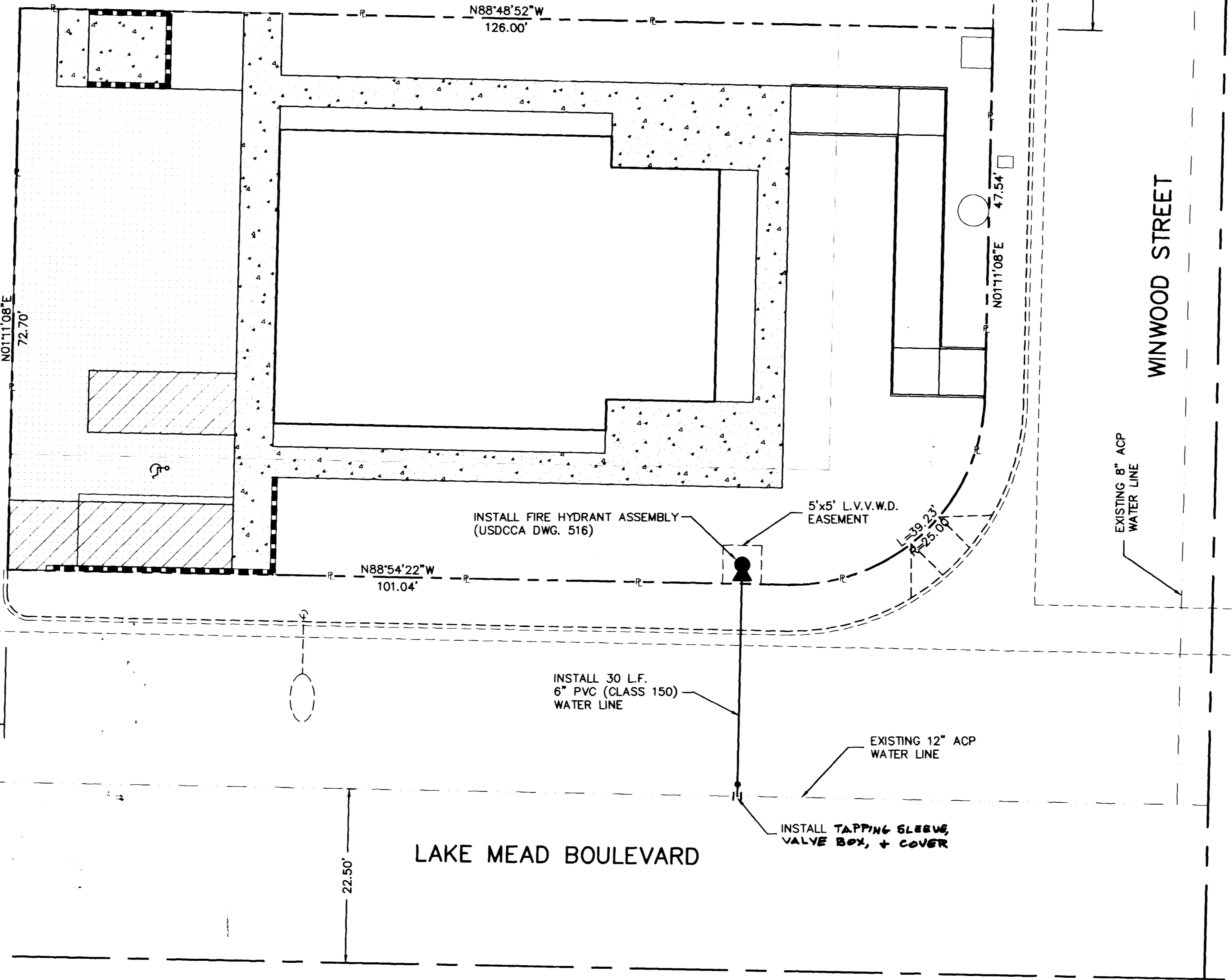
