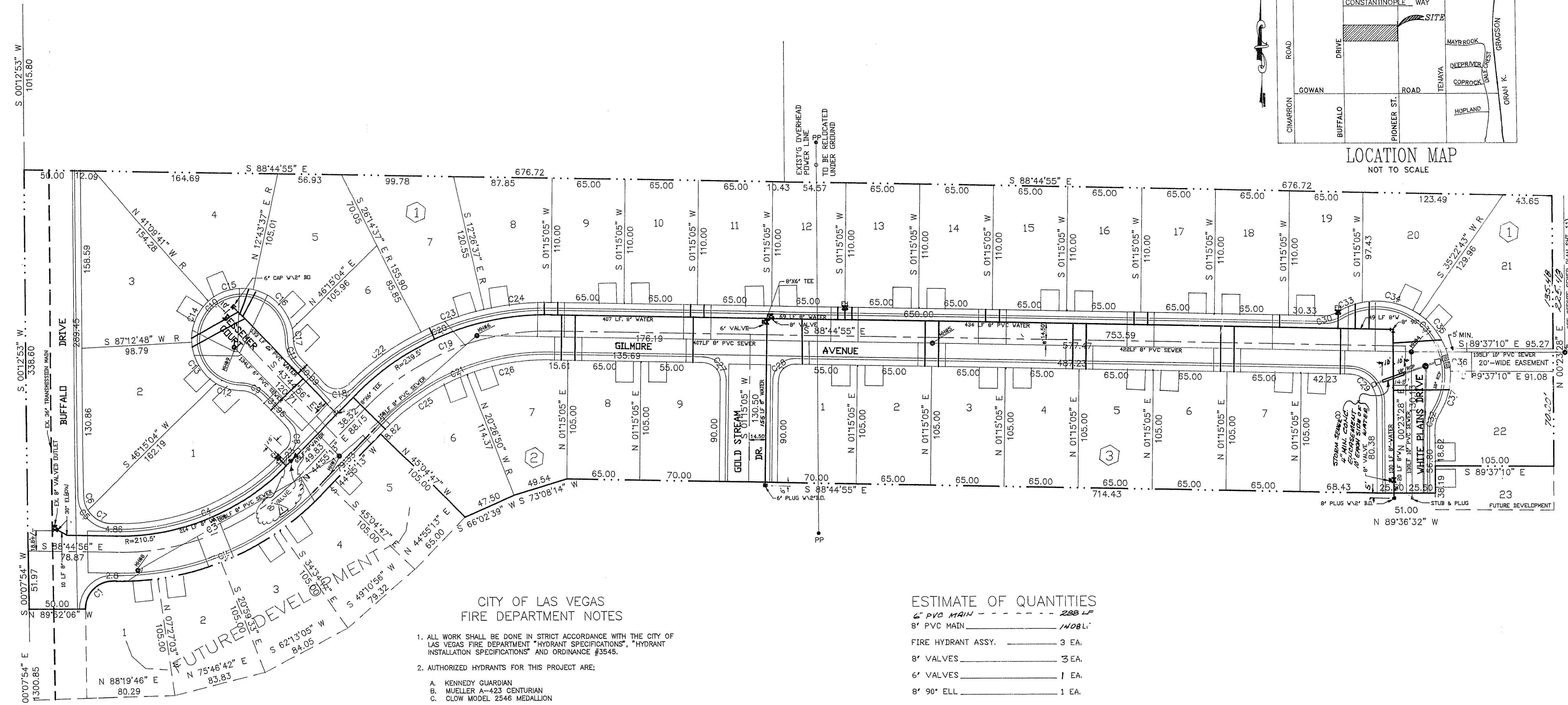




LAS VEGAS VALLEY WATER DISTRICT

- NO WORK SHALL BEGIN ON THE WATER PLANS UNTIL THEY HAVE BEEN RELEASED FOR CONSTRUCTION BY LVWD. FOLLOWING APPROVAL OF THE PLANS, NOTICE SHALL BE GIVEN TO THE LVWD CUSTOMER SERVICE DEPARTMENT (870-4194) 48 HOURS PRIOR TO ACTUAL CONSTRUCTION, AND 24 HOURS PRIOR TO INSPECTION.
- CALL BEFORE YOU DIG 1-800-227-2600.
- ALL WORK SHALL CONFORM TO LVWD LATEST STANDARD PLATES, DRAWINGS, AND SPECIFICATIONS.
- ALL WORK, EXCEPT AS MODIFIED HEREON OR BY NOTE 3, SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT DRAFT OR ADDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENTS, CLARK COUNTY AREA.
- DISTRICT APPROVED SERVICE SADDLES OR TAPPED COLLARS SHALL BE REQUIRED ON ALL 3/4" AND 1" SERVICE LATERALS. SERVICE SADDLES ONLY SHALL BE PERMITTED ON 1-1/2" AND 2" SERVICE LATERALS. DOUBLE TAPPED COLLARS ARE NOT PERMITTED.
- COPPER SERVICE LATERALS: ALL 3/4" TO 2" SERVICE LATERALS SHALL BE OF COPPER TUBING IN ACCORDANCE WITH THE DISTRICT'S SPECIFICATION TITLED "3502 - COPPER WATER TUBING".
- THE MAXIMUM ALLOWABLE JOINT DEFLECTION FOR ACP AND DUCTILE IRON PIPE SHALL BE AS FOLLOWS:

