

1 TYPICAL TRENCH DETAIL  
NOT TO SCALE

#### NOTES:

- WHERE EXISTING STREET IS PCC OVERLAIN WITH HMA, THE PCC SECTION REMOVED BY TRENCHING SHALL NOT BE REPLACED.
- FINAL TRENCH PAVING IS REQUIRED TO BE EXPANDED TO A PAINTED LANE STRIPE. EXISTING PAVEMENT PATCH, THE LIP OF GUTTER OR EDGE OF PAVEMENT WHERE SUCH STREET FEATURE IS WITHIN 3 FEET OF THE FINAL SAWCUT.
- PERMANENT PAVING MUST BE COMPLETED WITHIN 30 DAYS. HMA OR CUTBACK (1" THICK) MAY BE PLACED AS A TEMPORARY SURFACE IN ROADWAY AREAS AND SHALL BE MAINTAINED UNTIL PERMANENT PAVING IS COMPLETED. WHERE WARRANTED AND AT THE DISCRETION OF THE COTR, TRENCH PLATES MAY BE USED FOR UP TO 2 WEEKS. TRENCH PLATES SHALL HAVE A SKID RESISTANT SURFACE, SECURED WITH 24" WIDE COLLAR OF CURBACK AROUND ALL SIDES OF PLATE, AND TAPERED TO PROVIDE SMOOTH TRANSITIONS.
- A TACK COAT OF ASPHALTIC EMULSION OR PAVING GRADE ASPHALT SHALL BE APPLIED TO EXISTING HMA PAVEMENT AT ALL CONTACT SURFACES PRIOR TO PERMANENT HMA PAVING PER SECTION 22-7 OF STANDARD SPECIFICATIONS.
- UNLESS OTHERWISE SPECIFIED, PERMANENT PAVEMENT SHALL CONFORM IN QUALITY AND THICKNESS TO THE TYPE OF PAVEMENT REMOVED, BUT IN NO CASE SHALL BE LESS THAN FOUR INCHES (4") OF HOT MIX ASPHALT ON TWELVE INCHES (12") OF AGGREGATE BASE CLASS 2.
- EXISTING PAVEMENT SHALL BE SAWCUT AND REMOVED IN SUCH A MANNER AS NOT TO TEAR, BULGE, OR DISPLACE ADJACENT PAVEMENT. EDGES SHALL BE CLEAN AND VERTICAL WHEN PRACTICAL. ALL CUTS SHALL BE PARALLEL OR PERPENDICULAR TO THE STREET CENTERLINE.
- R.C. - RELATIVE COMPACTION AS DETERMINED BY ASTM DESIGNATION D-1557.
- NO SOLID BLOCKING PERMISSIBLE BENEATH PIPE.
- JETTING BACKFILL IS NOT PERMITTED.
- ROCKS EXCEEDING 6" SHALL NOT BE PERMITTED WITHIN THE TRENCH SECTION.
- THE MINIMUM EQUIPMENT REQUIRED FOR COMPACTION OF NATIVE BACKFILL MATERIAL SHALL CONSIST OF A SHEEPSFOOT VIBRATORY ROLLER WITH A MINIMUM DRUM WIDTH OF 48", A MINIMUM GROSS WEIGHT OF 4600 LBS, OR MUST MEET APPROVAL OF THE COTR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE COTR 48 HOURS PRIOR TO EXCAVATION.
- THE GEOTECHNICAL ENGINEER SHALL BE PRESENT DURING TESTING AND ON A FULL-TIME BASIS DURING ALL NATIVE BACKFILLING OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL NATIVE BACKFILL WORK INCLUDING COMPACTION AND UNIFORM MOISTURE CONDITIONING, AND THAT MOISTURE CONTENT IS ABOVE OPTIMUM MOISTURE TO THE EXTENT APPROPRIATE FOR THE NATIVE MATERIAL BEING USED.
- ROADWAYS WHERE NATIVE TRENCH BACKFILL IS USED, TREATED (LIME, CEMENT, FLYASH, ETC.) SUBGRADE SHALL NOT BE USED AS PART OF THE STRUCTURAL SECTION.
- PIPE SHALL BE INSTALLED CENTERED IN TRENCH.

