NOTES:

1. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.

2. PIPES SHALL NOT PROTRUDE MORE THAN 3" INSIDE MANHOLE SECTION AS MEASURED AT THE OUTSIDE EDGES OF THE PIPE, VERTICALLY ALIGNED WITH THE SPRINGLINE. CONSTRUCT WATERTIGHT CONNECTION TO MANHOLE. REFER TO STANDARD DETAIL DRAWING NOS. R-219 (311), R-220 (311) AND R-221 (311) FOR PIPE CONNECTION REQUIREMENTS.

3. MANHOLE BASE SHALL BE PORTLAND CEMENT CONCRETE (P.C.C.) AND SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC, SECTION 202.

4. TYPE V-A MANHOLE TO BE UTILIZED FOR PIPE DIAMETERS OF 15" THROUGH 27" OR DEPTHS EXCEEDING 18 FEET.

5. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE STANDARD SPECIFICATIONS.

6. PRECAST MANHOLE SECTIONS, OTHER THAN GRADE RINGS, SHALL BE JOINED WITH FLEXIBLE PLASTIC GASKET MATERIAL SUCH AS "RAM-NEK" OR EQUAL AS PER MANUFACTURER'S RECOMMENDATIONS.

7. EXCAVATION AND BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION AND BACKFILL" IN SECTION 305 OF THE STANDARD SPECIFICATIONS.

8. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE (SHEET AND SHORE IF SOIL CONDITIONS REQUIRE), IN EXISTING STREET SECTIONS, ALLEY SECTIONS AND CONFINED AREAS, SUCH AS LIMITED EASEMENTS OR ADJACENT STRUCTURES. NATURAL ANGLE OF REPOSE WILL BE ALLOWED IN ALL OTHER AREAS.

9. MANHOLE PRECAST SECTION LENGTHS SHALL BE ARRANGED TO FIT THE REQUIRED DEPTH.

10. NO SEWER LINE PIPE DIAMETERS OF LESS THAN 8" IN DIAMETER SHALL BE CONNECTED TO THE MANHOLE.

11. PRECAST CONCRETE BASE MAY BE USED IN LIEU OF CAST-IN-PLACE BASE.

12. MATCH PIPE INVERTS TO MANHOLE INVERTS WHERE PIPES CONNECT TO MANHOLE BASE.

13. ALL MANHOLES SHALL BE WATERTIGHT.

14. THE USE OF "INSIDE DROP" MANHOLES IS NOT PERMITTED BY THE CITY OF RENO.

15. REINFORCING STEEL SHALL BE AS SHOWN, WIRED TIGHTLY AT ALL INTERSECTIONS AND EMBEDDED AT LEAST ONE INCH CLEAR, UNLESS OTHERWISE NOTED.

16. PRIOR TO BACKFILLING, ALL MANHOLES SHALL BE VACUUM TESTED PER THE REQUIREMENTS OF ASTM C-1244.

17. THE USE OF A TYPE V-A MANHOLE REQUIRES APPROVAL FROM THE CITY ENGINEER PRIOR TO CONSTRUCTION.

18. NO STEPS, LADDERS OR OTHER CLIMBING DEVICES SHALL BE INSTALLED IN THE MANHOLE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
1	NOTE 2 10 17 18	01/04	NOTES- MANHOLE TYPE V-A	DRAWING NO. R-210B (306,311)	
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APPROVED BY G.S.		01/04			