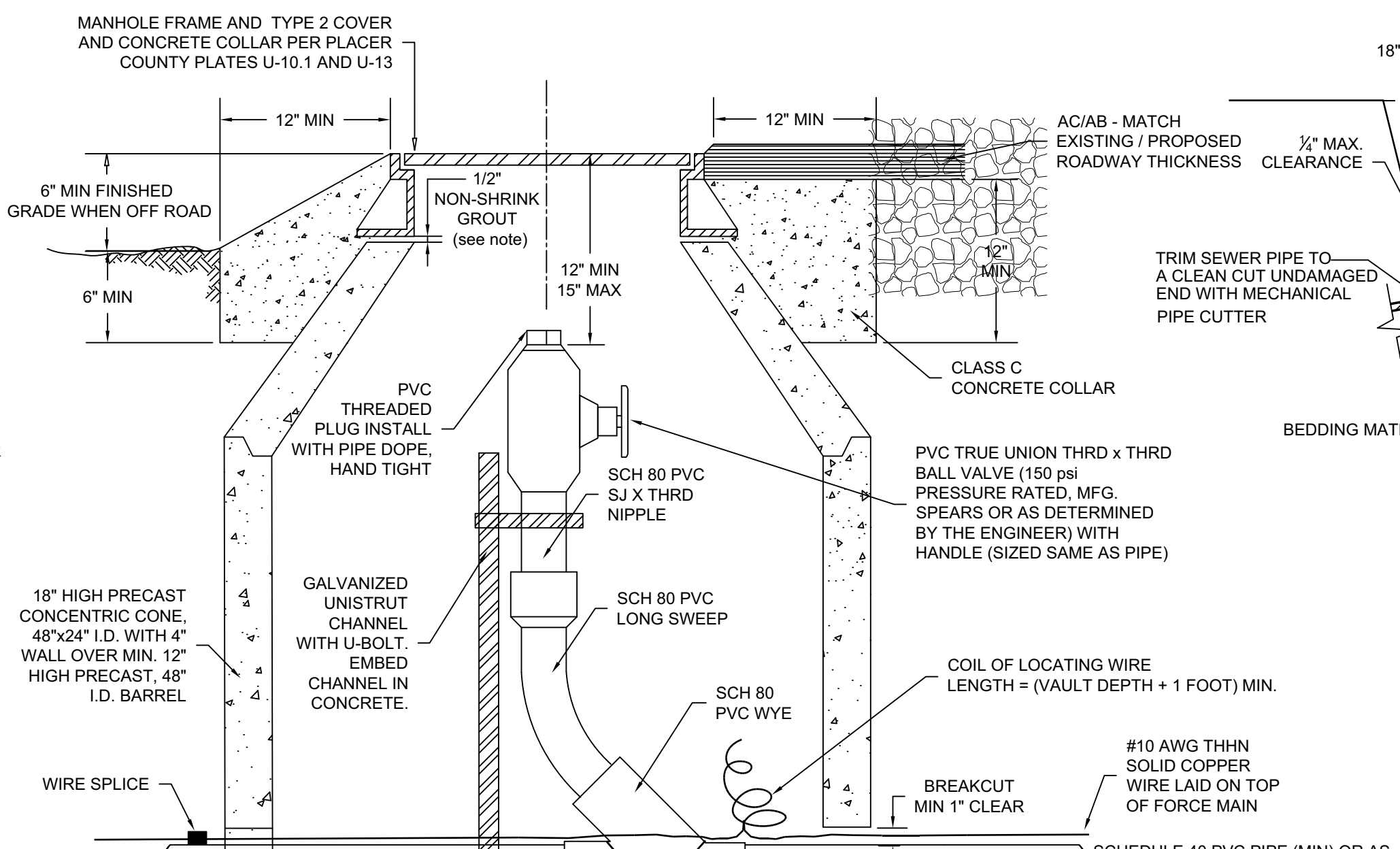


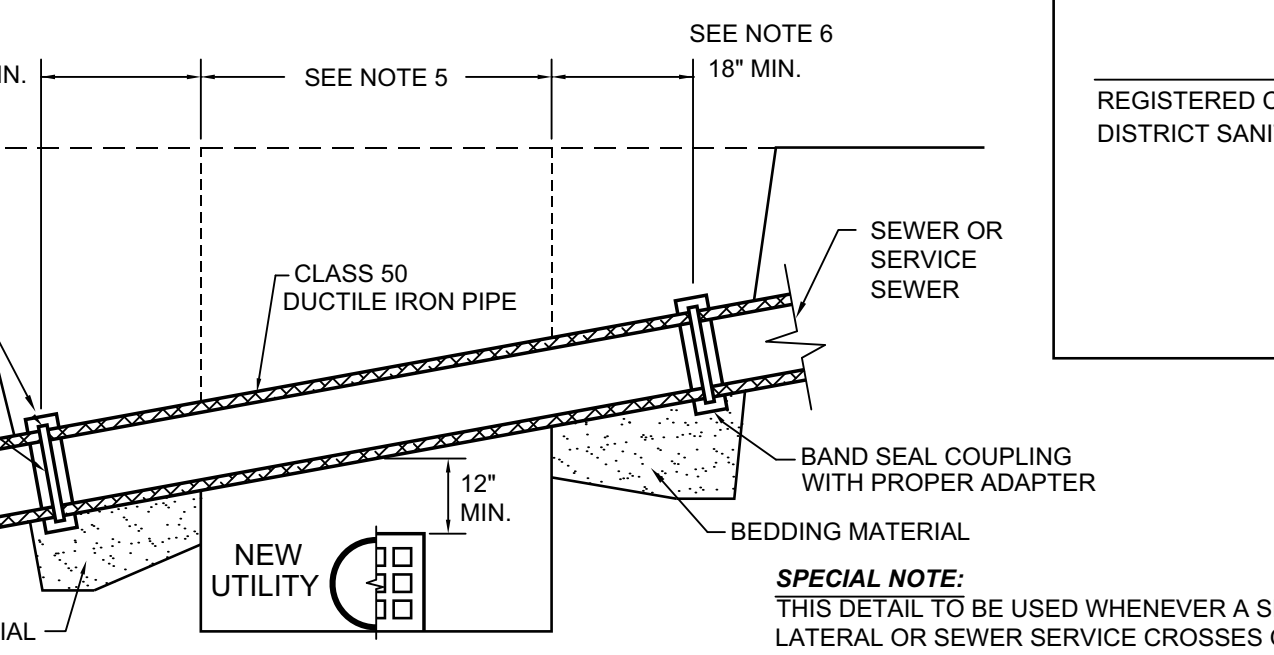
**TYPE A TERMINAL CLEANOUT  
2, 3, & 4 INCH PIPE (SCH 40 PVC FM)**  
nts

**NOTES:**  
1. RAM-NEK MAY BE SUBSTITUTED FOR NON-SHRINK GROUT.  
2. LAUNCHING TERMINAL CLEANOUT AS SIZED ON PLANS.  
3. REFERENCE "LINE VALVE AND LOCATING WIRE" DETAIL FOR ADDITIONAL LOCATING WIRE REQUIREMENTS.



**TYPE B CLEANOUT  
2", 2 1/2", 3", & 4 INCH PIPE**  
nts

**NOTES:**  
1. RAM-NEK MAY BE SUBSTITUTED FOR NON-SHRINK GROUT.  
2. REFERENCE "LINE VALVE AND LOCATING WIRE" DETAIL FOR ADDITIONAL LOCATING WIRE REQUIREMENTS.