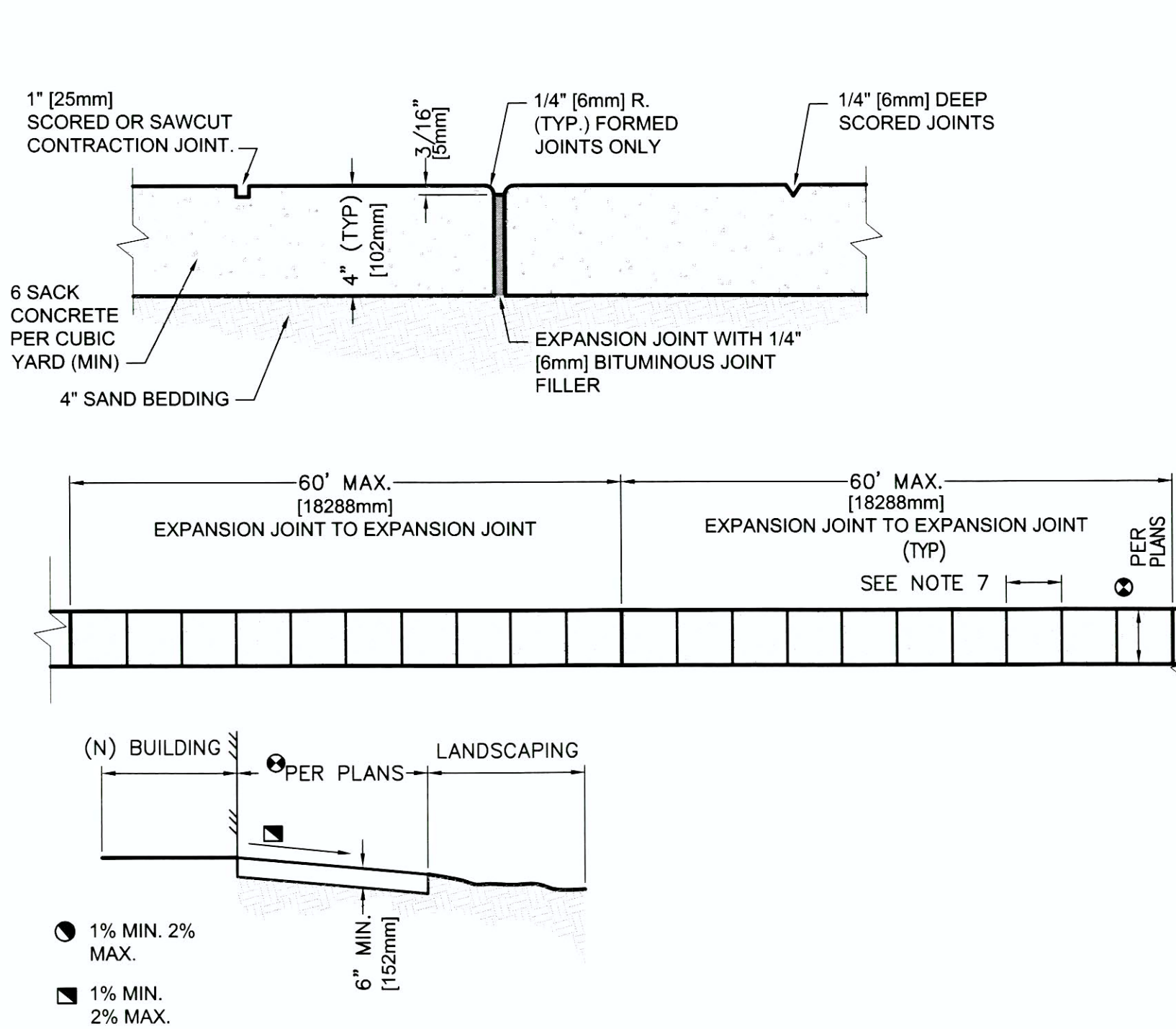
#### TRENCH WIDTH FOR HDPE PIPE

PIPE SIZE*	TRENCH WIDTH (MIN.)
15"	36"
18"	48"
24"	54"
30"	60"
36"	72"

