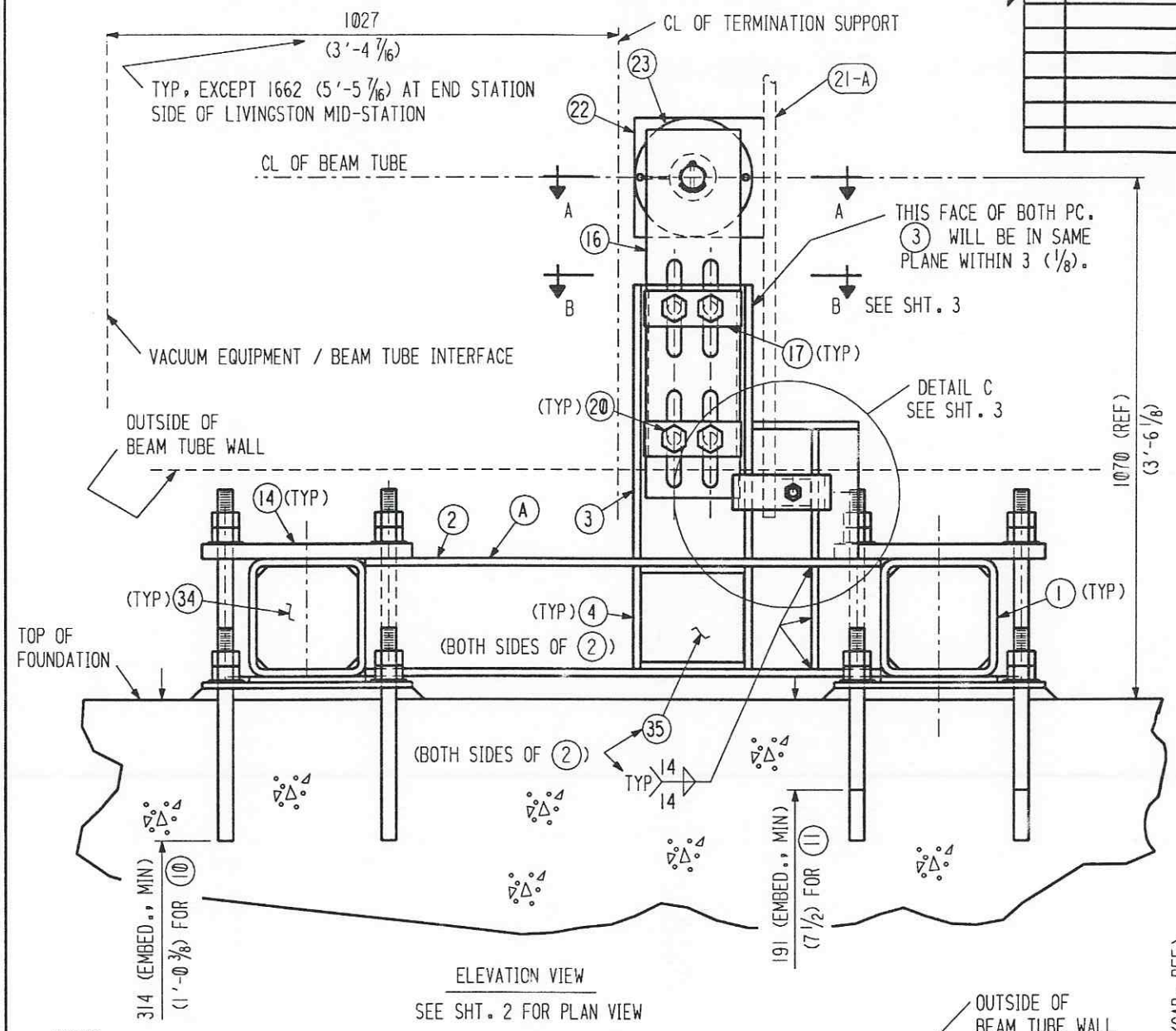


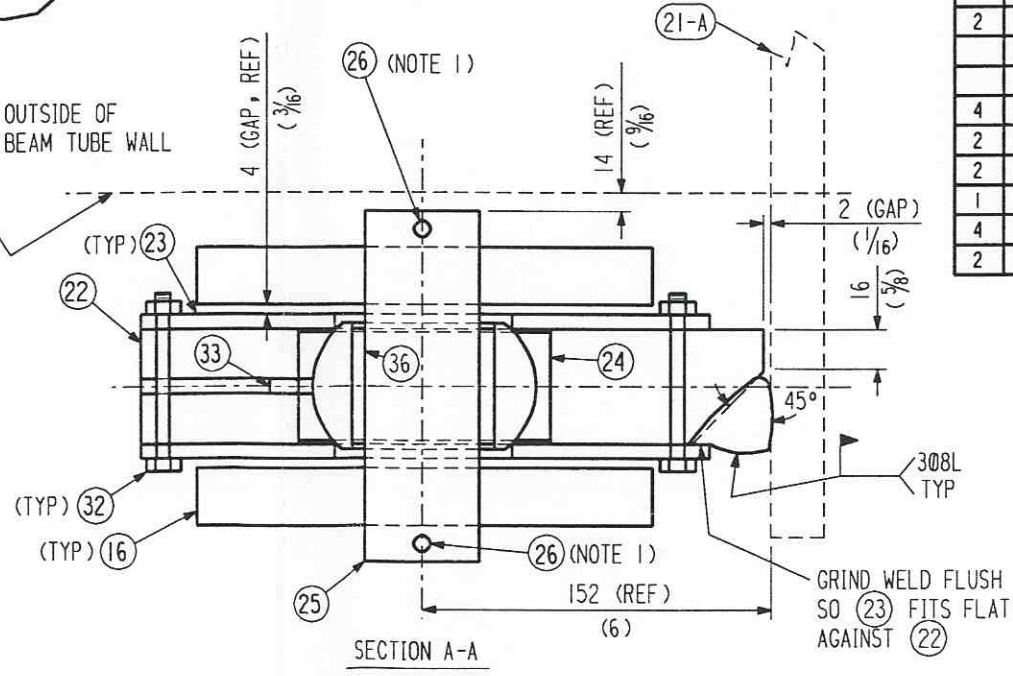
SHP PC	MARK	ASSM PC	DESCRIPTION	LENGTH MM	SPEC	D
			SELF LOCKING CUP POINT			
2	20-36		BEARING DIXON CJ32E40-16			C
			* = SA479-TP304L			
			** = 4140 W/ ROCKWELL C32			
			*** = A325 TYPE 3 (NOT GALV.)			
			M7 = SEE SPEC C-SUPT-1			



