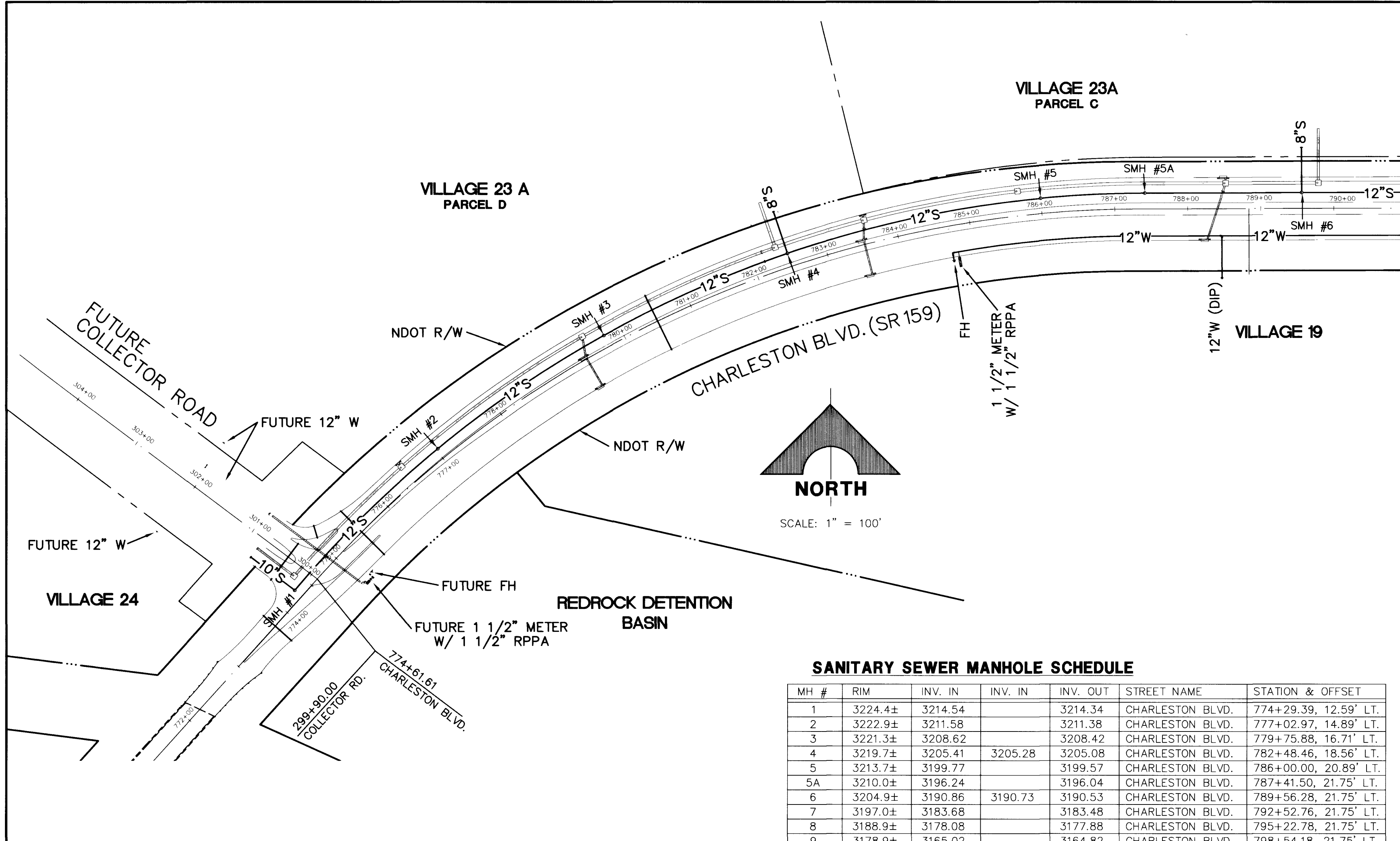
