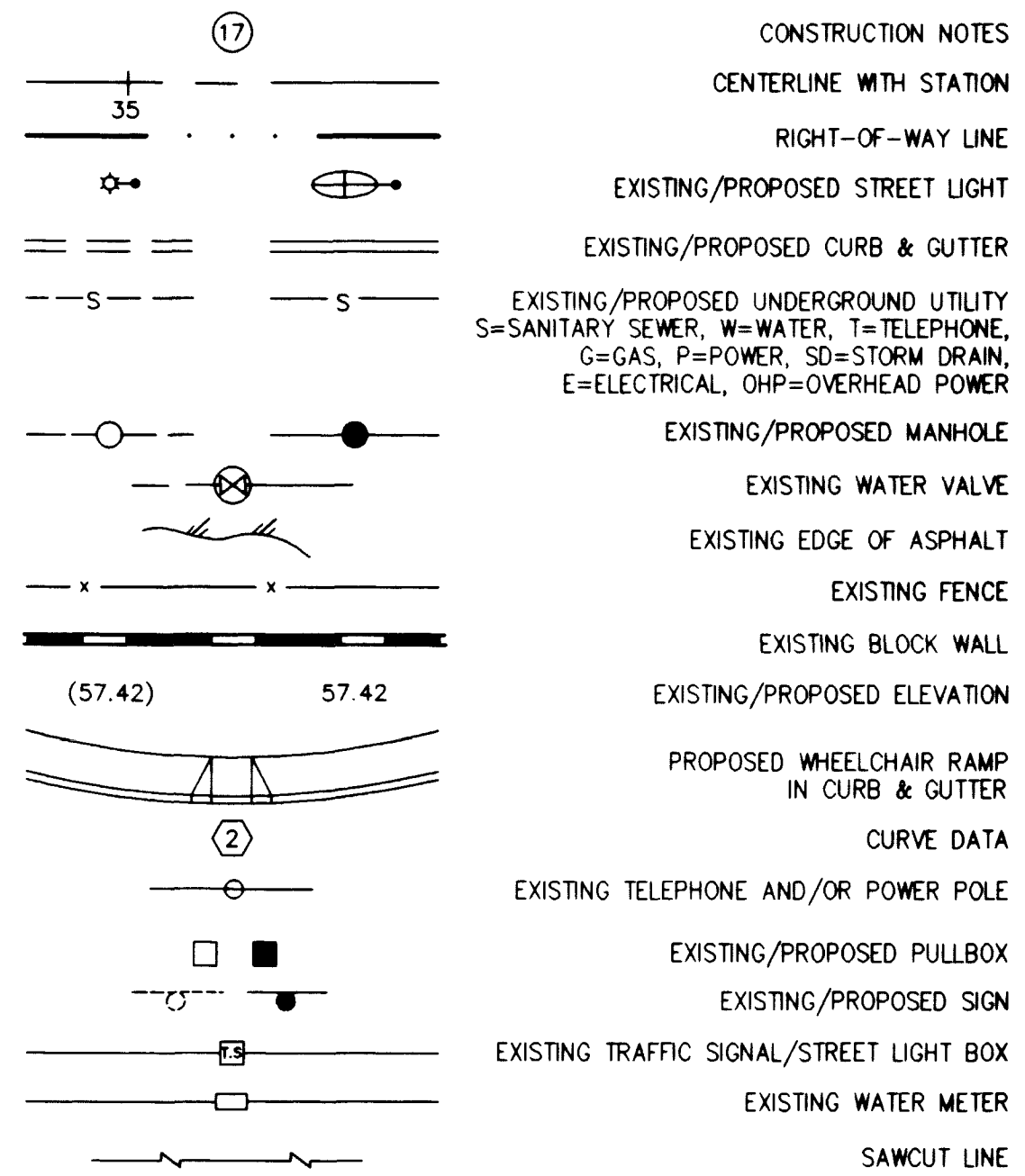


LEGEND



CONSTRUCTION NOTES
 CENTERLINE WITH STATION
 RIGHT-OF-WAY LINE
 EXISTING/PROPOSED STREET LIGHT
 EXISTING/PROPOSED CURB & GUTTER
 EXISTING/PROPOSED UNDERGROUND UTILITY
 S=SANITARY SEWER, W=WATER, T=TELEPHONE,
 G=GAS, P=POWER, SD=STORM DRAIN,
 E=ELECTRICAL, OHP=OVERHEAD POWER
 EXISTING/PROPOSED MANHOLE
 EXISTING WATER VALVE
 EXISTING EDGE OF ASPHALT
 EXISTING FENCE
 EXISTING BLOCK WALL
 EXISTING/PROPOSED ELEVATION
 PROPOSED WHEELCHAIR RAMP
 IN CURB & GUTTER
 CURVE DATA
 EXISTING TELEPHONE AND/OR POWER POLE
 EXISTING/PROPOSED PULLBOX
 EXISTING/PROPOSED SIGN
 EXISTING TRAFFIC SIGNAL/STREET LIGHT BOX
 EXISTING WATER METER
 SAWCUT LINE

ESTIMATE OF ON-SITE QUANTITIES

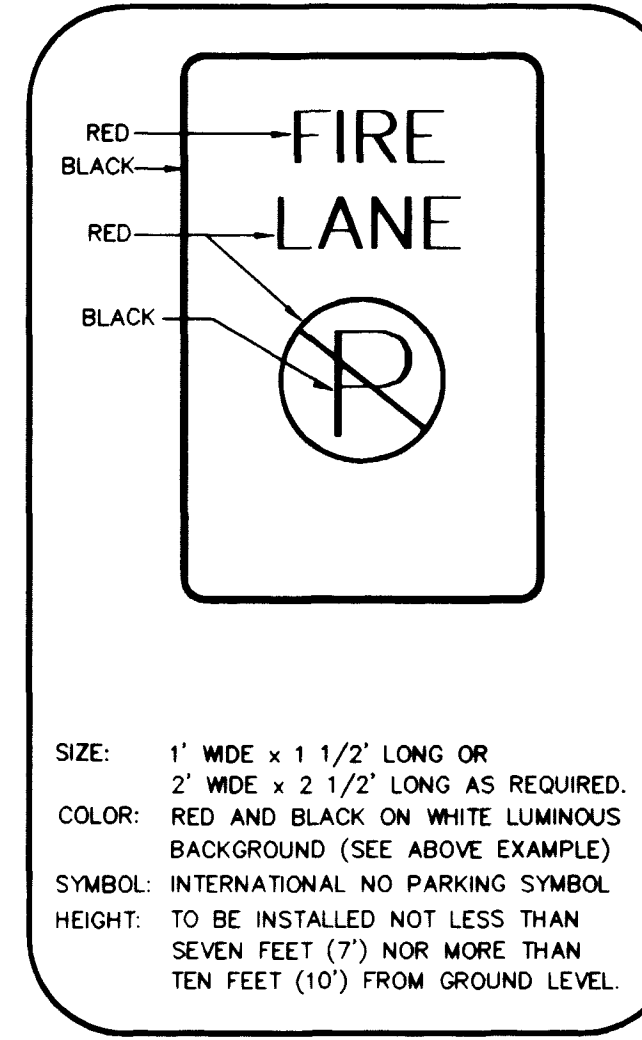
DESCRIPTION	ESTIMATED QUANTITY	UNIT
ON-SITE STREETS		
