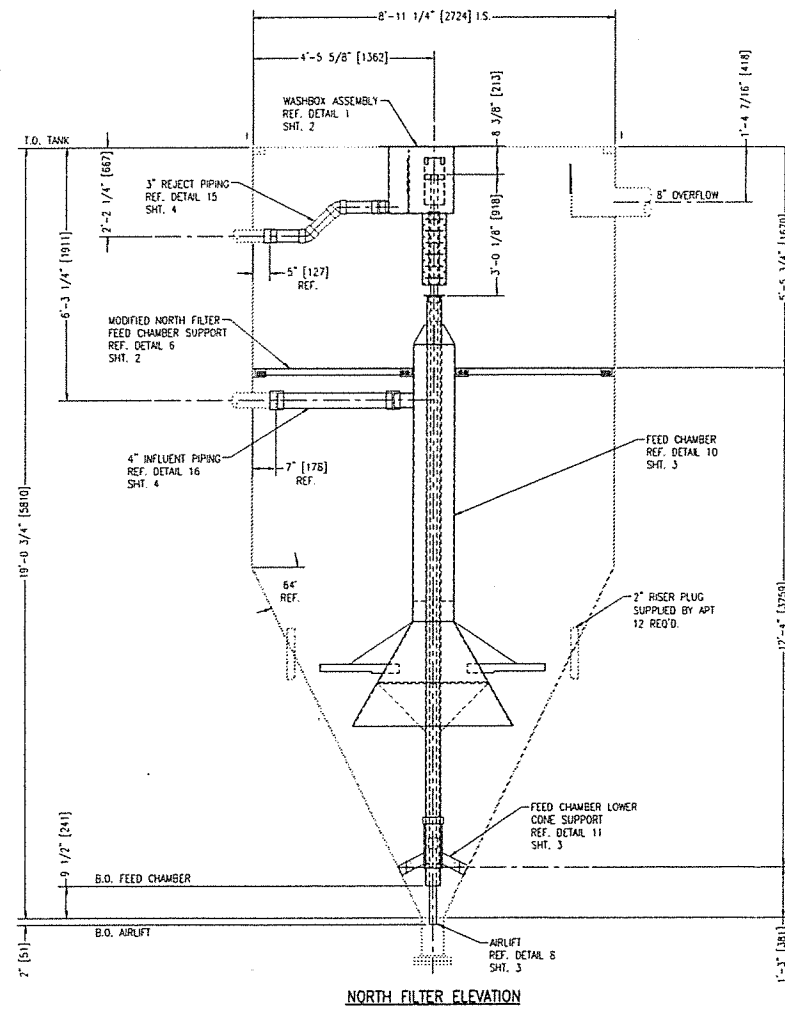
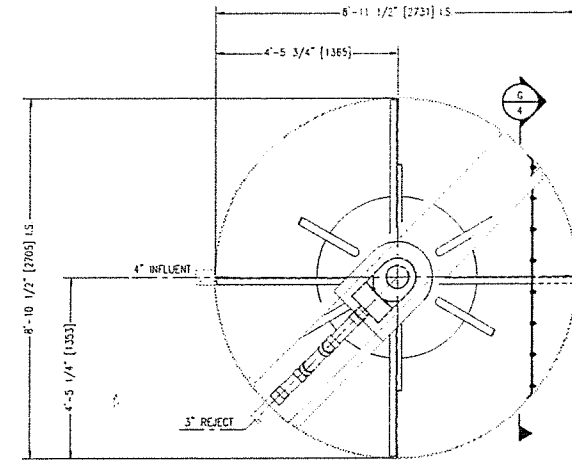
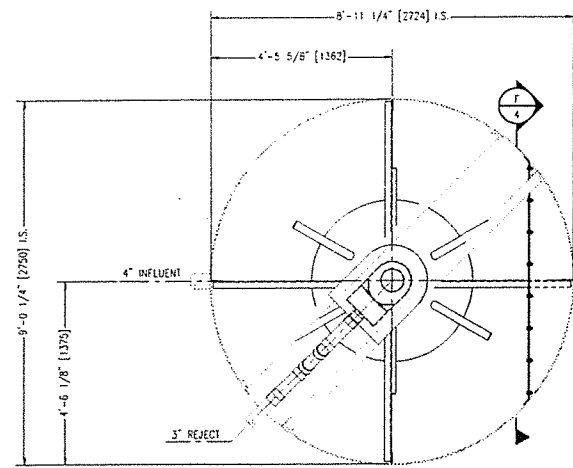
Data Sheet

APT Order Number 709-442
Order Date September 2, 1997
Serial Number CF-64-34

Owner's Name Sausalito-Marín City
Sanitary District
Sausalito, CA

Engineer n/a

Project No. _____
Modification Date October 9, 1997
Filter Model (1) CF-64
Peak Flow Rate 350 GPM
Tank Deminsions 108" dia. x 264" tall
Approx. Tank Weight (Dry) _____
Washbox Weight 50 lbs.
Airlift Weight 75 lbs.
Upper Deflector Cone Weight 200 lbs.
Sand Weight 33,500 lbs. each unit
Sand Mix 15% 8-12, 50% 12-20,
35% 16-25



GENERAL NOTES

1. MATERIALS OF CONSTRUCTION SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
 AIRLIFTS: 304 STAINLESS STEEL/PVC
 FEED CHAMBER: FRP
 WASHBOX: FRP
 WEIR PLATE: FRP