PIPE MUST BE CENTERED IN THE TRENCH.  
\*INSIDE DIAMETER

#### TABLE 1

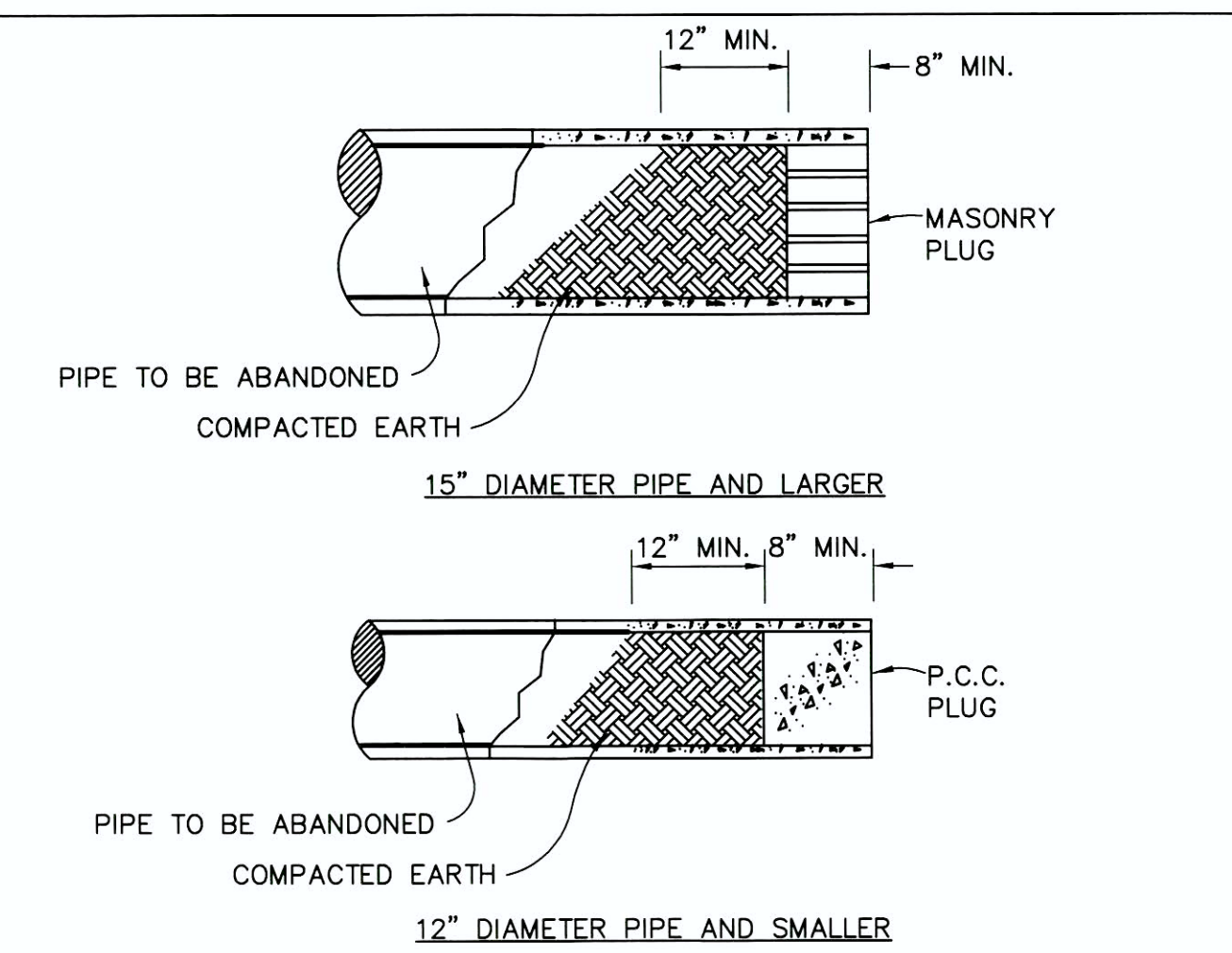
NOMINAL PIPE SIZE	MINIMUM DIMENSIONS		
	A	B	C
≤ 12"	6"	3"	6"
> 12"-18"	9"	6"	8"
> 18"-24"	9"	6"	8"
> 24"	12"	6"	12"



