

WATER NOTE:

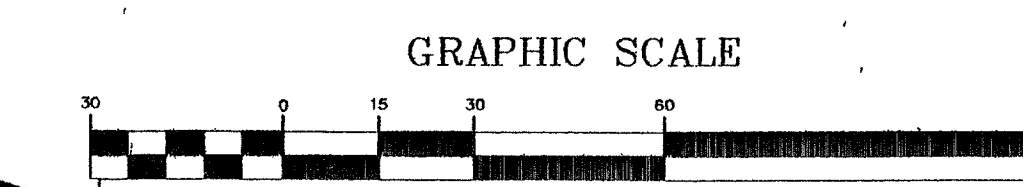
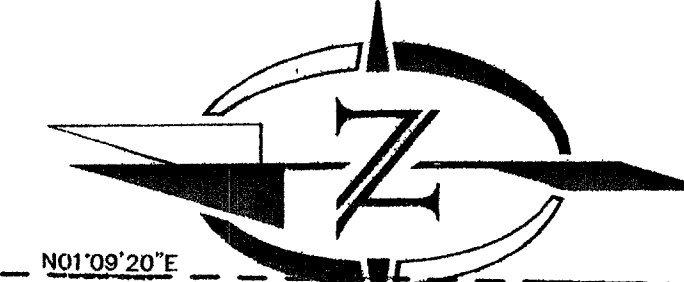
1. ALL CONSTRUCTION AND MATERIAL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS (UDACS) EXCEPT FOR PROJECTS SERVED BY THE VIRGIN VALLEY WATER DISTRICT

SEWER NOTE:

1. ALL CONSTRUCTION AND MATERIAL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF UNIFORM DESIGN AND CONSTRUCTION STANDARD FOR WASTE WATER COLLECTION SYSTEM FOR SOUTHERN NEVADA

DISCLAIMER NOTE:

UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION



BENCHMARK

LAS VEGAS VERTICAL CONTROL, V.2003 POINT # 61V90 175568, BEING A RIVET & ROUND PLATE IN CONCRETE CYLINDER AT THE 1/4-38" NORTH OF ELKHORN ROAD CENTERLINE AT THE INTERSECTION OF EL CAPITAN WAY. ELEVATION: 2564.67 (FEET)

781.713 (METERS)

NORTH AMERICAN VERTICAL DATE OF 1988 (NAVD88)

BASIS OF BEARING

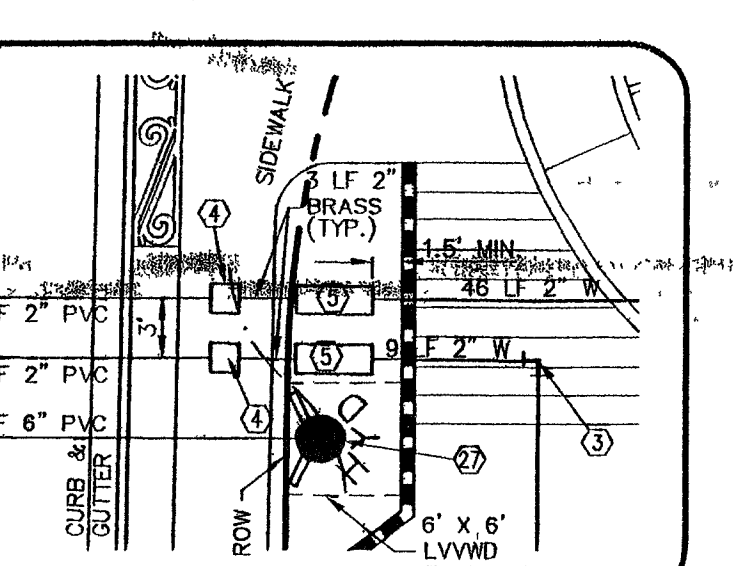
NORTH 00°07'03" WEST, BEING THE CENTERLINE OF EL CAPITAN WAY AS PER RECORD FILE 118 PAGE 0098 OF OFFICIAL RECORDS, CLARK COUNTY, NEVADA