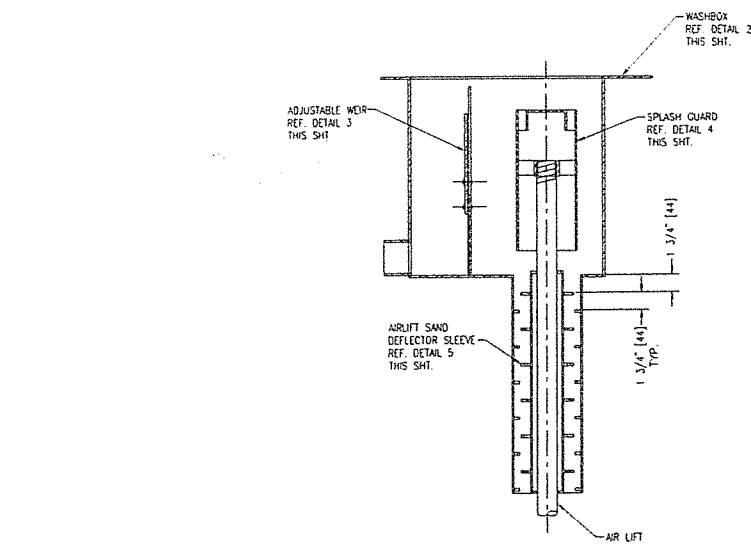
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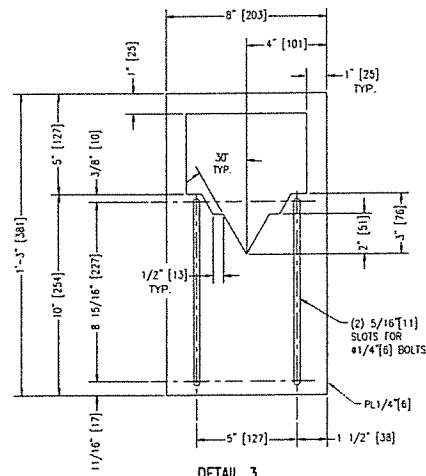
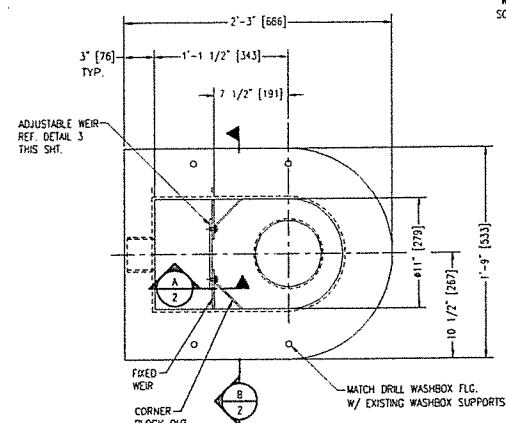
Applied Process Technology, Inc.
 35 Wellington Control, TX 77304
 936/539-4099 Fax 936/539-4089

**CENTRA-FLO GRAVITY SAND FILTER
 SAUSALITO NORTH AND SOUTH FILTER REPLACEMENT PARTS**

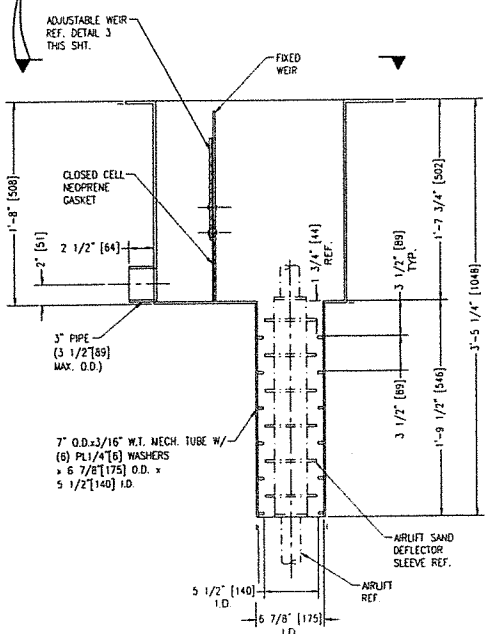
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CHK'D BY: J. STEVENS	SCALE: 1/2"=1'-0"	SHT 1 OF 4
CAD FILE: 406-1040-1	JOB NO: 406-1040	REV A



