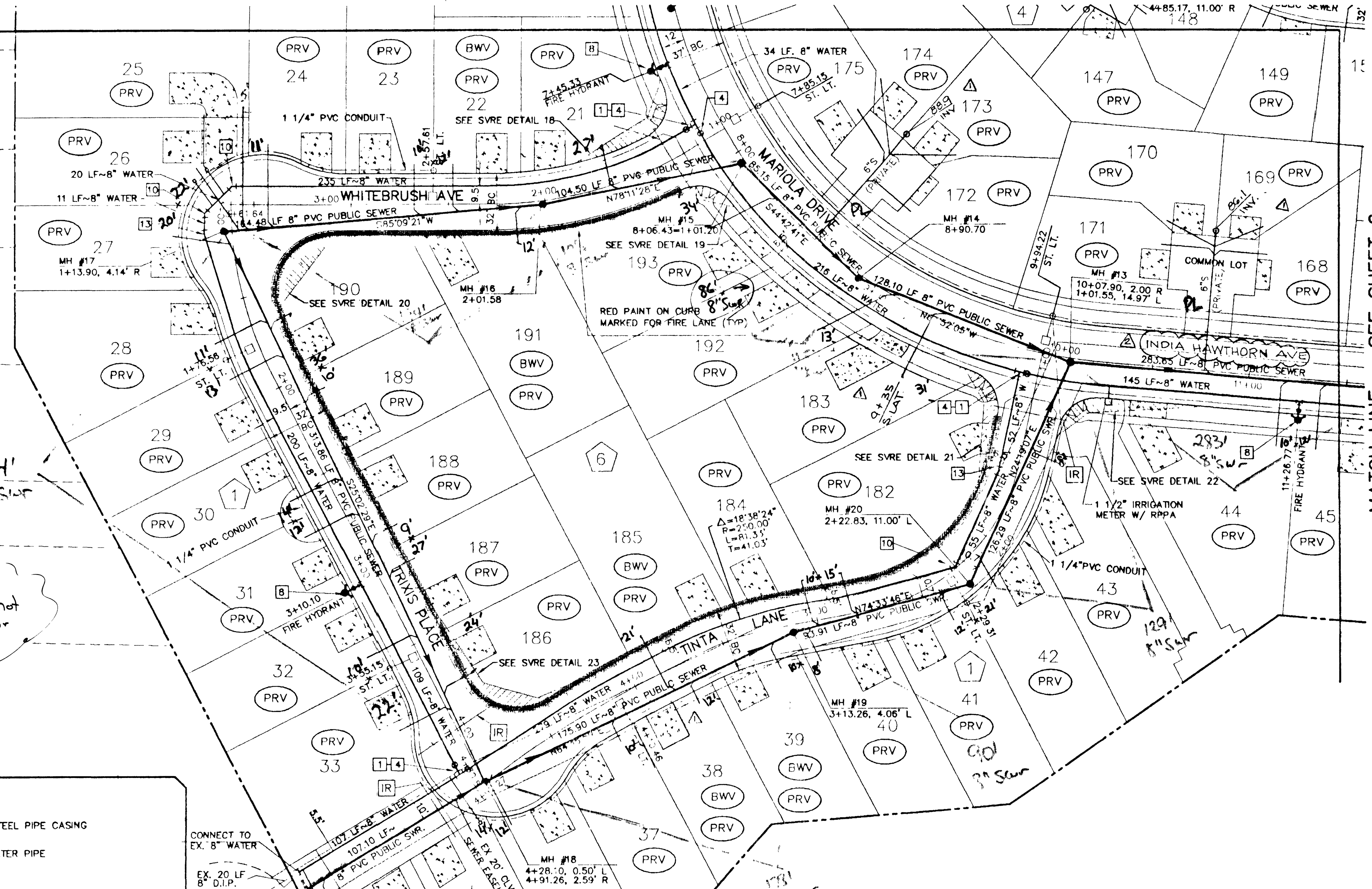
MATCH LINE – SEE SHEET 3



MATCH LINE – SEE SHEET 6

AS-BUILT SEWER PLAN
Dimension ties given here have been provided by the contractor. Pentacore Engineering assumes no responsibility for their accuracy or completeness.

