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ESTIMATE OF QUANTITIES

6" DOUBLE CHECK DETECTOR ASSEMBLY	1	EA.
8" WATER LINE	19	LF.
6" WET TAP	1	EA.
2" SERVICE SADDLE AND CORP STOP	2	EA.
2" R.P.P.A	2	EA.
2" WATER METER (FROM LVVWD)	2	EA.
2" WATER LINE	8	LF.
FIRE HYDRANT ASSEMBLY	2	EA.
6" WATER LINE (DR 14 – CLASS 200)	382	LF.
8"x6" REDUCER	1	EA.
2" – 90° ELBOW	4	EA.
6"– 90° ELBOW	1	EA.
8" TEE	1	EA.

SEWER NOTES

1. 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 WORK'S CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, AS AMENDED. IN ALL CASES, THESE STANDARDS SHALL SUPERSEDE THE UNIFORM STANDARD SPECIFICATIONS. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF THE CONTENTS OF THE ABOVE SPECIFICATION BOOKS.
2. 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.
3. CHISEL "S" OR "G" IN CURBS WHERE SEWER OR GAS LATERALS PASS UNDER THE CURB.
4. POLYVINYL (PVC) SEWER PIPE SHALL MEET ASTM D-3034 SDR35 SPECIFICATIONS, INSTALLED WITH SAND BEDDING AND BACKFILL OF TYPE II GRAVEL.
5. ALL MANHOLES IN PAVED STREETS, 80' R/W AND LARGER, SHALL HAVE CONCRETE COLLARS.
6. TEE SADDLES SHALL BE USED TO CONNECT SEWER LATERALS TO EXISTING MAIN LINES UP TO 12" DIA. SIZE. CONNECTION TO 15" OR LARGER MAINS SHALL REQUIRE SPECIAL PROCEDURES.
7. A SEWER MAIN CROSSING OVER A WATER MAIN OR LESS THAN 18" UNDER A WATER MAIN, MUST BE REINFORCED CONCRETE ENCASED FOR A DISTANCE NOT LESS THAN TEN FEET (10') TO EACH SIDE OF THE CENTERLINE OF THE WATER MAIN. SEE WATER-SEWER/STORM DRAIN CROSSING NOTE THIS SHEET.
8. ALL CONTRACTORS INSTALLING SEWER MAINS THAT WILL BE UNDER THE JURISDICTION OF THE CONTROLLING AGENCY MUST BE CLASS "A" CONTRACTORS.
9. 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.

INSTALLATION OF 6" DOUBLE CHECK DETECTOR ASSEMBLY

THE DOUBLE CHECK DETECTOR ASSEMBLY SHALL BE INSTALLED IN ACCORDANCE WITH THE UDS PLATE 20B.

ANY BLOCK WALL OR OTHER FENCE MATERIAL SHALL BE DESIGNED AND CONSTRUCTED AROUND THE OUTSIDE OF THE EASEMENT(S), SO AS TO ALLOW THE DISTRICT DIRECT ACCESS FROM THE ADJACENT RIGHT-OF WAY.

