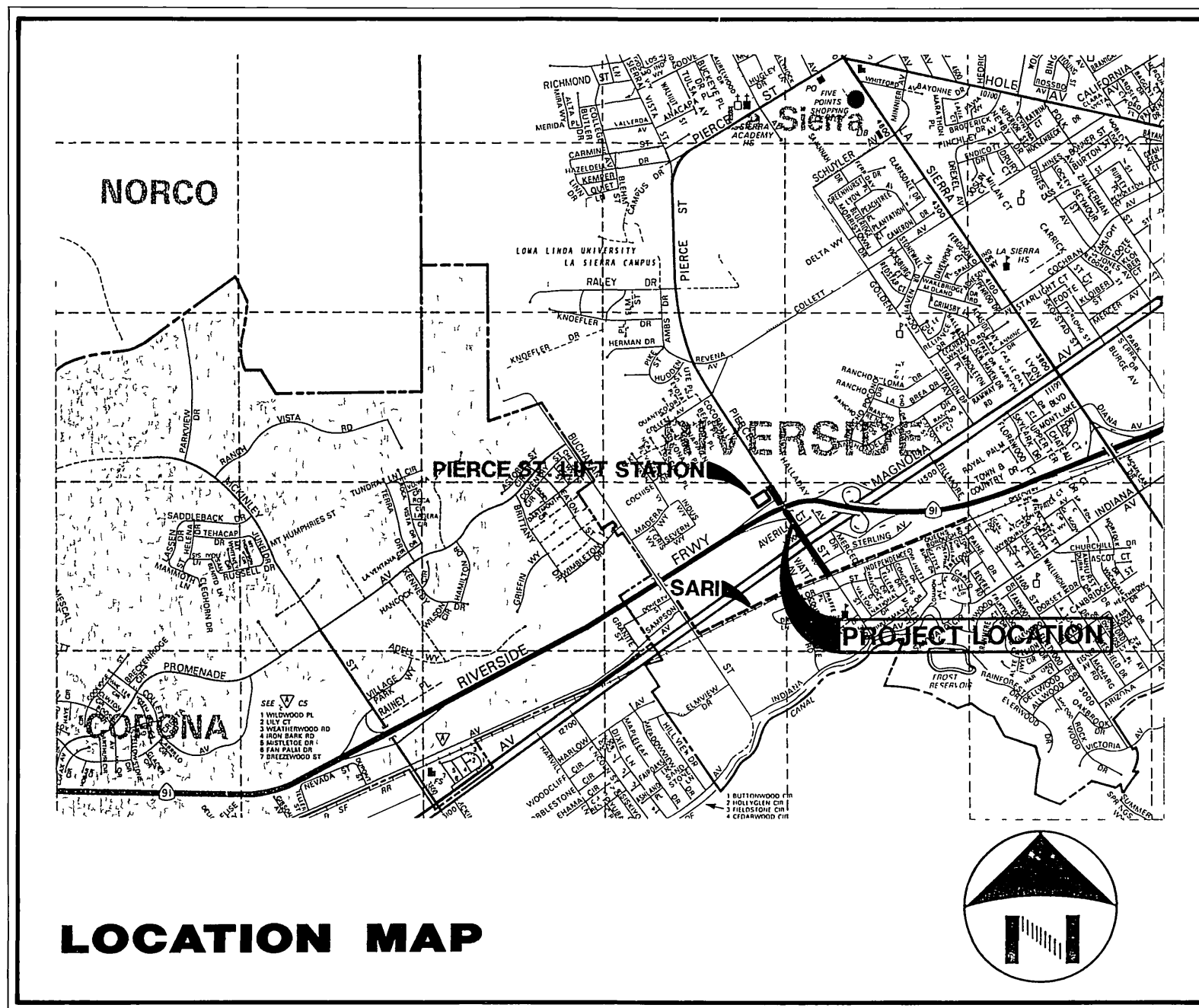
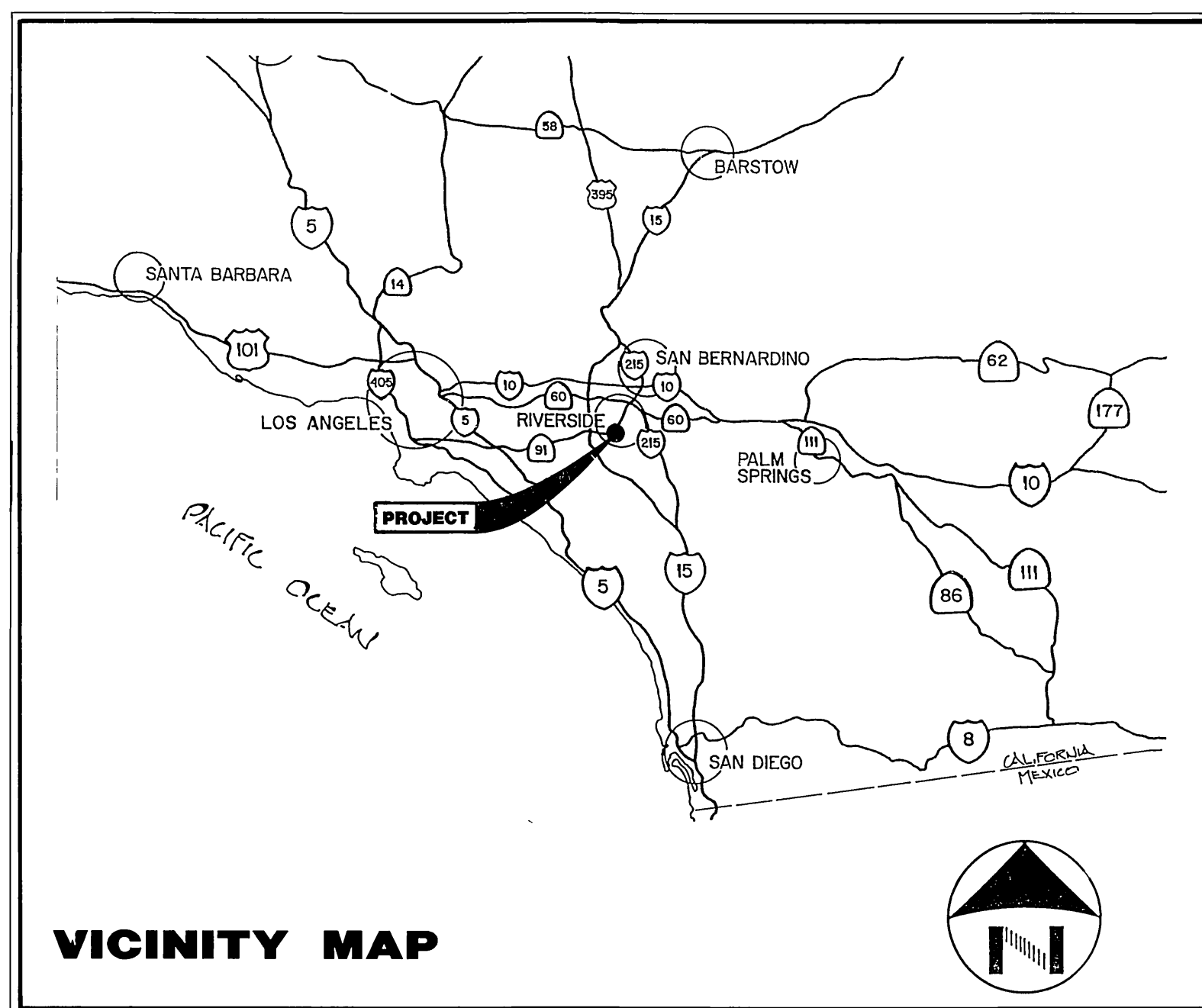


CITY OF RIVERSIDE  
PUBLIC WORKS DEPARTMENT

# PIERCE STREET PUMP STATION BYPASS

## 16" Ø FORCE MAIN



**1 PUBLIC STREETS**

PRIOR TO BEGINNING ANY WORK, CONTRACTOR SHALL OBTAIN PERMITS FOR SUCH WORK FROM THE CITY OF RIVERSIDE, PUBLIC WORKS DEPARTMENT, PUBLIC UTILITIES DEPARTMENT AND OBTAIN A CITY BUSINESS LICENSE AND OBTAIN ENCROACHMENT PERMIT FROM CALTRANS. CONTRACTOR SHALL BEAR ALL COSTS OF SAID PERMITS AND LICENSE. CONTRACTOR SHALL MAINTAIN AT LEAST ONE COPY OF SAID PERMIT ON THE JOBITE. CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS OF SAID PERMITS.

**2 TRAFFIC CONTROL**

CONTRACTOR SHALL PREPARE AND SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY FOR REVIEW AND APPROVAL. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH TRAFFIC CONTROL PLAN APPROVED BY CITY. CONTRACTOR SHALL REFER TO REQUIREMENTS OF THE SPECIAL PROVISIONS FOR TRAFFIC CONTROL AS A MINIMUM. ALL CONSTRUCTION SIGNING, LIGHTING AND BARRICADING SHALL COMPLY WITH STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION "MANUAL OF TRAFFIC CONTROLS, WARNING SIGNS, LIGHTS, AND DEVICES FOR USE IN PERFORMANCE OF WORK UPON HIGHWAYS", LATEST EDITION.

**3 STORAGE OF MATERIALS AND EQUIPMENT**

CONTRACTOR SHALL NOT STORE MATERIALS OR EQUIPMENT ON PRIVATE OR PUBLIC PROPERTY WITHOUT WRITTEN PERMISSION FROM THE AFFECTED PROPERTY OWNERS. APPROVING SUCH USE SAID WRITTEN PERMISSION SHALL BE SUBMITTED TO AND APPROVED BY OWNER PRIOR TO CONTRACTOR MOVING MATERIALS OR EQUIPMENT ONTO SITE.

**4 UTILITIES**

A OWNER HAS SEARCHED AVAILABLE KNOWN RECORDS FOR INFORMATION ABOUT UNDERGROUND FACILITIES. THOSE UNDERGROUND FACILITIES AS SHOWN ON THESE DRAWINGS ARE BASED ON AVAILABLE RECORDS. NO RECORD DATA FOR DEPTH WAS FOUND FOR UNDERGROUND FACILITIES MARKED \* IN PROFILE.

B WHERE UNDERGROUND MAIN CONDUCTORS OR CONDUITS SUCH AS WATER, GAS, SEWER, ELECTRIC POWER, TELEPHONE, OR CABLE TELEVISION ARE SHOWN ON THESE DRAWINGS, CONTRACTOR SHALL ASSUME THAT A SERVICE LATERAL FROM EACH UTILITY FACILITY EXTENDS TO EVERY PARCEL OR PROPERTY WHETHER OR NOT A SERVICE LATERAL IS SHOWN.

C AT LEAST 15 WORKING DAYS BEFORE COMMENCING ANY EXCAVATION ON EACH SEGMENT OF THE WORK, CONTRACTOR SHALL REQUEST UNDERGROUND SERVICE ALERT (1-800-422-4131) AND NON-MEMBER COMPANIES, OR UTILITIES TO MARK OR OTHERWISE INDICATE THE LOCATION(S) OF THEIR SUBSURFACE FACILITIES INCLUDING, BUT NOT LIMITED TO, STRUCTURES INCLUDING VAULTS, MAIN CONDUCTORS OR CONDUITS, AND SERVICE CONNECTIONS.

D AT LEAST 10 DAYS IN ADVANCE, OR A MINIMUM OF 1,000 FEET AHEAD OF TRENCHING, CONTRACTOR SHALL EXCAVATE, EXPOSE, AND DETERMINE THE EXACT LOCATION AND DEPTH OF EACH AND EVERY POTENTIAL INTERFERENCE OF FACILITIES INCLUDING, BUT NOT LIMITED TO, ALL ("POTHOLING") INCLUDING, BUT NOT LIMITED TO, ALL FACILITIES SHOWN SPECIFICALLY ON THESE DRAWINGS, OR WHICH HAVE BEEN MARKED BY THEIR RESPECTIVE OWNERS. CHANGES OR DELAYS CAUSED BY CONTRACTOR'S FAILURE TO PERFORM "POTHOLING" AND INTERFERENCE LOCATION WORK SHALL NOT BE ELIGIBLE FOR EXTRA WORK COMPENSATION OR TIME EXTENSION.

E UPON LEARNING OF THE EXISTENCE OR LOCATION OF ANY UTILITY FACILITY OMITTED FROM OR SHOWN INCORRECTLY ON THESE DRAWINGS, OR IMPROPERLY MARKED OR OTHERWISE INDICATED, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, PROVIDING FULL DETAILS AS TO DEPTH, LOCATION, SIZE, AND FUNCTION.

**5 STREET RESTORATION**

A CONTRACTOR SHALL PROVIDE ACCESS TO ALL STREETS, WALKWAYS, SIDEWALKS, DRIVEWAYS, BIKEWAYS, AND TRAILWAYS FOR ALL AUTOMOBILE AND PEDESTRIAN TRAFFIC AT ALL TIMES.

B CONTRACTOR SHALL PROTECT ALL BERMS, CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, AND BIKEWAYS IN PLACE. CONTRACTOR SHALL CORRECT ANY DAMAGED IMPROVEMENTS AS PART OF THE CONTRACT WORK AND AT NO ADDITIONAL COST TO OWNER.