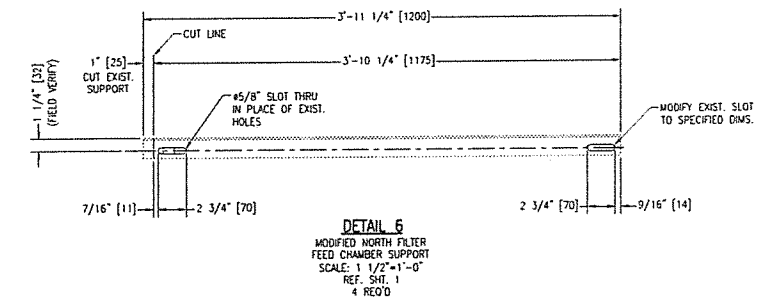
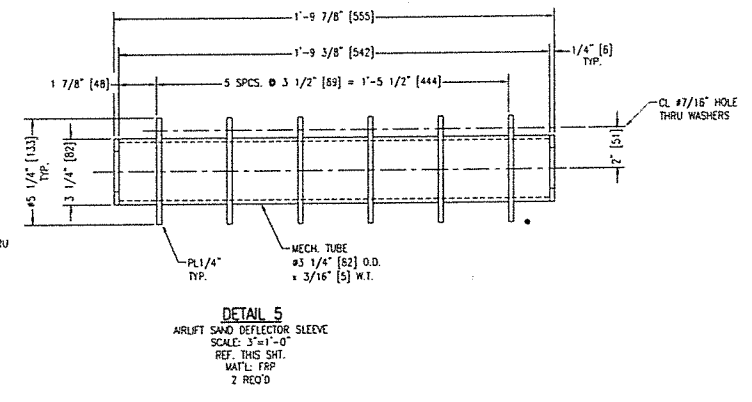
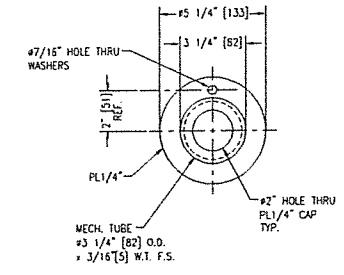
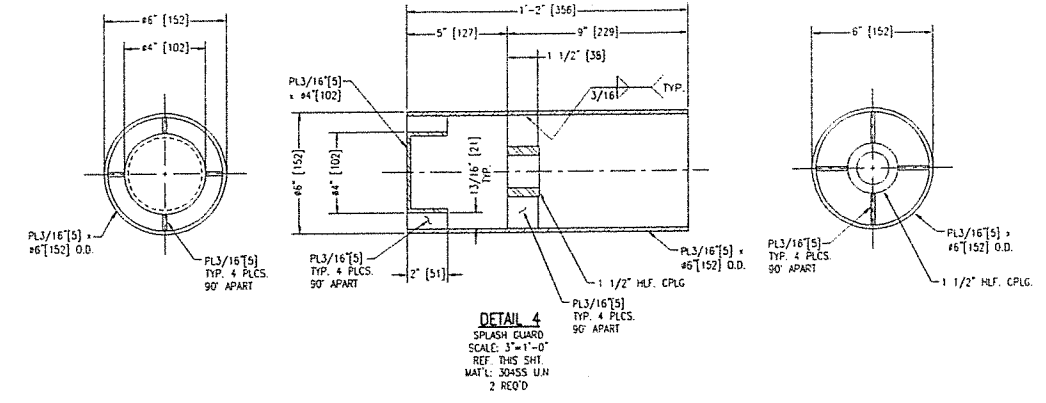
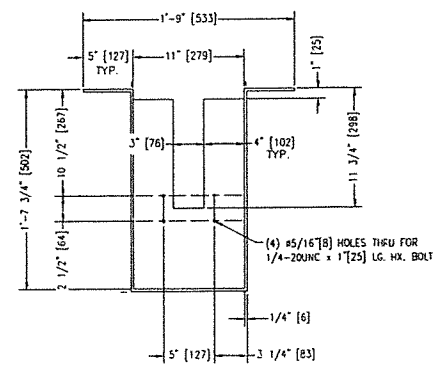
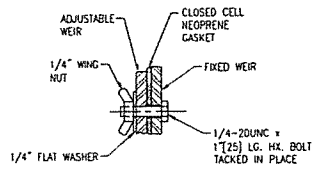
DETAIL 1
WASHEX ASSEMBLY
SCALE: 1 1/2"=1'-0"
REF. SHIT. 1



DETAIL 3
ADJUSTABLE WEIR
SCALE: 3"=1'-0"
REF. THIS SHIT.
MATERIAL FRP 2 REQ'D



DETAIL 2
WASHEX
SCALE: 1 1/2"=1'-0"
REF. THIS SHIT.
MATERIAL FRP 2 REQ'D



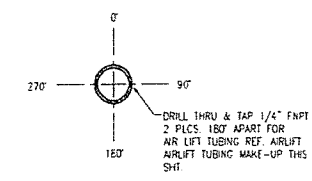
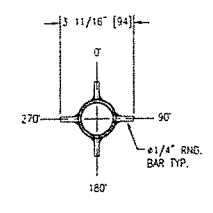
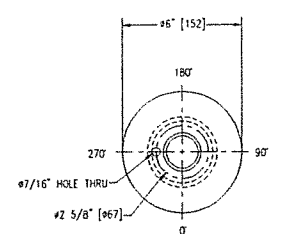
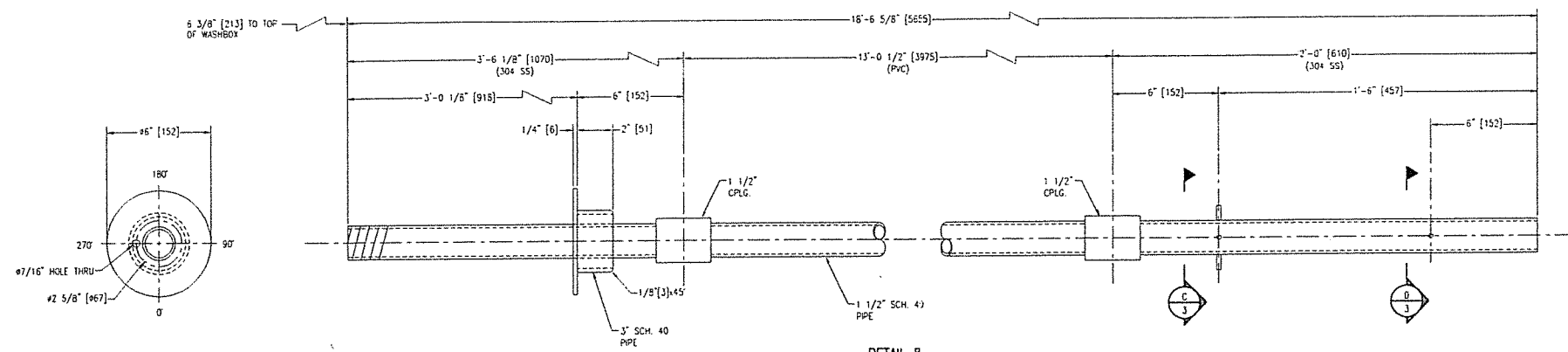
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936/539-4099 Fax 936/539-4089