Dated: 5/30/01

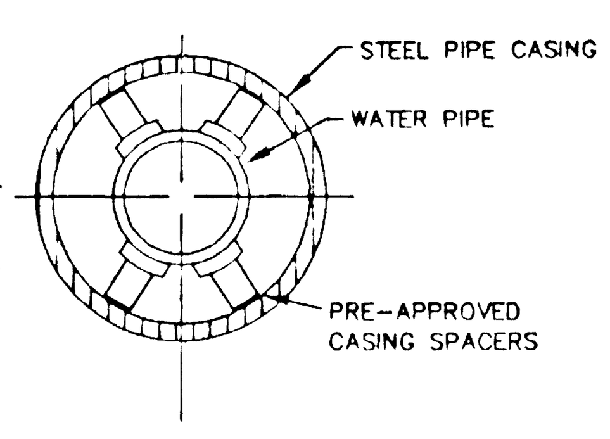
AS BUILT PLAN
PREPARED BY
PENTACORE

FROM INFORMATION PROVIDED BY:
CONTRACTOR Terra Construction
DATE 5/30/01

Dimensions not available for all lots

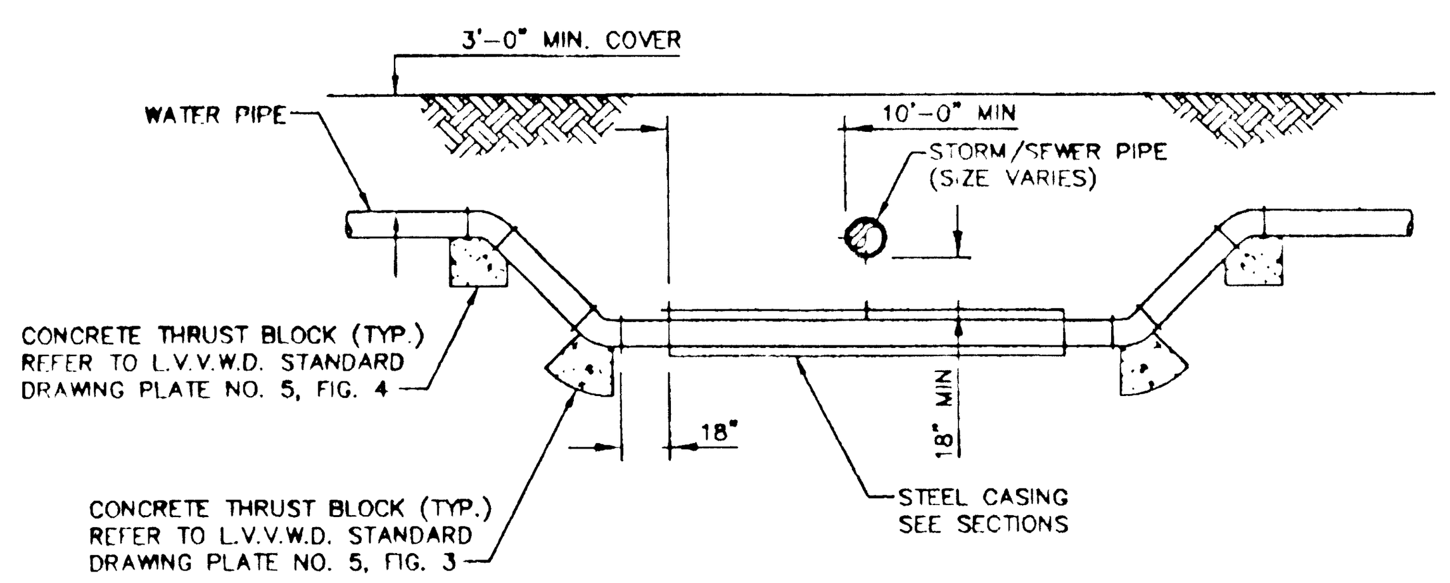
NOTES:

