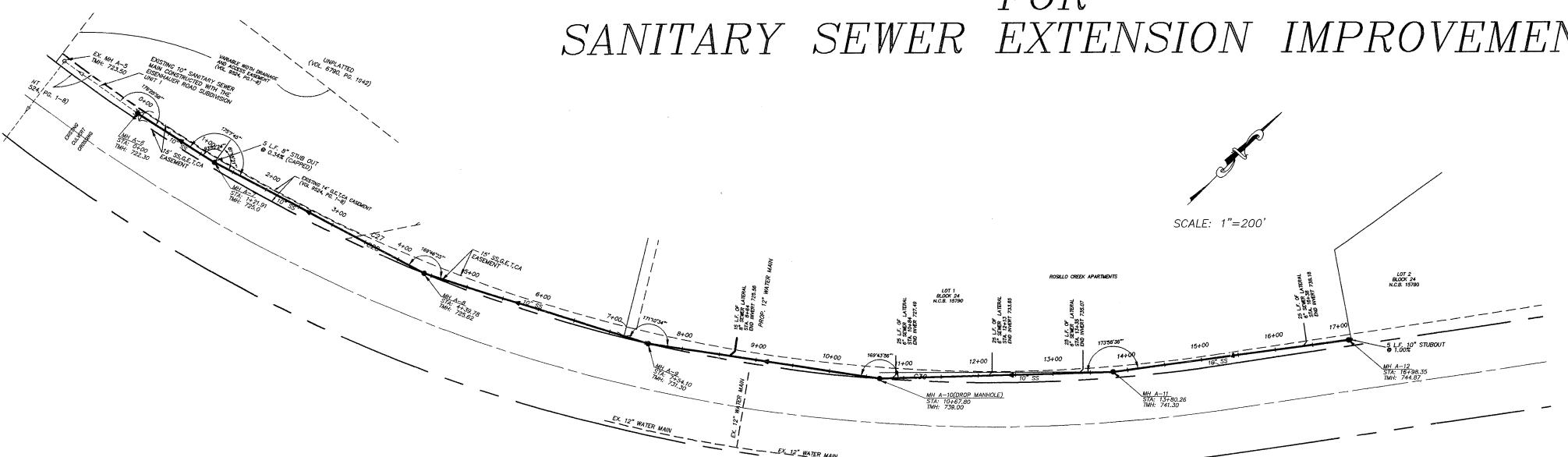
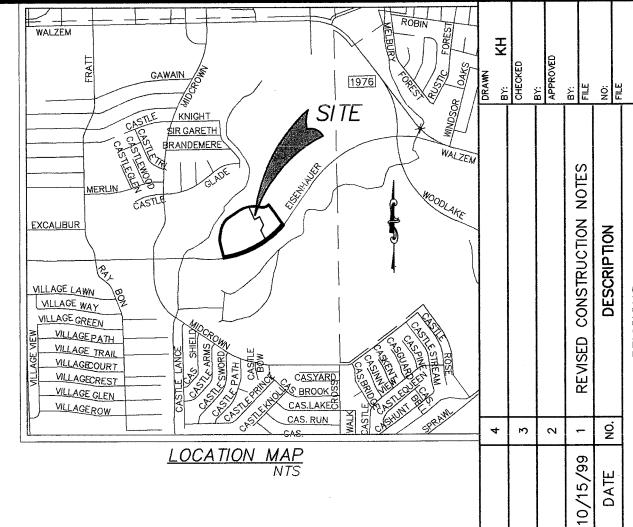
# ROSILLO CREEK APARTMENTS

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<u>LEGENI</u>

TMH TOP OF MAN

NV. INVERT

MH MANHOLE

SS SANITARY S

SAN. SANITARY

STA STATION

---- EXISTING SA

PROPOSED S

EXISTING MAN

PROPOSED S

PROPOSED SANITARY SECTION

PROPOSED MANHOLE

PROPOSED MANHOLE

FLOW DIRECTION

F,CA SANITARY SEWER, GAS

ELECTRIC, TELEPHONE

AND CARLE TY FASEME

TOTAL OF 10" SANITARY SEWER 1703 L.F.