**C TRENCHES WITHIN THE PAVED AREAS SHALL BE COMPLETELY BACKFILLED AND COMPACTED AND TEMPORARY PAVING INSTALLED SUITABLE TO SUPPORT TRAFFIC BY 5:00 PM EACH WORK DAY. STREETS SHALL BE COMPLETELY OPEN TO TRAFFIC ON WEEKENDS, ON HOLIDAYS, WHENEVER CONTRACTOR IS NOT ACTIVELY WORKING IN THE SPECIFIC AREA, AND BY 5:00 PM EACH WORK DAY.**

**D CONTRACTOR SHALL PLACE PERMANENT PAVEMENT THROUGH INTERSECTIONS AT THE END OF EACH WORKDAY AND BY 5:00 PM. INTERSECTIONS SHALL EXTEND FROM AT LEAST CURB RETURN TO CURB RETURN, OR AS OTHERWISE DIRECTED BY OWNER.**

**E CONTRACTOR SHALL PLACE PERMANENT PAVEMENT OVER ALL TRENCHES ON OR BEFORE FRIDAYS AND DAYS BEFORE HOLIDAYS. HOLIDAYS INCLUDE UNION HOLIDAYS, AND CITY HOLIDAYS. IF CONTRACTOR FAILS TO PLACE PERMANENT PAVEMENT ON OR BEFORE FRIDAYS AND DAYS BEFORE HOLIDAYS, HE SHALL BE IN VIOLATION OF THE CONTRACT AND AT LEAST THE OWNER WILL PROHIBIT ANY OTHER CONSTRUCTION UNTIL PAVEMENT WORK HAS BEEN COMPLETED.**

**F CONTRACTOR SHALL REPLACE EXISTING PAVEMENT AND BASE REMOVED DUE TO CONSTRUCTION IN ACCORDANCE WITH CITY OF RIVERSIDE STANDARD DRAWING 453 CASE 1 ALTERNATIVE 1 PAVEMENT SECTIONS IN PIERCE STREET FROM THE LIFT STATION TO THE PROJECTED RIGHT OF WAY OF MAGNOLIA BLVD (APPROX STATION 21+85) SHALL BE REPLACED WITH 6" ASPHALT CONCRETE PAVEMENT ON 2" OF CRUSHED AGGREGATE BASE. PAVEMENT SECTION AT CROSSING OF MAGNOLIA BLVD BETWEEN THE PROJECTED RIGHT-OF-WAY (APPROX STATION 21+85 TO 23+40) SHALL BE REPLACED WITH 10" ASPHALT CONCRETE ON 6 INCHES OF CRUSHED AGGREGATE BASE. PAVEMENT SECTION IN PIERCE STREET FROM MAGNOLIA BLVD (APPROX STATION 23+40) TO SARI SHALL BE REPLACED WITH 15" ASPHALT CONCRETE PAVEMENT ON 15" CRUSHED AGGREGATE BASE.**

**G ALL STREETS, DRIVEWAYS, GUTTERS, SIDEWALKS, AND ALL OTHER WORK AREAS SHALL BE KEPT CLEAN THEY SHALL BE WASHED AND SWEEP CLEAN ON A DAILY BASIS OR AS NECESSARY, AS DIRECTED BY OWNER.**

**6 TRAFFIC STRIPING**

A ALL TRAFFIC STRIPING AND PAVEMENT MARKINGS DESTROYED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH TEMPORARY STRIPING OR MARKINGS ACCEPTABLE TO OWNER. SAID TEMPORARY STRIPING SHALL BE PLACED PRIOR TO REOPENING STREET TO TRAFFIC.

B WITHIN 3 DAYS OF PLACEMENT OF FINAL ASPHALT CONCRETE PAVEMENT, ALL TRAFFIC STRIPING AND PAVEMENT MARKINGS SHALL BE PERMANENTLY RESTORED IN ACCORDANCE WITH CITY OF RIVERSIDE STANDARDS.

**7 SURVEY MONUMENTS AND BENCH MARKS**

CONTRACTOR SHALL NOT DISTURB EXISTING SURVEY MONUMENTS OR BENCH MARKS. IF MONUMENTS MUST BE REMOVED AND REPLACED FOR CONSTRUCTION, OWNER WILL DO SO AT CONTRACTOR'S EXPENSE.

**8 PIPELINE MATERIALS**

A FORCEMAIN AND LIFT STATION PIPING SHALL BE POLYVINYL CHLORIDE PIPE (PVC) AND DUCTILE IRON PIPE (DIP) AS SHOWN. 16" DIAMETER PVC FORCEMAIN SHALL BE BELL AND SPIGOT, PRESSURE RATING 251, OR RATIO OF 16, CAST IRON PIPE DIMENSIONS, INTERNAL DIAMETER OF 15.46" AS MANUFACTURED, BY J.M. MANUFACTURING COMPANY INCORPORATED OR EQUAL PER UNIFORM FITTINGS FOR PVC PIPE SHALL BE DIP MINIMUM CLASS 150 WITH POLYETHYLENE INTERNAL LINING. CONTRACTOR SHALL PROVIDE FITTINGS AND SHORT LENGTHS OF PIPING TO PROVIDE HIPS AND VIPS AS SHOWN ON THE DRAWINGS. SUBMIT COMPLETE SHOP DRAWINGS FOR APPROVAL.

B DIP PIPE SHALL BE MINIMUM CLASS THICKNESS 33, FITTINGS SHALL BE RATED MINIMUM CLASS 150 DUCTILE IRON PIPE, ALL WITH POLYETHYLENE LINING. DIP GROOVED FOR VICTAULIC COUPLINGS SHALL BE IN ACCORDANCE WITH VICTAULIC EXPOSED DIP SHALL HAVE PAINTED EXTERIOR. BURIED DIP SHALL BE PROTECTED WITH POLYETHYLENE BAGS. BURIED FLANGES AND BOLTS SHALL BE COATED WITH COPPER SUPER TANK SOLUTION OR HENRY'S LAP CEMENT. BOLTS FOR FLANGES SHALL BE A-307 UNLESS SPECIFIED OTHERWISE.

**9 CONSTRUCTION TOLERANCES**

A PIPELINES SHALL BE CONSTRUCTED SO THAT ACTUAL FLOW LINE ELEVATIONS ARE WITHIN 0.1 FOOT OF DESIGN FLOW LINE ELEVATIONS. PIPELINES WHEN INSTALLED, SHALL HAVE CONTINUOUS UPGRADE OR DOWNGRADE, CORRESPONDING WITH DESIGN SLOPE, WITHOUT ANY HIGH SPOTS. PIPELINES SHALL BE CONSTRUCTED SO THAT ACTUAL PIPELINE CENTERLINES ARE WITHIN 0.1 FOOT OF DESIGN PIPELINE CENTERLINES.

**B PIPELINE CONSTRUCTION SHALL CONFORM WITH CONSTRUCTION DRAWINGS (PLANS) WHICH SHOW FLOW LINE ELEVATIONS AND PIPELINE CENTERLINES IN ACCORDANCE WITH THE ABOVE SPECIFIED TOLERANCES. CONTRACTOR SHALL ASSIST OWNER AS REQUIRED TO CONFIRM COMPLIANCE WITH CONSTRUCTION TOLERANCES. CONTRACTOR SHALL MAKE OR ASSIST IN MAKING ALL NECESSARY MEASUREMENTS AS DETERMINED BY OWNER.**

**10 EXCAVATION, BEDDING AND BACKFILL**

A CONTRACTOR IS ADVISED THAT ROCK OR UNACCEPTABLE TRENCH BACKFILL MATERIAL MAY BE ENCOUNTERED DURING TRENCHING OPERATIONS. WHERE SUCH MATERIAL IS ENCOUNTERED, CONTRACTOR SHALL AT NO ADDITIONAL COST TO OWNER, FURNISH AND INSTALL SUITABLE BEDDING AND BACKFILL MATERIAL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

B BEDDING AND BACKFILL MATERIAL SHALL BE EITHER COMMERCIAL IMPORTED MATERIAL OR SELECT NATIVE UNACCEPTABLE TRENCH BACKFILL MATERIAL SHALL BE HAULED TO AND DISCARDED AT A LEGAL DISPOSAL SITE. CONTRACTOR SHALL NOT DISPOSE OF SUCH MATERIAL ON VACANT PRIVATE OR PUBLIC PROPERTY WITH OR WITHOUT PERMISSION.

C AT THE END OF EACH WORK DAY AND BY 5:00 PM, ALL EXCAVATIONS SHALL BE COMPLETELY BACKFILLED AND COMPACTED TO SUPPORT TRAFFIC INCLUDING TEMPORARY PAVING WHERE WITHIN EXISTING PAVED STREET.

D CONTRACTOR SHALL NOT EXCAVATE TRENCHES OR INSTALL PIPE IN STREETS ON WEEKENDS OR HOLIDAYS. HOLIDAYS INCLUDE UNION HOLIDAYS AND CITY OF RIVERSIDE HOLIDAYS.

E TRENCH BEDDING AND BACKFILL SHALL BE IN ACCORDANCE WITH CITY STANDARD DRAWINGS 452 AND 453. BEDDING FOR PIPE SHALL BE CASE III WITH CRUSHED ROCK BACKFILL 12" ABOVE TOP OF PIPE. ALL BACKFILL SHALL BE MINIMUM 90% RELATIVE COMPACTION EXCEPT THE TOP SURFACE WHICH SHALL BE CRUSHED AGGREGATE BASE COMPACTED TO 95% PER CASE 1 ALTERNATIVE 1 PER CITY STANDARD DRAWING 453.

F CONTRACTOR SHALL NOTIFY OWNER WHEN ANY SEGMENT OF BACKFILL IS COMPLETE AND READY FOR COMPACTION TESTING. AFTER SUCH NOTIFICATION, OWNER WILL HAVE ALL NECESSARY TESTS MADE BY A SOILS ENGINEER OF ITS CHOOSING. OWNER WILL PAY FOR ALL PASSING TESTS. CONTRACTOR SHALL PAY FOR ALL FAILING TESTS.

G COMPACTION TESTS WILL BE TAKEN IN THE PIPE ZONE, IN THE BACKFILL ABOVE THE PIPE ZONE, AND IN THE SURGRADE AT 30-FOOT INTERVALS MINIMUM. CONTRACTOR SHALL ASSURE AT NO ADDITIONAL COST TO OWNER, SOILS ENGINEER IN TAKING ALL COMPACTION TESTS. CONTRACTOR SHALL FURNISH ALL EQUIPMENT INCLUDING SKIDDER, LABOR, AND MATERIALS NEEDED FOR SUCH ASSISTANCE. COMPACTION TESTING SHALL BE COMPLETED AND ACCEPTED BY OWNER PRIOR TO PRESSURE TESTING OF ANY PIPELINE.

**11 CONSTRUCTION TESTING PROCEDURE**

OWNER HAS SELECTED TESTING PROCEDURE TO BE EMPLOYED BY CONTRACTOR AS OUTLINED IN THE SPECIAL PROVISIONS.

**12 WORK AT EXISTING LIFT STATION**

A CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD. CONTRACTOR SHALL PROVIDE ADDITIONAL VENTILATION AS NECESSARY AND MONITOR GAS LEVELS (HYDROGEN SULFIDE, METHANE AND OTHERS) DURING CONSTRUCTION TO ASSURE SAFE WORKING CONDITIONS.

C CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT REQUIRED FOR DEWATERING FOR CONNECTION TO THE EXISTING LIFT STATION. CONTRACTOR SHALL PROVIDE INSTALLATION OF 16" FORCE MAIN, METERING FACILITIES AND APPURTENANCES. CONTRACTOR MAY UTILIZE EXISTING DEWATERING WELLS AT LIFT STATION SITE TO AID IN DEWATERING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT SAID WELLS ARE ADEQUATE FOR HIS USE. WELLS SHALL BE EXAMINED BY CONTRACTOR PRIOR TO BID. CONTRACTOR MAY TEST WELLS AT HIS OWN EXPENSE. IF DESIRED, ADDITIONAL DEWATERING FACILITIES AS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.

D CONTRACTOR SHALL CONDUCT WORK IN A MANNER NECESSARY TO PREVENT INTERFERENCE WITH STATION OPERATION. EXISTING HEADER PIPING SHALL BE REMOVED AND NEW SHUT-OFF VALVE INSTALLED. SO PUMPS #5 AND #6 WILL BE OUT OF OPERATION A MAXIMUM OF 4 HOURS FROM 12:00 AM TO 4:00 AM. CONTRACTOR SHALL HAVE ALL MATERIALS ON SITE FOR MODIFYING PUMP HEADER AND PUMP #4 DISCHARGE PIPING AND HAVE 16" DIP FROM STATION WALL TO THE 16" SHUT-OFF VALVE COMPLETE INCLUDING TESTING PRIOR TO TAKING ANY PUMPS OUT OF SERVICE. WORK SHALL BE COMPLETED SO THAT TOTAL TIME PUMP #4 IS OUT OF SERVICE SHALL BE 72 HOURS.

E PUMPING CONTROL EQUIPMENT SHALL BE MODIFIED IN A MANNER TO PREVENT SHUT-DOWN OF THE PUMP STATION. THE EXISTING (OLD) PROGRAM SHALL BE SAVED SO THAT IF THE NEW PROGRAM WHEN LOADED MALFUNCTIONS THE EXISTING OLD PROGRAM CAN BE RELOADED AND STATION OPERATION WILL NOT BE AFFECTED.

**13 GENERAL NOTES**

A CONTRACTOR SHALL NOTIFY CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT AND PUBLIC UTILITIES DEPARTMENT, CALTRANS GENERAL TELEPHONE COMPANY, SOUTHERN CALIFORNIA GAS COMPANY, SOUTHERN CALIFORNIA EDISON COMPANY, AND SANTA ANA WATERSHED PROJECT AUTHORITY (SAWPA), CONCERNING CONSTRUCTION START, MINIMIZING 48 HOURS PRIOR TO TRENCHING OPERATIONS.

B CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM THE STATE DIVISION OF INDUSTRIAL SAFETY PRIOR TO STARTING CONSTRUCTION AND HE SHALL MAKE A COPY AVAILABLE TO OWNER.

