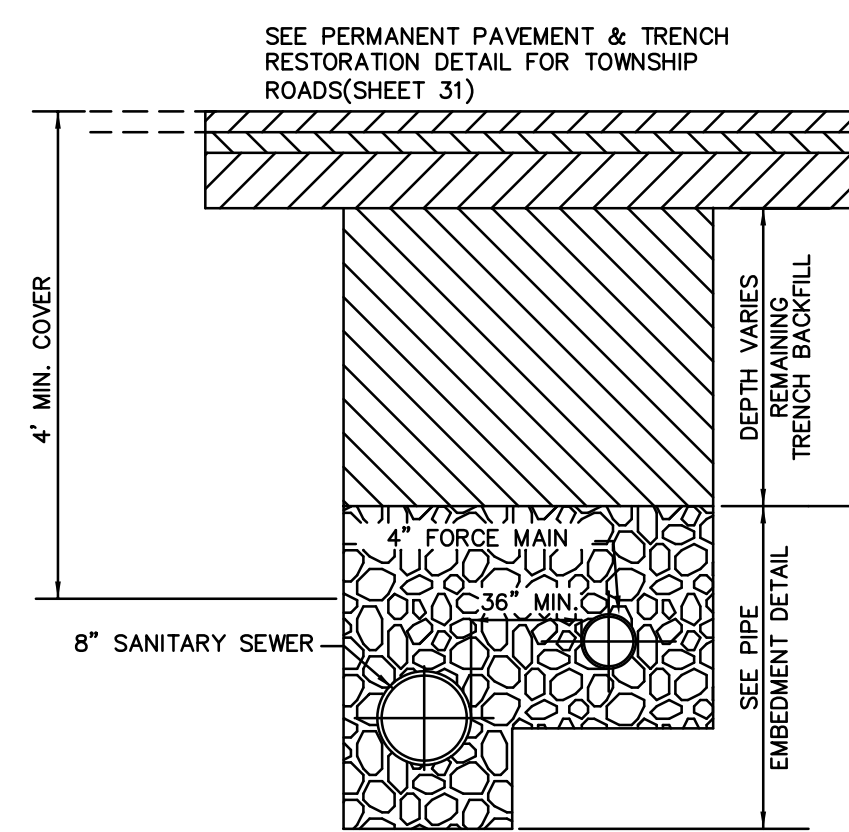


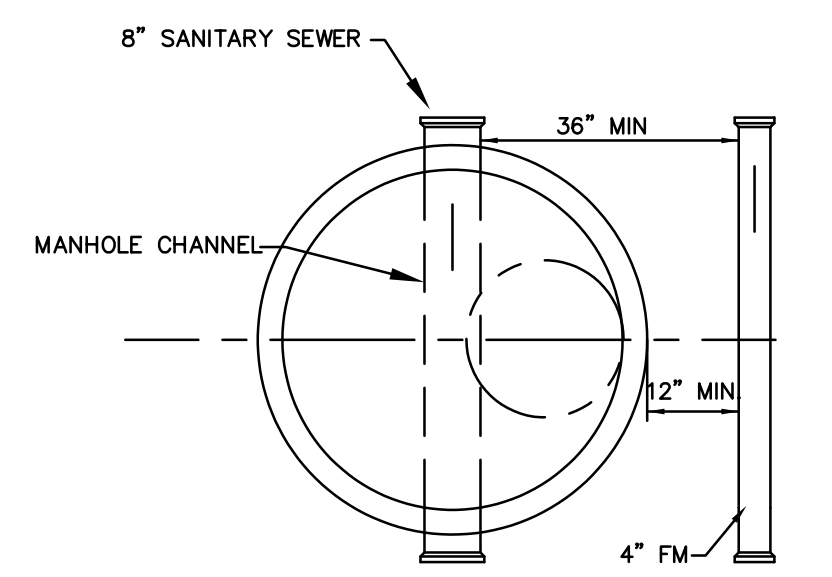
- NOTE:
- GATE VALVE SHALL BE MANUFACTURED BY U.S. PIPE & FOUNDRY COMPANY, MUELLER COMPANY, KENNEDY VALVE, OR APPROVED EQUIVALENT.
 - VALVE BOX SHALL BE MANUFACTURED BY U.S. PIPE & FOUNDRY COMPANY, MUELLER COMPANY, KENNEDY VALVE, OR APPROVED EQUIVALENT. VALVE BOX COVER TO READ "SEWER".
 - VALVE ASSEMBLY SHALL CONFORM TO AWWA C-509 94 FOR RESILIENT SEAT VALVES.