"A" TYPE CURB AND GUTTER	153	LF
2" AC	3526	SY
4" TYPE II AGGREGATE BASE (DRIVEWAYS ONLY)	392	CY
6" TYPE I AGGREGATE BASE (DRIVEWAYS ONLY)	588	CY
R1-1 SIGN (STOP)	1	Ea
FILL	10,000	CY
FOG SEAL	1.5	Ton
PRIME COAT	3.5	Ton
WATER		
8" PVC WATER MAIN (C-900 - CL150)	723	LF
6" PVC WATER MAIN (C-900 - CL150)	351	LF
FIRE HYDRANT ASSEMBLY (INCLUDING LEAD & GATE VALVE)	3	Ea
8" GATE VALVE AND VALVE BOX	3	Ea
6" GATE VALVE AND VALVE BOX	1	Ea
2" PVC SCH 40 SERVICE LINE	1191	LF
8" DOUBLE CHECK DETECTOR ASSEMBLY PER LVWD	1	Ea
SEWER (PRIVATE)		
6" SDR 35 PVC SEWER LATERAL	182	LF
6" PVC CLEAN OUTS WITH CAPS (NOT INCLUDING BUILDINGS)	5	Ea
8" SDR 35 PVC SEWER LATERAL	78	LF
8" PVC CLEAN OUTS WITH CAPS (NOT INCLUDING BUILDINGS)	1	Ea
4" SDR 35 PVC SEWER LATERAL	48	LF
4" PVC CLEAN OUTS WITH CAPS (NOT INCLUDING BUILDINGS)	2	Ea