C CONSTRUCTION STAKING SHALL BE PROVIDED BY THE OWNER AND SHALL CONSIST OF HORIZONTAL AND VERTICAL ALIGNMENT AT ALL HPI, VPI AND AT APPROXIMATELY 32' INTERVALS. LOCATION OF AIR VALVE, METER VALVE, METERING EQUIPMENT ENCLOSURE, SERVICE PEDESTAL AND LOCATION OF SARI (APPROXIMATE) SHALL ALSO BE STAKED BY OWNER. CONTRACTOR SHALL PAY FOR RESTAKING.

D ALL EXISTING FACILITIES THAT ARE MOVED DURING CONSTRUCTION OR ARE PAVED OVER, INCLUDING VALVE CANS AND COVERS, AND SEWER MANHOLE COVERS SHALL BE REINSTALLED BY CONTRACTOR AT PROPER ELEVATION AND LOCATION PER CITY STANDARDS.

E OWNER WILL OPERATE ALL EXISTING WATER AND SEWER SYSTEM VALVES AND EXISTING LIFT STATION FACILITIES FOR CONTRACTOR. CONTRACTOR SHALL NOT OPERATE ANY EXISTING SYSTEM VALVES OR LIFT STATION FACILITIES UNDER ANY CIRCUMSTANCES.

F REFER TO STANDARD DRAWING NO 1 AND 2 FOR LEGEND AND ABBREVIATIONS FOLLOWING ARE ADDITIONAL ABBREVIATIONS.

SAWPA SANTA ANA WATERSHED PROJECT AUTHORITY  
SARI SANTA ANA REGIONAL INTERCEPTOR

G CONTRACTOR BIDDING THIS WORK SHALL HAVE A CLASS A ENGINEERING CONTRACTORS LICENSE.

**14 PLATING OPEN TRENCH**

A CONTRACTOR MAY PROVIDE STEEL PLATE PROTECTION OVER TRENCH EXCAVATION AT THE END OF EACH WORK DAY EXCEPT ON FRIDAYS OR DAYS BEFORE HOLIDAYS PROVIDED THE PLATE AND TRENCH ARE SUITABLE TO SUPPORT TRAFFIC LOADINGS, INCLUDING H-20-44 TRUCK LOADINGS. PLATE SHALL BE LARGE ENOUGH TO LAP OVER TRENCH SIDES A MINIMUM OF 3 FEET. PLATING WILL BE PERMITTED ONLY WHERE THE TRENCH IS STABLE. TRENCH SHORING SHALL REMAIN IN PLACE. MAXIMUM LENGTH OF TRENCH PLATED SHALL BE 25 FEET. TEMPORARY PAVING SHALL BE PLACED FOR A SMOOTH TRANSITION OVER THE PLATE AND COMPLETE TRAFFIC WARNING SIGNS SHALL BE PROVIDED.

B CONTRACTOR SHALL BE AVAILABLE 24 HOURS TO REPAIR ANY FAILURE OF THE PLATED TRENCH WHICH MAY ENDANGER TRAFFIC. ALL TRENCHES SHALL BE BACK FILLED AND SUITABLE FOR TRAFFIC ON FRIDAYS AND DAYS BEFORE HOLIDAYS AS PRESCRIBED PER NOTES 3 AND 10 HEREON.

**LEGEND**

UTILITY INTERFERENCE FLAG (APPROXIMATE LOCATION OF INTERFERENCES) WITH TYPE OF UTILITY INDICATED BY: W - WATER, G - GAS, T - TELEPHONE, SD - STORM DRAIN, S - SEWER, E - ELECTRIC, TR - TRAFFIC, I - IRRIGATION, U - UNKNOWN UTILITY

FLW LINE ELEVATION

NOT BUILT!  
PER DECISION  
ON JULY, 1989

SANTA ANA WATERSHED PROJECT AUTHORITY

*[Signature]*  
APPROVED BY



• KRIEGER & STEWART •  
INCORPORATED  
ENGINEERING CONSULTANTS  
RIVERSIDE, CALIFORNIA (714) 684 6900  
APPROVED BY *Jon C. Reynolds*  
REGISTERED ENGINEER No. 20453 DATE 6-8-89

MARK	REVISIONS	APPR	DATE

CITY OF RIVERSIDE  
PUBLIC WORKS DEPARTMENT  
APPROVED BY *[Signature]*  
DATE *6-21-89*  
TRAFFIC DIVISION  
CHIEF W. ENGINEER

CITY OF RIVERSIDE  
PIERCE STREET PUMP STATION BYPASS  
16" Ø FORCE MAIN  
TITLE SHEET

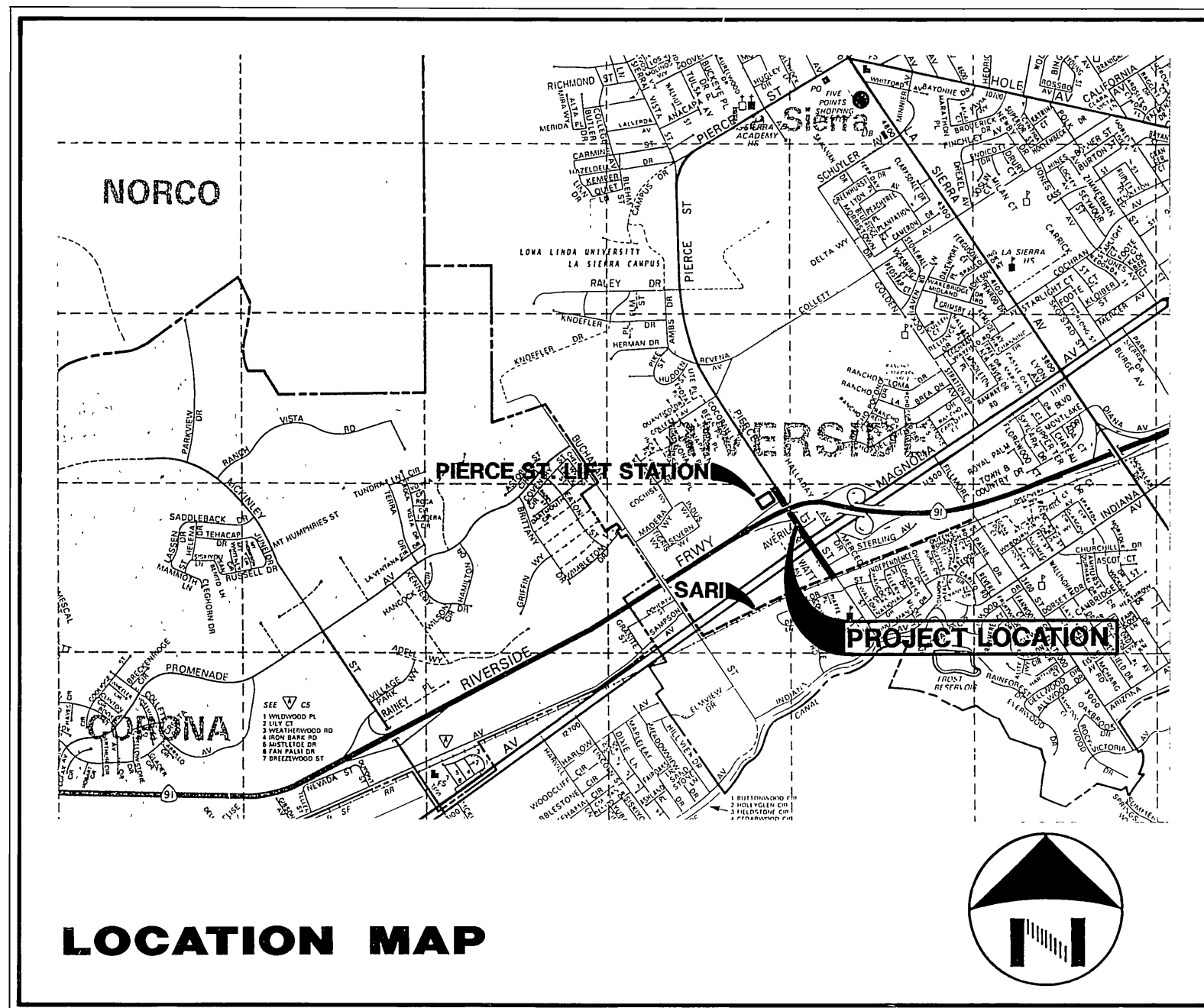
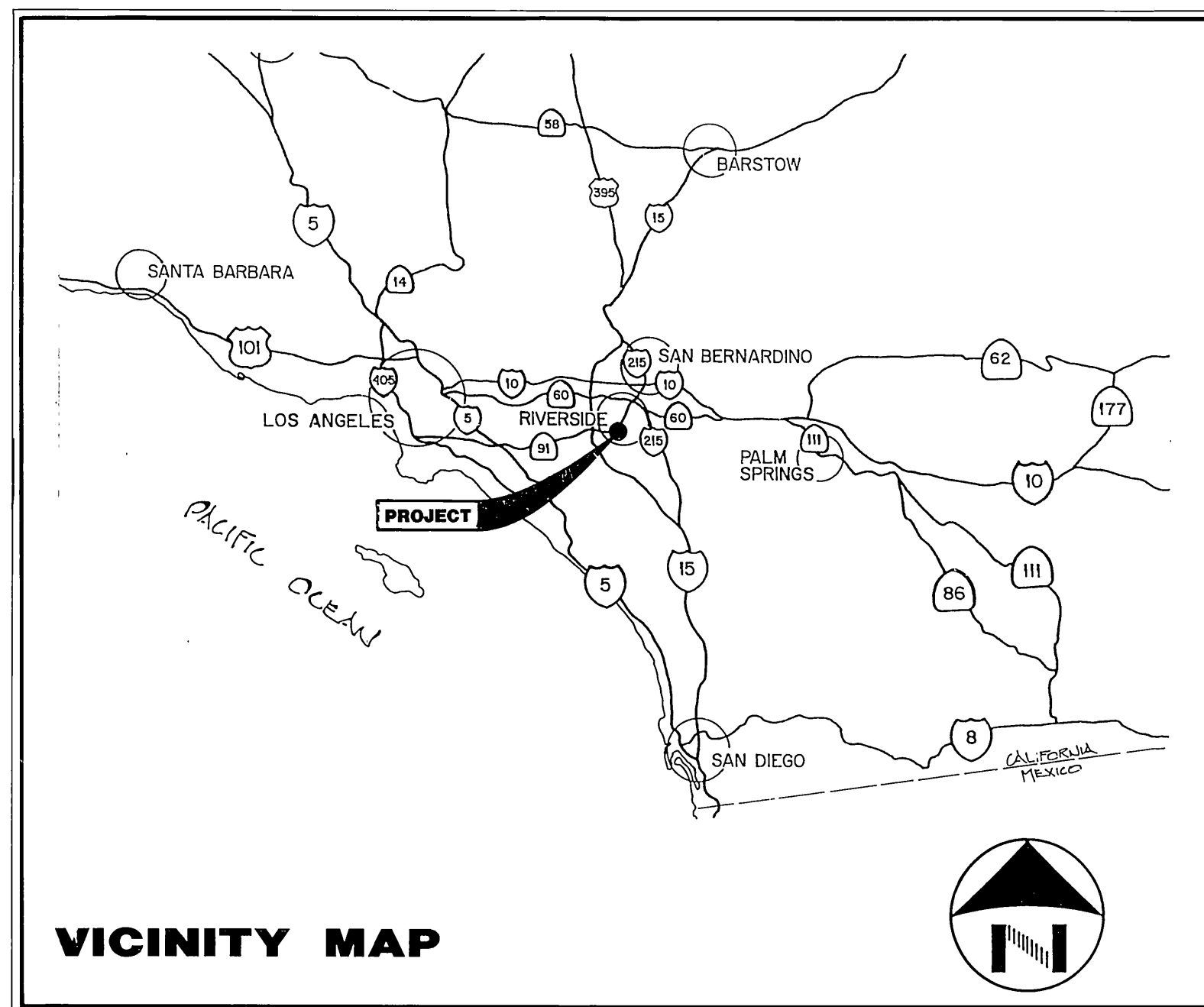
ACCOUNT NO. 80-871-907  
S-1547  
SHEET 1 OF 4  
476-6



CITY OF RIVERSIDE  
PUBLIC WORKS DEPARTMENT

PIERCE STREET  
PUMP STATION BYPASS

16" Ø FORCE MAIN



1. PUBLIC STREETS

PRIOR TO BEGINNING ANY WORK, CONTRACTOR SHALL OBTAIN PERMITS FOR SUCH WORK FROM THE CITY OF RIVERSIDE, PUBLIC WORKS DEPARTMENT, PUBLIC UTILITIES DEPARTMENT AND OBTAIN A CITY BUSINESS LICENSE AND OBTAIN ENCROACHMENT PERMIT FROM CALTRANS. CONTRACTOR SHALL BEAR ALL COSTS OF SAID PERMITS AND LICENSE. CONTRACTOR SHALL MAINTAIN AT LEAST ONE COPY OF SAID PERMIT ON THE JOBSITE. CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS OF SAID PERMITS.

2. TRAFFIC CONTROL

CONTRACTOR SHALL PREPARE AND SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY FOR REVIEW AND APPROVAL. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE TRAFFIC CONTROL PLAN APPROVED BY CITY. CONTRACTOR SHALL REFER TO REQUIREMENTS OF THE SPECIAL PROVISIONS FOR TRAFFIC CONTROL. AS A MINIMUM, ALL CONSTRUCTION SIGNING, LIGHTING AND BARRICADING SHALL COMPLY WITH STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION MANUAL OF TRAFFIC CONTROLS, WARNING SIGNS, LIGHTS, AND DEVICES FOR USE IN PERFORMANCE OF WORK UPON HIGHWAYS, LATEST EDITION.

