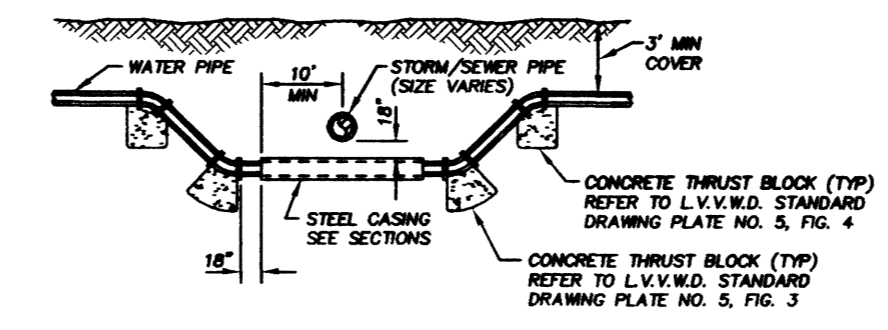


BENCHMARK

CLARK COUNTY VERTICAL CONTROL, CLARK COUNTY SURVEYOR
 T205, R60E, SW QUARTER REFERENCE NUMBER 3 BENCHMARK NAME
 10004W6
 A RIVET AND SQUARE ALUMINUM PLATE, STAMPED BM NO. 10004W6,
 IN AN ELECTRICAL TRANSFORMER PAD, 175 FEET WEST OF AL
 GARRISON STREET, ON THE SOUTH SIDE OF CRAIG ROAD.
 ELEVATION = 726.815 METERS (NAVD '88)
 ELEVATION = 2384.56 FEET (NAVD '88)

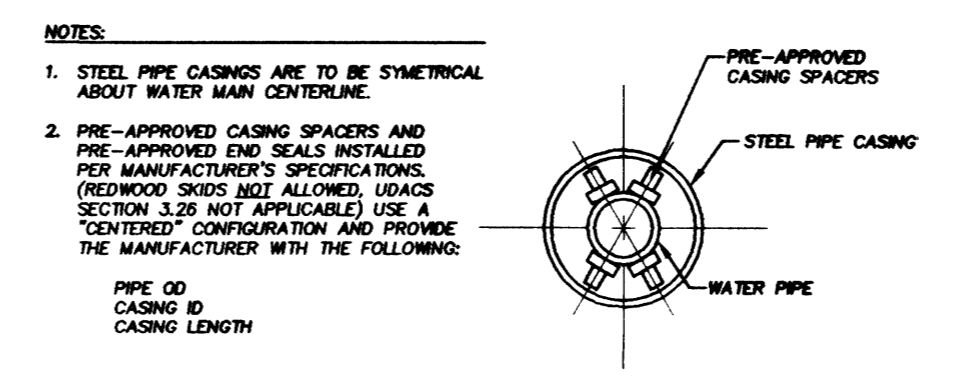
BASIS OF BEARING

NORTH 87°08'54" EAST, BEING THE SOUTH LINE OF THE SOUTHWEST
 QUARTER OF THE SOUTHWEST QUARTER OF SECTION 1, TOWNSHIP 20
 SOUTH, RANGE 59 EAST, M.D.M., CLARK COUNTY, NEVADA AND BEING
 THE CENTERLINE OF ALEXANDER ROAD, AS SHOWN BY MAP ON FILE
 IN BOOK 89 OF SURVEYS, PAGE 03 OF OFFICIAL RECORDS, CLARK
 COUNTY, NEVADA RECORDS.



WHERE THE WATER LINE IS LESS THAN 18 INCHES OVER THE SEWER LINE, WHERE THE WATER LINE IS UNDER THE SEWER
 LINE, AND WHERE THE HORIZONTAL SEPARATION, AS REQUIRED BY THE WATER SUPPLY REGULATIONS, CANNOT BE
 MAINTAINED BECAUSE OF PHYSICAL OBSTRUCTIONS, THE WATER LINE SHALL BE PROTECTED BY CONSTRUCTION OF THE
 STORM/SEWER LINE AS FOLLOWS:
 1. EXTRA HEAVY CAST IRON PIPE
 2. WATER SUPPLY QUALITY MATERIALS; OR
 3. ENCASMENT WITH FOUR INCHES, MINIMUM, OF CONCRETE
 OR SLEEVING WITH WATER SUPPLY QUALITY PIPE.
 EACH OF THESE PROVISIONS SHALL ALSO BE EXTENDED FOR OTHER THAN 90 DEGREE CROSSINGS TO THE POINT AT
 WHICH THE TEN FOOT SEPARATION BETWEEN THE WATER AND SEWER LINES IS ACHIEVED (10/90 OF CROSSING ANGLE).