ROSILLO CREEK APARTMENTS

JUNE 29, 1999 NON-EDWARD'S AQUIFER RECHARGE ZONE SANITARY SEWER SYSTEM GENERAL NOTES

# GENERA

1. All materials and construction procedures within the scope of this contract shall be approved by the San Antonio Water System (SAWS) and comply with:

- A. Specifications for Water and Sanitary Sewer construction (August 98)

  B. Current "City of San Antonio Standard Specifications for Public Works
- Construction".

  C. Texas Natural Resource Conservation Commission's Design Criteria for Sewage Systems [31 TAC 317.1, 31 TAC 317.2, 31 TAC 317.3 and 31 TAC

Sewage Systems [31 TAC 317.1, 31 TAC 317.2, 31 TAC 317.3 and 31 TAC 317.13].

The contractor is to notify and make arrangements with the San Antonio Water System Construction Inspection Division, at 704-7111, 48 hours prior to excavation.
 The locations and depths of existing utilities, to include service laterals, shown in these plans are approximate only. It shall be the Contractor's responsibility to locate

utility service lines 48 hours prior to excavation and to protect the same during construction.

San Antonio Water System (Water) 704—7109 704—7107

Drainage 1—800—545—6005 1—800—545—6005

 (Sewer)
 704-7107

 Drainage
 1-800-545-6005

 Telephone
 1-800-545-6005

 City Public
 1-800-545-6005

 Paragon Cable TV
 1-800-545-6005

 Valero Energy Co.
 1-800-545-6005

4. The Contractor shall maintain service to all existing sanitary sewers at all times during construction.

5. All work in Texas Highway Department and Bexar County right—of—way shall be done in accordance with respective construction specifications and permit.
 6. All work in Public Streets shall be coordinated with and approved by City of San

Antonio Public Works Department Traffic Division and Street Engineer.

7. Due to Federal Regulations Title 49, Part 192.181, City Public Service must maintain access to gas valves at all times. The Contractor must protect and work around gas valves that are in the project areas.

8. No testing will be performed prior to 30 days from complete installation of the

sanitary sewer lines.

The following sequence will be strictly adhered to:

1. Pull mandrel.

3. Pull wiper (after street has been asphalted in new subdivisions)

MANHOLES

All manholes shall be constructed so that the top of the ring is at least four (4) inches
above the finished grade of the surrounding ground except when located in paved
areas. In paved areas, the manhole ring shall be flush with pavement.

10. All manholes in the street areas shall have watertight ring and covers in accordance with Item 404B of the City of San Antonio Standard Specifications for Public Works Construction.

11. On any manholes to be abandoned, the rings and cover shall be salvaged in accordance with the City of the San Antonio Standard Specifications for Public Works Construction, Item 101: Preparation of right—of—way, and the hole backfilled to

# PIPING

12. The kind and description of the pipe conduit is shown on the plans, (if PVC, "SDR" and ASTM/ANSI designations, class).

13. The use of asbestos cement pipe will be prohibited under this contract. All ductile iron pipe used in this system shall be corrosion protected on both the interior and exterior surfaces. All corrosion protection shall be applied and installed in such a manner as to maintain a continuously protected surface after pipe installation.

14. All PVC sewer pipe with over 14 feet of cover shall be extra strength, minimum pipe stiffness of 115 psi.

15. All sewer pipes shall have compression or mechanical joints.

16. Sewer pipe connections to pre—cast manholes will be compression joints as approved by SAWS. Mechanical joint "Boot type" connections alone will not be allowed. "Boot type" joints may be used in conjunction with compression joints as approved by SAWS. Sewer pipe connections to monolithic manholes will be as shown on the Standard Detail Sheet. Any changes from these methods must be approved by SAWS.

17. All pipe trenching, bedding and backfill shall be done in accordance with appropriate ASTM/ANSI specifications (Reference 31 TAC 317.2(a); ASTM C12 (ANSI A106.2) or ASTM D-2321 (ANSI K65.171).

18. When sewer laterals are to be connected to existing sewer mains and no stub—out has been earlier provided, the connection must be made with an approved service saddle as per 31 TAC 313.5(c)(7).

19. All residential sewer service lateral shall be extended to the property line and

capped and sealed.

20. Where required, concrete encasement shall be placed for full width of the trench to a plane 6" above the top of the pipe, with pay limits as shown on the Standard Detail

21. A minimum of 3 feet of cover is to be maintained over the sanitary sewer main and laterals at subgrade, otherwise concrete encasement will be required.

# LASTING

22. When allowable, blasting shall be performed in accordance with appropriate criteria established by the National Fire Protection Association (31 TAC 313.5(c)(6).