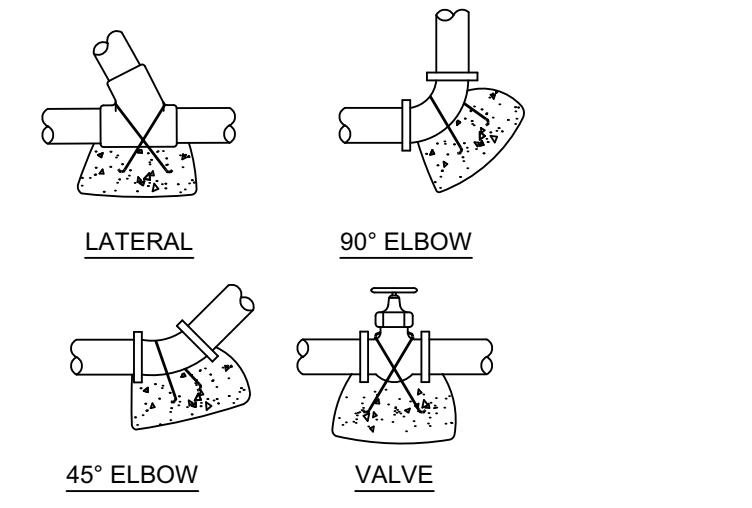


**SEWER UTILITY CROSSING**  
PLATE U-20  
nts

**NOTES:**  
1. INSIDE DIAMETER OF DUCTILE IRON PIPE TO BE SAME AS THE PIPE TO WHICH IT CONNECTS  
2. DUCTILE IRON PIPE IS TO BE USED AS PER THIS DETAIL WHENEVER THE LATERAL OR SERVICE SEWER IS CUT OR DAMAGED  
3. DUCTILE IRON PIPE IS TO BE USED AS PER THIS DETAIL WHENEVER CONSTRUCTION PASSES BENEATH THE LATERAL OR SERVICE SEWER  
4. ALTERATION OF SEWER GRADES WILL BE PERMITTED ONLY AFTER WRITTEN PERMISSION HAS BEEN RECEIVED FROM THE PLACER COUNTY DEPARTMENT OF FACILITY SERVICES  
5. WHENEVER THE SPAN, WHETHER CAUSED BY TRENCH WIDTH OR CROSSING ANGLE, OF THE DUCTILE IRON PIPE EXCEEDS 3 FT.-0 IN. PLACE BEDDING MATERIAL TO 6 IN. ABOVE THE DUCTILE IRON PIPE  
6. FOR CROSSINGS OF DOMESTIC WATER LINES, A MINIMUM OF 18 LF OF DIP SHALL BE USED.

