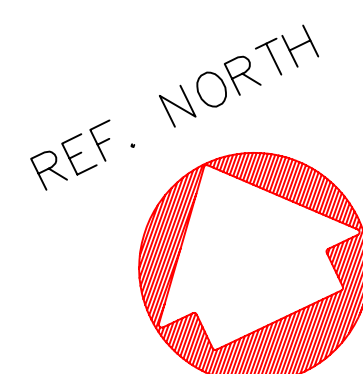
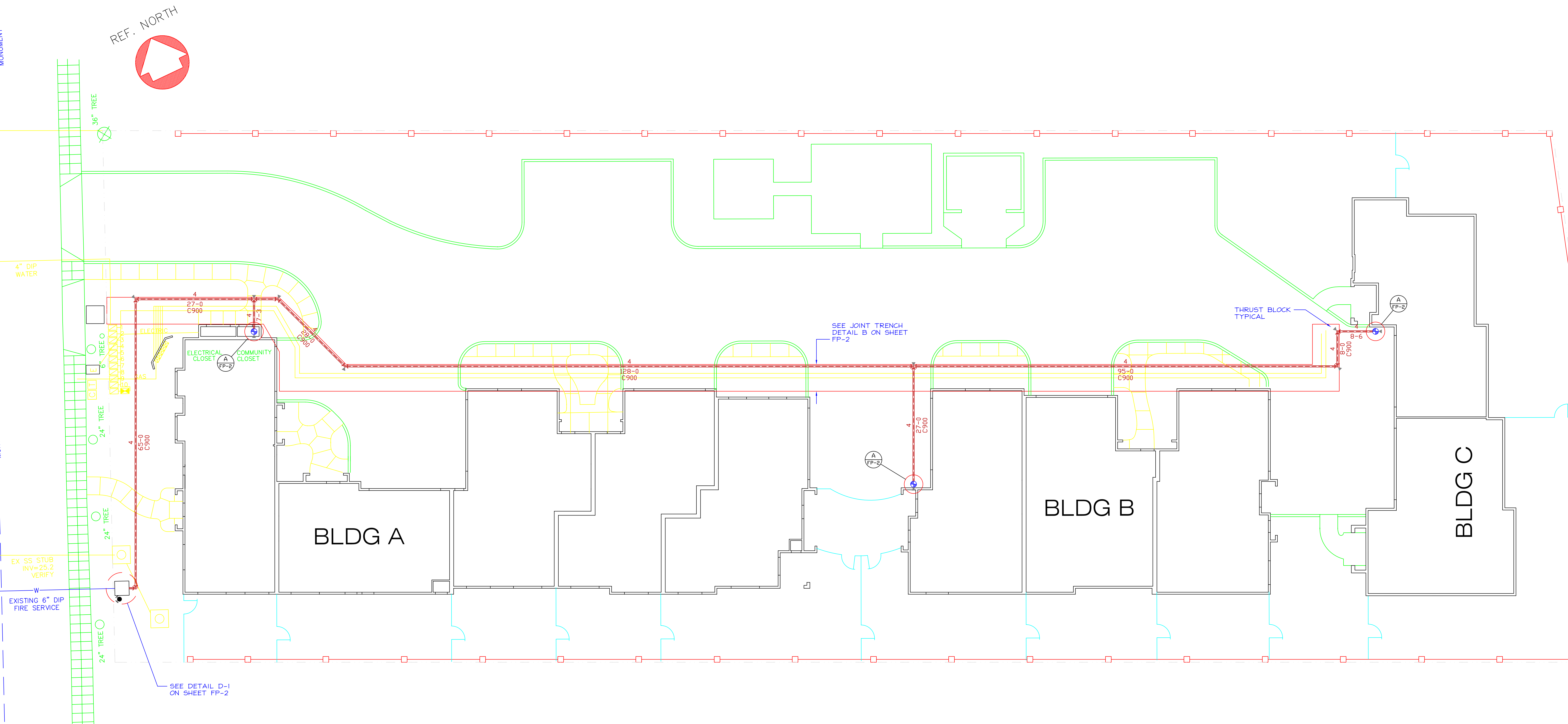
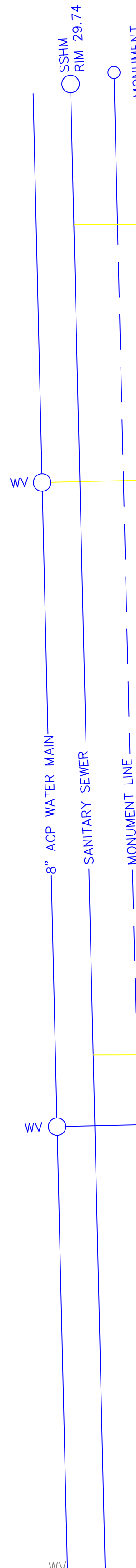


SIERRA VISTA AVENUE



UNDERGROUND PIPING PLAN

SCALE: 1" = 10'-0"