PIPE SIZES	ACP	DUCTILE IRON SLIP JOINT	DUCTILE IRON MECHANICAL JOINT
6 INCH	2.5 DEGREES	2.5 DEGREES	3.5 DEGREES
8-12 INCH	2.5 DEGREES	2.5 DEGREES	3.5 DEGREES
14-16 INCH	2 DEGREES	1.5 DEGREES	1.5 DEGREES
18-24 INCH	N/A	1.5 DEGREES	1.5 DEGREES

ON PVC PIPE, THE MAXIMUM OFFSET FOR A 20' LENGTH OF FACTORY BELLED PIPE SHALL BE 16 INCHES FOR 6" PIPE, 12 INCHES FOR 8" PIPE, AND 9 INCHES FOR 10" AND 12" PIPE.
IF THESE OFFSETS CONFLICT WITH THE PIPE MANUFACTURER'S RECOMMENDATION, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
- ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
- ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS AND VALLEY GUTTERS.
- DETECTOR TAPE SHALL BE REQUIRED IN ACCORDANCE WITH STANDARD PLATE NO. 27 WHERE INDICATED, AND AS FOLLOWS:
 - OVER ALL MAINS NOT INSTALLED 6 FEET FROM BACK OF CURB.
 - OVER ALL SERVICE LATERALS NOT INSTALLED AT RIGHT ANGLES TO MAIN.
- ALL WATER MAINS SHALL BE PRESSURE TESTED AT 200 PSI FOR A CONTINUOUS TWO HOUR PERIOD, IN ACCORDANCE WITH DISTRICT STANDARDS.
- ALL WATER MAINS SHALL BE DISINFECTED, FLUSHED, AND AN ACCEPTABLE HEALTH SAMPLE OBTAINED, PRIOR TO THE CONNECTION OF THE WATER MAIN(S) AND/OR LATERAL(S) TO THE DISTRICT'S SYSTEM.
- CONTRACTOR TO OBTAIN ALL METERS 2" AND SMALLER FROM LVWD CENTRAL STORES. TELEPHONE 258-3152 FORTY-EIGHT (48) HOURS PRIOR TO PICKUP.

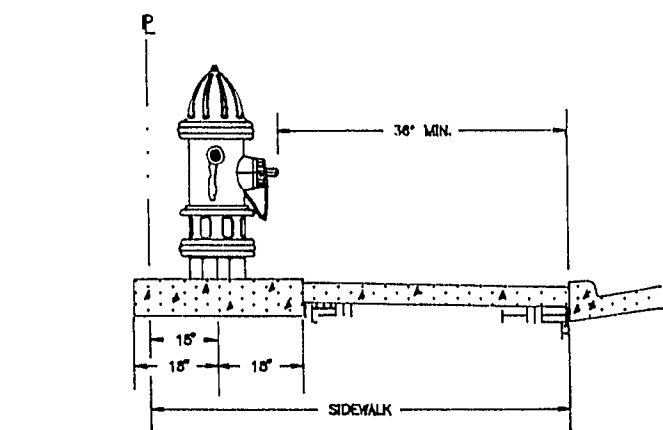
CITY OF LAS VEGAS
FIRE DEPARTMENT NOTES

- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE CITY OF LAS VEGAS FIRE DEPARTMENT "HYDRANT SPECIFICATIONS", "HYDRANT INSTALLATION SPECIFICATIONS" AND ORDINANCE #3545.
- AUTHORIZED HYDRANTS FOR THIS PROJECT ARE:
 - KENNEDY GUARDIAN
 - MUELLER A-423 CENTURIAN
 - CLOW MODEL 2546 MEDALLION
- ON ANY NEW HOME OR BUILDING INSTALLATION, ACCESSIBLE FIRE HYDRANTS SHALL BE INSTALLED BEFORE COMBUSTIBLE CONSTRUCTION COMMENCES AND SAID FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER WITH AN ADEQUATE WATER SUPPLY.
- CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT CENTERLINE OF STREET ADJACENT TO FIRE HYDRANT AS REQUIRED IN ORDINANCE #3545 TO IDENTIFY FIRE HYDRANT LOCATIONS.
- CALL THE LAS VEGAS BUILDING DEPARTMENT AT 799-2071 FOR UNDERGROUND INSPECTION, PRESSURE AND FLUSH VERIFICATION OF ALL FIRE HYDRANTS AND FIRE LINES BEFORE COVERING.
- PAINTING OF THE CURBS AND HYDRANT AND ANY WORK NECESSARY FOR PROTECTION OF HYDRANTS FROM PHYSICAL DAMAGE PER ORDINANCE #3545 SHALL BE COMPLETED BEFORE APPROVAL BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.
- A PERMIT IS REQUIRED FROM THE FIRE DEPARTMENT FOR ON-SITE WATER LINE AND FIRE HYDRANT. THE PERMIT AND CONTRACTORS MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER PRIOR TO ANY WORK BEGINNING.
- A FLOW TEST MUST BE WITNESSED BY THE FIRE DEPARTMENT PRIOR TO OCCUPANCY FOR VERIFICATION OF REQUIRED ON-SITE WATER SUPPLY.
- ALL ON-SITE FIRE MAIN MATERIALS MUST BE U.L. LISTED AND F.M. APPROVED.
- FIRE HYDRANT SPACING.