REGISTERED CIVIL ENGINEER  
DISTRICT SANITARY ENGINEER

NO. \_\_\_\_\_  
Exp. \_\_\_\_\_  
CIVIL  
STATE OF CALIFORNIA

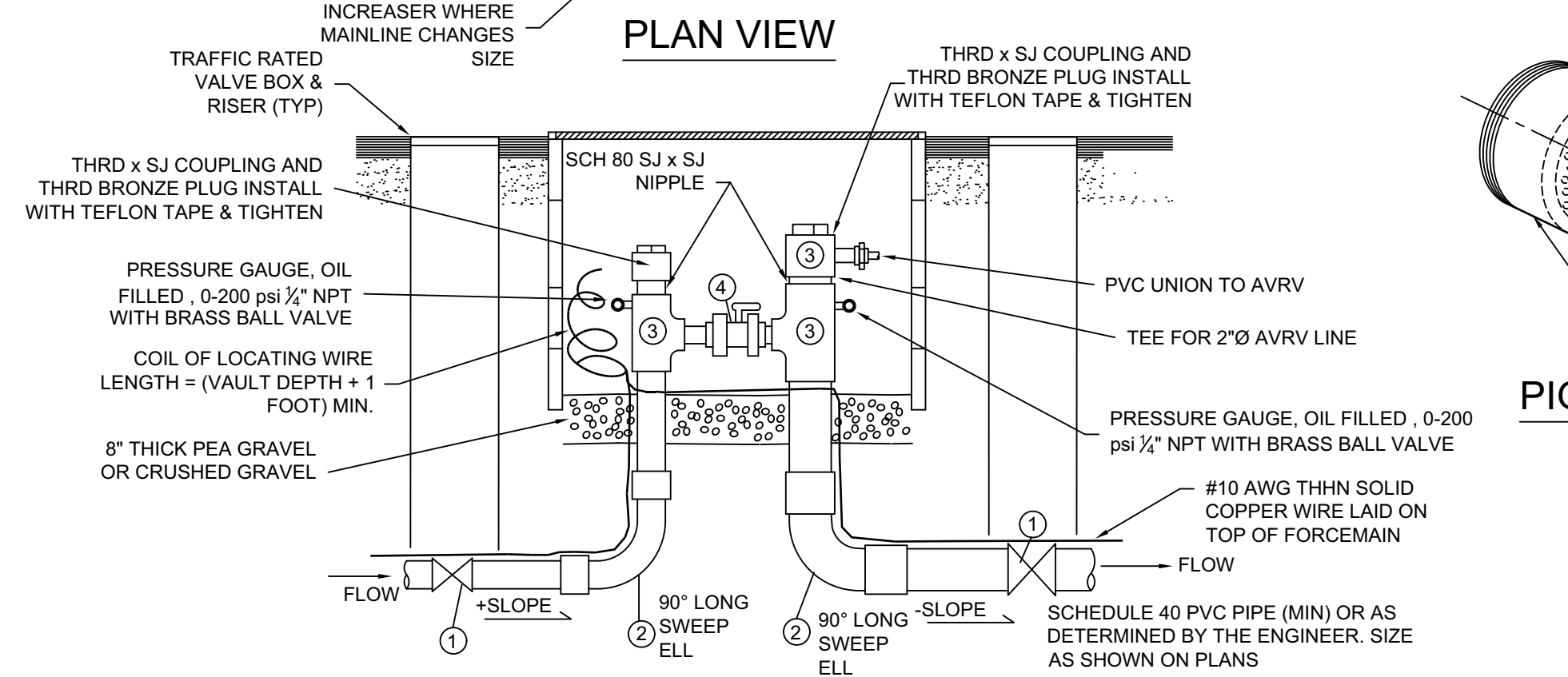
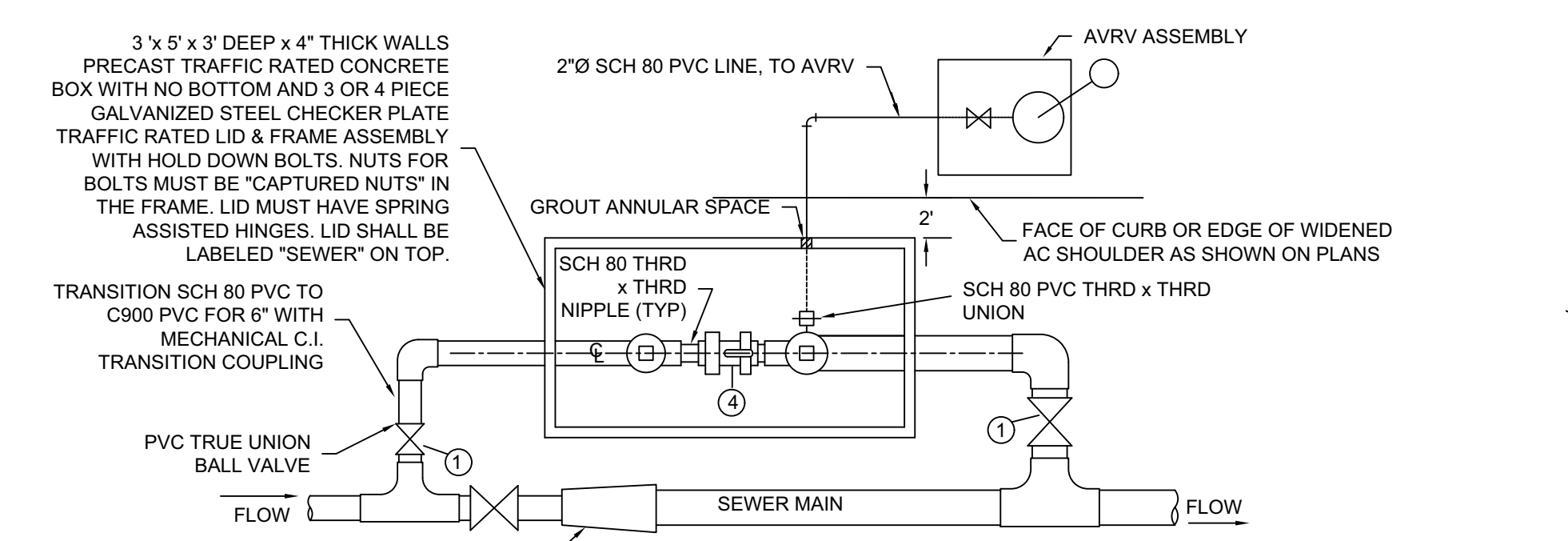


**SEWER THRUST RESTRAINT REQUIREMENTS**  
nts

| BEARING AREA OF THRUST BLOCKS, IN SQ. FT. |                     |                        |          |              |  |
|-------------------------------------------|---------------------|------------------------|----------|--------------|--|
| PIPE SIZE                                 | TEE WYE PLUG OR CAP | 90° BEND PLUGGED CROSS | 45° BEND | 22 1/2° BEND |  |
| 1 1/4"                                    | 0.3                 | 0.4                    | 0.2      | 0.1          |  |
| 2"                                        | 0.4                 | 0.6                    | 0.4      | 0.2          |  |
| 2 1/2"                                    | 0.7                 | 0.9                    | 0.5      | 0.3          |  |
| 3"                                        | 1.0                 | 1.4                    | 0.8      | 0.4          |  |
| 4"                                        | 1.6                 | 2.3                    | 1.2      | 0.6          |  |

