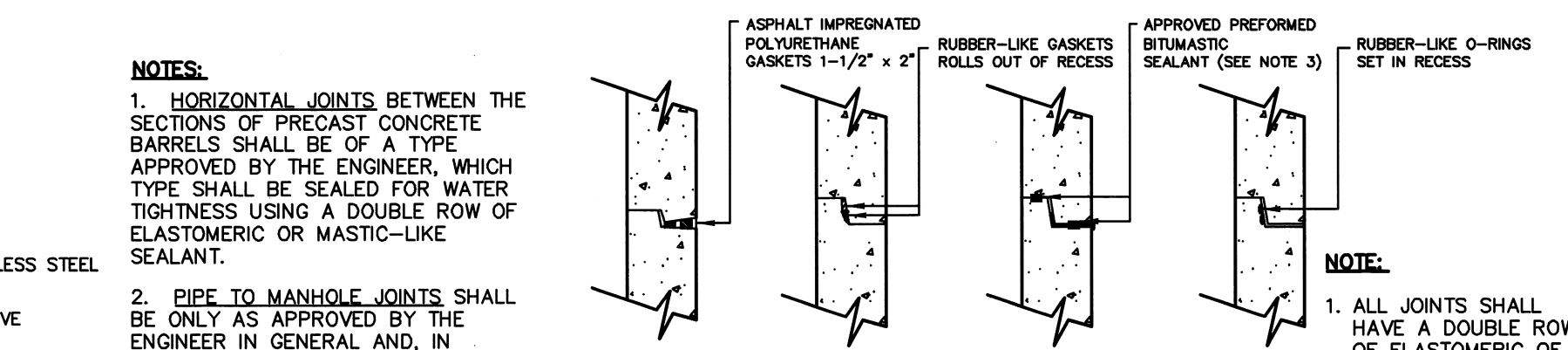
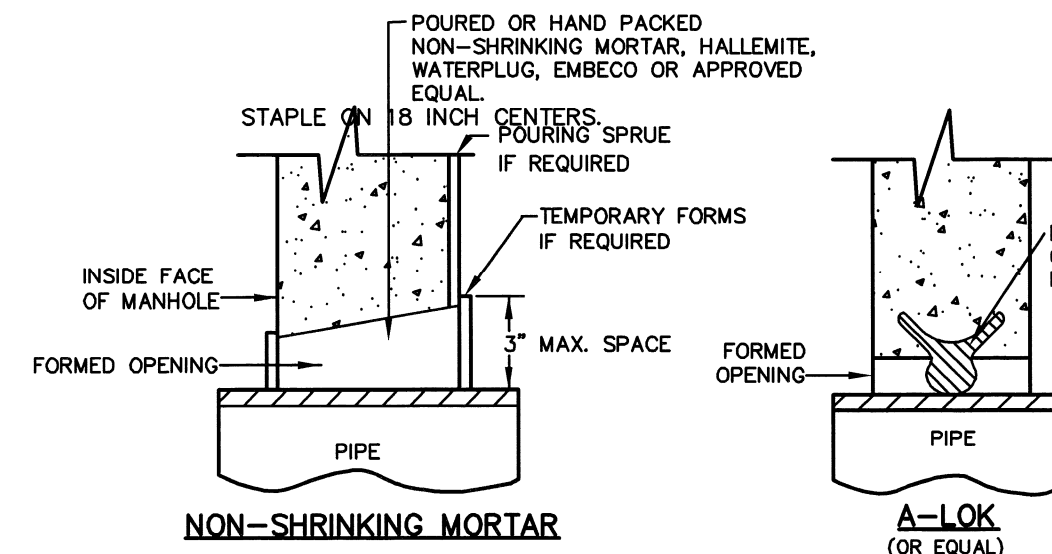