3. STORAGE OF MATERIALS AND EQUIPMENT

CONTRACTOR SHALL NOT STORE MATERIALS OR EQUIPMENT ON PRIVATE OR PUBLIC PROPERTY WITHOUT WRITTEN PERMISSION FROM THE AFFECTED PROPERTY OWNERS. APPROVING SUCH SAID WRITTEN PERMISSION SHALL BE SUBMITTED TO AND APPROVED BY OWNER PRIOR TO CONTRACTOR MOVING MATERIALS OR EQUIPMENT ONTO SITE.

4. UTILITIES

A. OWNER HAS SEARCHED AVAILABLE KNOWN RECORDS FOR INFORMATION ABOUT UNDERGROUND FACILITIES. THOSE UNDERGROUND FACILITIES AS SHOWN ON THESE DRAWINGS ARE BASED ON AVAILABLE RECORDS. NO RECORD DATA FOR DEPTH WAS FOUND FOR UNDERGROUND FACILITIES MARKED \* IN PROFILE.

B. WHERE UNDERGROUND MAIN CONDUCTORS OR CONDUITS SUCH AS WATER, GAS, SEWER, ELECTRIC POWER, TELEPHONE, OR CABLE TELEVISION ARE SHOWN ON THESE DRAWINGS, CONTRACTOR SHALL ASSUME THAT A SERVICE LATERAL FROM EACH UTILITY FACILITY EXTENDS TO EVERY PANEL OR PROPERTY WHETHER OR NOT A SERVICE LATERAL IS SHOWN.

C. AT LEAST 15 WORKING DAYS BEFORE COMMENCING ANY EXCAVATION ON EACH SEGMENT OF THE WORK, CONTRACTOR SHALL REQUEST UNDERGROUND SERVICE ALERT (1-800-222-4133) AND NON-MEMBER COMPANIES, OR UTILITIES TO MARK OR OTHERWISE INDICATE THE LOCATION(S) OF THEIR SUBSURFACE FACILITIES INCLUDING, BUT NOT LIMITED TO, STRUCTURES INCLUDING VAULTS, MAIN CONDUCTORS OR CONDUITS, AND SERVICE CONNECTIONS.

D. AT LEAST 10 DAYS IN ADVANCE, OR A MINIMUM OF 1,000 FEET AHEAD OF TRENCHING, CONTRACTOR SHALL EXCAVATE, EXPOSE, AND DETERMINE THE EXACT LOCATION AND DEPTH OF EACH AND EVERY POTENTIAL INTERFERENCE ("POTHOLDING"), INCLUDING BUT NOT LIMITED TO, ALL FACILITIES SHOWN SPECIFICALLY ON THESE DRAWINGS, OR WHICH HAVE BEEN MARKED BY THEIR RESPECTIVE OWNERS. CHANGES OR DELAYS CAUSED BY CONTRACTOR'S FAILURE TO PERFORM "POTHOLDING" AND INTERFERENCE LOCATION WORK SHALL NOT BE ELIGIBLE FOR EXTRA WORK COMPENSATION OR TIME EXTENSION.

E. UPON LEARNING OF THE EXISTENCE OR LOCATION OF ANY UTILITY FACILITY OMITTED FROM OR SHOWN INCORRECTLY ON THESE DRAWINGS, OR IMPROPERLY MARKED OR OTHERWISE INDICATED, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, PROVIDING FULL DETAILS AS TO DEPTH, LOCATION, SIZE, AND FUNCTION.

F. CONTRACTOR SHALL NOT INTERRUPT OR DISTURB ANY UTILITY FACILITY WITHOUT AUTHORITY FROM THE UTILITY OR ORDER FROM OWNER. WHERE PROTECTION IS REQUIRED TO ENSURE INTERFERENCE WITH UTILITY FACILITIES (INCLUDING CITY-OWNED UTILITIES) LOCATED AS SHOWN ON THE DRAWINGS OR VISIBLE TO CONTRACTOR OR MARKED OR OTHERWISE INDICATED AS STATED HEREIN, CONTRACTOR SHALL, UNLESS OTHERWISE PROVIDED, FURNISH AND PLACE ALL NECESSARY PROTECTION AT NO ADDITIONAL COST TO OWNER.

5. STREET RESTORATION

A. CONTRACTOR SHALL PROVIDE ACCESS TO ALL STREETS, WALKWAYS, SIDEWALKS, DRIVEWAYS, BIKEWAYS, AND TRAILWAYS FOR ALL AUTOMOBILE AND PEDESTRIAN TRAFFIC AT ALL TIMES.

B. CONTRACTOR SHALL PROTECT ALL BERMS, CURBS, GUTTERS, WALKWAYS, SIDEWALKS, DRIVEWAYS, BIKEWAYS, AND TRAILWAYS FOR ALL AUTOMOBILE AND PEDESTRIAN TRAFFIC AT ALL TIMES. CONTRACTOR SHALL CORRECT ANY DAMAGED IMPROVEMENTS AS PART OF THE CONTRACT WORK AND AT NO ADDITIONAL COST TO OWNER.

C. TRENCHES WITHIN THE PAVED AREAS SHALL BE COMPLETELY BACKFILLED AND COMPACTED AND TEMPORARY PAVING INSTALLED SUITABLE TO SUPPORT TRAFFIC BY 5:00 PM EACH WORK DAY. STREETS SHALL BE COMPLETELY OPEN TO TRAFFIC ON WEEKENDS, ON HOLIDAYS, WHENEVER CONTRACTOR IS NOT ACTIVELY WORKING IN THE SPECIFIC AREA, AND BY 5:00 PM EACH WORK DAY.

D. CONTRACTOR SHALL PLACE PERMANENT PAVEMENT THROUGH INTERSECTIONS AT THE END OF EACH WORKDAY AND BY 5:00 PM. INTERSECTIONS SHALL EXTEND FROM AT LEAST CURB RETURN TO CURB RETURN, OR AS OTHERWISE DIRECTED BY OWNER.

E. CONTRACTOR SHALL PLACE PERMANENT PAVEMENT OVER ALL TRENCHES ON OR BEFORE FRIDAYS AND DAYS BEFORE HOLIDAYS. HOLIDAYS INCLUDE UNION HOLIDAYS, AND CITY HOLIDAYS. IF CONTRACTOR FAILS TO PLACE PERMANENT PAVEMENT ON OR BEFORE FRIDAYS AND DAYS BEFORE HOLIDAYS, HE SHALL BE IN VIOLATION OF THE CONTRACT AND AT LEAST THE OWNER WILL PROHIBIT ANY OTHER CONSTRUCTION UNTIL PAVEMENT WORK HAS BEEN COMPLETED.

F. CONTRACTOR SHALL REPLACE EXISTING PAVEMENT AND BASE REMOVED DUE TO CONSTRUCTION IN ACCORDANCE WITH CITY OF RIVERSIDE STANDARD DRAWING 453 CASE 1 ALTERNATIVE 1 PAVEMENT SECTIONS IN PIERCE STREET FROM THE LIFT STATION TO THE PROJECTED RIGHT OF WAY OF MAGNOLIA BLVD. (APPROX. STATION 21+85) SHALL BE REPLACED WITH 6" ASPHALT CONCRETE PAVEMENT ON 2" OF CRUSHED AGGREGATE BASE. PAVEMENT SECTION AT CROSSING OF MAGNOLIA BLVD. BETWEEN THE PROJECTED RIGHT-OF-WAY (APPROX. STATION 21+85 TO 23+40) SHALL BE REPLACED WITH 10" ASPHALT CONCRETE ON 6 INCHES OF CRUSHED AGGREGATE BASE. PAVEMENT SECTION IN PIERCE STREET FROM MAGNOLIA BLVD. (APPROX. STATION 23+40) TO SARI SHALL BE REPLACED WITH 6" ASPHALT CONCRETE PAVEMENT ON 15" CRUSHED AGGREGATE BASE.

G. ALL STREETS, DRIVEWAYS, GUTTERS, SIDEWALKS, AND ALL OTHER WORK AREAS SHALL BE KEPT CLEAN. THEY SHALL BE WASHED AND SWEEP CLEAN ON A DAILY BASIS OR AS NECESSARY, AS DIRECTED BY OWNER.

6. TRAFFIC STRIPING

A. ALL TRAFFIC STRIPING AND PAVEMENT MARKINGS DESTROYED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH TEMPORARY STRIPING OR MARKINGS ACCEPTABLE TO OWNER. SAID TEMPORARY STRIPING SHALL BE PLACED PRIOR TO REOPENING STREET TO TRAFFIC.

B. WITHIN 5 DAYS OF PLACEMENT OF FINAL ASPHALT CONCRETE PAVEMENT, ALL TRAFFIC STRIPING AND PAVEMENT MARKINGS SHALL BE PERMANENTLY RESTORED IN ACCORDANCE WITH CITY OF RIVERSIDE STANDARDS.

7. SURVEY MONUMENTS AND BENCH MARKS

CONTRACTOR SHALL NOT DISTURB EXISTING SURVEY MONUMENTS OR BENCH MARKS. IF MONUMENTS MUST BE REMOVED AND REPLACED DURING CONSTRUCTION, OWNER WILL DO SO AT CONTRACTOR'S EXPENSE.

8. PIPELINE MATERIALS

A. FORCEMAIN AND LIFT STATION PIPING SHALL BE POLYVINYL CHLORIDE PIPE (PVC) AND DUCTILE IRON PIPE (DIP) AS SHOWN. 16" DIAMETER PVC FORCEMAIN SHALL BE BELL AND SPIGOT, PRESSURE RATING 235 DR RATIO OF 18. CAST IRON PIPE DIMENSIONS, INTERNAL DIAMETER OF 15.46" AS MANUFACTURED BY J.M. MANUFACTURING COMPANY INCORPORATED OR EQUAL PER UNIFORM FITTINGS FOR PVC PIPE SHALL BE DIP MINIMUM CLASS 150 WITH POLYETHYLENE INTERNAL LINING. CONTRACTOR SHALL PROVIDE FITTINGS AND SHORT LENGTHS OF PIPING TO PROVIDE HPIS AND VPIIS AS SHOWN ON THE DRAWINGS. SUBMIT COMPLETE SHOP DRAWINGS FOR APPROVAL.

B. DIP PIPE SHALL BE MINIMUM CLASS 150 THICKNESS 53, FITTINGS SHALL BE RATED MINIMUM CLASS 150 DUCTILE IRON PIPE, ALL WITH POLYETHYLENE LINING. DIP GROOVED FOR VICTALIC COUPLINGS SHALL BE IN ACCORDANCE WITH ANSA C606. EXPOSED DIP SHALL HAVE PAINTED EXTERIOR. BURIED DIP SHALL BE PROTECTED WITH POLYETHYLENE BAGS, BURIED FLANGES AND BOLTS SHALL BE COATED WITH KOPERS SUPER TANK SOLUTION OR HENRY'S LAP CEMENT. BOLTS FOR FLANGES SHALL BE A-307 UNLESS SPECIFIED OTHERWISE.

9. CONSTRUCTION TOLERANCES

A. PIPELINES SHALL BE CONSTRUCTED SO THAT ACTUAL FLOW LINE ELEVATIONS ARE WITHIN 0.1 FOOT OF DESIGN FLOW LINE ELEVATIONS. PIPELINES, WHEN INSTALLED, SHALL HAVE CONTINUOUS UPGRADE OR DOWNGRADE, CORRESPONDING WITH DESIGN SLOPE, WITHOUT ANY HIGH SPOTS. PIPELINES SHALL BE CONSTRUCTED SO THAT ACTUAL PIPELINE CENTERLINES ARE WITHIN 0.1 FOOT OF DESIGN PIPELINE CENTERLINES.

D. PIPELINE CONSTRUCTION SHALL CONFORM WITH CONSTRUCTION DRAWINGS (PLANS) WHICH SHOW FLOW LINE ELEVATIONS AND PIPELINE CENTERLINES IN ACCORDANCE WITH THE ABOVE SPECIFIED TOLERANCES. CONTRACTOR SHALL ASSIST OWNER AS REQUIRED TO CONFIRM COMPLIANCE WITH CONSTRUCTION TOLERANCES. CONTRACTOR SHALL MAKE OR ASSIST IN MAKING ALL NECESSARY MEASUREMENTS AS DETERMINED BY OWNER.

10. EXCAVATION, BEDDING AND BACKFILL

A. CONTRACTOR IS ADVISED THAT ROCK OR UNACCEPTABLE TRENCH BACKFILL MATERIAL MAY BE ENCOUNTERED DURING TRENCHING OPERATIONS. WHERE SUCH MATERIAL IS ENCOUNTERED, CONTRACTOR SHALL, AT NO ADDITIONAL COST TO OWNER, FURNISH AND INSTALL SUITABLE BEDDING AND BACKFILL MATERIAL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

B. BEDDING AND BACKFILL MATERIAL SHALL BE EITHER COMMERCIAL IMPORTED MATERIAL OR SELECT NATIVE MATERIAL AS SPECIFIED HEREIN. ALL ROCK OR UNACCEPTABLE TRENCH BACKFILL MATERIAL SHALL BE HAULED TO AND DISCARDED AT A LEGAL DISPOSAL SITE. CONTRACTOR SHALL NOT DISPOSE OF SUCH MATERIAL ON VACANT PRIVATE OR PUBLIC PROPERTY WITH OR WITHOUT PERMISSION.

C. AT THE END OF EACH WORK DAY AND BY 5:00 PM, ALL EXCAVATIONS SHALL BE COMPLETELY BACKFILLED AND COMPACTED TO SUPPORT TRAFFIC INCLUDING TEMPORARY PAVING WHERE WITHIN EXISTING PAVED STREET.

D. CONTRACTOR SHALL NOT EXCAVATE TRENCHES OR INSTALL PIPE IN STREETS ON WEEKENDS OR HOLIDAYS. HOLIDAYS INCLUDE UNION HOLIDAYS AND CITY OF RIVERSIDE HOLIDAYS.

