- A. MANHOLE STEPS SHALL BE MINIMUM 10" WIDE AND SPACED 12" WITH + 1" TOLERANCE, CENTER TO CENTER, IN VERTICAL ALIGNMENT AND ALIGN WITH BENCH.
- B. EMBED STEPS MINIMUM 3" WITH A MINIMUM PROJECTION OF 5".
- C. INSTALL BOTTOM STEP MINIMUM 5" AND MAXIMUM 16 1/2" ABOVE BENCH. THIS STEP MAY BE INSTALLED AT POINT OF MANUFACTURE BY DRILLING HOLES OF MINIMUM 1 1/2" DIAMETER AND 3" DEEP ON INSIDE OF MANHOLE, AND FILL VOID WITH NON-SHRINK GROUT. STEPS SHALL BE ALUMIMUM OF REINFORCED PVC.

NOTE: MANHOLE

- 1. PROVIDE LIFTING HOLES OR DEVICES FOR ALL PRECAST SECTIONS. HOLE COMPLETELY THRU WALLS SHALL BE PLUGGED W/NEOPRENE OF RUBBER PLUG INSERTS, MORTARED FLUSH ON EACH SIDE OF WALL WITH NON-SHRINK GROUT. HOLES NOT COMPLETELY THRU WALL SHALL BE FILLED FLUCH WITH WALL WITH NON-SHRINK GROUT. MINIMUM OF 4000 PSI CONCRETE SHALL BE USED FOR PRECAST CONSTRUCTION.
- 2. UNLESS OTHERWISE NOTED, MAXIMUM DEPTH OF MANHOLE SHALL BE 16'-0".
- 3. PROVIDE FLEXIBLE GASKET CONNECTOR BETWEEN PIPE AND MANHOLE.
- 4. GRADE OF PIPE ENTERING OF LEAVING MANHOLE SHALL NOT EXCEED 10%.
- 5. MINIMUM HEIGHT OF RISERS = 1'-0". NO MORE THAN ONE 1'-0" RISERS IS PERMITTED ON EACH MANHOLE.
- 6. MAXIMUM SIZE PIPE TO BE USED WITH 48" DIAMETER MANHOLE IS 24"
- 7. MANHOLES OVER 16' DEEP SHALL BE A MINIMUM 5' MANHOLE STANDARD WATERTIGHT MANHOLE FRAME COVER. (SEE DETAIL S/3.04; OR STANDARD TRAFFIC FRAME AND COVER (SEE DETAIL S/3.05 ROADWAYS ONLY). PROVIDE NEOPRENE GASKET BETWEEN FINISHED GRADE -TRANSITION REQUIREMENTS
 12 INCHES MAXIMUM, TRANSITIONS 8" 24" 8" FRAME & TRANSITION. FRAMES TO BE **BOLTED TO TRANSITION** TO BE BOLTED TO MANHOLE 6"-9" Δ. TYPICAL MANHOLE Ζ̈́ STEP-SEE NOTES ABOVE , 0 'n FIRST STEP NOT TO EXCEED 24" FROM TOP OF MANHOLE APPLY BITUMINOUS SEALANT TO EXTERIOR OF MANHOLE INCLUDING TRANSITION 48" FLEXIBLE GASKET JOINTS -KOR-N-SFAL OR EQUAL , | 1ST. RISER MONOLITHIC WITH BASE 2'-6" MIN. UP TO 15" ϕ PIPE 3'-6" MIN. - 16" ϕ **BENCH** 'n Δ TO 24" Ø ô Σ CHANNEL LINING SILILIAN III MIN MANHOLE BASE TO BE GRANULAR BEDDING ON FIRM BACKFILL EXCAVATION BELOW ° 99 SUBGRADE. ASTM-C33/#67 PIPE WITH GRANULAR BEDDING CRUSHED STONE OF GRADE TO TOP OF PIPE ໍ້ໝ WASHED GRAVEL <u>-569</u> 5" CLR