PIPE TO MANHOLE JOINTS

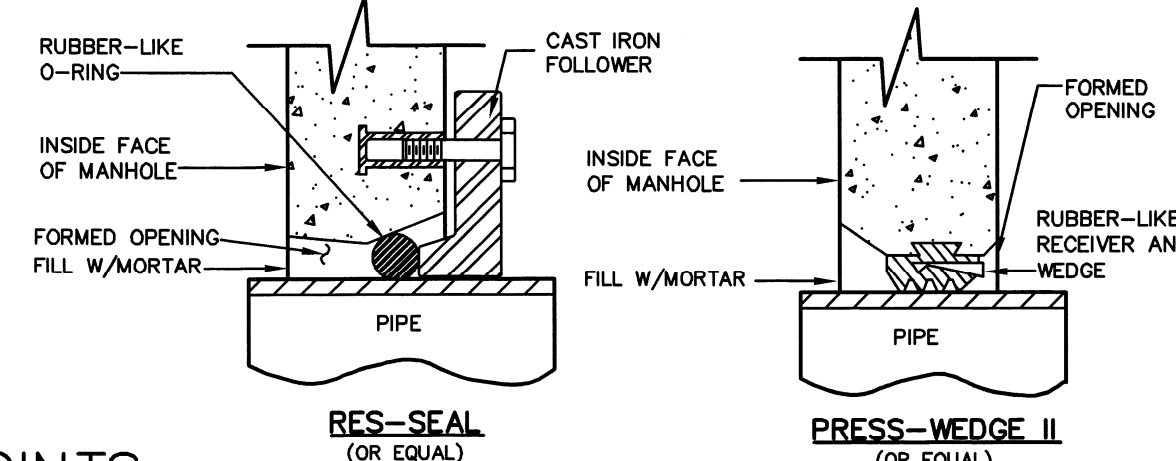


HORIZONTAL JOINTS

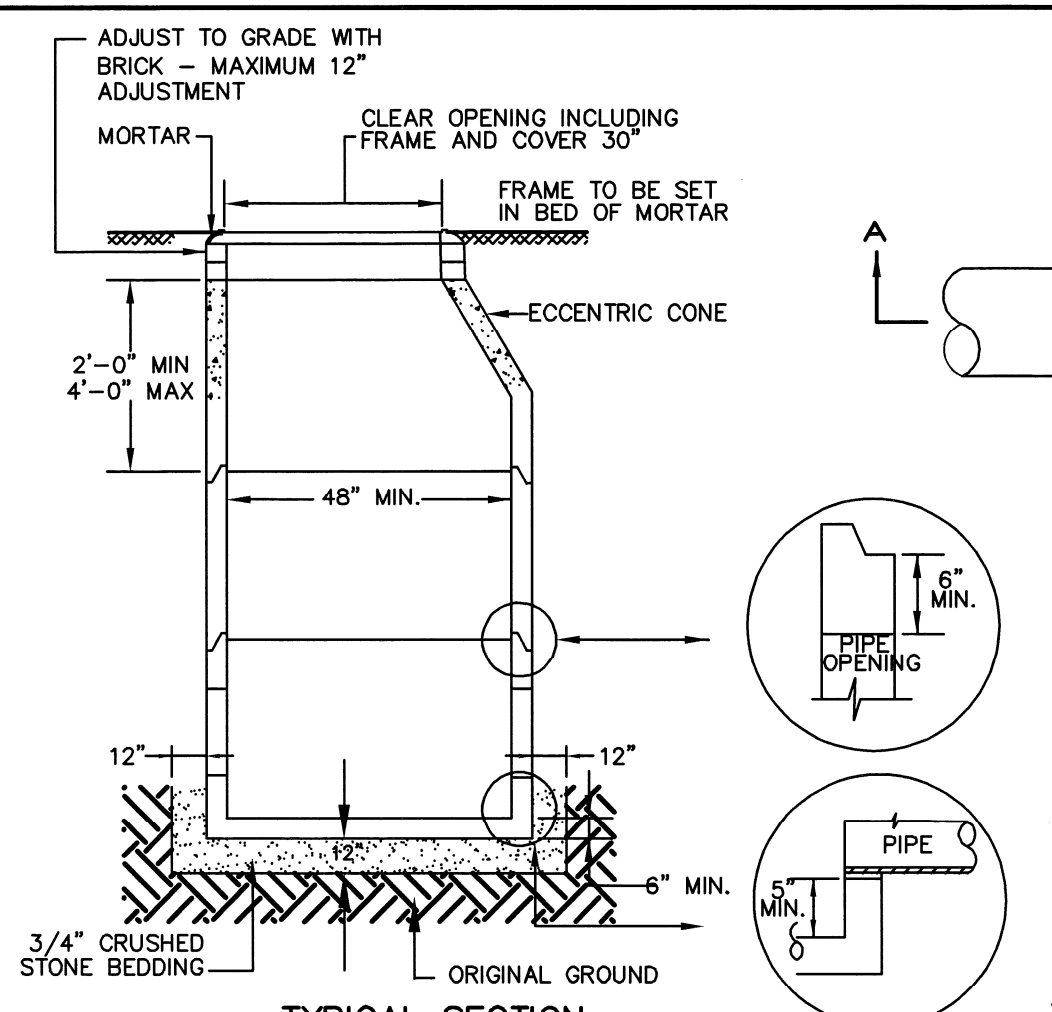


SEWER MANHOLE JOINTS

NOT TO SCALE

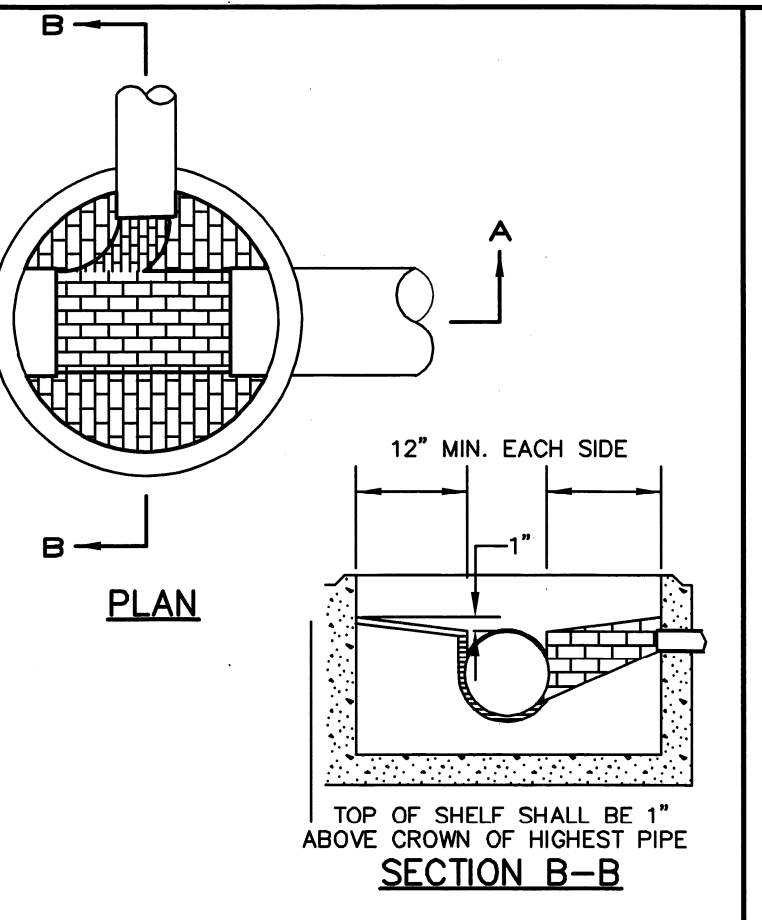


RFS-SEAL and PRESS-WEDGE II

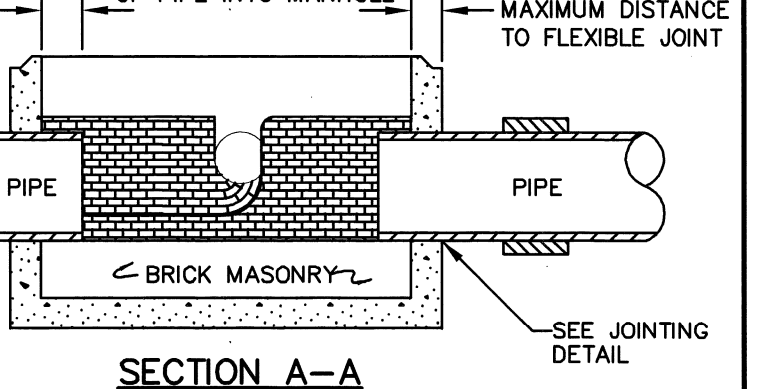


TYPICAL SECTION

- NOTES:**
1. INVERT AND SHELF TO BE PLACED AFTER EACH LEAKAGE TEST.
  2. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT.
  3. INVERT BRICKS SHALL BE LAID ON EDGE.
  4. BITUMINOUS WATERPROOF COATING TO BE APPLIED TO ENTIRE EXTERIOR OF MANHOLE.
  5. FRAMES AND COVERS MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
  6. HORIZONTAL JOINTS SHALL BE SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF ELASTOMERIC OR MASTIC-LIKE SEALANT.
  7. BARREL AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE DESIGNED FOR H2O LOADING, AND CONFORMING TO ASTM C478-06.
  8. USE 6 INCH EXTENDED BASE FOR MANHOLES OVER 15 FEET DEEP.