E. TRENCH BEDDING AND BACKFILL SHALL BE IN ACCORDANCE WITH CITY STANDARD DRAWINGS 452 AND 453. BEDDING FOR PIPE SHALL BE CASE III WITH CRUSHED ROCK BACKFILL 12" ABOVE TOP OF PIPE. ALL BACKFILL SHALL BE MINIMUM 90% RELATIVE COMPACTION EXCEPT THE TOP SURFACE WHICH SHALL BE CRUSHED AGGREGATE BASE COMPACTED TO 95% PER CASE I ALTERNATIVE I PER CITY STANDARD DRAWING 453.

F. CONTRACTOR SHALL NOTIFY OWNER WHEN ANY SEGMENT OF BACKFILL IS COMPLETE AND READY FOR COMPACTION TESTING. AFTER SUCH NOTIFICATION, OWNER WILL HAVE ALL NECESSARY TESTS MADE BY A SOILS ENGINEER OF ITS CHOOSING. OWNER WILL PAY FOR ALL PASSING TESTS. CONTRACTOR SHALL PAY FOR ALL FAILING TESTS.

G. COMPACTION TESTS WILL BE TAKEN IN THE PIPE ZONE, IN THE BACKFILL ABOVE THE PIPE ZONE, AND IN THE SUBGRADE AT 20-FOOT INTERVALS MINIMUM. CONTRACTOR SHALL ASSIST AT NO ADDITIONAL COST TO OWNER, SOILS ENGINEER IN TAKING ALL COMPACTION TESTS. CONTRACTOR SHALL FURNISH ALL EQUIPMENT INCLUDING SHOULDER LABOR, AND MATERIALS NEEDED FOR SUCH ASSISTANCE. COMPACTION TESTING SHALL BE COMPLETED AND ACCEPTED BY OWNER PRIOR TO PRESSURE TESTING OF ANY PIPELINE.

11. CONSTRUCTION TESTING PROCEDURE

OWNER HAS SELECTED TESTING PROCEDURE TO BE EMPLOYED BY CONTRACTOR AS OUTLINED IN THE SPECIAL PROVISIONS.

12. WORK AT EXISTING LIFT STATION

A. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD.

B. CONTRACTOR SHALL PROVIDE ADDITIONAL VENTILATION AS NECESSARY AND MONITOR GAS LEVELS (HYDROGEN SULFIDE, METHANE) ALL EQUIPMENT DURING CONSTRUCTION TO ASSURE SAFE WORKING CONDITIONS.

C. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT REQUIRED FOR Dewatering FOR CONNECTION TO THE EXISTING LIFT STATION. CONTRACTOR SHALL ASSIST IN INSTALLATION OF 16" FORCE MAIN, METERING FACILITIES AND APPURTENANCES. CONTRACTOR MAY UTILIZE EXISTING DEWATERING WELLS AT LIFT STATION SITE TO AID IN DEWATERING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT SAID WELLS ARE ADEQUATE FOR HIS USE. WELLS SHALL BE EXAMINED BY CONTRACTOR PRIOR TO BID. CONTRACTOR MAY TEST WELLS AT HIS OWN EXPENSE (TRENCHING AND DEWATERING FACILITIES AS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY).

D. CONTRACTOR SHALL CONDUCT WORK IN A MANNER NECESSARY TO PREVENT INTERFERENCE WITH STATION OPERATION. EXISTING HEADER PIPING SHALL BE REMOVED AND NEW SHUT-OFF VALVE INSTALLED SO PUMPS #5 AND #6 WILL BE OUT OF OPERATION A MAXIMUM OF 4 HOURS FROM 12:00 AM TO 4:00 AM. CONTRACTOR SHALL HAVE ALL MATERIALS ON SITE FOR MODIFYING PUMP HEADER AND PUMP #4 DISCHARGE PIPING AND HAVE 16" DIP TRENCH STATION WALL TO THE 16" SHUT-OFF VALVE COMPLETE INCLUDING TESTING PRIOR TO TAKING ANY PUMPS OUT OF SERVICE. WORK SHALL BE COMPLETED SO THAT TOTAL TIME PUMP #4 IS OUT OF SERVICE SHALL BE 72 HOURS.

13. GENERAL NOTES

A. CONTRACTOR SHALL NOTIFY CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT AND PUBLIC UTILITIES DEPARTMENT, CALTRANS, GENERAL TELEPHONE COMPANY, SOUTHERN CALIFORNIA GAS COMPANY, SOUTHERN CALIFORNIA EDISON COMPANY, AND SANTA ANA WATERSHED PROJECT AUTHORITY (SAWPA), CONCERNING CONSTRUCTION START, MINIMIZING 48 HOURS PRIOR TO TRENCHING OPERATIONS.

B. CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM THE STATE DIVISION OF INDUSTRIAL SAFETY PRIOR TO STARTING CONSTRUCTION AND HE SHALL MAKE A COPY AVAILABLE TO OWNER.

C. CONSTRUCTION STAKING SHALL BE PROVIDED BY THE OWNER AND SHALL CONSIST OF HORIZONTAL AND VERTICAL ALIGNMENT AT ALL HPI, VPI AND AT APPROXIMATELY 20' INTERVALS. LOCATION OF AIR VALVE, METER VAULT, METERING EQUIPMENT ENCLOSURE, SERVICE PEDESTAL AND LOCATION OF SARI (APPROXIMATE) SHALL ALSO BE STAKED BY OWNER. CONTRACTOR SHALL PAY FOR RESTAKING.

D. ALL EXISTING FACILITIES THAT ARE MOVED DURING CONSTRUCTION OR ARE PAVED OVER, INCLUDING VALVE CANS AND COVERS, AND SEWER MANHOLE COVERS SHALL BE REINSTALLED BY CONTRACTOR AT PROPER ELEVATION AND LOCATION PER CITY STANDARDS.

E. OWNER WILL OPERATE ALL EXISTING WATER AND SEWER SYSTEM VALVES AND EXISTING LIFT STATION FACILITIES FOR CONTRACTOR. CONTRACTOR SHALL NOT OPERATE ANY EXISTING SYSTEM VALVES OR LIFT STATION FACILITIES UNDER ANY CIRCUMSTANCES.

F. REFER TO STANDARD DRAWING NO. 1 AND 2 FOR LEGEND AND ABBREVIATIONS. FOLLOWING ARE ADDITIONAL ABBREVIATIONS:

SAWPA SANTA ANA WATERSHED PROJECT AUTHORITY  
SARI SANTA ANA REGIONAL INTERCEPTOR

14. PLATING OPEN TRENCH

A. CONTRACTOR MAY PROVIDE STEEL PLATE PROTECTION OVER TRENCH EXCAVATION AT END OF EACH WORK DAY (EXCEPT ON FRIDAYS OR DAYS BEFORE HOLIDAYS) PROVIDED THE PLATE AND TRENCH ARE SUITABLE TO SUPPORT TRAFFIC LOADINGS INCLUDING H-20-44 TRUCK LOADINGS. PLATE SHALL BE LARGE ENOUGH TO LAP OVER TRENCH SIDES A MINIMUM OF 3 FEET. PLATING WILL BE PERMITTED ONLY WHERE THE TRENCH IS STABLE. TRENCH SHORING SHALL REMAIN IN PLACE. MAXIMUM LENGTH OF TRENCH PLATED SHALL BE 25 FEET. TEMPORARY PAVING SHALL BE PLACED FOR A SMOOTH TRANSITION OVER THE PLATE, AND COMPLETE TRAFFIC WARNING SIGNS SHALL BE PROVIDED.

B. CONTRACTOR SHALL BE AVAILABLE 24 HOURS TO REPAIR ANY FAILURE OF THE PLATED TRENCH WHICH MAY ENDANGER TRAFFIC. ALL TRENCHES SHALL BE BACK FILLED AND SUITABLE FOR TRAFFIC ON FRIDAYS AND DAYS BEFORE HOLIDAYS AS PRESCRIBED PER NOTES 5 AND 10 HEREON.

LEGEND

UTILITY INTERFERENCE FLAG (APPROXIMATE LOCATION OF INTERFERENCE) WITH TYPE OF UTILITY INDICATED BY: W - WATER, G - GAS, T - TELEPHONE, SD - STORM DRAIN, S - SEWER, E - ELECTRIC, TR - TRAFFIC, I - IRRIGATION, U - UNKNOWN UTILITY

FLOW LINE ELEVATION

NOT BUILT!  
PER DECISION  
ON JULY, 1989



KRIEGER & STEWART  
INCORPORATED  
ENGINEERING CONSULTANTS  
RIVERSIDE, CALIFORNIA (714) 684-6900  
APPROVED BY Jon C. Reynolds  
REGISTERED ENGINEER NO. 20453 DATE 6-8-89

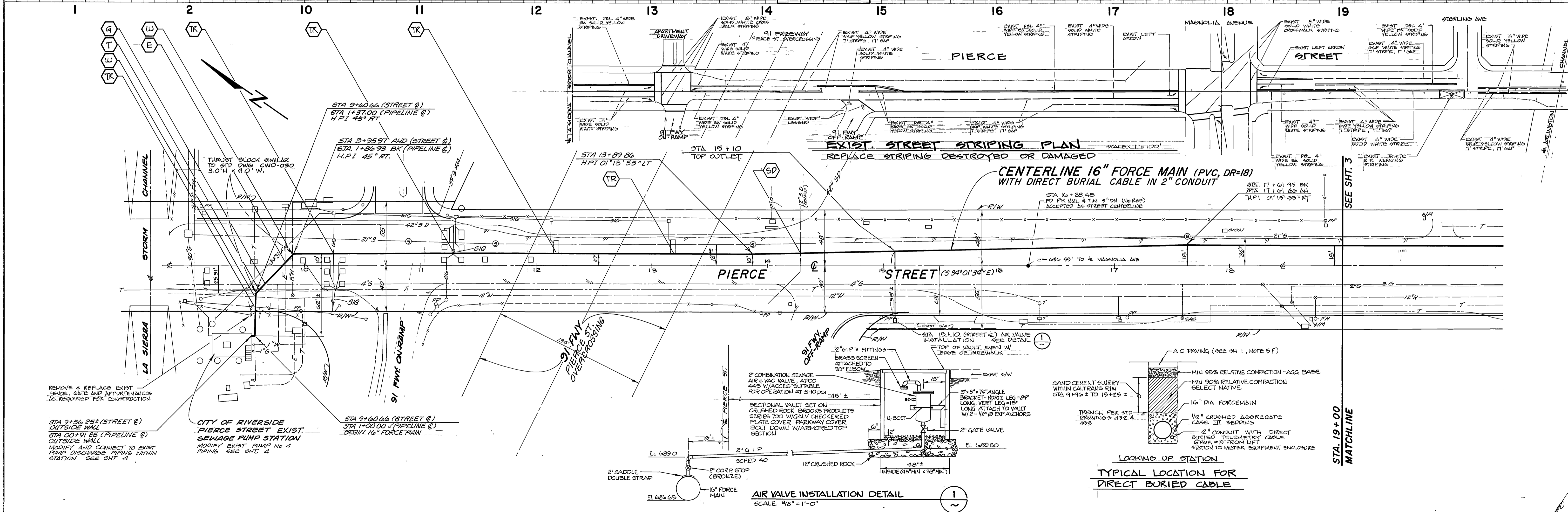
MARK	REVISIONS	APPR	DATE

CITY OF RIVERSIDE  
PUBLIC WORKS DEPARTMENT  
APPROVED BY [Signature]  
DATE 6/21/89  
TRAFFIC DIVISION  
CHIEF P.W. ENGINEER

CITY OF RIVERSIDE  
PIERCE STREET PUMP STATION BYPASS  
16" Ø FORCE MAIN  
TITLE SHEET

ACCOUNT NO. 80-871-907  
S-1547  
SHEET 1 OF 4  
476-6





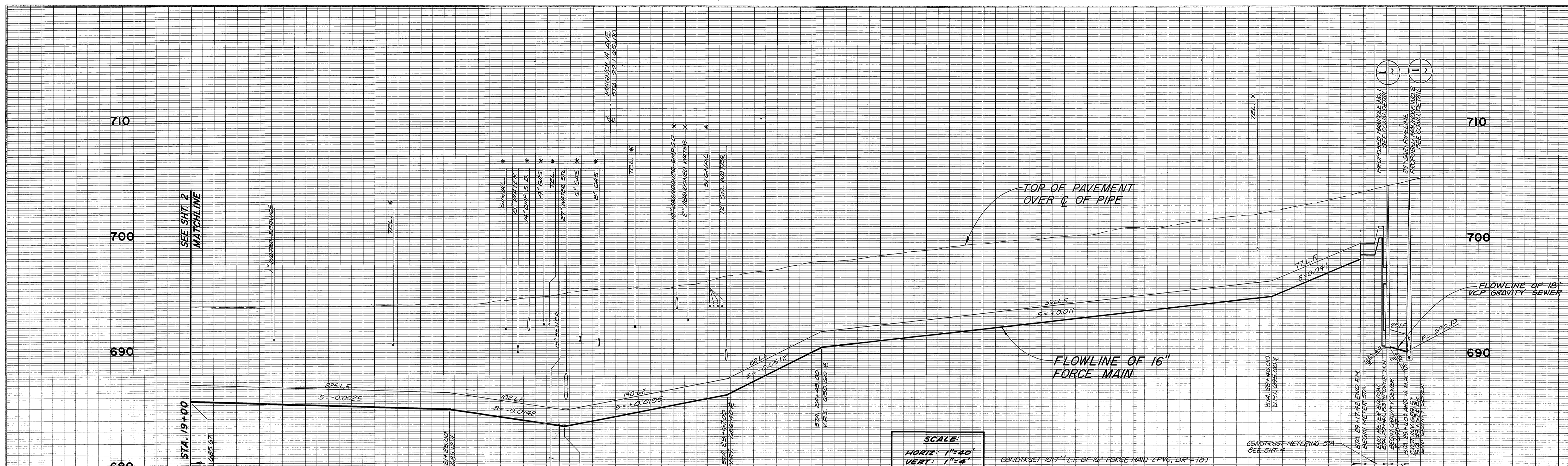
• KRIEGER & STEWART •  
INCORPORATED  
ENGINEERING CONSULTANTS  
RIVERSIDE, CALIFORNIA (714) 684 6900  
APPROVED BY *Jon C. Reynolds*  
REGISTERED ENGINEER NO. 20453 DATE 6-8-85