GATE VALVE WITH VALVE BOX DETAIL
NOT TO SCALE

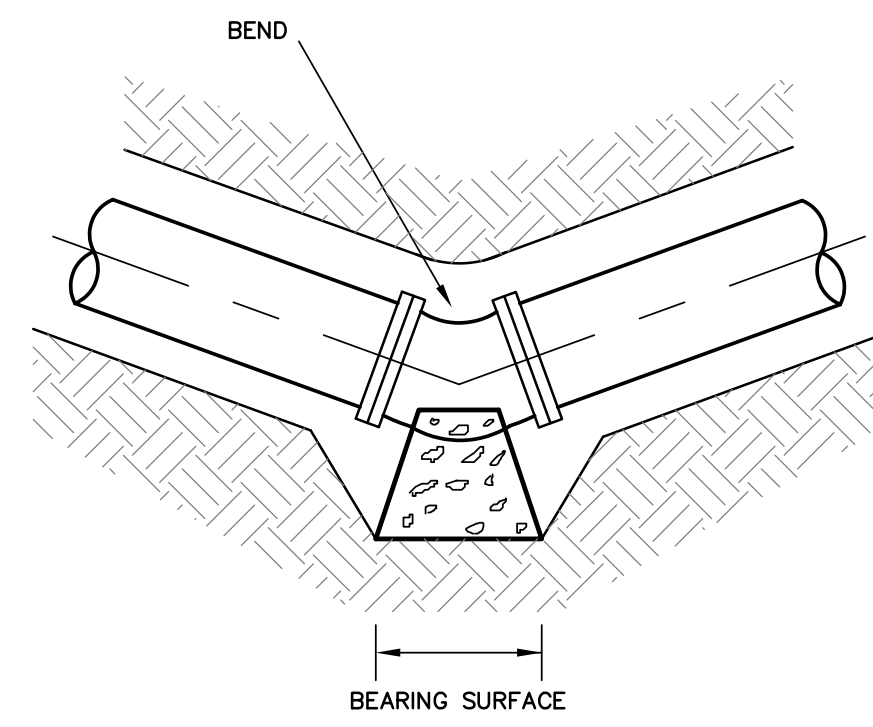


- NOTE:
- PROVIDE MIN. OF 36" HORIZONTAL SEPARATION BETWEEN OUTSIDE OF PROPOSED FORCE MAIN AND OUTSIDE OF SANITARY SEWER.

