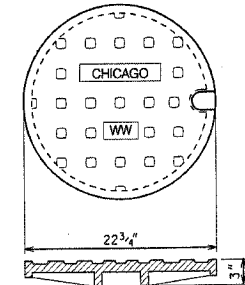


**BUTTERFLY VALVE BASIN
PRECAST CONCRETE**

- NOTES:
1. PRECAST CONCRETE TOP SLAB TO BE USED WHERE HEAD ROOM IS REQUIRED.
 2. PRECAST 6" THICK CONCRETE SLAB WITH #4 EPOXY COATED REBARS 4" C/C BOTH WAYS.
 3. PROVIDE FOUR #4 REBAR LUGS FOR HANDLING. CUT THE LUGS AFTER PLACING THE SLAB IN POSITION.
 4. PROVIDE 24-INCH DIAMETER OPENING IN THE CENTER OR AS REQUIRED.
 5. THE LOCATION OF MANHOLE TO BE DETERMINED ON INDIVIDUAL BASIS.
 6. PROVIDE 6" THICK COMPACTED CA-16 BEDDING.

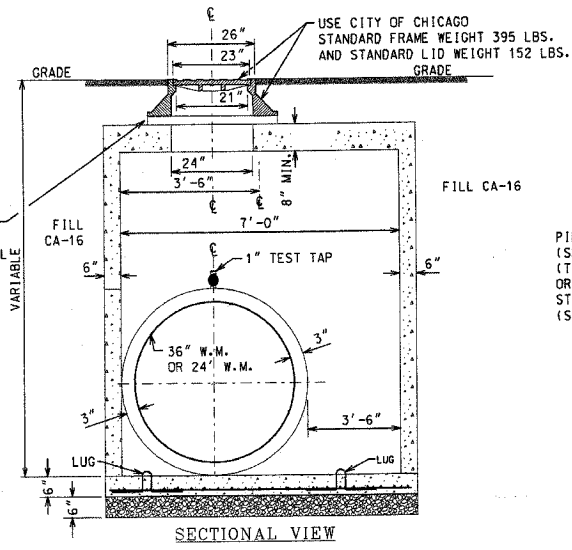
24" BUTTERFLY VALVE VAULT AND TEST TAP BASIN ASSEMBLY



- NOTES:
1. LETTERING FOR "CWW" ON THE FRAME SHALL BE LOCATED ON THE TOP SURFACE OF THE HORIZONTAL FLANGE AND SHALL BE 1" SHARP FACE GOTHIC, 1/4" WIDE AND RAISED 1/8" AS MEASURED FROM THE FLANGE SURFACE. LOCATION OF LETTERING SHALL BE AS INDICATED ON DRAWING.
- LETTERING FOR "CHICAGO WW" ON THE LID SHALL BE 1" SHARP FACE GOTHIC LETTERS, 1/4" WIDE AND RAISED 1/8" FROM 1/4" RECESS AS MEASURED FROM THE TOP OF SURFACE TO THE LID.

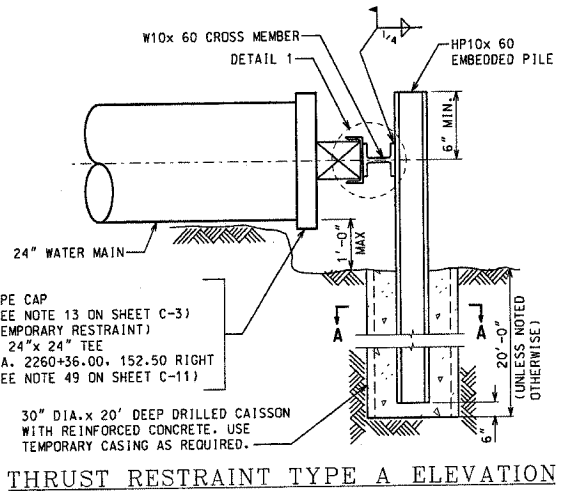
STANDARD WEIGHT OF LID..... 152 LBS.
STANDARD WEIGHT OF FRAME..... 395 LBS.
TOTAL WEIGHT..... 547 LBS.