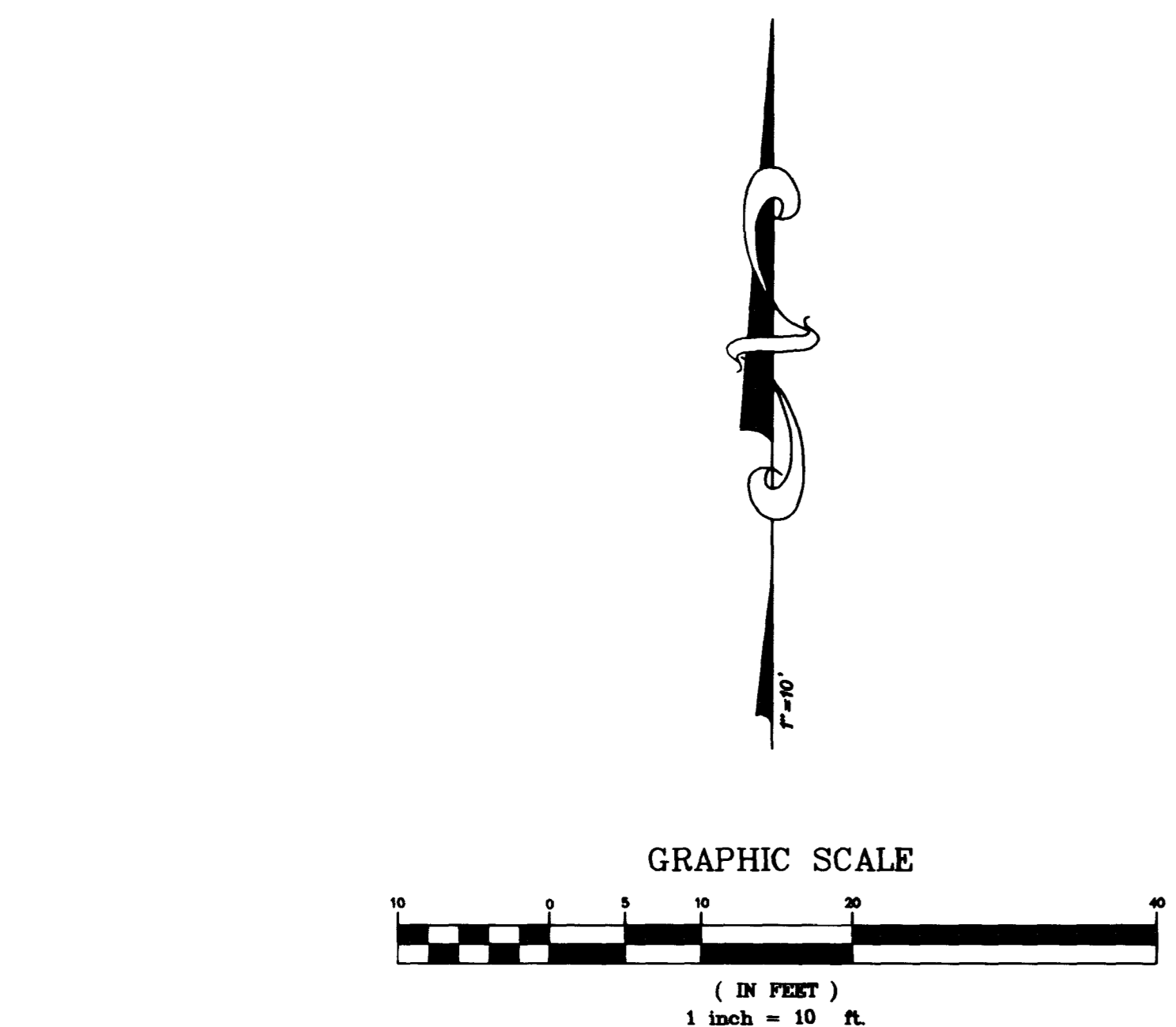