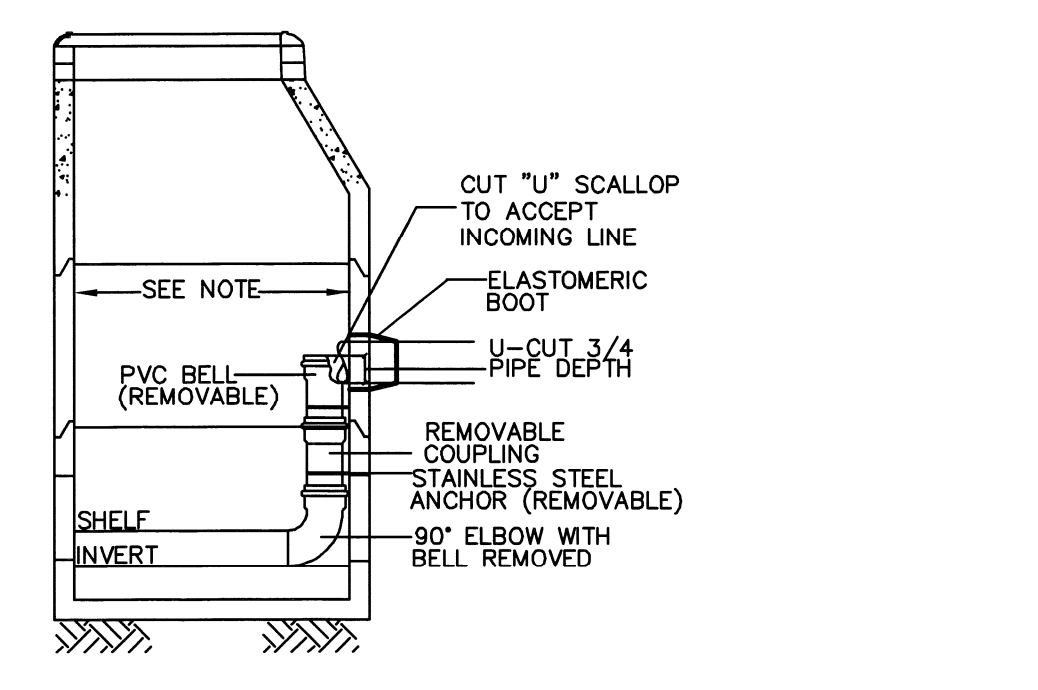


SECTION B-B



SECTION A-A

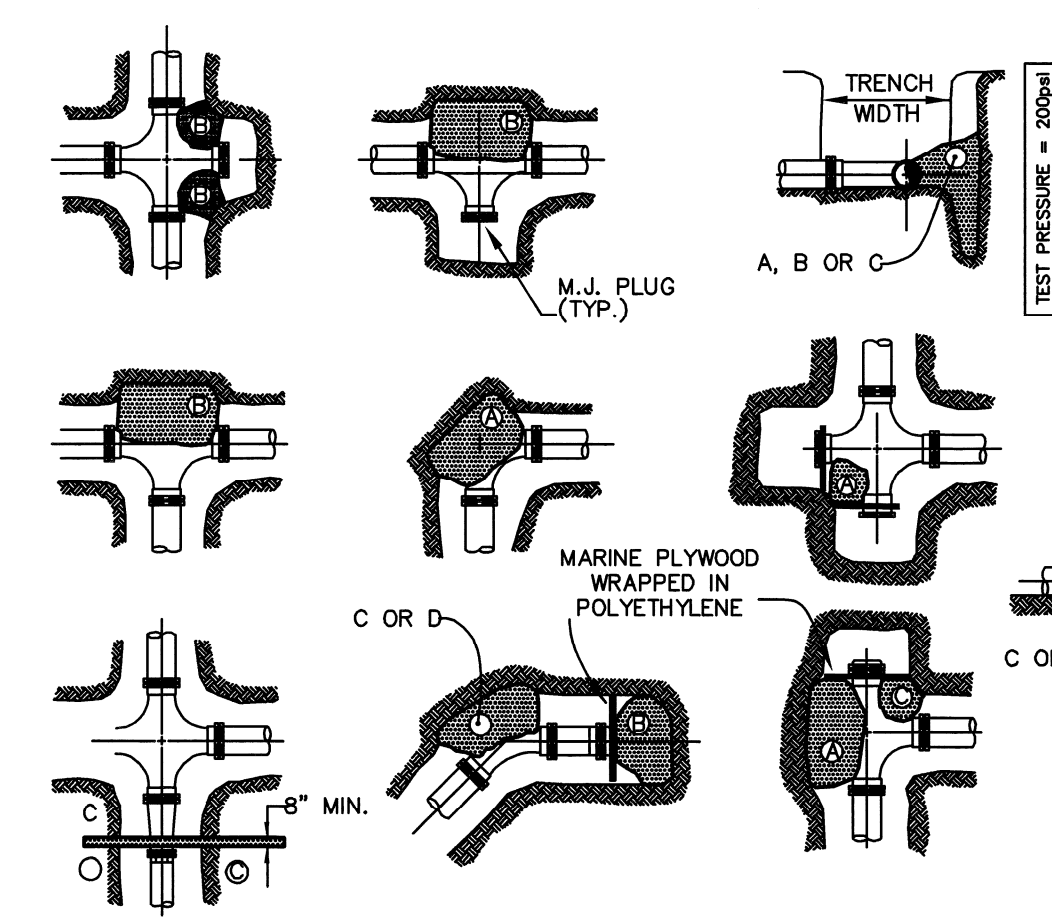
NOT TO SCALE



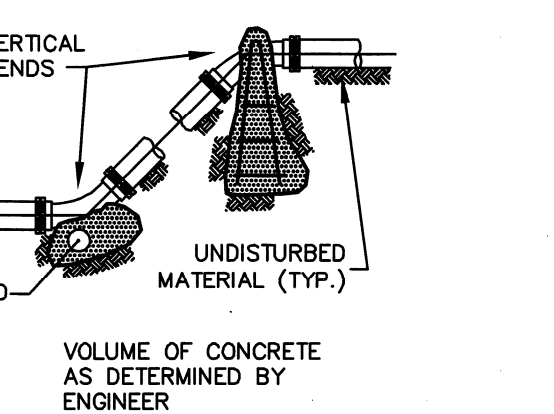
INSIDE DROP SEWER MANHOLE

NOT TO SCALE

- NOTES:**
1. INVERT AND SHELF TO BE PLACED AFTER EACH LEAKAGE TEST.
  2. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT.
  3. INVERT BRICKS SHALL BE LAID ON EDGE.
