

1. All pipe openings shall be installed with "HARCO" PVC manhole adapters or approved equal for PVC & Ductile Iron Pipe penetrations. Adapters shall be sealed with non-shrink waterproof grout.
2. Min. hole diameter equals outside wall of PVC pipe adapter plus 4 inches.
3. Gravity sewer depths shall not exceed 15' except by specific approval of City of West Palm Beach. Pipe for such installation shall be either PVC C900 DR18 or approved Class 50 DIP.
4. Manholes in grassed areas & unfinished roadways shall have a 6 ft. square or 6 ft. diameter circular concrete collar with #4 @ 12" E.W. reinforcing.
5. Coatings on interior and exterior of manholes shall be in accordance with City of West Palm Beach Approved Materials List (AML).
6. Lift holes are permitted, but shall be grouted with non-shrink waterproof grout.
7. All penetrations shall be pre-cast or core-drilled.
8. First manhole upstream from a wet well shall be 5'-0" Diameter (Min) for full height. Provide double lid manhole cover and frame TYPE "A", US Foundry No. 690-AH-M, or approved equal, as used on ARV manholes. Cover to be marked as shown in City of West Palm Beach Detail GS-2.
9. Eccentric cones to be placed so that ring and cover are on upstream side of manhole.
10. When a new line flow drops more than 1'-6" at a manhole an inside drop manhole must be used. Refer to detail GS-4.
11. No infiltration or exfiltration for new gravity sewer manholes shall be allowed. Chemical repair of any leaks is specifically not allowed.
12. All manhole frames and covers are to be flush with proposed finished grades of walks, paved areas, swales, etc.

REVISED:
JUNE-2016

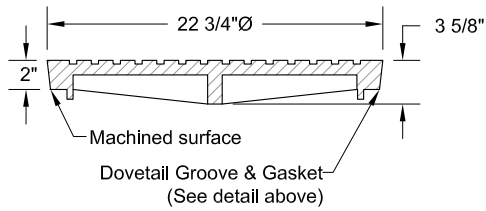
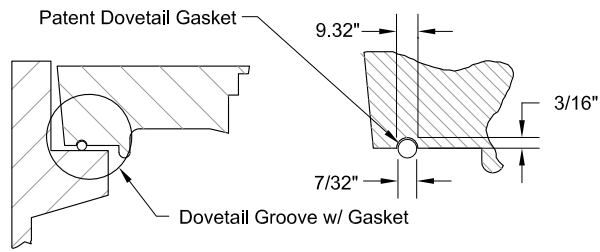
GRAVITY SEWER SYSTEM - TYPICAL MANHOLE

STANDARD
DETAIL

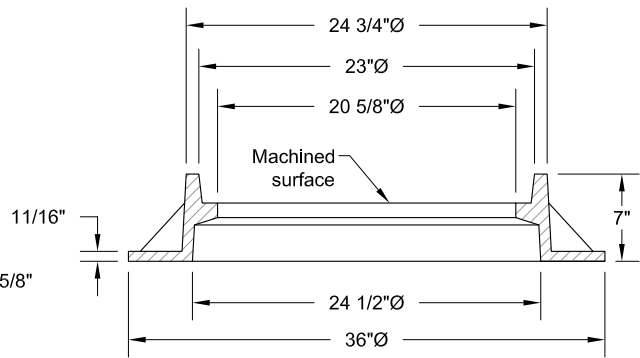
ISSUED:
2016

CITY OF WEST PALM BEACH

GS-1



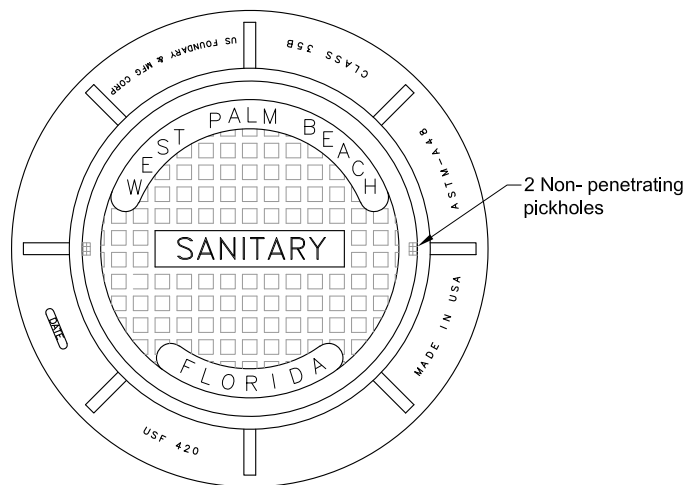
COVER



RING (24) & COVER (G)
(U.S. FOUNDRY NO. 420)