1. STEEL PIPE CASING SYMMETRICAL ABOUT WATER MAIN CENTERLINE.
2. PRE-APPROVED CASING SPACERS AND PRE-APPROVED END SEALS INSTALLED PER MANUFACTURER'S SPECIFICATIONS. (REDWOOD SKIDS NOT ALLOWED, UDACS SECTION 3.26 NOT APPLICABLE). USE A "CENTERED" CONFIGURATION AND PROVIDE THE MANUFACTURER WITH THE
3. FOLLOWING:
   - PIPE OD
   - CASING ID
   - CASING LENGTH



1. STEEL PIPE CASING SHALL BE FABRICATED FROM MIN. OF 1/4" THICK STEEL PLATES, CONFORMING TO THE REQUIREMENTS OF ASTM A283, GRADE B, C, OR D. ALL JOINTS SHALL BE WELDED. INTERIOR JOINTS SHALL BE GROUND TO A SMOOTH FINISH. ALL WELDING SHALL BE PREFORMED IN ACCORDANCE WITH AWWA C201, "AWWA STANDARD FOR FABRICATED ELECTRICALLY WELDED STEEL WATER PIPE". COATINGS FOR STEEL CASING 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 SPACERS. AFTER INSTALLATION OF THE PIPE, THE CASING SHALL BE SEALED AT BOTH ENDS WITH CASING END SEALS. DUCTILE IRON PIPE JOINTS INSIDE CASING ARE TO BE RESTAINED.

TYPICAL CASING SECTION



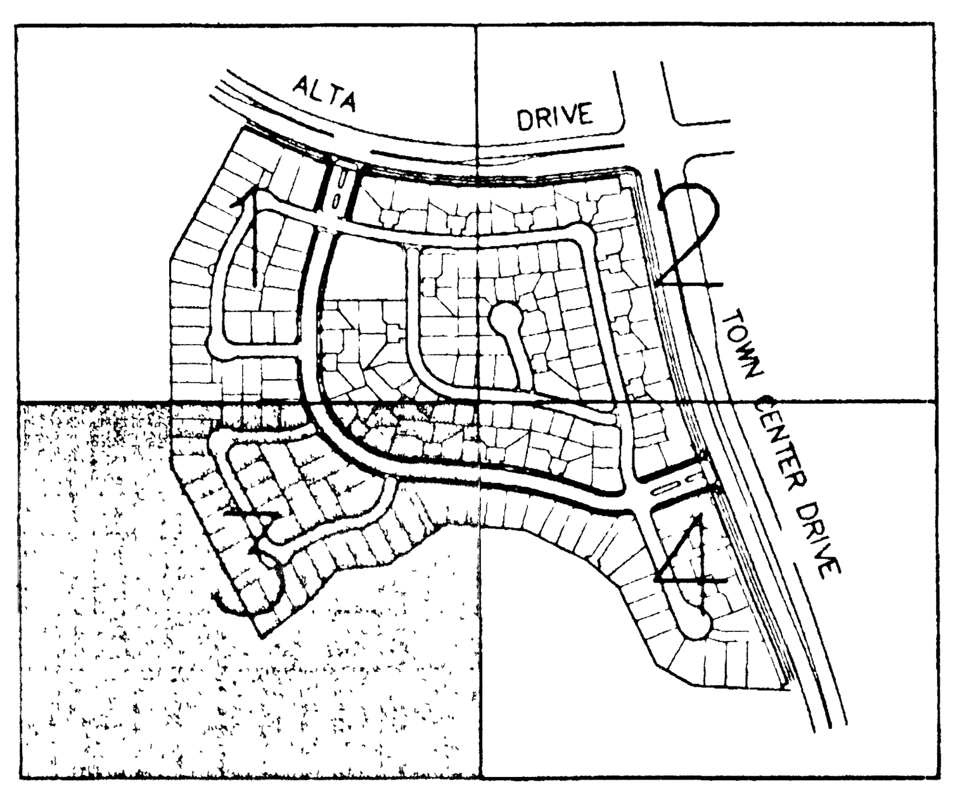
1. EXTRA HEAVY CAST IRON PIPE;
2. WATER SUPPLY QUALITY MATERIALS; OR
3. ENCASEMENT WITH FOUR INCHES, MINIMUM, OF CONCRETE OR SLEEVING WITH WATER SUPPLY QUALITY PIPE.