23. Blasting for sewer line excavation must be done in such a manner as to minimize the fracturing of rock beyond the required excavation. The Contractor shall consider the elevation of the existing sanitary sewer main in relation to the blasting charge and the relative direction of existing and proposed trenches. Blasting within such areas shall be accomplished only by qualified blasting contractors who hold blasting licenses from a qualified agency such as the San Antonio Fire Department in Bexar County. Any damage to existing sanitary sewers resulting from blasting shall be repaired and retested by the Contractor at his own expense.

24. No blasting shall be performed within 75 feet of existing utilities.

# TESTING

25. All sewer lines must be tested in accordance with the following:

A. 317.2(a)(5)(B): Deflection test for flexible and semi—rigid pipe conducted after final backfill has been in place at least 30 days.

B. 317.2(a)(4)(A)&(B) or the City of San Antonio Standard Specifications for Public Works Construction (518.3): Infiltration and/or exfiltration and/or low-pressure air test.

C. 313.5(c)(10)(C) or the City of San Antonio Standard Specifications for Public Works Construction (404.4—10): All manholes and wet wells must be tested separately and independently of the collection lines.

26. Sewer lines shall be tested from manhole to manhole.

27. Sanitary sewer main connections made directly to existing manholes will require successful testing of the manhole in accordance with the City of San Antonio Standard Specifications for Public Works Construction, Item 404.4—10.

28. After construction, testing will be done by T.V. camera by the SAWS forces and observed by inspector, Wastewater Engineering personnel, and Contractor as camera is run through the lines. Any abnormalities, such as broken pipe or misaligned joints, must be replaced by the Contractor at his expense.

29. A copy of all testing reports shall be forwarded to the San Antonio Water System Construction Inspection Division.

30. Contractor and/or Contractor's independently retain employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures. The Contractor's implementation of the systems, programs and/or procedures shall provide for adequate trench excavation safety protection that complies with as a minimum OSHA standards for trench excavations. Specifically, Contractor and/or Contractor's independently retained employee or safety consultant shall implement a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavation.

31. Contractor is responsible for removal of all waste materials upon project completion. The Contractor shall not permanently place any waste materials in the 100 year flood plain without first obtaining an approved Flood Plain Development Permit.

32. Water jetting the backfill within a street will not be permitted. Sanitary sewer trenches subject to traffic shall conform to the City of San Antonio Standard Specifications for Public Works Construction, paragraphs 400.4–2(d) or (e).

# WATER LINE CROSSINGS

33. Where the minimum 9 foot separation distance between sewer lines and water line/mains cannot be maintained, the installation of sewer lines shall be in strict accordance with the Texas Natural Resource Conservation Commission Rules (31

(A). Where a sanitary sewer parallels a waterline, the sewer shall be constructed of cast iron, ductile iron or PVC meeting ASTM specifications with a pressure rating for both the pipe and joints of 150 psi. The vertical separation shall be a minimum of two feet between outside diameters and the horizontal separation shall be a minimum of four feet between outside diameters. The sewer shall be located below the waterline.

(B) Where a sanitary sewer crosses a waterline and the sewer is constructed of cast iron, ductile iron or PVC with a minimum pressure rating of 150 psi, an absolute minimum distance of 6 inches between outside diameters shall be maintained. In addition the sewer shall be located below the waterline where possible and one length of the sewer pipe must be centered on the waterline.

(C) Where a sewer crosses under a waterline and the sewer is constructed of ABS truss pipe, similar semi—rigid plastic composite pipe, clay pipe or concrete pipe with gasketed joints, a minimum two foot separation distance shall be maintained. The initial backfill shall be cement stabilized sand(two or more bags of cement per cubic yard of sand) for all sections of sewer within nine feet of the waterline. This initial backfill shall be from one quarter diameter below the centerline of the pipe to one pipe diameter(but not less than 12 inches) above the top of the pipe.

(D) Where a sewer crosses over a waterline all portions of the sewer within nine feet of the waterline shall be constructed of cast iron, ductile iron, or PVC pipe with a pressure rating of at least 150 psi using appropriate adapters. In lieu of this procedure the new conveyance may be encased in a joint of 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the new conveyance. The space around the carrier pipe shall be supported at 5 feet intervals with spacers or be filled to the springline with washed sand. The encasement pipe should be centered on the crossing and both ends sealed with cement grout or manufactured seal.

