Procurement and Contracting Services

Request for Bids for AHSC Cooling Towers 3 and 4 Upgrades

ADDENDUM #2

Please mark all bid submission

Files with the following information

Sealed RFB # S252303

Due on March 31, 2023 no later than 2:00 PM, MST

The timeline for RFB S252303 has been amended as follows:

Section 3.3:

Original Schedule

02/22/2023	Issuance of RFB
03/07/2023	Vendors Visit University Site(s)
03/10/2023	Technical Questions/Inquiries due no later than 12:00 PM, MST
03/21/2023	RFB is Due March 21, 2023, no later than 2:00 PM, MST

Revised to:

02/22/2023	Issuance of RFB
03/07/2023	Vendors Visit University Site(s)
03/10/2023	Technical Questions/Inquiries due no later than 12:00 PM, MST
03/31/2023	RFB is Due March 31, 2023, no later than 2:00 PM, MST

Section 3.8: Proposal Submission and Subsequent Action

All dates within the entire section 3.8 are revised to March 31, 2023 at 2:00PM MST.

The following questions have been received by the technical question due date of March 10, 2023 by 12:00 PM, MST.

1. Question regarding Disconnect?
    a. The University will lock out and disconnect/reconnect power to the fan motors and safety switches, along with low voltage controls to each cell. The existing VFDs and Fan disconnects are to be reused. The awarded contractor shall coordinate the needs and schedule with the UA prior to commencing work.

2. Do you require a particular manufacturer for crane?
    a. The preferred manufacturer is Thern 5PT10G with a 120V 4WP20K electric winch to match the existing unit located on the north towers.

3. Can the University provide the existing 2 Cell Tower Information as followed?
    Size of existing Fill Media
    Size of existing drift eliminator system
    Size of existing drive shaft and fans (length & diameter)
    Photos of existing water distribution (nozzles etc.)
    Model and Serial number of existing gear reducers
        a. Please see following

Clarification: Included within Attachment A of the RFB is a Memorandum with a Subject of Performance Testing of the Cooling Towers. This Memorandum is being provided only as a reference to understand what testing will be performed at the end of the project. The University will contract with a 3rd party testing agency to verify tower cell performance

CUSTOMER: GEA

CUSTOMER ORDER NO.: 0910028

CUSTOMER JOB: SN 256203/256204

MARKS:

AMARILLO RIGHT ANGLE GEAR DRIVE
DOUBLE REDUCTION

MODEL: 1008 RATIO: 10.5:1 S/N

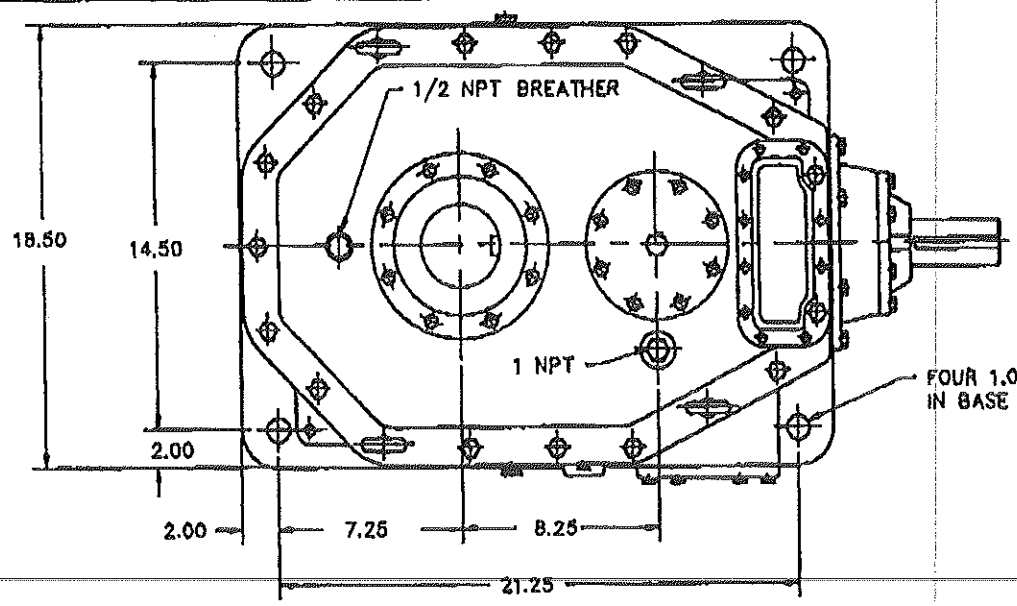
ROTATION: CW - CW WEIGHT: 830 lbs.