SEWER CONTRIBUTION

FIXTURE UNITS x 0.45 ERV's/FIXTURE x 250 GPD/ERV = 11,812 GPD

2" REDUCED PRESSURE PRINCIPLE ASSEMBLY

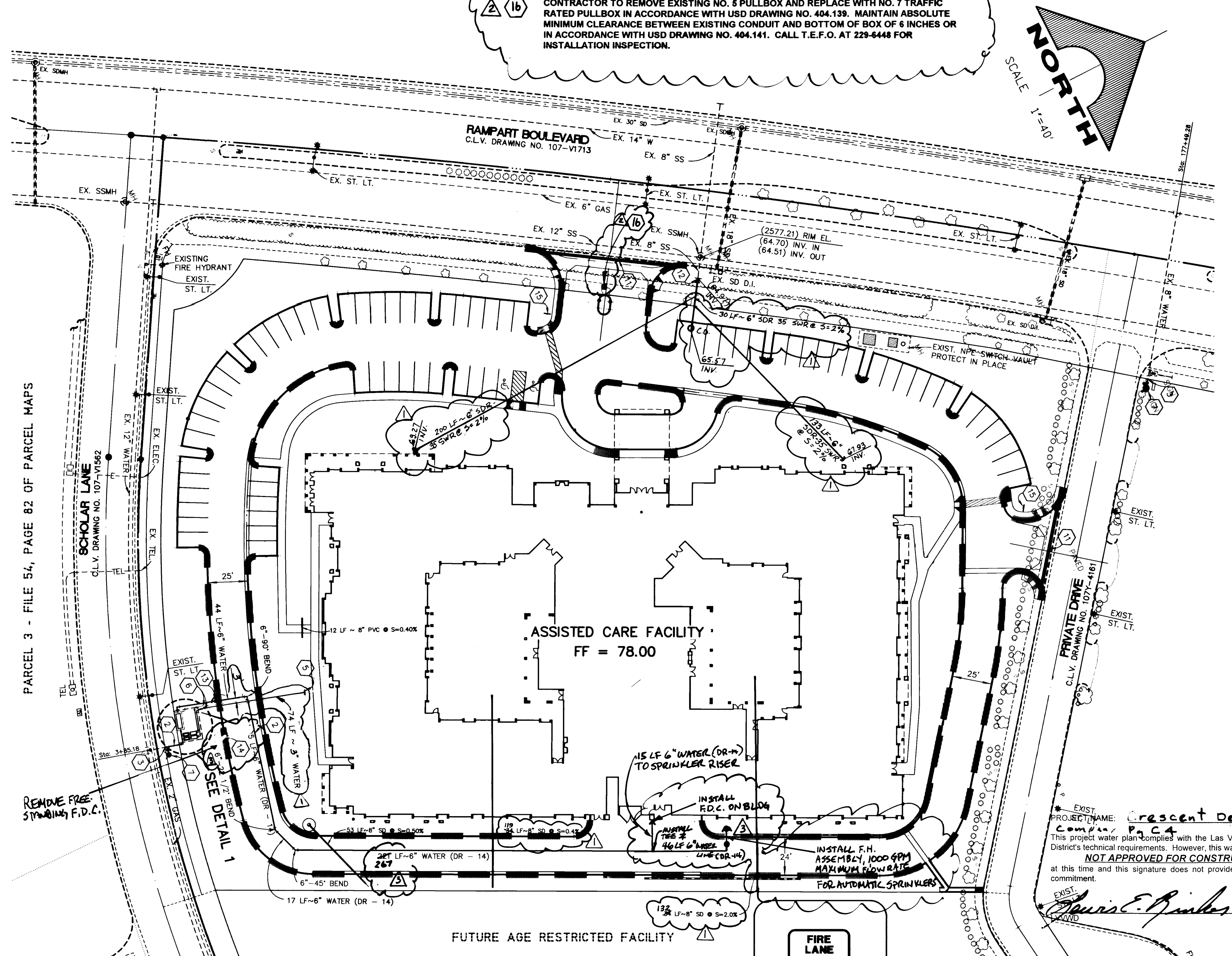
APPROVED REDUCED PRESSURE PRINCIPLE ASSEMBLY SHALL BE INSTALLED PER THE UDS PLATE NO. 11A. NO WATER SHALL BE TAKEN FROM A SERVICE REQUIRING BACKFLOW PREVENTION UNTIL THE REDUCED PRESSURE PRINCIPLE ASSEMBLY HAS BEEN SUCCESSFULLY TESTED BY THE LVVWD.
ANY BLOCK WALL OR OTHER FENCE MATERIAL SHALL BE DESIGNED AND CONSTRUCTED AROUND THE OUTSIDE OF THE EASEMENT(S), TO ALLOW THE DISTRICT DIRECT ACCESS FROM THE ADJACENT RIGHT-OF-WAY.

