ABBREVIATIONS
(SEE CVR. SHT. FOR COMPLETE LIST)

AC	ASPHALTIC CONCRETE
ADJ	ADJUST
AGG	AGGREGATE
BC	BACK OF CURB
BCR	BEGINNING OF CURB RETURN
BEG	BEGIN
BSW	BACK OF SIDEWALK
BVC	BEGINNING OF VERTICAL CURVE
CATV	CABLE TV
CCAUSD	CLARK COUNTY AREA UNIFORM STANDARD DRAWING
CCRFCD	CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT
CL	CENTERLINE
CLV	CITY OF LAS VEGAS
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COMM	COMMUNICATIONS
CONC	CONCRETE
COND	CONDUIT
CULV	CULVERT
DC	DEPRESSED CURB
DI	DROP INLET
DIP	DUCTILE IRON PIPE
DOM	DOMESTIC
ELEC	ELECTRIC
EAC	EDGE OF AC
EC	END OF CURVE
ECR	END OF CURB RETURN
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EVC	END OF VERTICAL CURVE
EX	EXISTING
FAST	FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FO	FIBER OPTICS
FS	FINISHED SURFACE GAS
GB	GRADE BREAK
HDPE	HIGH DENSITY POLYETHYLENE
HDWL	HEADWALL
HGL	HYDRAULIC GRADE LINE
HP	HIGH POINT
INV	INVERT
IRR	IRRIGATION
LAT	LATERAL
LF	LINEAL FEET
LS	LANDSCAPE
LT	LEFT
LVVWD	LAS VEGAS VALLEY WATER DISTRICT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MTR	METER
NDOT	NEVADA DEPARTMENT OF TRANSPORTATION
PB	PULL BOX
PL	PROPERTY LINE
PP	POWER POLE
PROP	PROPOSED
PVC	POLY VINYL CHLORIDE PIPE
PVMT	PAVEMENT
RT	RIGHT
ROW	RIGHT-OF-WAY
SS	SANITARY SEWER
SD	STORM DRAIN
SNWA	SOUTHERN NEVADA WATER AUTHORITY
STA	STATION
STLT	STREET LIGHT
SVZ	SIGHT VISIBILITY ZONE
SW	SIDEWALK
TEL	TELEPHONE
TC	TOP OF CURB
TF	TOP OF FOOTING
TW	TOP OF WALL
TYP	TYPICAL
UDACS	UNIFORM DESIGN AND CONSTRUCTION STANDARDS
VG	VALLEY GUTTER
WL	WATER LINE

LEGEND

DESCRIPTION	EXISTING	PROPOSED
UTILITIES		
B.O. VALVE		
FIRE HYDRANTS		
CLEAN OUT		
GATE VALVE		
METER		
REDUCER		
CAP		
11.25° ELBOW		
22.5° ELBOW		
45° ELBOW		
90° ELBOW		
CROSS		
TEE		
MANHOLES		
ELECTRICAL		Ⓔ
SANITARY SEWER		Ⓢ
STORM DRAIN		Ⓓ
TELEPHONE		Ⓣ
STREET LIGHTS		
100W HPS STLT.		
150W HPS STLT.		
200W HPS STLT.		
250W HPS STLT.		
400W HPS STLT.		
GRADING		
SPOT ELEV.	(12.3±) TC	12.34 TC
SLOPE	(1.2%±)	1.23%
5' CONT.		
1' CONT.		
SITE		
SIGN		
"L" CURB		
"A" CURB		
EDGE OF PVMT.		
WALL		

LINE TYPES

CL OR SECTION LINE
PROPERTY LINE
RIGHT OF WAY LINE
EASEMENT LINE
SAWCUT LINE
FLOW LINE

SHADES

HEAVY AC PAVEMENT
LIGHT AC PAVEMENT
CONCRETE PAVEMENT

DUAL REDUCED PRESSURE PRINCIPLE ASSEMBLY (2) 8"

APPROVED DUAL REDUCED PRESSURE PRINCIPLE ASSEMBLY9S) SHALL BE INSTALLED PER THE UDACS PLATE NO. 57. 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. EASEMENT SHALL BE CLEARLY MARKED OR STAKED PRIOR TO THE START OF CONSTRUCTION.

