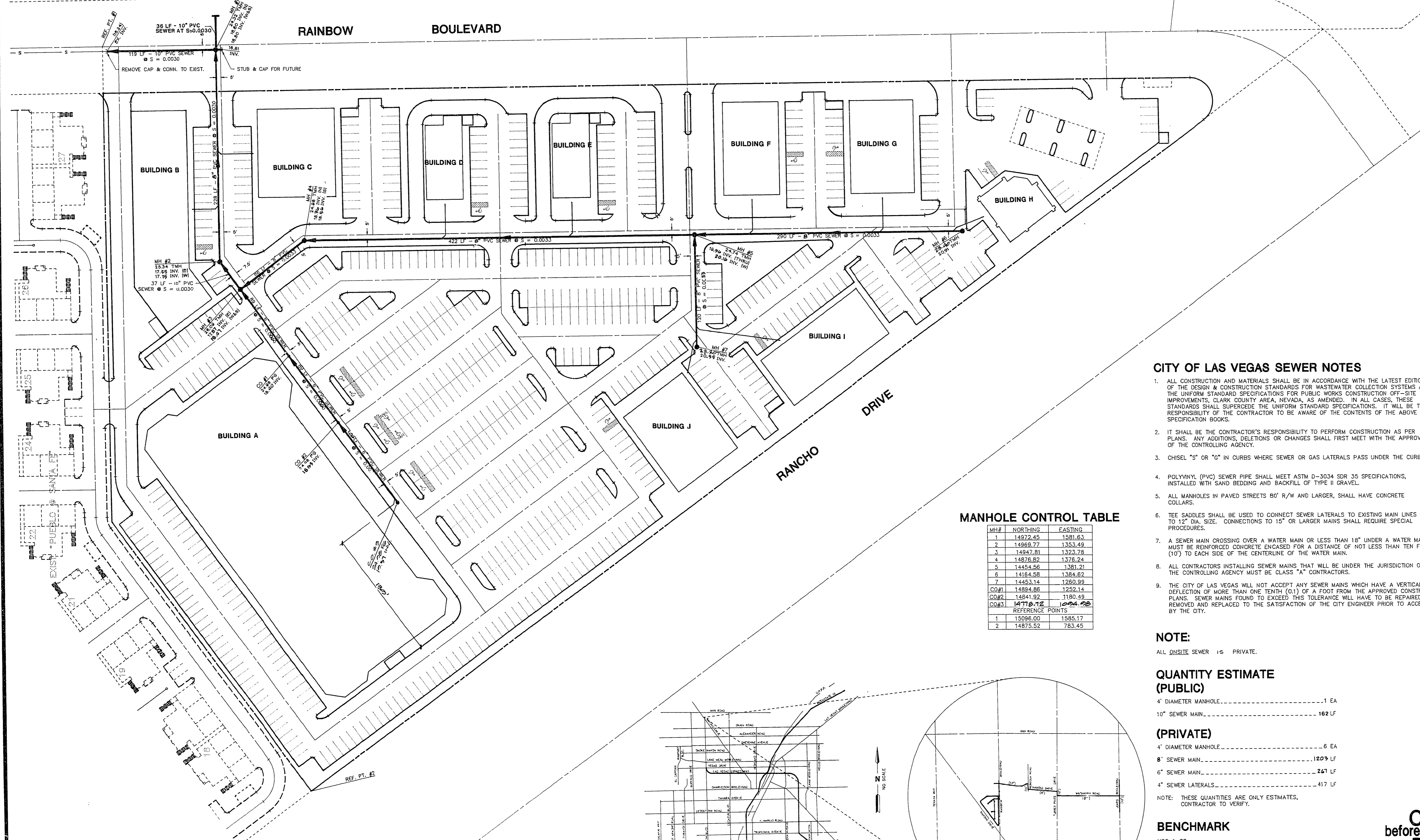


SCALE: 1" = 60'



APPROVAL	REV	DATE	BY	REVISION
	1	11-9-94	MM	REVISED CLUES
	2	11-18-94	FE	REVISED SEWER FOR BUILDING A
	3	12-19-94	AM	ADDED 10" STUB & REVISE SEWER QUANTITY
	4	1-18-95	SLH	CHANGED SEWER TO 10" CHANGED SLOPE TO 0.0033
	5	1-17-95	SLH	CHANGED SEWER TO 24" 5" 24" ADD VEL. 1.73-72