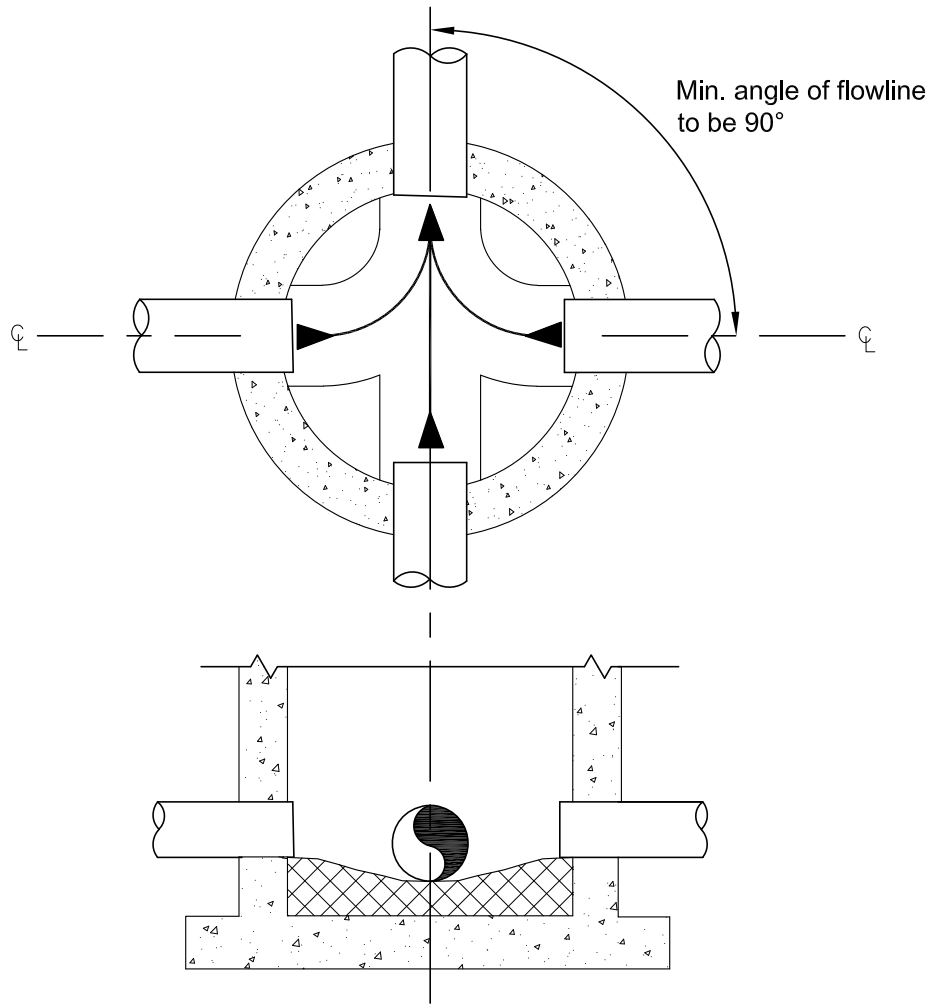
RING

1. Provide U.S.Foundry No. 420-G-ORS Ring, or approved equal.
2. Manholes located on private property shall not have "WEST PALM BEACH" embossed on them.
3. If manhole lids are not furnished with the O-Rings, then add the Cretex (or equal) manhole lid gasket.