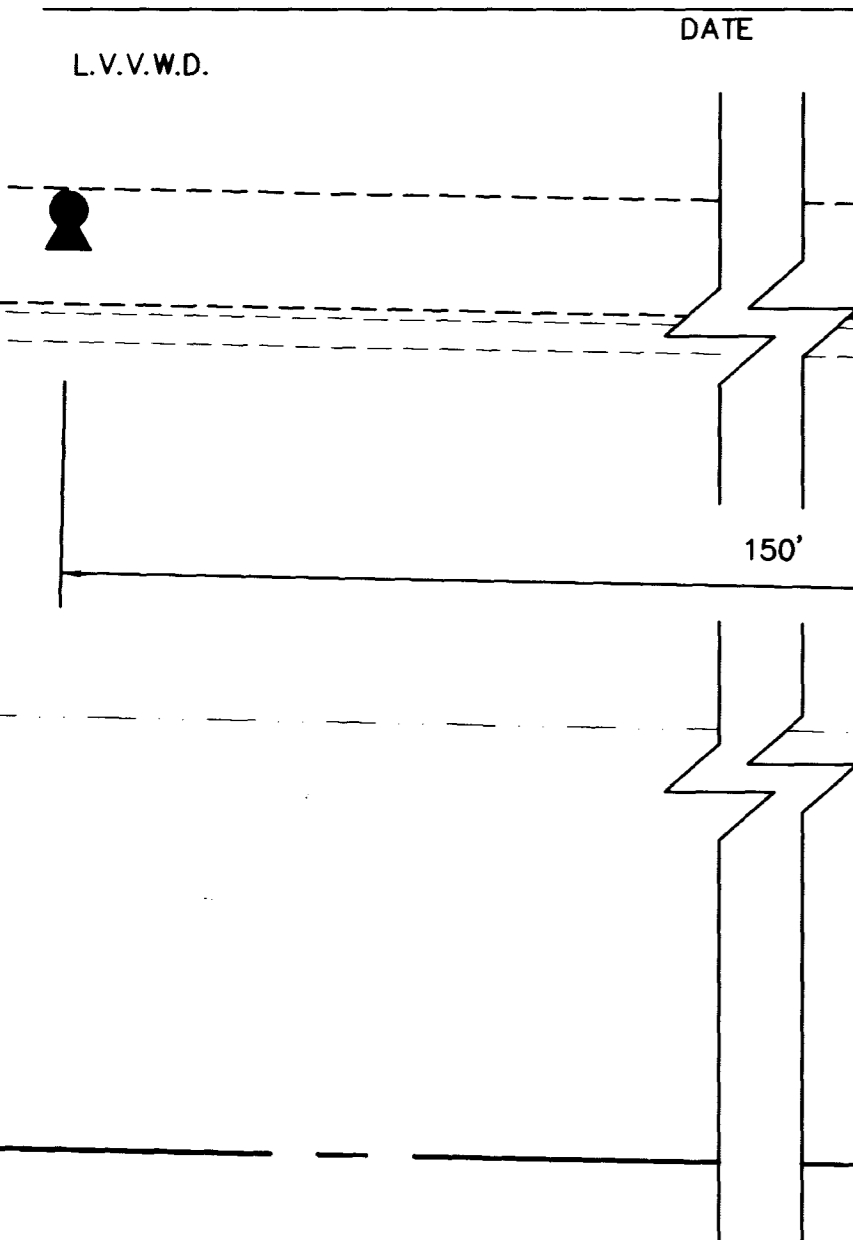