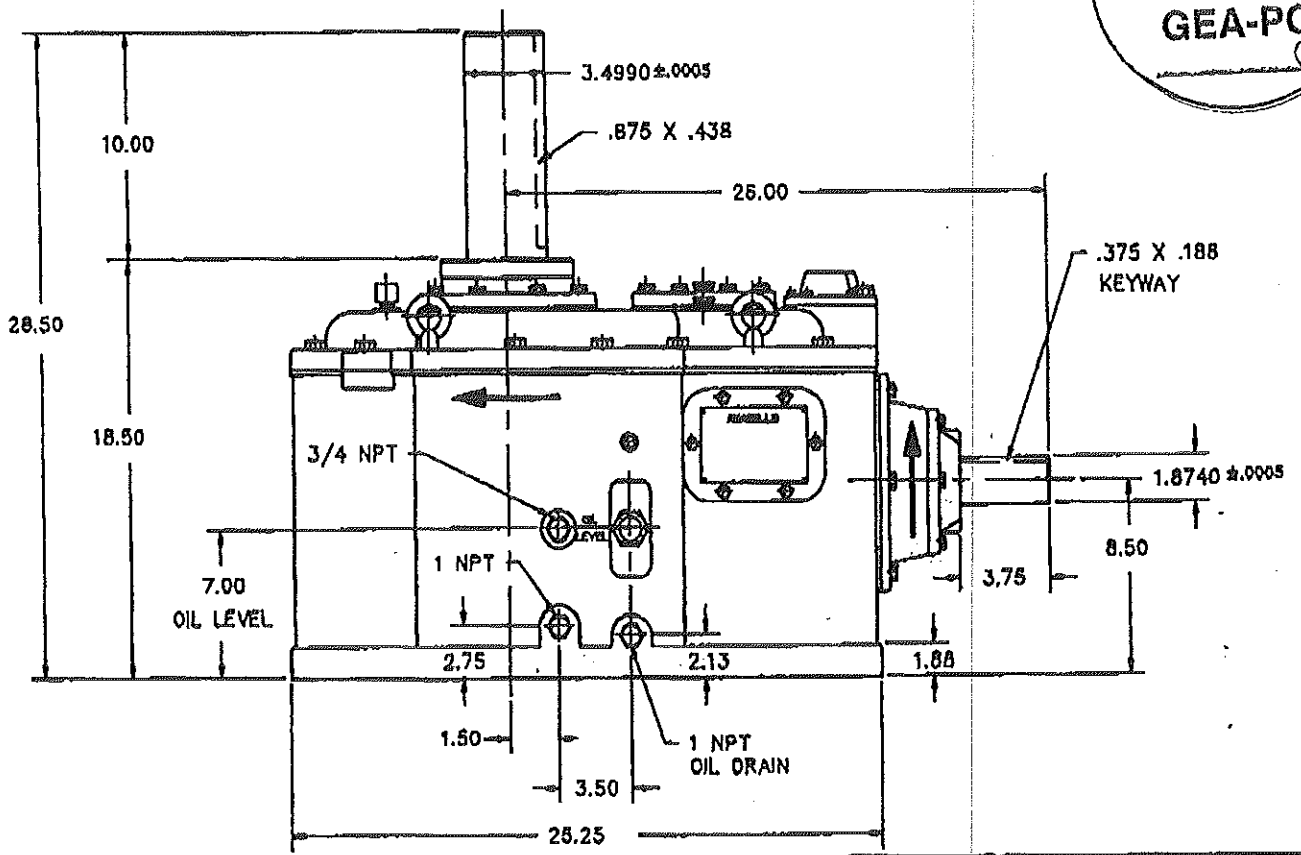
HORSEPOWER: 86 AT 1750 INPUT SPEED

SERVICE FACTOR: 2.0 OIL CAPACITY: 6 gals.