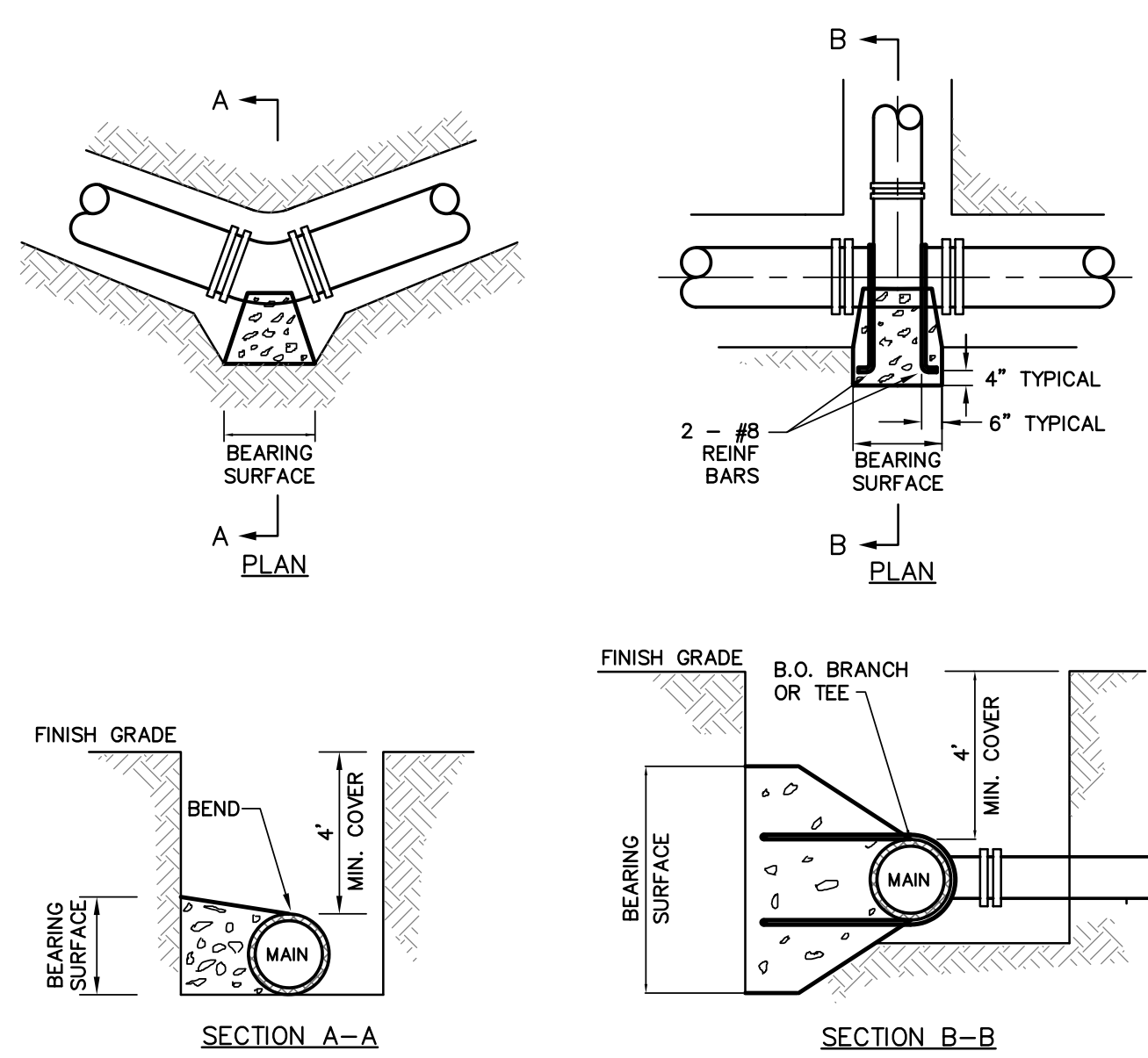
FORCE MAIN AND SANITARY SEWER COMMON TRENCH DETAIL UNDER BITUMINOUS PAVEMENT
NOT TO SCALE