APPROVED

M. Tellalian 9-13-96
CBI DATE

J. Jones 9/23/96
CALTECH DATE



- NOTES:**
- 1) COTTER PIN TO HAVE BOTH LEGS BENT UP TO PREVENT ROTATION OF COTTER PIN.
 - 2) POSITION TERMINATION SUPPORT IN PROPER LOCATION BEFORE INSTALLING (13).
 - 3) ROUGHEN THE FOUNDATION SURFACE BY CHIPPING, SAND BLASTING OR OTHER MECHANICAL MEANS TO REMOVE ANY LAITANCE OR WEAK SURFACE LAYER..
 - 4) CLEAN BOTTOM OF BASE PLATE (9) TO REMOVE DIRT AND CONTAMINATION. WIPE SURFACE WITH ISOPROPYL ALCOHOL TO DECREASE THE SURFACE..
 - 5) POSITION AND LEVEL THE BASE PLATE (9). A MINIMUM CLEARANCE BETWEEN THE BASE PLATE AND THE FOUNDATION OF 13 (1/2) IS REQUIRED OVER THE ENTIRE BASE PLATE.
 - 6) PROVIDE FORMS OR RESTRAINTS TO CONTAIN THE GROUT UNDER THE BASE PLATE. THE FORMS SHALL PROVIDE CHAMFERED EDGES AROUND THE PERIMETER OF THE BASE PLATE.
 - 7) USE "FIVE STAR SPEED EPOXY GROUT" OR EQUAL.
 - 8) ENSURE THAT THE GROUT FILLS THE SPACES BETWEEN THE ANCHOR BOLTS AND THE BASE PLATE TO THE TOP SURFACE OF THE BASE PLATE.
 - 9) OUTER EDGES OF (12) TO BE PARALLEL WITHIN 2 (1/16).
 - 10) AFTER STACKING THREE BELLEVILLE WASHERS PER ANCHOR BOLT, FINGER TIGHTEN NUTS ON PC. (10). TIGHTEN NUTS IN INCREMENTS OF 1/2 TURN MAKING SURE TO ALTERNATE BETWEEN THE NUTS ON EACH END OF PC. (14). STOP TIGHTENING NUTS AS SOON AS BELLEVILLE WASHERS ARE COMPLETELY FLAT.