SPECIAL FEATURES: LOW OIL LEVEL SWITCH, SS. DRAIN VALVE

Mount Williams





BY: K.M. AL

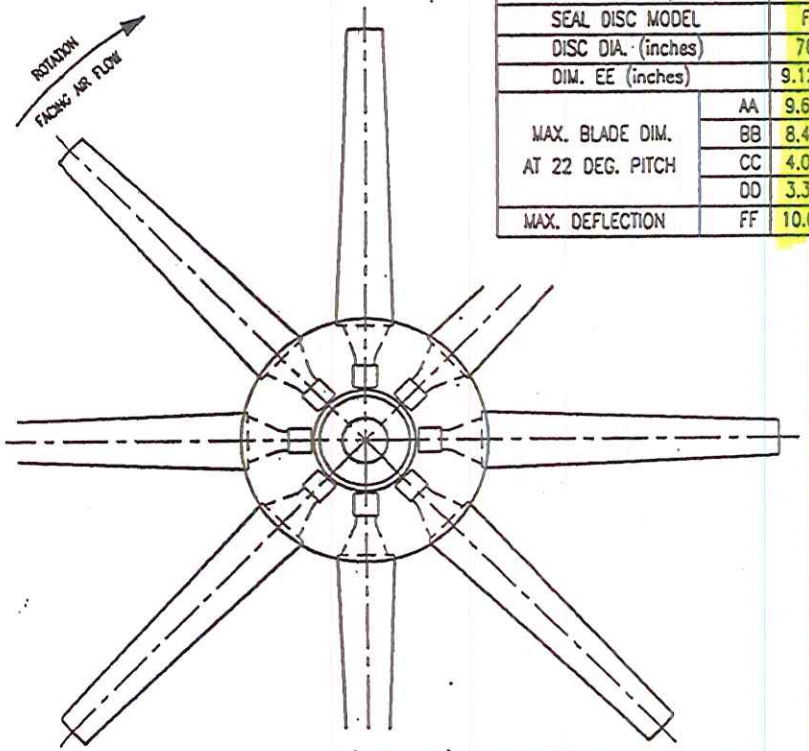
DATE: 3-2-05 AGC# 32342

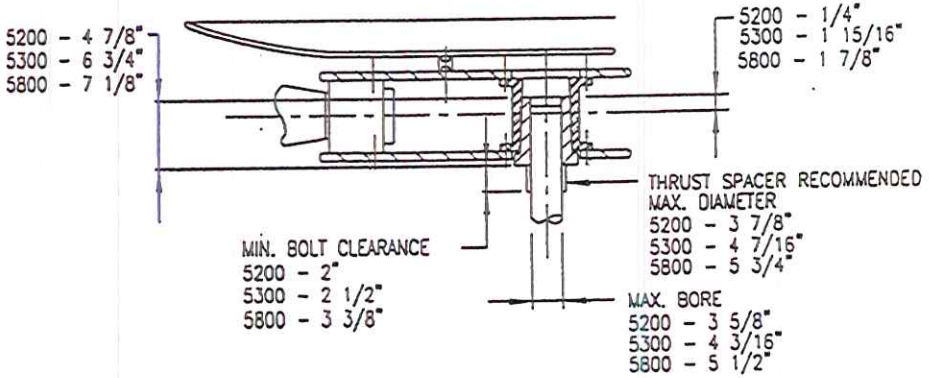
AMARILLO GEAR COMPANY
P.O. BOX 1789, AMARILLO, TEXAS 79105
TEL: 806-622-1273 FAX: 806-622-3259

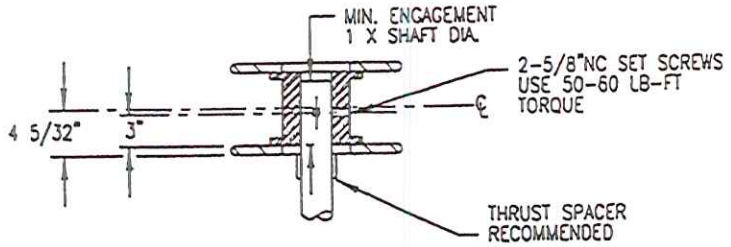
FORM 321A

STANDARD DIMENSIONS – MODEL H BLADES						
FAN DIAMETER (FEET)		22	24	26	28	30
SEAL DISC MODEL		F	F	G	G	G
DISC DIA. (inches)		76	76	88	88	88
DIM. EE (inches)		9.125	9.125	10.125	10.125	10.125
MAX. BLADE DIM. AT 22 DEG. PITCH	AA	9.68	9.84	9.97	10.07	10.19
	BB	8.44	8.61	8.76	8.87	9.00
	CC	4.08	3.75	3.42	3.14	2.81
	DD	3.36	3.09	2.82	2.59	2.32
MAX. DEFLECTION	FF	10.00	11.00	12.50	14.00	14.00

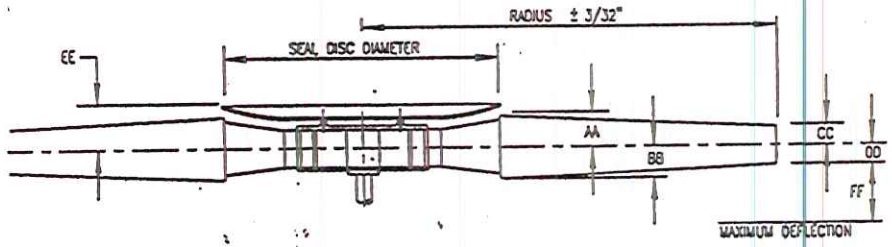
HUB MODELS					FAN WEIGHTS				
NO. BLD	R-2	S-2	STR.	U-1	22	24	26	28	30
6	5206	5306	5406	5806	1168	1234	1298	1358	1400
7	5207	5307	5407	5807	1277	1297	1429	1499	1548
8	5208	5308	5408	5808	1387	1475	1559	1639	1695
9	5209	5309	5409	5809	1497	1596	1690	1780	1843
10	5210	5310	5410	5810	1597	1717	1821	1921	1991
11	5211	5311	5411	5811	1716	1837	1952	2062	2139
12	5212	5312	5412	5812	1826	1958	2082	2202	2286







1. FOR HUB INSTALLATION AND OPERATION SEE MANUAL IN 5000H.
2. THRUST SPACER RECOMMENDED IF GEAR BOX SHAFT HAS NO SHOULDER.
3. SPECIAL TAPERED BORES AVAILABLE.
4. THE AA, BB, CC, DD DIMENSIONS CAN VARY AS MUCH AS 1 1/2" DEPENDING ON HOW THE BLADES ARE TRACKED.
5. A MINIMUM CLEARANCE OF DIMENSION FF UNDER BLADE TIPS IS REQUIRED.