UNDERGROUND NOTES

- Underground to be installed per NFPA 13 1999, NFPA 24 1995, and the requirements of the Mountain View Fire Department.
- All portions of the underground main shall be UL listed for fire service.
- A Hydrostatic pressure test at 200 psi for 2 hours shall be conducted before joints are covered. Pipe shall be center loaded during test.
- The underground piping shall be flushed prior to system tie in. Minimum flow rate shall be 390 gpm.
- Per NFPA 13 chapter 8-1 "contractors manual and test certificate for underground piping" shall be completed, signed and delivered to the fire prevention bureau.
- All pipe fittings and transitions to have approved thrust blocks and/or mechanical restraints meeting all applicable codes.
- All pipe to be PVC C900 with AWWA C907 PVC fittings. Pipe within 5 feet of the building and vertical risers shall be ductile iron. All ferrous metal pipe and fittings shall be wrapped with 8 mil polyethylene and secured with 10 mil poly tape. All nuts and bolts shall be mastic coated.
- Minimum pipe bury to be 36" of cover, see joint trench detail for required location of the fire line.
- All piping shall be inspected by the Fire Department prior to backfill.
- Set the riser flange at +0'-6" above finished floor.
- Provide a 2" annular clearance around pipe and floor slab at the system riser.
- Underground fittings shall be restrained by approved means, see plan for additional information.
- All buried fasteners shall be coated with an approved corrosion retardant material prior to bury.
- Provide a conduit run for the PIV tamper switch at the fire service pit.
- Plans have been prepared by:

Engineered Fire Systems, Inc.  
13457 Colfax Highway  
Grass Valley, CA 95945  
Contact: Eric Price  
530-274-9400 (101)

SPECIFIC UNDERGROUND REQUIREMENTS

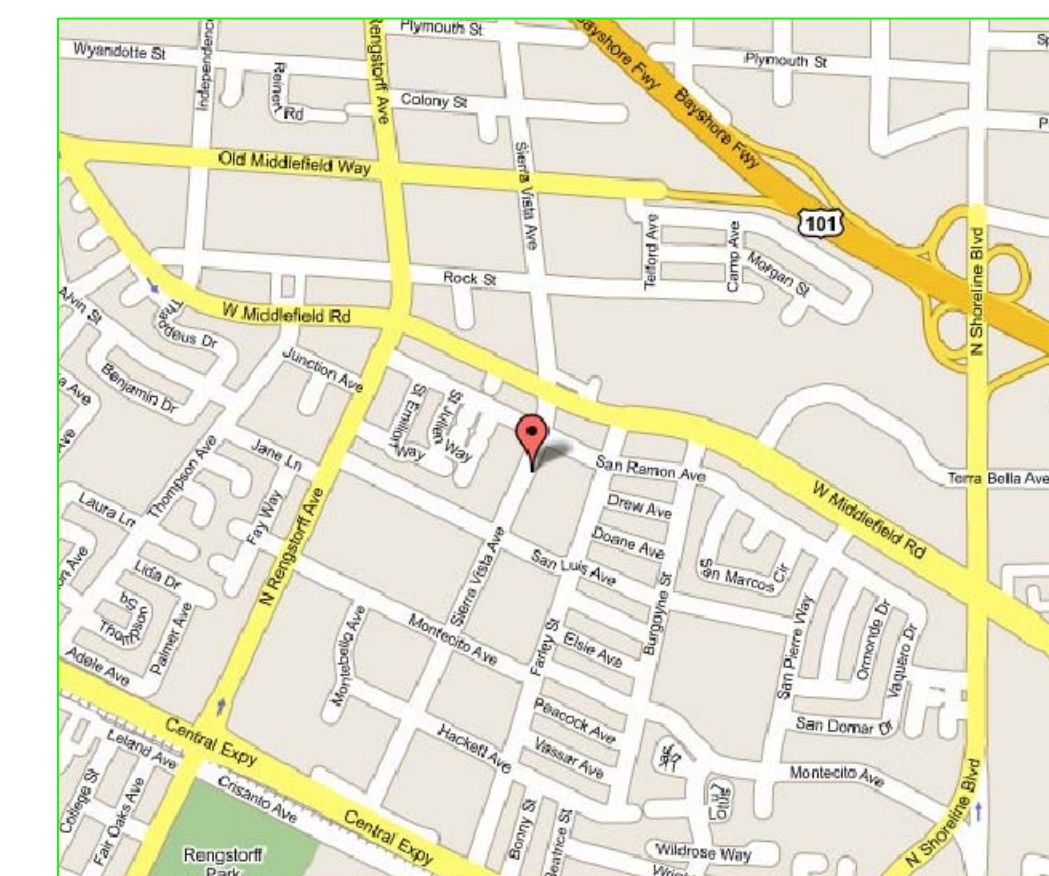
- The color of the post indicator valve (PIV) and fire department connection (FDC) shall be red. The fire department connection shall be provided with two (2) horizontal rows of 3 inch wide highly reflective tape, spaced 3 inches apart, placed on the upper portion of the fire department connection riser.
- All underground fire lines and hydrants shall be flushed using velocities specified in NFPA 24 prior to any overhead pipe being connected. Contractors shall have the appropriate tools and equipment on-site to complete a flush of all piping and hydrants. There shall be sufficient fire hose to direct the water to a safe location off site. In case of multiple hydrants or risers, a minimum of two (2) appurtenances shall be connected and ready to flush. A minimum of two (2) replacement hoses, along with additional burlap sacks, shall be available on site.
  - 4" pipe shall be flushed through a minimum of one (1) 4" hose or (2) 2-1/2" hoses.
  - 6" pipe shall be flushed through a minimum of one (1) 4" hose or (4) 2-1/2" hoses.
  - 8" pipe shall be flushed through a minimum of two (2) 4" hoses, (1) 4" hose and two (2) 2-1/2" hoses, or six (6) 2-1/2" hoses.