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:

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/SINE OF CROSSING ANGLE.)

STORM SEWER CROSSING DETAIL

(NOT TO SCALE)



KEY MAP

Avoid cutting underground utility lines. It's costly.

Call before you Dig.

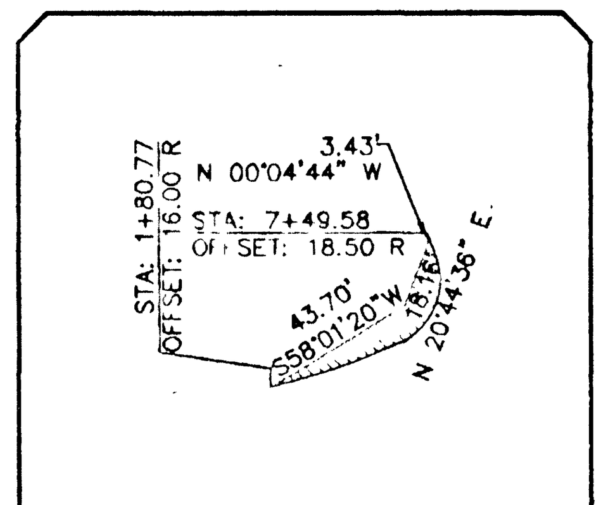
1-800-227-2600

UNDERGROUND SERVICE ALERT (USA)

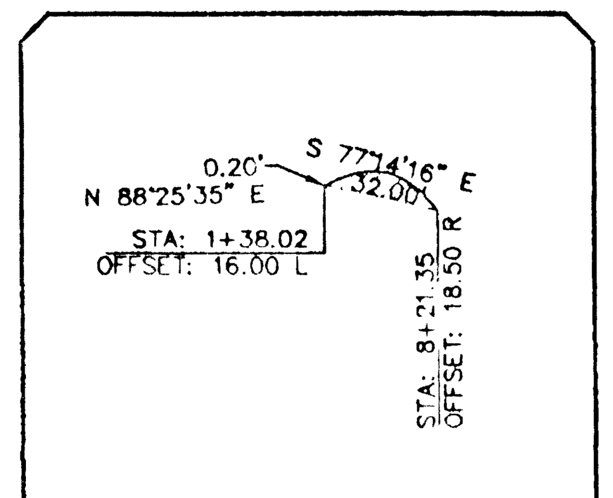
FITTINGS LEGEND

1. 8" TEE
2. 8"x6" TEE
3. 6" GATE VALVE
4. 8" GATE VALVE
5. 12" GATE VALVE
6. 12"x8" REDUCER
7. 2" BLOW-OFF ASSEMBLY W/CAP
8. FIRE HYDRANT ASSY. (UDS PLATE NO. 7)
9. 8" CROSS
10. 8" 45° BEND
11. 8" 22 1/2° BEND
12. 8" 90° BEND
13. 8" 11 1/4° BEND

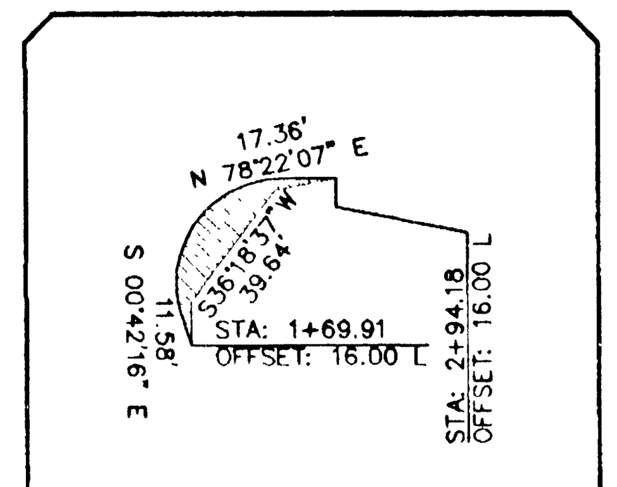
IR (1) - 6" & (1) -3" IRRIGATION SLEEVES