**MASTER SEWER PLAN**

**RANCHO SANTA FE CENTER**

PROJECT

**CITY OF LAS VEGAS SEWER NOTES**

- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE DESIGN & CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS AND THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, AS AMENDED. IN ALL CASES, THESE STANDARDS SHALL SUPERCEDE THE UNIFORM STANDARD SPECIFICATIONS. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF THE CONTENTS OF THE ABOVE SPECIFICATION BOOKS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM CONSTRUCTION AS PER PLANS. ANY ADDITIONS, DELETIONS OR CHANGES SHALL FIRST MEET WITH THE APPROVAL OF THE CONTROLLING AGENCY.
- CHISEL "S" OR "G" IN CURBS WHERE SEWER OR GAS LATERALS PASS UNDER THE CURB.
- POLYNYL (PVC) SEWER PIPE SHALL MEET ASTM D-3034 SDR 35 SPECIFICATIONS, INSTALLED WITH SAND BEDDING AND BACKFILL OF TYPE II GRAVEL.
- ALL MANHOLES IN PAVED STREETS 80" R/W AND LARGER, SHALL HAVE CONCRETE COLLARS.
- TEE SADDLES SHALL BE USED TO CONNECT SEWER LATERALS TO EXISTING MAIN LINES UP TO 12" DIA. SIZE. CONNECTIONS TO 15" OR LARGER MAINS SHALL REQUIRE SPECIAL PROCEDURES.
- A SEWER MAIN CROSSING OVER A WATER MAIN OR LESS THAN 18" UNDER A WATER MAIN, MUST BE REINFORCED CONCRETE ENCASED FOR A DISTANCE OF NOT LESS THAN TEN FEET (10') TO EACH SIDE OF THE CENTERLINE OF THE WATER MAIN.
- ALL CONTRACTORS INSTALLING SEWER MAINS THAT WILL BE UNDER THE JURISDICTION OF THE CONTROLLING AGENCY MUST BE CLASS "A" CONTRACTORS.
- THE CITY OF LAS VEGAS WILL NOT ACCEPT ANY SEWER MAINS WHICH HAVE A VERTICAL DEFLECTION OF MORE THAN ONE TENTH (0.1) OF A FOOT FROM THE APPROVED CONSTRUCTION PLANS. SEWER MAINS FOUND TO EXCEED THIS TOLERANCE WILL HAVE TO BE REPAIRED OR REMOVED AND REPLACED TO THE SATISFACTION OF THE CITY ENGINEER PRIOR TO ACCEPTANCE BY THE CITY.

**MANHOLE CONTROL TABLE**

MH#	NORTHING	EASTING
1	14972.45	1581.63
2	14968.77	1353.49
3	14947.81	1323.78
4	14876.82	1378.24
5	14454.56	1381.21
6	14164.58	1384.62
7	14453.14	1280.99
CO#1	14894.86	1262.14
CO#2	14841.92	1180.49
CO#3	14778.72	1024.28
REFERENCE POINTS		
1	15096.00	1585.17
2	14875.52	783.45

**NOTE:**

ALL ON-SITE SEWER IS PRIVATE.

