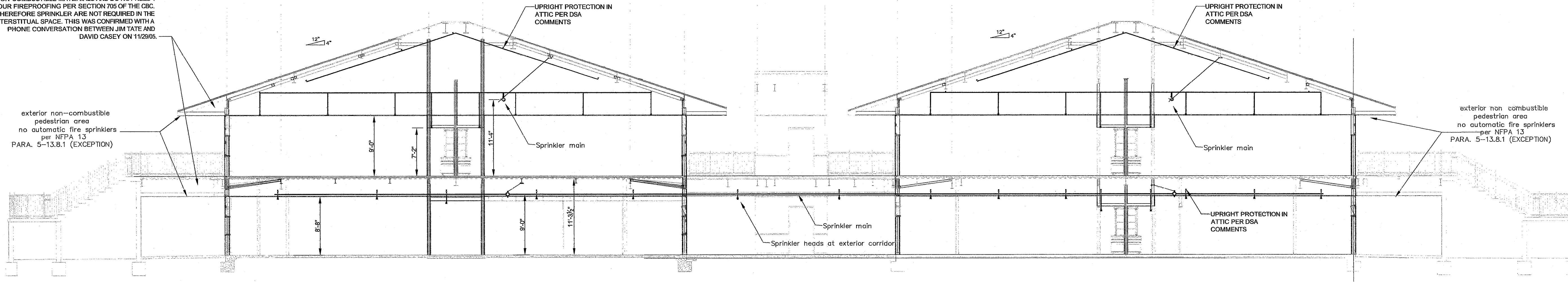
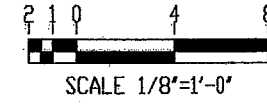




EXTERIOR OVERHANGS & BALCONIES SHALL BE OF NON-COMBUSTIBLE MATERIALS AND DO NOT NEED 1 HOUR FIREPROOFING PER SECTION 706 OF THE CBC. THEREFORE SPRINKLER ARE NOT REQUIRED IN THE INTERSTITIAL SPACE. THIS WAS CONFIRMED WITH A PHONE CONVERSATION BETWEEN JIM TATE AND DAVID CASEY ON 11/28/05.

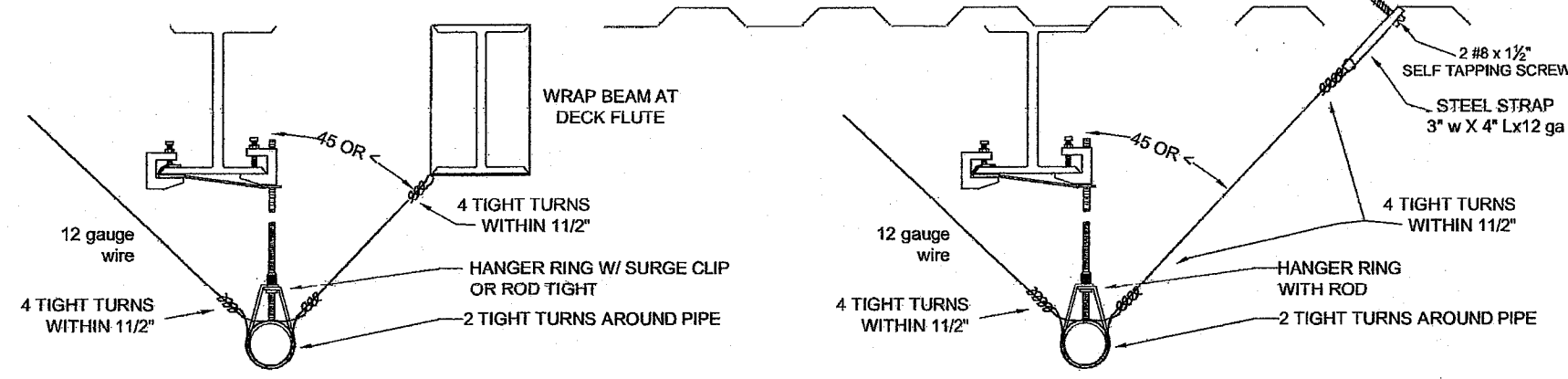
exterior non-combustible pedestrian area no automatic fire sprinklers per NFPA 13 PARA. 5-13.8.1 (EXCEPTION)