ESTIMATE OF OFF-SITE QUANTITIES

DESCRIPTION	ESTIMATED QUANTITY	UNIT
OFF-SITE		
CONCRETE CROSS GUTTER	720	SF
CONCRETE SIDEWALK	1860	SF
TYPE "L" CURB & GUTTER	372	LF
TYPE II AGGREGATE BASE	108	CY
TYPE I AGGREGATE BASE	250	CY
4" AC PAVEMENT	1133	SY
2" AC PAVEMENT	400	SY
4" SEWER MANHOLE	1	EA
8" SDR 35 PVC SEWER LATERAL	17	LF
STREET/STOP SIGNS	1	EA
MISC TRENCHING	200	LF
EXCAVATION & EMBANKMENT	511	CY
WATER SERVICE	1	EA
6" WATER	100	LF
8" WATER	50	LF
FIRE HYDRANT ASSEMBLY (INCLUDING LEAD & GATE VALVE)	1	EA
200W H.P.S. STREET LIGHT	1	EA

ABBREVIATIONS

A.C. ASPHALTIC CONCRETE
 ADJ. ADJUST
 B.C. BACK OF CURB
 B.C.R. BACK OF CURB RADIUS
 B.O.F. BOTTOM OF FOOTING
 B.V.C. BEGIN VERTICAL CURVE
 B.W. BACK OF WALK
 C.C. CLARK COUNTY
 C & G CURB AND GUTTER
 CL CENTER LINE
 CONC. CONCRETE
 CONST. CONSTRUCT or CONSTRUCTION
 D.I. DROP INLET
 DIA. DIAMETER
 DWG. DRAWING
 E.B.C. END BACK OF CURB
 EOP. ELEVATION
 ELEV./EL. EDGE OF PAVEMENT
 E.V.C. END VERTICAL CURVE
 E.W. EACH WAY
 EX./EXIST. EXISTING
 F.G. FINISHED GRADE
 F.H. FIRE HYDRANT
 F.L. FLOW LINE
 G.B. GRADE BREAK
 G.V. GATE VALVE
 INV. INVERT
 L. LENGTH
 L.F. LINEAR FEET
 LT. LEFT
 MAX. MAXIMUM
 M.H. MANHOLE
 MIN. MINIMUM
 M.O. MIDDLE ORDINATE
 N/A. NOT APPLICABLE
 P.C. POINT OF CURVATURE
 P.H. POT HOLED
 P.I. POINT OF INTERSECTION
 P.O.C. POINT ON CURVATURE
 P.O.T. POINT ON TANGENCY
 P.R.C. POINT OF REVERSE CURVATURE
 PROP. PROPOSED
 P.T. POINT OF TANGENCY
 PVC UNPLASTICIZED POLYVINYL CHLORIDE
 R.C.P. REINFORCED CONCRETE PIPE
 R.P. RADIAL POINT
 RT. RIGHT
 R.T.C. REGIONAL TRANSPORTATION COMMISSION
 R/W. RIGHT-OF-WAY
 S.D. STORM DRAIN
 STD. STANDARD
 S.W. SIDEWALK
 T.C. TOP OF CURB
 T.D. TOP OF DECK
 T.O.W. TOP OF WALK
 T.W. TOP OF WALL
 TRANS. TRANSITION
 T.R.W. TOP OF RETAINING WALL
 TYP. TYPICAL
 V.C. VERTICAL CURVE
 V.G. VALLEY GUTTER
 W.M. WATER METER



SIZE: 1' WIDE x 1 1/2' LONG OR
 2' WIDE x 2 1/2' LONG AS REQUIRED.
 COLOR: RED AND BLACK ON WHITE LUMINOUS
 BACKGROUND (SEE ABOVE EXAMPLE)
 SYMBOL: INTERNATIONAL NO PARKING SYMBOL
 TO BE INSTALLED NOT LESS THAN
 SEVEN FEET (7') NOR MORE THAN
 TEN FEET (10') FROM GROUND LEVEL.

