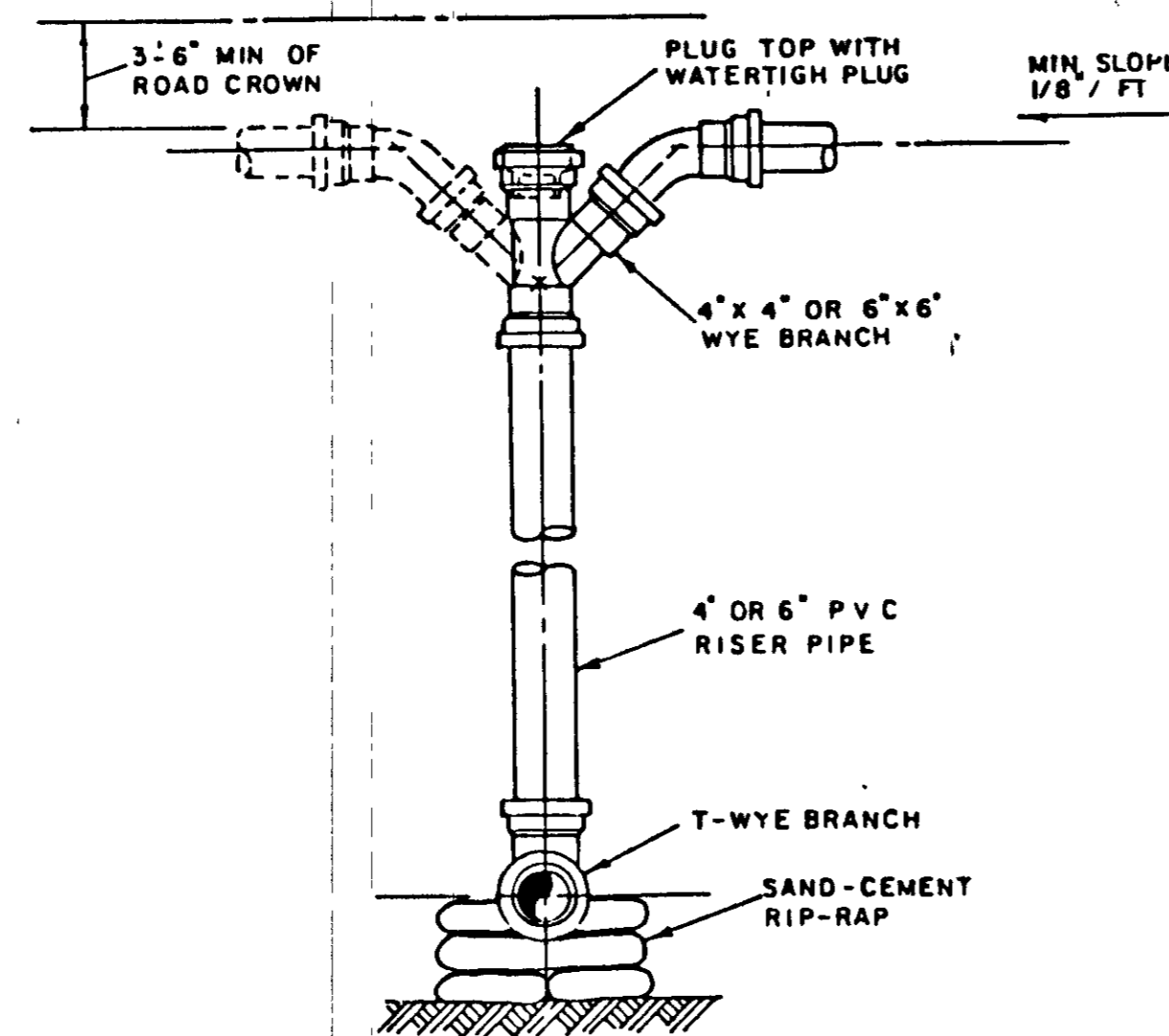


**STANDARD ENGINEERING NOTES**

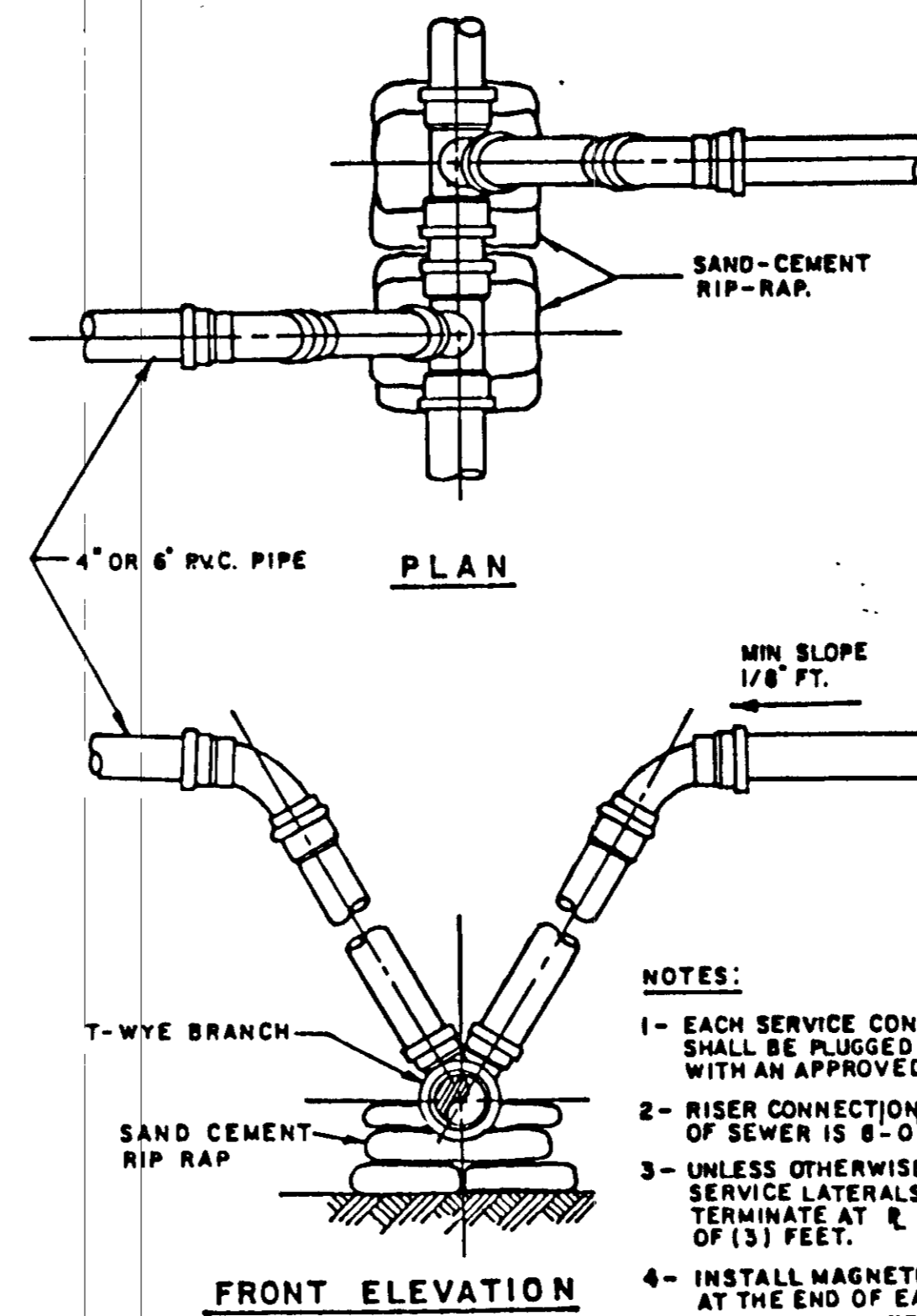
**Sewer Collection System**

- Gravity sewer pipe shall conform to ASTM 3034 SDR-35, PR 118.
- Joints for PVC sewer shall be rubber gasketed type conforming to ASTM D3212 and ASTM F477.
- All PVC sewer pipe shall be installed in accordance with the Uni-Bell Plastic Pipe Association Standard UNI-B-5.
- All sewer mains to have a minimum cover of 3'-0" unless otherwise noted.
- Where sewer and water mains cross, at least 18" vertical clearance shall be maintained. Where a sewer main parallels a water main, a separation of at least 10' shall be maintained. Special provisions shall apply when these conditions cannot be met.