### Building L Section A-A

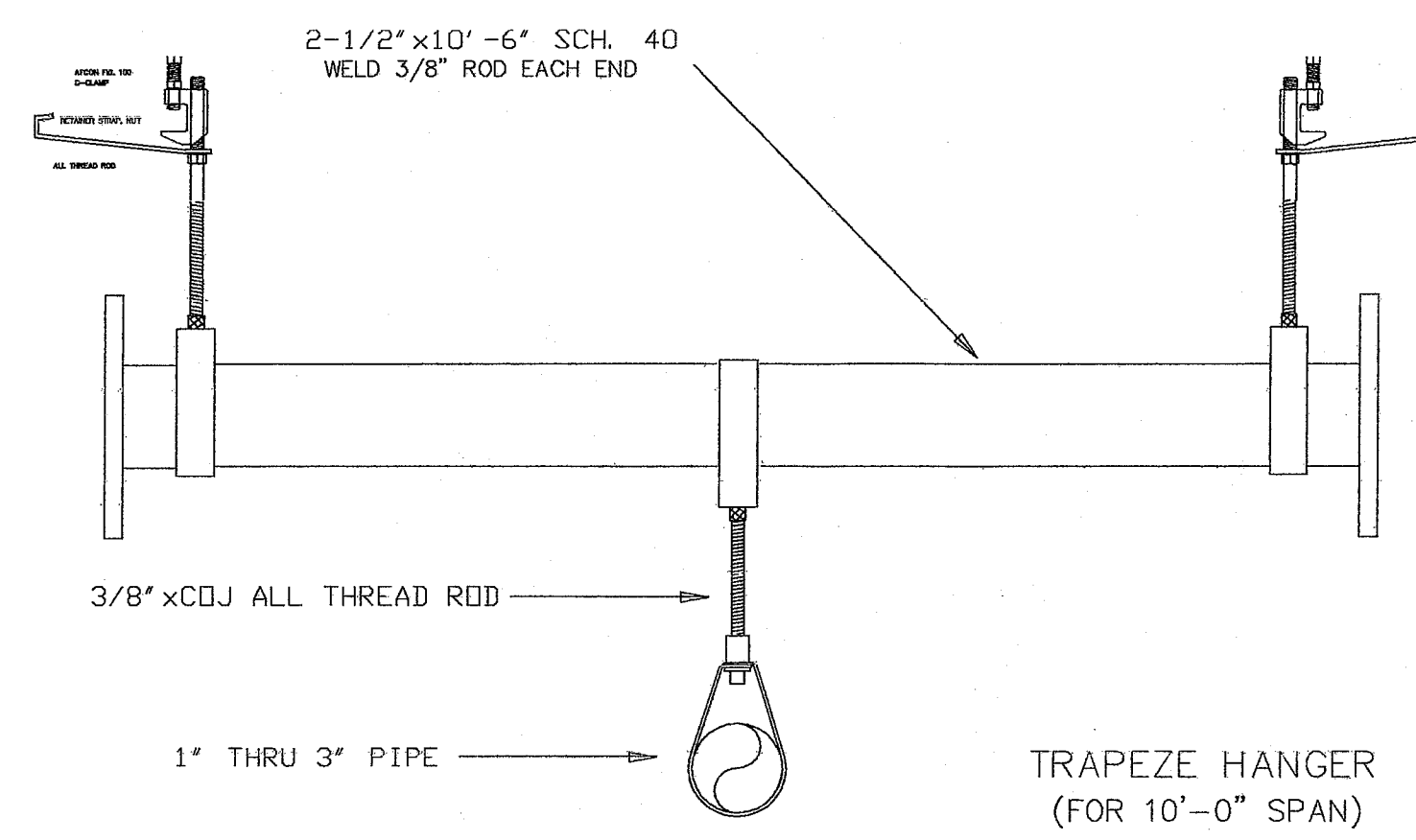


#### END OF LINE RESTRAINTS

ALL END OF LINE HANGERS WITH RODS 6" OR LESS SHALL BE EQUIPPED WITH TOLCO SURGE RESTRAINT DEVICE / MEETING REQUIREMENT OF RESTRAINT FOR EXCESSIVE VERTICAL AND LATERAL MOVEMENT  
END OF LINE HANGERS WITH RODS THREADED TIGHT TO TOP OF PIPE IN HANGER RING MEETS REQUIREMENT OF RESTRAINT FOR EXCESSIVE VERTICAL MOVEMENT OF PIPING SYSTEM



WORST CASE ZONE OF INFLUENCE AT BUILDING L 1st FLOOR (SEE SHEET FP-3) AT MAIN NEAR GRID LINE (D) AND INCLUDING ALL LINES BETWEEN GRIDS (7) AND (10)



HILTI DINK BOLT 3 ANCHOR (SDO REPORT #234-1320)

MINIMUM OF 3,000 PSI CONCRETE

PIPE SIZE	RING T.O. DIA.	ROD DIA.	BOLT DIA.	MIN. EMBED. DEPTH	MAX. LBS.
1"	1"	3/8"	3/8"	2 1/2"	318
1 1/4"	1 1/4"	3/8"	3/8"	2 1/2"	444
2"	2"	3/8"	3/8"	2 1/2"	506
2 1/2"	2 1/2"	3/8"	3/8"	2 1/2"	778
3"	3"	3/8"	3/8"	2 1/2"	1058
4"	4"	1/2"	1/2"	3 1/2"	2469
4 1/2"	4 1/2"	1/2"	1/2"	3 1/2"	2658
6"	6"	1/2"	1/2"	3 1/2"	7169

ALLOWABLE LOAD 3/8" ANCHOR: TENSION = 2178, SHEAR = 2039  
ALLOWABLE LOAD 1/2" ANCHOR: TENSION = 8826, SHEAR = 8529

HILTI DINK BOLT 3 ANCHOR (SDO REPORT #234-1320)

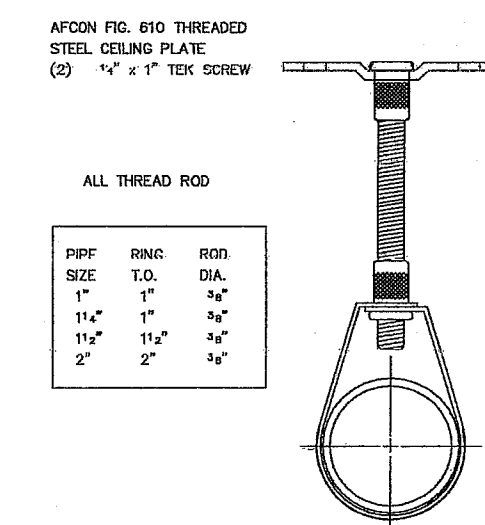
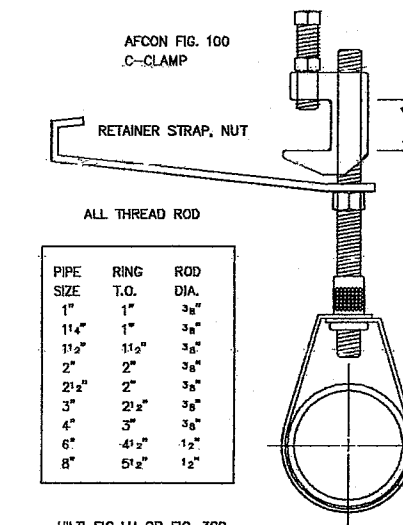
MINIMUM OF 3,000 PSI CONCRETE

PIPE SIZE	RING T.O. DIA.	ROD DIA.	BOLT DIA.	MIN. EMBED. DEPTH	MAX. LBS.
1"	1"	3/8"	3/8"	2 1/2"	318
1 1/4"	1 1/4"	3/8"	3/8"	2 1/2"	444
2"	2"	3/8"	3/8"	2 1/2"	506
2 1/2"	2 1/2"	3/8"	3/8"	2 1/2"	778
3"	3"	3/8"	3/8"	2 1/2"	1058
4"	4"	1/2"	1/2"	3 1/2"	2469
4 1/2"	4 1/2"	1/2"	1/2"	3 1/2"	2658
6"	6"	1/2"	1/2"	3 1/2"	7169

ALLOWABLE LOAD 3/8" ANCHOR: TENSION = 2178, SHEAR = 2039  
ALLOWABLE LOAD 1/2" ANCHOR: TENSION = 8826, SHEAR = 8529

#### Installing Expansion Anchors

When installing expansion anchors in existing reinforced or prestressed concrete, shall not cut or damage the existing reinforcing bars and/or prestressed tendons. Maintain a minimum clearance of one inch between the reinforcement and the drilled anchor.