ACFM	STATIC. PRESS.				IN. WATER
TEMP.	°F	DENSITY RATIO	ALT.		FT.
FAN R.P.M.	PITCH ANGLE (APPROX.)÷			°	
FAN MODEL	HUB MODEL				
BLADE	BORE		KEYWAY		
QTY.					
P.O. NO.	HUDSON JOB NO.				
APPROVED			DATE		

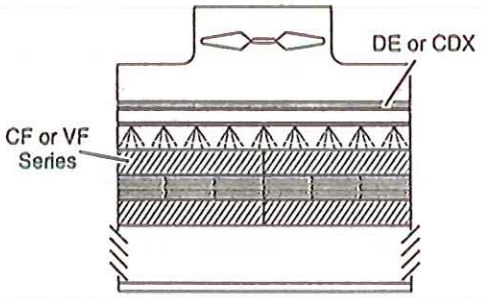
5	4	3	2	1	REVISION
CY	CRG	CRG	CRG	CRG	REVISED BY
AB	RCM	RCM	RCM	RCM	APPROVED BY
10/1/96	8/21/96	8/4/95	4/25/95	1/23/95	DATE

HUDSON PRODUCTS CORPORATION
HOUSTON, TEXAS
CERTIFIED PRINT

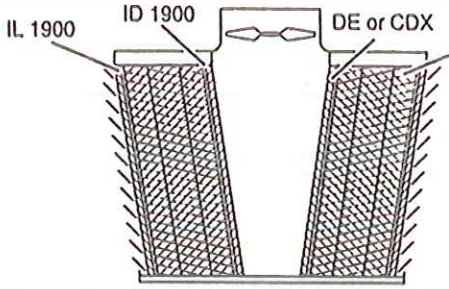
DRAWING NO.
CP-5000H

ACCU-PAC® Cooling Tower Film Fill

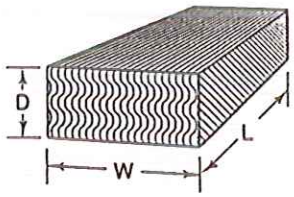
Product Description		Applications
CF 650	Cross corrugated, edge bonded media having the highest surface to volume ratio.	Scrubbers, Oil-Water separation and specialty applications.
CF 1200AT	Cross corrugated, edge bonded fill with dedicated glue points, alternating tip(AT), and very high surface to volume ratio. Pat. No. 4,668,443.	Package counterflow towers in HVAC and industrial applications. 4" - 6" depth as distribution pad.
[illegible]00	Cross corrugated, edge bonded fill with optimally sized microstructure, dedicated glue points, high surface to volume ratio and high thermal performance. Pat. No. 4,668,443.	Power, Refining, Chemical, Steel and Food processing with average water quality. Used in counterflow and crossflow towers and as top layer with vertical flow media.
IL 1900	Cross corrugated fill with integral louver. ID 1900 has integral drift eliminator. Pat. No. 4,668,443.	IL-for crossflow towers to eliminate water leaving (blowout) the tower when fan is off. ID-for crossflow towers as drift eliminator.
CF 3000	Cross corrugated, edge bonded fill with large flute openings. Pat. No. 4,668,443.	Applications are the same as CF 1900 and the least prone to fouling of the cross corrugated fills.
VF 19 Plus	Vertical flow, anti-fouling, edge bonded, dedicated glue points with microstructure and open cell design for optimal air and water flow and the highest VF Series thermal performance. Pat. No. 4,668,443 & 5,217,788.	Power, Refining, Chemical, Steel and Food processing counterflow towers with poor water quality.
VF 3800	Vertical flow, anti-fouling, edge bonded with no microstructure. Pat. No. 4,668,443.	Refining, Chemical, Steel, Pulp & Paper and Food processing counterflow towers with poor water quality.
VF 5000	Vertical flow, anti-fouling, edge bonded with the largest of flute openings of the VF Series. Pat. No. 4,668,443.	Refining, Chemical, Steel, Pulp & Paper and Food processing counterflow towers with very poor water quality.