THIS PROPERTY MAY HAVE STATIC WATER PRESSURE IN EXCESS OF 80 PSI. THE UNIFORM PLUMBING CODE REQUIRES THAT INDIVIDUAL, ON-SITE (PRIVATE), PRESSURE-REDUCING VALVES BE INSTALLED WHENEVER THE PRESSURE EXCEEDS 80 PSI. PRV'S ARE THE DEVELOPER'S RESPONSIBILITY, AND WILL NOT BE INSPECTED OR INCLUDED IN THE ACCEPTANCE OF LVVWD FACILITIES.

THE DISTRICT CANNOT GUARANTEE A WATERTIGHT SHUTDOWN WHERE CONNECTIONS OR REPAIRS TO EXISTING FACILITIES ARE REQUIRED. THE CONTRACTOR SHALL ENSURE ALL LABOR AND EQUIPMENT IS AVAILABLE TO REMOVE FUGITIVE WATER THAT MAY IMPEDE CONSTRUCTION AT ALL TIMES. COORDINATION WITH INSPECTION DIVISION MUST TAKE PLACE PRIOR TO ANY TRIAL SHUTDOWN. CONTRACTOR TO INSTALL TEMPORARY SERVICE TO ENSURE PROPER SHUTDOWN IN THE EVENT NO OTHER APPURTENANCES ARE AVAILABLE.

WATER MAIN JOINT DEFLECTION (PVC, 4"-24")
PVC PIPE SHALL BE DEFLECTED AT THE JOINT ONLY. THE MAXIMUM ALLOWABLE DEFLECTION SHALL BE ONE (1) DEGREE PER JOINT WITH A MINIMUM RADIUS OF CURVATURE OF 1,150 FEET, PER UDACS 2.07.01 AND 2.07.02. FOR CHANGES IN DIRECTION EXCEEDING THE MAXIMUM ALLOWABLE JOINT DEFELCTION, FITTINGS SHALL BE USED.

INSTALL PIPELINE MARKER BALLS IN TRENCH ABOVE EACH HORIZONTAL ELBOW FITTING, PER UDACS PLATE NO. 15.

INSTALLATION OF METER AND VAULT
(1) 8"X4" FMCT TYPE I:

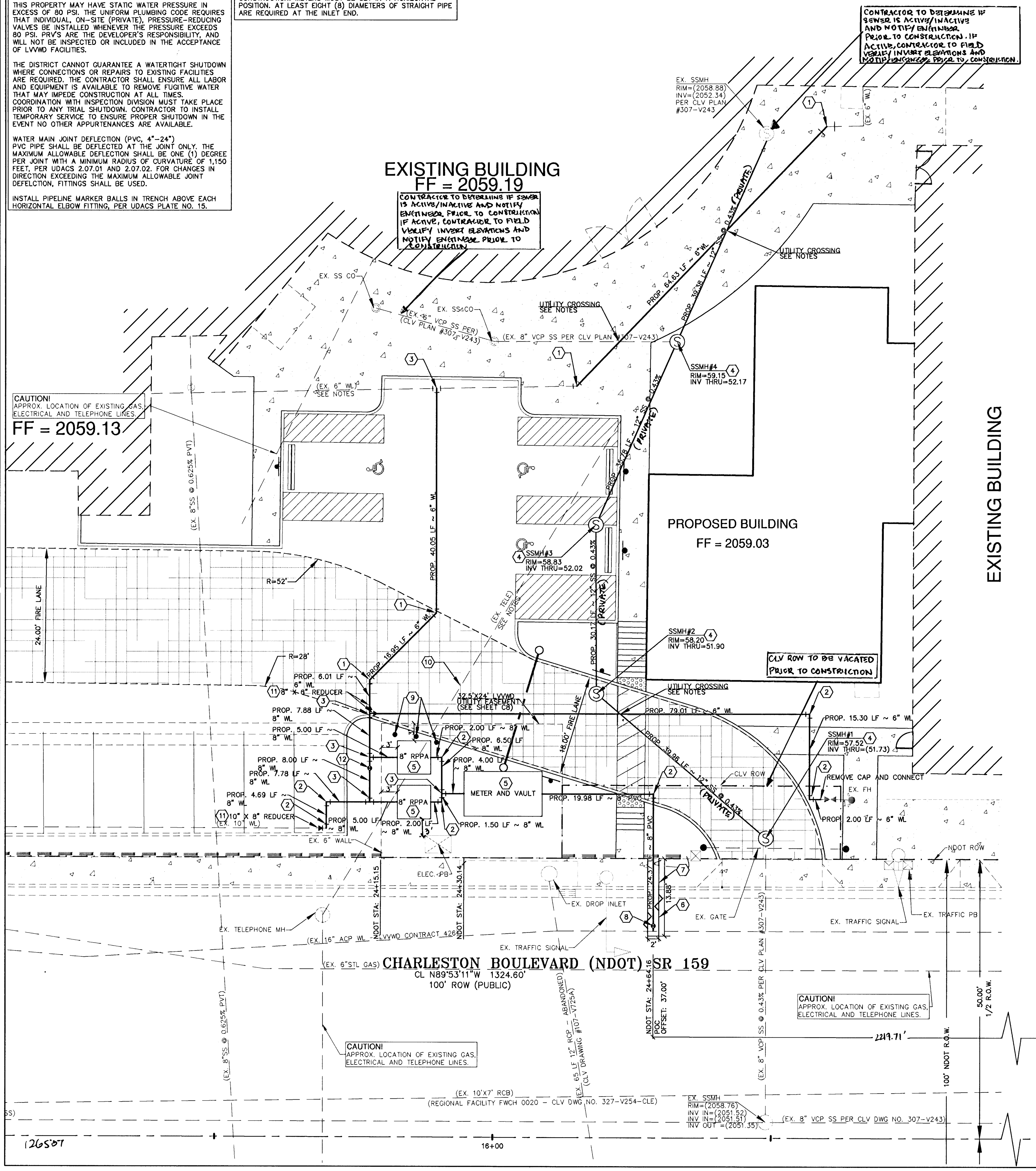
THE METER(S) AND VAULT(S) WITH NON-TRAFFIC BEARING COVER(S) SHALL BE INSTALLED IN ACCORDANCE WITH THE UDACS PLATE NO. 53, AND WITH UDACS STANDARD VAULT DRAWING C-475, LATEST REVISION. ANY BLOCK WALL OR OTHER FENCE MATERIAL SHALL BE DESIGNED AND CONSTRUCTED AROUND THE OUTSIDE OF THE EASEMENT(S) TO ALLOW THE DISTRICT DIRECT ACCESS TO THE VAULT(S) FROM THE ADJACENT RIGHT-OF-WAY. EASEMENTS SHALL BE CLEARLY MARKED OR STAKED PRIOR TO THE START OF CONSTRUCTION. METERS MUST BE SET IN A HORIZONTAL POSITION. AT LEAST EIGHT (8) DIAMETERS OF STRAIGHT PIPE ARE REQUIRED AT THE INLET END.

NEVADA DEPARTMENT OF TRANSPORTATION (NDOT) PERMIT REQUIRED

AN APPROVED NDOT OCCUPANCY PERMIT SHALL BE OBTAINED THROUGH THE DISTRICT PRIOR TO ANY CONSTRUCTION WITHIN THE NDOT RIGHT-OF-WAY. PLANS SHOWING WORK IN NDOT RIGHT-OF-WAY MUST SHOW NDOT STATIONING. THE DEVELOPER ASSUMES ALL LIABILITY FOR WORK CONDUCTED UNDER THE DISTRICT OBTAINED PERMIT THROUGH WARRANTY EXPIRATION.

