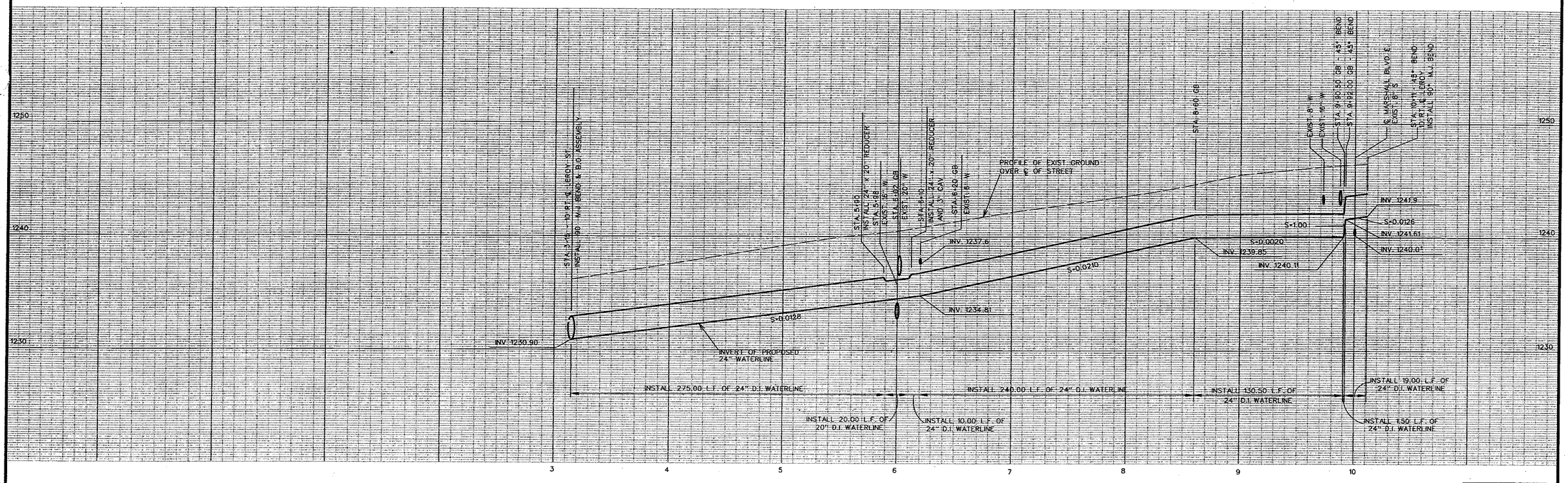
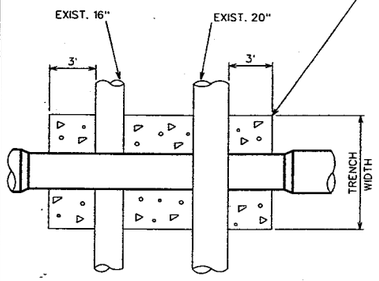