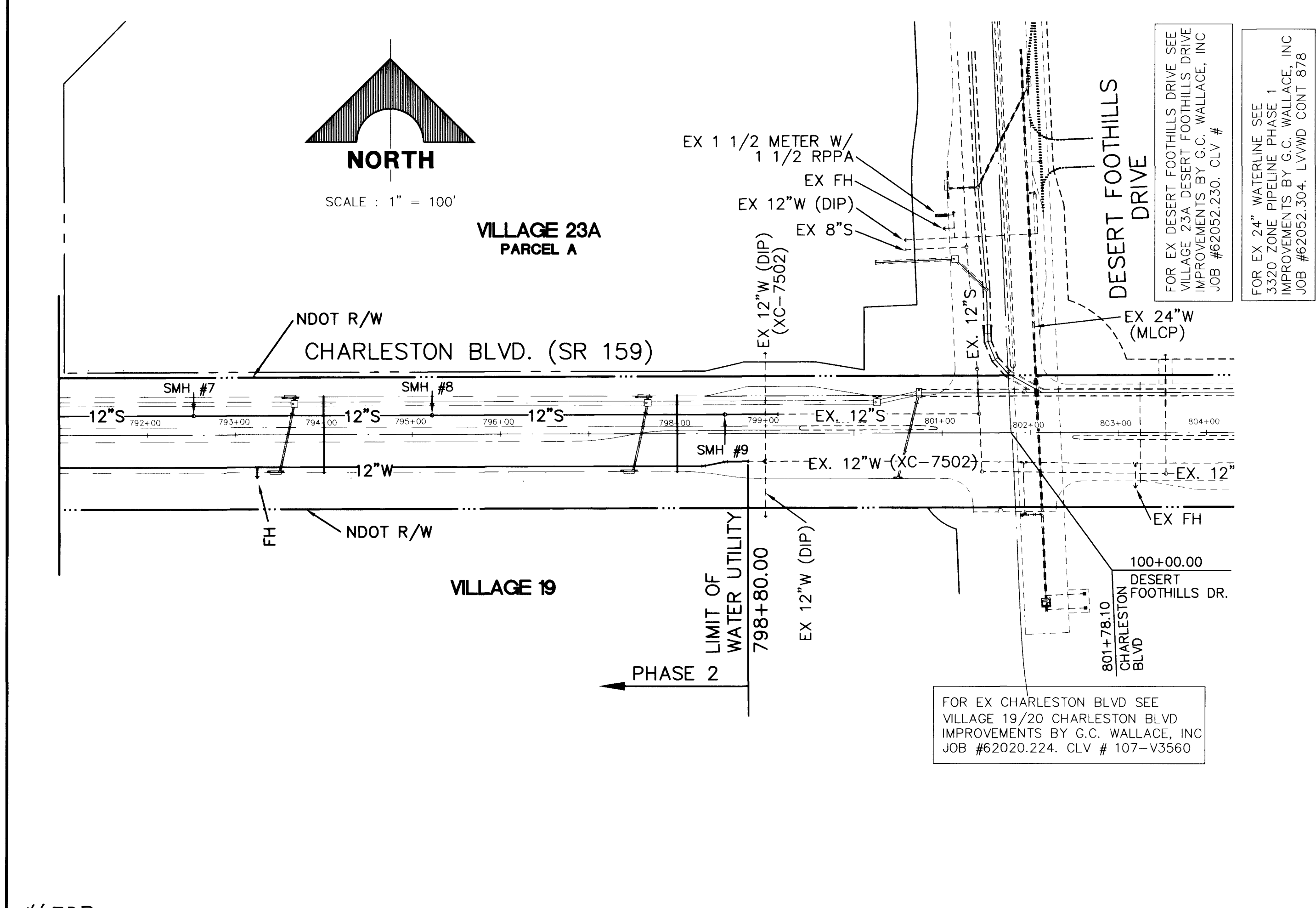