PLAN

REVISED: JUNE-2016	GRAVITY SEWER - MANHOLE FRAME & COVER	STANDARD DETAIL
ISSUED: 2016	CITY OF WEST PALM BEACH	GS-2



1. Flow channels shall be constructed with 6" brick rubble, bedded and covered with 2" min. Type II Portland cement grout. Flow channels shall be properly shaped so as to provide for smooth flow between the influent pipe(s) and the effluent pipe. Side walls of flow channels shall begin at spring line of pipe and shall be sloped to match flow line. Provide 0.1 foot min. drop through manhole between inflow and outflow inverts.
2. Service laterals directly entering manholes, rather than in-line, must be approved by the City of West Palm Beach.

REVISED:
JUNE-2016

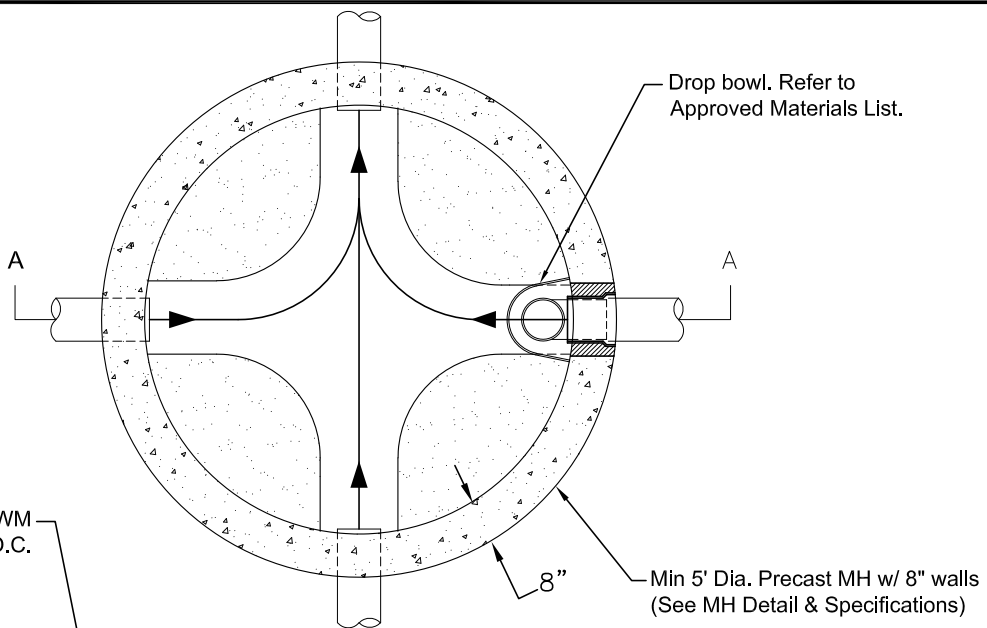
GRAVITY SEWER SYSTEM - SEWER FLOW CHANNELS

STANDARD
DETAIL

ISSUED:
2016

CITY OF WEST PALM BEACH

GS-3



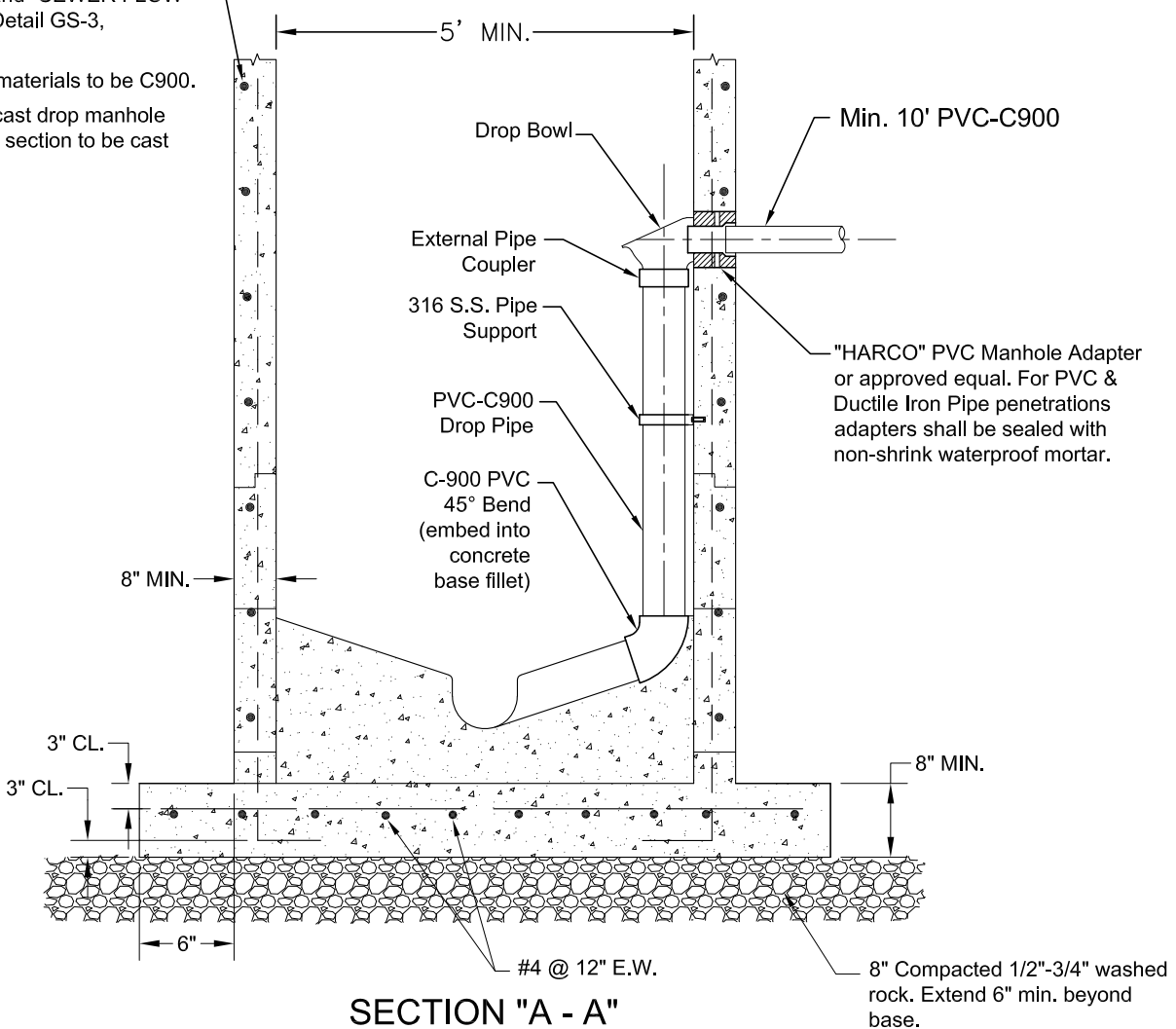
PLAN

4 x 4 W4xW4 WWM
or #4 @ 12" E.W.O.C.

Drop bowl. Refer to
Approved Materials List.

8" Min 5' Dia. Precast MH w/ 8" walls
(See MH Detail & Specifications)

1. Details not shown are to be similar to those shown for "MANHOLE," Detail GS-1, and "SEWER FLOW CHANNEL," Detail GS-3, Standards.
2. All PVC pipe materials to be C900.
3. Standard precast drop manhole base and wall section to be cast monolithically