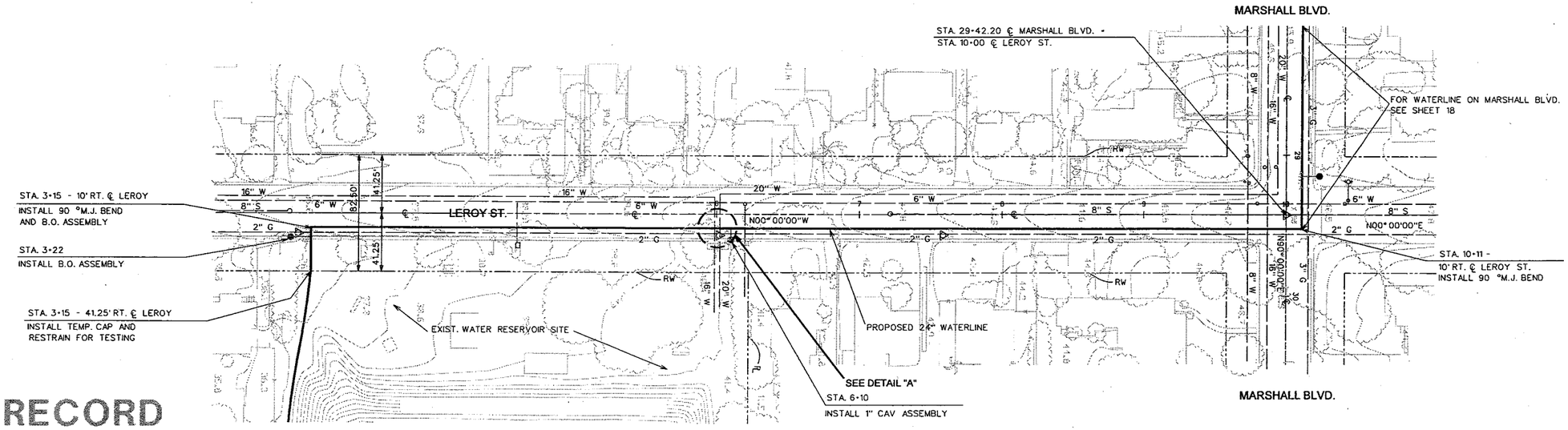
PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

CONCRETE ENCASE PROPOSED 20" PIPE
DEPTH BELOW 20" PIPE = SPRING LINE OF BOTTOM PIPE (16")
HEIGHT ABOVE 20" PIPE = SPRING LINE OF TOP PIPE (20")



NOTE: VERIFY LOCATION AND DEPTHS OF EXISTING 16" ⌀ AND 20" ⌀ PIPE PRIOR TO INSTALLING 20". MINIMUM SEPARATION BETWEEN CROSSING PIPES SHALL BE 0.20 FT. ADJUST GRADE ACCORDINGLY.

DETAIL "A"



RECORD DRAWING

IF SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
	3/99	RECORD DRAWING			

REVISIONS

DESIGNED BY: STL
DRAWN BY: JW
CHECKED BY: DHD

URS Consultants, Inc.
CONSULTING ENGINEERS
SACRAMENTO CALIFORNIA

JOB No. 62370

REGISTERED PROFESSIONAL ENGINEER No. 34551 Wayne R. Beuschel EXP. 3/30/99 CIVIL STATE OF CALIFORNIA

NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

PLAN AND PROFILE
LEROY ST.
STA. 10+10 TO STA. 3+15

Scale: AS SHOWN | Date: 9/25/97 | Dwg. No.: 19

U:\ST5\PROJ\SANBRDO\...ECORD\SHT19.DGN

CONSTRUCTION NOTES:

1. 24" DUCTILE IRON TEE (MJ) RESTRAINED
2. 24" 90 DUCTILE IRON BEND (MJ) RESTRAINED
3. 24" DUCTILE IRON PLUG (MJ) RESTRAINED
4. 24" DUCTILE IRON PIPE
5. DEFLECT PIPE TO A MAXIMUM OF 3 PER JOINT
6. VERTICAL PIPE DEFLECTION TO A MAXIMUM OF 3 PER JOINT
7. 1" AIR RELEASE VALVE AT HIGH POINT IN LINE

FUTURE 24" PIPE (BY OTHERS)

TANK

APPROX. 6' COVER

APPROX. 4' COVER

APPROX. 3' COVER

INSTALL 3" CAV ASSEMBLY

STA 3+15 - ℄ LEROY STREET
SEE SHEET 19

LEROY ST.

WATERMAN AVE.