Note: Fire hydrants shall be flushed using the hose arrangement required for 6" pipe. Wharf hydrants shall be flushed using the hose arrangement required for 4" pipe.
- The FDC shall be provided with frangible metal caps or brass plugs.

SYMBOL LEGEND

- Existing Underground Piping
- New Underground Piping
- System Riser Location
- Fire Dept. Connection
- Fire Hydrant
- Thrust Block
- Key Gate Valve
- AKWA C907 PVC 90°
- AKWA C907 PVC 45°
- AKWA C907 PVC TEE

VICINITY MAP

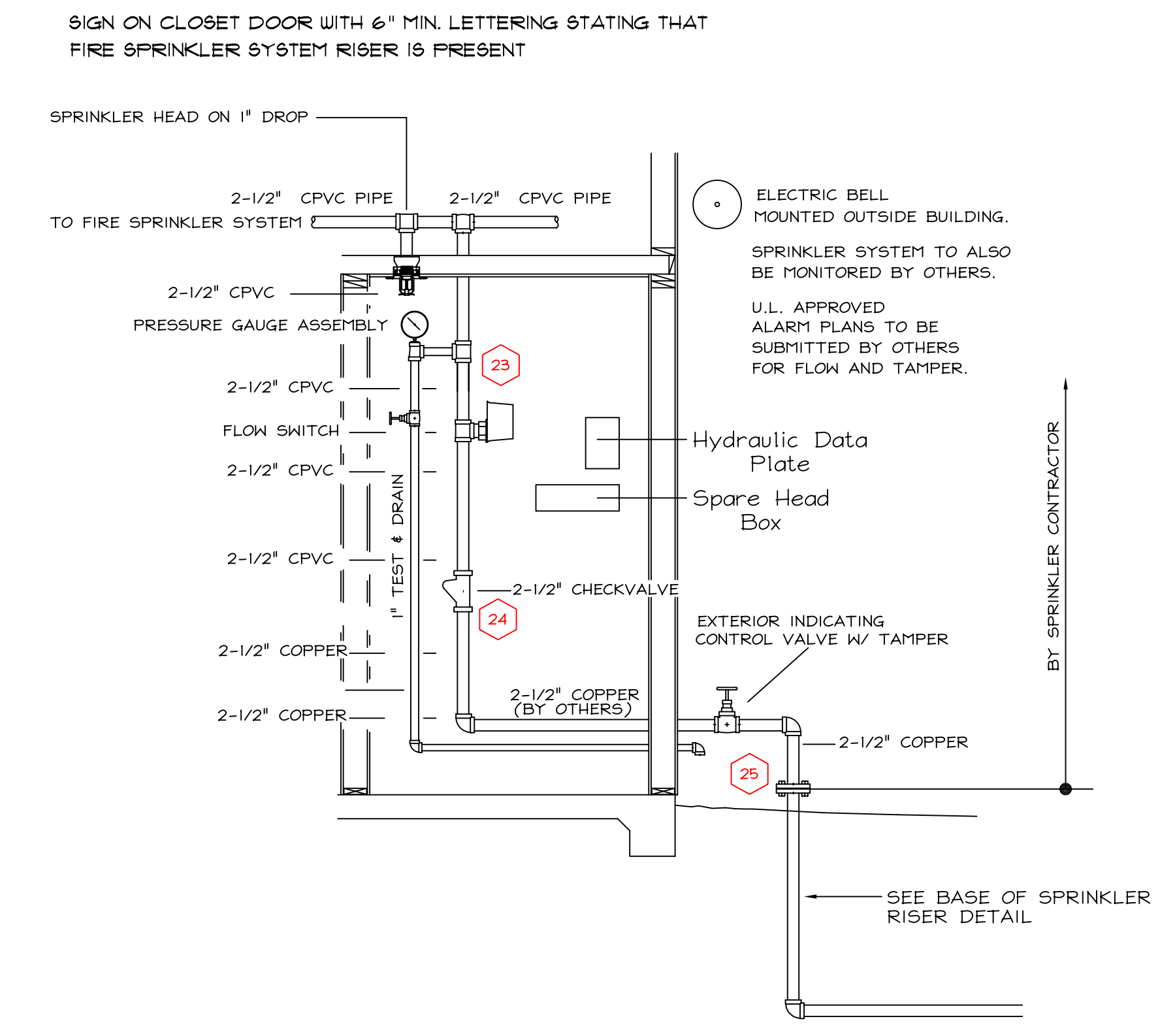
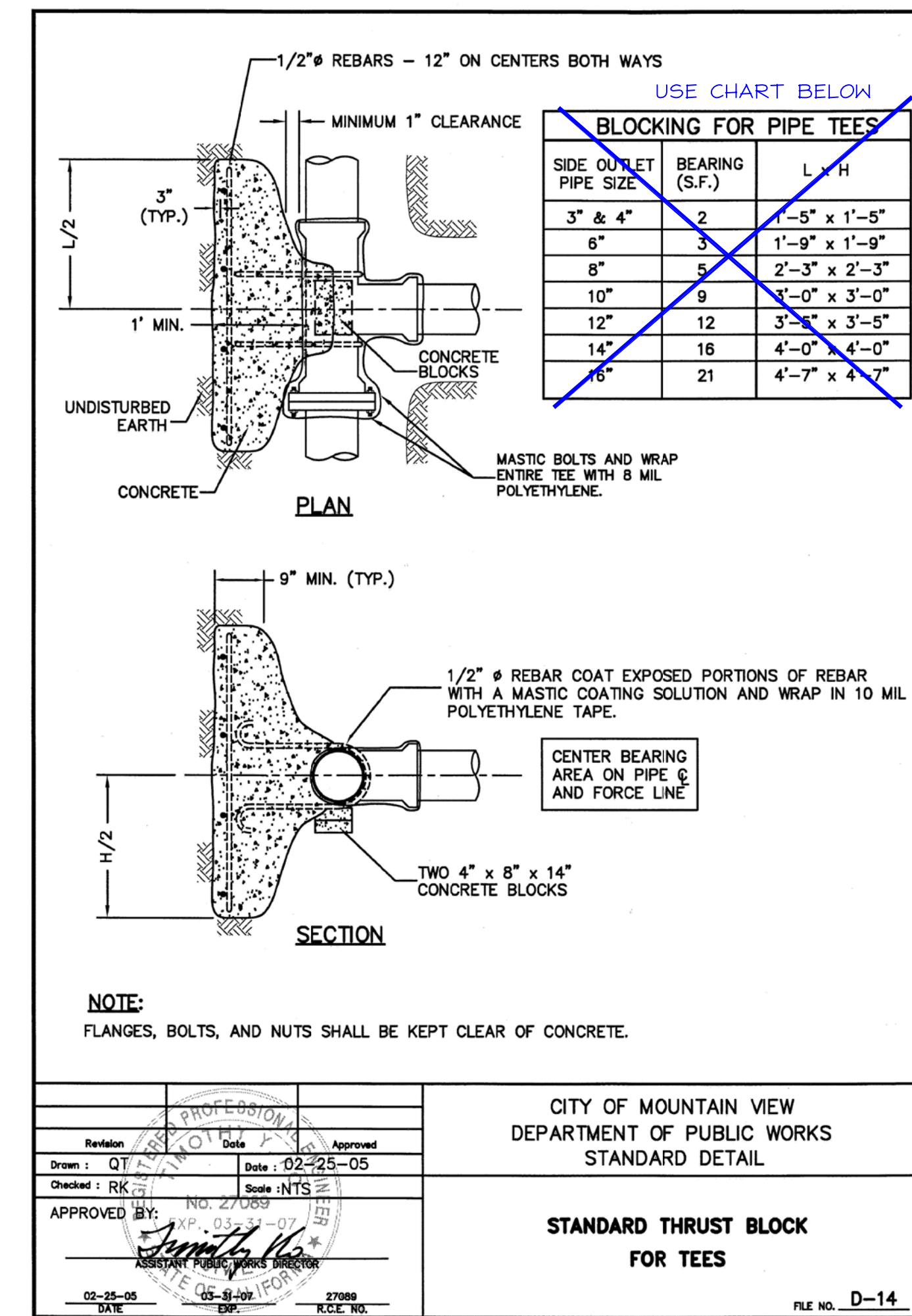
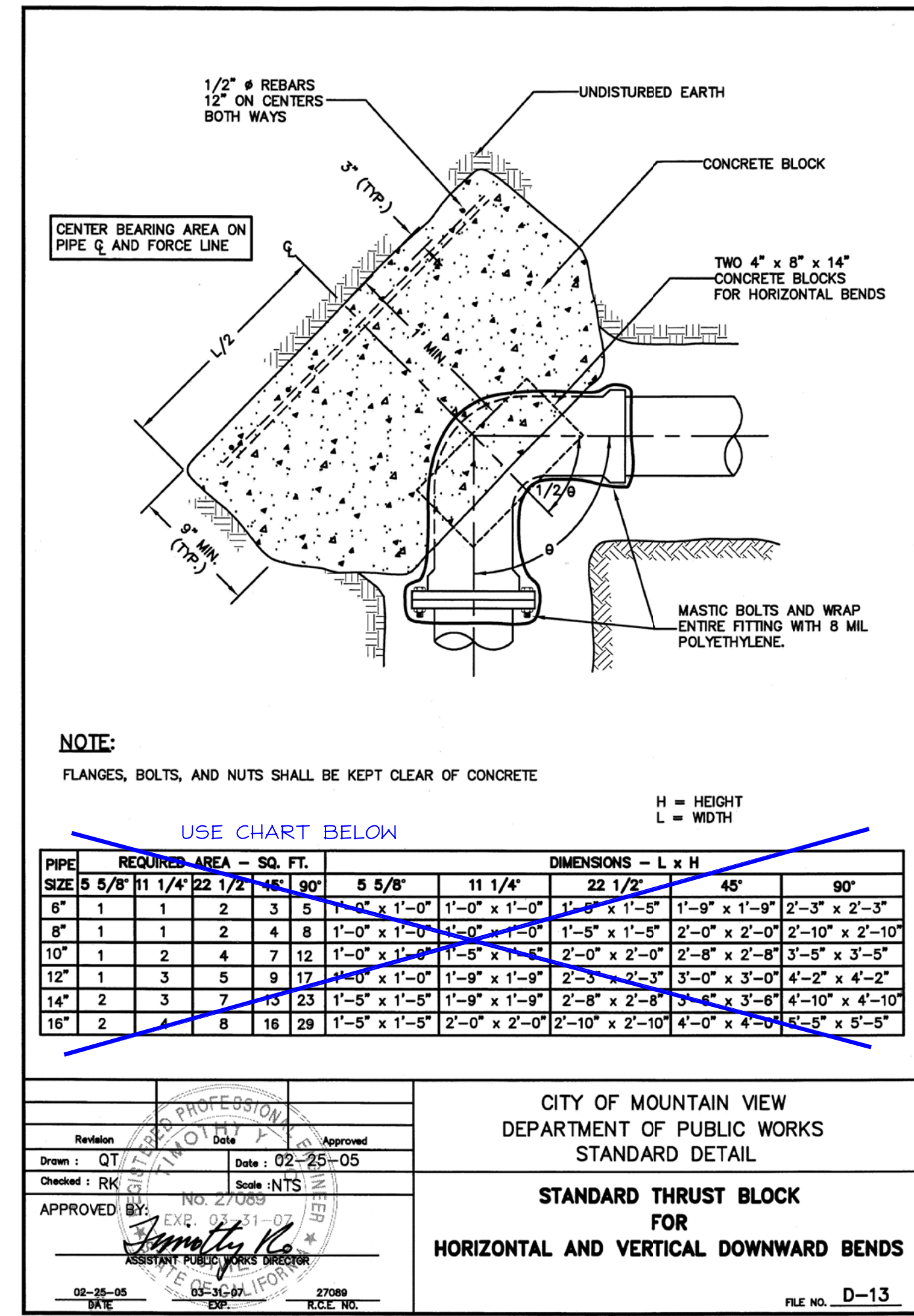
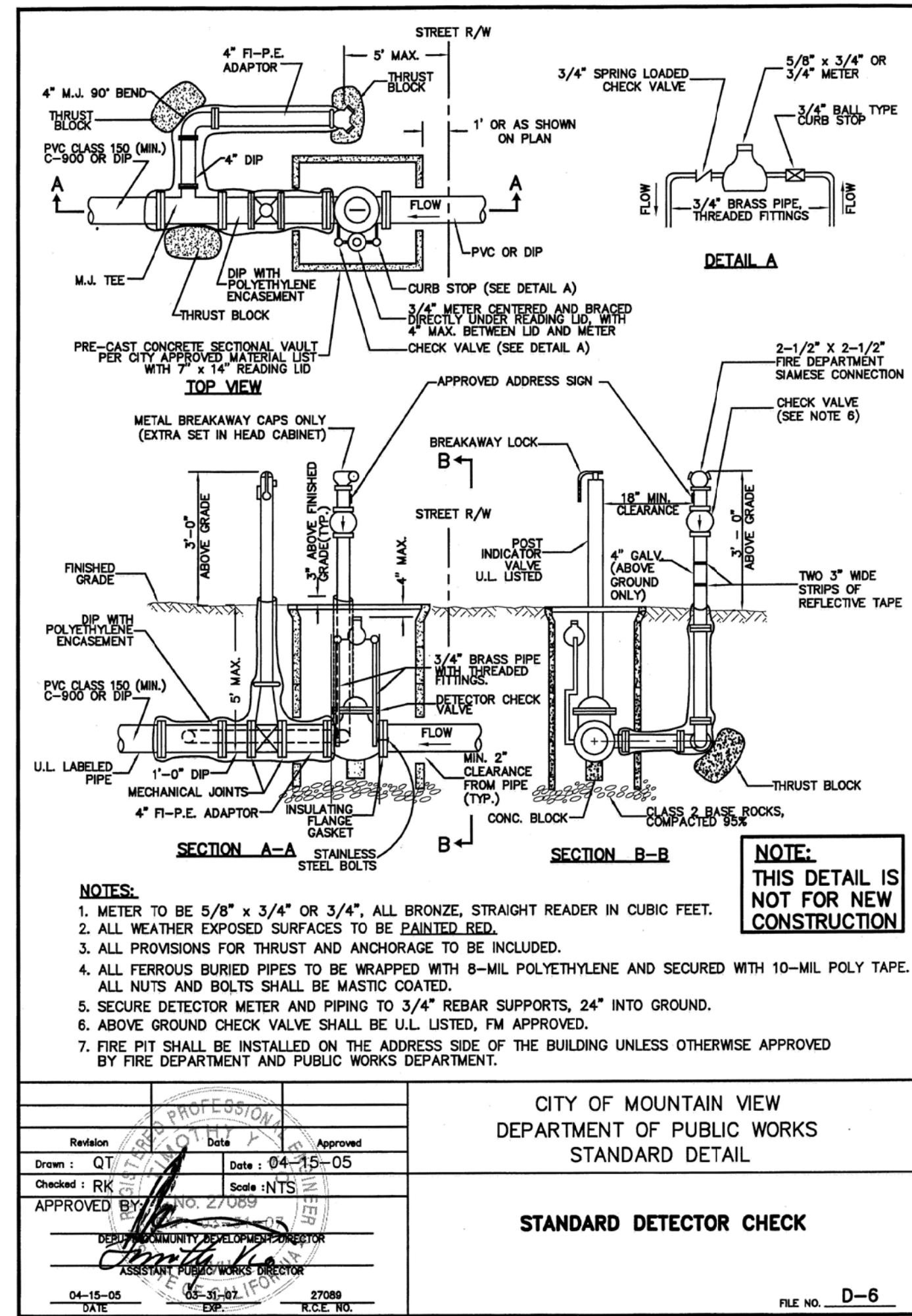


THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT AND THE COUNTY PUBLIC WORKS DEPARTMENT AT LEAST 48 HOURS ( 2 WORKING DAYS ) PRIOR TO BEGINNING ANY EXCAVATION IN THE VICINITY OF UNDERGROUND FACILITIES.

| REVISIONS |        |                          | PIPE SUMMARY |               |
|-----------|--------|--------------------------|--------------|---------------|
| NO.       | DATE   | DESCRIPTION              | LOCATION     | TYPE - U.O.N. |
| 1         | 7/7/05 | FIRE DEPARTMENT COMMENTS | UNDERGROUND  | PVC C900      |
|           |        |                          |              |               |
|           |        |                          |              |               |
|           |        |                          |              |               |
|           |        |                          |              |               |
|           |        |                          |              |               |

|               |                         |
|---------------|-------------------------|
| DATE          | 6-10-05                 |
| SCALE         | AS NOTED                |
| DRAWN         | E. PRICE                |
| FILE NUMBER   | 10199                   |
| SYSTEM        | WET                     |
| OCCUPANCY     | NFPA 13                 |
| SHEET TITLE   | UNDERGROUND PIPING PLAN |
| SHEET NUMBER  | FP-1                    |
| 1 OF 2 SHEETS |                         |

PROJECT: SIERRA VISTA TOWNHOMES ADDRESS: 465 SIERRA VISTA AVENUE CITY & STATE: MOUNTAIN VIEW, CA

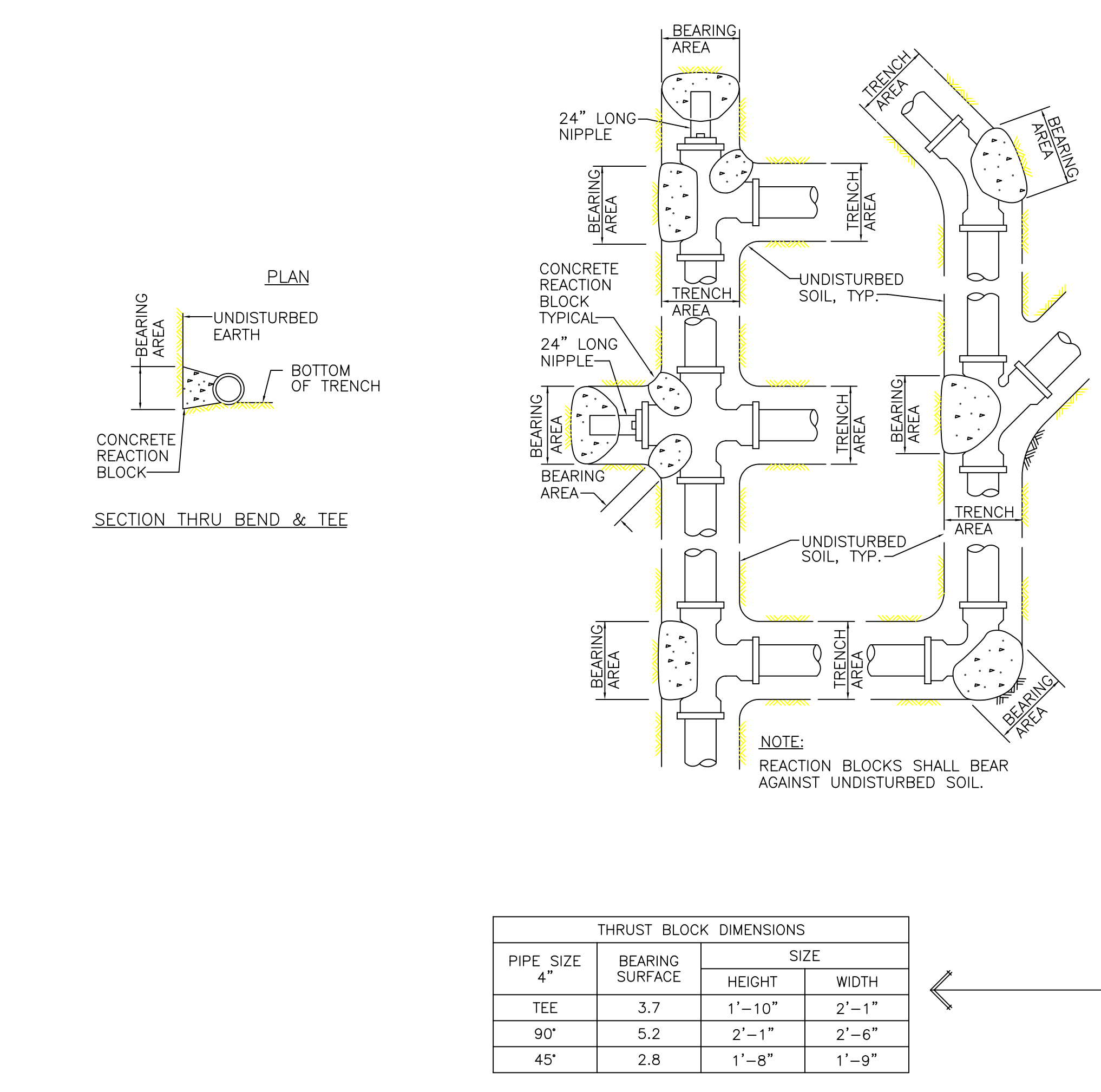


C CITY STANDARD DETAIL D-6  
 SCALE: NONE

D CITY STANDARD DETAIL D-13  
 SCALE: NONE

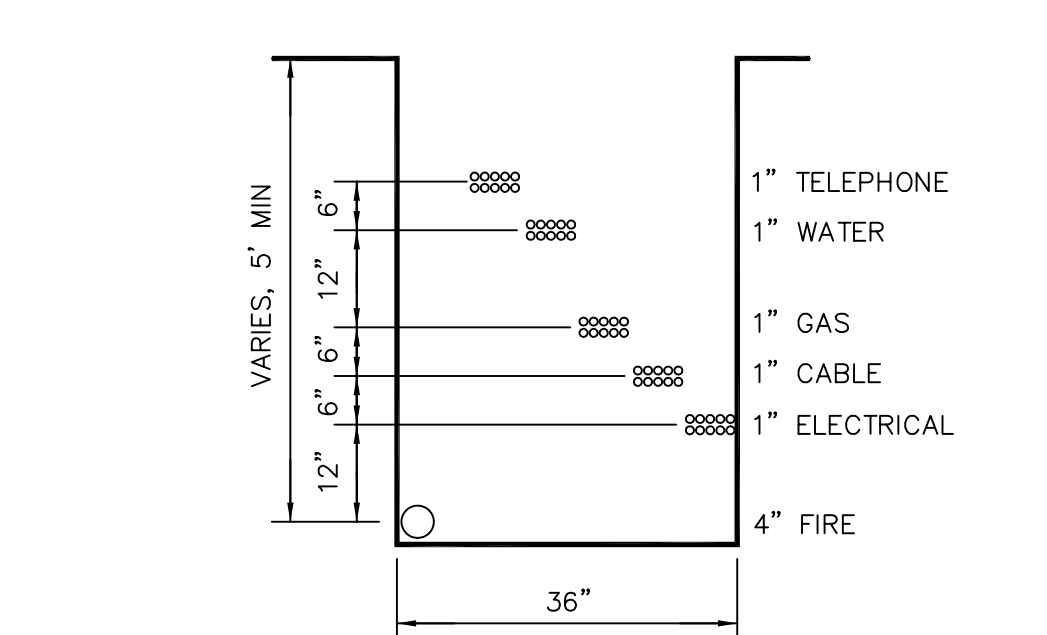
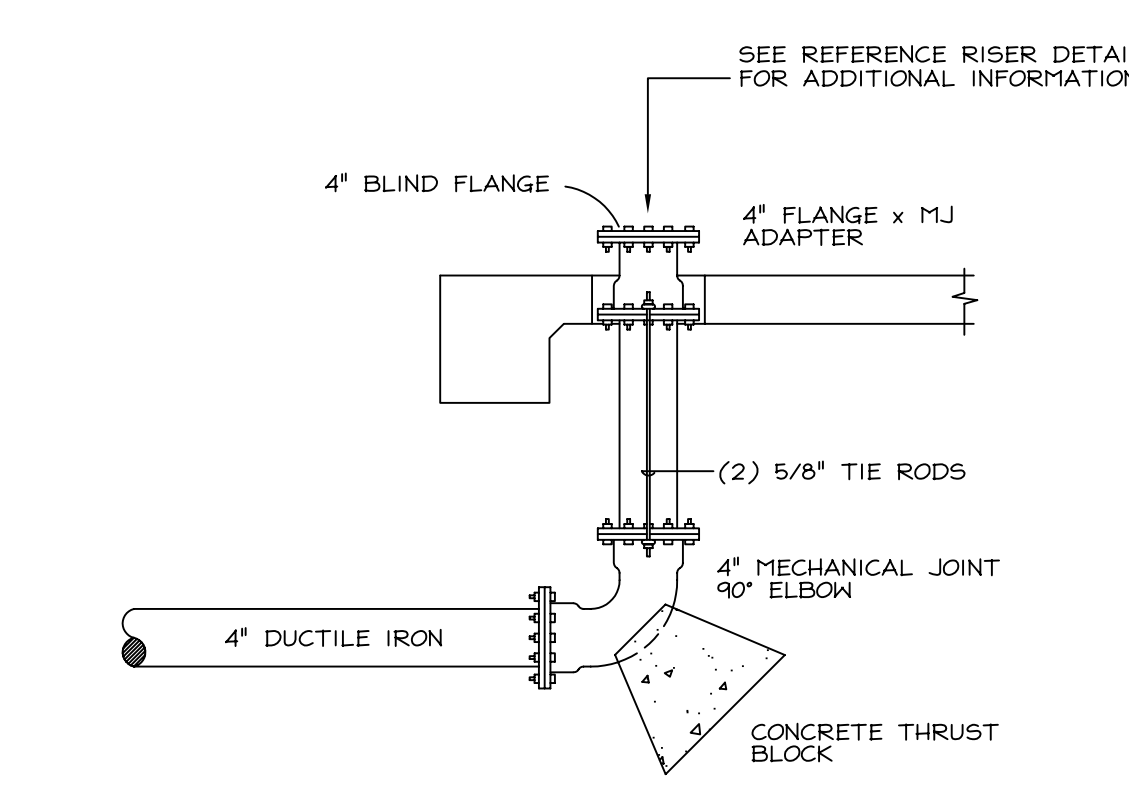
E CITY STANDARD DETAIL D-14  
 SCALE: NONE