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 #3944.
- AUTHORIZED HYDRANTS FOR THIS PROJECT ARE:
 A. KENNEDY GUARDIAN
 B. MUELLER A-423 CENTURIAN
 C. 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.
- THE CONTRACTOR SHALL PLACE A BLUE REFERENCE MARKER AT THE CENTERLINE OF STREET ADJACENT TO FIRE HYDRANT AS REQUIRED IN ORDINANCE #3944 TO IDENTIFY FIRE HYDRANT LOCATIONS.
- CALL THE LAS VEGAS BUILDING DEPARTMENT AT 229-2071 FOR UNDERGROUND INSPECTION, PRESSURE AND FLUSH VERIFICATION OF ALL FIRE HYDRANTS AND FIRE LINES BEFORE COVERING.
- 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.
- A PERMIT IS REQUIRED FROM THE FIRE DEPARTMENT FOR ON-SITE WATER LINE AND FIRE HYDRANTS. 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.
- PRIVATE FIRE HYDRANTS SHALL BE PAINTED RED.
- 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 A.W.W.A. APPROVED.
- FIRE HYDRANT SPACING:
 RESIDENTIAL - 500 FEET UNSPRINKLERED, 1,000 FEET SPRINKLERED
 COMMERCIAL, INCLUDING MULTI-FAMILY - 300 FEET UNSPRINKLERED, 600 SPRINKLERED
- 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 TRANSPORTATION HAZARDS.
- 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.
- NO FIRE HYDRANT SHALL BE LOCATED WITHIN 6 FEET OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREET LIGHT OR ANY OTHER OBSTRUCTION.
- TWO SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE ARE 4 OR MORE FIRE HYDRANTS INSTALLED ON A SINGLE SYSTEM.
- NOT MORE THAN 2 HYDRANTS CAN BE OUT OF SERVICE DUE TO A SINGLE MAIN BREAK.
- FIRE APPARATUS ACCESS ROADS 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 13 FEET 6 INCHES.
- 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 EXCEPTION IN UFC 94, SECTION 902.2)
- ALL DEAD END FIRE APPARATUS ACCESS ROADS AND/OR FIRE LINES, PUBLIC OR PRIVATE, IN EXCESS OF 150 FEET IN LENGTH, SHALL BE PROVIDED WITH AN APPROVED TURN AROUND AREA. (SEE ORDINANCE #3944)
- 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 OF 100 FEET ALONG ALL DESIGNATED FIRE LINES. 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 PRESENT, 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.

CITY OF LAS VEGAS SEWER NOTES

- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE DESIGN AND 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 CURB WHERE SEWER OR GAS LATERALS PASS UNDER THE CURB.
- POLYVINYL (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 FOOT RIGHT-OF-WAY AND LARGER, SHALL HAVE CONCRETE COLLARS.
- TEE SADDLES SHALL BE USED TO CONNECT SEWER LATERALS TO EXISTING MAIN LINES UP TO 12 INCHES DIAMETER SIZE. CONNECTIONS TO 15 INCHES OR LARGER MAINS SHALL REQUIRE SPECIAL PROCEDURES.
- A SEWER MAIN CROSSING OVER A WATER MAIN OR LATERAL OR LESS THAN 18 INCHES UNDER A WATER MAIN MUST EITHER BE ENCASED WITH REINFORCED CONCRETE, OR USE EXTRA HEAVY CAST IRON PIPE, OR USE WATER SUPPLY QUALITY MATERIALS FOR A DISTANCE NOT LESS THAN TEN FEET (10') TO EACH SIDE OF THE CENTERLINE OF THE WATER MAIN OR LATERAL.
- 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.