DESIGNED BY *MSK* DRAWN BY *SEJ/DD* CHECKED BY *JCR*

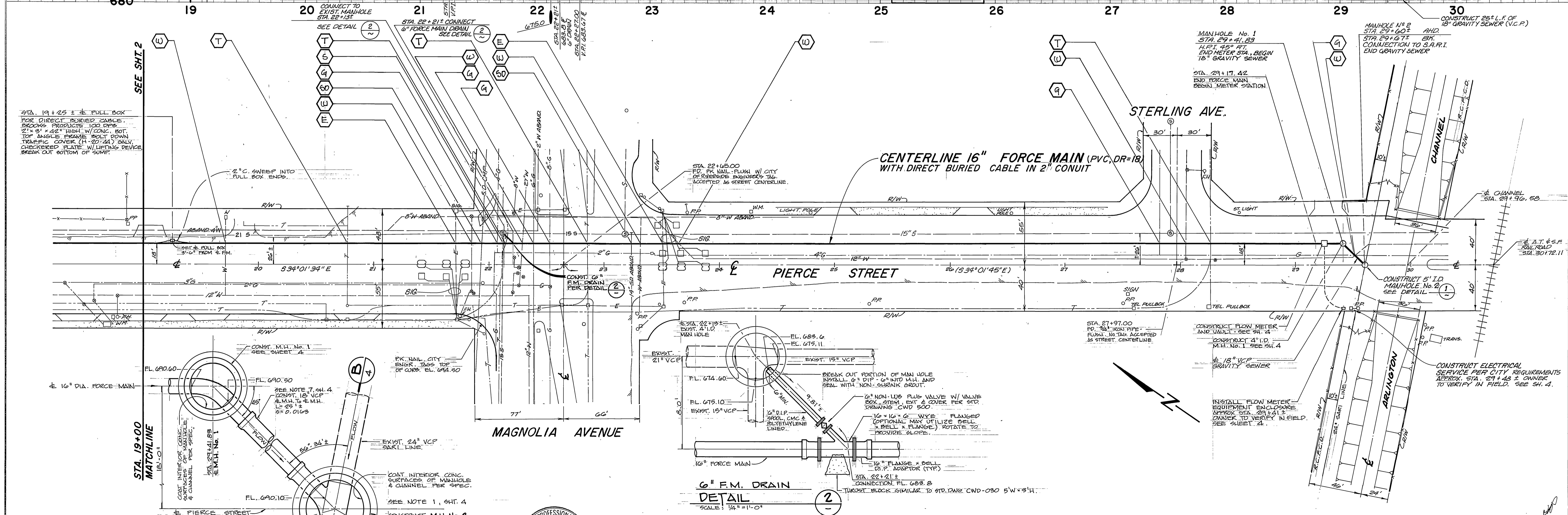
**CITY OF RIVERSIDE**  
PUBLIC WORKS DEPARTMENT  
APPROVED BY *[Signature]* DATE *6-28-85*  
PRINCIPAL ENGINEER  
PARK DEPARTMENT  
TRAFFIC DIVISION  
CHIEF P.W. ENGINEER

**CITY OF RIVERSIDE**  
PIERCE STREET PUMP STATION BYPASS  
16" FORCE MAIN  
STATION 1+00 TO STATION 1+86.93  
STATION 9+95.97 TO STATION 19+00  
HORIZ SCALE 1" = 40' VERT SCALE 1" = 4'  
ACCOUNT NO. 90-577-507  
S-1547  
2 OF 4  
SHEET 2 OF 4  
DATE \_\_\_\_\_ PUBLIC WORKS DIRECTOR  
DATE \_\_\_\_\_





SCALE:  
HORIZ: 1"=40'  
VERT: 1"=4'



STA. 19+25 ± FULL BOX FOR DIRECT BURIED CABLE. BROOKS PRODUCTS 100 DFB. 21" x 21" x 2" HIGH W/ CONC. ROT TOP ANGLE FRAME BOLT DOWN TRAFFIC COVER (H-20-44) GALV. CHECKED PLATE W/ LIFTING DEVICE. BREAK OUT BOTTOM OF SUMP.

SEE SHT. 2

STA. 19+00 MATCHLINE

STA. 19+00 MATCHLINE

PLAN - M.H. No. 1 & M.H. No. 2  
DETAIL  
SCALE: 1/4" = 1'-0"



• KRIEGER & STEWART •  
INCORPORATED  
ENGINEERING CONSULTANTS  
RIVERSIDE, CALIFORNIA (714) 684-6900  
APPROVED BY *Jon C. Reynolds*  
REGISTERED ENGINEER No. 20453 DATE 6-8-89

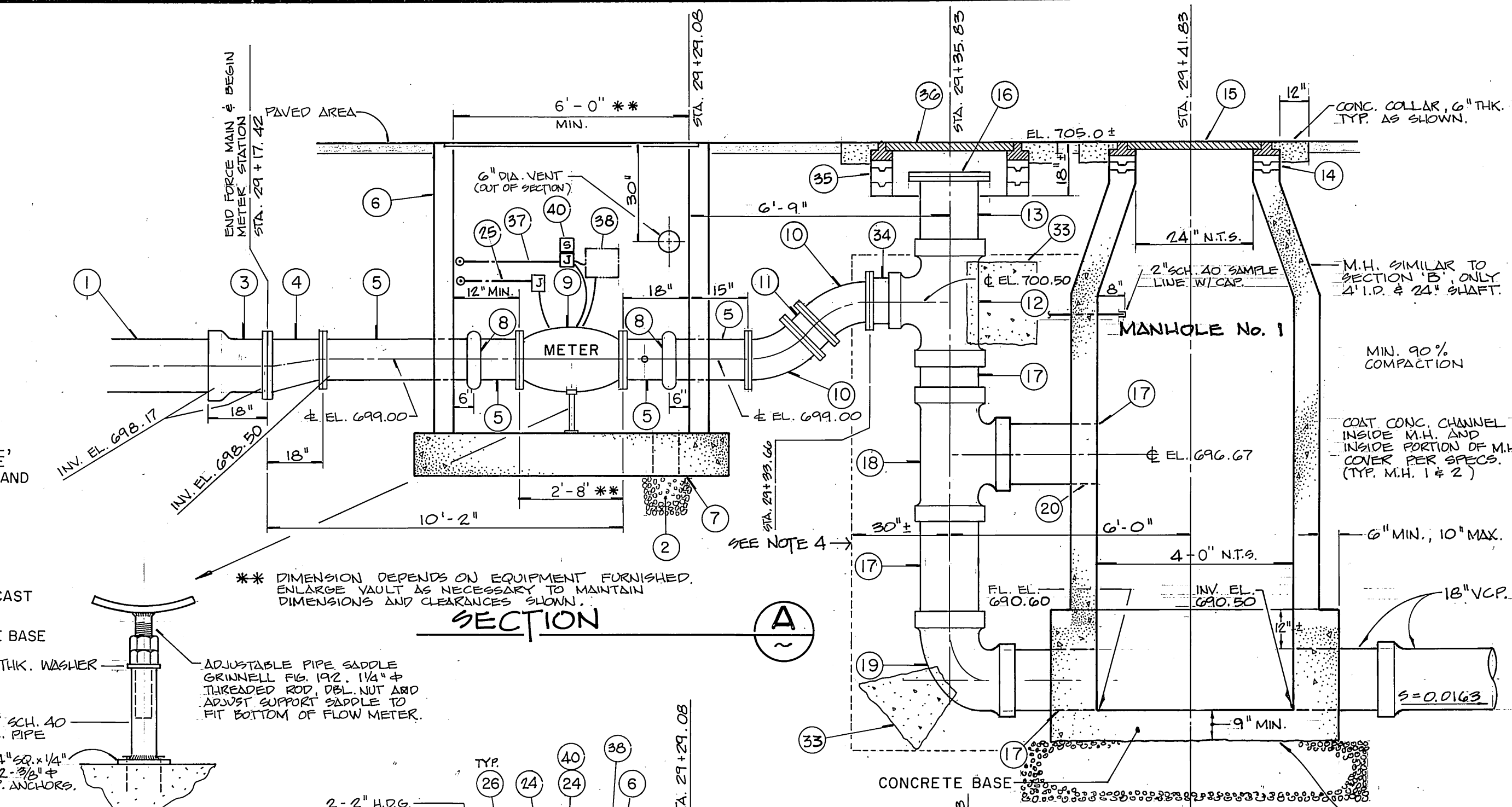
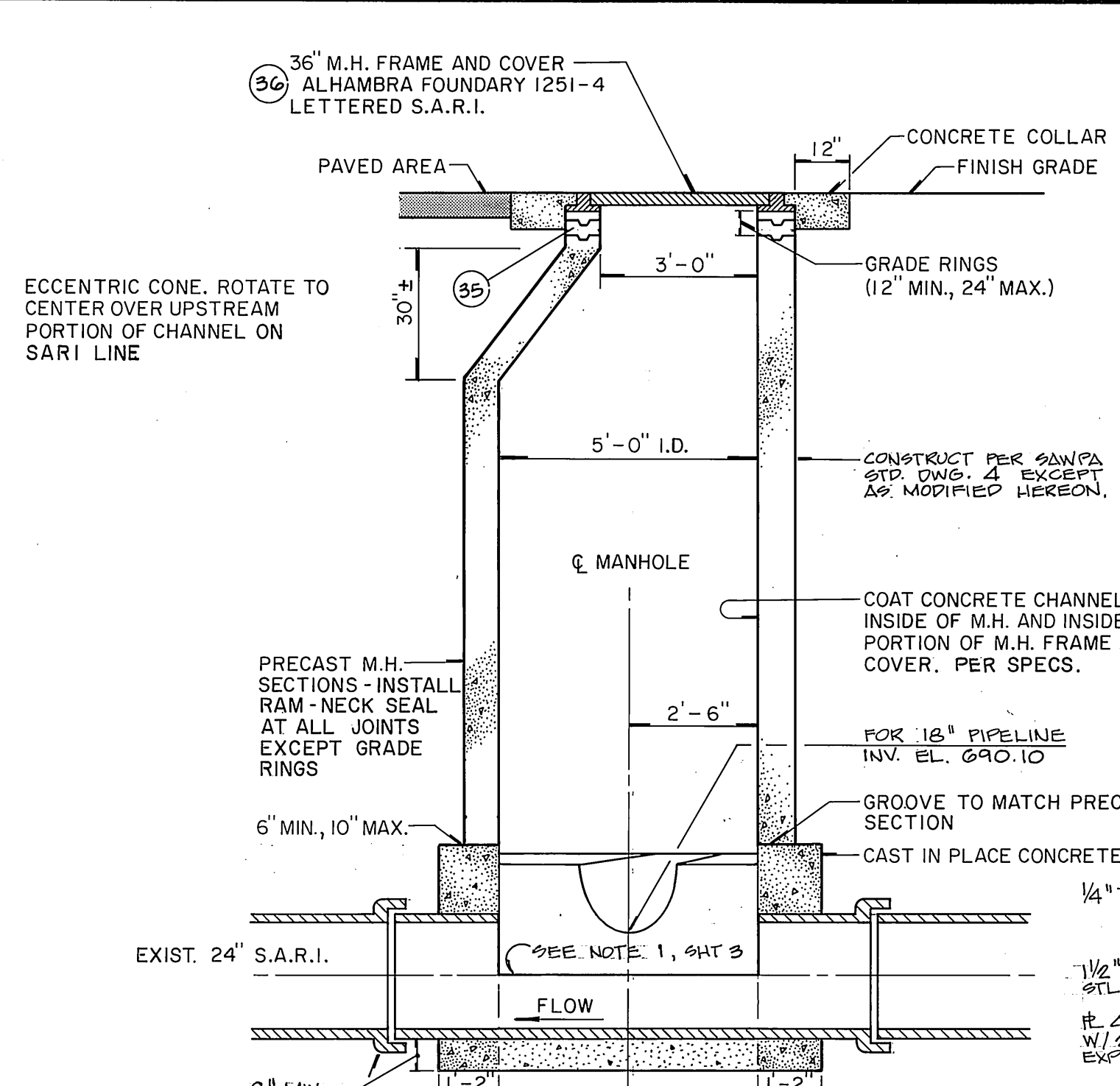
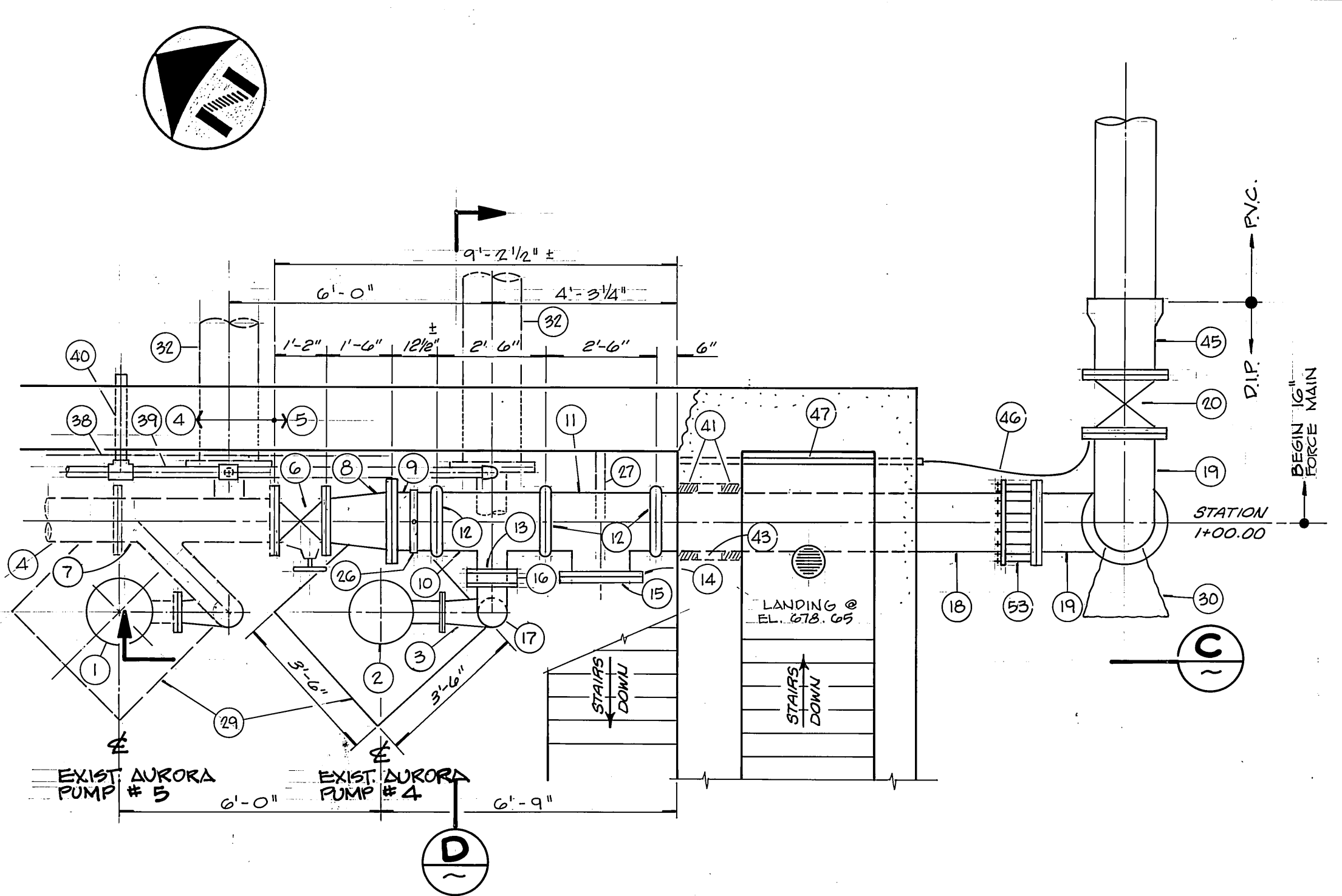
DESIGNED BY	MSH	DATE	
DRAWN BY	BEW/D	CHECKED BY	J.C.K.