34. The Texas Natural Resource Conservation Commission and Environmental Protection Agency (EPA) require erosion and sedimentation control for construction of sewer collection systems. Developer or authorized representative shall provide

erosion and sedimentation control as noted on the project's plan and profile sheets.

EROSION AND SEDIMENTATION CONTROL

35. All temporary erosion and sedimentation controls shall be removed by the Contractor at final acceptance of the project by the San Antonio Water System. SUPPLEMENTARY

36. No extra payment shall be allowed for work called for on the plans but not included on the bid schedule. This incidental work will be required and shall be included under the pay item to which it relates.

37. The Developer dedicates the sanitary sewer mains upon completion by the developer and acceptance by the San Antonio Water System. The San Antonio Water System will own and maintain said sanitary sewer mains which are located within this particular subdivision (As applicable).

38. Work completed by the contractor which has not received work order or the consent of the San Antonio Water System construction inspection division will be subject to removal and replacement by and at the expense of the contractor.

# RECORD DRAWINGS

THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT MOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

<u>DEVELOPER:</u> Rosillo Creek, Inc. 11506 Nicholas Street, Suite 200 Omaha, NE 68154

SAWS JOB No. **99-1624** PLAT No. 990148 DATE: 2-5-99

SCALE

Vertical 1" = N/A

Horizontal 1" = 200'
0 100' 200' 300'

SHEET OF

\$ 1 4

ASSOCIATES,

PLA

MASTER 17+03.