Counterflow Tower



Crossflow Tower



Standard Description:
D x W x L

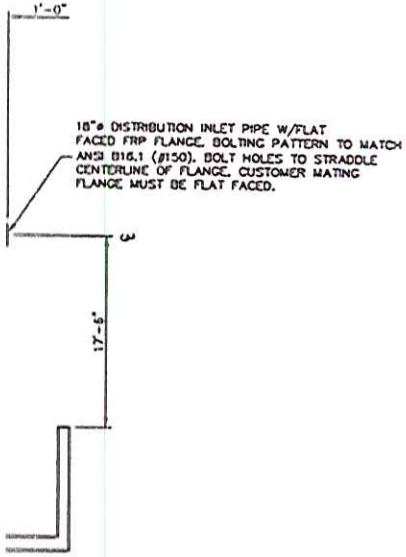
ACCU-PAC® Cooling Tower Film Fill

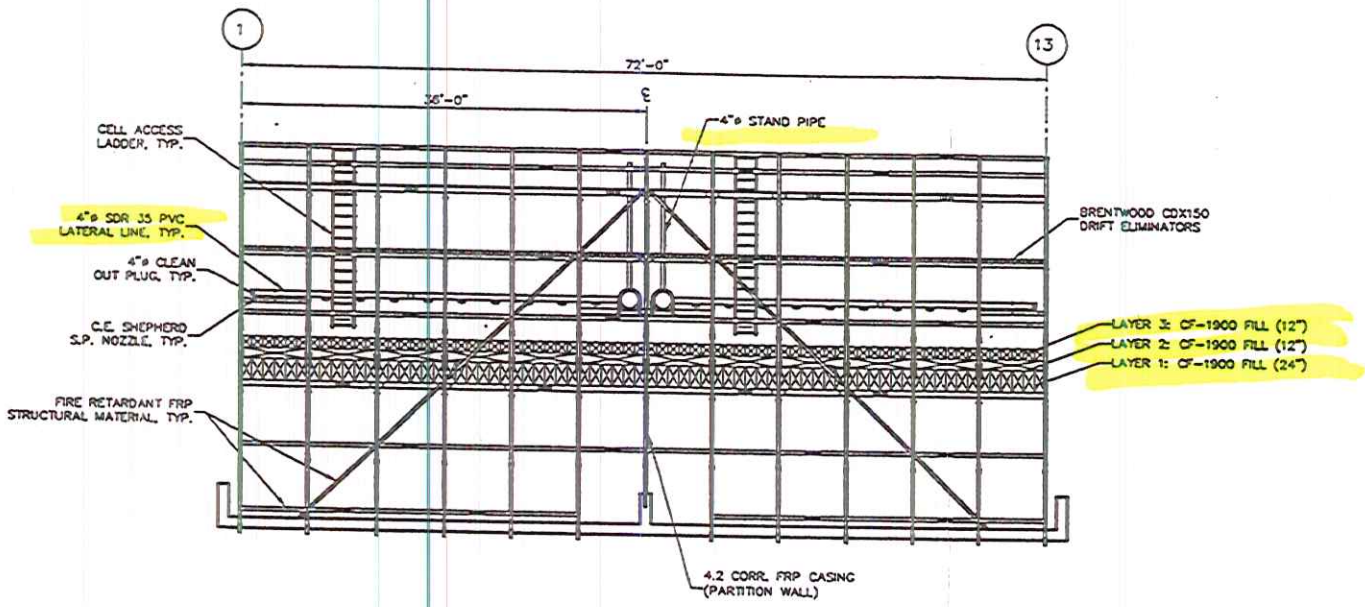
Product Identification	Specific Surface Area ft.²/ft.³ (m²/m³)	Size of Corrugation Angle and Sheets/ft.	Cooling Tower Application	Sizing in Inches (Metric,mm): Depth x Width x Length Minimum	Maximum	Standard
CF 650	119 (390)	6.5mm - 30° - 44		4" x 6" x 12" (101x153x305)	12" x 12" x 120" (305x305x3048)	L-4, 6, 8 & 10 ft; W-12" (1220, 1829, 2439, 3048; W-305)
CF 1200-AT	69 (226)	12mm - 30° - 26	Counterflow	4" x 6" x 12" (101x153x305)	23" x 12" x 144" (560x305x3658)	L-4, 6, 8 & 10 ft; W-12" (1220, 1829, 2439, 3048; W-305)
CF 1900	48 (157)	19mm - 30° - 16	Counterflow & Crossflow	6" x 6" x 12" (153x153x305)	24" x 24" x 144" (610x610x3658)	L-4, 6, 8 & 10 ft; W-12" or 24" (1220, 1829, 2439, 3048; W-305 or 610)
IL 1900 (ID 1900 for DE)	48 (157)	19mm - 30° - 17 ID-1900 - 16	Crossflow	12" x 6.75" x 12" (305x172x305)	12"x 24.75" x 144" (305x624x3658)	L-4, 6, 8 & 10 ft; W-12.75" or 24.75" (1220, 1829, 2439, 3048; W-324 or 624)
CF 3000	31 (102)	30mm - 30° - 10	Counterflow & Crossflow	12" x 6" x 12" (305x152x305)	24" x 24" x 144" (610x610x3658)	L-4, 6, 8 & 10 ft; W-12" or 24" (1220, 1829, 2439, 3048; W-305 or 610)
VF 19 PLUS	47 (154)	19mm - 0° - 16	Counterflow	5.9" x 6" x 12" (100x153x305)	23.6" x 24" x 144" (600x610x3658)	L-4, 6, 8 & 10 ft; W-12" or 24" (1220, 1829, 2439, 3048; W-305 or 610)
VF 3800	40 (131)	38mm - 0° - 16	Counterflow	24" x 6" x 12" (600x153x305)	24" x 24" x 144" (610x610x3658)	L-4, 6, 8 & 10 ft; W-12" or 24" (1220, 1829, 2439, 3048; W-305 or 610)
VF 5000	30 (98)	50mm - 0° - 12	Counterflow	24" x 6" x 12" (600x153x300)	24" x 24" x 144" (610x610x3658)	L-4, 6, 8 & 10 ft; W-12" or 24" (1220, 1829, 2439, 3048; W-305 or 610)

Brentwood sheet thicknesses are quoted in final gage (as measured in the field) of .008" (.203mm), .010" (.254mm), .015" (.381mm) or your specific requirement. All Brentwood fill products are available in PVC and most designs are also available in HPVC and are UV stabilized. The PVC compounds used in Brentwood fills have outstanding resistance to weather exposure and are nearly impervious to chemical degradation by alkali, acids, grease, fats, oils and biological attack. Brentwood PVC has excellent fire rating due to its self-extinguishing characteristics and meets or exceeds Cooling Tower Institute PVC Materials Standard 136.

