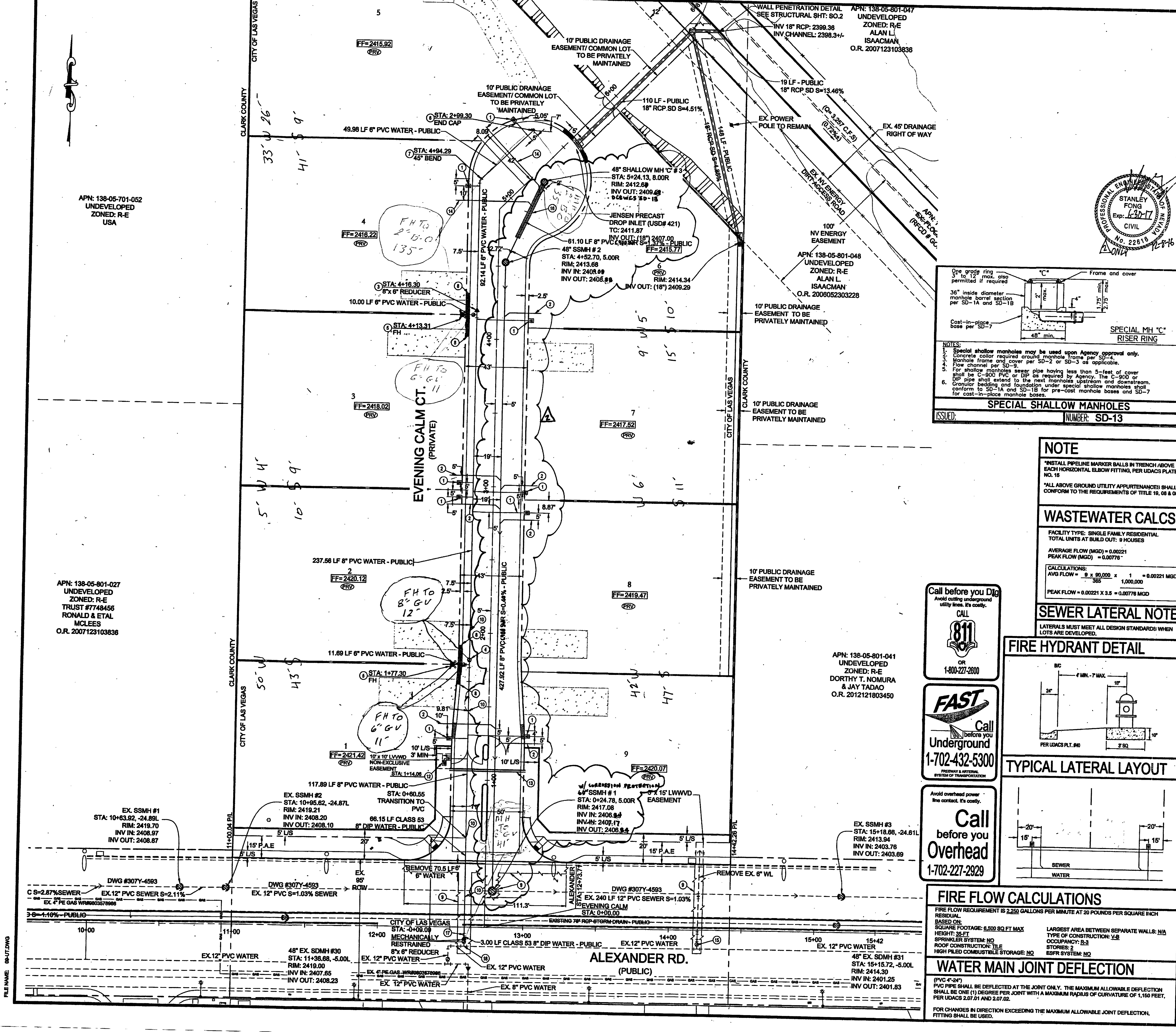




LEGEND		
	EXISTING	PROPOSED
CENTERLINE		
RIGHT-OF-WAY		
CUT LINE-ASPHALT		
CURB AND GUTTER		
FENCE		
POWER POLE		
CURB DROP INLET		
STORM DRAIN MANHOLE		
SIDEWALK		
PROPERTY LINE		
EDGE OF PAVEMENT		
CAP & 2' BLOW OFF VALVE		
WATERLINE FITTINGS		
GATE VALVE		
FIRE HYDRANT		
SEWER LINE MANHOLE		
SEWER LATERAL		
WATER LINE		
WATER LATERAL WIMETER		
PRESSURE REDUCING VALVE		
BACK WATER VALVE		

UTILITY DISCLAIMER NOTE

EXISTING UTILITY LOCATIONS SHOWN HEREIN ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND 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 LOCATIONS. CALL BEFORE YOU DIG: 1-800-227-2600. CALL BEFORE YOU OVERHEAD: 1-702-227-2929.