#### Siesmic Attachment Calculations for Sway Brace Assemblies

Brace Identification Symbol	SD-2	Type Of Brace	LONGITUDINAL BRACE
Diameter And Length Of Brace	1 1/4" sch. 40 x 9'-0" maximum	Orientation Of Connecting Surface:	fig. F (Table 4-14.4.3.5.6)
Angle Of Brace	45-90 degree max	Fastener (Table 4-14.4.3.5.6)	
Least Radius Of Gyration	.54	Type: TOLCO FIG. 800 BEAM ATTACHMENT	Diameter: NA Length: NA
L/R Value	200	Maximum Distance Between Braces	80'-0" Feet
Maximum Horizontal Load (Table 4-6.4.3.5.3)	3385 lbs.		

#### Siesmic Brace Attachments

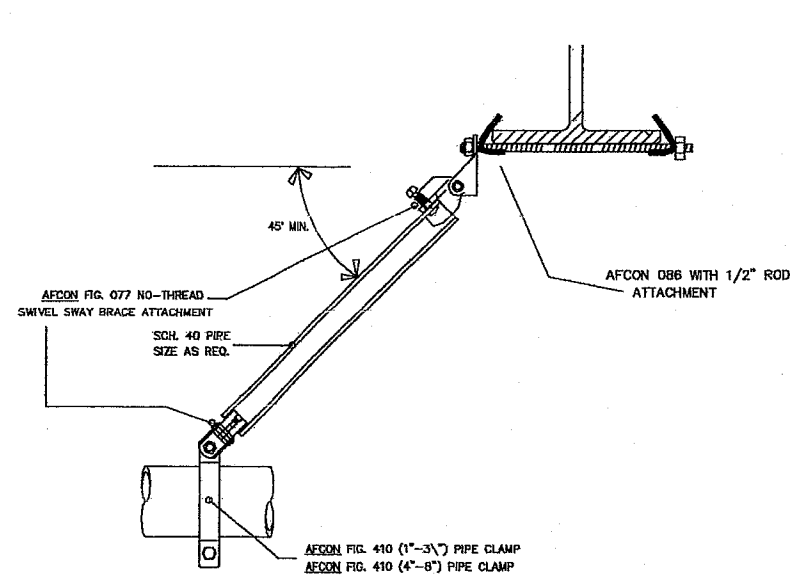
Structural Attachment Fittings:

Make: AFCON Model: 076

Pipe Attachment Fittings:

Make: AFCON Model: 410

#### Detail Of Assembly



2-WAY LONGITUDINAL EQB Cs (1-1/4" BRACE PIPE)

#### System Load Calculations

DIA	TYPE	LENGTH	TOTAL FEET	1/2 WEIGHT	TOTAL WEIGHT
4"	SCH. 10	80'-0"	80'-0"	5.89 lbs.	471.2
TOTAL 1/2 WEIGHT OF WATER FILLED PIPE					471.2

#### Siesmic Attachment Calculations for Sway Brace Assemblies

Brace Identification Symbol	SB-1	Type Of Brace	LATERAL BRACE
Diameter And Length Of Brace	1 1/4" sch. 40 x 9'-0" maximum	Orientation Of Connecting Surface:	fig. F (Table 4-14.4.3.5.6)
Angle Of Brace	45-90 degree max	Fastener (Table 4-14.4.3.5.6)	
Least Radius Of Gyration	.54	Type: TOLCO FIG. 800 BEAM ATTACHMENT	Diameter: NA Length: NA Max. Load: 1782 lbs. AFCON 086
L/R Value	200	Maximum Distance Between Braces	40'-0" Feet
Maximum Horizontal Load (Table 4-14.3.5.5)	3385 lbs.		

#### Siesmic Brace Attachments

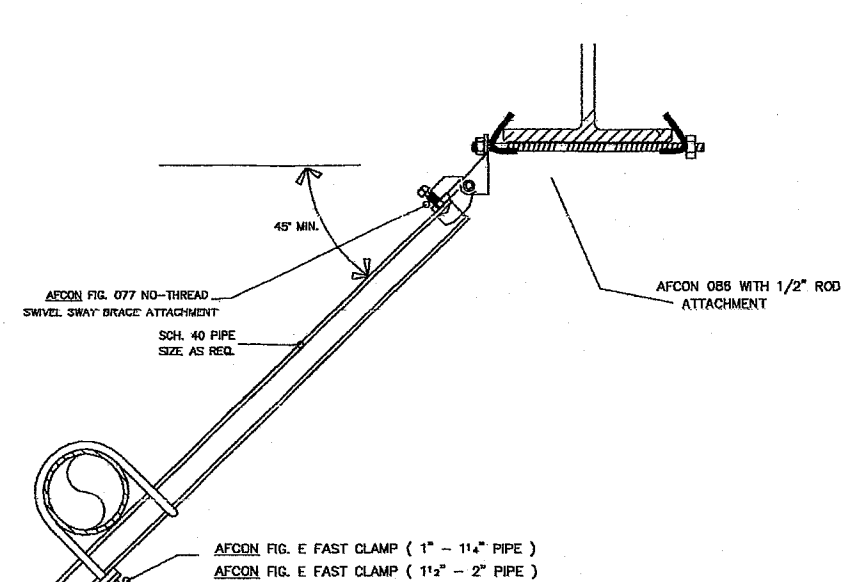
Structural Attachment Fittings:

Make: AFCON Model: fig. 076

Pipe Attachment Fittings:

Make: AFCON Model: fig. 410

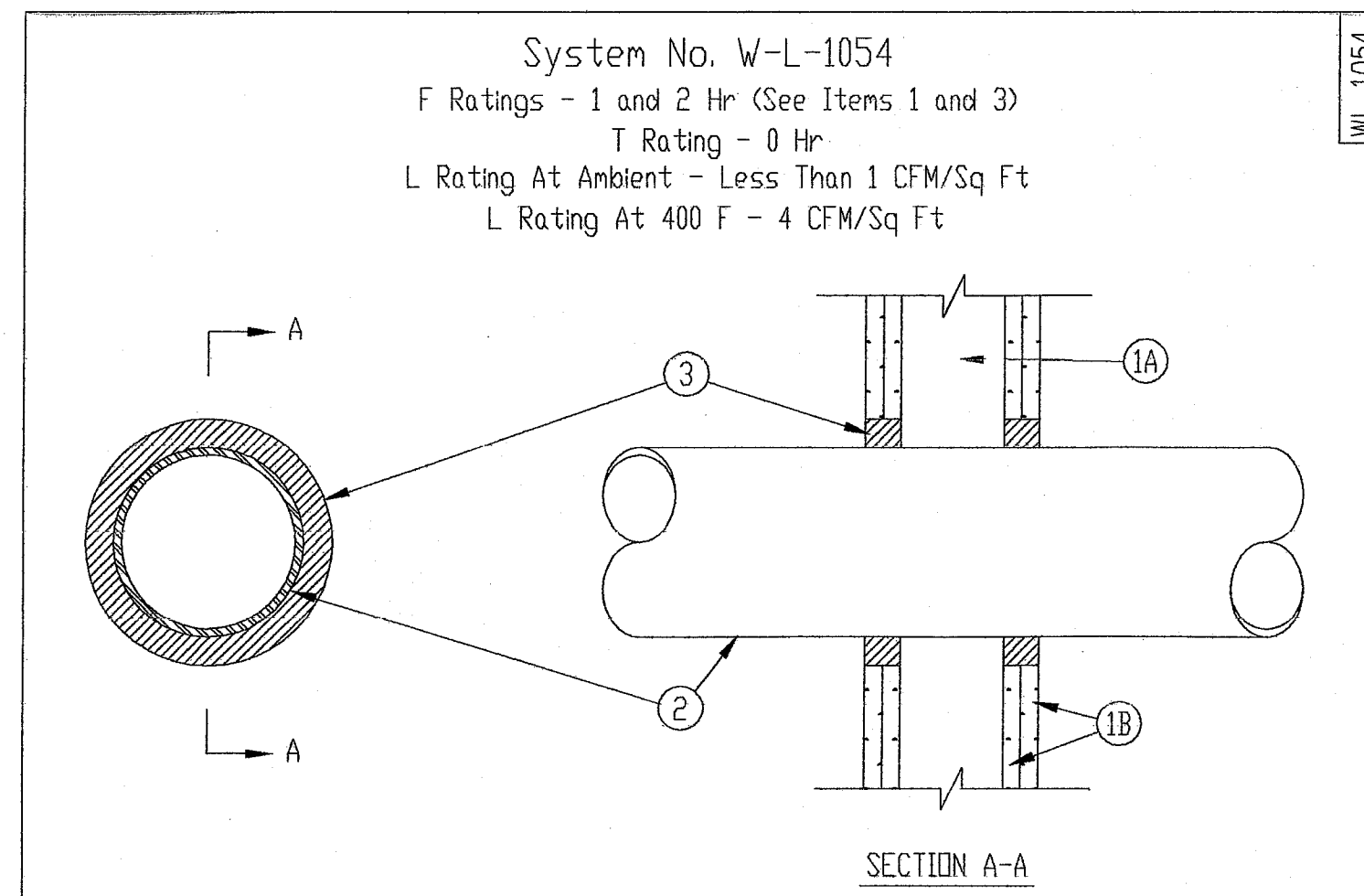
#### Detail Of Assembly



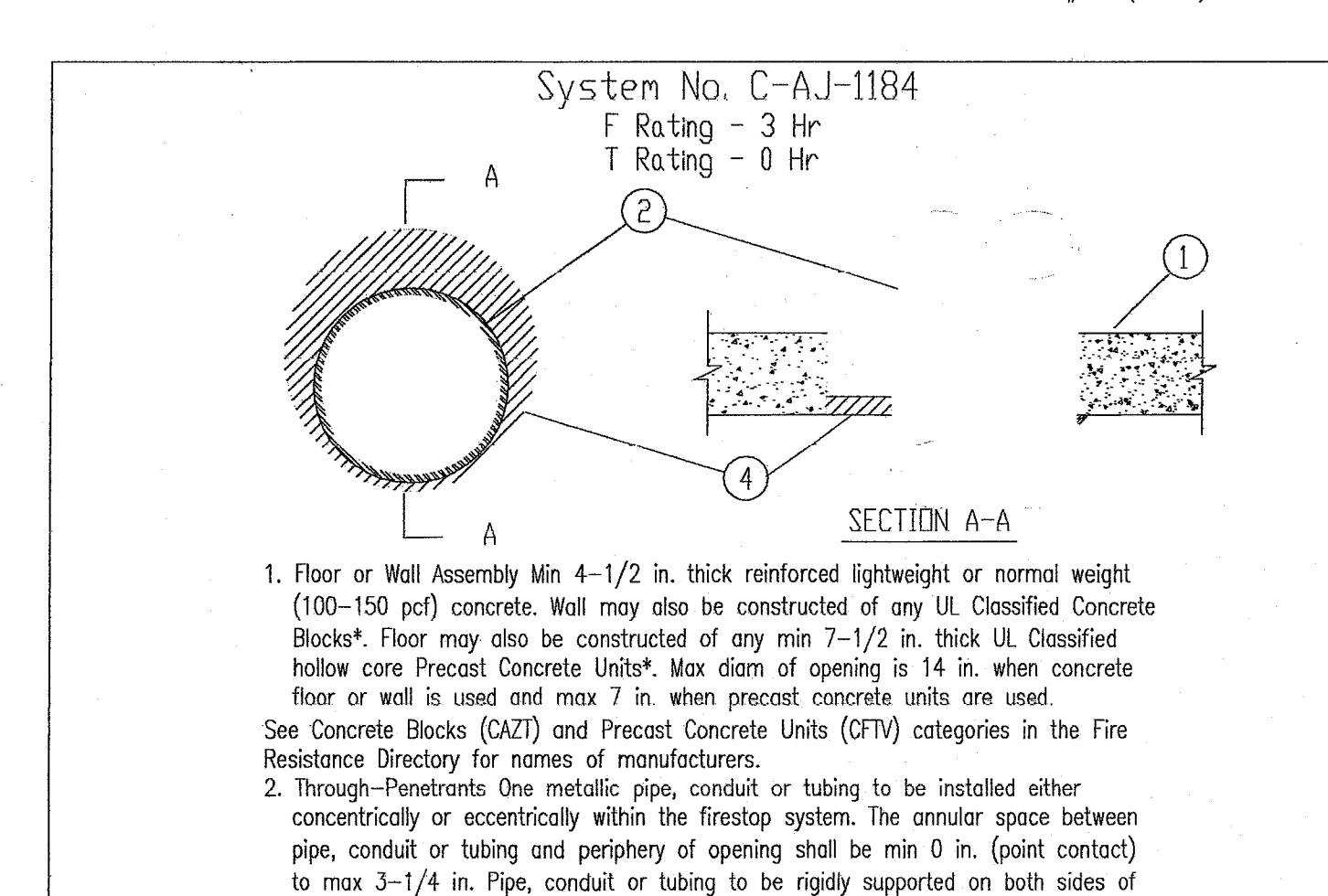
2-WAY LATERAL EQB Cs (1-1/4" BRACE PIPE)