TYPICAL CASING SECTION

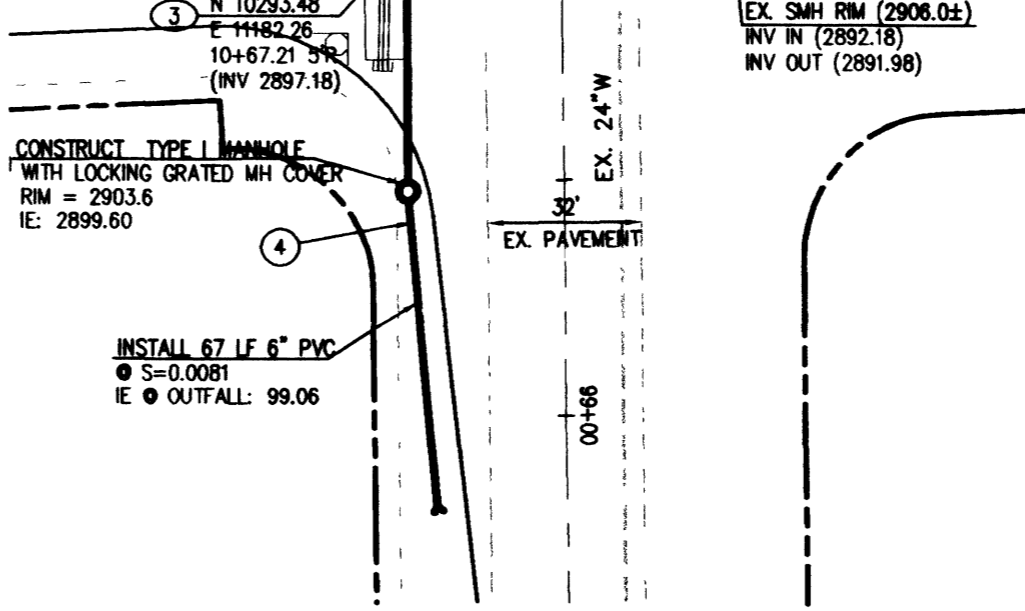


NOTES:
 1. STEEL PIPE CASINGS ARE TO BE SYMMETRICAL
 ABOUT WATER MAIN CENTERLINE.
 2. PRE-APPROVED CASING SPACERS AND
 PRE-APPROVED END SEALS SHALL BE INSTALLED
 PER MANUFACTURER'S SPECIFICATIONS.
 (REDWOOD SHOULD NOT BE USED). LOADS
 SECTION 3.25 NOT APPLICABLE. USE A
 CENTERED CONFIGURATION AND PROVIDE
 THE MANUFACTURER WITH THE FOLLOWING:
 PIPE OD
 CASING ID
 CASING LENGTH
 1. STEEL PIPE CASING SHALL BE FABRICATED FROM A MINIMUM OF 1/4" THICK STEEL PLATES, CONFORMING TO THE
 REQUIREMENTS OF ASTM A368, GRADE B, C, OR D. ALL JOINTS SHALL BE WELDED. INTERIOR JOINTS SHALL BE
 GROUNDED TO A SMOOTH FINISH, ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH ANNA 2201, ANNA
 STANDARD FOR FABRICATED ELECTRICALLY WELDED STEEL WATER PIPE. COATINGS ARE NOT
 REQUIRED.
 2. PIPE CASING SHALL BE LAID TRUE TO LINE AND GRADE WITH NO BENDS OR CHANGES IN GRADE FOR THE FULL
 LENGTH OF THE CASING.
 3. THE PIPE SHALL BE SUPPORTED AT EACH END OF EACH JOINT WITH SKIDS. THE ANNUAL SPACE BETWEEN THE
 PIPE AND THE CASING SHALL BE BACKFILLED WITH SAND. AFTER INSTALLATION OF THE PIPE, THE CASING SHALL
 BE SEALED AT BOTH ENDS WITH MORTARED BRICK OR CEMENT BRICK.