LAS VEGAS VALLEY WATER DISTRICT NOTES

- NO WORK SHALL BE BEGUN UNTIL THE WATER PLANS HAVE BEEN RELEASED FOR CONSTRUCTION BY THE LVWD. FOLLOWING WATER PLANS APPROVAL, FORTY EIGHT (48) HOUR NOTICE SHALL BE GIVEN TO THE LVWD 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 LVWD INSPECTION.
- ALL WORK SHALL CONFORM TO LVWD STANDARD PLATES, DRAWING, AND SPECIFICATIONS AND THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS (UDACS), LATEST EDITION.
- 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 OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA.
- A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT, UNLESS OTHERWISE APPROVED BY THE LVWD.
- ALL SERVICE LATERALS TWO INCHES (2") IN DIAMETER AND SMALLER SHALL BE COPPER TUBING WITH LVWD APPROVED SERVICE SADDLES.
- ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
- ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS, CURBS AND ALLEY GUTTERS.
- THE FOLLOWING REQUIREMENTS MUST BE MET IN THE EVENT A WATER LINE AND A SANITARY SEWER OR STORM SEWER LINE CROSS:
 - POTABLE WATER SUPPLY QUALITY MATERIAL
 - ENCASEMENT WITH FOUR INCH (4") CONCRETE (MINIMUM)
 - SLEDDING WITH POTABLE WATER SUPPLY QUALITY PIPE
 EACH PROVISION MUST EXTEND ALONG THE SANITARY SEWER OR STORM SEWER, ON EITHER SIDE OF THE WATER MAIN, A MINIMUM TEN FOOT (10') DISTANCE PERPENDICULAR TO THE EXTERIOR OF MAIN.
- WARNING TAPE SHALL BE REQUIRED OVER ALL MAINS, ALL SIX INCH (6") DIAMETER AND LARGER SERVICE LATERALS, AND ANY SERVICE LATERAL NOT INSTALLED PERPENDICULAR TO THE MAIN IN ACCORDANCE WITH STANDARD PLATE 27.
- ALL WATER FACILITIES SHALL BE FILLED, DISINFECTED, PRESSURE TESTED, FLUSHED, FILLED AND AN ACCEPTABLE WATER SAMPLE OBTAINED PRIOR TO CONNECTION TO THE LVWD'S DISTRIBUTION SYSTEM.
- THE CONTRACTOR MUST OBTAIN ALL METERS TWO INCHES (2") AND SMALLER FROM LVWD CENTRAL STORES. TELEPHONE 258-3152 FORTY-EIGHT (48) HOURS PRIOR TO PICK-UP.
- CONSTRUCTION MAY INTERRUPT SERVICE, WITH LVWD APPROVAL AND PROPER NOTIFICATION, BETWEEN THE HOURS OF 10:00 P.M. AND 6:00 A.M. SUNDAY THROUGH THURSDAY. CIRCUMSTANCES THAT MAY REQUIRE TEMPORARY SERVICE FEED MUST HAVE PRIOR LVWD APPROVAL.
- ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE LISTED ON THE LVWD'S PRE-APPROVED MATERIALS AND MANUFACTURERS LISTING FOR NEW FACILITIES, LATEST REVISION OR SPECIFICALLY APPROVED ON THESE PLANS.



FIRE FLOW CALCULATIONS

FIRE FLOW REQUIREMENT IS 1750 GALLONS PER MINUTE AT 20 PSI RESIDUAL PRESSURE.

BASED ON:

SQUARE FOOTAGE:	<u>4,108</u> SQUARE FEET
LARGEST AREA BETWEEN 4-HOUR AREA SEPARATION WALLS:	<u>1,027</u> SQUARE FEET
BUILDING HEIGHT:	<u>20'</u> FEET
NUMBER OF STORIES:	<u>2</u> FLOOR
TYPE OF CONSTRUCTION:	<u>V-N</u>
OCCUPANCY:	<u>RESIDENTIAL</u>
FULL AUTOMATIC FIRE SPRINKLER SYSTEM:	<u>NO</u>