APPROVED FOR CONSTRUCTION

[signature] 02/22/11
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER — DATE:
LVVWD PROJECT # 116706



WATER AND SEWER CONSTRUCTION NOTES:

- ALL WATER AND SEWER CONSTRUCTION TO BE DONE IN ACCORDANCE WITH "UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS (U.D.A.C.S.)" LATEST EDITION AND D.C.S.W.C.S..

1. INSTALL 45° BEND W/THRUST BLOCK (SAME SIZE AS PIPE) PER U.D.A.C.S. PLATE No. 31.
2. INSTALL 90° BEND W/THRUST BLOCK (SAME SIZE AS PIPE) PER U.D.A.C.S. PLATE No. 31.
3. INSTALL TEE (SAME SIZE AS PIPES). PER U.D.A.C.S. PLATE No. 31.
4. INSTALL 48" SANITARY SEWER MANHOLE PER D.C.S.W.C.S. PLATE SD-1
5. INSTALL TYPE I 8"X4" FMCT TYPE I METER WITH DUAL 8" RPPA'S PER U.D.A.C.S. PLATE No. 53 & 57.
6. TRENCH AND BACKFILL PER NDOT DETAIL ON SHEET C8
7. SAWCUT, REMOVE AND REPLACE PAVEMENT AND SIDEWALK TO MATCH EXISTING.
8. INSTALL 16"X8" MJ (OR APPROVED EQUAL) TAPPING SLEEVE WITH 8" TAPPING VALVE PER U.D.A.C.S. PLATE No. 34.
9. INSTALL VEHICULAR PROTECTION BOLLARDS PER UDACS PLATE No. 75.
10. RE-ROUTE EXISTING TELEPHONE LINES AROUND LVVWD EASEMENT.
11. INSTALL REDUCER W/ THRUST BLOCK (SAME SIZES AS PIPE) PER U.D.A.C.S PLATE No. 30.
12. INSTALL GATE VALVE (SAME SIZE AS PIPE) PER U.D.A.C.S. PLATES No. 30 AND No. ~~32~~ 39.

NOTE:

NO CONSTRUCTION SHALL OCCUR IN NDOT RIGHT-OF-WAY UNTIL ISSUANCE OF NDOT PERMIT.

NOTE:

EXISTING UTILITIES SHOWN ON THIS SHEET ARE SHOWN PER INFORMATION PROVIDED BY THE OWNER AND THE ENITITIES. CIVILWORKS IS NOT RESPONSIBLE FOR EXISTING UTILITY LOCATIONS SHOWN ON THESE PLANS. CONTRACTOR IS TO POTHOLE AND VERIFY EXISTING UTILITY LOCATIONS, DEPTHS AND INVERTS AND NOTIFY ENGINEER/ARCHITECT OF ANY CONFLICTS PRIOR TO CONSTRUCTION.

INVERT NOTE:

EXISTING SANITARY SEWER INVERTS WERE TAKEN FROM CLV AS-BUILT DRAWINGS. CONTRACTOR TO VERIFY INVERTS AND NOTIFY OWNER/ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

UTILITY CROSSING NOTE:

THE FOLLOWING REQUIREMENTS MUST BE MET IN THE EVENT A WATER LINE AND SANITARY OR STORM SEWER LINE CROSS (INCLUDES "FIRE WATER LINES"): A MINIMUM OF EIGHTEEN (18") INCH VERTICAL SEPARATION (OUTSIDE) WALL TO OUTSIDE WALL) MUST BE MAINTAINED WHEN THE WATER LINE IS INSTALLED OVER THE SANITARY LINE OR STORM SEWER LINE OR "FIRE WATER" 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 (4") INCH CONCRETE (MINIMUM).
C. SLEEVE WITH POTABLE WATER SUPPLY QUALITY PIPE.