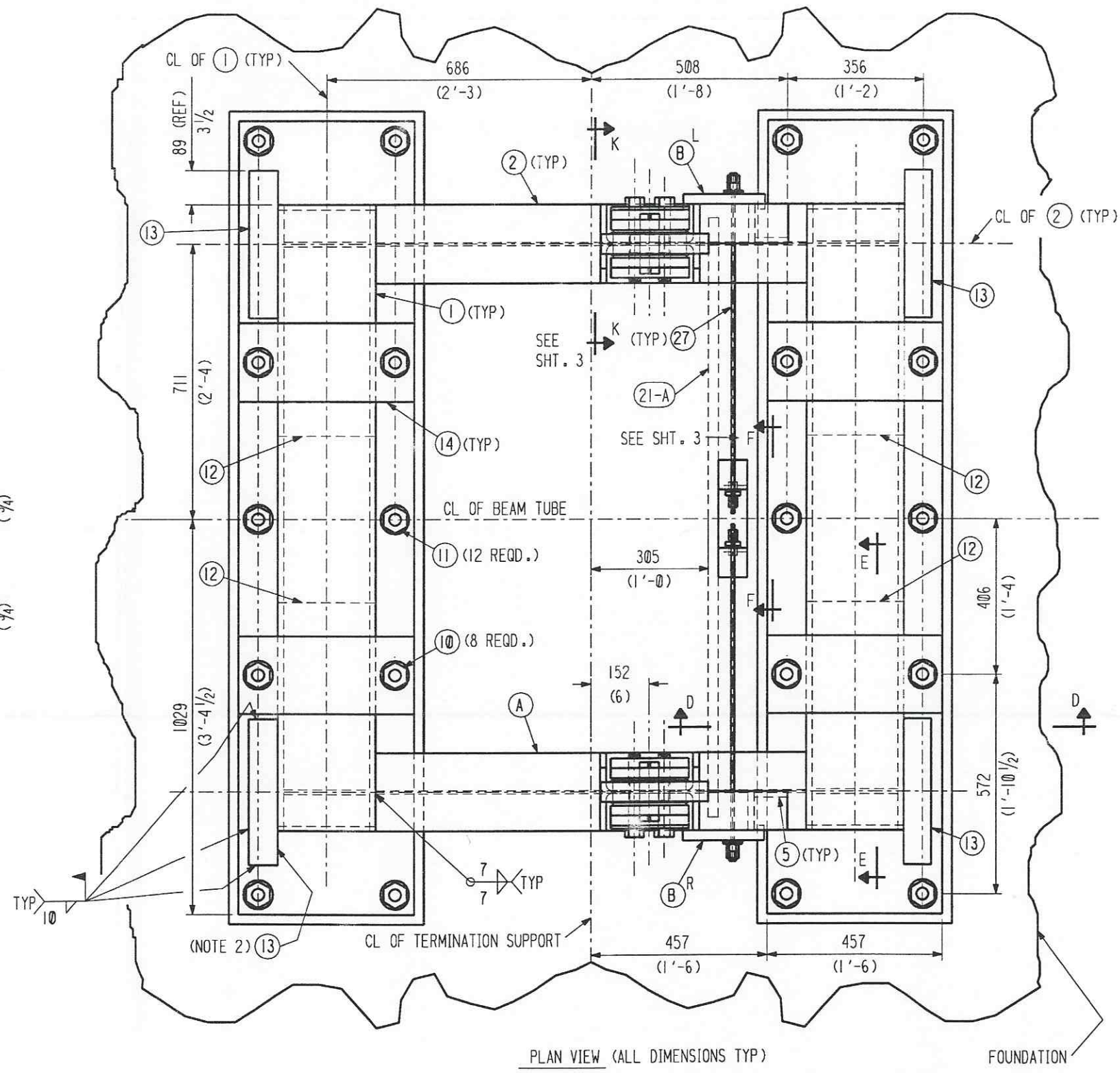
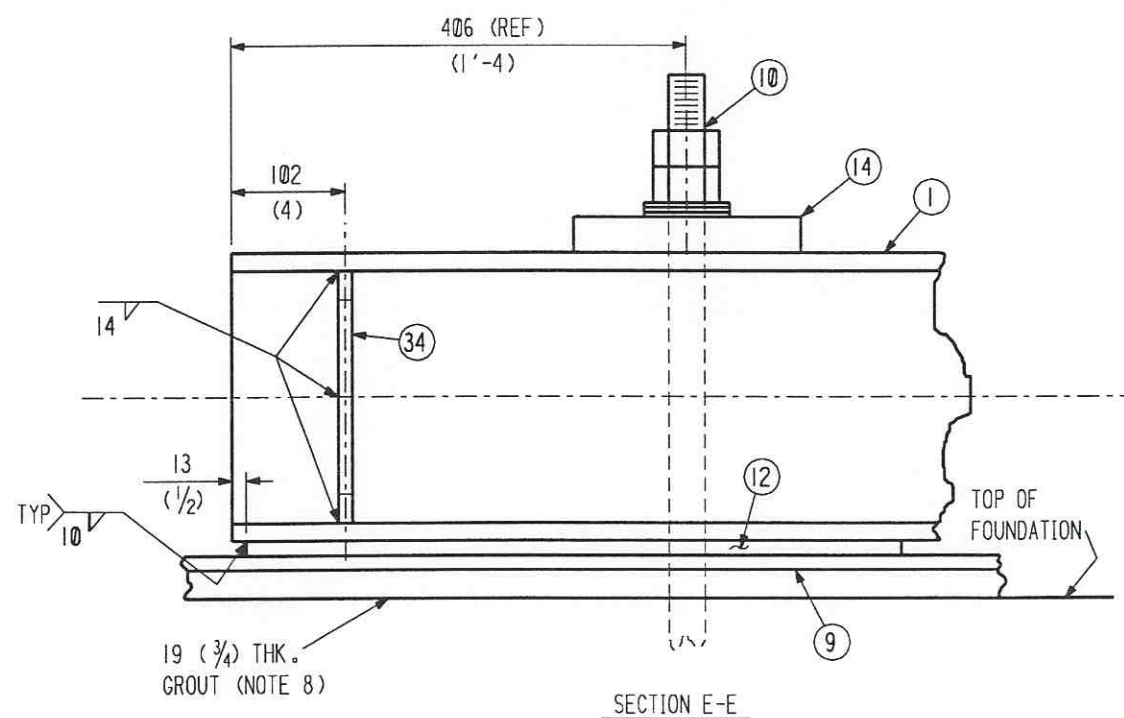
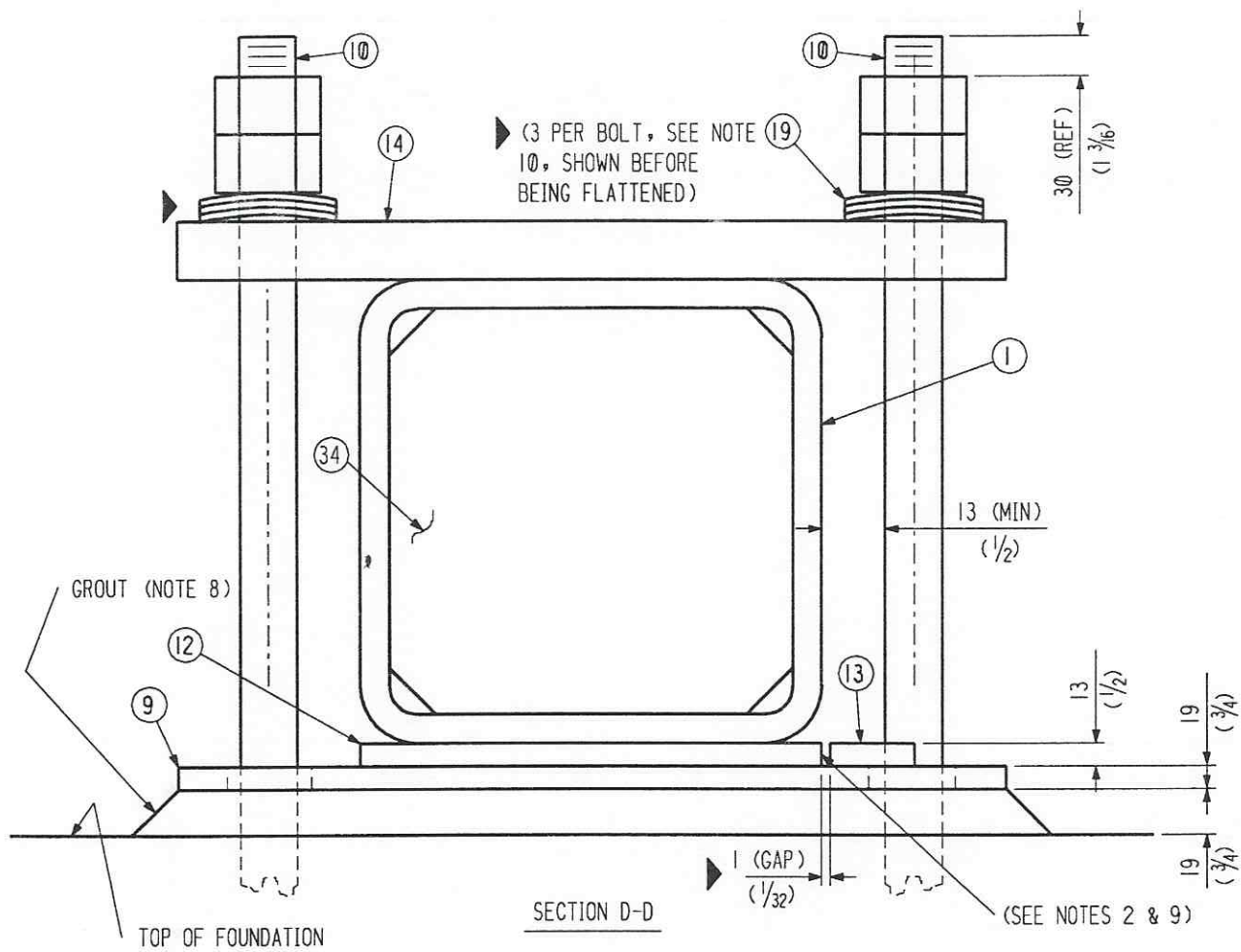
SHP PC	MARK	ASSM PC	DESCRIPTION	LENGTH MM	SPEC	D
1	20-A		TERMINATION SUPPORT		M7	
	20-1	2	TUBE 254 X 254 X 16 (10 X 10 X 5/8)	1626	A500 GR.B	C
				(5'-4)		
	20-2	2	W254 X 45 (W10 X 45)	1118	A36	C
				(3'-8)		
	20-3	2	W254 X 45 X SK (W10 X 45)		A36	C
	20-4	12	PL SK X 16 (5/8)		A36	C
	20-5	2	L 102 X 102 X 16 (4 X 4 X 5/8)	279 (11)	A36	C
	20-6	2	PL 102 X 16 (4 X 5/8)	229 (9)	A36	C
	20-12	4	PL 254 X 13 (10 X 1/2)	584	A36	C
				(1'-11)		
	20-15	4	PL SK X 32 (1 1/8)		A36	C
	20-34	4	PL SK X 16 (5/8)		A36	C
	20-35	4	PL 194 X 10 (7 5/8 X 3/8)	194	A36	C
				(7 5/8)		
2	20-B R/L		LATERAL CLAMP ASSEMBLY			
	20-7	2	PL SK X 25 (1")		A36	C
	20-8	4	BAR 13 X 6 (1/2 X 1/4)	25 (1")	A36	C
2	20-9		PL SK X 19 (3/4)		A36	C
8	20-10		ANCHOR BOLT 25 (1") DIA HILTI	737	A193-B7	C
			HY-150 314 (1'-0 3/8) EMBED.	(2'-5)	ZINC PL.	
			W/ WASHER, 2 NUTS AND ADHESIVE			
12	20-11		ANCHOR BOLT 22 (7/8) DIA HILTI	305	A193-B7	C