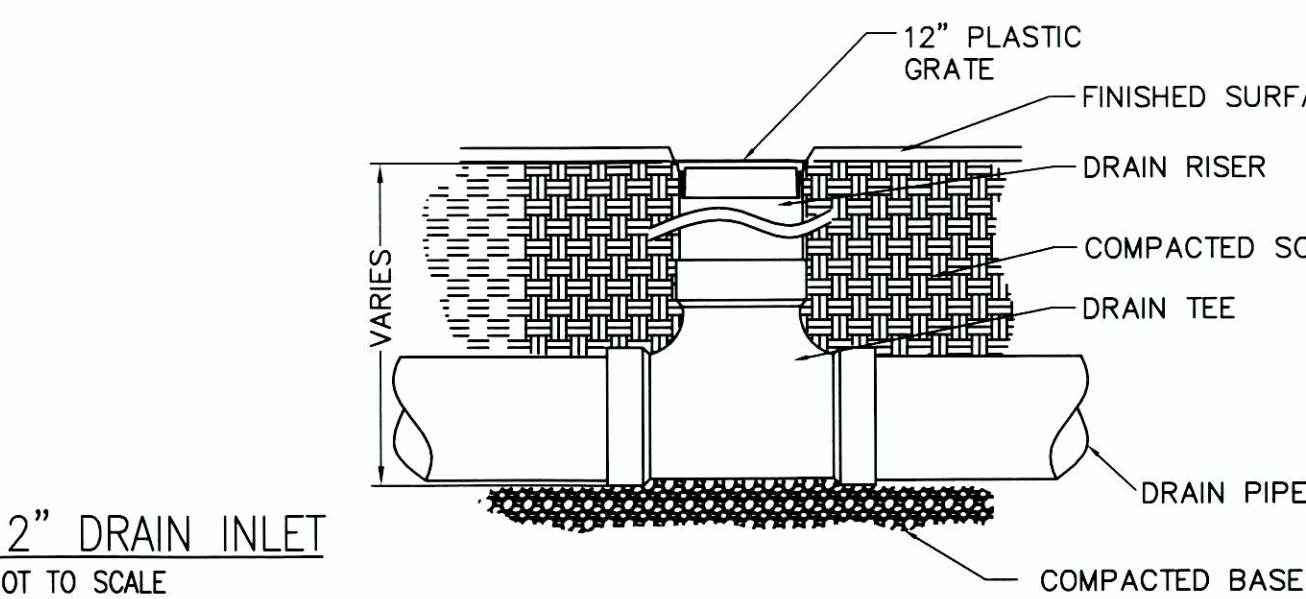
#### NOTES:

- EXPANSION JOINTS SHALL BE LOCATED WHERE SIDEWALK ABUTS CONCRETE DRIVEWAYS, CURB OR OTHER ADJACENT STRUCTURES.
- ONE-HALF INCH BITUMINOUS JOINT FILLER SHALL BE INSTALLED AT EXPANSION JOINT LOCATIONS AND SHALL EXTEND THE FULL DEPTH OF THE CONCRETE.
- 1" DEEP CONTRACTION JOINTS SHALL BE PLACED AT INTERVALS OF APPROXIMATELY 15' [4572mm] OR AT A SPACING THAT MATCHES THE ADJACENT CURB.
- FORMED CONTRACTION JOINTS SHALL BE FINISHED WITH A TOOL HAVING A 1/4" (6mm) RADIUS.
- SCORED JOINTS SHALL BE 1/4" (6mm) DEEP AND PLACED AT THE SPACING INDICATED FOR THE WIDTH OF SIDEWALK OR MATCH SCORED JOINTS OF ADJACENT CURB.
- CONCRETE SHALL BE FINISHED BY MEANS OF A FLOAT, STEEL TROWELLED AND BROOMED WITH A FINE BRUSH IN A TRANSVERSE DIRECTION.
- 1/4" DEEP SCORED JOINTS (TYP) SPACED AT 6' (1829mm) OR EQUAL TO SIDEWALK WIDTH.