REVIEWED BY: *[Signature]*

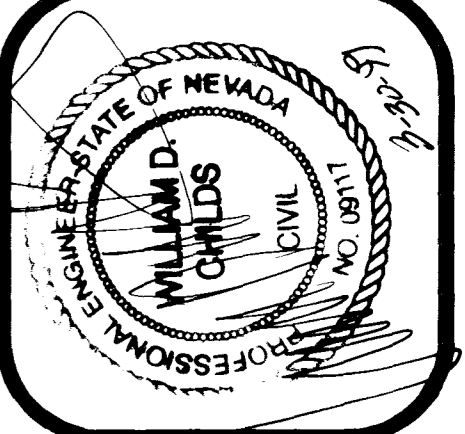
DATE: 3.30.99

LEGEND

	STREET CENTERLINE
	PROPERTY LINE
	SETBACK LINE
	EXISTING WALL
	EXISTING CURB & GUTTER
	HANDICAP ACCESS
	CONCRETE WALKWAY

**CITY OF LAS VEGAS
FIRE DEPARTMENT NOTES**

- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE CITY OF LAS VEGAS FIRE DEPARTMENT'S ORDINANCE # 5115, "HYDRANT SPECIFICATIONS", AND "HYDRANT INSTALLATION SPECIFICATION".
- AUTHORIZED FIRE HYDRANTS FOR THIS PROJECT ARE:
 - KENNEDY GUARDIAN
 - MUELLER A-423 CENTURIAN
 - CLOW MODEL 2546 MEDALLION
- ON ANY RESIDENTIAL OR COMMERCIAL INSTALLATIONS FIRE HYDRANTS SHALL BE INSTALLED AND FIRE APPARATUS ACCESS ROADS SHALL BE MAINTAINED BEFORE COMMENCEMENT OF ANY COMBUSTIBLE CONSTRUCTION. ALL FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER AND SHALL BE CAPABLE OF DELIVERING THE REQUIRED FIRE FLOW.
- TO IDENTIFY THE FIRE HYDRANT LOCATIONS, CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT THE CENTER LINE OF STREET ADJACENT TO THE FIRE HYDRANTS AS REQUIRED BY ORDINANCE #5115.
- ALL UNDERGROUND INSPECTIONS, PRESSURE AND FLUSH VERIFICATIONS OF ALL FIRE HYDRANTS AND FIRE LINES, SHALL BE CONDUCTED BEFORE COVERING THE LINES. CALL CITY OF LAS VEGAS INSPECTION HOT-LINE AT 229-2071 TO REQUEST AN INSPECTION BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.
- PAINTING OF THE CURBS AND FIRE HYDRANTS AND ALL OTHER WORK NECESSARY AS REQUIRED BY ORDINANCE #5115, FOR THE PROTECTION OF FIRE HYDRANTS FROM PHYSICAL DAMAGE, SHALL BE COMPLETED BEFORE APPROVAL BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.
- A PERMIT IS REQUIRED FROM THE CITY OF LAS VEGAS FIRE DEPARTMENT FOR THE ON-SITE WATER LINES AND FIRE HYDRANTS. THE PERMIT AND CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER BEFORE COMMENCEMENT OF WORK.
- PRIVATE FIRE HYDRANTS SHALL BE PAINTED RED.
- PRIOR TO THE FINAL OCCUPANCY, A FLOW TEST MUST BE WITNESSED BY THE CITY OF LAS VEGAS FIRE DEPARTMENT TO VERIFY AVAILABILITY OF THE REQUIRED FIRE FLOW.
- FIRE HYDRANTS SPACING SHALL BE:
 - RESIDENTIAL - 500 FEET UNSPRINKLERED, 1000 FEET SPRINKLERED
 - COMMERCIAL - 300 FEET UNSPRINKLERED, 600 FEET SPRINKLERED
- WHERE NEW WATER MAINS ARE EXTENDED ALONG STREETS WHERE FIRE HYDRANTS ARE NOT NEEDED FOR PROTECTION OF THE STRUCTURES, FIRE HYDRANTS SHALL BE INSTALLED AT MAXIMUM 1,000 FOOT SPACING, TO PROVIDE FOR TRANSPORTATION HAZARDS.
- NO FIRE HYDRANTS 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.
- NO FIRE HYDRANTS SHALL BE LOCATED WITHIN 6 FEET OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREET LIGHT OR ANY OTHER OBSTRUCTIONS.
- THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO THE END OF A DEAD END STREET SHALL NOT EXCEED 200 FEET.
- THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A FIRE DEPARTMENT CONNECTION (FDC) SHALL NOT EXCEED 100 FEET, AS MEASURED BY AN APPROVED ROUTE.