UTILITY NOTES

1. ALL WATER FACILITIES CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE "UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS" (UDACS), LATEST EDITION.
2. FIRE, WATER, AND SEWER SERVICES, AS APPROVED ON THIS PLAN, ARE INTENDED SPECIFICALLY FOR THE LOT, AND ARE NOT INTENDED TO BE CREATED IN THE FUTURE. IN THE EVENT THAT THE PARCELS AND/OR LOTS SHOWN ON THIS PLAN ARE FURTHER DIVIDED TO CREATE ADDITIONAL PARCELS OR LOTS, THE OWNER IS REQUIRED TO PROVIDE SEPARATE FIRE, WATER, & SEWER SERVICES TO EACH.
3. WATER AND SEWER LATERALS SHALL BE INSTALLED A MINIMUM OF 48" APART IN SEPARATE TRENCHES. WATER LATERALS SHALL BE A MINIMUM OF 12" ABOVE THE SEWER LATERAL (REF. UNIFORM PLUMBING CODE).
4. LOCATOR WIRE SHALL BE USED FOR ALL SERVICE LATERALS NOT PERPENDICULAR TO THE MAIN (TYPICAL).
5. ALL SEWER/STORM DRAINS CROSSING WATER LINES MUST CONFORM TO SECTION 2.22 OF "UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS" (UDACS) FOR WATER AND STORM MAIN CROSSINGS AND CLEARANCES.
6. ALL WORK TO BE PERFORMED OUTSIDE OF THE PROJECT BOUNDARY AND ON PRIVATE PROPERTY SHALL NOT BE PERFORMED UNTIL WRITTEN PERMISSION AND EASEMENTS HAVE BEEN OBTAINED FROM THE OFFSITE OWNER AND GIVEN TO CLARK COUNTY.
7. ALL ONSITE STREETS AND DRAINAGE EASEMENTS ARE TO BE PRIVATELY OWNED AND MAINTAINED.

ABANDON VALVES CUT AND CAP

ALL VALVES TO BE ABANDONED SHALL BE ABANDONED IN THE CLOSED POSITION, UNLESS SHOWN OTHERWISE, BY REMOVING A MINIMUM OF THE TOP TWENTY-FOUR (24) INCHES OF VALVE BOX, AND THEN FILLING THE BOTTOM OF THE BOX WITH A MINIMUM OF EIGHT (8) INCHES OF SAND OR TYPE II AGGREGATE BASE. THE REMAINING PORTION OF THE VALVE BOX SHALL BE FILLED WITH CONCRETE HAVING A COMPRESSIVE STRENGTH OF AT LEAST TWO THOUSAND (2000) PSI. THE LATERAL MUST BE CUT WITHIN ONE (1) FOOT OF THE EXISTING VALVE, OR AS SHOWN ON PLANS, AND CAPPED. THE CONTRACTOR SHALL CUT THE EXISTING WHERE SHOWN ON DRAWINGS AND INSTALL A CAP COMPLETE WITH THRUST BLOCK, WHERE A JOINT OR CURBING IN THE EXISTING PIPE IS UNCOVERED AT THE CUT AND CAP LOCATIONS. THE INSTALLATION OF A PLUG MAY BE PERMITTED WITH THE DISTRICT APPROVAL. A CONCRETE THRUST BLOCK SHALL BE INSTALLED AT ALL CAP OR PLUG LOCATIONS IN ACCORDANCE WITH THE PROVISIONS OF UDACS PLATE 31.