- Where a sewer main is to be installed below a storm drain pipe, a minimum of 1' vertical separation shall be maintained. Special provisions shall apply when these conditions cannot be met.
- Unless otherwise noted, manhole top elevations shall be:  
Paved area - flush with pavement  
Unpaved area - 0.25' above finish grade minimum.
- Install magnetic markers at the end of each service line or opposite wyes and record their location.
- The sewer collection system shall not be placed in service until the system has been visually inspected and flushed of sediment and debris.
- The sewer lines shall be T.V. inspected and the alignment between manholes checked by using lights, laser beams or other suitable means.
- The sewer lines shall be tested by one of the following methods - water infiltration, water exfiltration or low pressure air exfiltration as directed by owner's representative.



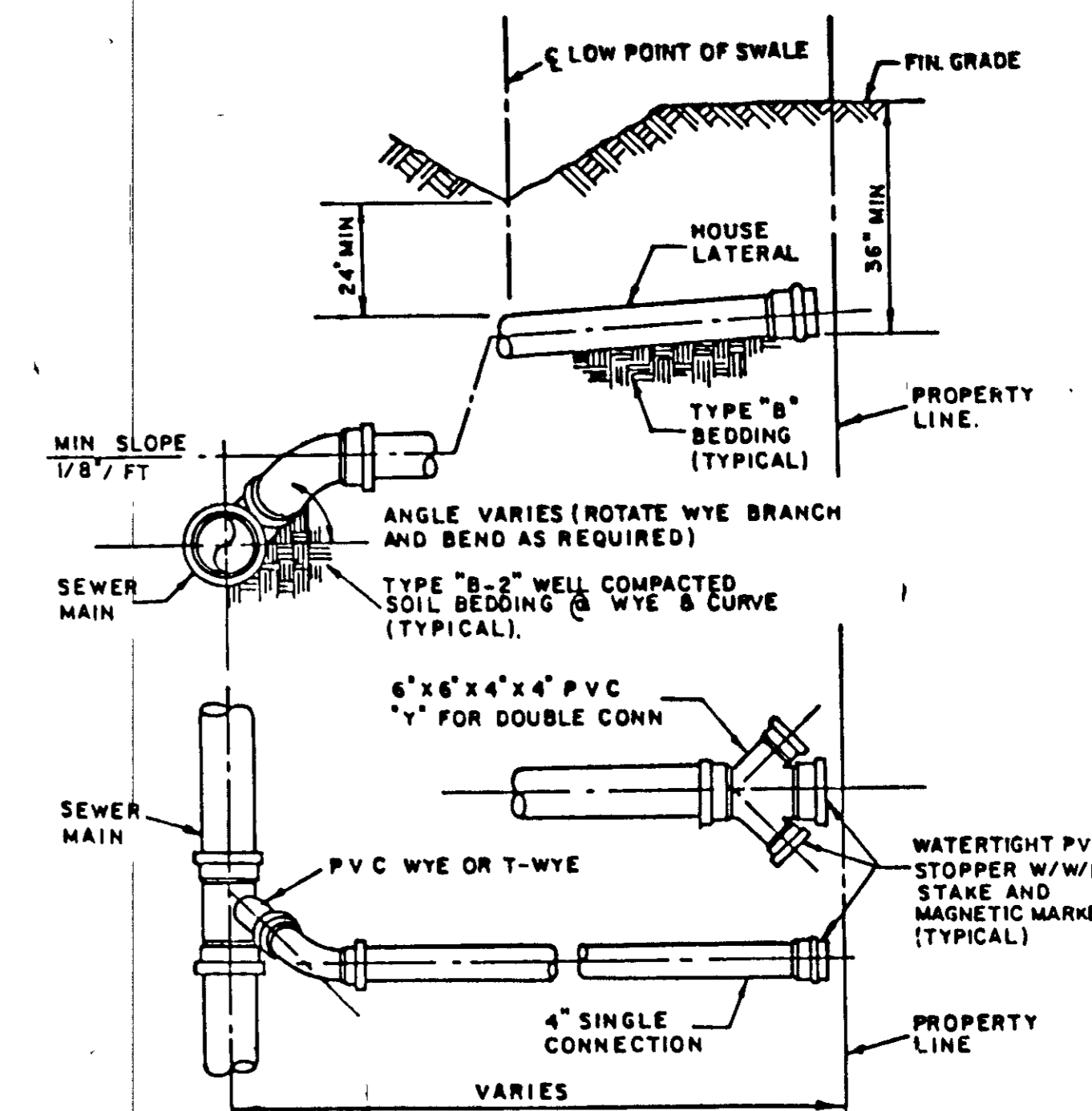
- NOTES:**
- RISER CONNECTION TO BE USED ONLY WHEN DIRECTED BY THE ENGINEER
  - EACH SERVICE CONNECTION SHALL BE PLUGGED WATERTIGHT WITH AN APPROVED PLUG
  - RISER CONNECTION WHEN TOP OF SEWER IS 8'-0" OR DEEPER
  - UNLESS OTHERWISE REQUIRED, SERVICE LATERALS SHALL TERMINATE AT  $R_L$  AT A DEPTH OF (3) FEET.
  - INSTALL MAGNETIC MARKERS AT THE END OF EACH SERVICE LINE OR OPPOSITE WYES AND RECORD THE LOCATION