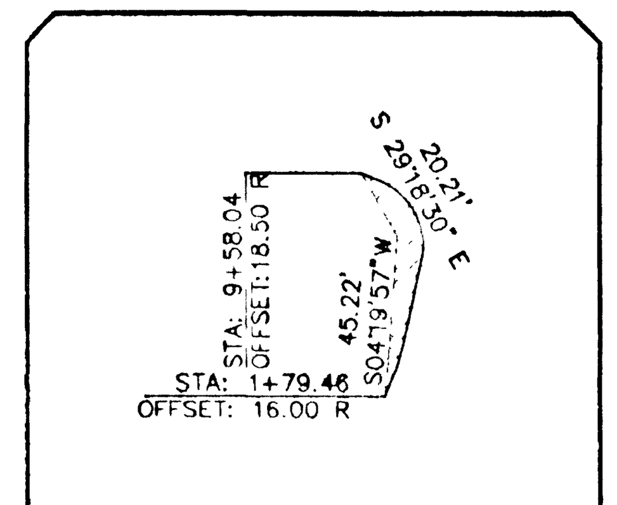
SVRE DETAIL 18
N.T.S.



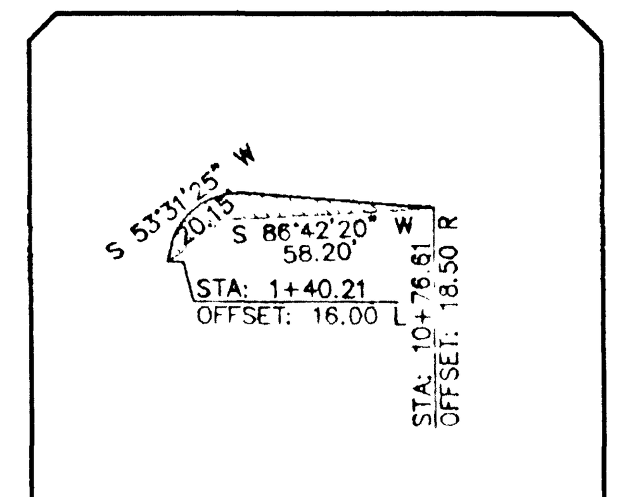
SVRE DETAIL 19
N.T.S.



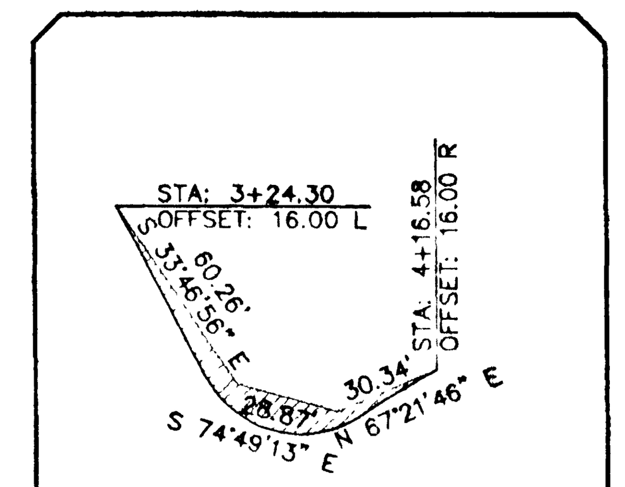
SVRE DETAIL 20
N.T.S.



SVRE DETAIL 21
N.T.S.



SVRE DETAIL 22
N.T.S.



SVRE DETAIL 23
N.T.S.