#### System Load Calculations

DIA	TYPE	LENGTH	TOTAL FEET	1/2 WEIGHT	TOTAL WEIGHT
4"	SCH. 10	40'-0"	40'-0"	5.89 lbs.	235.6
1-1/2"	SCH. 40	20'-0" PER LINE	80'-0"	1.81 lbs	144.8
1-1/4"	SCH. 40	44'-0" PER LINE	176'-0"	1.47 lbs	258.7
1"	SCH. 40	varies PER LINE	120'-0"	1.03 lbs	123.6
TOTAL 1/2 WEIGHT OF WATER FILLED PIPE					762.7 lbs.



- Wall Assembly --- The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:  
A. Studs --- Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.  
B. Gypsum Board --- 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. for steel stud walls. Max diam of opening is 14-1/2 in. for wood stud walls. The F Rating of the firestop system is equal to the fire rating of the wall assembly.
- Through-Penetrants --- One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:  
A. Steel Pipe --- Nom 30 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.  
B. Iron Pipe --- Nom 30 in. diam (or smaller) cast or ductile iron pipe.  
C. Conduit --- Nom 4 in. diam (or smaller) steel electrical metallic tubing or 6 in. diam steel conduit.  
D. Copper Tubing --- Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.  
E. Copper Pipe --- Nom 6 in. diam (or smaller) regular (or heavier) copper pipe.
- Fill, Void or Cavity Material --- Sealant --- Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC --- FS-One Sealant  
\*Bearing the UL Classification Mark



- Floor or Wall Assembly Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks\*. Floor may also be constructed of any min 7-1/2 in. thick UL Classified hollow core Precast Concrete Units\*. Max diam of opening is 14 in. when concrete floor or wall is used and max 7 in. when precast concrete units are used. See Concrete Blocks (C27) and Precast Concrete Units (C31) categories in the Fire Resistance Directory for names of manufacturers.
- Through-Penetrants One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min 0 in. (point contact) to max 3-1/4 in. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:  
A. Steel Pipe Nom 10 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.  
B. Iron Pipe Nom 10 in. diam (or smaller) cast or ductile iron pipe.  
C. Conduit Nom 4 in. diam (or smaller) steel electrical metallic tubing or steel conduit.  
D. Copper Tubing Nom 4 in. diam (or smaller) Type L (or heavier) copper tubing.  
E. Copper Pipe Nom 4 in. diam (or smaller) regular (or heavier) copper pipe.
- Forms --- (Not Shown, Optional) Used as a form to prevent leakage of fill material during installation. Forms to be rigid sheet material, cut to fit the contour of the penetrating item and positioned as required to accommodate the required thickness of fill material. Forms to be removed after fill material has cured. Additional forming material may be used concrete block wall is penetrated. A min 1/2 in. thickness of min 4 pcf mineral wool batt insulation is firmly packed into the annulus as a permanent form and recessed from both surfaces of the wall as required to accommodate the required thickness of fill material.
- Fill, Void or Cavity Material --- Sealant Min 1 in. thickness of fill material applied within the annulus. At the point contact location between penetrant and concrete, a min 1/2 in. diam bead of fill material shall be applied at the concrete through penetrant interface. When precast concrete units are used, the fill material shall be installed within annular space, flush with lower surface of floor. When concrete block wall is penetrated, a min 1 in. thickness of fill material shall be applied within the annulus flush with both surfaces of wall.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC --- FS05 or FS-ONE Sealant  
\*Bearing the UL Classification Mark



Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc.



**AS-BUILT**  
DATE 06-14-06 BY CB

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
OFFICE OF REGULATION SERVICES  
04-106494  
AC \_\_\_ FLS \_\_\_ SS \_\_\_  
DATE

13-505 REV# DATE BY

ADDED UPRIGHT PROTECTION IN ATTIC PER DSA COMMENT

**J.G. TATE FIRE PROTECTION SYSTEMS INC.**  
12600 Stovos Dr., Suite 11  
Poway CA. 92064  
Phone 858-486-0900  
Fax 858-486-0980