**CENTRA-FLO GRAVITY SAND FILTER
SAUSALITO NORTH AND SOUTH FILTER REPLACEMENT PARTS**

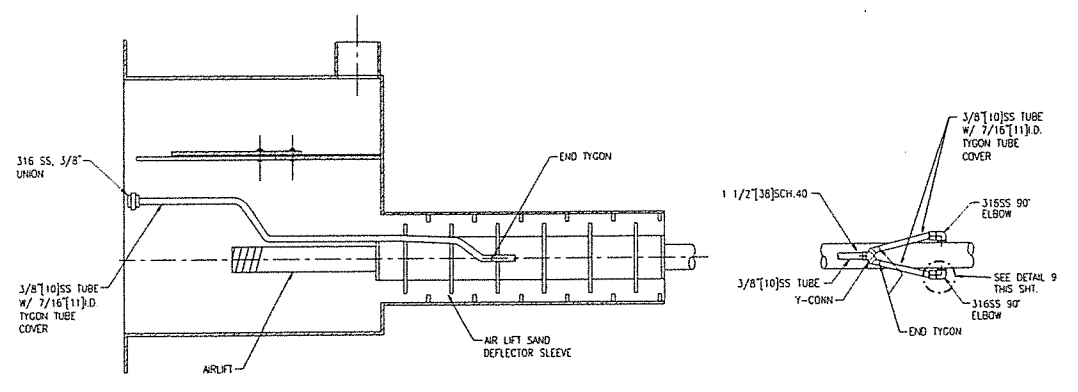
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CHK'D BY: J. STEVENS	SCALE: 1"=1'-0"	SHT 2 OF 4
CAD FILE: 406-1040-2	JOB NO: 406-1040	REV. A



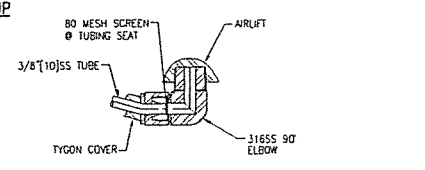
DETAIL 8
AIR LIFT
SCALE: 3"=1'-0"
REF. THIS SHIT.
2 REQ'D

SECTION C-C
SCALE: 3"=1'-0"
REF. THIS SHIT.

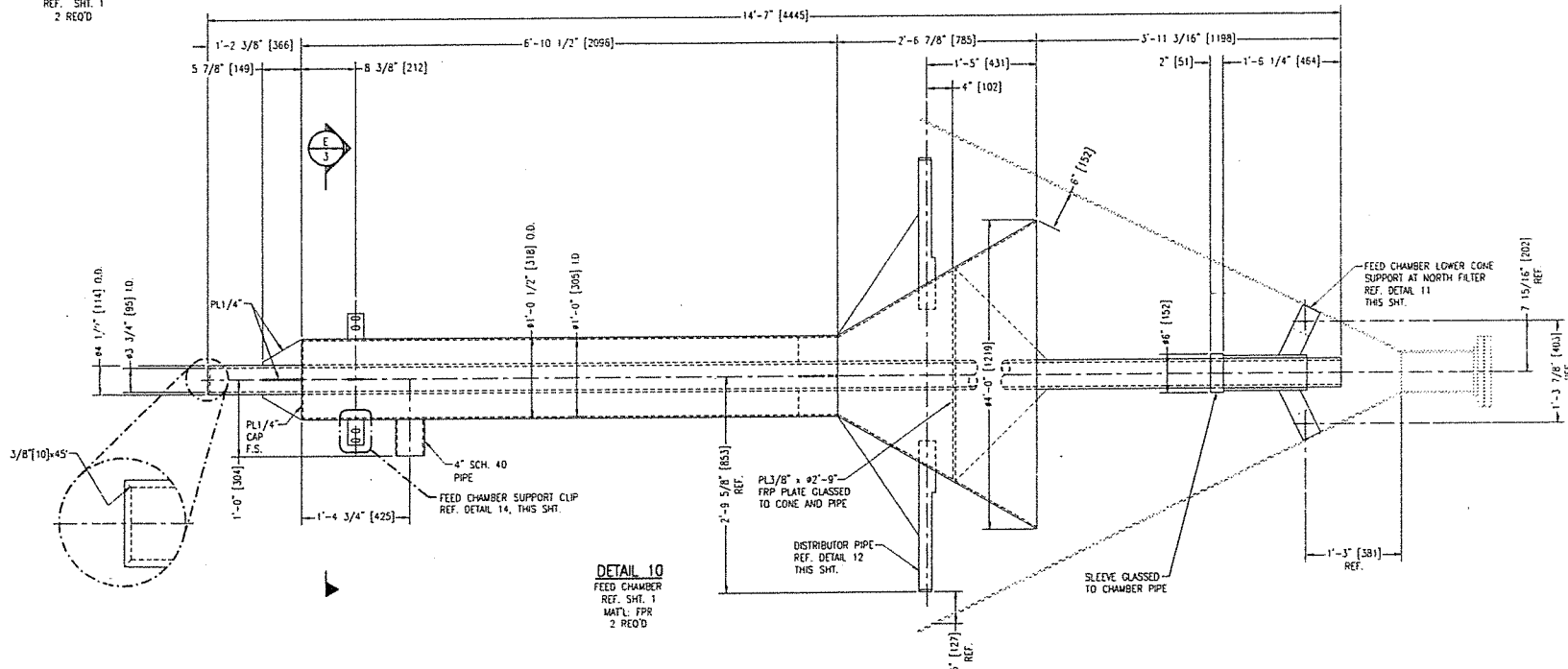
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SCALE: 3"=1'-0"
REF. THIS SHIT.