| VERTICAL RESTRAINT BLOCKS, CU. FT. CONCRETE REQ'D. |         |           |           |        |  |
|----------------------------------------------------|---------|-----------|-----------|--------|--|
| PIPE SIZE                                          | LATERAL | 90° ELBOW | 45° ELBOW | VALVES |  |
| 2"                                                 | 4       | 6         | 3         | 2      |  |
| 2 1/2"                                             | 6       | 8         | 4         | 2      |  |
| 3"                                                 | 8       | 11        | 6         | 3      |  |
| 4"                                                 | 13      | 19        | 10        | 5      |  |

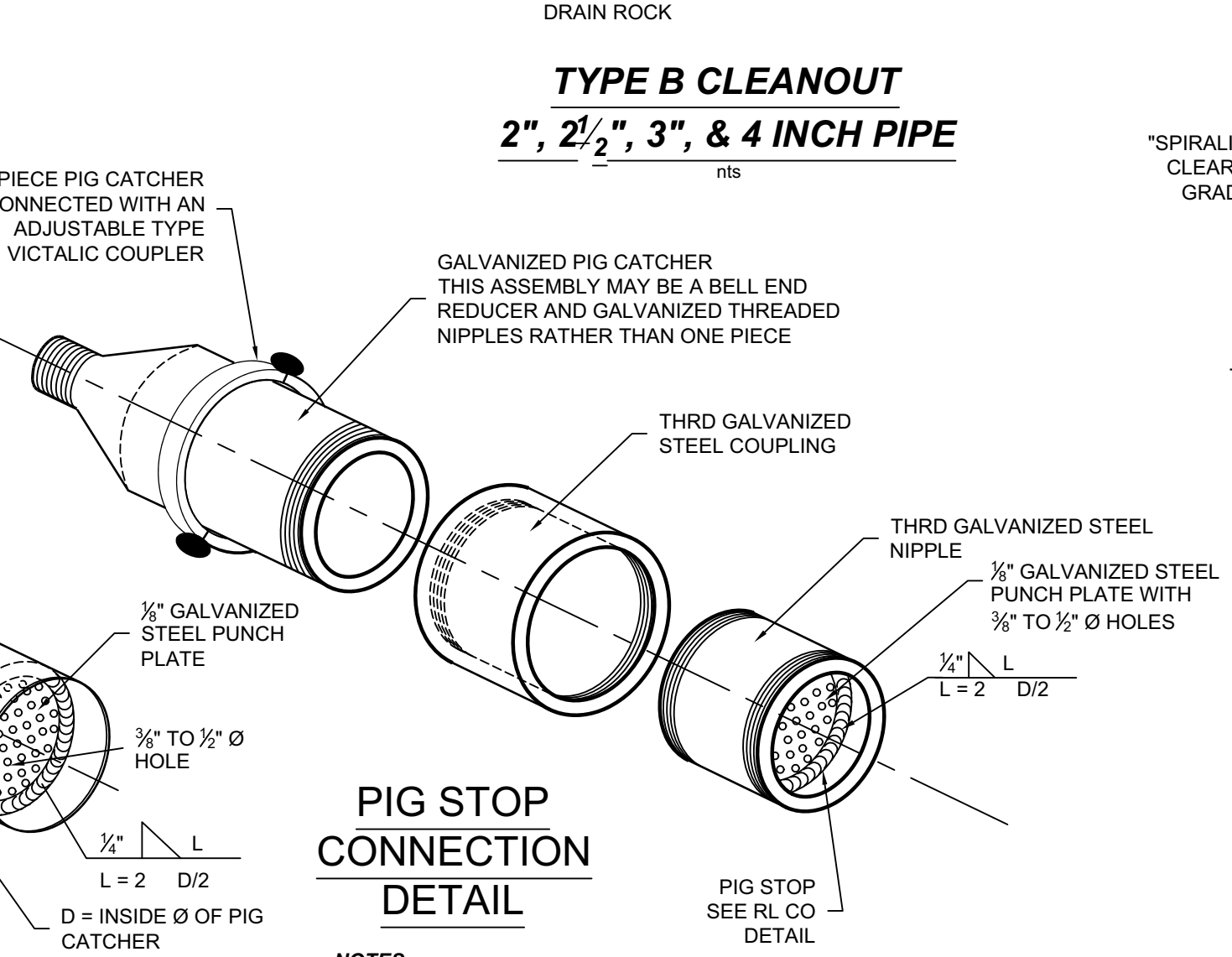
**NOTE:** RESTRAINING "STRAPS" TO BE 1/2" REINFORCING BARS



**TYPE RL CLEANOUT  
2" - 4" FORCEMAIN**  
nts

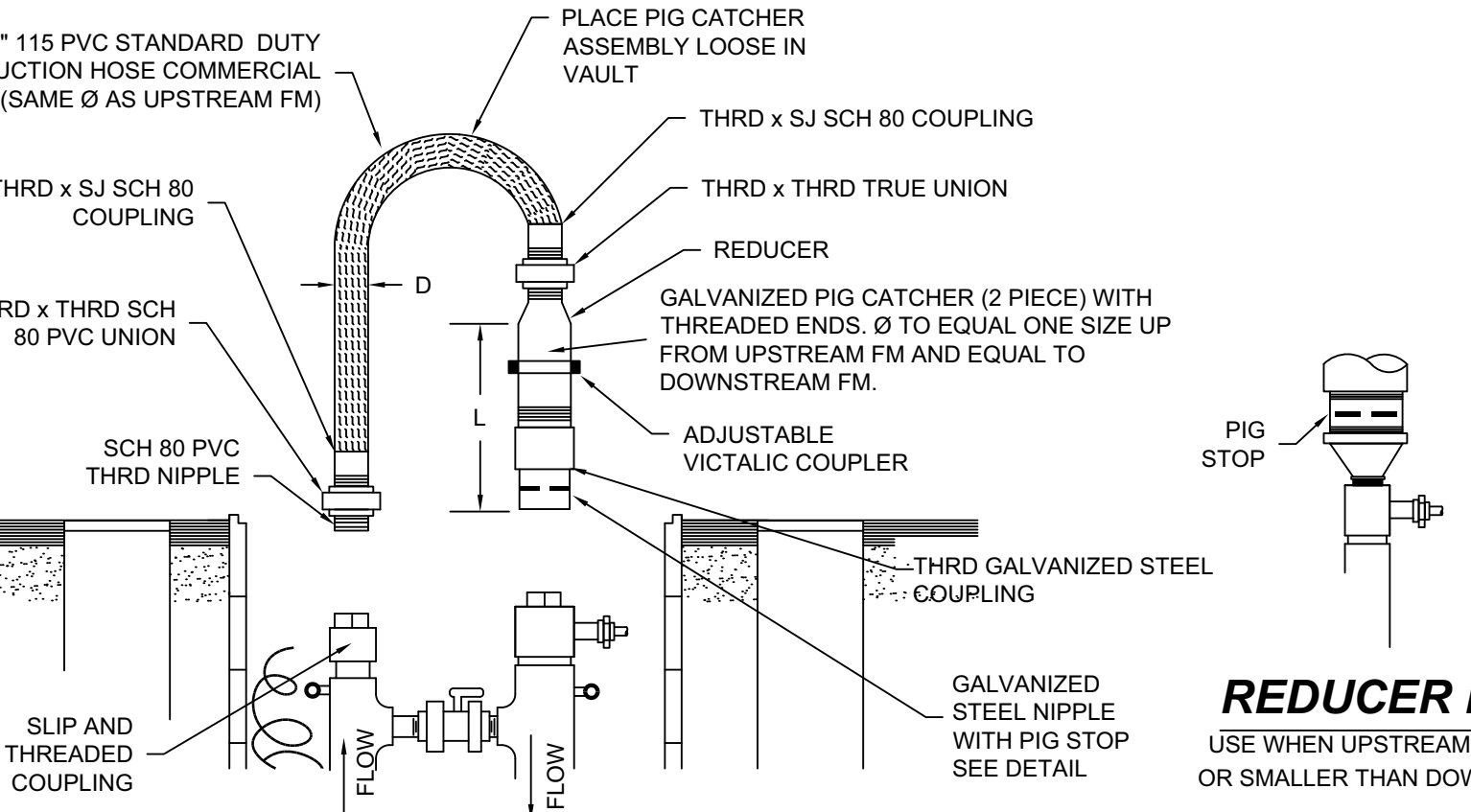
| ITEM NO. | DESCRIPTION                                         |
|----------|-----------------------------------------------------|
| 1-2      | "size" PVC TRUE UNION BALL VALVE & FITTINGS SJ x SJ |
| 3        | "size" TEE                                          |
| 4        | "size" PVC TRUE UNION BALL VALVE THRD x THRD        |