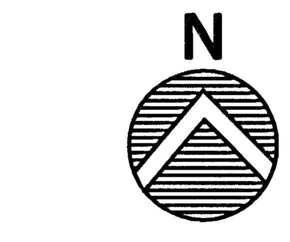
EACH PROVISION MUST EXTEND ALONG THE SANITARY OR STORM SEWER OR "FIRE WATER" ON EITHER SIDE OF THE MAIN A MINIMUM OF TEN (10) FOOT DISTANCE PERPENDICULAR TO THE WATER MAIN EXTERIOR. (PER UDACS 2-22.02)

FIRE FLOW CALCULATIONS

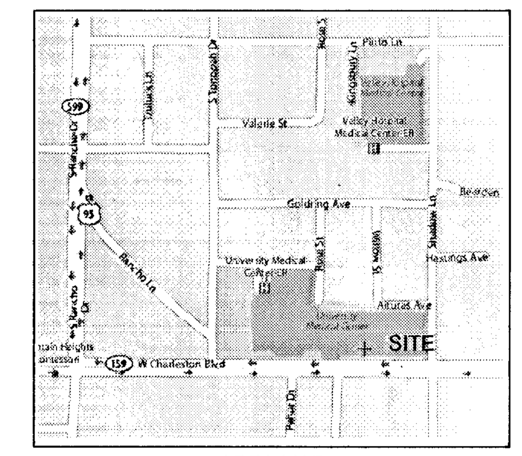
BASED ON:

SQUARE FOOTAGE (ADDITION):	~~2,481~~ 16207
LARGEST AREA BETWEEN SEPARATION WALL:	NA
BUILDING HEIGHT (ADDITION):	18'
NUMBER OF STORIES:	1
TYPE OF CONSTRUCTION:	II-B
EXPOSURES:	–
SPRINKLER SYSTEM:	YES – WATER SUPPLY FROM EX. BLDG
OCCUPANCY:	B
ROOF CONSTRUCTION: RESIDUAL:	–
FLOW REQUIRED @ 20 PSI	1500 GPM
MAX. STORAGE HEIGHT:	NA

EX. STATIC WATER PRESSURE IS 140± psi IN STREET.



GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 INCH = 10 ft



AREA MAP
T 20S R 61E S33

NOTICE: POINT OF CONNECTION

CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO CONSTRUCTION ACTIVITIES AND CONSTRUCTION OF SANITARY SEWER AND SEWER LATERALS OF ALL INVERT ELEVATIONS. ONCE INVERT INFORMATION IS RECEIVED, THE SLOPE AND INVERTS WILL BE REVISED ACCORDINGLY. IF THE CONTRACTOR DOES NOT PROVIDE THE INFORMATION, THE ENGINEER WILL NOT BE RESPONSIBLE FOR THE SANITARY SEWER DESIGN.

SEWER/WATER MAIN LOCATION NOTE:

CONTRACTOR TO FIELD LOCATE AND VERIFY EXISTING WATER AND SEWER LINE LOCATIONS PRIOR TO CONSTRUCTION NOTIFY OWNER, ARCHITECT & ENGINEER IN CASE OF DISCREPENCIES.

UTILITY CROSSING NOTE:

CONTRACTOR SHALL LOCATE ALL UTILITIES. WHERE UTILITY CROSSINGS EXIST, THE CONTRACTOR SHALL CONSTRUCT UTILITIES PER CODE. THE CONTRACTOR IS RESPONSIBLE TO REPAIR ANY UTILITIES DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES.

NOTE:

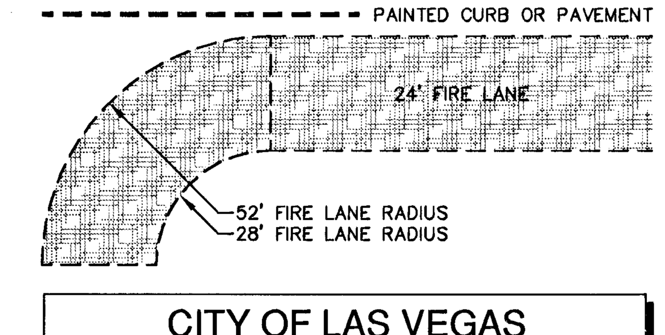
CONTRACTOR TO INCLUDE COST OF UNDERGROUND UTILITY DETECTION COMPANY TO LOCATE AND MARK ALL EXISTING UTILITIES PRIOR TO ANY DEMOLITION OR EXCAVATION. ENGINEER TO BE PROVIDED WITH AS-BUILT SKETCH OF EXISTING UTILITIES, AND IS TO BE NOTIFIED IMMEDIATELY OF ANY POTENTIAL CONFLICTS WITH PROPOSED UTILITIES AND/OR FINISHED GRADES.