RECORD DRAWING

IF SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
	3/99	RECORD DRAWING			

REVISIONS

DESIGNED BY: J. G. DYE
DRAWN BY: S. W. LEDBETTER
CHECKED BY: J. G. DYE

URS Consultants, Inc.
CONSULTING ENGINEERS
SACRAMENTO CALIFORNIA

JOB No. 62370

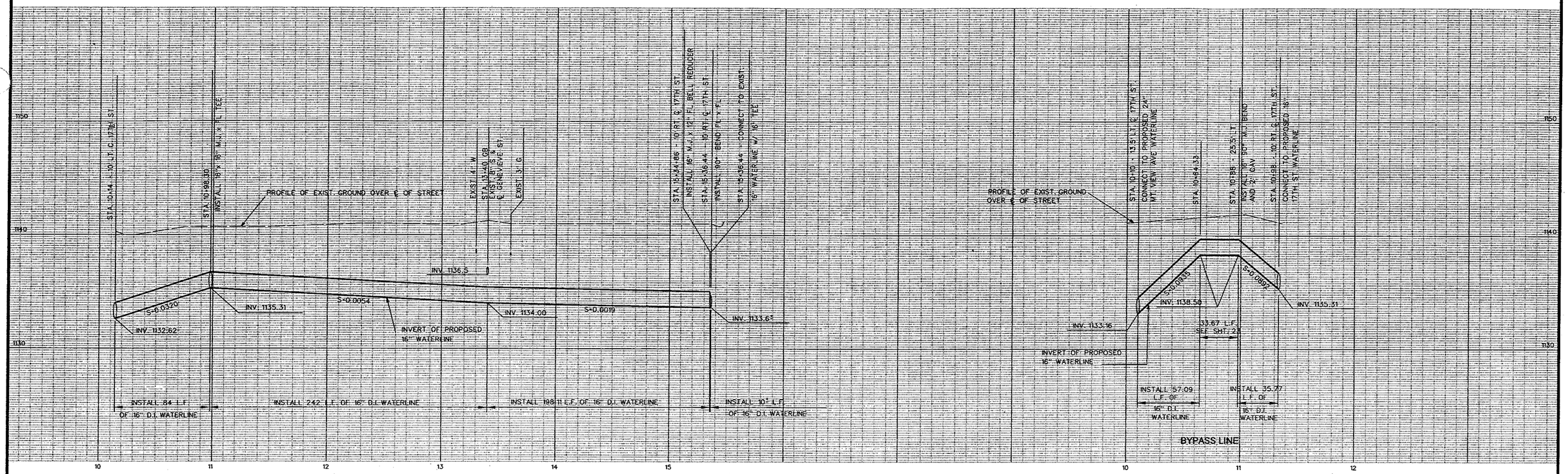
REGISTERED PROFESSIONAL ENGINEER — No. 34557 — George H. Deutscher — EXP. 9/30/99 — CIVIL — STATE OF CALIFORNIA

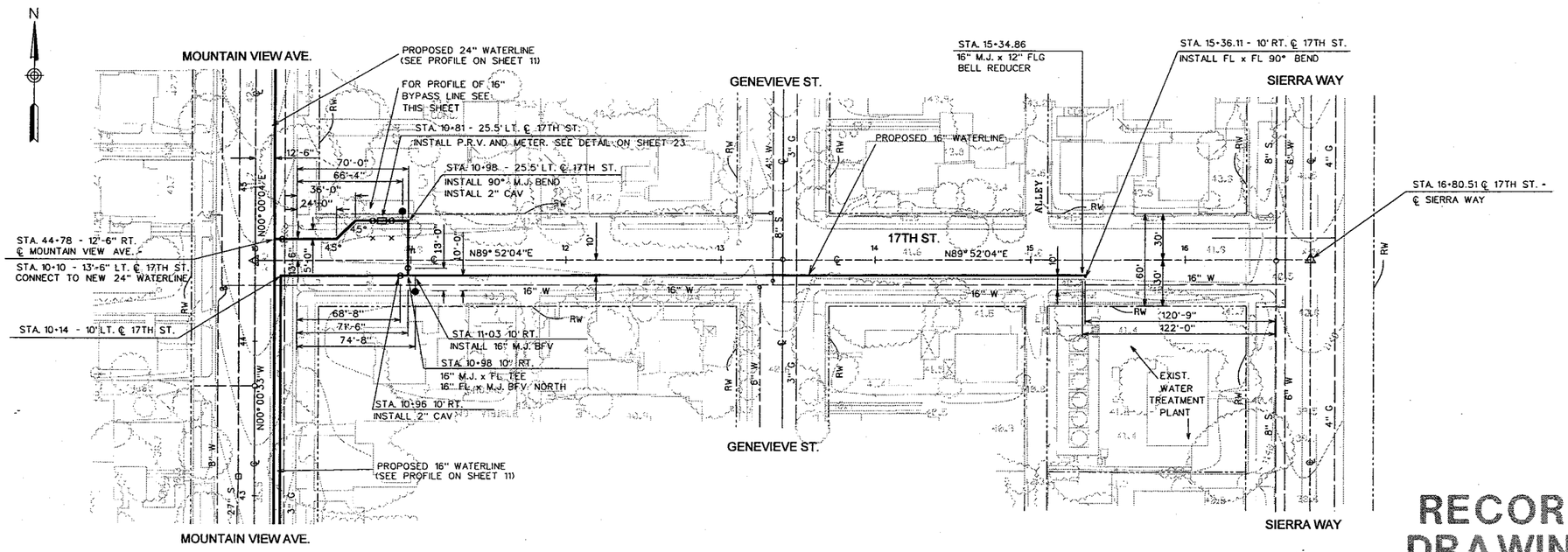
NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