CLV FIRE DEPARTMENT NOTES

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE CITY OF LAS VEGAS FIRE DEPARTMENT "HYDRANT SPECIFICATIONS," "HYDRANT INSTALLATION SPECIFICATIONS" AND ORDINANCE No. 3944.

2. AUTHORIZED HYDRANTS FOR THIS PROJECT ARE:

   A. KENNEDY GUARDIAN
   B. MUELLER A-423 CENTURIAN
   C. CLOW MODEL 2546 MEDALLION

3. ON ANY NEW HOME OR BUILDING INSTALLATION, ACCESSIBLE FIRE HYDRANTS SHALL BE INSTALLED BEFORE COMBUSTIBLE CONSTRUCTION COMMENCES AND SAID FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER WITH AN ADEQUATE WATER SUPPLY.

4. CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT CENTER LINE OF STREET ADJACENT TO FIRE HYDRANT AS REQUIRED IN ORDINANCE No. 3944 TO IDENTIFY THE FIRE HYDRANT LOCATIONS.

5. CONTRACTOR SHALL CALL THE LAS VEGAS FIRE DEPARTMENT AT 229-2071 FOR UNDERGROUND INSPECTION, PRESSURE AND FLUSH VERIFICATION OF ALL FIRE HYDRANTS AND FIRE LINES BEFORE BACK FILLING.

6. PAINTING OF THE CURBS AND HYDRANTS AND ANY WORK NECESSARY FOR PROTECTION OF HYDRANTS FROM PHYSICAL DAMAGE PER ORDINANCE No. 3944 SHALL BE COMPLETED BEFORE APPROVAL BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.

7. A PERMIT IS REQUIRED FROM THE FIRE DEPARTMENT FOR ON-SITE WATER LINE AND FIRE HYDRANT. THE PERMIT AND CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER PRIOR TO ANY WORK BEGINNING.

8. PRIVATE FIRE HYDRANTS SHALL BE PAINTED RED.

9. A FLOW TEST MUST BE WITNESSED BY THE FIRE DEPARTMENT PRIOR TO OCCUPANCY FOR VERIFICATION OF REQUIRED ON-SITE WATER SUPPLY.

10. ALL ON-SITE FIRE MAIN MATERIALS MUST BE U.L. LISTED AND A.W.W.A. APPROVED.

11. FIRE HYDRANT SPACING:

    RESIDENTIAL – 500 FEET UNSPRINKLERED; 1,000 FEET SPRINKLERED.
    COMMERCIAL, INCLUDING MULTI-FAMILY – 300 FEET UNSPRINKLERED; 600 FEET SPRINKLERED.

12. WHERE NEW WATER MAINS ARE EXTENDED ALONG STREETS, WHERE HYDRANTS SHALL BE SPACED AT MAXIMUM ONE-THOUSAND (1,000') FOOT SPACING TO PROVIDE FOR TRANSPORTATION HAZARDS.

13. NO FIRE HYDRANT SHALL BE LOCATED WITHIN THE REQUIRED RADIUS OF A CUL-DE-SAC OR WITHIN TWENTY (20') FEET OF THE PERIMETER OF THE RADIUS OF THE CUL-DE-SAC.

14. NO FIRE HYDRANT SHALL BE LOCATED WITHIN SIX FEET (6') FEET OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREET LIGHT OR ANY OTHER OBSTRUCTION.

15. TWO SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE ARE FOUR (4) OR MORE FIRE HYDRANT INSTALLED ON A SINGLE SYSTEM.

16. NOT MORE THAN TWO (2') HYDRANTS CAN BE OUT OF SERVICE DUE TO A SINGLE MAIN BREAK.

17. FIRE APPARATUS ACCESS ROADS SHALL HAVE AN UNOBSTRUCTED WIDTH OF NOT LESS THAN TWENTY FEET (20') PROVIDED NO PARKING IS ALLOWED, NOT LESS THAN TWENTY-EIGHT FEET (28') IF PARALLEL PARKING IS ALLOWED ON ONE SIDE, AND NOT LESS THAN THIRTY-SIX FEET (36') IF PARALLEL PARKING IS ALLOWED ON BOTH SIDES. VERTICAL CLEARANCE SHALL BE NOT LESS THAN THIRTEEN-FEET-SIX-INCHES (13' 6").