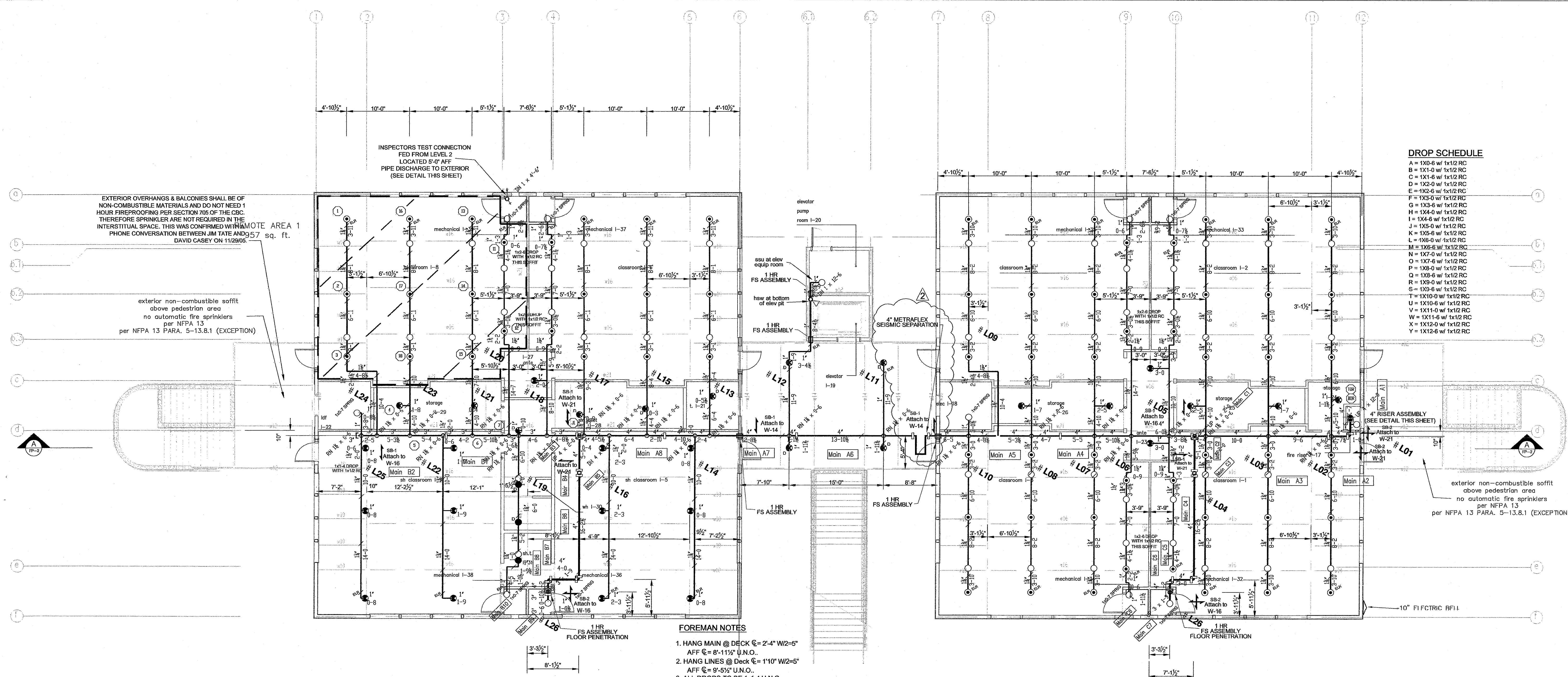
CONTRACT NAME: JEFFERSON MIDDLE SCHOOL  
823 ACACIA MIDDLE STREET  
OCEANSIDE, CA 92054  
CONTRACT NO.: 05-359  
DRAWING NO.: FP 2 OF 4

SYMBOLS: Description, Total This Sheet, Total This Job

Number of Sprinklers: Total This Job, Description

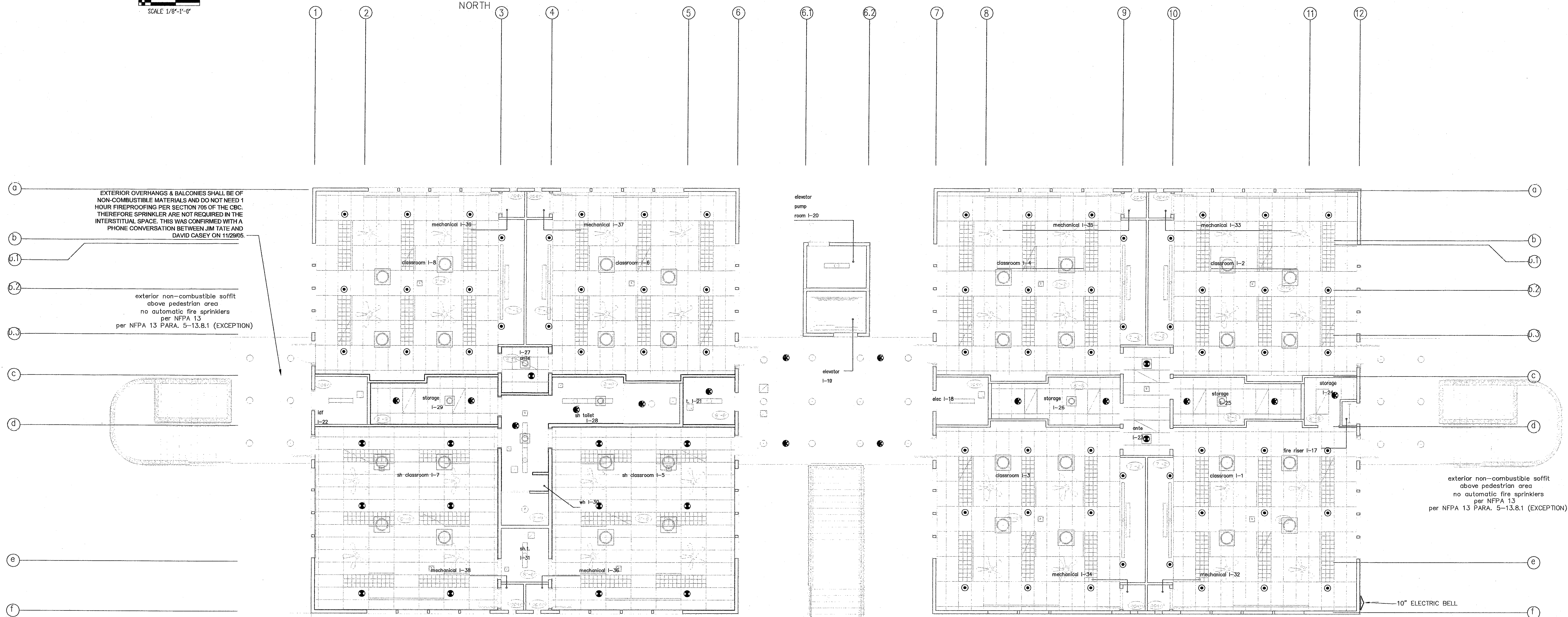
HYDRAULIC REFERENCE POINTS: Elev. Below Top of Steel, Elev. Above Finished Floor, Ceiling Height, Sprinkler Location, Rise Up or Down