**SANITARY SEWER LATERAL MODIFIED RISER**



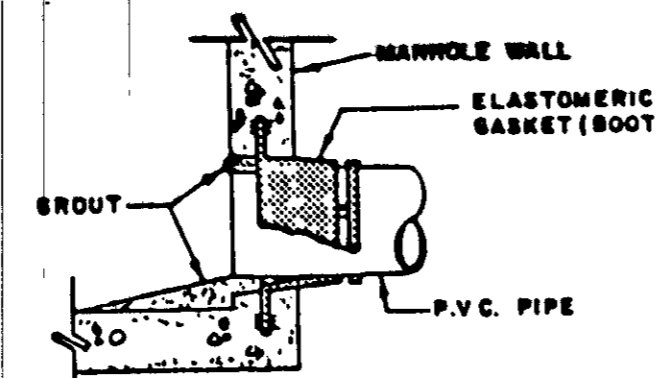
- NOTES:**
- EACH SERVICE CONNECTION SHALL BE PLUGGED WATERTIGHT WITH AN APPROVED PLUG.
  - RISER CONNECTION WHEN TOP OF SEWER IS 8'-0" DEEPER.
  - UNLESS OTHERWISE REQUIRED, SERVICE LATERALS SHALL TERMINATE AT  $R_L$  AT A DEPTH OF (3) FEET.
  - INSTALL MAGNETIC MARKERS AT THE END OF EACH SERVICE LINE OR OPPOSITE WYES AND RECORD THE LOCATION