  4. BITUMINOUS WATERPROOF COATING TO BE APPLIED TO ENTIRE EXTERIOR OF MANHOLE.
  5. MANHOLE TO BE 4' DIAMETER FOR ONE 8" DROP INLET AND 5' DIAMETER FOR TWO 8" DROP INLETS.



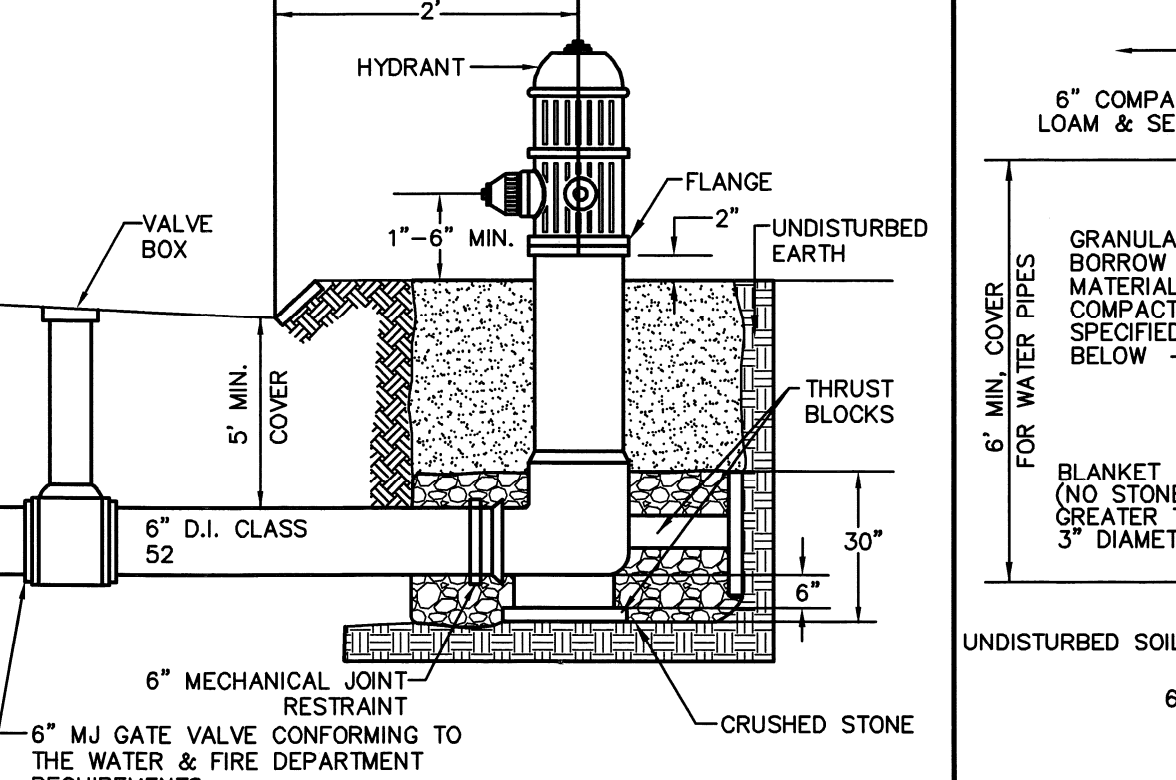
REACTION TYPE	PIPE SIZE			
	4"	6"	8"	12"
A 90°	0.89	2.19	3.82	11.14
B 180°	0.63	1.55	2.78	8.38
C 45°	0.48	1.19	2.12	6.02
D 22-1/2°	0.25	0.60	1.06	3.08
E 11-1/4°	0.13	0.30	0.54	1.54