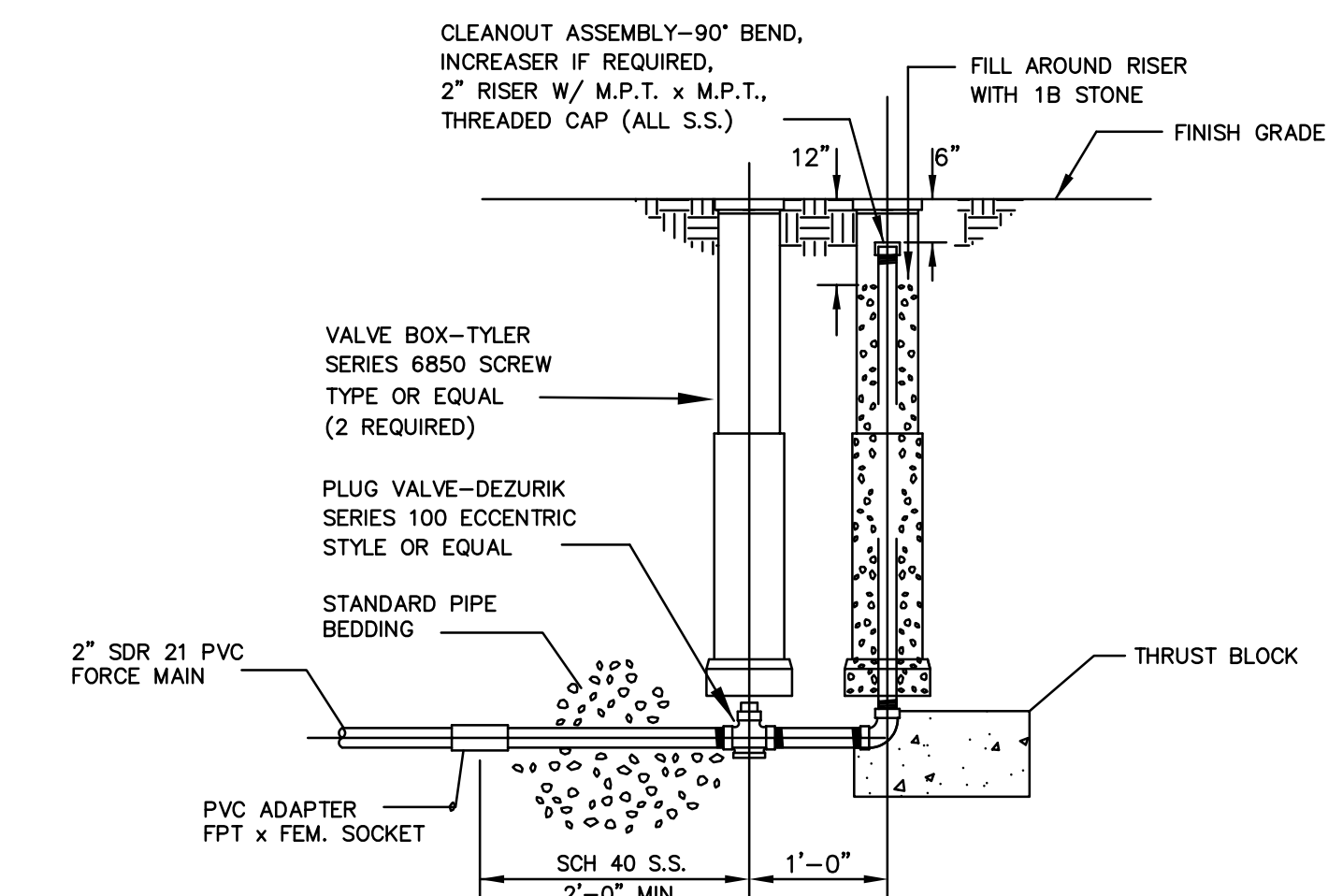
FORCE MAIN AND SANITARY MANHOLE SEPARATION DETAIL
NOT TO SCALE



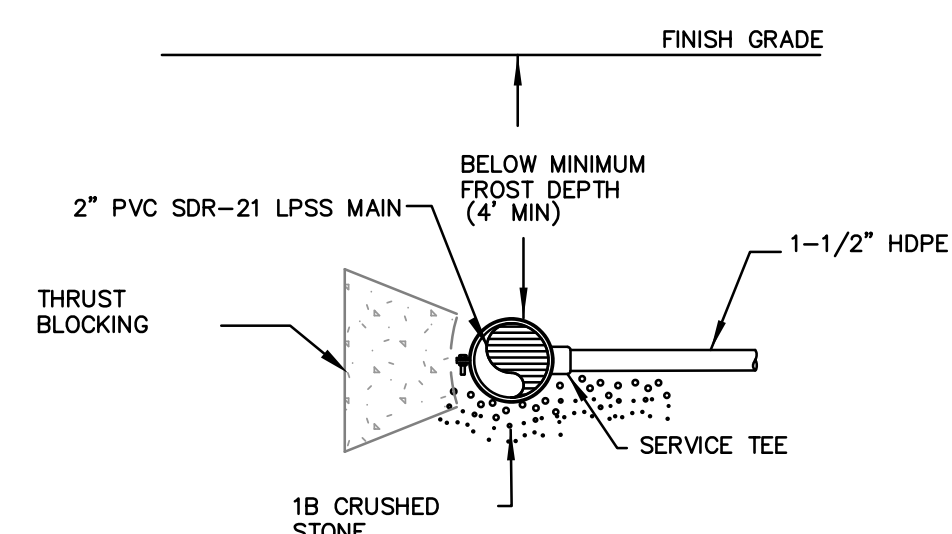
VERTICAL THRUST DOWNWARD
NOT TO SCALE



HORIZONTAL THRUST BLOCKING
NOT TO SCALE



TERMINAL CLEANOUT
NOT TO SCALE



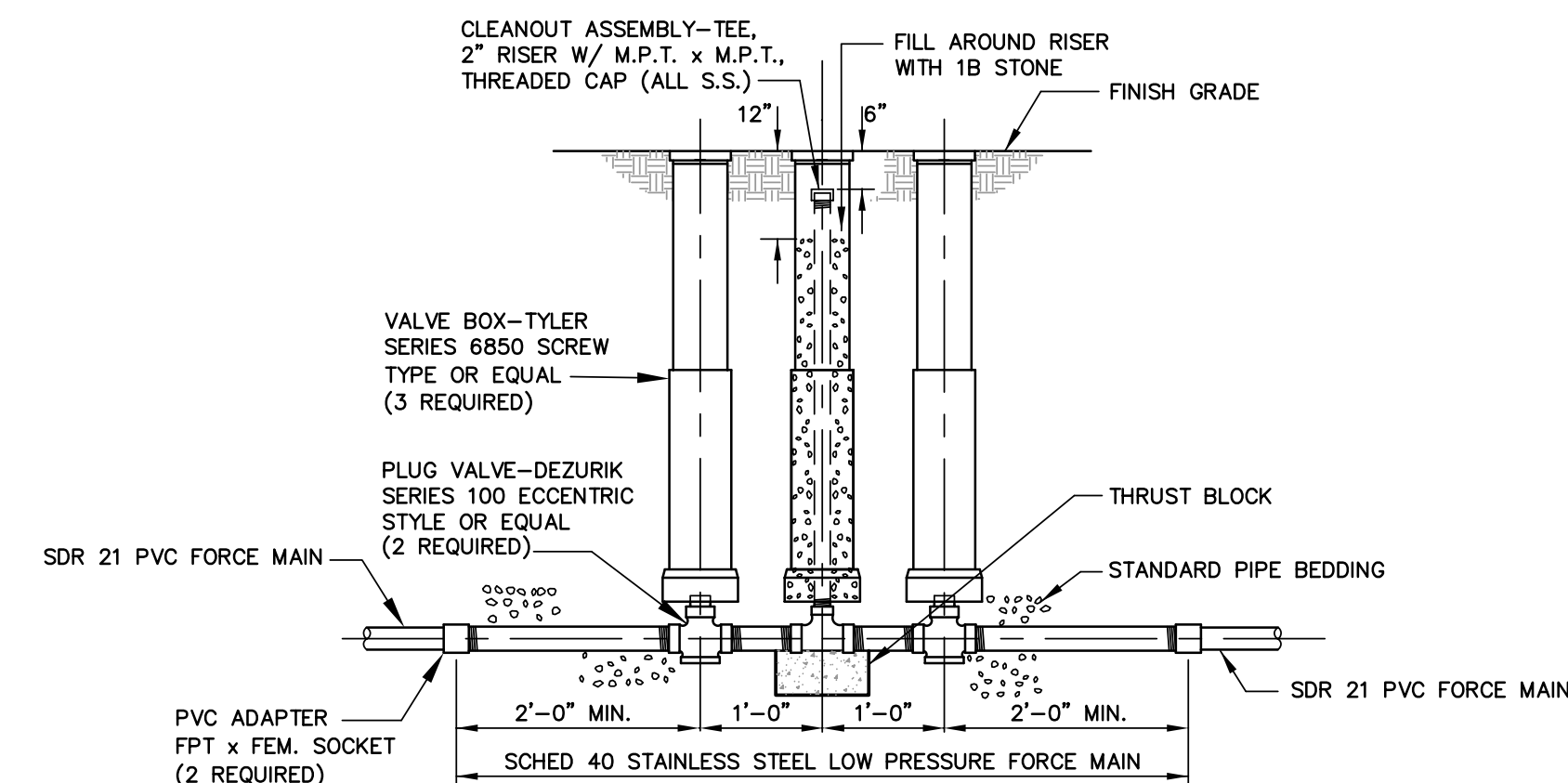
LPS CONNECTION DETAIL
NOT TO SCALE

BEARING SURFACE REQUIRED (Sq. Ft.)
HORIZONTAL THRUST BLOCKING & VERTICAL THRUST DOWNWARD
100 P.S.I. WORKING PRESSURE

PIPE SIZE	4"			
	22.5'	45'	90'	D.E.
SAND 0.75 TON/SQ.FT.	3.4	6.0	11.0	6.4
SOFT CLAY 1 TON/SQ.FT.	2.6	4.6	8.2	4.8
SAND AND GRAVEL 2 TON/SQ.FT.	1.3	2.3	4.1	2.4
CLAY 4 TON/SQ.FT.	1.0	1.2	2.1	1.3
SOFT ROCK 5 TON/SQ.FT.	1.0	1.0	1.6	1.0
ROCK 15 TON/SQ.FT.	-	-	1.0	0.4