**SANITARY SEWER LATERAL VERTICAL RISER**



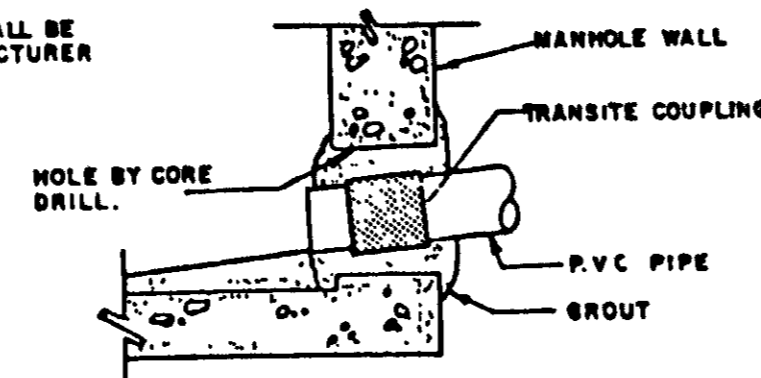
- NOTES:**
- INVERT OF LATERAL TO BE 36" FROM FIN. GRADE EXCEPT ON "WATER LINE SIDE" OF STREET R/W WHERE IT WHERE IT SHALL DROP TO 48" AS SOON AS DEPTH OF MAIN SEWER PERMITS
  - THIS DETAIL TO BE USED WHEN TOP OF SEWER MAIN IS LESS THAN 7'-0" DEEP
  - INSTALL MAGNETIC MARKERS AT THE END OF EACH SERVICE LINE OR OPPOSITE WYES AND RECORD THE LOCATION.