18. THE TURNING RADIUS FOR ANY FIRE APPARATUS ACCESS ROAD AND/OR FIRE LANE, PUBLIC OR PRIVATE, SHALL BE NOT LESS THAN FOURTY-FIVE FEET (45') OUTSIDE RADIUS AND TWENTY-TWO FEET (22') INSIDE RADIUS.

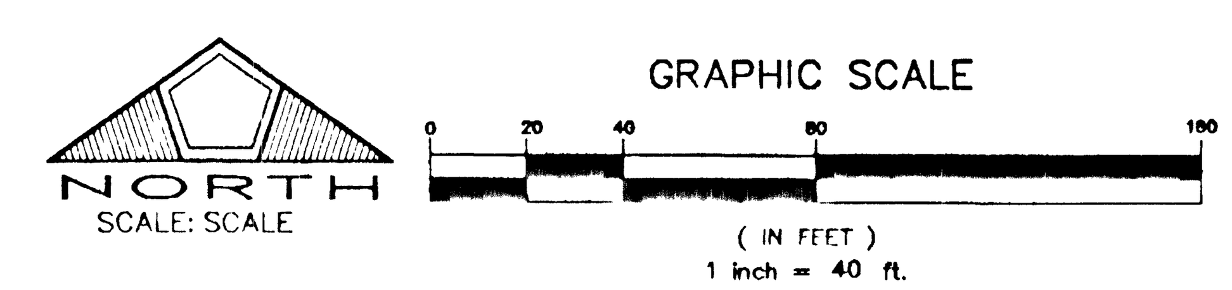
19. A FIRE APPARATUS ROAD SHALL BE REQUIRED WHEN ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY IS LOCATED MORE THAN ONE-HUNDRED FIFTY FEET (150') FROM A FIRE DEPARTMENT VEHICLE ACCESS. (SEE EXCEPTIONS IN UFC 94, SECTION 902.2)

20. ALL DEAD END FIRE APPARATUS ACCESS ROADS AND/OR FIRE LANES, PUBLIC OR PRIVATE, IN EXCESS OF ONE-HUNDRED FIFTY FEET (150') IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURNAROUND AREA. SEE ORDINANCE No. 3944.

21. ACCESS 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 WITH SIGNS 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 PRESENT, SHALL BE PAINTED WITH A RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS.

22. 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.

9/97



APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT — DATE 1/27/99

FIRE FLOW CALCULATIONS

FIRE FLOW REQUIREMENTS IS: AT 20 psi RESIDUAL PRESSURE.	1,500 GALLONS PER MINUTE
BASED ON:	
SQUARE FOOTAGE	3000 SF.
LARGEST AREA BETWEEN 4-HOUR AREA SEPARATION WALLS:	N/A
BUILDING HEIGHT	20' ±
NUMBER OF STORIES	TWO-STORY
TYPE OF CONSTRUCTION	TYPE 5
OCCUPANCY	SINGLE-FAMILY
FULL AUTOMATIC FIRE SPRINKLER SYSTEM	NONE

REVIEWED BY: ________ DATE: 11-20-98

AS-BUILT

NIGRO ASSOCIATES
4545 SPRING MOUNTAIN ROAD, SUITE 105
LAS VEGAS, NEVADA 89102
(702) 247-1920

PENTACORE
CIVIL ENGINEERING · LAND SURVEYING · PLANNING
CONSTRUCTION MANAGEMENT · ADA CONSULTING
6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89102 (702)258-0115

UTILITY PLAN 3

DESERT BLOOM
AS-BUILT SEWER PLAN

PROFESSIONAL ENGINEER · STATE OF NEVADA · RICHARD P. SENECAL · CIVIL · 11752

SHEET 5 OF 21

C.L.V. DWG.# 307Y-4588

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