BRENTWOOD INDUSTRIES

Brentwood Industries, Inc.
610 Morgantown Rd., Reading, PA 19611
P.O. Box 605, Reading, PA 19603, U.S.A.
610-236-1100 FAX: 610-236-1199
email: ctsales@brentw.com





LONGITUDINAL VIEW
PERIMETER VIEW W/ CASING REMOVED

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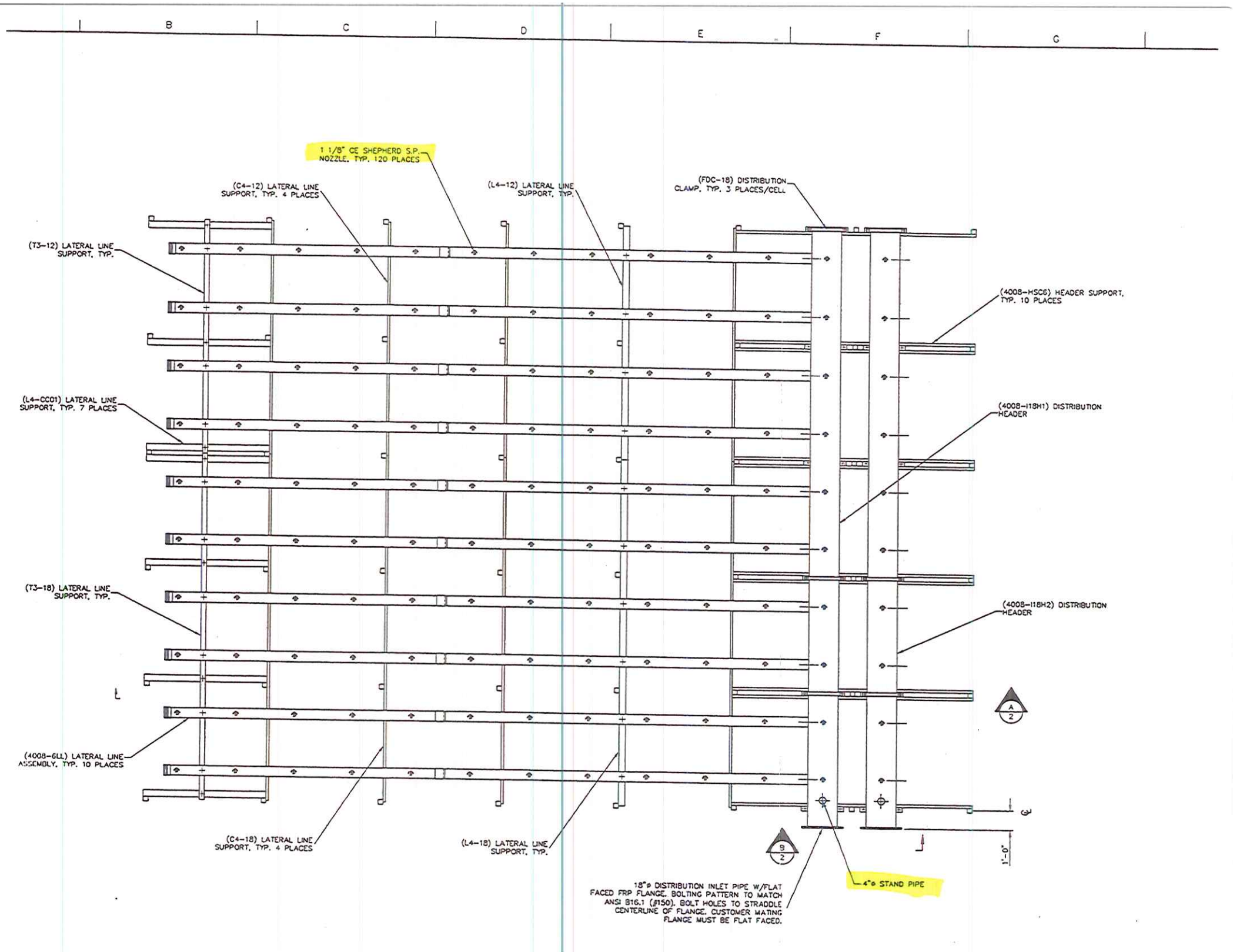
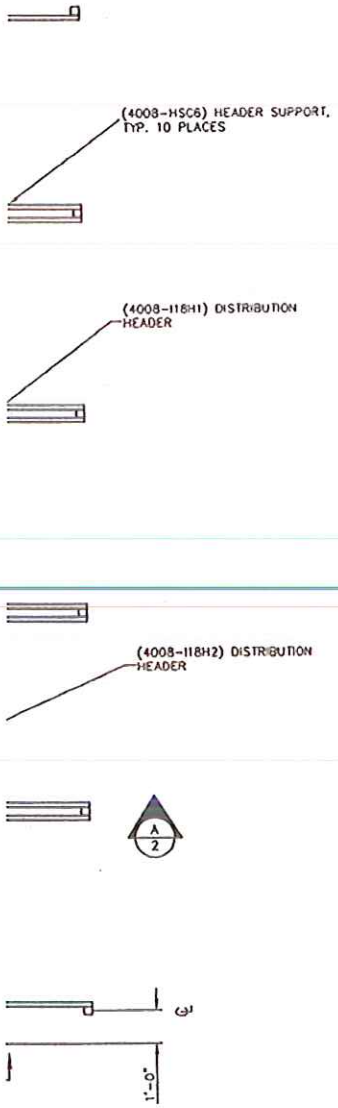