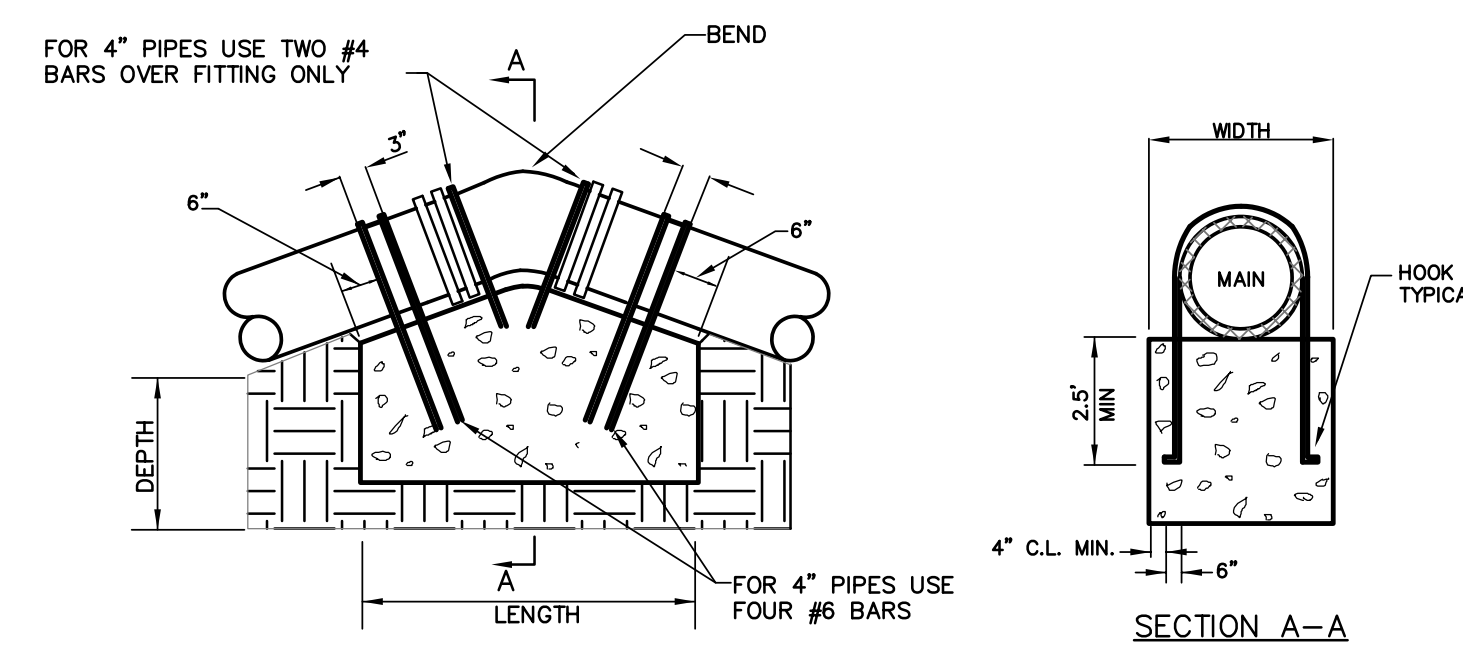
BEARING SURFACE REQUIREMENTS

- THRUST BLOCK NOTES:
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
 - ALL REINFORCING STEEL SHALL BE DEFORMED BARS (ASTM GRADE 60).
 - ALL FITTINGS AND JOINTS SHALL BE COVERED WITH POLYETHYLENE FILM BEFORE PLACING OF CONCRETE.
 - PAIN ALL EXPOSED STEEL WITH TWO COATS OF BITUMASTIC PAINT OR EPOXY COATING.
 - FOR THE REQUIRED BEARING SURFACE SEE "BEARING SURFACE REQUIREMENTS" DETAIL.