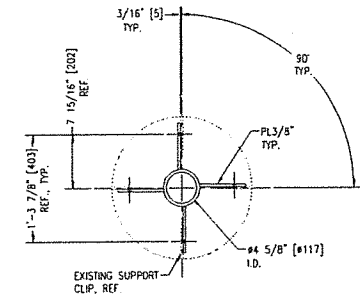
AIRLIFT TUBING MAKE-UP
N.T.S.



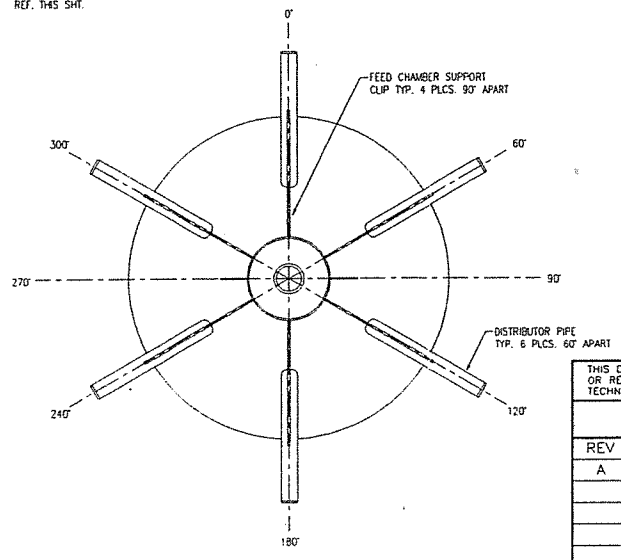
DETAIL 9
SECTION THRU AIRLIFT
TUBING ELBOW
N.T.S.
REF. THIS SHIT.



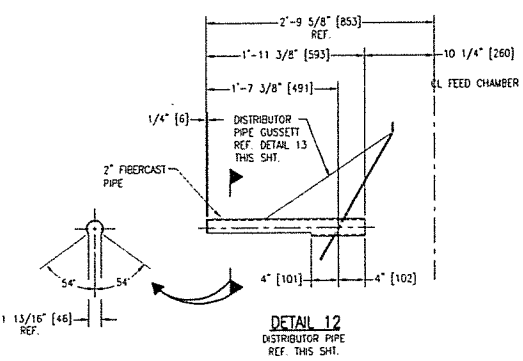
DETAIL 10
FEED CHAMBER
REF. SHIT. 1
MATL: FFR
2 REQ'D



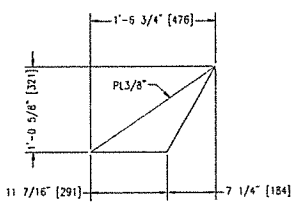
DETAIL 11
FEED CHAMBER LOWER CONE
SUPPORT AT SOUTH FILTER
REF. THIS SHIT.
MATL: FFR
1 REQ'D



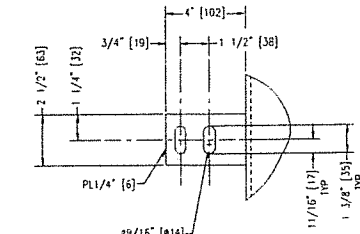
SECTION E-E
REF. THIS SHIT.



DETAIL 12
DISTRIBUTOR PIPE
GUSSET
REF. THIS SHIT.



DETAIL 13
DISTRIBUTOR PIPE GUSSET
REF. THIS SHIT.



DETAIL 14
FEED CHAMBER SUPPORT CLIP
SCALE: 3"=1'-0"
REF. THIS SHIT.