SANITARY SEWER MANHOLE SCHEDULE

MH #	RIM	INV. IN	INV. IN	INV. OUT	STREET NAME	STATION & OFFSET
1	3224.4±	3214.54		3214.34	CHARLESTON BLVD.	774+29.39, 12.59' LT.
2	3222.9±	3211.58		3211.38	CHARLESTON BLVD.	777+02.97, 14.89' LT.
3	3221.3±	3208.62		3208.42	CHARLESTON BLVD.	779+75.88, 16.71' LT.
4	3219.7±	3205.41	3205.28	3205.08	CHARLESTON BLVD.	782+48.46, 18.56' LT.
5	3213.7±	3199.77		3199.57	CHARLESTON BLVD.	786+00.00, 20.89' LT.
5A	3210.0±	3196.24		3196.04	CHARLESTON BLVD.	787+41.50, 21.75' LT.
6	3204.9±	3190.86	3190.73	3190.53	CHARLESTON BLVD.	789+56.28, 21.75' LT.
7	3197.0±	3183.68		3183.48	CHARLESTON BLVD.	792+52.76, 21.75' LT.
8	3188.9±	3178.08		3177.88	CHARLESTON BLVD.	795+22.78, 21.75' LT.
9	3178.9±	3165.02		3164.82	CHARLESTON BLVD.	798+54.18, 21.75' LT.



LAS VEGAS VALLEY WATER DISTRICT NOTES

- LVVWD PROJECT # 26936
- NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN RELEASED FOR CONSTRUCTION BY THE LVVWD. FOLLOWING WATER PLAN APPROVAL, 48 HOUR NOTICE SHALL BE GIVEN TO THE LVVWD 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 LVVWD INSPECTION. WHEN REQUESTING INSPECTIONS, PLEASE REFER TO THE PROJECT # IDENTIFIED ABOVE.
 - ALL WORK SHALL CONFORM TO THE LVVWD'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 IMPROVEMENT, CLARK COUNTY AREA.
 - A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVVWD.
 - ALL SERVICE LATERALS TWO (2) INCHES IN DIAMETER AND SMALLER SHALL BE COPPER TUBING WITH LVVWD APPROVED SERVICE SADDLES.
 - ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
 - ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAY, 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 OVER 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 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 FOUR (4) INCH CONCRETE (MINIMUM),
C. SLEEVING WITH POTABLE WATER SUPPLY QUALITY PIPE.
EACH PROVISION MUST EXTEND ALONG THE SANITARY OR STORM SEWER, ON EITHER SIDE OF THE MAIN, A MINIMUM 10 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 LVVWD'S DISTRIBUTION SYSTEM.
 - THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVWD CENTRAL STORES. TELEPHONE 258-3152 FORTY-EIGHT (48) HOURS PRIOR TO PICKUP.
 - CONSTRUCTION MAY INTERRUPT SERVICE, WITH LVVWD APPROVAL AND PROPER NOTIFICATION, BETWEEN THE HOURS OF 10 PM AND 6 AM, SUNDAY THROUGH THURSDAY. CIRCUMSTANCES MAY REQUIRE TEMPORARY SERVICE FEES BE INSTALLED, WITHOUT LVVWD REIMBURSEMENT. ANY TEMPORARY SERVICE FEE MUST HAVE PRIOR LVVWD APPROVAL.
 - ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LVVWD'S PRE-APPROVED MATERIALS AND MANUFACTURERS LISTING FOR NEW FACILITIES, LATEST REVISION, OR SPECIFICALLY APPROVED ON THESE PLANS.

APPROVED FOR CONSTRUCTION

CITY OF LAS VEGAS FIRE DEPARTMENT

APPROVAL:

LAS VEGAS VALLEY WATER DISTRICT

CONDITIONAL APPROVAL OF VALVED OUTLET (6" and larger)

The water plans show one or more valved outlets extending out of paved areas. Installation of these outlets is acceptable, however, if the outlets are incorrectly located or not used for any reason when the property is actually developed, the developer shall abandon the outlets at the connection to the active main in accordance with the District's standards and at the Developer's expense.