INLINE CLEANOUT
NOT TO SCALE

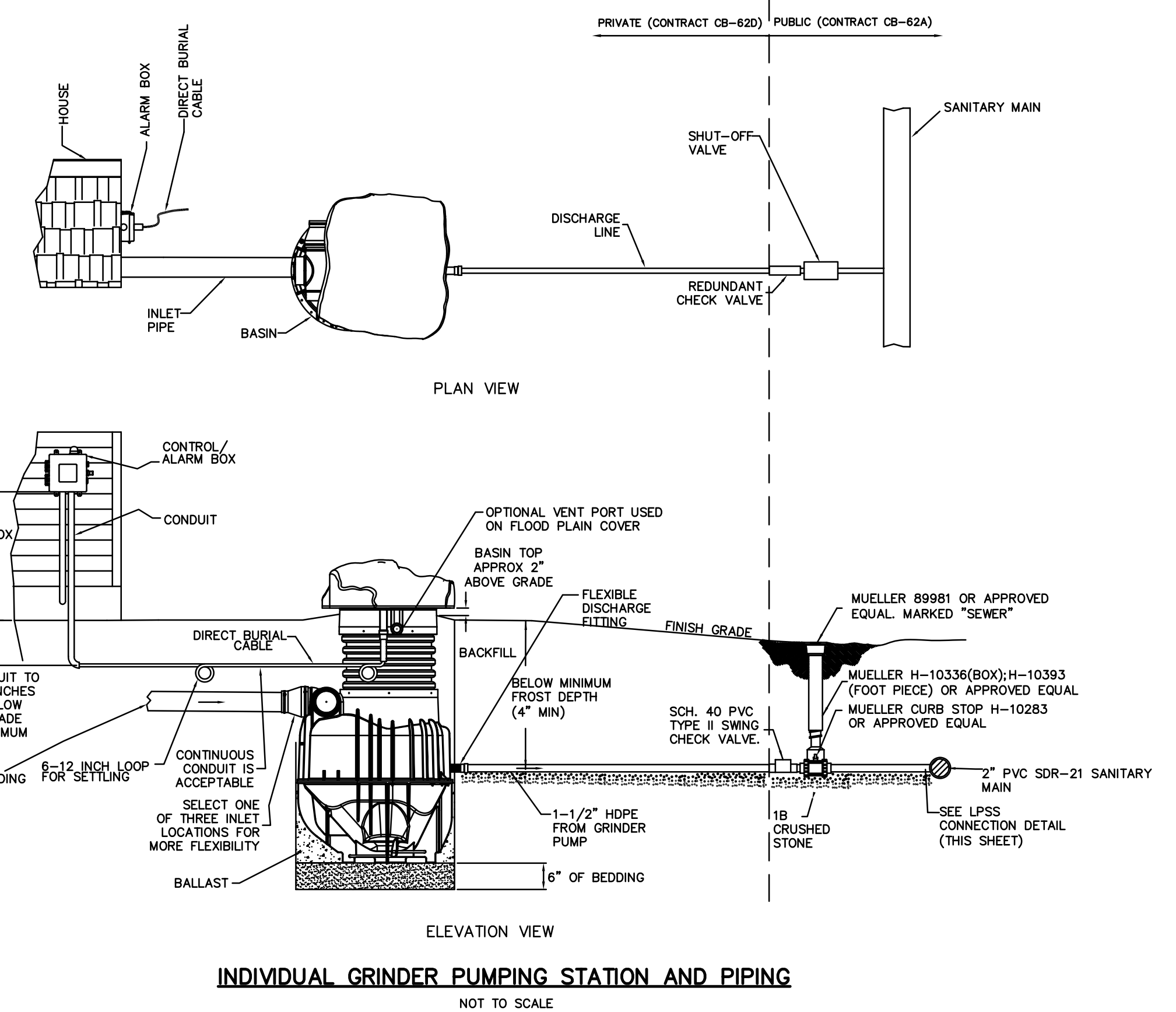
- NOTE:
- FOR INLINE CLEANOUT AT A LOW PRESSURE SEWER JUNCTION, PROVIDE 1'-0" BETWEEN TEE CENTERLINE AND CLEANOUT, AND 1'-0" BETWEEN TEE CENTERLINE AND PLUG VALVE AS SHOWN ON LOW PRESSURE SEWER SYSTEM FORCE MAIN JUNCTION DETAIL.