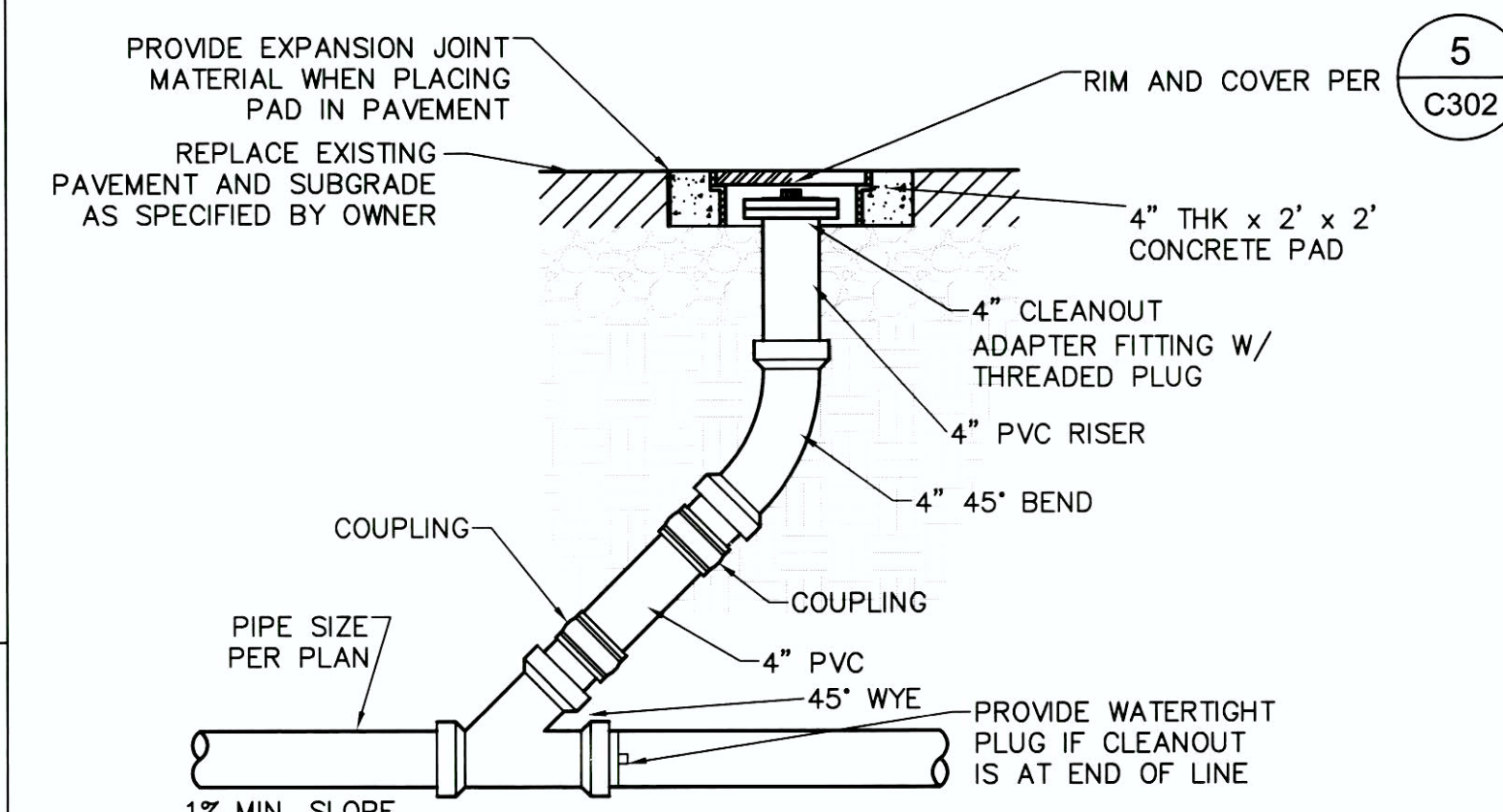
2 SIDEWALK EXPANSION JOINT  
NOT TO SCALE



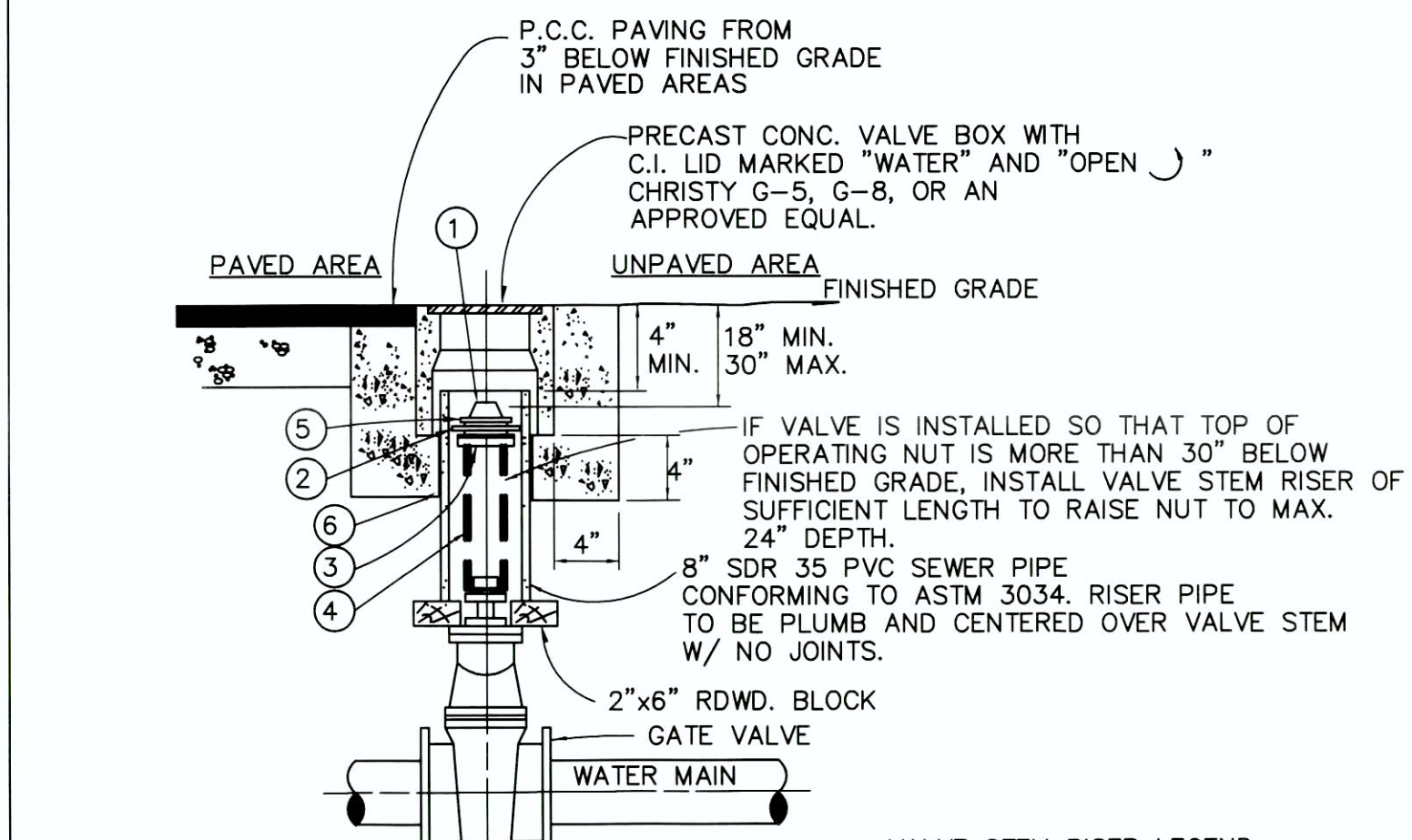
3 ABANDONED PIPE PLUG DETAIL  
NOT TO SCALE



4 12" DRAIN INLET  
NOT TO SCALE



5 COMBINED SEWER CLEANOUT  
NOT TO SCALE

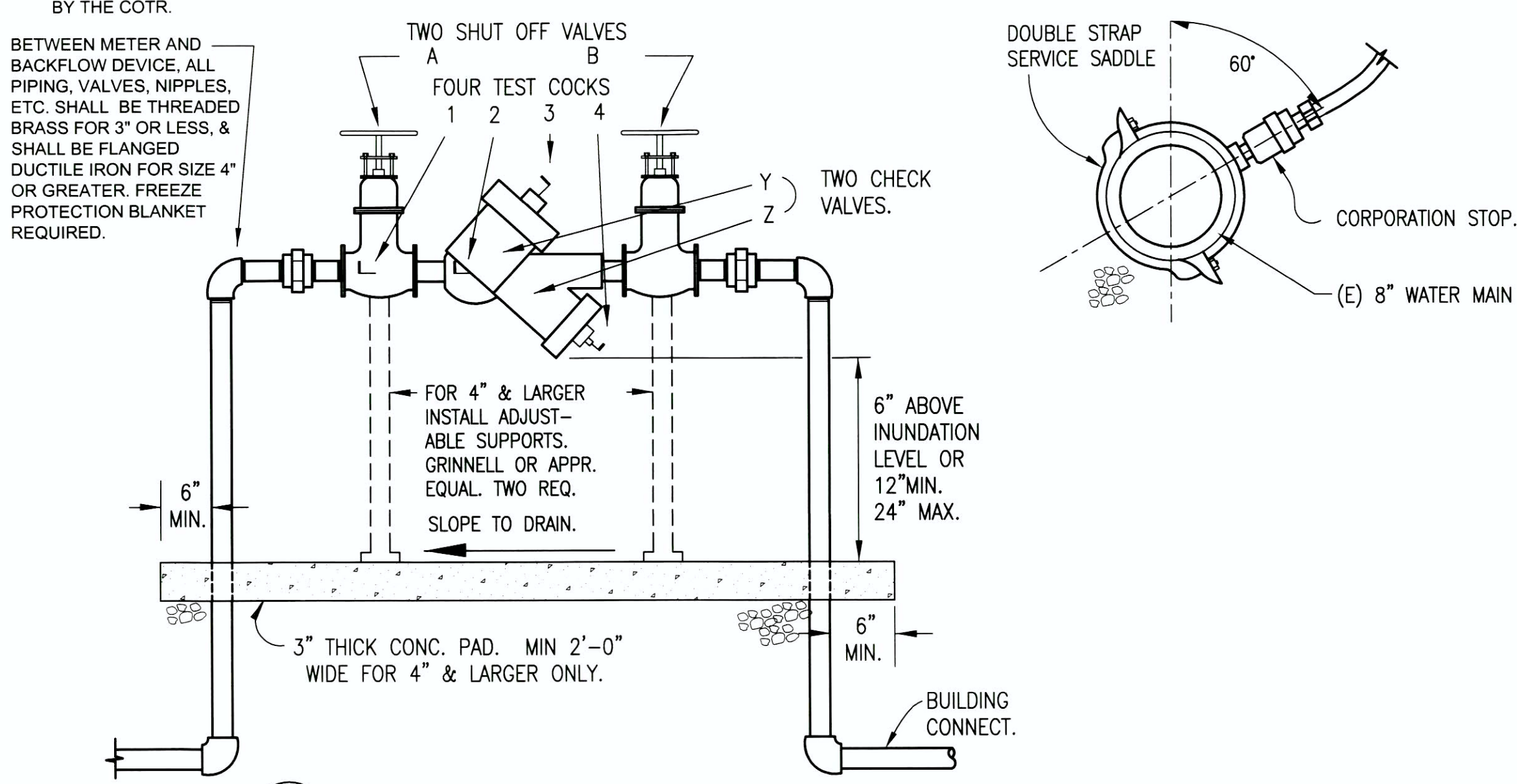


- VALVE STEM RISER LEGEND**