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. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF THE CONTENTS OF THE ABOVE SPECIFICATIONS.
- 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 CITY ENGINEER.
- CHISEL "S" OR "G" IN CURBS 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 AGGREGATE BASE.
- ALL MANHOLES PAVED IN STREETS EIGHTY FOOT (80') R/W AND LARGER SHALL HAVE CONCRETE COLLARS. STREETS LESS THAN EIGHTY FOOT (80') R/W WILL REQUIRE RETROFIT IF PAVING DOES NOT CONFORM TO CITY STANDARDS AT THE MANHOLE.
- TEE SADDLES SHALL BE USED TO CONNECT SEWER LATERALS TO EXISTING MAIN LINES UP TO TWELVE INCH (12") DIAMETER CONNECTIONS TO FIFTEEN INCH (15") OR LARGER MAINS SHALL REQUIRE SPECIAL PROCEDURES. IN LINE Y'S SHALL BE USED ON LINES TWELVE INCHES (12") OR ABOVE.
- WATER MAINS SHALL BE PROTECTED IN ACCORDANCE WITH LVVWD STANDARDS WHENEVER A SEWER MAIN CROSSES OVER A WATER MAIN OR THE SEWER IS LESS THAN EIGHTEEN INCHES (18") UNDER A WATER MAIN.
- ALL CONTRACTORS INSTALLING SEWER MAINS THAT WILL BE UNDER THE JURISDICTION OF THE CITY OF LAS VEGAS MUST BE STATE OF NEVADA 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 AT ANY LOCATION. 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 OF LAS VEGAS.
- INSTALLATION OF CURVED SEWER REQUIRES SPECIAL CONSTRUCTION PROCEDURES AND INSPECTIONS. CONTACT CITY OF LAS VEGAS OFFSITE INSPECTION AND TESTING 24 HOURS PRIOR TO INSTALLATION.

NOTE:

N.D.O.T. ENCROACHMENT PERMIT(S) REQUIRED FOR PROJECT CONSTRUCTION

AN APPROVED NDOT OCCUPANCY PERMIT SHALL BE OBTAINED THROUGH THE DISTRICT PRIOR TO ANY CONSTRUCTION WITHIN THE NDOT RIGHT-OF-WAY.

THE CONSTRUCTION, MAINTENANCE, AND USE OF PEDESTRIAN WALKWAYS AND LANDSCAPING WITHIN THE STATE OF NEVADA, DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY WILL REMAIN A HIGHWAY AGREEMENT (OR AN AMENDMENT TO EXISTING HIGHWAY AGREEMENT NUMBER NM476-97-030). ALL LANDSCAPE WITHIN THE N.D.O.T. RIGHT-OF-WAY AND COMMON LOTS ADJACENT TO THIS RIGHT-OF-WAY WILL BE PRIVATELY MAINTAINED BY SUMMERLIN H.O.A.(S).