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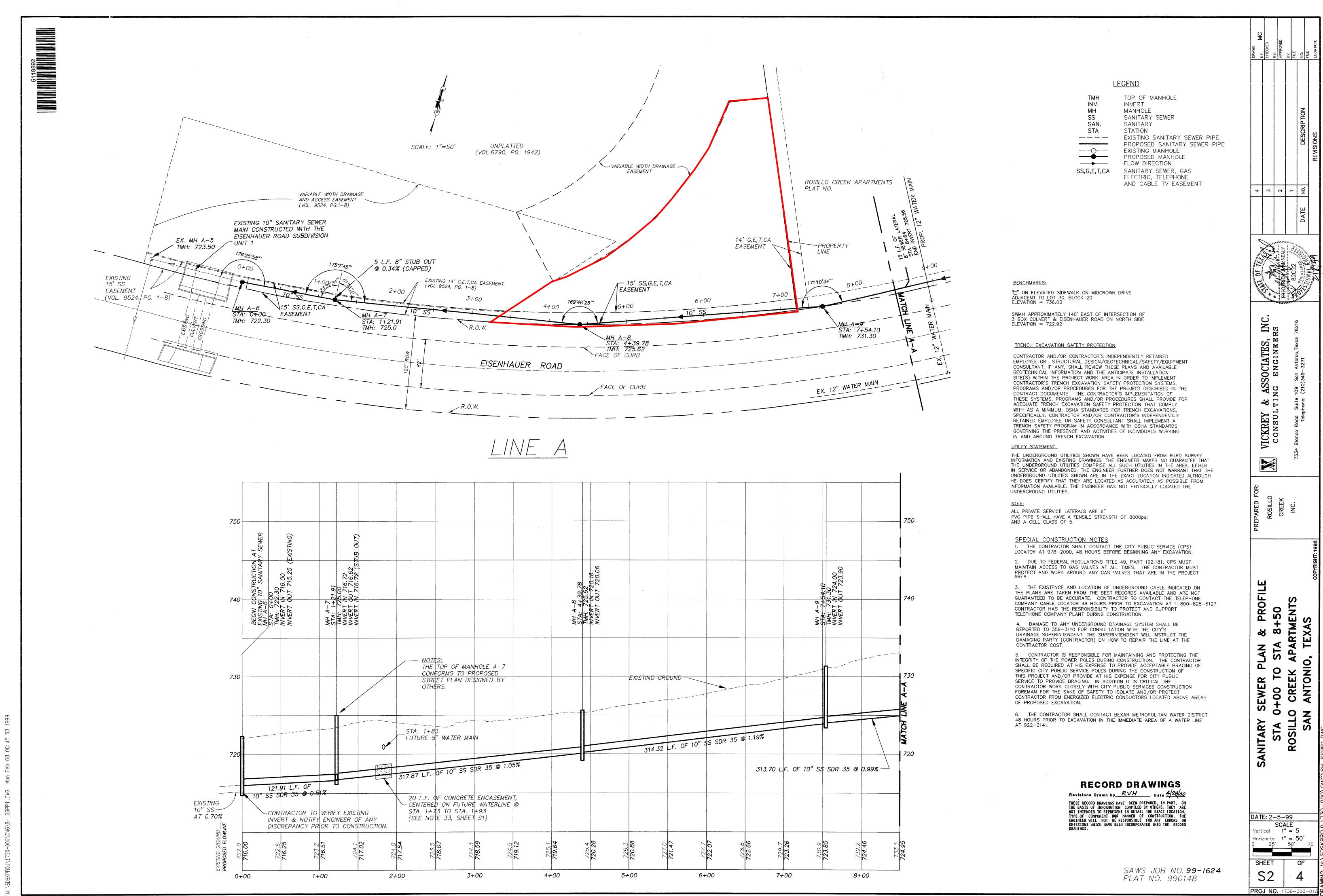
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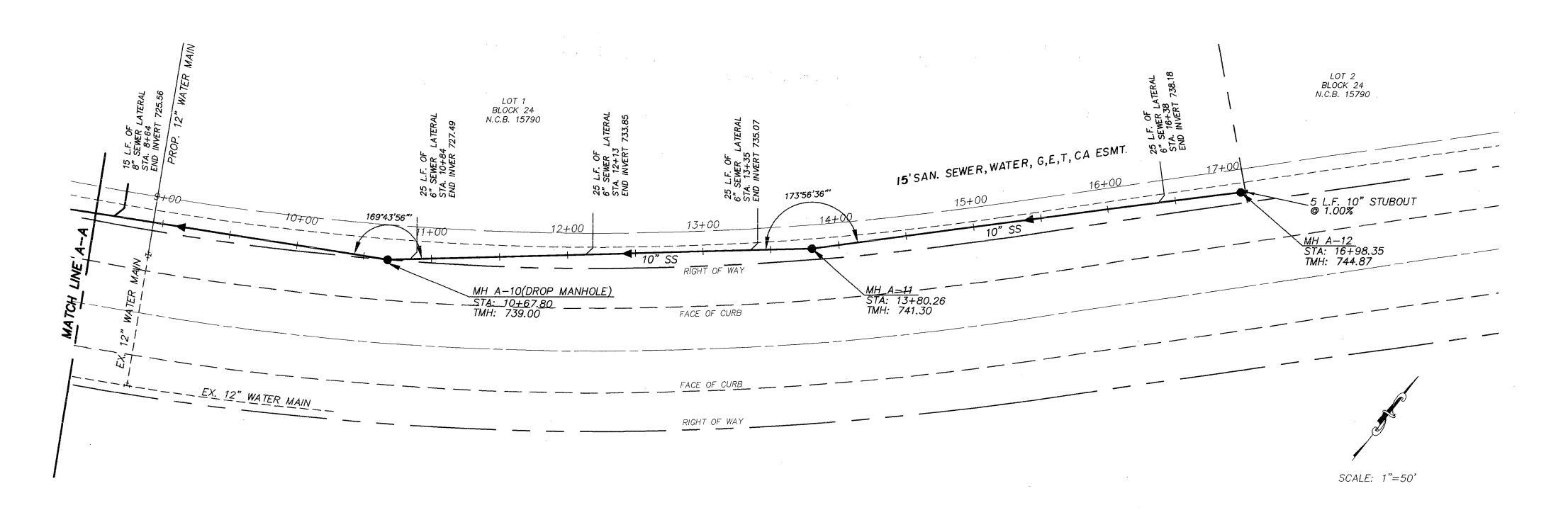
990148

99-1624

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PROJ NO. 1730-0





RUBBER GASKET COMPRESSION JOINTS PER ASTM C-443 CONC. ENCSMNT. 12" MIN 2500 P.S.I. CONCRETE 8" DIAMETER (MIN.) PIPE FILLET JUNCTION OF BENCH & SIDEWALL WITH CONCRETE GROUT PRICE FOR DROP FITTINGS AND ENCASEMENT TO BE INCLUDED WITH PRICE OF MANHOLE.