- VALVE OPERATING NUT OR 1 7/8" x 1 7/8" x 2" SOLID STEEL WELDED TO GUIDE PLATE.
  - 3/16" THK x 7-1/2" FREE SPINNING GUIDE PLATE W/ 2-1/2" HOLE IN CENTER.
  - TWO 3/16"x1-1/2"x1-1/2"x5" STEEL ANGLE WELDED TO TWO SIDES OF RISER SHAFT.
  - 2"x1/2"x3/16" SQUARE STRUCTURAL STEEL TUBING TO FIT OPERATING NUT LENGTH AS REQUIRED.
  - 3"x3"x1/4" STEEL TOP PLATE WELDED TO RISER SHAFT AFTER GUIDE PLATE IS IN PLACE.
  - WRAP 8" RISER IN FELT.
- NOTES:**
- GATE VALVES SHALL CONFORM TO A.W.W.A. STD. C509 OF LATEST REV. AND SHALL BE RESILIENT WEDGE TYPE W/ NON-RISING STEM. OPENING COUNTER-CLOCKWISE W/ O-RING STEM SEAL AND SUITABLE ENDS FOR CONNECTIONS TO TYPE OF PIPE OR FITTING USED.
  - 6" & 8" VALVES SHALL BE GATE VALVES. 12" & LARGER SHALL BE BUTTERFLY VALVES.