**NOTES:**  
1. PVC PIPE AND PVC FITTINGS SHALL BE SCHEDULE 80, PRESSURE RATED, SOLVENT WELD, WITHIN CLEANOUT ASSEMBLY PAY LIMITS, EXCEPT WHERE SHOWN OTHERWISE.  
2. REFERENCE SEWER TRENCH AND LOCATING WIRE DETAILS FOR ADDITIONAL LOCATING WIRE REQUIREMENTS.  
3. ALL PVC BALL VALVES ARE TO BE RATED FOR 150 PSI PRESSURE AND MANUFACTURED BY SPEARS OR APPROVED EQUIVALENT.



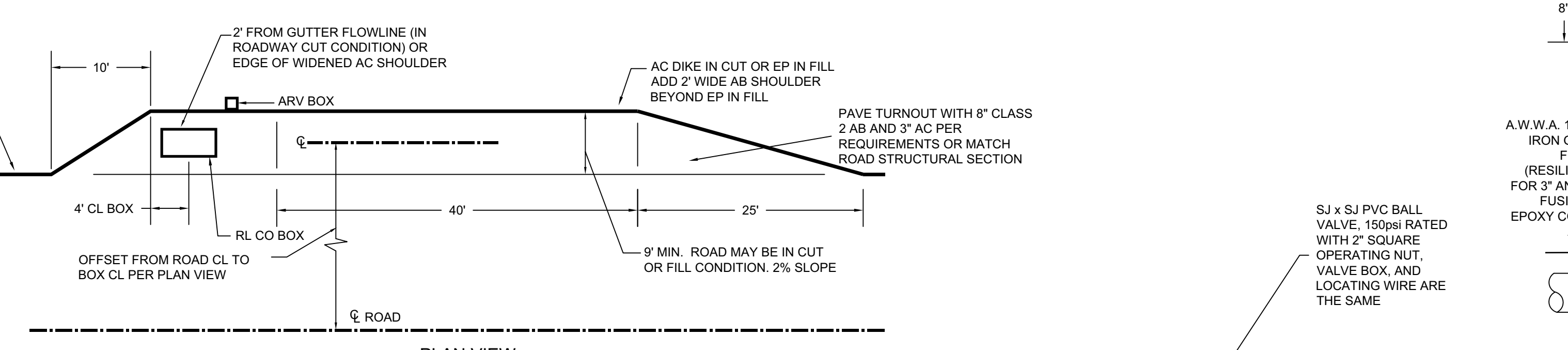
**PIG STOP CONNECTION DETAIL**

**NOTES:**  
1. STEEL PIG CATCHER TO BE HOT DIP GALVANIZED AFTER FABRICATION.

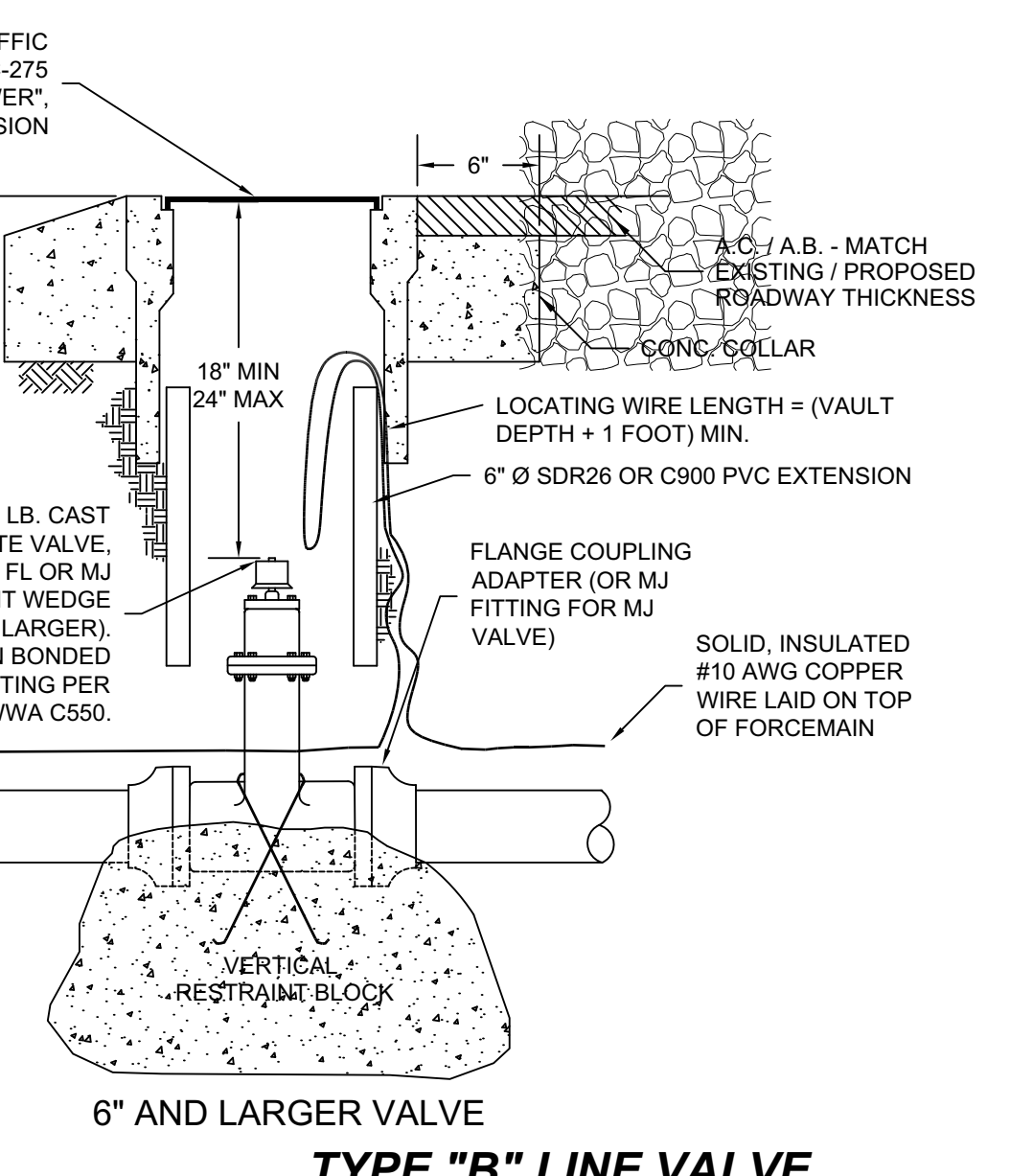