B
C
D
E
F
G
1 1/8" CE SHEPHERD S.P. NOZZLE. TYP. 120 PLACES
(C4-12) LATERAL LINE SUPPORT, TYP. 4 PLACES
(L4-12) LATERAL LINE SUPPORT, TYP.
(FDC-18) DISTRIBUTION CLAMP. TYP. 3 PLACES/CELL
(T3-12) LATERAL LINE SUPPORT, TYP.
(4008-HSC6) HEADER SUPPORT, TYP. 10 PLACES
(L4-CC01) LATERAL LINE SUPPORT, TYP. 7 PLACES
(4008-I18H1) DISTRIBUTION HEADER
(T3-18) LATERAL LINE SUPPORT, TYP.
(4008-I18H2) DISTRIBUTION HEADER
(4008-6LL) LATERAL LINE ASSEMBLY, TYP. 10 PLACES
(C4-18) LATERAL LINE SUPPORT, TYP. 4 PLACES
(L4-18) LATERAL LINE SUPPORT, TYP.
A 2
9 2
1'-0"
18"ø DISTRIBUTION INLET PIPE W/FLAT FACED FRP FLANGE. BOLTING PATTERN TO MATCH ANSI B16.1 (#150). BOLT HOLES TO STRADDLE CENTERLINE OF FLANGE. CUSTOMER MATING FLANGE MUST BE FLAT FACED.
4"ø STAND PIPE



BILL OF MATERIALS

PART NO.	DESCRIPTION	QTY
	DISTRIBUTION INSTALLATION	
4008-118H1	18"Ø FRP HEADER INLET PIPE ASSEMBLY **	1
4008-118H2	18"Ø FRP HEADER INLET PIPE ASSEMBLY **	1
	3M ADHESIVE SEALANT 560 (CARTRIDGE) **	1
4008-6LL	6"Ø LATERAL LINE ASSEMBLY	10
4008-4SP	4"Ø STAND PIPE - 4"ø x 12'-0"	1
	CE SHEPHERD S.P. NOZZLE WITH 1 1/8" ORIFICE	120
	JONES-TITE GROMMET - 4"ø	1
	JONES-TITE GROMMET - 6"ø	10
FDC-18	DISTRIBUTION CLAMP (FOR 18"Ø PIPE)	3
	FLANGE GASKET (FOR 18"Ø PIPE)	1
	ALL THREAD - 1/2"ø x 20"	12
	BOLT - 1/2"ø x 5"	43
	A.F.C. BOLT - 1/2"ø x 4 1/2"	18
	BOLT - 1/2"ø x 8"	1
	ALL THREAD - 1/2"ø x 12"	20
	NUT - 1/2"ø	134
	FLAT WASHER - 1/2"ø	196
	LOCK WASHER - 1/2"ø	62
	ALL THREAD - 1 1/8"ø x 6"	16
	NUT - 1 1/8"ø	32
	FLAT WASHER - 1 1/8"ø	32
L4-CC01	L4x4x1/4 x 6'-3"	7
L4-12	L4x4x1/4 x 12'-0"	1
L4-18	L4x4x1/4 x 18'-0"	1
C4-12	C4x1 1/8x1/4 x 12'-0"	4
C4-18	C4x1 1/8x1/4 x 18'-0"	4
4008-HSC6	C6x1 5/8x1/4 x 12'-3" **	10
4008-HST31	T3x3x1/4 x 0'-4 3/16"	12
4008-HST32	T3x3x1/4 x 0'-6 1/4"	12
4008-HST33	T3x3x1/4 x 2'-2"	6
4008-HST34	T3x3x1/4 x 2'-2"	12
T3-12	T3x3x1/4 x 12'-0"	1
T3-18	T3x3x1/4 x 18'-0"	1
	#12 x 1 1/2" "TEK" SCREW	70

QUANTITIES SHOWN ARE FOR ONE INSTALLATION ONLY. MULTIPLY BY 2 FOR TOTAL QUANTITY.

** - QUANTITIES SHOWN ARE TOTAL REQUIRED FOR TOWER.

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MAR 09 2005
GEA - PC
ENGINEERING DEPARTMENT

NOTES:

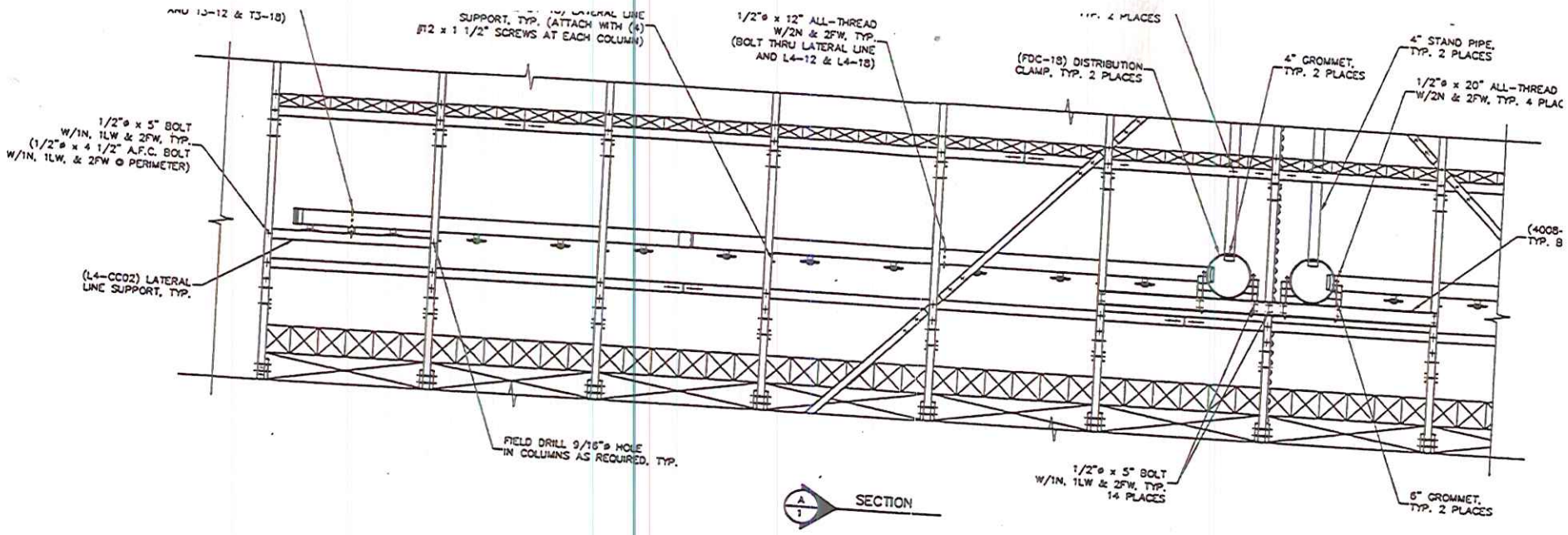
1) ALL (C4-12 & C4-18) LATERAL LINE SUPPORTS TO BE CONNECTED WITH #12 x 1 1/2" SCREWS.

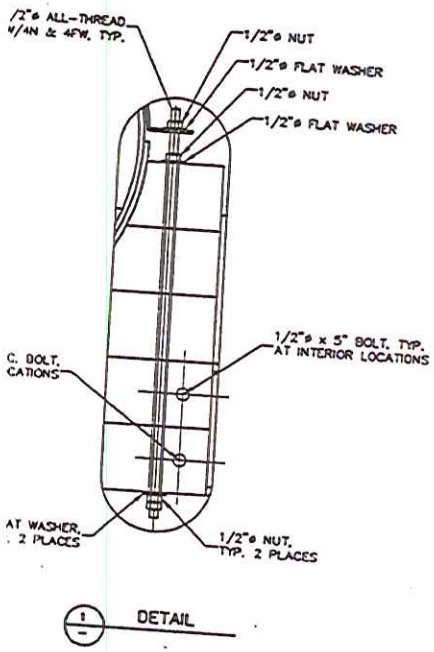
2) ALL STRUCTURAL HARDWARE TO BE 304 S.S.

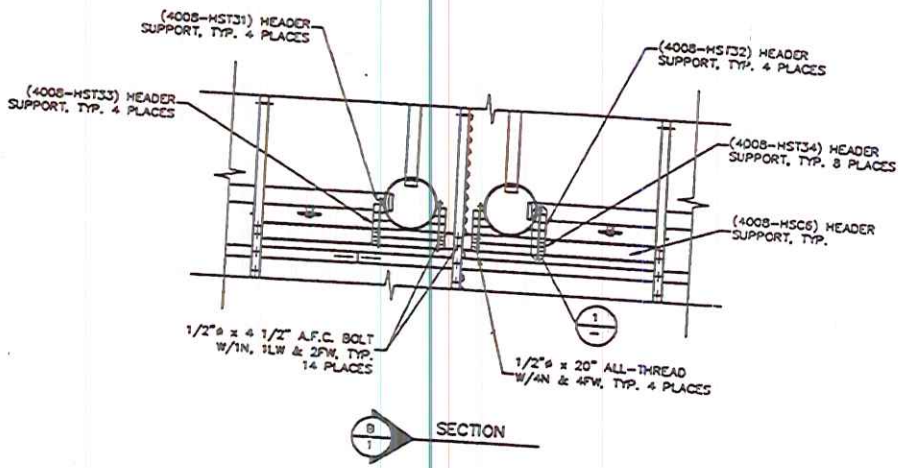
54")	TC				3-9-05
DER INTERFACE	TC	MW	EH	KG	12-08-04
	TC	MW	EH	KG	11-18-04
	DR	CK	ENG	PROJ	DATE

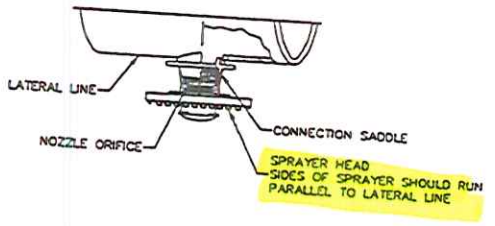
GEA
ENERGY TECHNOLOGY DIVISION
Integrated Cooling Technologies

PROJECT NAME AND LOCATION	UA INFRASTRUCTURE PHASE VI TUCSON, AZ AGREEMENT# 110486-08
MODEL NO.	363028-2I-22-FCF
DWG NAME	DISTRIBUTION INSTALLATION
SCALE	3/8"=1'
PROJECT NO.	04-008
DRAWING NO.	320
SHEET	1 OF 2
REVISION	B









DOWNSPRAY NOZZLE INSTALLATION DETAIL
(TYPICAL FOR LATERAL LINES)
N.T.S.

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DEC 0 6 2004

End of addendum, all else remains the same.