			HY-150 191 (7 1/2) EMBED.	(1'-0)	ZINC PL.	
			W/ WASHER, 2 NUTS AND ADHESIVE			
4	20-13		PL 76 X 13 (3 X 1/2)	381	A36	C
				(1'-3)		
4	20-14		PL SK X 32 (1 1/4)		A36	C
4	20-16		PL SK X 25 (1")		A514 GR.B	C
4	20-17		PL SK X 32 (1 1/4)		A36	C
4	20-18		PL SK X 32 (1 1/4)		**	C
24	20-19		BELLEVILLE WASHERS 25 (1") DIA		SS	C
			SPEC PART # B2000-065-S			
8	20-20		BOLT 29 (1 1/8) DIA HVY HEX HD	191	***	Ac
				(7 1/2)		
2	20-21		WASHER 19 (3/4) DIA		F436	Ac
2	20-22		BAR 254 (10) X 51 (2) X SK		*	C
4	20-23		SHEET SK X 3 (1/8) YOROLITE		G-11	C
2	20-24		BEARING SPHERICAL SKF GEZ 208 ES			C
2	20-25		BAR 51 (2) DIA X SK		303 SS	C
4	20-26		COTTER PIN 6 (1/4) DIA	76 (3)	316 SS	C
2	20-27		CABLE 10 (3/8) DIA (7 X 19 DR	914	CS	C
			6 X 19) GALV. W/ TWO 19 (3/4) DIA X	(3'-0)		
			102 (4) LONG THREADED PLUGS ZINC PL.			
4	20-28		NUT 19 (3/4) DIA HVY HEX		A307B	Ac
2	20-29		GROMMET X SK YOROLITE		GRADE G11	C
2	20-30		PL SK X 10 (3/8)		*	C
1	20-31		PL SK X 13 (1/2)		*	C
4	20-32		BOLT 6 (1/4) DIA HEX W/ NUT	76 (3)	A307	Ac
2	20-33		SET SCREW 6 (1/4) DIA - 20 UNC	13 (1/2)	CS	C