STORM/SEWER/WATER CROSSING DETAIL

NOT TO SCALE

MATCHLINE SEE BOTTOM LEFT



PRIVATE ST. / DRIVE NOTE:

ALL ONSITE PRIVATE STREETS / PRIVATE DRIVES ARE
 P.U.E.'S, PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS
 TO BE PRIVATELY MAINTAINED HOA.

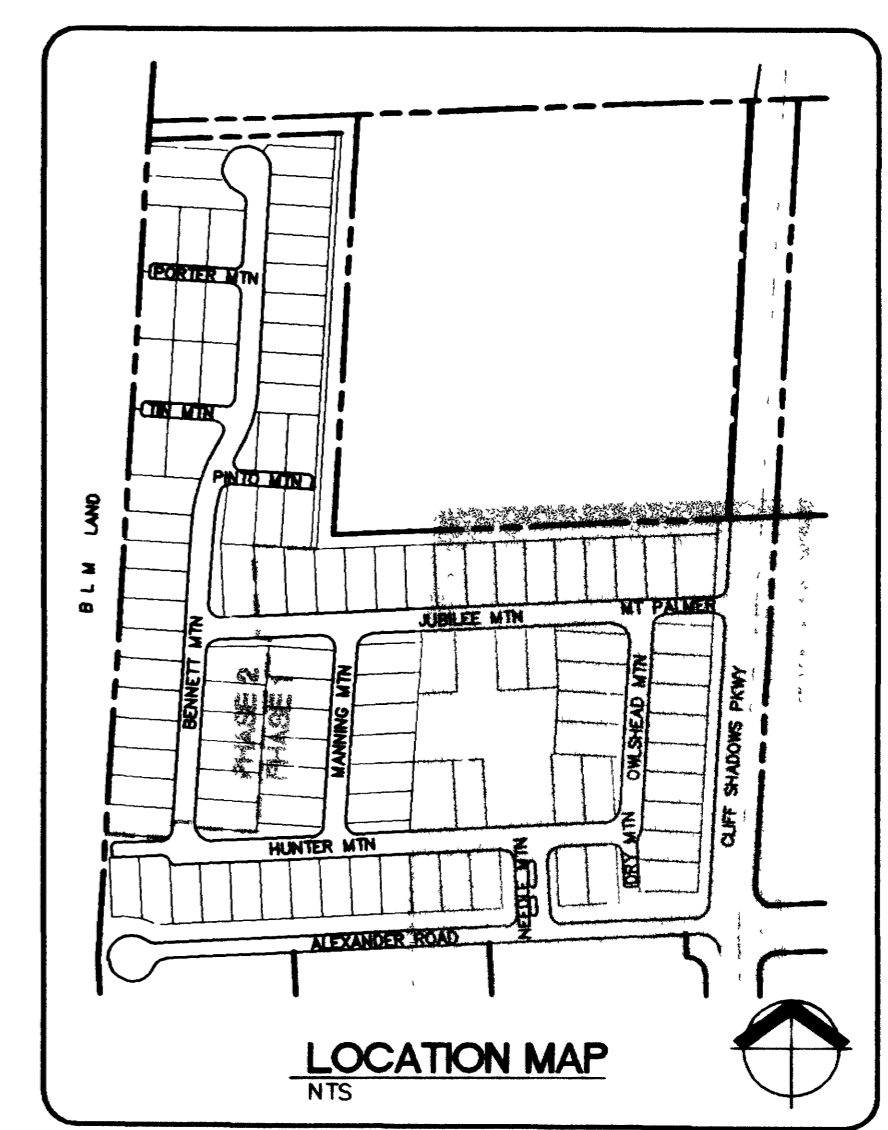
PROJECT NAME: KIMBALL HILL HOMES • LONE MOUNTAIN WEST UNIT 1
 THIS PROJECT WATER PLAN COMPLIES WITH THE LAS VEGAS VALLEY WATER
 DISTRICT'S TECHNICAL REQUIREMENTS. HOWEVER, THIS WATER PLAN IS
 NOT APPROVED FOR CONSTRUCTION.

AT THIS TIME AND THIS SIGNATURE DOES NOT PROVIDE OR IMPLY A WATER
 COMMITMENT.