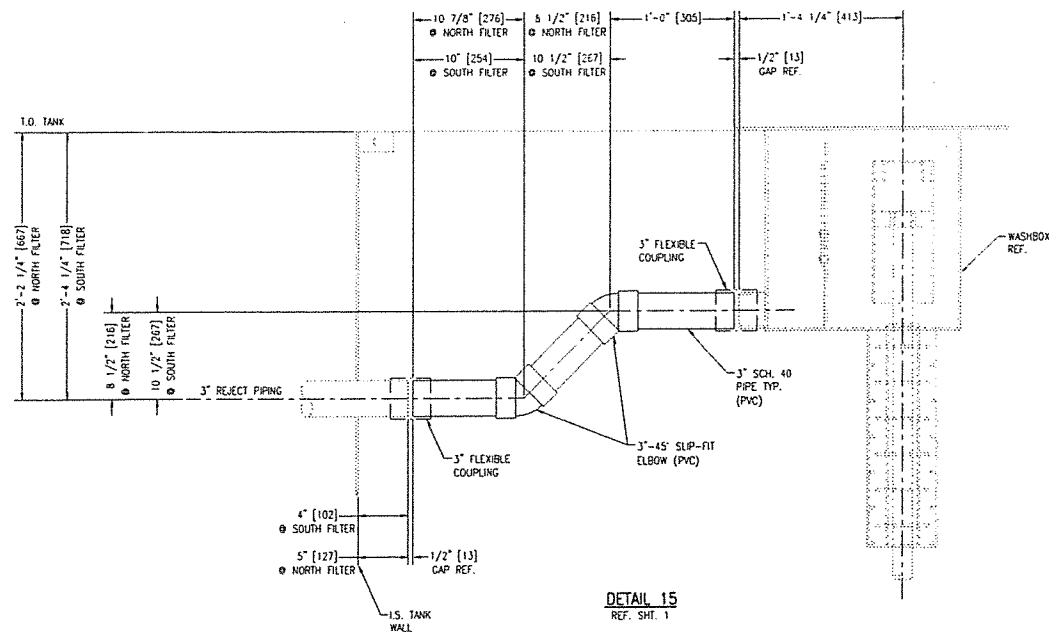
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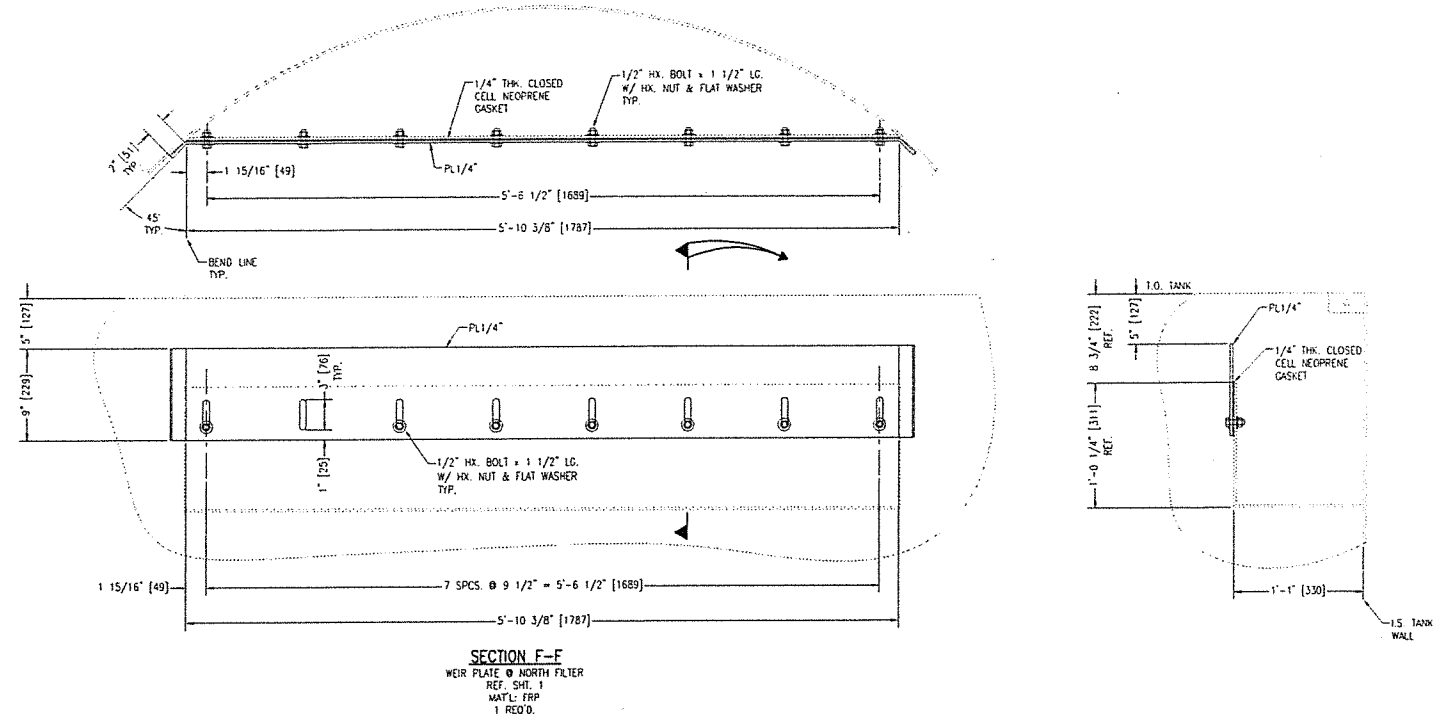
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CENTRA-FLO GRAVITY SAND FILTER SAUSALITO NORTH AND SOUTH FILTER REPLACEMENT PARTS

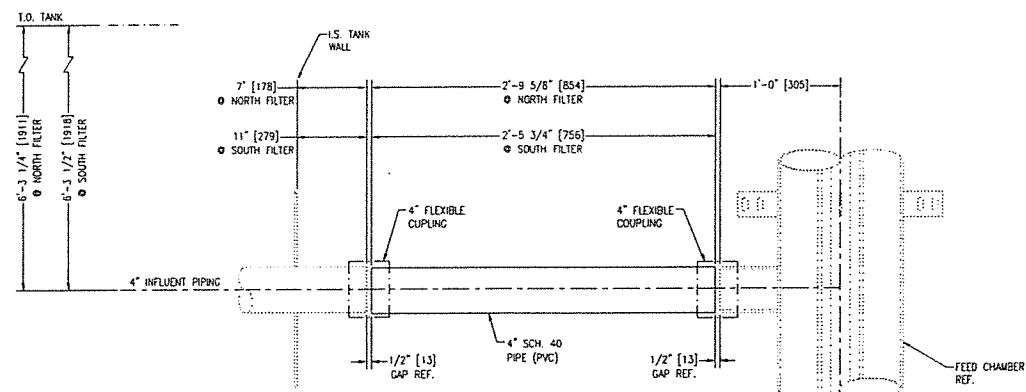
DRAWN BY: P. SIMON	DATE: 9/2/04	DWG. NO.: 406-1040-3
CHK'D BY: J. STEVENS	SCALE: 1"=1'-0"	SHT 3 OF 4
CAD FILE: 406-1040-3	JOB NO: 406-1040	REV: A