UTILITY NOTES

1. INSTALL 6" DOUBLE CHECK DETECTOR ASSEMBLY. SEE DETAIL 1 THIS SHEET.
2. INSTALL 6" OR 8" PVC (DR – 14) WATER LINE TO LVVWD STANDARDS. SEE PLAN FOR SIZE.
3. REMOVE EXISTING CAP & JOIN 8" WATER LINE. FIELD TO DETERMINE ACTUAL LOCATION PRIOR TO CONSTRUCTION.
4. INSTALL 2" WATER SERVICE PER UDS PLATE NO. 1D & 2" REDUCED PRESSURE PRINCIPLE ASSEMBLY PER UDS PLATE NO. 11A. SEE DETAIL 1 THIS SHEET.
5. SEE PLUMBING PLANS FOR CONTINUATION INTO RISER ROOM.
6. INSTALL PVC SCHEDULE 80 WATER LINE PER LVVWD STDS. SEE PLAN FOR PIPE SIZE.
7. INSTALL FIRE HYDRANT ASSEMBLY, VALVE AND 6" LINE PER SUMMERLIN STD. DWG. U-33. INSTALL HYDRANT PER SUMMERLIN STD. DWG. U-13.
8. INSTALL 6" TAPPING TEE & VALVE PER UDS PLATE NO. 22.
9. INSTALL 6" PVC SANITARY SEWER LATERAL MEETING ASTM D-3034 SDR 35 STANDARDS. PROVIDE 6" CLEAN OUT TO GRADE @ 100' OC MAX, AND PER UPC SEC. 406. MINIMUM SLOPE 2.0%.
10. SAWCUT REMOVE & REPLACE EXISTING PAVEMENT
11. INSTALL (2) 4" PVC, SCHED 40, CONDUIT SLEEVES UNDER DRIVEWAY. AND 1-6" PVC SCH. 40 CONDUIT. LOCATE SLEEVES AT 18" BEHIND CURB & GUTTER.
12. INSTALL 8"x6" REDUCER
13. INSTALL POST INDICATOR VALVE
14. INSTALL FIRE DEPARTMENT SIAMESE CONNECTION
15. INSTALL NO PARKING SIGN – SEE DETAIL, THIS SHEET

GENERAL NOTE: ALL UTILITY LINES SHALL BE BACKFILLED AND COMPACTED PER SUMMERLIN STANDARD DRAWING U-20.

2 16 CONTRACTOR TO REMOVE EXISTING NO. 5 PULLBOX AND REPLACE WITH NO. 7 TRAFFIC RATED PULLBOX IN ACCORDANCE WITH USD DRAWING NO. 404.139. MAINTAIN ABSOLUTE MINIMUM CLEARANCE BETWEEN EXISTING CONDUIT AND BOTTOM OF BOX OF 6 INCHES OR IN ACCORDANCE WITH USD DRAWING NO. 404.141. CALL T.E.F.O. AT 229-6448 FOR INSTALLATION INSPECTION.



FIRE DEPARTMENT PAINTED RED CURB

PROJECT NAME: Crescent Development Company, Pg C4
This project water plan complies with the Las Vegas Valley Water District's technical requirements. However, this water plan is
NOT APPROVED FOR CONSTRUCTION
at this time and this signature does not provide or imply a water commitment.
Louis E. Rinker 6-29-98
LVVWD DATE

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

FIRE FLOW REQUIREMENT IS: 2875 GALLONS PER MINUTE AT 20 PSI RESIDUAL PRESSURE, BASED ON 50% REDUCTION OF GPM PLUS SPRINKLER DEMAND.