**STANDARD SANITARY SEWER LATERAL DETAIL**



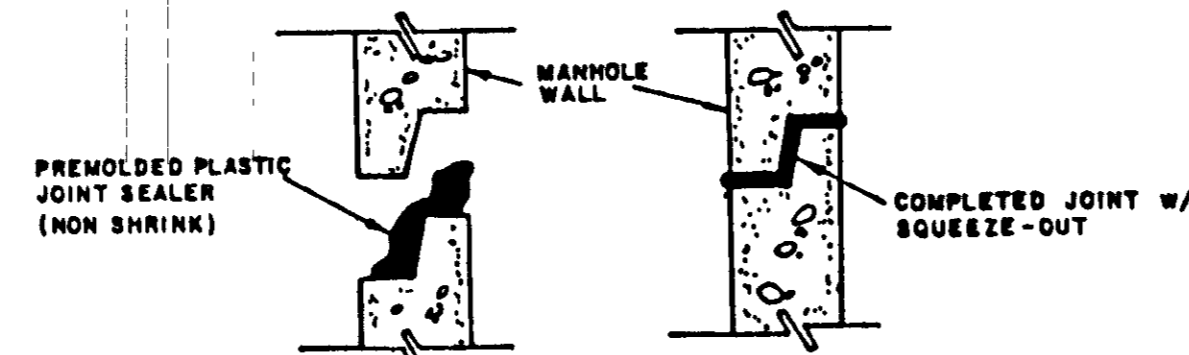
**NEW STRUCTURE**

NOTE: PREFABRICATED BOOT SHALL BE INSTALLED BY THE MANUFACTURER OF THE MANHOLE

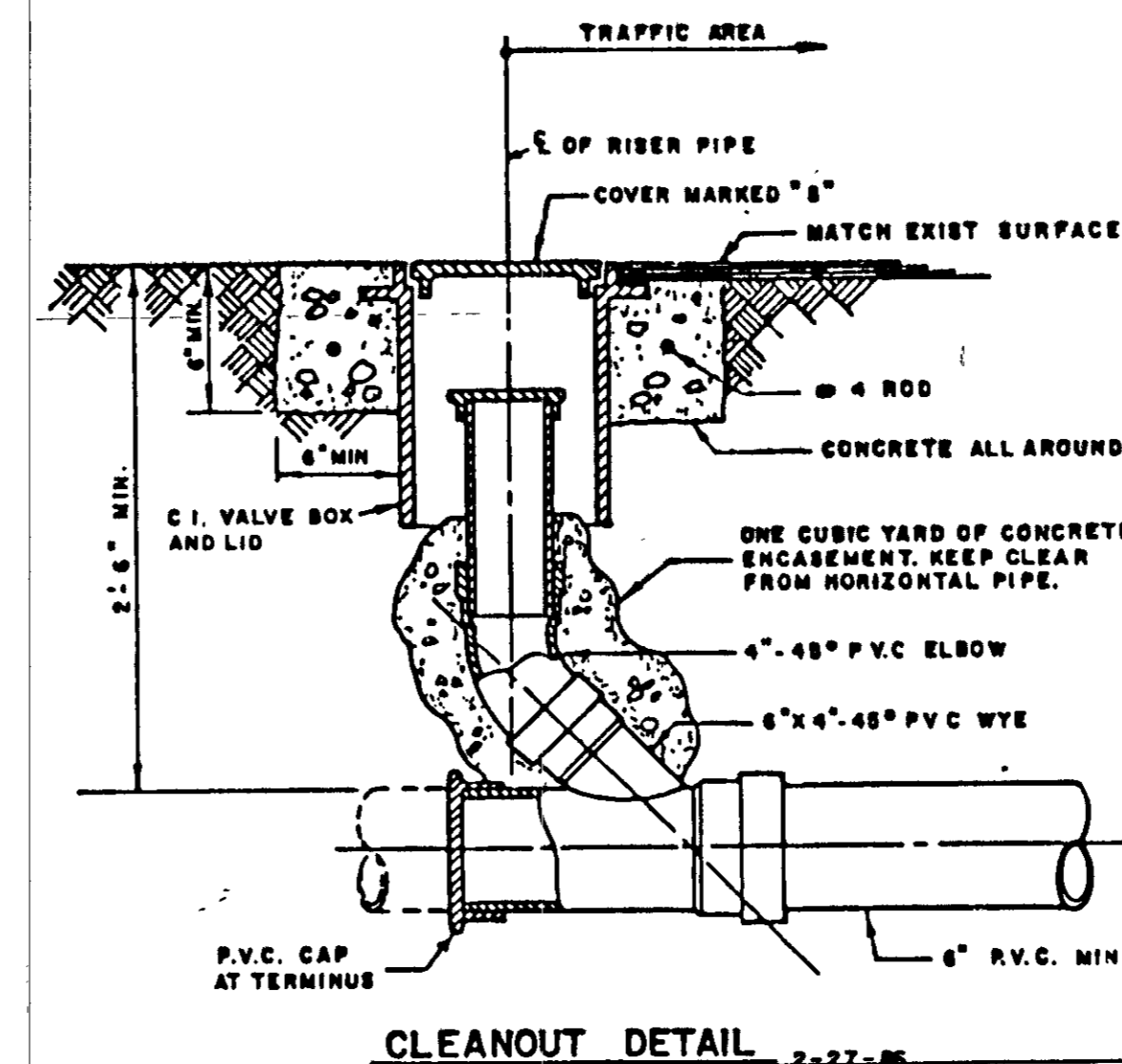


**EXISTING STRUCTURE**

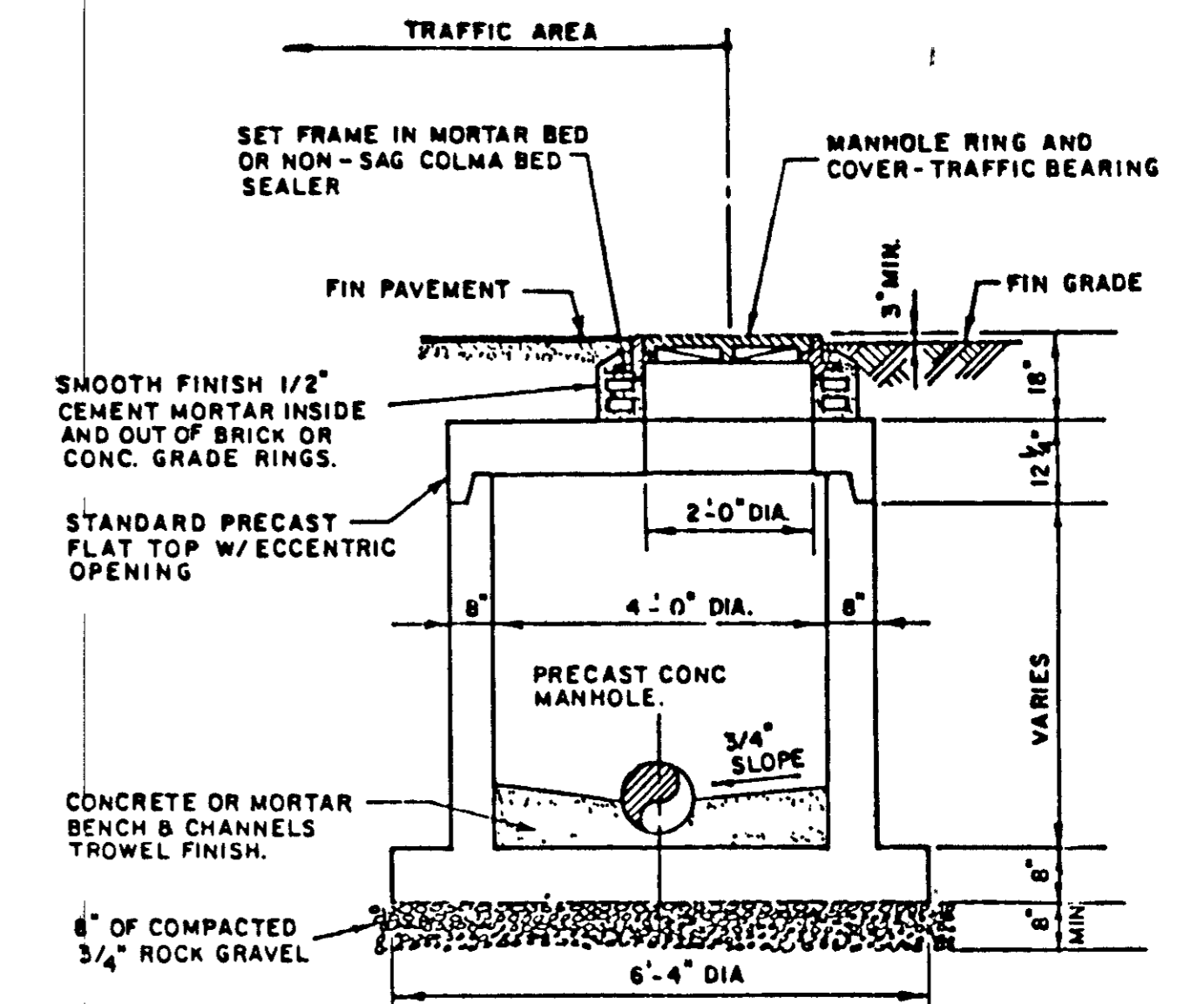
NOTE: ALL PVC PLASTIC GRAVITY SEWER MAINS ENTERING MANHOLE WALL SHALL BE GROUTED IN PLACE WITH A TRANSITE COUPLING DESIGNED FOR PVC PIPE.



**JOINT DETAILS  
MISCELLANEOUS MANHOLE DETAIL**



**CLEANOUT DETAIL**



- NOTES:**
- PROVIDE 0.1' DROP THROUGH MANHOLE EXCEPT ON STRAIGHT RUNS
  - PRECAST CONCRETE MANHOLE SHALL CONFORM TO ASTM C478, SHALL BE TYPE II ACID RESISTANT CEMENT AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS
  - USE ONLY WHERE APPROVED BY G.D.U. AND SPECIFIED ON PLANS

**FLAT TOP PRECAST MANHOLE  
(USE ONLY WHERE SPECIFIED)**



	<b>COUNTY OF CHARLOTTE</b> COUNTY ENGINEERING DEPARTMENT PUNTA GORDA, FLORIDA	
	<h1>DETAILS</h1>	
SCALE AS SHOWN	DES BY	SHEET 3 OF 3
DRW BY B. P.	CHK BY H. S.	
SURVEYED BY	APPROVED BY	DRAWING No. 825
DATE	JOB No.	