**REDUCER DETAIL**  
USE WHEN UPSTREAM PIPE IS EQUAL OR SMALLER THAN DOWNSTREAM PIPE

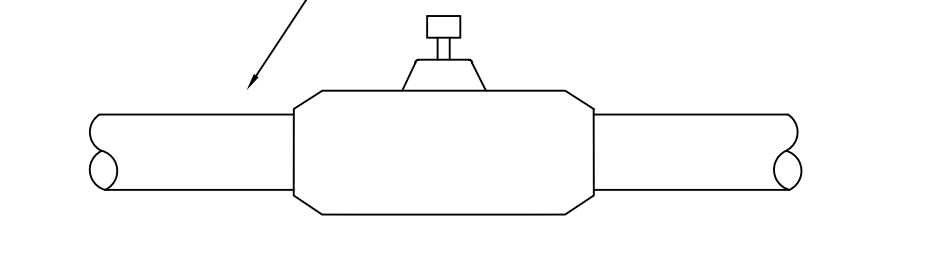
**TEMPORARY PIG CATCHER ATTACHMENT FOR TYPE RL CO 2" - 3" FM**  
nts



**VEHICLE TURNOUT at RL (RECEIVE-LAUNCH) CLEANOUT ASSEMBLY**  
nts



**6" AND LARGER VALVE  
TYPE "B" LINE VALVE**  
nts



**2", 3", & 4" VALVE**

DATE: 2001  
DRAWN: LORI HAMMETT  
CHECKED: RON WOOD  
AS-BUILT: \_\_\_\_\_

DESIGNED: RON WOOD  
PROJECT NO. \_\_\_\_\_

DEPARTMENT OF FACILITY SERVICES  
COUNTY OF PLACER

LOW PRESSURE SEWER SYSTEM DETAILS  
PLACER COUNTY, CALIFORNIA

SHEET NO. 1/2