THRUST BLOCK

NOT TO SCALE

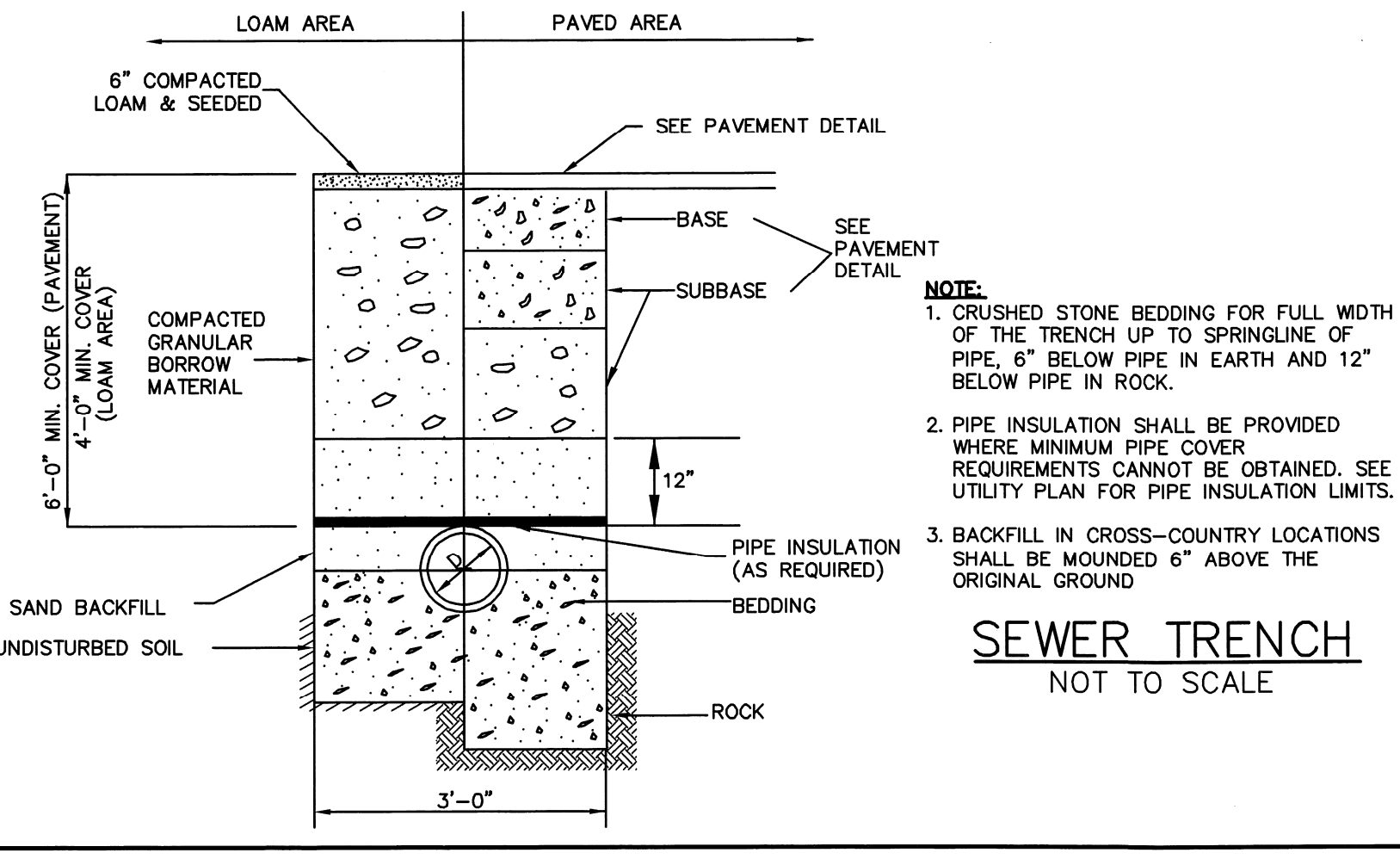
- NOTES:**
1. FOUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
  2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
  3. PLACE BOARD IN FRONT OF ALL PIPES BEFORE POURING THRUST BLOCKS.
  4. WHERE M.J. PIPE IS USED, M.J. PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKINGS.
  5. INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH DURHAM DEPARTMENT OF PUBLIC WORKS STANDARDS.



FIRE HYDRANT

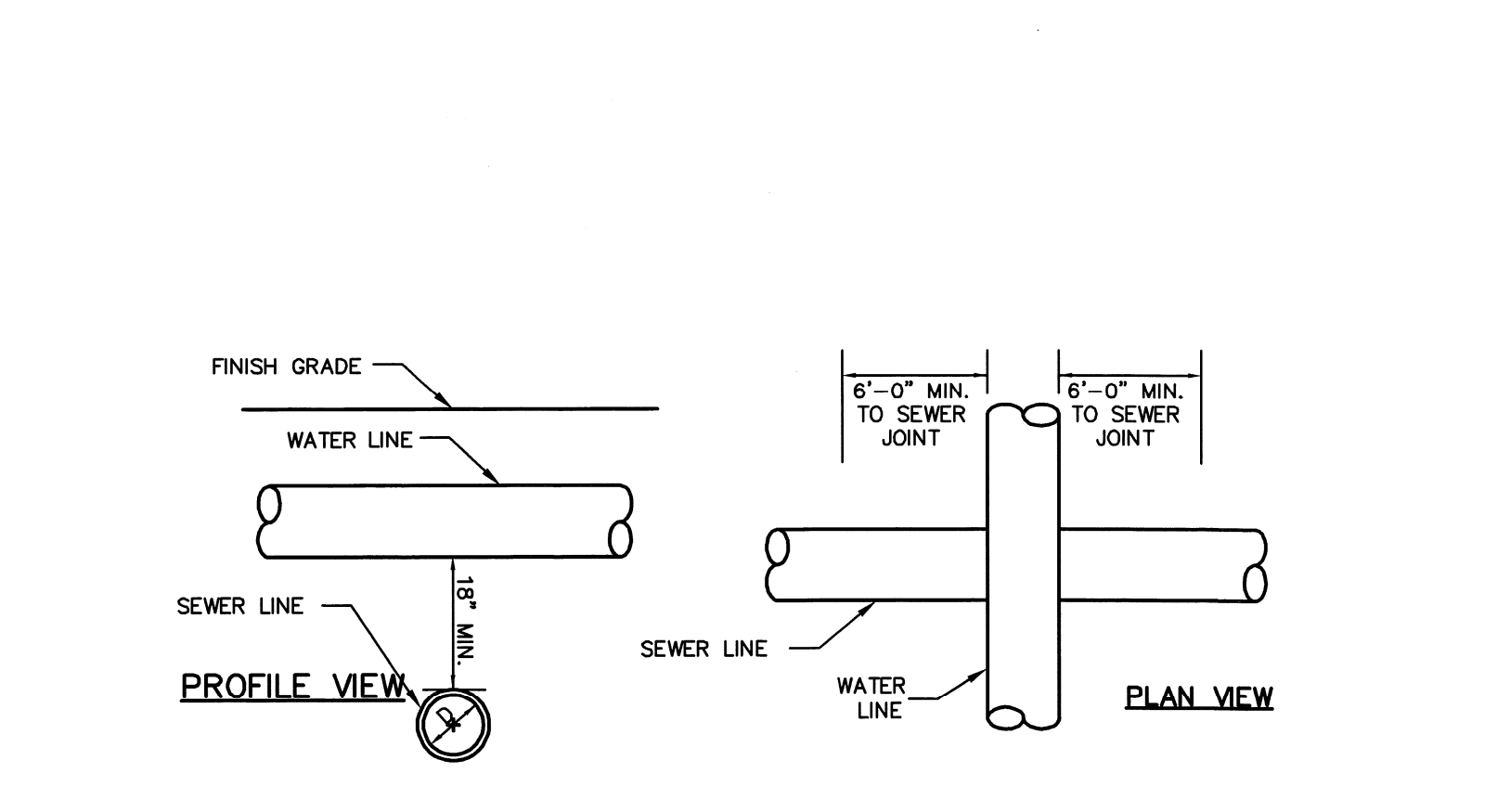
NOT TO SCALE

- NOTES:**
1. HYDRANT INSTALLATION & OPERATION TO CONFORM TO REGULATIONS OF THE WATER & FIRE DEPARTMENTS.
  2. ALL MECHANICAL JOINTS TO BE RESTRAINED WITH MEGALUG RETAINER GLANDS.
  3. FIRE HYDRANTS SHALL HAVE MAIN PUMPER NOZZLE AND TWO (2) HOSE NOZZLES.