CONSTRUCTION NOTES

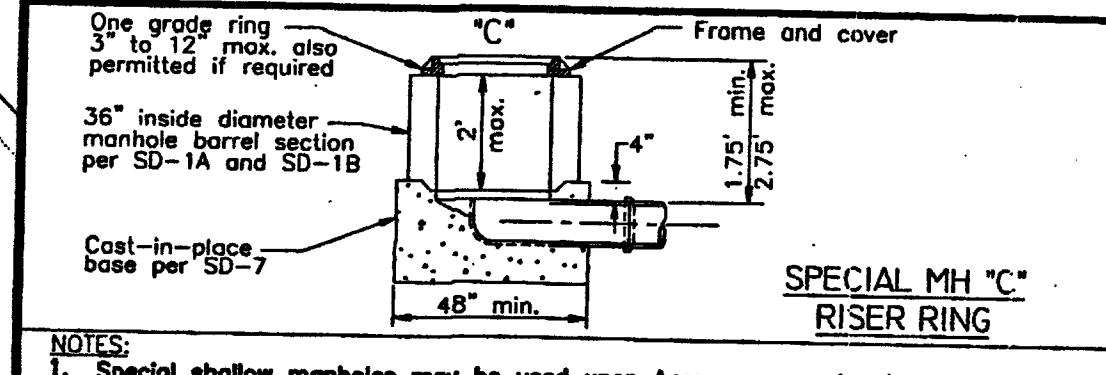
1. 1" WATER SERVICE W/ 1" METER (UDACS PLT. 4)
2. 1" SEWER LATERAL (UDACS PLT. 30)
3. 8" GATE VALVE (UDACS PLT. 30)
4. FIRE HYDRANT ASSEMBLY W/ 8" GATE VALVE (UDACS PLT. 40) - PUBLIC
5. 1" BLOW-OFF ASSEMBLY (UDACS PLT. 38)
6. 8" 45° HORIZONTAL WATERLINE BEND (UDACS PLT. 31)
7. PAINT CURB RED 18" EACH SIDE OF HYDRANT (CURB LENGTH PERMITTING)
8. TRENCH, BACKFILL, & PAVEMENT RESTORATION PER CCALSD # 503, 500.4
9. DEFLECT WATER LINE HORIZONTALLY UP TO 1" AS NEEDED
10. REMOVE CAP AND BLOW OFF PER UDACS PLATE NO. 36 AND CONNECT TO EXISTING MAIN
11. 1" IRRIGATION METER W/ 1" RPPA (UDACS PLT. 4 & 8)
12. 2" 4" PVC IRRIGATION CONDUIT
13. 4" C900 SEWER LATERAL
14. CUT AND CAP LATERAL AND ABANDON VALVE PER NOTE ON THIS SHEET
15. AND REMOVE ALL EX. 8" WL OFF THIS LATERAL
16. CONCRETE CAP PER CCSCWS SD #21
17. 8" 45° VERTICAL CLASS 53 DIP BEND MECHANICALLY RESTRAINED
18. EXISTING 6" 12" TEE W/ 8" GATE VALVE, PROTECT IN PLACE



DATE: 4/26/2016
SCALE: 1"=30'
JOB NO: THM-13-002
DESIGNED BY: JFD
CHECKED BY: RH
SHEET NAME: UT1
SHEET: 09 OF 10
10745038
CLV 57982

APPROVAL SIGNATURES

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER (PROJ. 121893)
L.V.W.D. APPROVED FIRE FLOW: 2,250 G.P.M. AT 20 PSI RESIDUAL
4/28/16
LAS VEGAS FIRE DEPARTMENT
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 = 2,250 G.P.M. AT 20 PSI RESIDUAL.