# **LEGEND**

TOP OF MANHOLE INV. INVERT MANHOLE SS SANITARY SEWER STA SS,G,E,T,CA

SANITARY STATION EXISTING SANITARY SEWER PIPE PROPOSED SANITARY SEWER PIPE EXISTING MANHOLE PROPOSED MANHOLE FLOW DIRECTION

SANITARY SEWER, GAS ELECTRIC, TELEPHONE AND CABLE TV EASEMENT

### BENCHMARKS:

"X" ON ELEVATED SIDEWALK ON MIDCROWN DRIVE ADJACENT TO LOT 30, BLOCK 20 ELEVATION = 736.00

SWMH APPROXIMATELY 140' EAST OF INTERSECTION OF 3 BOX CULVERT & EISENHAUER ROAD, ON NORTH SIDE ELEVATION = 722.92

# TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATE INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS, SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

# UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FILED SURVEY INFORMATION AND EXISTING DRAWINGS. THE ENGINEER MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE ENGINEER HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

(1). ALL PRIVATE SERVICE LATERALS ARE 6"(UNLESS NOTED OTHERWISE)( I.E. STA. 8+78) (2). PVC PIPE SHALL HAVE A TENSILE STRENGTH OF 8000psi AND A CELL CLASS OF 5.

(3). ALL LATERALS WILL BE STUBED 6" ABOVE EXISTING GROUND AND CAPPED PER LATERAL STUB UP DETAIL (COST IS SUBSIDIARY OF LATERAL, NO SEPARATE PAY ITEM)

# SPECIAL CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL CONTACT THE CITY PUBLIC SERVICE (CPS) LOCATOR AT 978-2000, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.

2. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT

3. THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-828-5127. CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.

4. DAMAGE TO ANY UNDERGROUND DRAINAGE SYSTEM SHALL BE REPORTED TO 359-3110 FOR CONSULTATION WITH THE CITY'S DRAINAGE SUPERINTENDENT. THE SUPERINTENDENT WILL INSTRUCT THE DAMAGING PARTY (CONTRACTOR) ON HOW TO REPAIR THE LINE AT THE CONTRACTOR COST.

5. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROTECTING THE INTEGRITY OF THE POWER POLES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE REQUIRED AT HIS EXPENSE TO PROVIDE ACCEPTABLE BRACING OF SPECIFIC CITY PUBLIC SERVICE POLES DURING THE CONSTRUCTION OF THIS PROJECT AND/OR PROVIDE AT HIS EXPENSE FOR CITY PUBLIC SERVICE TO PROVIDE BRACING. IN ADDITION IT IS CRITICAL THE CONTRACTOR WORK CLOSELY WITH CITY PUBLIC SERVICES CONSTRUCTION FOREMAN FOR THE SAKE OF SAFETY TO ISOLATE AND/OR PROTECT CONTRACTOR FROM ENERGIZED ELECTRIC CONDUCTORS LOCATED ABOVE AREAS OF PROPOSED EXCAVATION.

6. THE CONTRACTOR SHALL CONTACT BEXAR METROPOLITAN WATER DISTRICT 48 HOURS PRIOR TO EXCAVATION IN THE IMMEDIATE AREA OF A WATER LINE AT 922-2141.

SAWS JOB NO. **99-1624** PLAT NO. 990148

700			<u>L</u> 1	INE "/	7)				700
750		92			MH A-11 STA: 13+80.26 TMH: 741.30 INVERT IN 734.12 INVERT OUT 734.02			MH A-12 STA: 16+98.35 TMH: 744.87 INVERT IN 737.40 INVERT OUT 737.30	2" CAP 6"  2" PVC  6"x2" REDUCER OF 8"x2" REDUCER OF 3/4" BEND
740	DROP MANHOLE MH A-10	STA: 10+67.80 TMH: 739.00 INVERT IN 730.8 INVERT OUT 727	EXISTING GROUND						2 LATERAL STUB U
730 STA: 8+9	3		PROPOSED GRADE ————————————————————————————————————	35 @ 1.00%		318.09 L.F. OF 10" S	S SDR 35 @ 1.00%	5. 10 (CONTRA	.00 L.F. STUBOUT OF "SS SDR 35 @ 1.00% CTOR SHALL CAP STUBOUT)  730
12" WATER  12" WATER	R MAIN(PROPOSED)								
734.5 735.7 734.5 735.7 735.7 735.7									RECORD DRAWINGS  Revisions Drawn by RVH Date 4/28/00  THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BISIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.
	736.7	739.5	740.4 731.71 740.9 732.21 741.5	732.72			735.82 744.3 736.32	744.5 736.82 744.6 737.42	ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OF CHISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD ORAWINGS.

99-1624

Horizontal 1" = 50

SHEET

PROFIL R PLAN TO 174 DATE: 2-5-99 SCALE Vertical 1" = 5

ASSOCIATES,