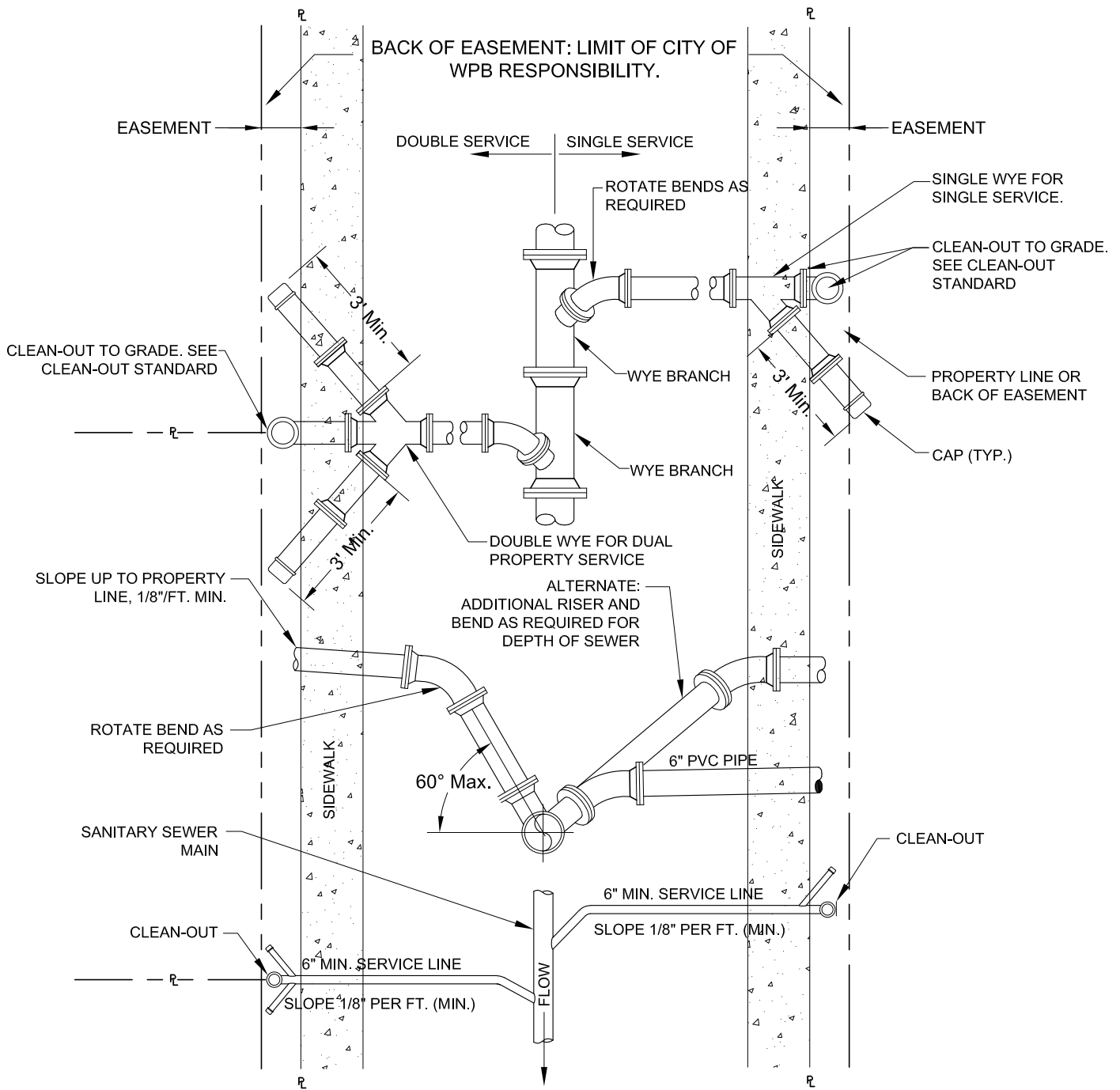
SECTION "A - A"

Min. 10' PVC-C900

"HARCO" PVC Manhole Adapter
or approved equal. For PVC &
Ductile Iron Pipe penetrations
adapters shall be sealed with
non-shrink waterproof mortar.