DETAILED AND BILLED FOR (1), (16) REQUIRED

BY DTR 3-11-96		REVISED BILLING OF PC. 22.	
DATE	BY	DATE	BY
9-13-96	MJT	9-13-96	MJT
REV. SPEC. FOR PC. 21 AND 32.		REVISED ENTIRE SHEET	
DATE	BY	DATE	BY
6-28-96	MJT	6-28-96	MJT
DATE	BY	DATE	BY
5-18-96	MJT	5-18-96	MJT
REVISIONS			
CUSTOMER'S NO		CONTRACT NO	
BY DTR CHKD ARL DATE 3-11-96		953571	
M.J. TELLALIAN		DWG 20	
ENGINEERING ASSIGNED		SHT 1	
		REV 3	
LIGO-DS60512-03-B			

55710120.DCN

INDICATES CHANGE FROM PREVIOUS ISSUE



PLAN VIEW (ALL DIMENSIONS TYP)

APPROVED

M. Tellalian 9-13-96
CBI DATE

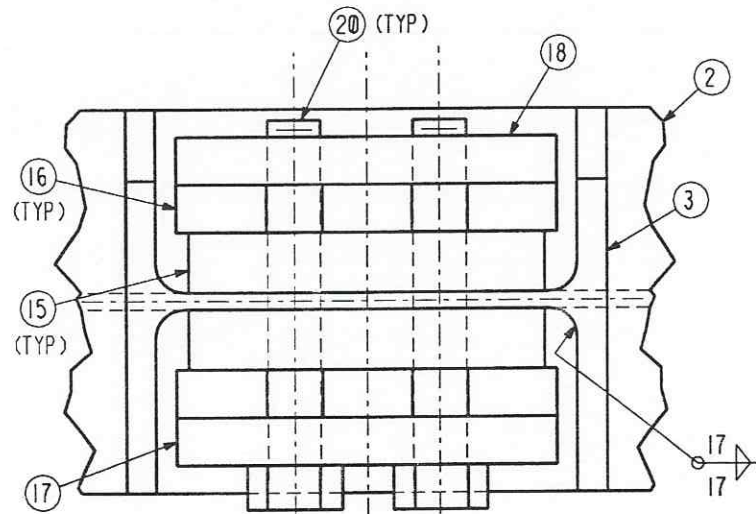
J. Davis 9/23/96
CALTECH DATE

BY	DTR	DATE	6-28-96
CHKD	ARL	DATE	9-23-96
BY	DTR	DATE	9-23-96
CHKD	ARL	DATE	9-23-96

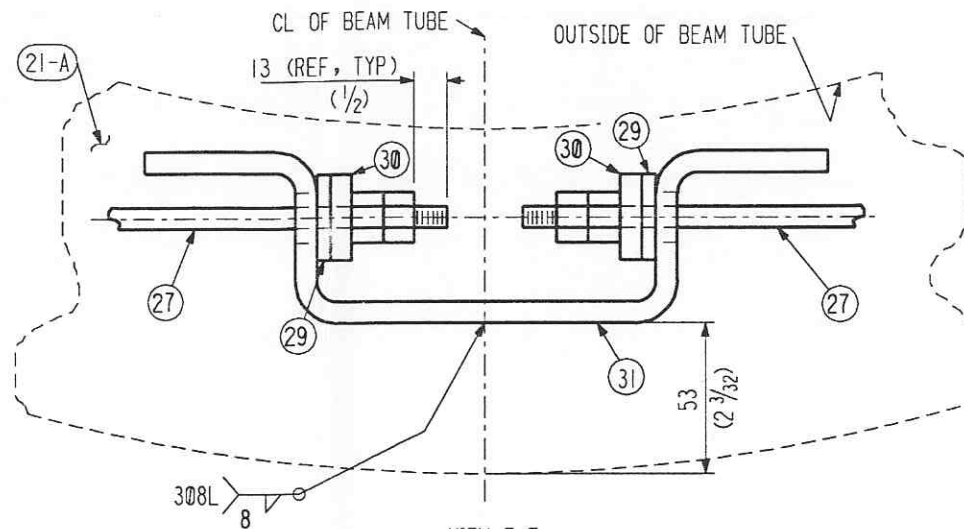
CBI		SUPPLIER'S / PURCHASER'S NO	
LIGO BEAM TUBE HANFORD, WA & LIVINGSTON, LA			
BEAM TUBE TERMINATION SUPPORT PLAN VIEW			
CUSTOMER'S NO		CONTRACT NO	
BY DTR CHKD ARL DATE 3-11-96		953571	
M.L. TELLALIAN ENGINEERING ASSIGNED		DWG 20	REV 3
		SHT 2	

55710220.DGN

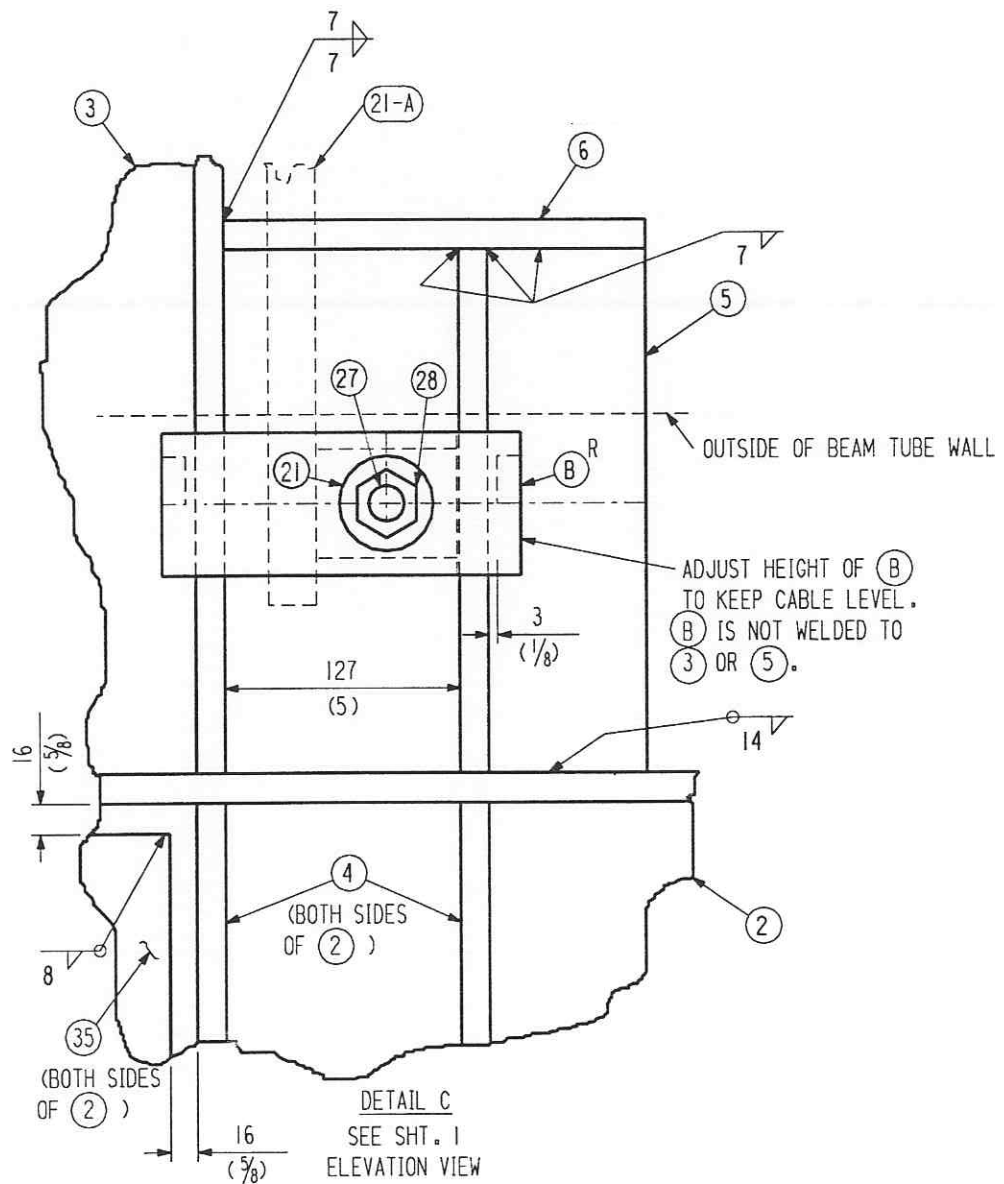
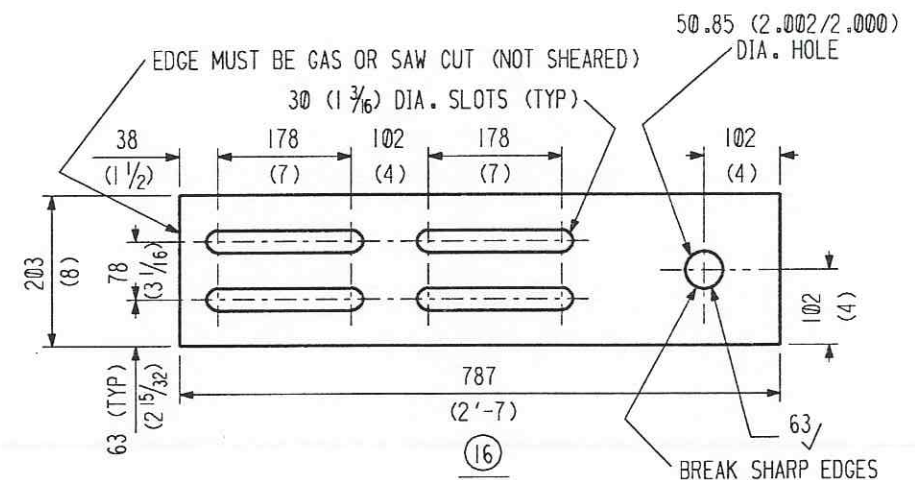
INDICATES CHANGE FROM PREVIOUS ISSUE