SEWER TRENCH

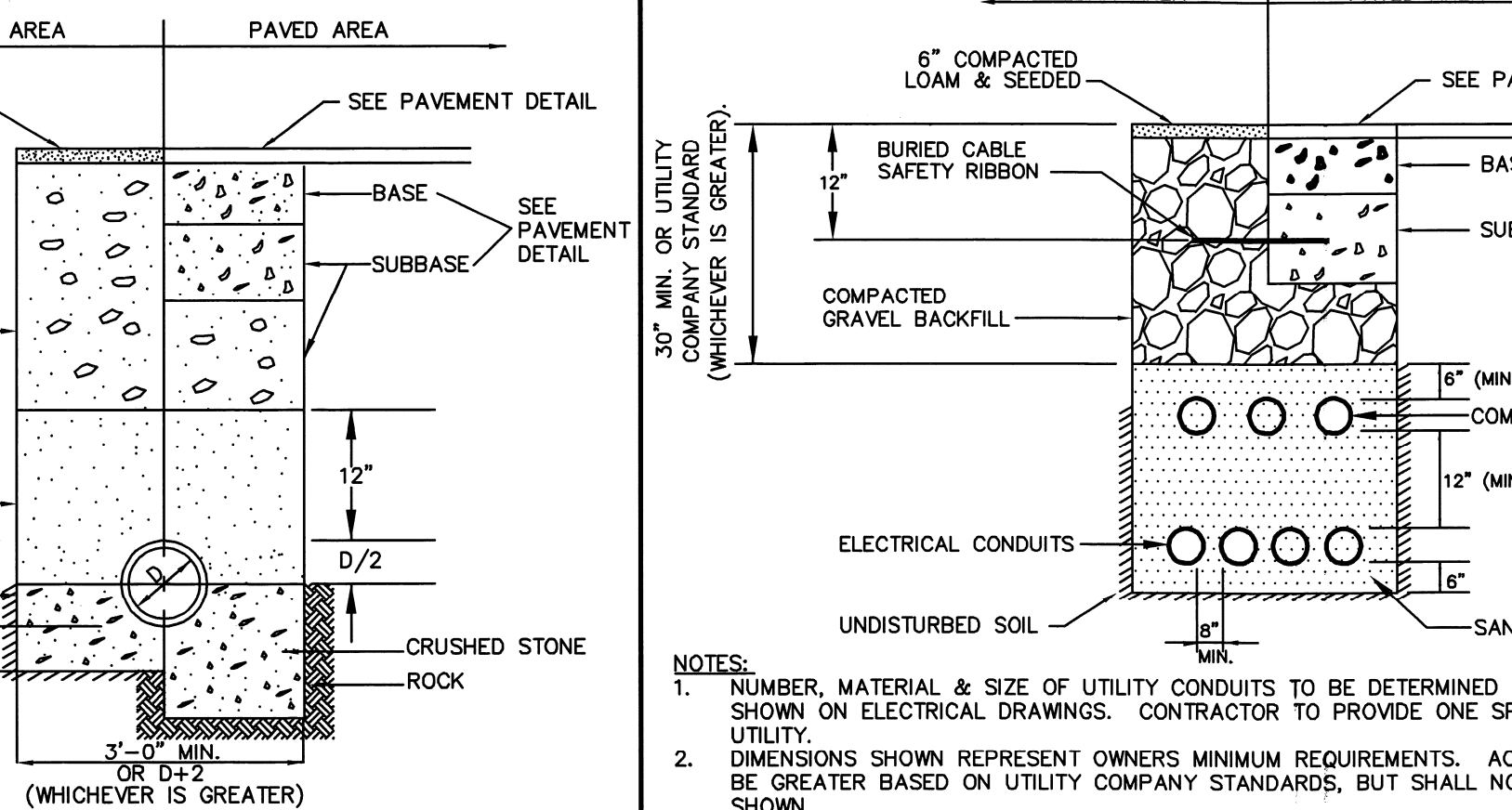
NOT TO SCALE



WATER & SEWER CROSSING

NOT TO SCALE

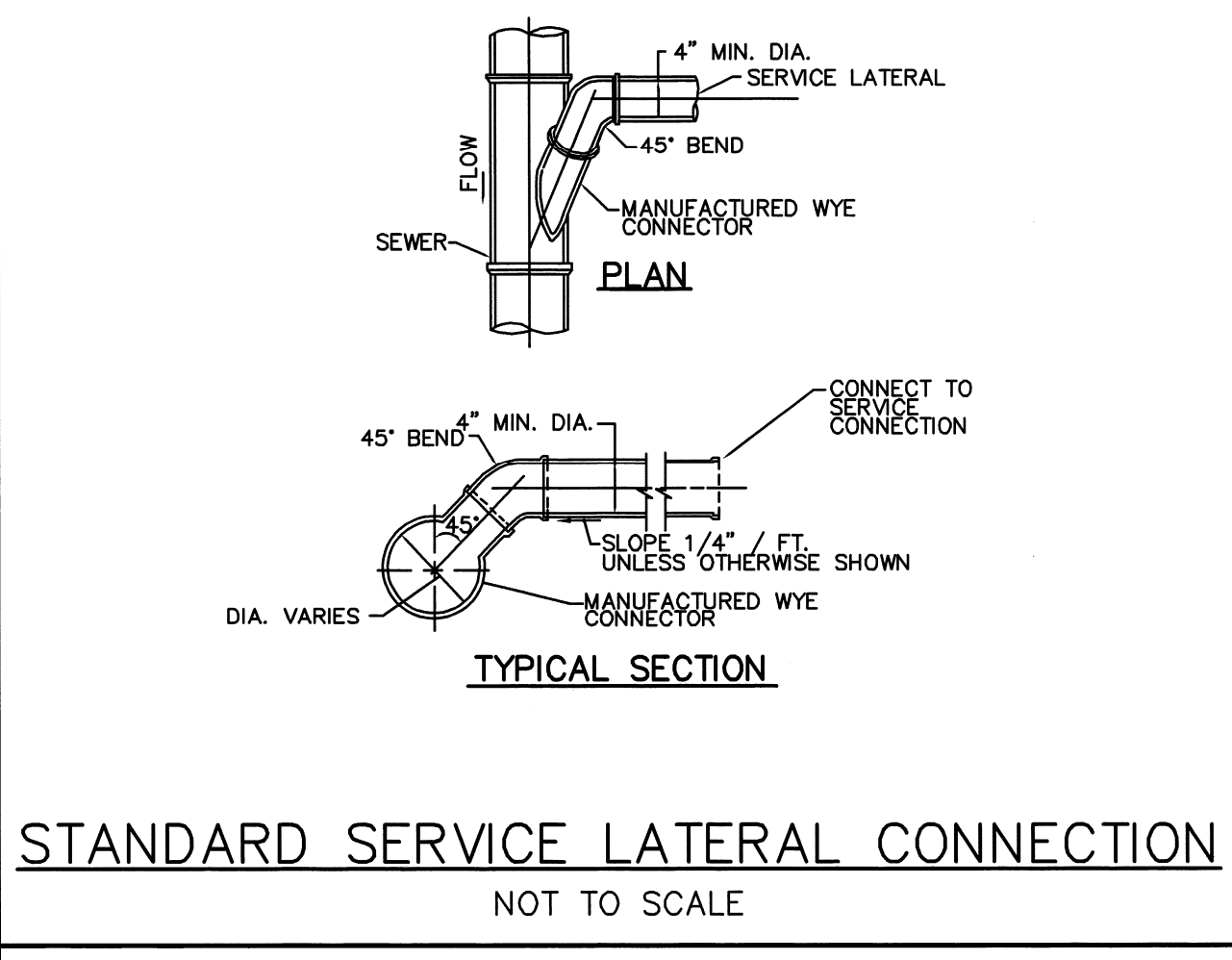
- NOTES:**
1. A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18" MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER AND SANITARY SEWER CROSSINGS. SEWER JOINTS SHALL BE A MINIMUM DISTANCE OF 6 FEET EACH