CITY OF RIVERSIDE  
PUBLIC WORKS DEPARTMENT  
APPROVED BY *[Signature]* DATE 6/21/89  
TRAFFIC DIVISION  
CHIEF P.W. ENGINEER

CITY OF RIVERSIDE  
PIERCE STREET PUMP STATION BYPASS  
16" Ø FORCE MAIN  
STATION 19+00 TO STATION 29+59  
HORIZ. SCALE: 1" = 40' VERT. SCALE: 1" = 4'

ACCOUNT NO. 90-571-507  
S-1547  
3 OF 4  
SHEET OF  
476-6  
INDEXED 10/11/89

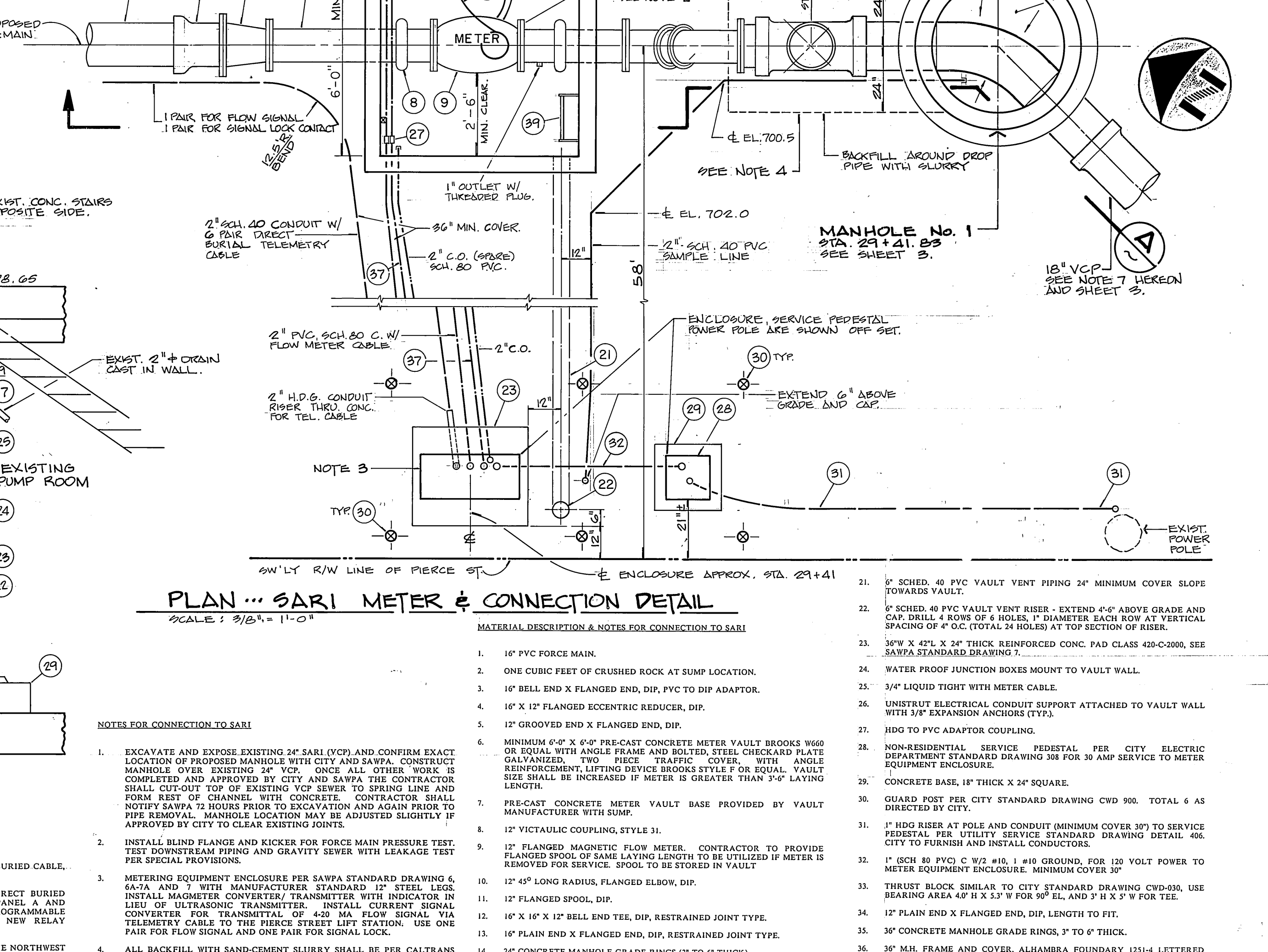
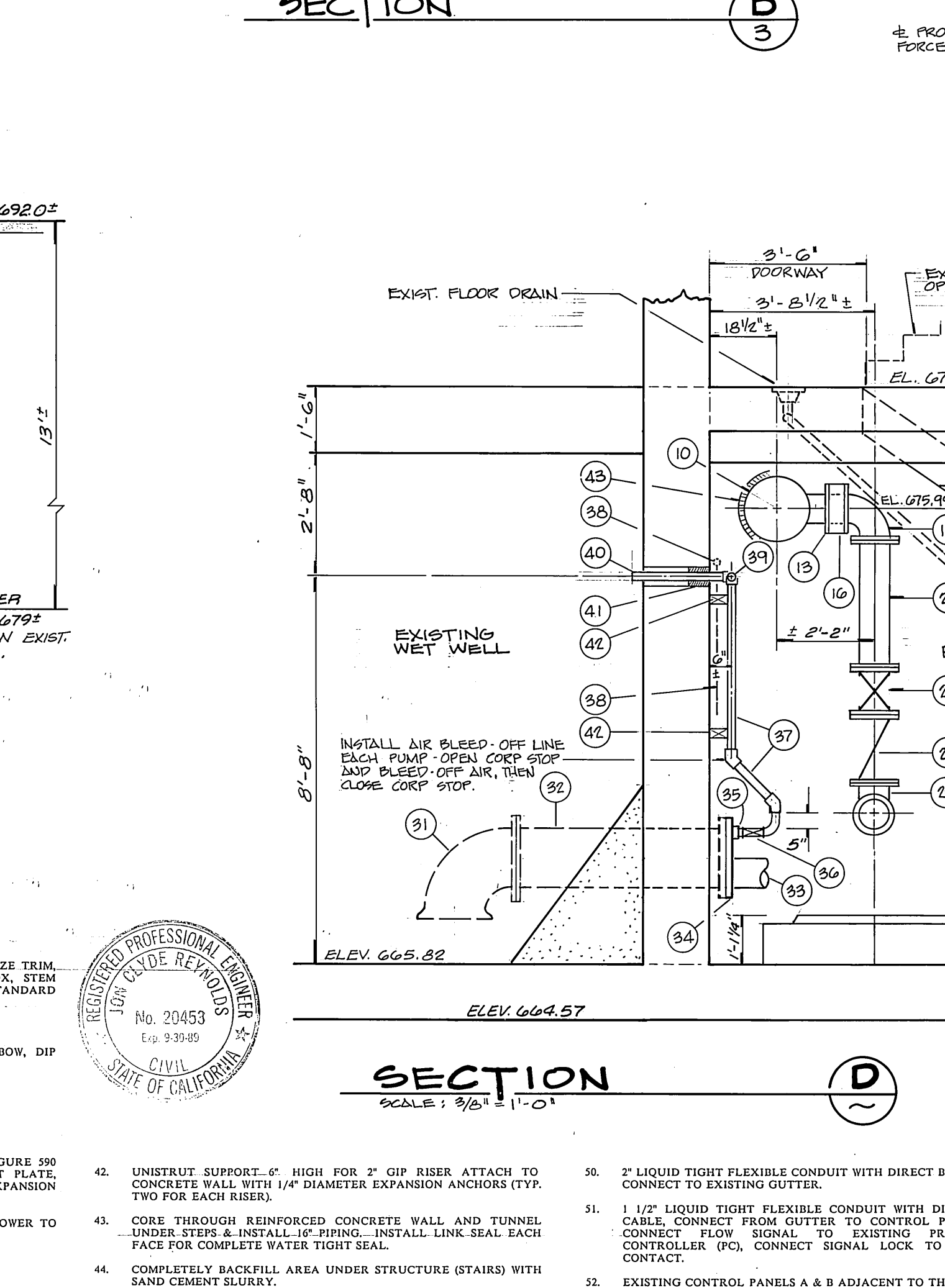
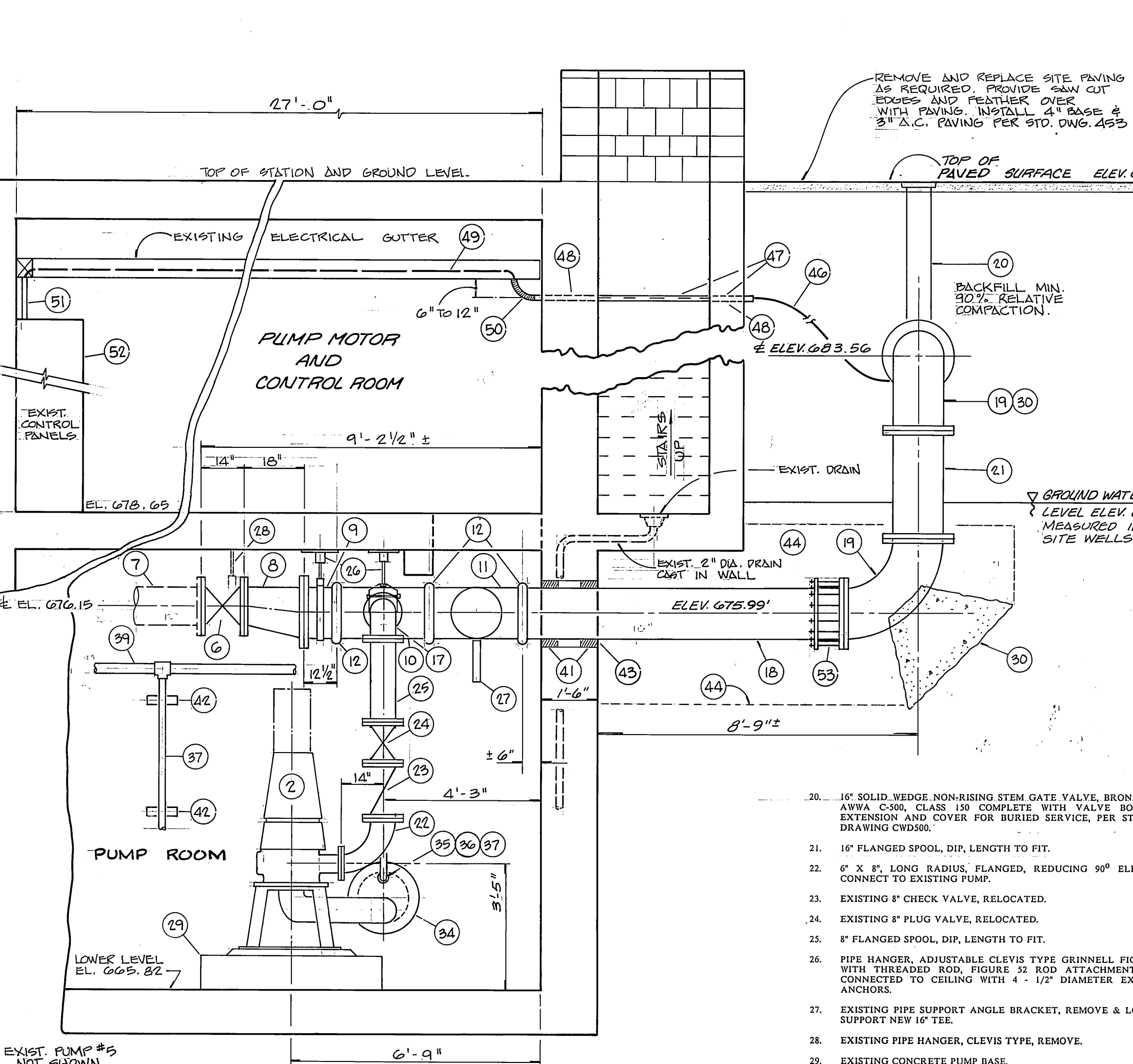