CITY OF LAS VEGAS FIRE DEPARTMENT NOTES

- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE CITY OF LAS VEGAS FIRE DEPARTMENT'S ORDINANCE # 5115, "HYDRANT SPECIFICATIONS", AND "HYDRANT INSTALLATION SPECIFICATION".
- AUTHORIZED HYDRANTS FOR THIS PROJECT ARE:
A. KENNEDY - GUARDIAN MODELS K81A AND K81D
B. MUELLER SUPER CENTURION 250 MODEL A-423
C. CLOW - MODEL F-2548LV
D. TROY VALVE - PATRIOT MODEL P78100N NEVADA HYDRANT
- ON ANY RESIDENTIAL OR COMMERCIAL INSTALLATIONS FIRE HYDRANTS SHALL BE INSTALLED AND FIRE APPARATUS ACCESS ROADS SHALL BE MAINTAINED BEFORE COMMENCEMENT OF ANY COMBUSTIBLE CONSTRUCTION. ALL FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER AND SHALL BE CAPABLE OF DELIVERING THE REQUIRED FIRE FLOW.
- TO IDENTIFY THE FIRE HYDRANT LOCATIONS, CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT THE CENTER LINE OF STREET ADJACENT TO THE FIRE HYDRANTS AS REQUIRED BY ORDINANCE #5115.
- ALL UNDERGROUND INSPECTIONS, PRESSURE AND FLUSH VERIFICATIONS OF ALL FIRE HYDRANTS AND FIRE LINES, SHALL BE CONDUCTED BEFORE COVERING THE LINES. CALL THE CITY OF LAS VEGAS INSPECTION HOT-LINE AT 229-2071 TO REQUEST AN INSPECTION BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.
- PAINTING OF THE CURBS AND HYDRANTS AND ALL OTHER WORK NECESSARY AS REQUIRED BY ORDINANCE #5115, FOR THE PROTECTION OF FIRE HYDRANTS FROM PHYSICAL DAMAGE, SHALL BE COMPLETED BEFORE APPROVAL BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.
- A PERMIT IS REQUIRED FROM THE CITY OF LAS VEGAS FIRE DEPARTMENT FOR ON-SITE WATER LINES AND FIRE HYDRANTS. THE PERMIT AND CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER BEFORE COMMENCEMENT OF WORK.
- PRIVATE FIRE HYDRANTS SHALL BE PAINTED RED.
- PRIOR TO THE FINAL OCCUPANCY, A FLOW TEST MUST BE WITNESSED BY THE CITY OF LAS VEGAS FIRE DEPARTMENT TO VERIFY AVAILABILITY OF THE REQUIRED FIRE FLOW.
- ALL ON-SITE UNDERGROUND WATER MAINS AND MATERIALS SHALL BE U.L. LISTED, A.W.W.A. APPROVED, AND SHALL BE RATED FOR THE APPROPRIATE WORKING PRESSURE.
- FIRE HYDRANT SPACING:
RESIDENTIAL - 500 FEET W/O SPRINKLERS 1000 FEET W/ SPRINKLERS.
COMMERCIAL - 300 FEET W/O SPRINKLERS; 600 FEET W/ SPRINKLERS.
- WHERE NEW WATER MAINS ARE EXTENDED ALONG STREETS WHERE FIRE HYDRANTS ARE NOT NEEDED FOR PROTECTION OF THE STRUCTURES, FIRE HYDRANTS SHALL BE INSTALLED AT MAXIMUM 1,000 FOOT SPACING, TO PROVIDE FOR TRANSPORTATION HAZARDS.
- NO FIRE HYDRANTS SHALL BE LOCATED WITHIN THE REQUIRED RADIUS OF A CUL-DE-SAC OR WITHIN TWENTY FEET (20') OF THE PERIMETER OF THE RADIUS OF THE CUL-DE-SAC.
- NO FIRE HYDRANTS SHALL BE LOCATED WITHIN SIX FEET (6') OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREET LIGHT OR ANY OTHER OBSTRUCTION.
- THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO THE END OF A DEAD-END STREET SHALL NOT EXCEED 200 FEET.
- THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A FIRE DEPARTMENT CONNECTION (FDC) SHALL NOT EXCEED 100 FEET, AS MEASURED BY A BREAK IN A WATER MAIN.
- TWO SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE ARE FOUR (4) OR MORE FIRE HYDRANTS/ LEAD-INS INSTALLED ON A SINGLE SYSTEM.
- SECTIONAL CONTROL VALVES SHALL BE INSTALLED SO THAT NO MORE THAN 2 FIRE HYDRANTS CAN BE OUT OF SERVICE DUE TO A BREAK IN A WATER MAIN.
- ALL FIRE APPARATUS ACCESS ROADS SHALL HAVE AN UNOBSTRUCTED WIDTH OF NOT LESS THAN TWENTY FEET (20') (FLOW LINE TO FLOW LINE), PROVIDED NO PARKING IS ALLOWED ON EITHER SIDE. TWENTY-EIGHT FEET (28') (FLOW LINE TO FLOW LINE), IF PARALLEL PARKING IS ALLOWED ON ONE SIDE ONLY, AND THIRTY-SIX FEET (36') (FLOW LINE TO FLOW LINE) IF PARALLEL PARKING IS ALLOWED ON BOTH SIDES. VERTICAL CLEARANCE SHALL NOT BE LESS THAN THIRTEEN FEET, SIX INCHES (13'6").
- ALL FIRE APPARATUS ACCESS ROADS SHALL BE PAVED TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES, AND SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF THE FIRE APPARATUS.
- THE GRADIENT FOR A FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 12% ANGLES OF APPROACH AND ANGLES OF DEPARTURE SHALL NOT EXCEED 6% FOR 25 FEET PRIOR TO OR AFTER THE GRADE CHANGE.
- THE TURNING RADIUS FOR ANY FIRE APPARATUS ACCESS ROAD SHALL BE NO LESS THAN FIFTY-TWO FEET (52') OUTSIDE RADIUS AND TWENTY-EIGHT FEET (28') INSIDE RADIUS.
- A FIRE APPARATUS ROAD SHALL BE REQUIRED WHEN ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY IS LOCATED MORE THAN ONE HUNDRED FIFTY FEET (150') FROM A FIRE DEPARTMENT VEHICLE ACCESS (SEE EXCEPTIONS IN UFC 97, SECTION 902.2).
- ALL DEAD END FIRE APPARATUS ACCESS ROADS, PUBLIC OR PRIVATE, IN EXCESS OF ONE HUNDRED FIFTY FEET (150') IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURN AROUND AREA HAVING A MINIMUM DIAMETER OF 81 FEET (BACK OF CURB TO THE BACK OF CURB).
- ALL FIRE APPARATUS 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 AT INTERVALS OF ONE HUNDRED FEET (100') ALONG ALL DESIGNATED FIRE LANES. 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 TEN FEET (10') OR LESS THAN SIX FEET (6') FROM ROADWAY LEVEL. THE CURBS ALONG OR ON THE PAVEMENT OR CEMENT, IF CURB IS NOT PROVIDED, 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.