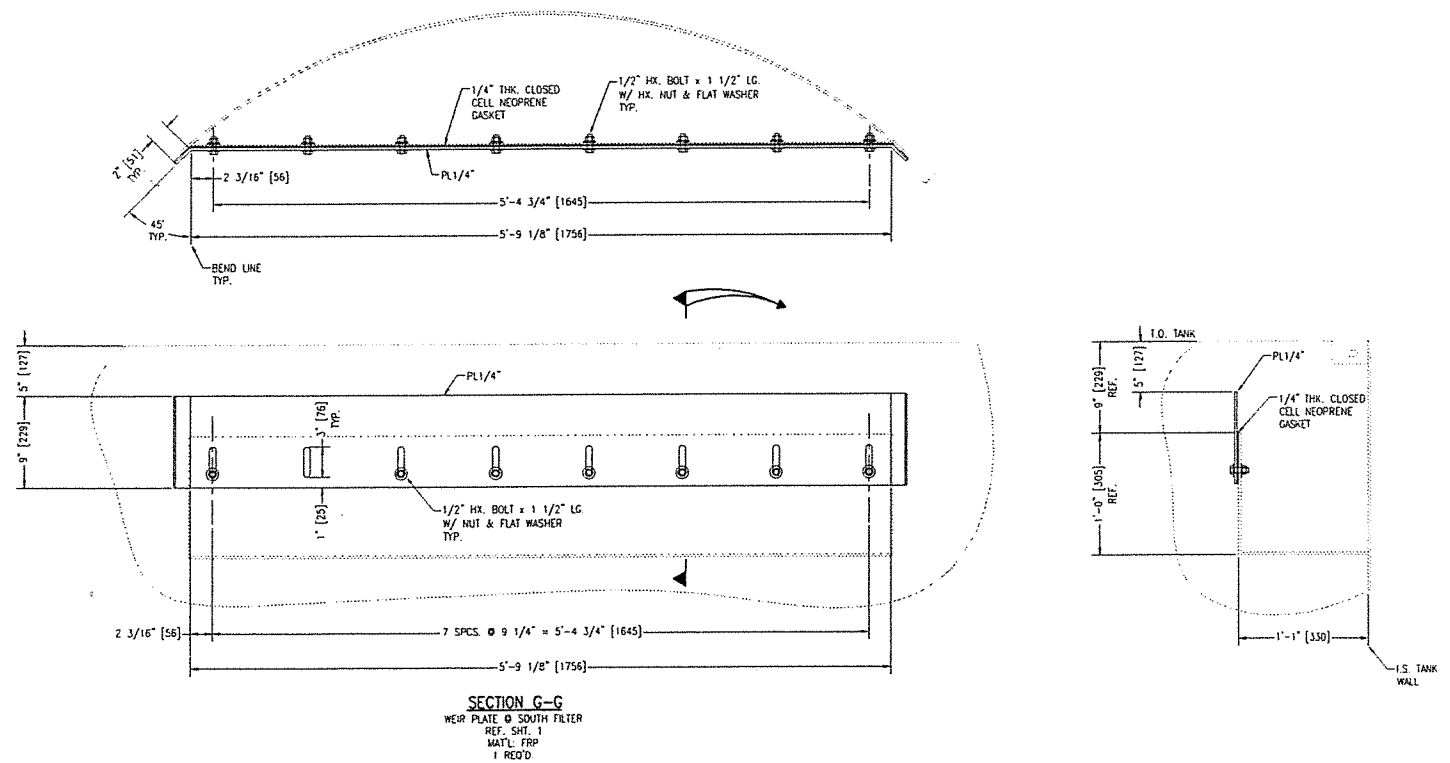
DETAIL 15
REF. SH. 1



SECTION F-F
WEIR PLATE @ NORTH FILTER
REF. SH. 1
MAT'L: FRP
1 REQ'D



DETAIL 16
REF. SH. 1



SECTION G-G
WEIR PLATE @ SOUTH FILTER
REF. SH. 1
MAT'L: FRP
1 REQ'D

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936/539-4099 Fax 936/539-4089

CENTRA-FLO GRAVITY SAND FILTER
SAUSALITO NORTH AND SOUTH FILTER REPLACEMENT PARTS

DRAWN BY: P. SIMON	DATE: 9/2/04	DWG. NO.: 406-1040-4
CHK'D BY: J. STEVENS	SCALE: 1 1/2" = 1'-0"	SH. 4 OF 4
CAD FILE: 406-1040-4	JOB NO: 406-1040	REV: A

FILTER SAND SPECIFICATION

General

Filter sand shall conform to AWWA/ANSI standard B-100-89 except as stated herein.

Silica Content

Minimum SiO₂ content shall be 98% by weight.

Shape

A minimum of 95% by weight shall have sphericity within the range of Krumbein index 0.6 - 0.8.

Particle Size

Sand must be thoroughly washed and dried before screening.

The sand mix may be obtained by combining various quantities of standard grades. The batch then must be thoroughly mixed before sampling. A copy of the batch sieve analysis and a representative 2 pound sample must be submitted to APT before shipment.