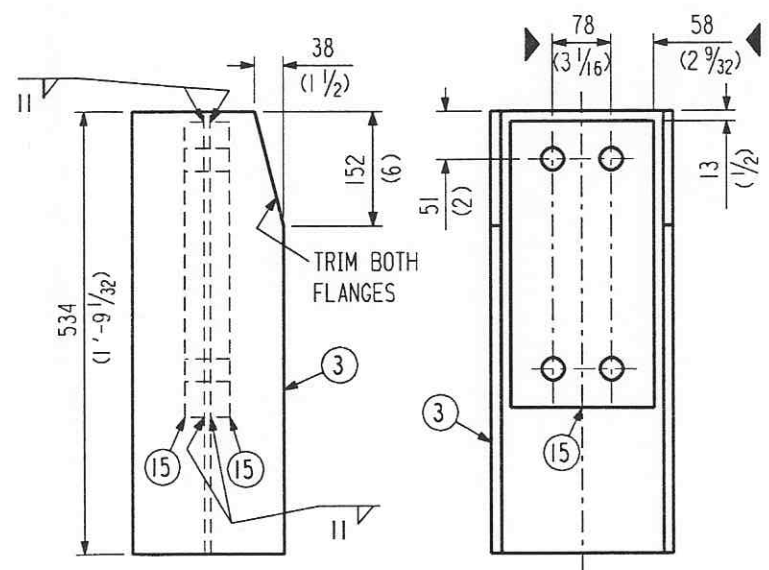
SECTION B-B
SEE SHT. 1
ELEVATION VIEW



VIEW F-F
SEE SHT. 2, PLAN VIEW



DETAIL C
SEE SHT. 1
ELEVATION VIEW



VIEW K-K
SEE SHT. 2, PLAN VIEW

APPROVED

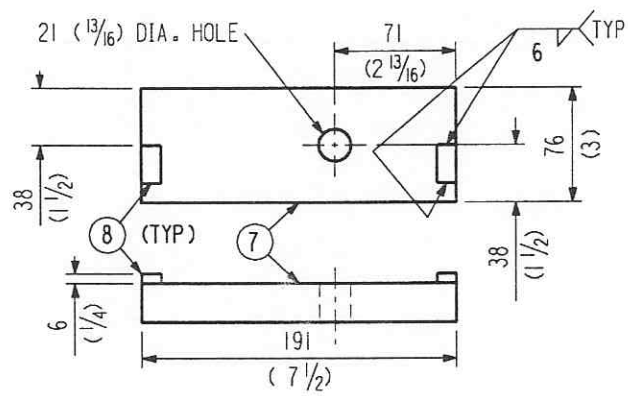
M. Tellalian 9-13-96
CBI DATE

J. Jones 9/23/96
CALTECH DATE

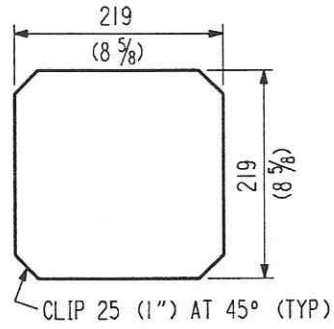
BY DTR		REV. DIMENSIONING OF PC. 15.	REVISIONS		REMARKS
DATE	DATE	DATE	DATE	DATE	
BY CHKD	DATE	BY DTR	REV. SHT. 1	REVISED ENTIRE SHEET	<p>CBI</p> <p>LIGO BEAM TUBE HANFORD, WA & LIVINGSTON, LA BEAM TUBE TERMINATION SUPPORT PIECE DETAILS</p>
DATE	DATE	DATE	DATE	DATE	
BY CHKD	DATE	BY DTR	REV. SHT. 1	REVISED ENTIRE SHEET	
DATE	DATE	DATE	DATE	DATE	
CUSTOMER'S NO			CONTRACT NO		
BY DTR CHKD ARL DATE 3-11-96			953571		
M.L. TELLALIAN			DWG 20		
ENGINEERING ASSIGNED			SHT 3		
			REV 3		