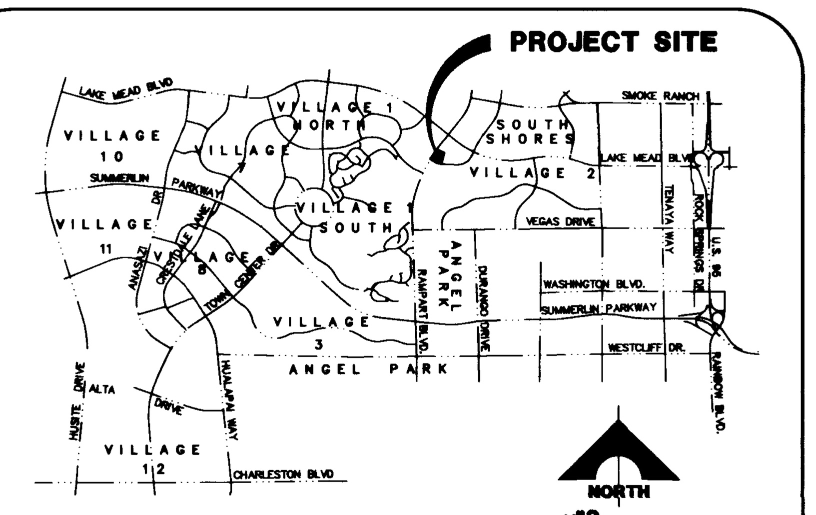
SQUARE FOOTAGE:	101,000 SF
LARGEST AREA BETWEEN AREA SEPARATION WALLS.	N/A
BUILDING HEIGHT:	2 STORY
TYPE OF CONSTRUCTION:	V-I HR.
EXPOSURES	
OCCUPANCY:	B-2
SPRINKLER SYSTEM:	YES
ROOF CONSTRUCTION	FLAT