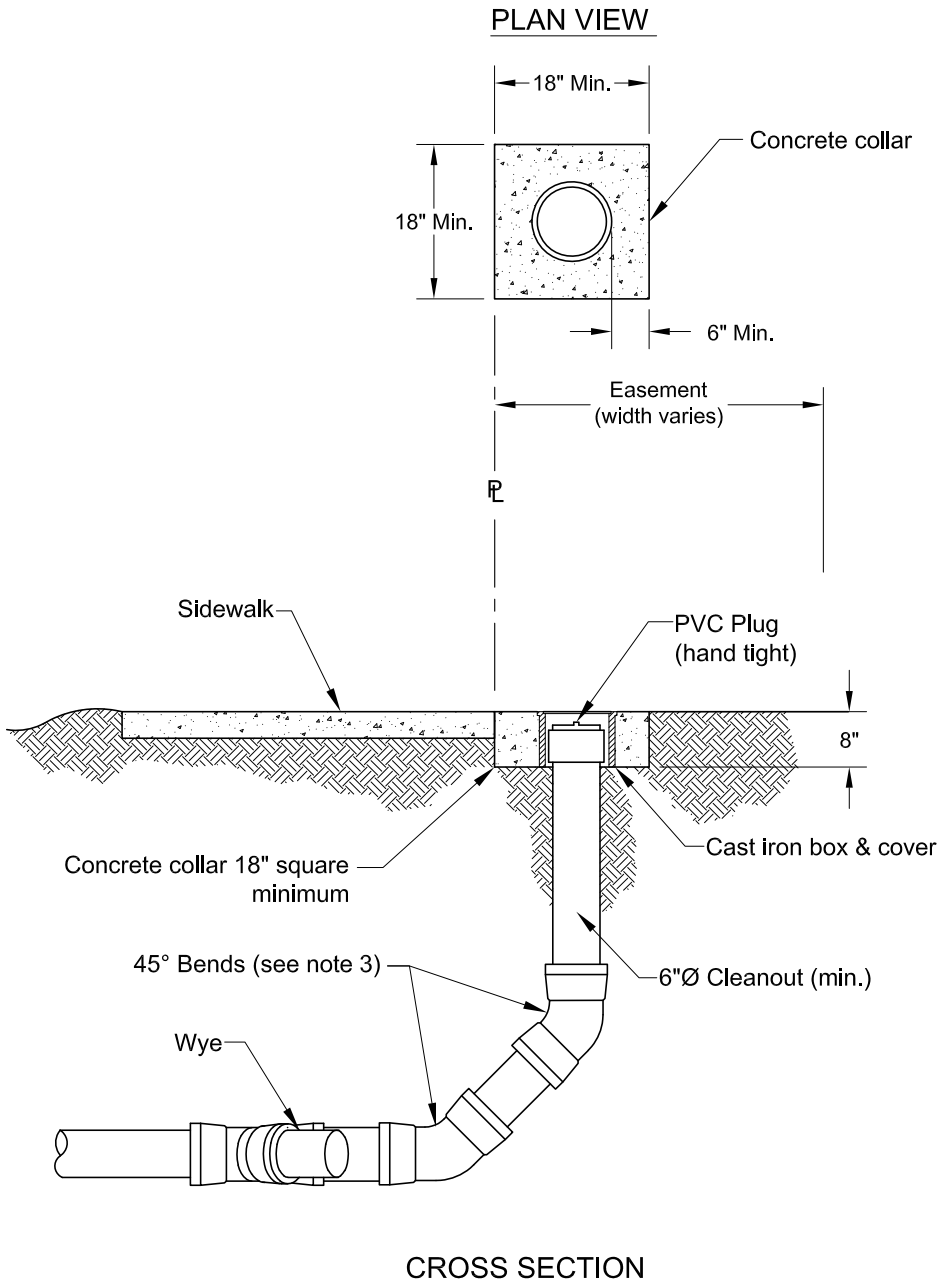
8" Compacted 1/2"-3/4" washed
rock. Extend 6" min. beyond
base.