557100320.DGN

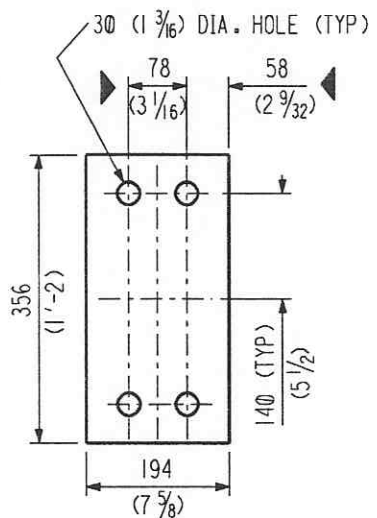
INDICATES CHANGE FROM PREVIOUS ISSUE



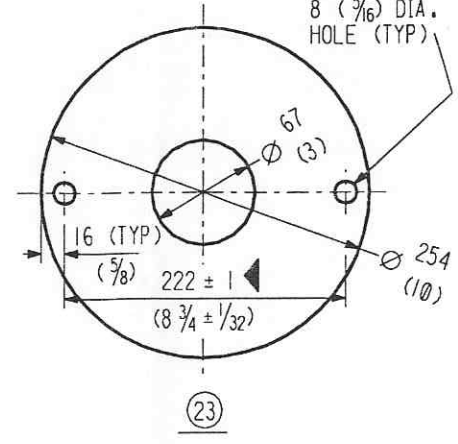
(B)^R (AS SHOWN)
(B) (MIRROR)



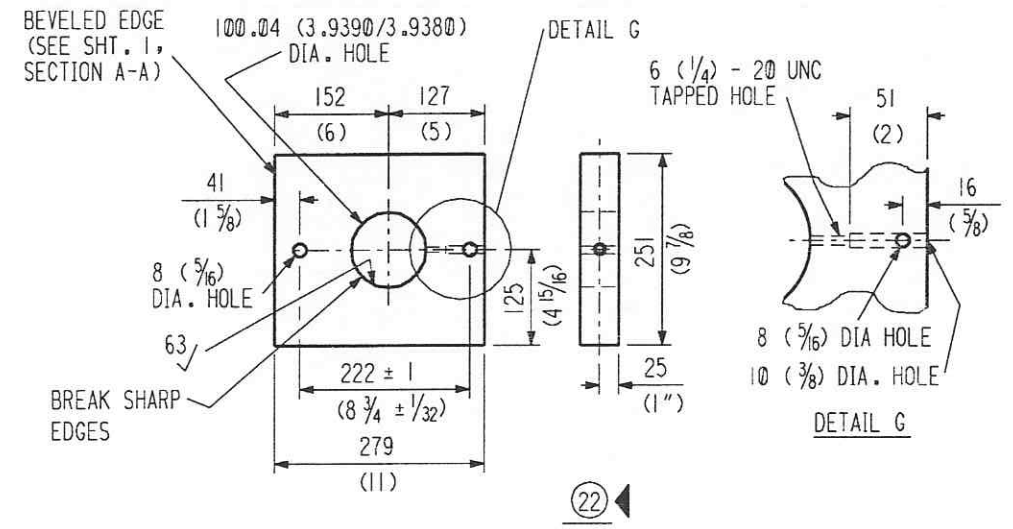
(34)



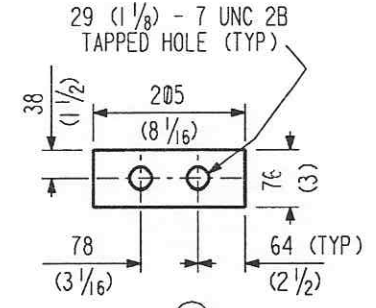
(15) (WELD (15) TO (3) BEFORE DRILLING HOLES)



(23)

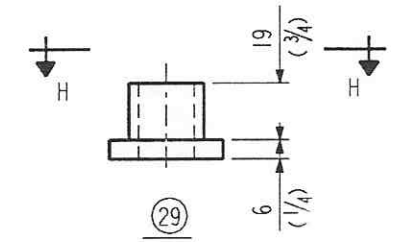


(22)

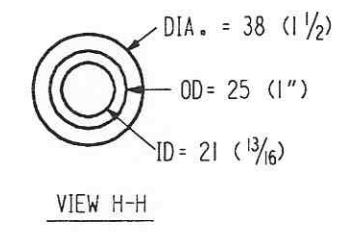


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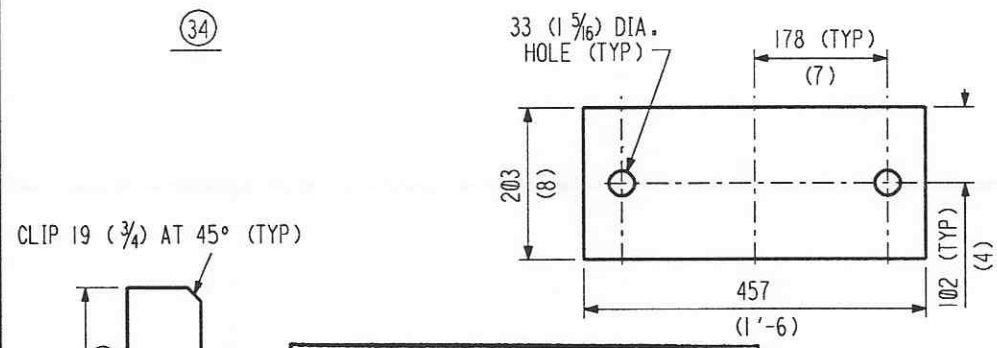
(FABRICATOR TO SPRAY COLD GALV., TAKING CARE NOT TO SPRAY THE THREADS)