APPROVED BY: Amy Chang Date: 6/29/98
FIRE MARSHALL, CITY OF LAS VEGAS

FIRE HYDRANT INSTALLATION

FIRE HYDRANT(S) TO BE INSTALLED IN ACCORDANCE WITH THE UDACS STANDARD PLATE NO. 7

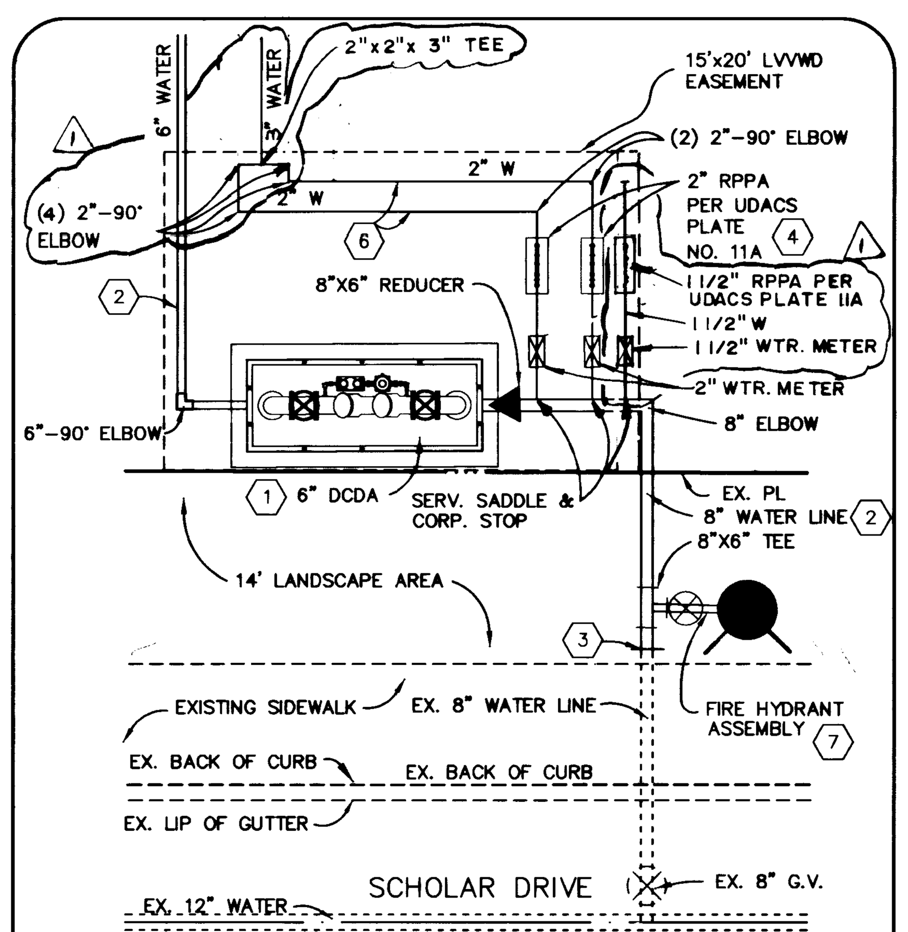
NO PARKING – FIRE LANE SIGN



VICINITY MAP

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY
CALL BEFORE YOU DO OVERHEAD
1-702-593-6111



1 6" DCDA & (2) 2" WATER METER DETAIL N.T.S.

FIRE DEPARTMENT NOTES

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE CITY OF LAS VEGAS FIRE DEPT. "HYDRANT SPECIFICATIONS," "HYDRANT INSTALLATION SPECIFICATIONS" AND ORDINANCE #3944.
2. AUTHORIZED HYDRANTS FOR THIS PROJECT ARE:
   A. KENNEDY GUARDIAN
   B. MUELLER A-423 CENTURIAN
   C. CLOW MODEL 2546 MEDALLION
3. 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.
4. CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT CENTERLINE OF STREET ADJACENT TO FIRE HYDRANT AS REQUIRED IN ORDINANCE #3944 TO IDENTIFY THE FIRE HYDRANT LOCATIONS.
5. CALL THE LAS VEGAS FIRE DEPARTMENT AT 229-2071 FOR UNDERGROUND INSPECTION, PRESSURE AND FLUSH VERIFICATION OF ALL FIRE HYDRANTS AND FIRE LINES BEFORE COVERING.
6. PAINTING OF THE CURBS AND HYDRANTS AND ANY WORK NECESSARY FOR PROTECTION OF HYDRANTS FROM PHYSICAL DAMAGE PER ORDINANCE #3944 SHALL BE COMPLETED BEFORE APPROVAL BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.
7. A PERMIT IS REQUIRED FROM THE FIRE DEPARTMENT FOR ONSITE WATER LINE AND FIRE HYDRANT. THE PERMIT AND CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER PRIOR TO ANY WORK BEGINNING.
8. PRIVATE FIRE HYDRANTS SHALL BE PAINTED RED.
9. A FLOW TEST MUST BE WITNESSED BY THE FIRE DEPARTMENT PRIOR TO OCCUPANCY FOR VERIFICATION OF REQUIRED ONSITE WATER SUPPLY.
10. ALL ONSITE FIRE MAIN MATERIALS MUST BE U.L. LISTED AND A.W.W.A. APPROVED.
11. FIRE HYDRANT SPACING:
    RESIDENTIAL – 500 FEET UNSPRINKLERED; 1,000 FEET SPRINKLERED.
    COMMERCIAL, INCLUDING MULTIFAMILY – 300 FEET UNSPRINKLERED; 600 FEET SPRINKLERED.
12. WHERE NEW WATER MAINS ARE EXTENDED ALONG STREETS, WHERE HYDRANTS ARE NOT NEEDED FOR PROTECTION OF STRUCTURES, FIRE HYDRANTS SHALL BE SPACED AT MAXIMUM 1,000 FOOT SPACING TO PROVIDE FOR THE TRANSPORTATION HAZARDS.
13. NO FIRE HYDRANT SHALL BE LOCATED WITHIN THE REQUIRED RADIUS OF A CUL-DE-SAC OR WITHIN 20 FEET OF THE PERIMETER OF THE RADIUS OF THE CUL-DE-SAC.
14. NO FIRE HYDRANT SHALL BE LOCATED WITHIN 6 FEET OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREET LIGHT OR ANY OTHER OBSTRUCTION.
15. TWO SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE ARE 4 OR MORE FIRE HYDRANTS INSTALLED ON A SINGLE SYSTEM.
16. NOT MORE THAN 2 HYDRANTS CAN BE OUT OF SERVICE DUE TO A SINGLE MAIN BREAK.
17. FIRE APPARATUS ACCESS ROAD SHALL HAVE AN UNOBSTRUCTED WIDTH OF NOT LESS THAN 20 FEET PROVIDED NO PARKING IS ALLOWED, NOT LESS THAN 28 FEET IF PARALLEL PARKING IS ALLOWED ON ONE SIDE, AND NOT LESS THAN 36 FEET IF PARALLEL PARKING IS ALLOWED ON BOTH SIDES. VERTICAL CLEARANCE SHALL BE NOT LESS THAN 45 FEET OUTSIDE RADIUS AND 22 FEET INSIDE RADIUS.
18. 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.
19. 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 IN UFC 94, SECTION 902.2).
20. ALL DEAD END FIRE 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 #3944.
21. ACCESS ROAD SHALL BE MARKED BY PLACING APPROVED SIGNS AT THE START OF THE DESIGNATED FIRE LANE, ONE SIGN AT THE END OF THE FIRE LANE AND WITH SIGNS AT INTERVALS OF 100 FEET ALONG ALL DESIGNATED FIRE LANES. SIGNS TO BE PLACED ON BOTH SIDE OF AN ACCESS ROADWAY IF NEEDED TO PREVENT PARKING ON EITHER SIDE. SIGNS TO BE INSTALLED NO HIGHER THAN 10 FEET OR LESS THAN 6 FEET FROM ROADWAY LEVEL. THE CURBS ALONG OR ON THE PAVEMENT OR CEMENT IF CURB IS NOT PRESENT, SHALL BE PAINTED WITH A RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS.