QUANTITIES

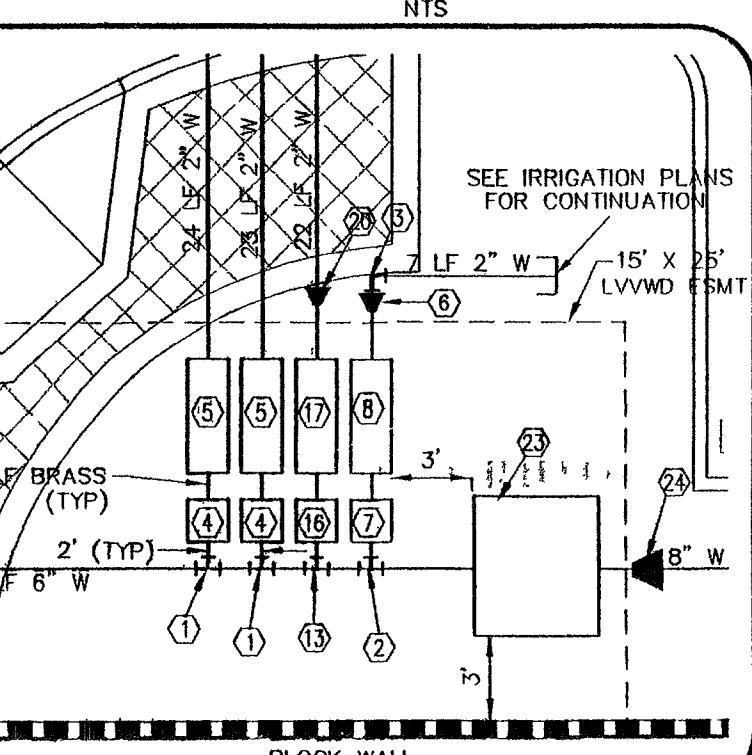
	WATER	PUBLIC	PRIVATE
1 1/2" WATER METER	1 EA		
2" WATER METER	4 EA		
1" WATER METER	1 EA		
1 1/2" RPPA		1 EA	
2" RPPA		1 EA	
6" DCDA		2 EA	
FIRE HYDRANT		2 EA	
8" GATE VALVE		2 EA	
48" SSMH		3 EA	
1200 GAL GREASE INTERCEPTOR		2 EA	
CLEAN OUT		2 EA	

SEWER CONTRIBUTION

* AVE. DAILY = 2,546 GPM
 **PEAK DAILY = 8,402 GPM
 * AVE. DAILY = 0.10 GALLONS PER SQ. FT. PER DAY
 * AVE. DAILY = 36,667 S.F. (0.10 GAL/SQ. FT./DAY)
 = 3666.7 GPD = 2,546 GPM
 **PEAK DAILY = 3.3 (AVE.)
 = 3.3 X 2,546 GPM = 8,402 GPM



DETAIL "A" NTS



DETAIL "B" NTS

WATER AND SEWER MAIN CROSSING NOTE

PER UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS 2003, 2.19.01

A. THE FOLLOWING SEPARATIONS MUST BE MAINTAINED BETWEEN ALL STORM AND SANITARY SEWER LINES WHICH PARALLEL WATER LINES SIX (6) INCHES AND LARGER.

1) WATER MAINS AND SEWER LINES SHALL BE INSTALLED IN SEPARATE TRENCHES WITH AT LEAST TEN (10) FEET OF SEPARATION MEASURED HORIZONTALLY FROM EXTERIOR PIPE WALLS.

2) SEWER LINES SHALL BE PLACED LOWER THAN WATER MAINS WHENEVER POSSIBLE.

PER UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS 2003, 2.19.02

B. WHERE THE WATER MAIN IS BELOW THE SEWER MAIN, OR WHERE THE WATER MAIN IS ABOVE THE SEWER MAIN WITH A VERTICAL SEPARATION LESS THAN EIGHTEEN (18) INCHES, THE FOLLOWING PROVISIONS SHALL APPLY:

1) A REASONABLE EFFORT MUST BE MADE TO PLACE WATER AND SEWER PIPELINE JOINTS AN EQUAL DISTANCE FROM THE CROSSING POINT. THIS REQUIREMENT DOES NOT APPLY TO WELDED JOINTS.

2) A VERTICAL SEPARATION OF NO LESS THAN SIX (6) INCHES MUST BE MAINTAINED AND STRUCTURAL SUPPORT FOR THE SEWER AND/OR WATER MAIN BE DETERMINED BY THE ENGINEER AND APPROVED BY THE AGENCY HAVING JURISDICTION.