**QUANTITY ESTIMATE (PUBLIC)**

- 4" DIAMETER MANHOLE.....1 EA
- 10" SEWER MAIN.....162 LF

**(PRIVATE)**

- 4" DIAMETER MANHOLE.....6 EA
- 8" SEWER MAIN.....1209 LF
- 6" SEWER MAIN.....241 LF
- 4" SEWER LATERALS.....417 LF

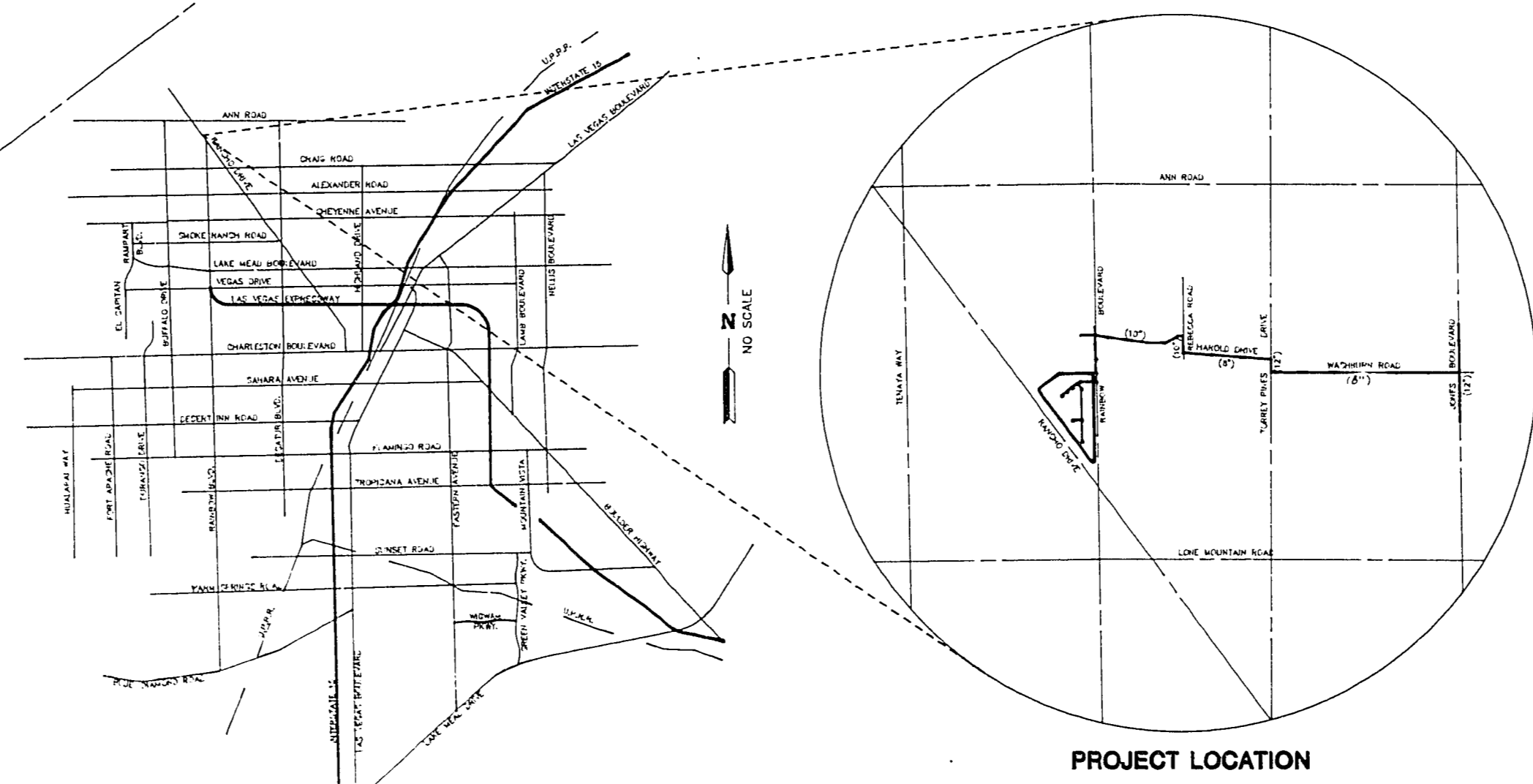
NOTE: THESE QUANTITIES ARE ONLY ESTIMATES, CONTRACTOR TO VERIFY.

**BENCHMARK**

USC & GS  
R-169  
USC & GS BRASS CAP STAMPED R - 169, 200 FT. EAST OF RANCHO RD. AND 40 FT. NORTH OF LORENZI BLVD.  
ELEVATION = 707.364 METERS  
2326.743 U.S. SURVEY FEET

**NOTE**

EXISTING UTILITY LOCATIONS SHOWN HEREIN ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.



**VICINITY MAP**

**PROJECT LOCATION**

SEWER FOR RANCHO SANTA FE CENTER

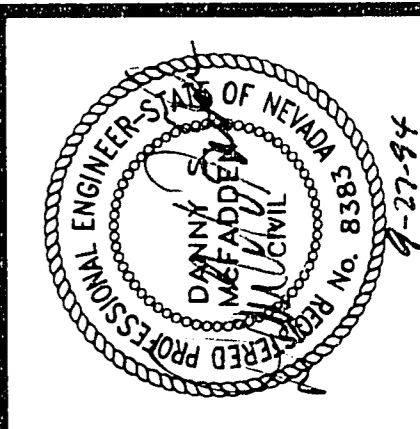
DETERMINE MINIMUM VELOCITIES

USE 8" DIA. PVC SEWER  
USE SLOPE = 0.0033/FT.

V = 1.49  $r^{2/3}$   $s^{1/2}$   
R  
V = 1.49  $(0.1775 \times 0.0033^{1/2})$   
0.17  
V = 114.63  $(0.30)(0.6)$   
V = 20 f.p.s.

**SPECIAL NOTE:** WHEN THE DEPTH OF COVER OVER THE TOP OF THE PIPE IS LESS THAN THREE FEET, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL REINFORCED CONCRETE ENCASEMENT AS SHOWN ON STANDARD DRAWING SD-11, OR INSTALLED USING DUCTILE IRON PIPE. IF DUCTILE PIPE IS USED, IT SHALL BE WRAPPED WITH A MINIMUM 2 LAYERS OF 8 MILS OF POLYETHYLENE SHEET OR SLEEVE PRIOR TO BACKFILLING.

Call before you Dig.  
1-800-227-2800  
UNDERGROUND SERVICE (USA)



**ESI ENGINEERS AND SURVEYORS INC.**  
PLANNING • CONSULTING ENGINEERS • SURVEYORS  
7548 WEST SAMARA AVENUE • LAS VEGAS, NEVADA 89137 • (702) 248-6415

W.O. # : 880-8450  
BY : DSR  
DATE : AUG 1994

SHEET 7 OF 9

SCALE : 1" = 50'

19-60-34

11-16-22

307Y-4348