LAS VEGAS VALLEY WATER DISTRICT DATE

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE



WATER CONSTRUCTION NOTES

- 1. REMOVE EXISTING CAP AND TIE PROPOSED 12" WATER TO EXISTING WATER LINE
- 2. INSTALL 8"x8"x8" TEE WITH THRUST BLOCK PER UDACS PLATE #60
- 3. INSTALL FIRE HYDRANT ASSEMBLY PER UDACS PLATE #7 (INCLUDING ALL VALVES, TEES, THRUST BLOCKS AND APPURTENANCES)
- 4. INSTALL 1" LATERAL AND 5/8" DOMESTIC WATER METER PER UDACS PLATE #18
- 5. INSTALL 1-1/2" IRRIGATION METER WITH 1-1/2" RPPA PER UDACS PLATE # 1D AND 11A
- 6. INSTALL 8" CAP AND 2" BLOW-OFF ASSEMBLY PER UDACS PLATE #4
- 7. INSTALL 8"x8"x8" TEE WITH THRUST BLOCK PER UDACS PLATE #5
- 8. INSTALL 8" GATE VALVE
- 9. INSTALL 8" 90° BEND WITH THRUST BLOCK PER UDACS PLATE #5
- 10. INSTALL 8" 45° BEND WITH THRUST BLOCK PER UDACS PLATE #5
- 11. INSTALL 6" CAP AND 2" BLOWOFF ASSEMBLY PER UDACS PLATE NO. 4
- 12. CONSTRUCT 8" WET TAP TO EXISTING 24" LINE W/ 24"x8" TAPPING TEE & 6" TAPPING VALVE.

STORM DRAIN CONSTRUCTION NOTES

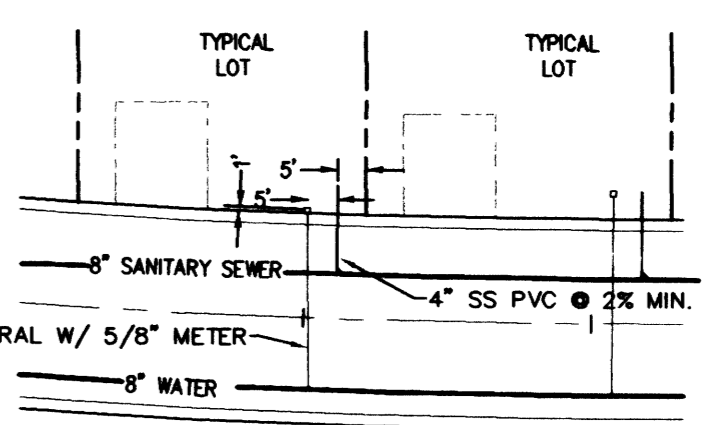
- 1. CONSTRUCT MODIFIED TYPE "C" D.I. PER DETAIL SHEET 13
- 2. CONSTRUCT TYPE 1 MANHOLE WITH LOCKING GRATED COVER
- 3. CONSTRUCT 18" RCP
- 4. CONSTRUCT 6" PVC

SEWER CONSTRUCTION NOTES

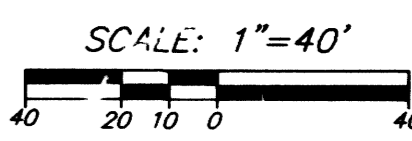
- 1. INSTALL 48" SANITARY SEWER MANHOLE PER SOUTHERN NEVADA DESIGN AND CONSTRUCTION STANDARDS FOR WASTE WATER COLLECTION SYSTEMS, 1997. SD-1.
- 2. INSTALL 8" PVC SEWER MAIN
- 3. TIE PROPOSED SANITARY SEWER TO EXISTING SEWER
- 4. 4" SANITARY SEWER LATERAL SLOPE AT 2% MIN.
- 5. INSTALL SEWER BACK WATER VALVE ON LOTS SHOWN.

SEWER CONTRIBUTION

AVG. DAILY FLOW = (250 GPD/LOT) 250gpd x 62 lots = 0.0155 MGD
 PEAK DAILY FLOW = (MGD)(3.5) = 0.015 = 0.0543 MGD



TYPICAL LATERAL DETAIL



DATE	8/27/01	DESIGNED BY	B. JONES
ENGINEER	J. HITCHEN	CHECKED	
SCALE	1" = 40' HORIZ	PROJECT NO.	KHH003
SHEET TITLE: UTILITY PLAN SHEET NUMBER: MU-2 C5 OF 20 CLV DRAWING NO. 307 Y-4678-1			

43923 36811