SIDE OF THE CROSSING. CROSSING SHALL CONFORM TO TOWN OF DURHAM WATER DEPARTMENT STANDARDS AND SPECIFICATIONS.



WATER TRENCH

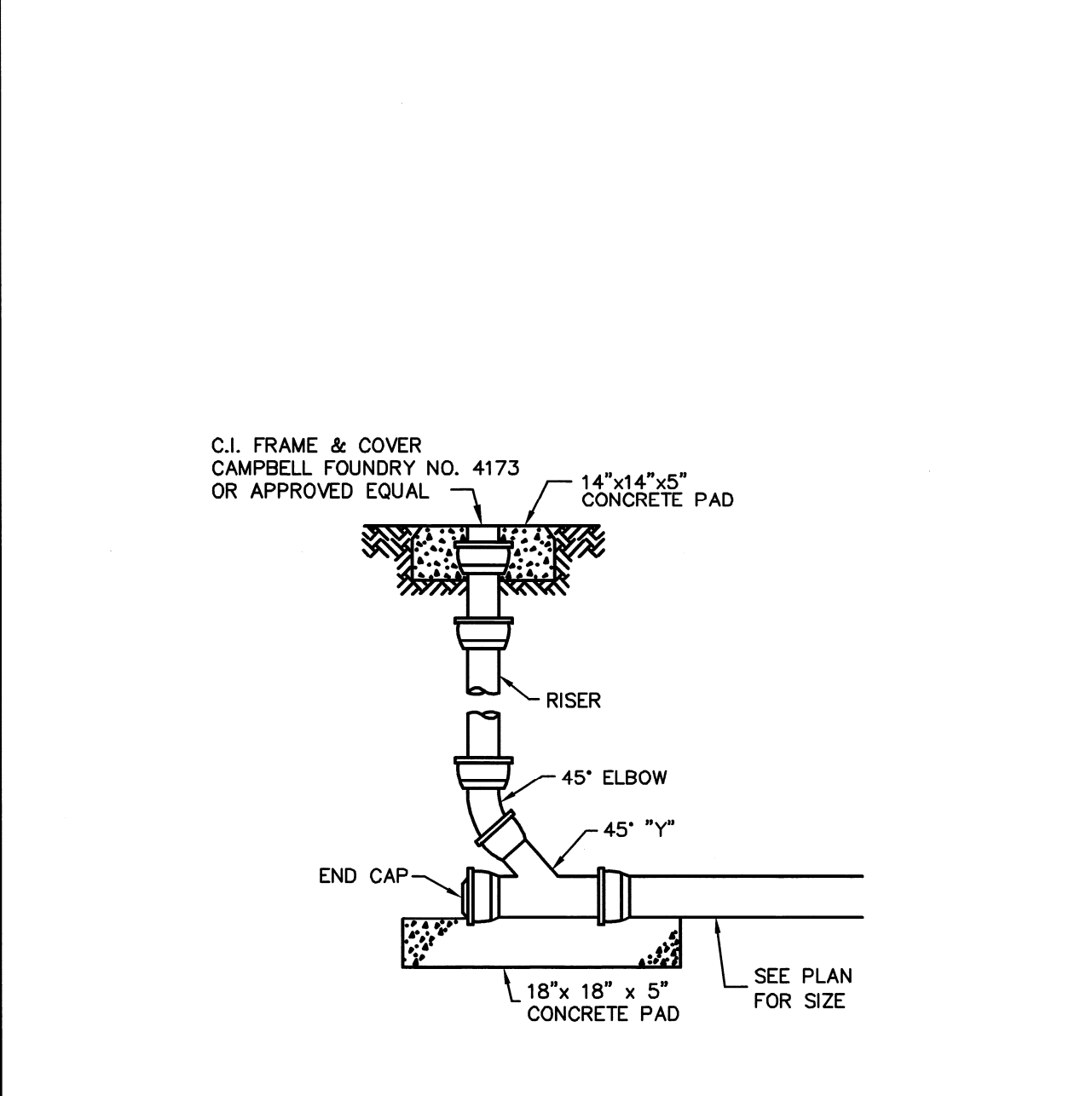
NOT TO SCALE

- NOTE:**
1. BLANKET SHALL BE SAND FOR FULL WIDTH OF THE TRENCH UP 12" ABOVE TOP OF PIPE. PIPE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE DURHAM DEPARTMENT OF PUBLIC WORKS.