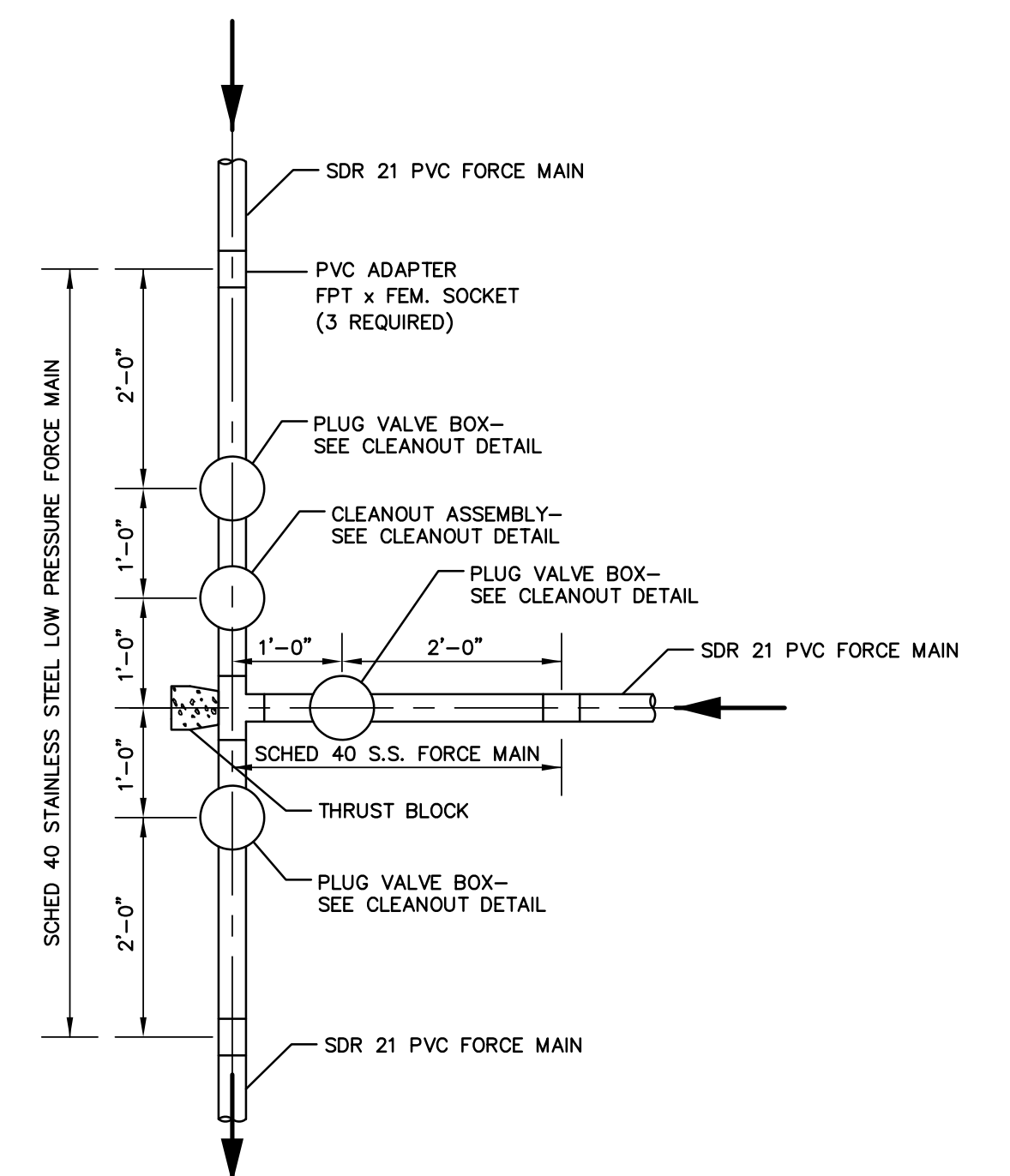
VERTICAL THRUST UPWARD
NOT TO SCALE

CONCRETE BLOCKING DIMENSIONS, VERTICAL THRUST UPWARD
100 P.S.I. WORKING PRESSURE

PIPE SIZES	LENGTH			WIDTH			DEPTH		
	3'	4'	6'	3'	3'	3'	2'	3'	4'
4"	11.25'	22.5'	45'	11.25'	22.5'	45'	11.25'	22.5'	45'



INDIVIDUAL GRINDER PUMPING STATION AND PIPING
NOT TO SCALE



LOW PRESSURE SEWER SYSTEM FORCE MAIN JUNCTION DETAIL
NOT TO SCALE