WATER QUANTITIES (PUBLIC)

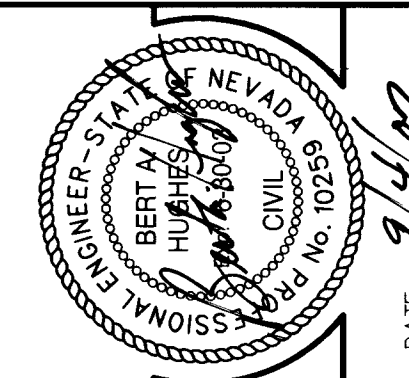
	PHASE 1	PHASE 2	PHASE 3 [FUTURE]
12" PVC WATER	0 LF	1404 LF	[160] LF
12" DIP WATER	0 LF	58 LF	0 LF
6" WATER	0 LF	0 LF	[20] LF
12" GATE VALVE	0 EA	2 EA	0 EA
CAP AND BLOW OFF	0 EA	1 EA	[1] EA
FIRE HYDRANTS	0 EA	2 EA	[1] EA
1 1/2" METER W/ 1 1/2" RPPA	0 EA	1 EA	[1] EA

PHASE 2 (STA: 774+50 - 798+80) EXTEND 12" WATER WITH HYDRANTS, METER AND RPPA, STUB TO SOUTH AND SLEEVE FOR FUTURE WATER AT COLLECTOR ROAD
PHASE 3 (STA: 774+50 - 776+00) FUTURE WATER FROM 3435 WATER ZONE

SEWER QUANTITIES (PUBLIC)

	PHASE 1	PHASE 2
8" PVC SEWER	123 LF	0 LF
10" PVC SEWER	0 LF	76 LF
12" PVC SEWER	1706 LF	795 LF
48" SEWER MANHOLE	7 EA	3 EA
PIPE END CAPS	3 EA	1 EA

PHASE 1 (STA: 782+15.72 - 799+14) EXTEND 12" SANITARY SEWER W/ 8" STUBS TO NORTH PARCELS
PHASE 2 (STA: 774+20 - 782+15.72) EXTEND 12" SANITARY SEWER W/ 10" STUB TO NORTH AT COLLECTOR ROAD



DATE: 9/4/02

DESIGN: DFF
DRAWN: SDO
CHECK: SDO
ISSUE DATE: 9/4/02
ISSUE EDITOR: SDO
PLOT DATE: 09-04-02
PLOT TIME: 13:59:09

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SUMMERLIN

VILLAGE 19/23A CHARLESTON BOULEVARD IMPROVEMENTS

WATER AND SEWER MASTER PLAN

SHEET 4

JOB NO. 62023.240

4 OF 21 SHEETS