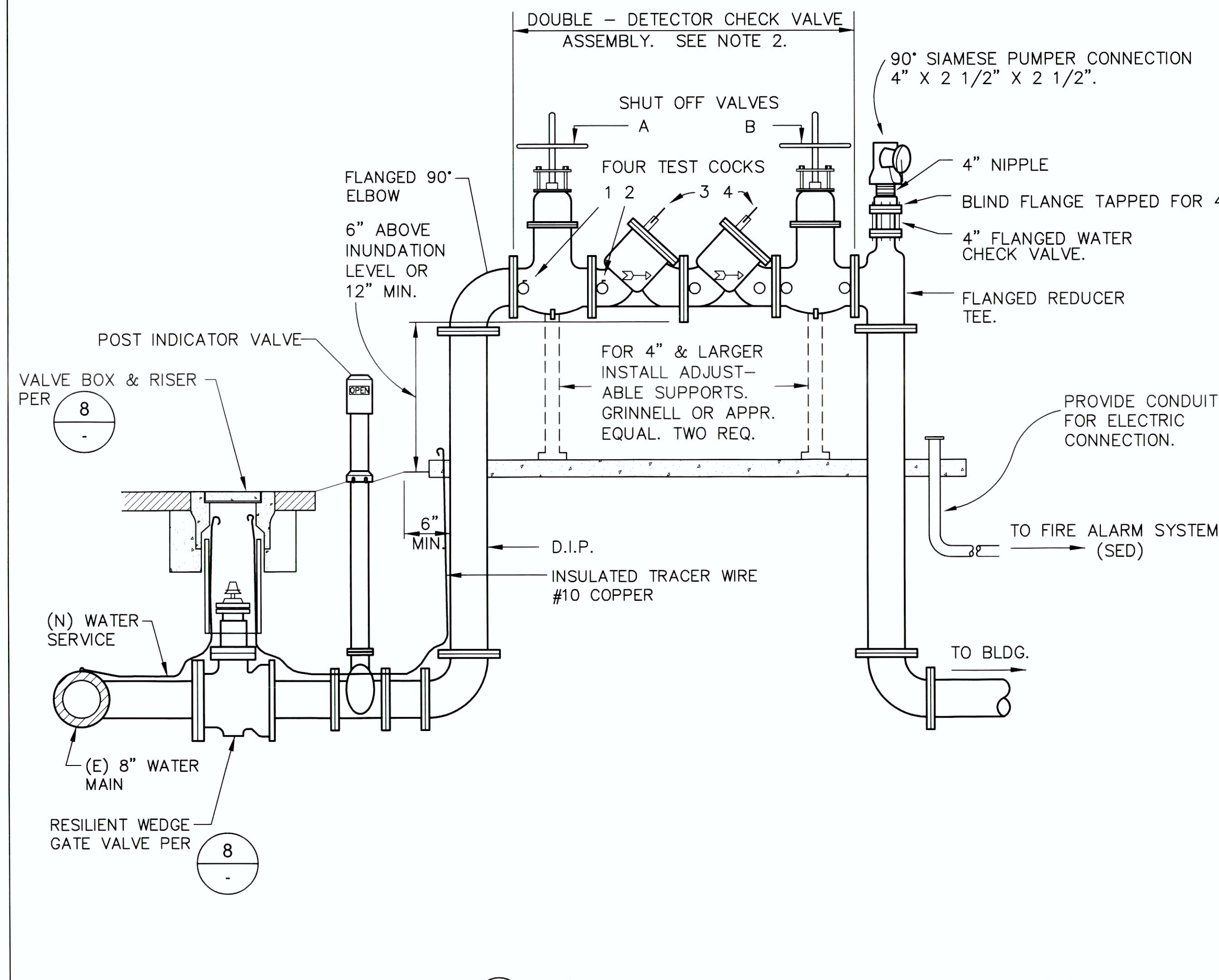
8 TYPICAL GATE VALVE AND BOX  
NOT TO SCALE

#### NOTES:

- REDUCED PRESSURE TYPE BACKFLOW DEVICES SHALL BE REQUIRED FOR ANY USE WHERE TOXIC MATERIALS ARE USED OR STORED ON SITE OR WHERE POSITIVE PROTECTION FOR THE PUBLIC WATER SUPPLY IS REQUIRED. TYPICAL APPLICATIONS INCLUDE: ALL IRRIGATION SERVICES & PARKS, HOSPITALS, MEDICAL & DENTAL LABORATORIES, MORTUARIES, INDUSTRIAL PLANTS, DRY CLEANERS, OR AS DETERMINED BY THE COTR.
- APPROVED REDUCED PRESSURE BACKFLOW DEVICE SHALL BE AS SHOWN ON 'LIST OF APPROVED BACKFLOW PROTECTION DEVICES' (LATEST REVISION) BY THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS-CONNECTION CONTROL & HYDRAULIC RESEARCH.
- BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AT THE LOCATION SHOWN ON THE DRAWINGS AND AS APPROVED BY THE COTR.
- A VALVE OF THE SAME SIZE AS THE BACKFLOW PREVENTER SHALL BE INSTALLED ON EACH SIDE OF THE BACKFLOW PREVENTION ASSEMBLY. VALVES 2" & LESS SHALL BE THREADED FORD BALL VALVES. VALVES 3" SHALL BE WATTS BALL VALVES, AND 4" & LARGER SHALL BE RESILIENT SEATED GATE VALVES.
- ANY COVER OR SCREENING FOR THE BACKFLOW PREVENTION ASSEMBLY MUST BE APPROVED BY THE COTR PRIOR TO INSTALLATION.
- IN LIMITED SPACE APPLICATIONS VALVES MAY BE INSTALLED ON RISERS, MIN. 4" ABOVE GRADE.
- THE ADDITION OF SPOOLS MUST BE APPROVED BY THE COTR PRIOR TO INSTALLATION.
- THE PIPING FROM THE REDUCED PRESSURE BACKFLOW PREVENTER & THE REDUCED PRESSURE BACKFLOW PREVENTER VALVE ASSEMBLY ITSELF MUST BE THE SAME SIZE AS THE SERVICE LINE UNLESS OTHERWISE APPROVED BY THE COTR.



6 TYPICAL BACKFLOW PREVENTER  
NOT TO SCALE



7 8" FIRE SERVICE DOUBLE DETECTOR CHECK ASSEMBLY  
NOT TO SCALE

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Drawing Title  
**CONSTRUCTION DETAILS**

Scale: **NONE**

Approved: Project Director

Project Title  
**VA Medical Center  
Seismic Replacement And  
Retrofit**

Location  
**San Francisco, CA**

Date  
**10 / 22 / 2012**

Checked  
**MGK**

Drawn  
**CFB**

Project Number  
**2941-001-00**

Building Number

Drawing Number  
**C301**

Office of  
Facilities  
Management

Department of  
Veterans Affairs