APPROVED: Amy Chang 6/29/98
FIRE MARSHALL, CITY OF LAS VEGAS DATE

LAS VEGAS VALLEY WATER DISTRICT STANDARD NOTES

1. NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN RELEASED FOR CONSTRUCTION BY THE LVVWD. FOLLOWING WATER PLAN APPROVAL, 48 HOUR NOTICE SHALL BE GIVEN TO THE LVVWD COMMUNICATION SUPPORT CENTER (258-7171) PRIOR TO THE START OF CONSTRUCTION. NOTICE MUST BE GIVEN BY 2:00 p.m. THE BUSINESS DAY PRIOR TO A LVVWD INSPECTION.
2. ALL WORK SHALL CONFORM THE LVVWD's STANDARD PLATES, DRAWINGS AND SPECIFICATIONS AND THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS (UDACS), LATEST EDITION.
3. ALL WORK, EXCEPT AS MODIFIED BY THESE PLANS OR BY NOTE 2, SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT DRAFT OR EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENT, CLARK COUNTY AREA.
4. A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVVWD.
5. ALL SERVICE LATERALS TWO (2) INCHES IN DIAMETER AND SMALLER SHALL BE COPPER TUBING WITH LVVWD APPROVED SERVICE SADDLES.
6. ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
7. ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAY, VALLEY AND CURB GUTTERS.
8. THE FOLLOWING REQUIREMENTS MUST BE MET IN THE EVENT A WATER LINE AND SANITARY OR STORM SEWER LINE CROSS:

   A MINUMUM EIGHTEEN (18) INCH VERTICAL SEPARATION (OUTSIDE TO OUTSIDE) MUST BE MAINTAINED WHEN THE WATER LINE IS INSTALLED OVER THE SANITARY OR STORM SEWER LINE. IF THE VERTICAL SEPARATION CANNOT BE MAINTAINED OR THE WATER LINE MUST BE PLACED UNDER THE SANITARY OR STORM SEWER LINE, THE SANITARY OR STORM SEWER LINE MUST BE CONSTRUCTED WITH ONE OF THE FOLLOWING OR, AS SHOWN ON THESE PLANS:
   A. POTABLE WATER SUPPLY QUALITY MATERIAL,
   B. ENCASEMENT, WITH FOUR (4) INCH CONCRETE (MINIMUM),
   C. SLEEVING WITH POTABLE WATER SUPPLY QUALITY PIPE.

   EACH PROVISION MUST EXTEND ALONG THE SANITARY OR STORM SEWER, ON EITHER SIDE OF THE MAIN, A MINIMUM 10 FOOT DISTANCE PERPENDICULAR TO THE WATER MAIN EXTERIOR.
9. WARNING TAPE SHALL BE REQUIRED OVER ALL MAINS, ALL SIX (6) INCH DIAMETER AND LARGER SERVICE LATERALS, AND ANY SERVICE LATERAL NOT INSTALLED PERPENDICULAR TO THE MAIN IN ACCORDANCE WITH STANDARD PLATE NO. 27.
10. ALL WATER FACILITIES SHALL BE FILLED, DISINFECTED, PRESSURE TESTED, FLUSHED, FILLED AND AN ACCEPTABLE WATER SAMPLE OBTAINED, PRIOR TO CONNECTION TO THE LVVWD'S DISTRIBUTION SYSTEM.
11. THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVWD CENTRAL STORES. TELEPHONE 258-3152 FORTY-EIGHT (48) HOURS PRIOR TO PICKUP.
12. CONSTRUCTION MAY INTERRUPT SERVICE, WITH LVVWD APPROVAL AND PROPER NOTIFICATION, BETWEEN THE HOURS OF 10 PM AND 6 AM, SUNDAY THROUGH THURSDAY. CIRCUMSTANCES MAY REQUIRE TEMPORARY SERVICE FEEDS BE INSTALLED, WITHOUT LVVWD REIMBURSEMENT. ANY TEMPORARY SERVICE FEED MUST HAVE PRIOR LVVWD APPROVAL.
13. ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LVVWD'S PRE-APPROVED MATERIALS AND MANUFACTURERS LISTING FOR NEW FACILITIES, LATEST REVISION, OR SPECIFICALLY APPROVED ON THESE PLANS.

APPROVED FOR CONSTRUCTION
9/31/98
LAS VEGAS VALLEY WATER DISTRICT DATE

REV.	DATE	DESCRIPTION	DATE	APPROVAL
1	8-04-98	SD EXTENSION, +SWR. LAT REALIGNMENT & ADD 1 1/2" IRRIGATION	3/30/99	BB
			8/13/98	HS
2	11-30-98	REPLACE P.B. & ADJUST TO GRADE	11/30/98	HS
3	3-24-99	REMOVE FDC AND FIRE HYDRANT, ADD 46 LF 6" (DR 14) WATERLINE	3/24/99	

STATE OF NEVADA — PROFESSIONAL ENGINEER — DANNY S. McFADDEN — CIVIL — No. 8383

RECOMMENDED 6-29-98 DATE

DRAWNED BY: RPL
DESIGNED BY: RPL
CHECKED BY: DSM

G.C. WALLACE, INC.
Engineering/Architecture
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89102
TEL. NO. (702) 363-1200, FAX. NO. (702) 363-8979

CRESCENT DEVELOPMENT COMPANY
ASSISTED CARE FACILITY
UTILITY PLAN

SHEET **C4**
SHT 4 OF 7

JOB NO. 753.000A.610

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