PLAN ... LIFT STATION - PARTIAL LOWER LEVEL  
SCALE: 3/8" = 1'-0"

SECTION A  
SCALE: 3/8" = 1'-0"

SECTION B  
SCALE: 3/8" = 1'-0"



PLAN ... SARI METER & CONNECTION DETAIL  
SCALE: 3/8" = 1'-0"

SECTION C  
SCALE: 3/8" = 1'-0"

SECTION D  
SCALE: 3/8" = 1'-0"

- MATERIAL DESCRIPTION AND NOTES FOR LIFT STATION**
- EXISTING AURORA PUMP #5, 6" DISCHARGE AND 8" SUCTION TO REMAIN UNMODIFIED.
  - EXISTING AURORA PUMP #4, 6" DISCHARGE AND 8" SUCTION, MODIFY PIPING TO PERMIT DISCHARGE TO EXISTING AND PROPOSED FORCE MAINS.
  - REMOVE EXISTING 6" X 8" INCREASER, DISCHARGE PIPING AND VALVES AND INSTALL DISCHARGE PIPING AND EXISTING VALVES AS SHOWN. SEE NOTE 12 FOR MAXIMUM PUMP SHUT DOWN TIME.
  - EXISTING 12" DISCHARGE HEADER TO REMAIN.
  - REMOVE EXISTING 12" SPOOL, 12" X 12" X 8" VYE BLIND FLANGE AND PUMP #4 DISCHARGE PIPING AND INSTALL NEW PIPING AND FITTINGS AS SHOWN.
  - 12" ECCENTRIC NON-LUBRICATED FLUO VALVE, WITH GEAR OPERATOR WITH CHAIN WHEEL, DEZURK. CONNECT TO EXISTING 12" X 12" X 8" FLANGED VYE.
  - EXISTING 12" X 12" X 8" FLANGED VYE TO REMAIN.
  - 12" X 16" FLANGED ECCENTRIC REDUCER, DIP.
  - 16" FLANGED END X GROOVED END SPOOL, DIP, LENGTH FABRICATED TO FIT.
  - 10" X 16" X 8" GROOVED TEE, DIP.
  - 16" X 16" X 16" GROOVED TEE, DIP.
  - 16" VICTAULIC COUPLING, STYLE 31.
  - 8" VIC-FLANGE BY VICTAULIC.
  - 16" VIC-FLANGE BY VICTAULIC.
  - 16" BLIND FLANGE CONNECTION FOR FUTURE DISCHARGE HEADER.
  - FLANGE FILLER FABRICATED TO FIT.
  - 8" FLANGED 90° ELBOW, DIP.
  - 16" PLAIN END X GROOVED END SPOOL, DIP, LENGTH TO FIT.
  - 16" 90° FLANGED ELBOW, DIP WITH THRUST BLOCK.
  - 16" SOLID WEDGE NON-RISING STEM GATE VALVE, BRONZE TRIM, AWWA C-509 CLASS 150 COMPLETE WITH VALVE BOX, STEM EXTENSION AND COVER FOR BURIED SERVICE, PER STANDARD DRAWING CWD90.
  - 16" FLANGED SPOOL, DIP, LENGTH TO FIT.
  - 6" X 8" LONG RADIUS, FLANGED, REDUCING 90° ELBOW, DIP CONNECT TO EXISTING PUMP.
  - EXISTING 4" CHECK VALVE, RELOCATED.
  - EXISTING 1" FUGO VALVE, RELOCATED.
  - 8" FLANGED SPOOL, DIP, LENGTH TO FIT.
  - PIPE HANGER, ADJUSTABLE CLEVIS TYPE GRINNELL FIGURE 590 WITH THREADED ROD, FIGURE 52 ROD ATTACHMENT PLATE, CONNECTED TO CEILING WITH 1/2" DIAMETER EXPANSION ANCHORS.
  - EXISTING PIPE SUPPORT ANGLE BRACKET, REMOVE & LOWER TO SUPPORT NEW 10" TEE.
  - EXISTING PIPE HANGER, CLEVIS TYPE, REMOVE.
  - EXISTING CONCRETE PUMP BASE.
  - CONCRETE THRUST BLOCK SIMILAR TO STANDARD DRAWING CWD-030, USE 4.5" H X 8" W BEARING AREA.
  - EXISTING 16" 90° BELL ELBOW, PUMP SUCTION.
  - EXISTING 16" PUMP SUCTION.
  - EXISTING 16" PUMP SUCTION.
  - EXISTING 16" PUMP SUCTION.
  - 16" BLIND FLANGE WITH 8" PUMP SUCTION CONNECTION (TYP. 3 PUMPS)
  - INSTALL (WELD) 2" THREADED HALF COUPLING TO BLIND FLANGE AT SPOT OF 16" PIPE, DRILL THROUGH BLIND FLANGE INTO 16" PIPE TO PERMIT REMOVAL OF TRAPPED AIR. INSTALL 2" THREADED CORP STOP & PIPING (TYP. EACH PUMP - TOTAL 3).
  - 3" THREADED CORP STOP (TYP. EACH PUMP - TOTAL 3).
  - 2" GIP RISER FROM EACH PUMP SUCTION.
  - EXISTING PIPING FOR SEAL WATER SYSTEM.
  - 3" GIP HEADER FOR AIR REMOVAL.
  - CORE THROUGH WALL, INSTALL 3" GIP, DRY PACK WITH NON-SHRINK GROUT FOR COMPLETE WATER AND AIR TIGHT SEAL. PROVIDE LINK SEAL AT END AS SHOWN. (ONE LOCATION ONLY)
  - LINK SEAL WITH THUNDERLINK, NEOPRENE WITH STAINLESS STEEL BOLTS.
  - UNISTRUT SUPPORT...6" HIGH FOR 2" GIP RISER ATTACH TO CONCRETE WALL WITH 1/4" DIAMETER EXPANSION ANCHORS (TYP. TWO FOR EACH RISER).
  - CORE THROUGH REINFORCED CONCRETE WALL AND TUNNEL UNDER STEPS & INSTALL 1/2" PIPING. INSTALL LINK SEAL EACH FACE FOR COMPLETE WATER TIGHT SEAL.
  - COMPLETELY BACKFILL AREA UNDER STRUCTURE (STAIRS) WITH SAND CEMENT SLURRY.
  - 16" FLANGED END BY BELL END DIP, PVC TO DIP ADAPTOR.
  - 6 PAIR DIRECT BURIED TELEMETRY CABLE IN 2" SCH. 40 CONDUIT.
  - 2" HDG ELECTRICAL CONDUIT WITH DIRECT BURIED CABLE.
  - CORE THROUGH REINFORCED CONCRETE WALL AND INSTALL 2" HDG ELECTRICAL CONDUIT. INSTALL NON SHRINK GROUT TO SEAL HOLE FROM BOTH SIDES.
  - INSTALL DIRECT BURIED CABLE IN EXISTING GUTTER, TO CONTROL SECTION A.
  - 2" LIQUID TIGHT FLEXIBLE CONDUIT WITH DIRECT BURIED CABLE, CONNECT TO EXISTING GUTTER.
  - 1 1/2" LIQUID TIGHT FLEXIBLE CONDUIT WITH DIRECT BURIED CABLE, CONNECT FROM GUTTER TO CONTROL PANEL A AND CONNECT FLOW SIGNAL TO EXISTING PROGRAMMABLE CONTROLLER (PC), CONNECT SIGNAL LOCK TO NEW RELAY CONTACT.
  - EXISTING CONTROL PANELS A & B ADJACENT TO THE NORTHWEST WALL. INSTALL SELECTOR SWITCHES, LIGHTS, FLOW INDICATOR, AND TOTALIZER IN PANEL B ROOM. PROVIDE ALL INTERCONNECTING WIRING, CONTROLS, AND RELAYS FOR CONNECTION TO PC IN PANEL A AND TO PROVIDE OPERATION AS SPECIFIED IN SPECIAL PROVISIONS.
  - FLANGED ADAPTOR COUPLING, DRESSER. INTERIOR AND EXTERIOR FUSION EPOXY COATED WITH STAINLESS STEEL BOLTS.
  - 2" PVC SCHED. 40 PVC VENT VENT PIPING 24" MINIMUM COVER SLOPE TOWARDS VAULT.
  - 1" SCHED. 40 PVC VENT RISER - EXTEND 6" ABOVE GRADE AND CAP. DRILL 4 ROWS OF 6 HOLES, 1" DIAMETER EACH ROW AT VERTICAL SPACING OF 4" OC. (TOTAL 24 HOLES) AT TOP SECTION OF RISER.
  - 3PW X 47L X 24" THICK REINFORCED CONC. PAD CLASS 420-C-2000, SEE SARTA STANDARD DRAWING 7.
  - WATER PROOF JUNCTION BOXES MOUNT TO WALL.
  - 3/4" LIQUID TIGHT WITH METER CABLE.
  - UNISTRUT ELECTRICAL CONDUIT SUPPORT ATTACHED TO VAULT WALL WITH 3/8" EXPANSION ANCHORS (TYP.).
  - HDG TO PVC ADAPTOR COUPLING.
  - NON-RESIDENTIAL SERVICE PESTAL PER CITY ELECTRIC DEPARTMENT STANDARD DRAWING 308 FOR 30 AMP SERVICE TO METER ENCLOSURE.
  - CONCRETE BASE, 18" THICK X 24" SQUARE.
  - GUARD POST PER CITY STANDARD DRAWING CWD 900. TOTAL 6 AS DIRECTED BY CITY.
  - 1" HDG RISER AT POLE AND CONDUIT (MINIMUM COVER 30") TO SERVICE PESTAL PER UTILITY SERVICE STANDARD DRAWING DETAIL 46. CITY TO FURNISH AND INSTALL CONDUCTORS.
  - 1" SCH. 80 PVC C W/ 2 #12, #10 GROUND, FOR 120 VOLT POWER TO METER EQUIPMENT ENCLOSURE. MINIMUM COVER 10".
  - THRUST BLOCK SIMILAR TO CITY STANDARD DRAWING CWD-230, USE BEARING AREA 4.5" H X 5.5" W FOR 90° EL, AND 3" H X 5" W FOR 45°.
  - 12" PLAIN END X FLANGED END, DIP, LENGTH TO FIT.
  - 30" CONCRETE MANHOLE GRADE RINGS, 3" TO 6" THICK.
  - 24" CONCRETE MANHOLE GRADE RINGS (3" TO 6" THICK).
  - 36" M.H. FRAME AND COVER, ALHAMBRA FOUNDRY 1254-4 LETTERED SARI WITH DIAMOND THREAD AND HINGED LIFT HANDLE.
  - 2" OSC. SUPPLY FOR CITY STANDARD DRAWING CWD 900. TOTAL 6 AS DIRECTED BY CITY.
  - 16" PLAIN END X PLAIN END, PVC OR DIP.
  - 16" X 16" X 16" BELL END TEE, DIP.
  - 90° LONG RADIUS, BELL END, ELBOW, DIP.
  - STUB PIPE THRU MANHOLE AND FILL HOLE WITH NON-SHRINK GROUT FROM OUTSIDE AND INSIDE.
  - WATERPROOF SINGLE POLE SWITCH, CONNECT TO SIGNAL LOCK FOR OFF/ON CONTROL OF SIGNAL LOCK SYSTEM.

**• KRIEGER & STEWART •**  
INCORPORATED  
ENGINEERING CONSULTANTS  
RIVERSIDE, CALIFORNIA (714) 684-6900

APPROVED BY *Joe C. Reynolds*  
REGISTERED ENGINEER NO. 20453 DATE 6-8-89

DESIGNED BY *MEK* DRAWN BY *REGLLA* CHECKED BY *J.C.S.*

**CITY OF RIVERSIDE**  
PUBLIC WORKS DEPARTMENT

APPROVED BY *[Signature]* DATE 6-21-89  
PRINCIPAL ENGINEER

APPROVED BY *[Signature]*  
PUBLIC WORKS DIRECTOR

DATE

**CITY OF RIVERSIDE**  
PIERCE STREET PUMP STATION BYPASS  
16" FORCE MAIN  
**DETAILS**

ACCOUNT NO. 90-577-507  
S-1547  
4 OF 4  
SHEET OF  
HORIZ. SCALE: AS SHOWN  
INDEXED 10/11/89 LCH  
476-6