3) THE SEWER MAIN WILL BE CONSTRUCTED ONE OF THE FOLLOWING OPTIONS, IN THE FOLLOWING PRIORITY:

a. THE SEWER MAIN MUST BE CONSTRUCTED OF WATER SUPPLY QUALITY MATERIALS MEETING AWWA STANDARDS

b. THE SEWER MAIN (DEPENDING ON FIELD CONDITIONS) SHALL BE TOTALLY ENCASED IN A MINIMUM OF FOUR (4) INCHES OF CEMENT SLURRY (300 PSI +/-) FOR A DISTANCE OF TEN (10) FEET ON EACH SIDE OF THE CROSSING. ENCASEMENT WILL NOT BE PERMITTED FOR ASBESTOS CEMENT PIPE

c. THE SEWER MAIN OR WATER MAIN MAY BE INSTALLED IN A SLEEVE OF WATER QUALITY PIPE WHICH EXTENDS, WITHOUT JOINTS, TEN (10) FEET ON EACH SIDE OF THE MAIN (SEE UDACS PLATE 15)

d. THE ENGINEER MAY PETITION THE AGENCY FOR APPROVAL TO ENCASE THE WATER MAIN (DEPENDING ON FIELD CONDITIONS) IN A MINIMUM OF FOUR (4) INCHES OF CEMENT SLURRY (300 PSI +/-) FOR A DISTANCE OF TEN (10) FEET ON EACH SIDE OF THE CROSSING. ENCASEMENT WILL NOT BE PERMITTED FOR ASBESTOS CEMENT PIPE

STORM DRAIN CONSTRUCTION NOTES

1) CONNECT NEW 18" RCP TO PROPOSED MANHOLE. (MANHOLE PROPOSED BY WHITNEY HEIGHTS PROJECT & DESIGNED BY THOMSON CONSULTING ENGINEERS.

2) INSTALL 17.5" TYPE "CM" WITH "6 NUMBER GRATES" PER CLV STANDARDS SEE DETAIL ON SHEET C6.01.

3) INSTALL TYPE I MANHOLE PER CAUSD #403.

SEWER CONSTRUCTION NOTES

1) INSTALL 48" SANITARY SEWER MANHOLE PER WASTEWATER COLLECTION SYSTEMS STANDARDS #50-1

2) INSTALL 1200 GALLON JENSEN GREASE INTERCEPTOR MODEL 1200EE

3) INSTALL 24" JENSEN SAMPLING BOX MODEL 2432-Z

4) INSTALL 6" SEWER CLEAN OUT

CLV FIRE FLOW CALCULATIONS

FIRE FLOW REQUIREMENT IS 2,000 GALLONS PER MINUTE AT 20 PSI RESIDUAL PRESSURE.

BASED ON SQUARE FOOTAGE: 23,067 SQUARE FEET

LARGEST AREA BETWEEN 4-HOUR AREA SEPARATION WALLS: 23,067 SQUARE FEET

BUILDING HEIGHT: 35 FEET

NUMBER OF STORIES: 2 FLOORS

TYPE OF CONSTRUCTION: V-N

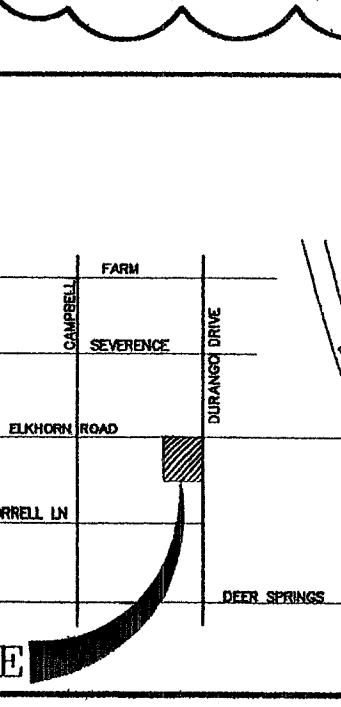
OCCUPANCY: M-MERCHANT RETAIL

FULL AUTOMATIC FIRE SPRINKLER SYSTEM: YES CNO (ALL BUILDINGS)

REVIEWED BY: [Signature] DATE: 6/8/03

LAS VEGAS VALLEY WATER DISTRICT APPROVAL

	STATIC PRESSURE	MAX. DAILY USE
BUILD A	61.18 PSI	
BUILD B	61.18 PSI	
BUILD C	63.21 PSI	56 GPM
BUILD D	63.27 PSI	
BUILD E	63.93 PSI	



WATER CONSTRUCTION NOTES

1) INSTALL 2" WATER SERVICE SADDLE WITH CORP. STOP PER UDACS PL #10

2) INSTALL 1" WATER SERVICE SADDLE WITH CORP. STOP PER UDACS PL #10

3) INSTALL 2" 90° BEND

4) INSTALL 2" RPPA PER UDACS PL #11A

5) INSTALL 2" x 1" REDUCER

6) INSTALL 1" WATER METER PER UDACS PL #10 (IRRIGATION)