SCALE: as noted  
DRAWN BY: R.LARSEN  
DATE: 8-15-05  
CONTRACT NO.: 05-359  
DRAWING NO.: FP 2 OF 4



Building L level 1 piping plan

SCALE 1/8"=1'-0"



Building L level 1 ceiling plan

SCALE 1/8"=1'-0"

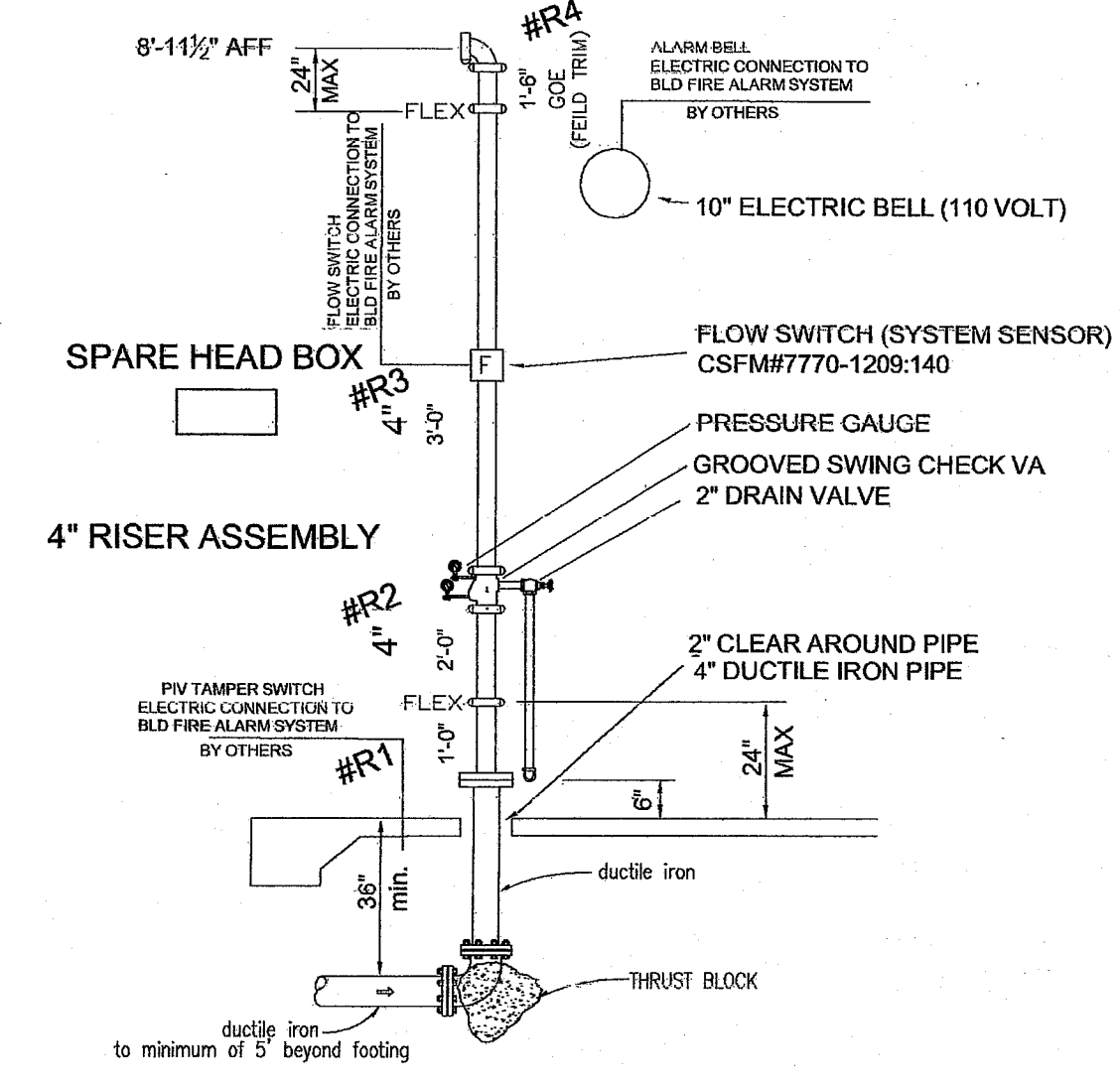
**FOREMAN NOTES**  
 1. HANG MAIN @ DECK @ 2'-4" W/2-5" AFF @ 8'-11 1/2" U.N.O.  
 2. HANG LINES @ DECK @ 1'-10" W/2-5" AFF @ 9'-5 1/2" U.N.O.  
 3. ALL DROPS TO BE 1x1-4 U.N.O.

**FOREMAN NOTES**  
 1. HANG MAIN @ DECK @ 2'-4" W/2-5" AFF @ 8'-11 1/2" U.N.O.  
 2. HANG LINES @ DECK @ 1'-10" W/2-5" AFF @ 9'-5 1/2" U.N.O.  
 3. ALL DROPS TO BE 1x1-4 U.N.O.