LAS VEGAS VALLEY WATER DISTRICT NOTES

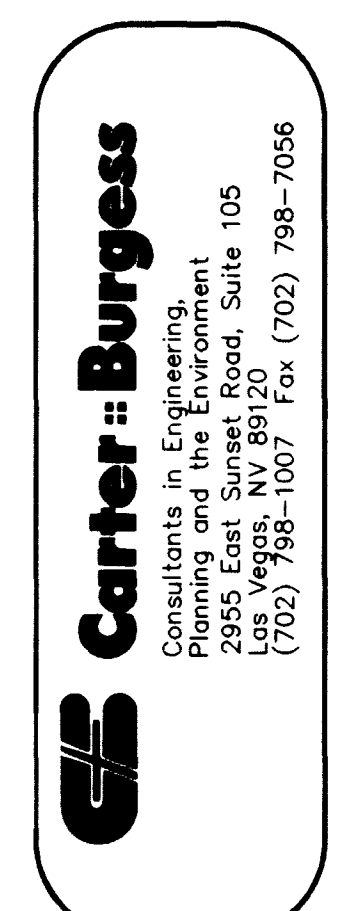
- NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN RELEASED FOR CONSTRUCTION BY THE LVWD. FOLLOWING WATER PLAN APPROVAL, 48 HOUR NOTICE MUST BE GIVEN TO THE LVWD COMMUNICATION SUPPORT CENTER (258-7171) PRIOR TO THE START OF CONSTRUCTION. NOTICE MUST BE GIVEN BY 2:00 P.M. THE BUSINESS DAY PRIOR TO A LVWD INSPECTION.
- ALL WORK SHALL CONFORM TO THE LVWD'S STANDARD PLATES, DRAWINGS 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 OFFSITE IMPROVEMENTS, CLARK COUNTY AREA.
- A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVWD.
- ALL SERVICE LATERALS TWO (2)" INCHES IN DIAMETER AND LESS 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 DRIVEWAY AREAS, VALLEY AND CURB GUTTERS.
- THE FOLLOWING REQUIREMENTS MUST BE MET IN THE EVENT A WATER LINE AND SANITARY OR STORM SEWER LINE CROSS:
 A. A MINIMUM EIGHTEEN (18) INCH VERTICAL SEPARATION (OUTSIDE TO OUTSIDE) MUST BE MAINTAINED WHEN THE WATER LINE IS INSTALLED UNDER 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, 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) INCHES CONCRETE (MINIMUM),
 c. SLEEVING WITH POTABLE WATER QUALITY PIPE.
 EACH PROVISION MUST EXTEND ALONG THE SANITARY OR STORM SEWER, ON EITHER SIDE OF THE MAIN A MINIMUM OF TEN FOOT DISTANCE PERPENDICULAR TO THE WATER MAIN EXTERIOR.
- 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.
- 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 (2) INCHES AND SMALLER FROM LVWD CENTRAL STORES. TELEPHONE 258-3152 FORTY-EIGHT (48) HOURS PRIOR TO PICKUP.
- CONSTRUCTION MAY INTERRUPT SERVICE, WITH LVWD APPROVAL AND PROPER NOTIFICATION, BETWEEN THE HOURS OF 10 P.M. AND 6 A.M., SUNDAY THROUGH THURSDAY. CIRCUMSTANCES MAY REQUIRE TEMPORARY SERVICE FEEDS BE INSTALLED, WITHOUT LVWD REIMBURSEMENT. ANY TEMPORARY SERVICE FEED MUST HAVE PRIOR LVWD APPROVAL.
- ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LVWD'S APPROVED MATERIALS AND MANUFACTURERS LISTING FOR NEW FACILITIES, LATEST REVISION, OR SPECIFICALLY APPROVED ON THESE PLANS.



REVISIONS

No.	Date

DESIGNED: L.L.P.
 DRAWN: L.L.P.
 CHECKED: D.T.
 JOB No: 982022
 HORIZ: N/A
 VERT: N/A
 DATE: OCT 98



PROJECT: BUFFALO HIGHLANDS APARTMENTS
 PHASE X

NOTES and
 ESTIMATE OF QUANTITIES

SHEET
 2 OF 8