CHICAGO STANDARD FRAME AND LID



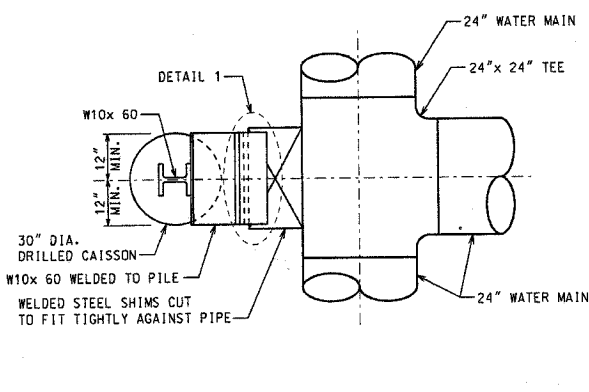
**PITOMETER TAP BASIN/TEST TAP BASIN
PRECAST CONCRETE**

- NOTES:
1. PROVIDE 6" THICK COMPACTED CA-16 BEDDING.
 2. USE PRECAST CONCRETE BASE OR PROVIDE 6" THICK 100 CLASS "S1" CONCRETE BASE POURED IN PLACE WITH #4 EPOXY COATED REBARS 4" C/C BOTH WAYS.
 3. PROVIDE FOUR #4 REBAR LUGS FOR HANDLING. CUT THE LUGS AFTER PLACING THE SLAB IN POSITION.
 4. PRECAST CONCRETE TOP SLAB TO BE USED WHERE HEAD ROOM IS REQUIRED.
 5. THE LOCATION OF MANHOLE TO BE DETERMINED ON INDIVIDUAL BASIS.

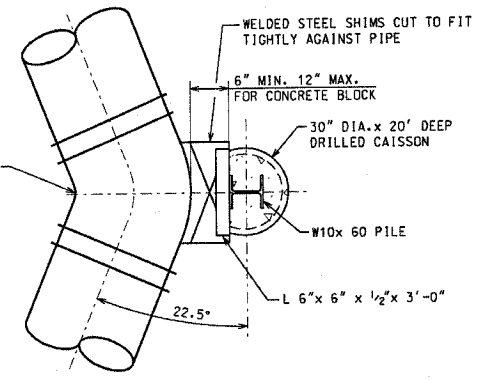


THRUST RESTRAINT TYPE A ELEVATION

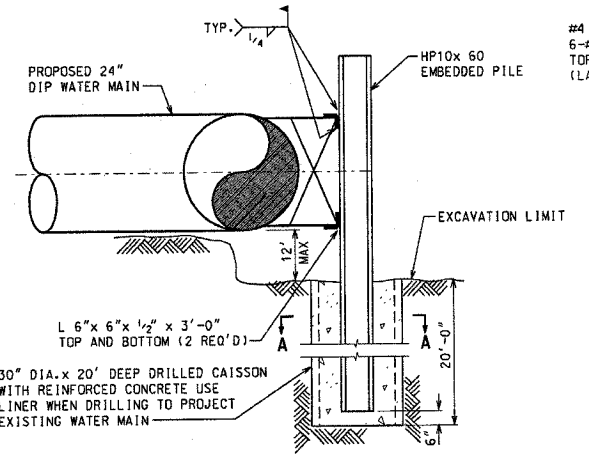
NOTE:
SEE PLAN VIEWS FOR ORIENTATION PIPE.