The range of particle sizes in the batch shall be as shown on the attached Silica Sand Specification/Sieve Analysis.

SILICA SAND

TYPICAL PHYSICAL PROPERTIES

FUSION POINT	3135 °F
HARDNESS	7 MHOS SCALE
GRAIN SHAPE	SPHERICAL
SPECIFIC GRAVITY	2.65 g/cm ³
BULK DENSITY	Approx. 1.57 g/cm ³
pH	6.8 to 7.2
SPHERICITY (Krumbein)	0.6 to 0.7
ROUNDNESS (Krumbein)	0.6 to 0.7

TYPICAL CHEMICAL ANALYSIS

SILICON DIOXIDE	98.20%
ALUMINUM OXIDE	.72%
CALCIUM OXIDE	.56%
IRON OXIDE	.07%
MAGNESIUM OXIDE	.13%
MANGANESE OXIDE	.03%
POTASSIUM OXIDE	.10%
SODIUM OXIDE	.03%
TITANIUM DIOXIDE	.07%
LOSS ON IGNITION	.09%
	<u>100.00%</u>

TYPICAL SIEVE ANALYSIS - #16-30 and Coarser

<u>U.S. Sieve</u>	<u>#4-8</u>	<u>#8-12</u>	<u>#10-20</u>	<u>#12-20</u>	<u>#16-30</u>
6	1.0%				
7	38.6				
8	53.5	6.0%			
10	6.4	54.0	1.0%		
12	0.5	35.3	15.0	2.1%	
14		4.7	24.3	20.9	
16		T	31.4	29.6	1.1%
18			21.4	28.6	28.4
20			3.5	13.3	40.2
25			3.4	5.0	18.6
30				0.5	7.0
40					4.3
Pan					0.4
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Material Safety Data Sheet
 To be used to comply with
 OSHA's Hazard Communication Standard,
 29 CFR 1910.1200. Standard must be
 consulted for specific requirements.

U.S. Department of Labor
 Occupational Safety and Health Administration
 (Non-Regulatory Form)
 Form Approved
 OMB No. 1210-0072



IDENTITY (As Used on Label and List) SILICA SAND
Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I SILICA FLOUR

Manufacturer's Name AGSCO CORPORATION	Emergency Telephone Number 847-520-4455
Address (Number, Street, City, State, and ZIP Code) 945 CHADICK DRIVE	Telephone Number for Information 847-520-4455
WHEELING ILLINOIS 60090	Date Prepared 01-20-96
	Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identify Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits (Recommended)	% (optional)
SILICON DIOXIDE SiO ₂ (SILICA) 0.1 MILLIGRAMS PER CUBIC METER OF AIR QUARTZ				
QUARTZITE				
NOVACULITE				
TRIPOLI				
CHEMICAL ABSTRACT SERVICE # 14008-60-7				

Section III — Physical/Chemical Characteristics

Boiling Point	1750°C	Specific Gravity (H₂O = 1)	2.65
Vapor Pressure (mm Hg.)	105MM HG AT 2075°C	Melting Point	1725°C
Vapor Density (AIR = 1)	ESTIMATED 78G/CC 2075°C	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water	NOT SOLUBLE		
Appearance and Odor	GRANULAR POWDER - ODORLESS		

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	N/A	Flammable Limits	N/A	LEL	N/A	UEL	N/A
Extinguishing Media	N/A						
Special Fire Fighting Procedures	NON-FLAMMABLE						
Unusual Fire and Explosion Hazards	NONE						

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	N/A

Incompatibility (Materials to Avoid) **Hydrofluoric acid (HF), in which silica will dissolve and produce the corrosive gas silicon tetrafluoride (SiF4).**

Hazardous Decomposition or Byproducts **N/A**

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	N/A

Section VI — Health Hazard Data

Route(s) of Entry: **Inhalation? Yes** **Skin? No** **Ingestion? No**

Health Hazards (Acute and Chronic): **Pulmonary fibrosis (Silicosis) with long term exposure.**

Carcinogenicity: **NTP? No** **IARC Monograph? Level 2A Grouping** **OSHA Regulated? NO**

Signs and Symptoms of Exposure **Shortness of breath on effort, difficulty breathing, coughing and phlegm production, getting more colds or infection than usual.**

Medical Conditions Generally Aggravated by Exposure **Injury to lungs. (Silicosis)**

Emergency and First Aid Procedures **For gross inhalation--remove to fresh air, give oxygen and artificial respiration as needed. For eyes--flush with warm water. Seek medical attention as needed.**

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled **Clean up by use of recommended dustless methods--water or vacuum.**

Waste Disposal Method **Any approved solid waste disposal method.**

Precautions to Be Taken in Handling and Storing **Adequate ventilation and dust collection. Use dustless systems for handling & storing so that exposure does not exceed OSHA Standard TLV(0.10 milligrams per cubic meter of air.)**

Other Precautions **Practice good housekeeping. Suggest posting work areas where product is used or stored. Warning employees that repeated inhalation of respirable dust or extended period of time may cause injury to lungs.**

Section VIII — Control Measures

Respiratory Protection (Specify Type) **Dust respirators (NIOSH TC-21C-132) e.g. 3M #8710**

Ventilation Yes	Local Exhaust	Vented hoods--follow OSHA Standards.
	Mechanical (General)	Dust collection at source--suction fans or scrubbers.

Protective Gloves **As required to OSHA Standards.** Eye Protection **As required.**

Other Protective Clothing or Equipment **As required to OSHA Standards.**

Hygienic Practices **Good housekeeping.**