- TWO SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE ARE 4 OR MORE FIRE HYDRANTS/SPRINKLER LEAD-INS ARE INSTALLED ON A SINGLE SYSTEM.
- SECTIONAL CONTROL VALVES SHALL BE INSTALLED SO THAT NO MORE THAN 2 FIRE HYDRANTS CAN BE OUT OF SERVICE DUE TO A BREAK IN A WATER MAIN.
- ALL FIRE APPARATUS ACCESS ROADS SHALL HAVE AN UNOBSTRUCTED WIDTH OF NOT LESS THAN 20 FEET (FLOWLINE TO THE FLOW LINE), PROVIDED NO PARKING IS ALLOWED ON EITHER SIDE; 28 FEET (FLOW LINE TO THE FLOW LINE), IF PARALLEL PARKING IS ALLOWED ON ONE SIDE ONLY, AND 36 FEET (FLOW LINE TO THE FLOW LINE), IF PARALLEL PARKING IS ALLOWED ON BOTH SIDES. VERTICAL CLEARANCE SHALL BE NOT LESS THAN 13 FEET 6 INCHES.
- ALL FIRE APPARATUS ACCESS ROADS SHALL BE PAVED TO PROVIDE EITHER DRIVING CAPABILITIES, AND SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF THE FIRE APPARATUS.
- THE GRADIENT FOR A FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 12% ANGLES OF APPROACH AND ANGLES OF DEPARTURE SHALL NOT EXCEED 6% FOR 25 FEET TO OR AFTER THE GRADE CHANGE.
- THE TURNING RADIUS OF A FIRE APPARATUS ACCESS ROADS SHALL BE NO LESS THAN 45 FEET OUTSIDE AND 22 FEET INSIDE TURNING RADIUS.
- A FIRE APPARATUS ACCESS 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 97, SECTION 902.2).
- 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 TURN AROUND AREA HAVING A MINIMUM DIAMETER OF 81 FEET (BACK OF CURB TO THE BACK OF CURB).
- ALL FIRE APPARATUS ACCESS ROADS 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 100 FEET ALONG ALL DESIGNATED FIRE LANES. SIGNS TO BE PLACED ON BOTH SIDES 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 PROVIDED SHALL BE PAINTED WITH A RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS.
- ELECTRICALLY CONTROLLED ACCESS GATES SHALL BE PROVIDED WITH AN APPROVED EMERGENCY VEHICLE DETECTOR/RECEIVER SYSTEM. SAID SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF LAS VEGAS GUIDELINES FOR AUTOMATIC EMERGENCY VEHICLE ACCESS GATES.



**REDROCK
ENGINEERING**

2001 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89102
(702) 247-9986

**PALACIOS FOUR-PLEX
LAKE MEAD BOULEVARD & WINWOOD STREET
LAS VEGAS, NEVADA**

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS TO THE ENGINEER PRIOR TO COMMENCING WORK. THESE DRAWINGS ARE NOT TO BE SCALED. ALL DIMENSIONS, SPECIFICATIONS AND NOTES TO BE USED ONLY WITH REFERENCE TO THESE DRAWINGS AND NOT TO BE USED ON ANY OTHER PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE. THE ENGINEER'S USE OF THESE DRAWINGS IN WHOLE OR IN PART, IN ANY MANNER WHATSOEVER, IS STRICTLY PROHIBITED EXCEPT WITH WRITTEN CONSENT OF THE ENGINEER.

FIRE PLAN

DATE :	3/29/99	REVISION :	
JOB # :		SCALE :	1"=10'
DRAWN BY :	M.J.P.	APPROVED BY :	APN
SHEET :	24	TOTAL SHEETS :	60-E

SHEET #

2

2 OF 2

107-V3062