REVISED: JUNE-2016	GRAVITY SEWER - INSIDE DROP (MANHOLE)	STANDARD DETAIL
ISSUED: 2016	CITY OF WEST PALM BEACH	GS-4



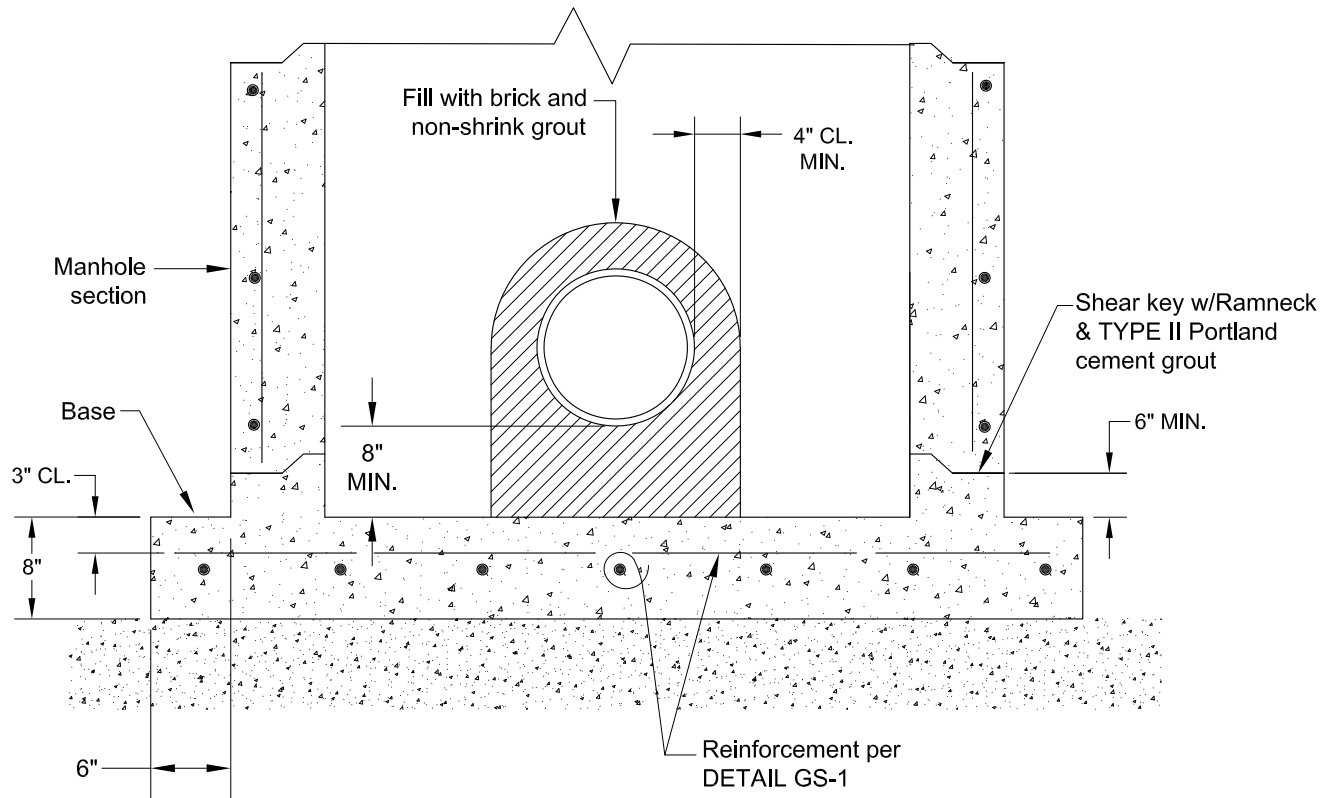
1. Service laterals shall terminate inside property line at a minimum depth of 3 feet. However, where lot size is such that additional cover is required to maintain plumbing code requirement for effluent pipe fall, minimum depth shall be increased accordingly.
2. Clean-out connection to be raised to finished grade prior to water meter activation.

REVISED: JUNE-2016	GRAVITY SEWER SYSTEM - HOUSE LATERAL CONNECTIONS	STANDARD DETAIL
ISSUED: 2016	CITY OF WEST PALM BEACH	GS-5



1. When service line depth exceeds 7 ft. of cover, wye may be installed on vertical section with 3 ft. min. cover.
2. Clean-out connection to be raised to finished grade prior to water meter activation.
3. Number of bends shall be minimized to the extent possible.

REVISED: JUNE-2016	GRAVITY SEWER SYSTEM - CLEAN-OUT	STANDARD DETAIL
ISSUED: 2016	CITY OF WEST PALM BEACH	GS-6



1. To construct new manhole over existing sewer, slide base under pipe and set manhole section on top.
2. For additional details not shown, see "GRAVITY SEWER MANHOLE" DETAIL GS-1.
3. Contractor shall be responsible for support of existing sewer during installation of manhole.
4. Flow channels shall be constructed per DETAIL GS-3

REVISED: JUNE-2016	GRAVITY SEWER SYSTEM - "DOGHOUSE" MANHOLE	STANDARD DETAIL
ISSUED: 2016	CITY OF WEST PALM BEACH	GS-7