NOTE:

REMOVAL OF EXISTING ACTIVE UTILITIES TO BE PHASED AS DIRECTED BY OWNER.

FIRE ACCESS LEGEND:

PAINTED CURB OR PAVEMENT



CITY OF LAS VEGAS FIRE DEPARTMENT APPROVAL

BY: [signature] DATE: 1/31/11

APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR, OR AN APPROVAL OF, ANY VIOLATION OF ANY OF THE PROVISIONS OF THE STATE OR COUNTY LAWS. FIRE FLOW 1500 GPM AT 20 P.S.I. RESIDUAL.

BASIS OF BEARING

NORTH 89°54'59" WEST BEING THE CENTERLINE OF PINTO LANE AS SHOWN BY MAP THEREOF ON FILE IN BOOK 123, PAGE 37 OF PLATS, LYING WITHIN THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 33, TOWNSHIP 20 SOUTH, RANGE 61 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: OLV01 33W6 (NAVD 88) RIVET AND PLATE IN TOP OF CURB AT SOUTHEAST CORNER OF ALTA & SHADOW LN

ELEV. = 625.7337 (METRIC)
2052.93 (US SURVEY FEET)
2008 ADJUSTED VALUE = 625.692 (METRIC)
2052.79 (US SURVEY FEET)
NOTE: THE SUBJECT SITE WAS SURVEYED BEFORE THE 2008 ADJUSTED VALUE WAS ADOPTED. THEREFORE, SITE GRADING SHOWN ON THE PLANS ARE BASED OFF OF THE 2052.93 ELEVATION.

H #39833

SAFETY ALERT
Call Before You Overhead 1-702-227-2929
AVOID HITTING UNDERGROUND TRAFFIC SIGNAL AND STREET LIGHT SYSTEM CONDUITS IT'S COSTLY
Call before you UnderGround 1-702-455-7511 C.C. TRAFFIC OPERATIONS AND 1-702-432-5300 LV AREA COMPUTERIZED TRAFFIC SYS.
Call before you Dig. Avoid cutting underground utility lines. It's costly.
Call 811
1-800-227-2600 AND CLARK COUNTY TRAFFIC OPERATIONS 1-702-455-7544

UTILITY PLAN

#	DATE:	REVISION DESCRIPTION:

CONSULTANT LIST:
HMH Surveying Inc
7625 DEAN MARTIN DRIVE, SUITE 101
LAS VEGAS, NEVADA 89139
OFFICE #: (702) 256-7850
FACSIMILE #: (702) 256-1710

NVCI CANCER CENTER
AT CHARLESTON BLVD. AND SHADOW LANE

DEVELOPER: NEVADA CANCER INSTITUTE
1 BREAKTHROUGH WAY
LAS VEGAS, NEVADA 89135
CONTACT: STEVE ARCHER
PHONE: 702-822-5400

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PROJ. No.	98609096.00	DATE	31Jan11
PROJ. ENGR.	BAP	TECH'N	DJA
PROJ. MGR.	DJA	ENGR CHK.	BAP

PRINTS REQUIRE ENGINEER'S SEAL AND SIGN FOR PROOF OF VALIDITY

PROFESSIONAL ENGINEER STATE OF NEVADA
BRANDON A. POTTS
Exp: 12/31/11
CIVIL
No. 13121
1/31/11

SHEET #: C6
6 OF 8

10nv5585