F REFERENCE RISER DETAIL  
 SCALE: NONE



**MINIMUM BEARING AREAS (SQ. FT.) FOR HORIZONTAL THRUST BLOCKS**

| PIPE SIZE | BEND       | PRESSURE 200 P.S.I. TYPE OF SOIL CONDITION |      |      |      |      |     |     |
|-----------|------------|--|------|------|------|------|-----|-----|
|           |            | A  | B    | C    | D    | E    | F   | G   |
| 4"        | TEES, CAPS | 7.4  | 3.7  | 2.5  | 1.9  | 1.2  | 1.0 | 1.0 |
|           | 90°        | 10.4                                       | 5.2  | 3.5  | 2.6  | 1.7  | 1.3 | 1.0 |
|           | 45°        | 5.7  | 2.8  | 1.9  | 1.4  | 1.0  | 1.0 | 1.0 |
| 6"        | TEES, CAPS | 15.2                                       | 7.6  | 5.1  | 3.8  | 2.5  | 1.9 | 1.5 |
|           | 90°        | 21.5                                       | 10.7 | 7.2  | 5.4  | 3.6  | 2.7 | 2.1 |
|           | 45°        | 11.6                                       | 5.8  | 3.9  | 2.9  | 1.9  | 1.5 | 1.2 |
| 8"        | TEES, CAPS | 26.3                                       | 13.2 | 8.8  | 6.6  | 4.4  | 3.3 | 2.6 |
|           | 90°        | 37.2                                       | 18.6 | 12.4 | 9.3  | 6.2  | 4.7 | 3.7 |
|           | 45°        | 20.2                                       | 10.1 | 6.7  | 5.0  | 3.4  | 2.5 | 2.0 |
| 10"       | TEES, CAPS | 43.0                                       | 21.5 | 14.3 | 10.8 | 7.2  | 5.4 | 4.3 |
|           | 90°        | 60.8                                       | 30.4 | 20.3 | 15.2 | 10.1 | 7.6 | 6.1 |
|           | 45°        | 33.0                                       | 16.5 | 11.0 | 8.2  | 5.5  | 4.1 | 3.3 |



PIV Controls ASR's for 465 Sierra Vista Avenue

FDC Supplies ASR's for 465 Sierra Vista Avenue

G SIGNAGE REQUIREMENTS  
 SCALE: NONE

TYPE OF SOIL CONDITION LATERAL BEARING PRESSURE

A: SOFT CLAY; FINE LOOSE SAND 500 LBS. PER SQ. FT.  
 B: SAND & CLAY; MIXED OR IN LAYERS; FINE 1000  
 C: HARD DRY CLAY 1500  
 D: COARSE SAND 2000  
 E: GRAVEL 3000  
 F: SOFT ROCK 4000  
 G: HARDPAN 5000

NOTE:  
 ACTUAL FIELD CONDITIONS ARE TO BE VERIFIED DURING INSTALLATION.

| REVISIONS |        |                          | PIPE SUMMARY |               |
|-----------|--------|--------------------------|--------------|---------------|
| NO.       | DATE   | DESCRIPTION              | LOCATION     | TYPE - U.O.N. |
| 1         | 7/7/05 | FIRE DEPARTMENT COMMENTS | UNDERGROUND  | PVC C900      |

ENGINEERED FIRE SYSTEMS, INC.  
 AUTOMATIC SPRINKLER "SPECIALISTS"  
 13457 COLFAX HWY, GRASS VALLEY, CA, 95945, (530) 274-9400

|              |                 |
|--------------|-----------------|
| DATE         | 6-10-05         |
| SCALE        | AS NOTED        |
| DRAWN        | E. PRICE        |
| FILE NUMBER  | 10199           |
| SYSTEM       | WET             |
| OCCUPANCY    | NFPA 13         |
| SHEET TITLE  | NOTES & DETAILS |
| SHEET NUMBER | FP-2            |
|              | 2 OF 2 SHEETS   |