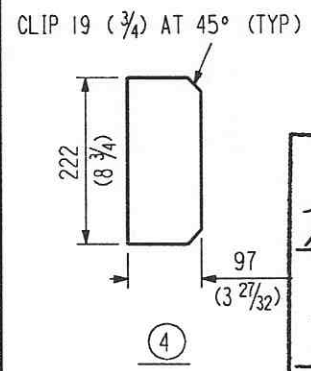
(29)



VIEW H-H

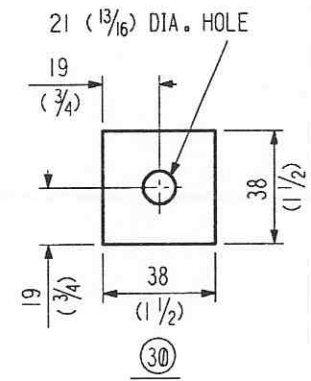


(14)



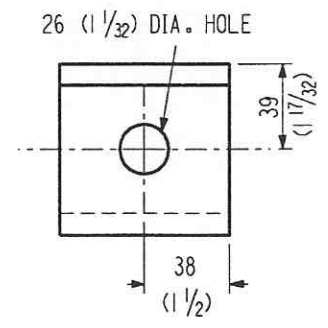
(4)

APPROVED	
<i>M. Tellalian</i>	9-13-96
CBI	DATE
<i>J. Jones</i>	9/23/96
CALTECH	DATE

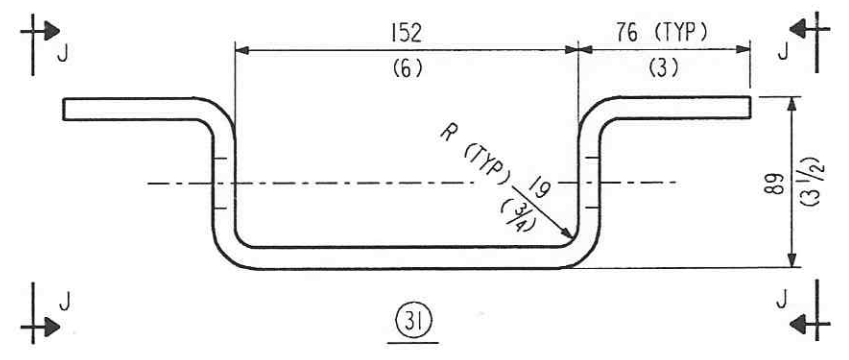


(30)

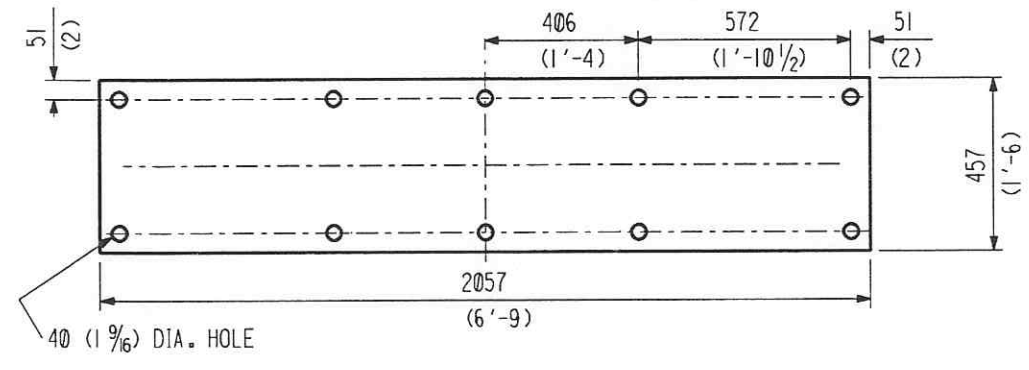
PIN TO BE ANNEALED AND CENTERLESS GROUND 50.76 (1.9995/1.9980) DIA.



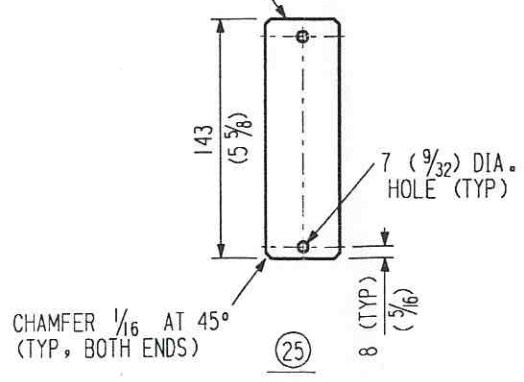
VIEW J-J



(31)

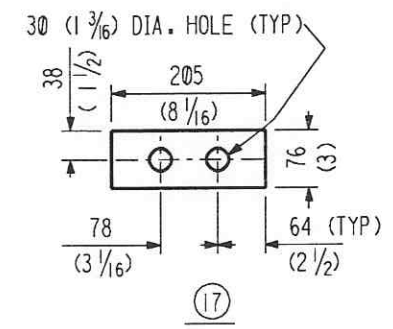


(9) (ALL DIMENSIONS TYP)



(25)

CHAMFER 1/16 AT 45° (TYP, BOTH ENDS)



(17)

INDICATES CHANGE FROM PREVIOUS ISSUE

55710420.DGN

CBI		SUPPLIER'S / PURCHASER'S NO	
LIGO BEAM TUBE HANFORD, WA & LIVINGSTON, LA BEAM TUBE TERMINATION SUPPORT PIECE DETAILS			
CUSTOMER'S NO		CONTRACT NO	
BY DIR_CHKD ARL DATE 3-11-96		953571	
M.J. TELLALIAN		DWG 20	REV 3
ENGINEERING ASSIGNED		SHT 4	
DIR	REVISED DIM. OF PC. 22 & 23.	REMARKS	
CHKD	DATE	BY	
3	9-13-96	M.J.T.	
BY	REV. SHT. 1	DATE	
2		6-20-96	
CHKD	ADDED ENTIRE SHT.	DATE	
1		5-6-96	
BY		DATE	
1		5-6-96	