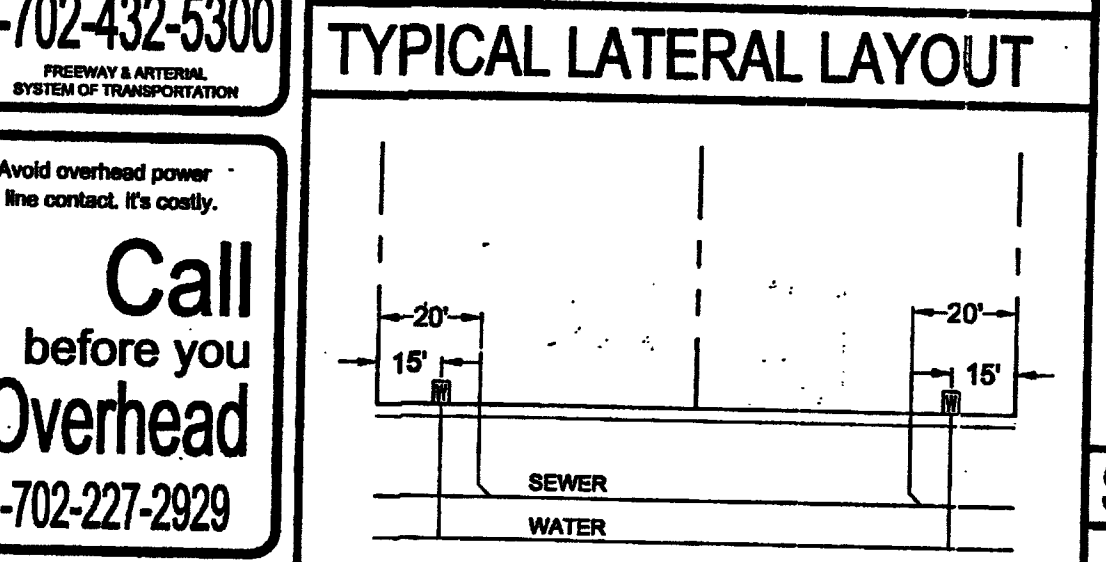
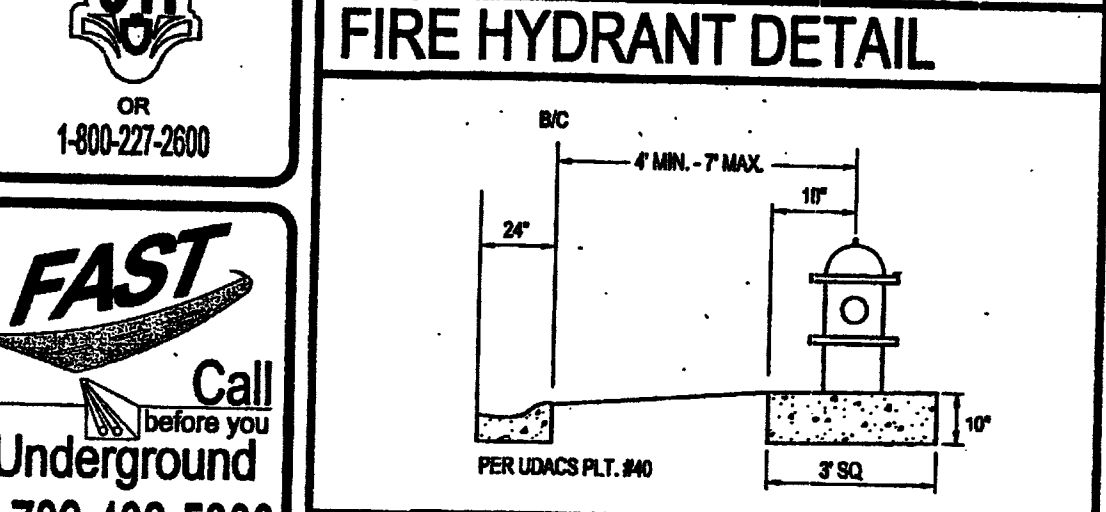
NOTES:
1. Special shallow manholes may be used upon Agency approval only.
2. Concrete collar required around manhole frame per SD-9.
3. Manhole frame and cover per SD-2 or SD-3 as applicable.
4. Flow channel per SD-9.
5. For shallow manholes sewer pipe having less than 5-feet of cover shall be C-900 PVC or DIP as required by Agency. The C-900 or DIP pipe shall extend to the next manholes upstream and downstream.
6. Granular bedding and foundation under special shallow manholes shall conform to SD-1A and SD-1B for pre-cast manhole bases and SD-7 for cast-in-place manhole bases.

SPECIAL SHALLOW MANHOLES
ISSUED: NUMBER: SD-13

NOTE
*INSTALL PIPELINE MARKER BALLS IN TRENCH ABOVE EACH HORIZONTAL ELBOW FITTING, PER UDACS PLATE NO. 15
*ALL ABOVE GROUND UTILITY APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF TITLE 18, 06 & 08

WASTEWATER CALCS
FACILITY TYPE: SINGLE FAMILY RESIDENTIAL
TOTAL UNITS AT BUILD OUT: 8 HOUSES
AVERAGE FLOW (MGD) = 0.00221
PEAK FLOW (MGD) = 0.00776
CALCULATIONS:
AVG FLOW = $\frac{9 \times 90,000}{365} \times \frac{1}{1,000,000} = 0.00221$ MGD
PEAK FLOW = $0.00221 \times 3.5 = 0.00776$ MGD

SEWER LATERAL NOTE
LATERALS MUST MEET ALL DESIGN STANDARDS WHEN LOTS ARE DEVELOPED.



FIRE FLOW CALCULATIONS
FIRE FLOW REQUIREMENT IS 2,250 GALLONS PER MINUTE AT 20 POUNDS PER SQUARE INCH RESIDUAL
BASED ON:
SQUARE FOOTAGE: 6,500 SQ. FT. MAX
HEIGHT: 35-FT
SPRINKLER SYSTEM: NO
ROOF CONSTRUCTION: TILE
HIGH PILED COMBUSTIBLE STORAGE: NO
LARGEST AREA BETWEEN SEPARATE WALLS: N/A
TYPE OF CONSTRUCTION: V-B
OCCUPANCY: B-3
STORIES: 2
ESFR SYSTEM: NO

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 MAXIMUM 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 DEFLECTION, FITTING SHALL BE USED.

THM ENTERPRISES
6205 W. RUSSELL RD. STE. 235
LAS VEGAS, NV 89148
(702) 928-3131 FAX: (702) 928-3633

TANEY ENGINEERING
6009 S. JONES BLVD STE 100
LAS VEGAS, NV 89118
(702) 368-5444 FAX: (702) 368-5633

ALEXANDER & DURANGO
A RESIDENTIAL SUBDIVISION

UTILITY PLAN