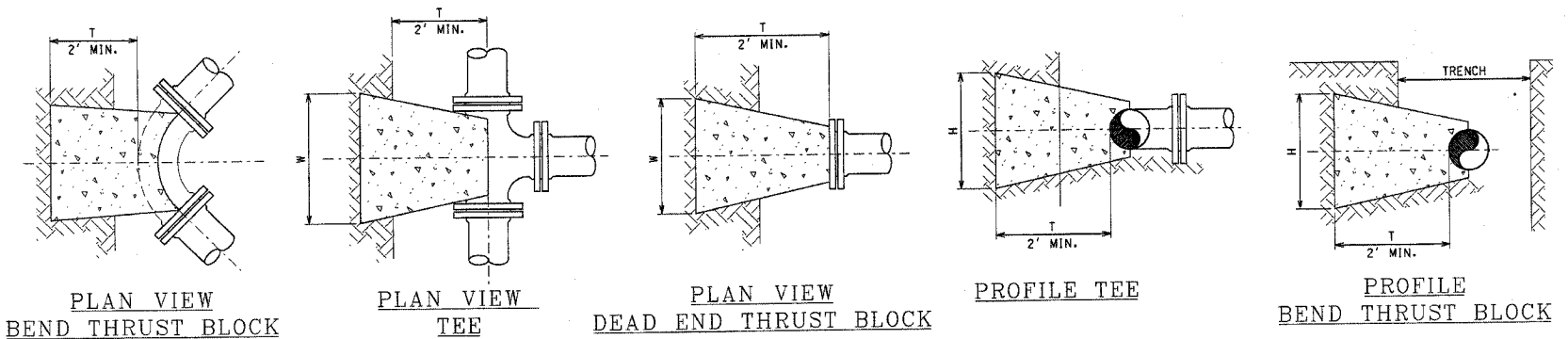
**THRUST RESTRAINT TYPE A PLAN
@ 2260+36.00, 152.50 RIGHT**



THRUST RESTRAINT TYPE B PLAN



THRUST RESTRAINT TYPE B ELEVATION



PLAN VIEW BEND THRUST BLOCK PLAN VIEW TEE PLAN VIEW DEAD END THRUST BLOCK PROFILE TEE PROFILE BEND THRUST BLOCK

PIPE SIZE	DEAD ENDS	1/8 BENDS	1/16 BENDS	1/32 BENDS
	H x W	H x W	H x W	H x W
24"	3.5' x 6'	3' x 5'	8' x 3'	2' x 2'
12"	3' x 3'	2' x 2'	1.5' x 1.5'	1' x 1'
8"	2' x 2'	1' x 1'		

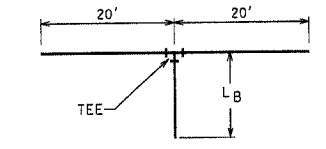
T = THICKNESS OF THE THRUST BLOCK
H = HEIGHT OF THE THRUST BLOCK
W = WIDTH OF THRUST BLOCK

**TABLE 1
THRUST BLOCK DIMENSIONS FOR
VARIOUS PIPE SIZES AND FITTINGS
MINIMUM DIMENSIONS IN FEET**

PIPE SIZE	1/8 BENDS
	8"
12"	1.0
24"	5.0

**TABLE 2
MINIMUM VOLUME OF CONCRETE
REQUIRED IN CUBIC YARDS FOR
VARIOUS PIPE SIZES AND BENDS.**

HORIZONTAL THRUST BLOCK DETAILS



TEE SIZE	L/B
8" x 8" ; (8", 12" OR 24") x 12"	0
24" x 24"	277'

**HORIZONTAL TEES
(RESTRAINT JOINTS)**

PIPE SIZE	DISTANCE OF RESTRAINED JOINTS REQUIRED EITHER SIDE OF BENDS		
	1/32	1/16	1/8
8"	3'	6'	12'
12"	4'	8'	17'
24"	8'	20'	42'

**HORIZONTAL BENDS
(RESTRAINED JOINTS)**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94 (DAN RYAN EXPRESSWAY)
WATER MAIN DETAILS
S. STATE STREET
E. 85TH STREET TO E. 95TH STREET

SCALE: NOT TO SCALE DRAWN BY: CW
DATE: SEPTEMBER 3, 2004 CHECKED BY: NDS

C-16

DATE: _____
BY: _____
SURVEYED: _____
PLOTTED: _____
CHECKED: _____
NOTE BOOK NO.: _____
STRUCTURE IDENTIFYING CIRCUIT NO.: _____

DATE: _____
BY: _____
SURVEYED: _____
PLOTTED: _____
CHECKED: _____
NOTE BOOK NO.: _____
STRUCTURE IDENTIFYING CIRCUIT NO.: _____