STANDARD SERVICE LATERAL CONNECTION

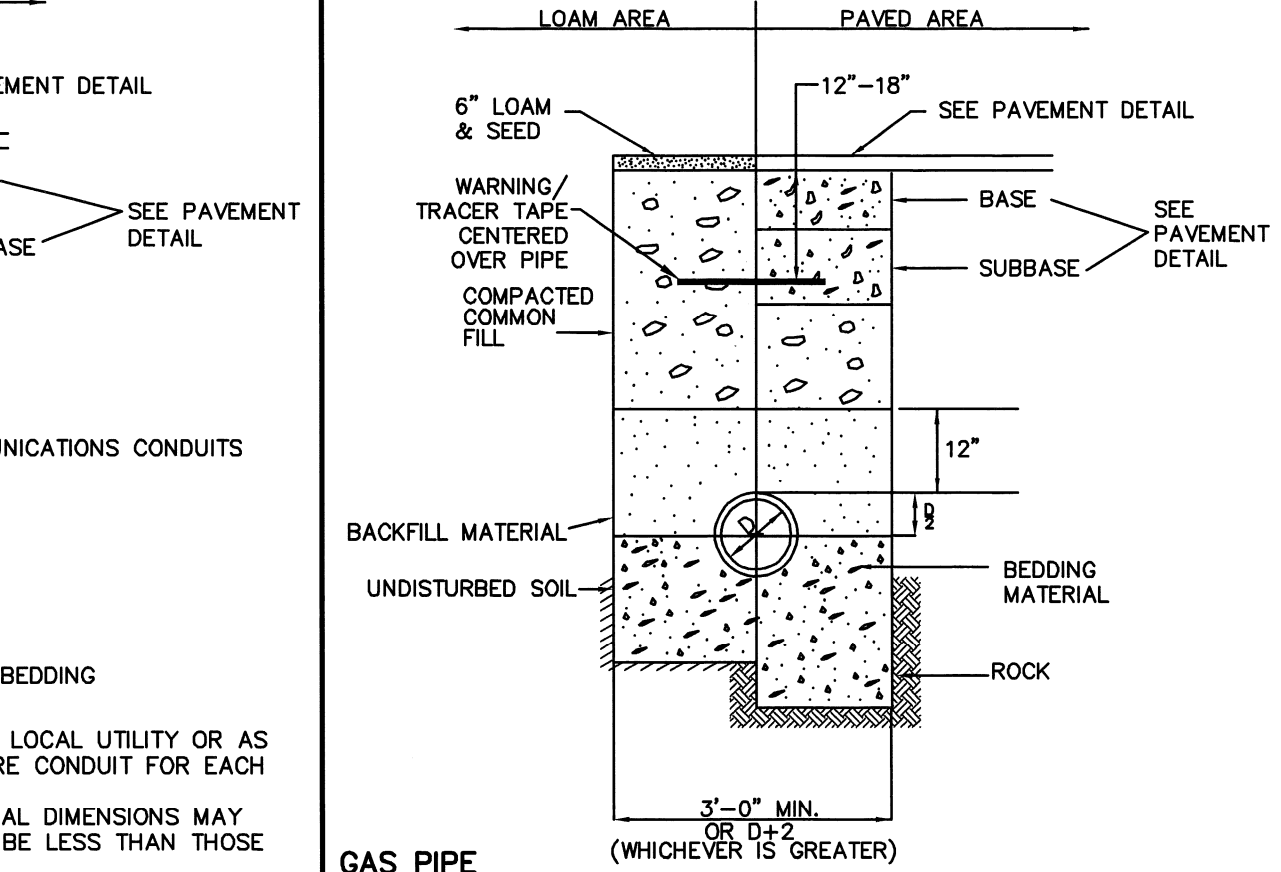
NOT TO SCALE



CLEAN-OUT

NOT TO SCALE

- NOTES:**
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.
  2. GAS PIPE INSTALLATION SHALL CONFORM TO GAS COMPANY STANDARDS.



GAS TRENCH

NOT TO SCALE

- NOTES:**
1. NUMBER, MATERIAL & SIZE OF UTILITY CONDUITS TO BE DETERMINED BY LOCAL UTILITY OR AS SHOWN ON ELECTRICAL DRAWINGS. CONTRACTOR TO PROVIDE ONE SPARE CONDUIT FOR EACH UTILITY.
  2. DIMENSIONS SHOWN REPRESENT OWNERS MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS MAY BE GREATER BASED ON UTILITY COMPANY STANDARDS, BUT SHALL NOT BE LESS THAN THOSE SHOWN.
  3. NO CONDUIT RUN SHALL EXCEED 360 DEGREES IN TOTAL BENDS.
  4. A SUITABLE PULLING STRING, CAPABLE OF 200 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE UTILITY COMPANY IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT.
  5. UTILITY COMPANY MUST BE GIVEN THE OPPORTUNITY TO INSPECT THE CONDUIT PRIOR TO BACKFILL. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS SHOULD THE UTILITY COMPANY BE UNABLE TO INSTALL ITS CABLE IN A SUITABLE MANNER.
  6. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE.
  7. ALL 90° SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL.

ELECTRICAL AND COMMUNICATION CONDUIT

NOT TO SCALE

**Peak Campus Development, LLC**

The Lodges at West Edge

Durham, NH

Mark	Date	Description
F	8/11/13	ISSUED FOR BUILDING PERMIT
E	4/19/13	REV. PER NHDES COMMENTS
D	12/10/12	REVISED FOR AOT SUBMISSION
C	11/1/12	REVISED FOR PB SUBMISSION
B	9/26/12	REVISED FOR PB SUBMISSION
A	8/22/12	PB SUBMISSION

PROJECT NO:	P0637
FILE:	P0637_DETAILS.dwg
DRAWN BY:	KAM/SLK1
CHECKED BY:	JMP2
APPROVED BY:	GMM

DETAILS SHEET

SCALE: AS SHOWN