7) INSTALL 1" RPPA PER UDACS PL #11A (IRRIGATION)

8) INSTALL 2" 45° BEND

9) INSTALL 12" x 6" TEE WITH THRUST BLOCKS PER UDACS PL #5

10) INSTALL 4" 90° BEND PER UDACS PL #5

11) INSTALL 8" x 8" TEE WITH THRUST BLOCK PER UDACS PL #5

12) INSTALL 1 1/2" WATER SERVICE SADDLE WITH CORP. STOP PER UDACS PL #10

13) INSTALL 4" x 4" TEE WITH THRUST BLOCK PER UDACS PL #5

14) INSTALL 1 1/2" 90° BEND

15) INSTALL 1 1/2" WATER METER PER UDACS PL #10

16) INSTALL 1 1/2" RPPA PER UDACS PL #11A

17) INSTALL 1 1/2" x 1" REDUCER

18) INSTALL 8" GATE VALVE PER UDACS PL #3

REDUCED PRESSURE PRINCIPLE ASSEMBLY (4) 2" - (1) 1 1/2" - (1) 1"

APPROVED REDUCED PRESSURE PRINCIPLE ASSEMBLY(S) SHALL BE INSTALLED PER THE UDACS 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 LVWD

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.

EASEMENTS SHALL BE CLEARLY MARKED OR STAKED PRIOR TO THE STATE OF CONSTRUCTION.

INSTALLATION OF DOUBLE CHECK DETECTOR ASSEMBLY (2) - 6"

THE DOUBLE CHECK DETECTOR ASSEMBLY SHALL BE INSTALLED IN ACCORDANCE WITH THE UDACS STANDARD PLATE 11C.

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.

EASEMENTS SHALL BE CLEARLY MARKED OR STAKED PRIOR TO THE STATE OF CONSTRUCTION

PIPE MATERIAL CONSTRUCTION LIST

UNLESS OTHERWISE NOTED ON THE PLANS, ALL PIPE MATERIALS USED SHALL BE AS FOLLOWS:

WATER SYSTEM
 ALL PIPES GREATER THAN 4" IN DIAMETER SHALL BE CONSTRUCTED USING PVC C-900
 ALL PIPES LESS THAN 4" IN DIAMETER SHALL BE CONSTRUCTED USING PVC SCH 40

SEWER SYSTEM
 ALL PIPES SHALL BE CONSTRUCTED USING SDR-35

STORM DRAIN SYSTEM
 ALL PIPES SHALL BE CONSTRUCTED USING MATERIALS AS NOTED ON PLANS

EASEMENT NOTE:

THIS IS A RECORDED COMMERCIAL SUBDIVISION. ALL PROPERTY, THAT IS NOT DIRECTLY UNDER A BUILDING FOOTPRINT, IS A COMMON UTILITY EASEMENT, FOR SEWER, WATER, FIRE AND ELECTRICAL, REGARDLESS OF ANY AND ALL "PROPERTY LINES".

Call before you Dig
 1-702-455-7511
 CLARK COUNTY TRAFFIC OPERATIONS
 1-702-229-6611
 FREQUENT AND ANNUAL SYSTEMS OF TRANSPORTATION

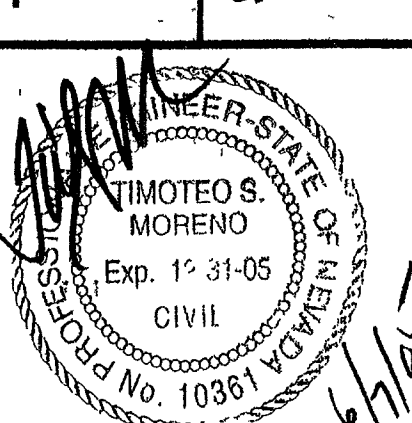
AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY!
 CALL BEFORE YOU DIG
 1-702-227-2929

AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY!
 Call before you Dig
 1-800-227-2600
 UNDERGROUND SERVICE (USA)

90372

TITLE: DURANGO / ELKHORN COMMERCIAL CENTER (AKA TOWN CENTER PLAZA)

SHEET: UTILITY PLAN



SHEET C4.01
 107V4343

REVISION APPROVAL BLOCK

SCALE: 1"=30'

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 SUBMITTAL DATE: 6/8/03
 2480 E. Tompkins Ave., Suite # 232, Las Vegas, NV 89121
 phone: 702.456.4864 fax: 702.456.4919

INTEGRITY ENGINEERING

JOB NO: 41-104