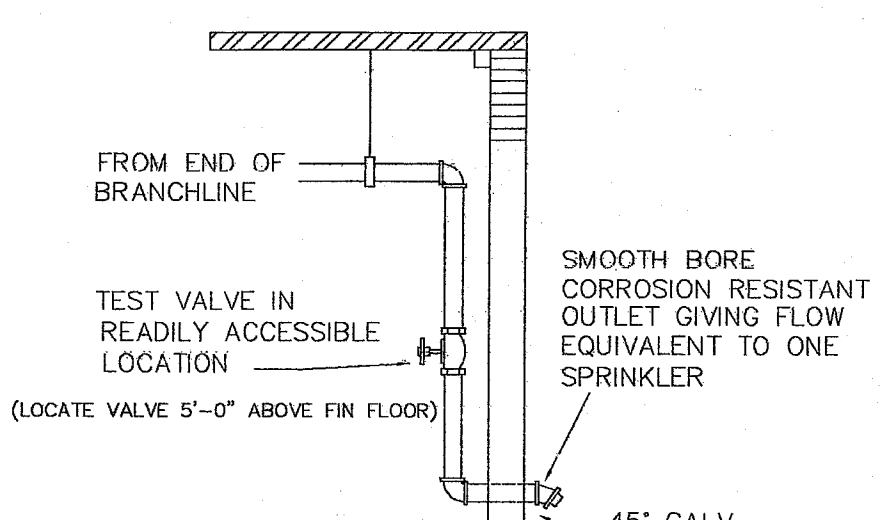
**NOTE:**  
 HEADS NOT NECESSARILY CENTERED IN ACT TILES OR ALIGNED WITH CEILING ELEMENTS SUCH AS LIGHTS, DIFFUSERS, OR FANS, ALTHOUGH THEY WILL BE ALIGNED WITH OTHER HEADS

REMOTE AREA 1  
 LIGHT HAZARD  
 REMOTE AREA level 1  
**HYDRAULIC SYSTEM**  
 THIS BUILDING IS PROTECTED BY A HYDRAULIC DESIGNED AUTOMATIC SPRINKLER SYSTEM.  
 Date Installed: 12/05  
 Location: level 1 CLASSROOM  
 Area/System: building L  
 Sprinklers to Discharge: 11 HEADS  
 Density: 0.10 GPM/FOOT  
 Area of Discharge: 907 SQ.FT.  
 Water flow rate: 226.65 gpm  
 Branching Loss at 226.65 gpm  
 100 gpm HOSE ALLOWANCE @ MAIN  
 FILE # 359-1.WX1

**DROP SCHEDULE**  
 A = 1X0-6 w/ 1x1/2 RC  
 B = 1X1-4 w/ 1x1/2 RC  
 C = 1X1-6 w/ 1x1/2 RC  
 D = 1X2-0 w/ 1x1/2 RC  
 E = 1X2-0 w/ 1x1/2 RC  
 F = 1X3-0 w/ 1x1/2 RC  
 G = 1X3-0 w/ 1x1/2 RC  
 H = 1X4-0 w/ 1x1/2 RC  
 I = 1X5-0 w/ 1x1/2 RC  
 J = 1X5-0 w/ 1x1/2 RC  
 K = 1X5-0 w/ 1x1/2 RC  
 L = 1X6-0 w/ 1x1/2 RC  
 M = 1X6-0 w/ 1x1/2 RC  
 N = 1X7-0 w/ 1x1/2 RC  
 O = 1X7-0 w/ 1x1/2 RC  
 P = 1X8-0 w/ 1x1/2 RC  
 Q = 1X8-0 w/ 1x1/2 RC  
 R = 1X9-0 w/ 1x1/2 RC  
 S = 1X9-0 w/ 1x1/2 RC  
 T = 1X10-0 w/ 1x1/2 RC  
 U = 1X10-0 w/ 1x1/2 RC  
 V = 1X11-0 w/ 1x1/2 RC  
 W = 1X11-0 w/ 1x1/2 RC  
 X = 1X12-0 w/ 1x1/2 RC  
 Y = 1X12-0 w/ 1x1/2 RC



**RISER DETAIL**  
 NOT TO SCALE



**INSPECTORS TEST DETAIL**  
 NOT TO SCALE

MINIMUM OF 3,000 PSI CONCRETE  
 ALLOWABLE LOAD 3/8" AND 1/2" ANCHORS  
 MINOR = 574 LBS/INCH  
 ALLOWABLE LOAD 1/2" ANCHORS  
 MINOR = 574 LBS/INCH

PIPE	SIZE	ROD	ROD	MIN	MAX
1/2"	1/2"	3/8"	3/8"	2 1/2"	3 1/2"
3/4"	3/4"	3/4"	3/4"	2 1/2"	3 1/2"
1"	1"	3/4"	3/4"	2 1/2"	3 1/2"
1 1/4"	1 1/4"	3/4"	3/4"	2 1/2"	3 1/2"
1 1/2"	1 1/2"	3/4"	3/4"	2 1/2"	3 1/2"
2"	2"	3/4"	3/4"	2 1/2"	3 1/2"
2 1/2"	2 1/2"	3/4"	3/4"	2 1/2"	3 1/2"
3"	3"	3/4"	3/4"	2 1/2"	3 1/2"
3 1/2"	3 1/2"	3/4"	3/4"	2 1/2"	3 1/2"
4"	4"	3/4"	3/4"	2 1/2"	3 1/2"
4 1/2"	4 1/2"	3/4"	3/4"	2 1/2"	3 1/2"
5"	5"	3/4"	3/4"	2 1/2"	3 1/2"

AS-BUILT DRAWINGS  
 ADDED UPRIGHT PROTECTION IN ATTIC PER DSA COMMENT  
 REVISION  
 06-14-06 CB 12-5-05  
 DATE BY

**J.G. TATE**  
**FIRE PROTECTION**  
**SYSTEMS INC.**  
 12600 Stowe Dr., Suite 11  
 Poway, CA 92064  
 Phone 858-486-0900  
 Fax 858-486-0850

CONTRACT NAME: JEFFERSON MIDDLE SCHOOL  
 825 ACACIA MIDDLE STREET  
 OCEANSIDE, CA 92054  
 CONTRACT WITH: SOLTEK PACIFIC  
 26 WEST EL NORTE PARKWAY STE. 210  
 Escondido, CA 92023-1517

SYMBOLS  
 Hydraulic References  
 1. Above Top of Steel  
 2. Below Top of Steel  
 3. Above Top of Floor  
 4. Below Top of Floor  
 5. Ceiling Height  
 6. Double Hanger Location  
 7. Rise up or down

Number of Sprinklers  
 Total This Sheet  
 Net Total This Job

DATE: 06-15-05  
 DRAWN BY: R.LARSEN  
 CONTRACT NO: 05-359  
 DRAWING NO: FP 3 OF 4

IDENTIFICATION STAMP  
 DIV. OF THE STATE ARCHITECT  
 OFFICE OF REGULATION SERVICES  
 04-106494  
 AC FL SS  
 DATE