RESIDENTIAL - 500 FEET UNSPRINKLERED, 600 FEET SPRINKLERED	COMMERCIAL, INCLUDING MULTI-FAMILY - 300 FEET UNSPRINKLERED, 400 FEET SPRINKLERED
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- NO FIRE HYDRANT SHALL BE LOCATED WITHIN THE REQUIRED RADIUS OF CUL-DE-SAC OR WITHIN 20 FEET OF THE PERIMETER OF THE RADIUS OF THE CUL-DE-SAC.
- NO FIRE HYDRANT SHALL BE LOCATED WITHIN 6 FEET OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREET LIGHT OR ANY OTHER OBSTRUCTION.
- NOT MORE THAN 2 HYDRANTS CAN BE OUT OF SERVICE DUE TO A SINGLE MAIN BREAK.
- THE TURNING RADIUS FOR ANY FIRE APPARATUS ACCESS ROAD AND/OR FIRE LANE, PUBLIC OR PRIVATE SHALL BE NOT LESS THAN 45 FEET OUTSIDE RADIUS AND 22 FEET INSIDE RADIUS.
- A FIRE APPARATUS ROAD SHALL BE REQUIRED WHEN ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY IS LOCATED MORE THAN 150 FEET FROM A FIRE DEPARTMENT VEHICLE ACCESS. (SEE EXCEPTIONS UFC 88, SECTION 10.207).
- ALL DEAD END FIRE HYDRANTS APPARATUS ACCESS ROADS AND/OR FIRE LANES PUBLIC OR PRIVATE IN EXCESS OF 150 FEET IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURNAROUND AREA. SEE ORDINANCE #3545.

ESTIMATE OF QUANTITIES

6" PVC MAIN	288 LF
8" PVC MAIN	1408 LF
FIRE HYDRANT ASSY.	3 EA.
8" VALVES	3 EA.
6" VALVES	1 EA.
8" 90° ELL	1 EA.
8" 30° ELL	2 EA.
8X6 TEE	2 EA.
8" PLUG W/2" BD	1 EA.
6" PLUG W/2" BD	1 EA.
6" CAP W/2" BD	1 EA.
3/4" SERVICE	34 EA.
3/4" METER (FROM LVVWD)	34 EA.



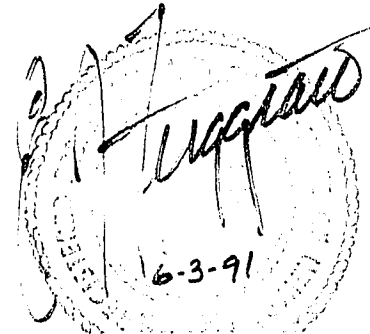
STANDARD FIRE HYDRANT DETAIL
(SEE NOTE #3 CLY STD. DWG. #516)

FIRE FLOW CALCULATIONS

MAXIMUM BUILDING = 2356 SQ. FT.
CONSTRUCTION = TYPE V-N
2356 x 18 x 1.5 = 1310
USE 1500 GPM @ 20 PSI

APPROVALS:

[Signature] 3/16/93
LVV.W.D. DATE
[Signature] 3/16/93
C.L.V. FIRE DEPARTMENT DATE



NOTE: ALL UTILITIES SHOWN ARE BELIEVED TO BE ACCURATELY LOCATED BY THE INFORMATION PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF ALL UTILITIES, SEE THE APPROPRIATE UTILITY OR GOVERNMENTAL AGENCY.
CALL before you dig.
1-800-227-2600

CASHDAN
844 E. SAHARA AVENUE
LAS VEGAS, NEVADA 89104
(702) 735-7895 FAX (702) 735-6282

REVISIONS:

NO.	DESCRIPTION	DATE
1	ADD 8" VALVE BEYOND FIRST HYDRANT	3/16/93

**PIONEER ESTATES WEST
PHASE - 1
LAS VEGAS, NEVADA**

MASTER WATER PLAN

DATE: JAN. 11, 1991
JOB NO: 90-823
DESIGNED: C.O.S.
DRAWN: R.Q.A.
CHKD BY: E.J.F.
SCALE: 1" = 50'
sheet: 15 OF 16

5674-4209-1