SOUTH PLANT PIPELINE
WATERMAN PLANT IMPROVEMENTS

Scale: 1" = 40'
Date: 9/25/97
Dwg. No.: 20

USTS\PROJ\SANBRDO\RECORD\SHT20.DGN





PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

RECORD DRAWING

IF SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
	3/99	RECORD DRAWING			

REVISIONS

DESIGNED BY: STL
DRAWN BY: JW
CHECKED BY: DHD

URS Consultants, Inc.
CONSULTING ENGINEERS
SACRAMENTO CALIFORNIA

JOB No. 62370

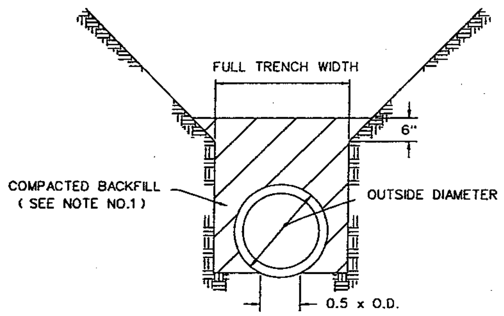
REGISTERED PROFESSIONAL ENGINEER — No. 34557 — Gregory K. Gautschel — EXP. 9/30/99 — CIVIL — STATE OF CALIFORNIA

NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

PLAN AND PROFILE
17TH ST.
STA. 10+14 TO STA. 15+07

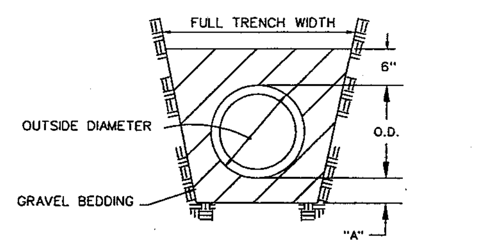
Scale: AS SHOWN | Date: 9/25/97 | Dwg. No.: 21

U:\ST5\PROJ\SANBRDO\RECORD\SH721.DGN



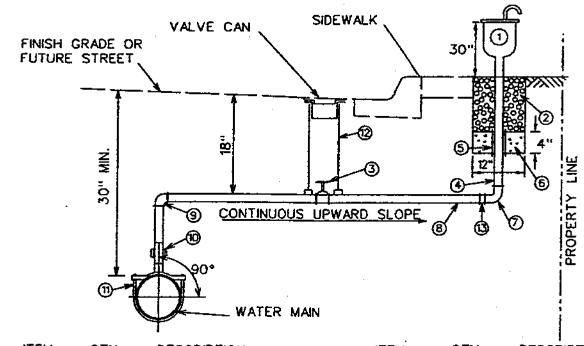
NOTES:
1. EARTH TO BE COMPACTED IN MAXIMUM OF 6" LIFTS.

RIGID PIPE BEDDING



NOTES:
1. EARTH TO BE COMPACTED IN MAXIMUM OF 6" LIFTS.
2. "A"= 4" FOR PIPE WITH OUTSIDE DIAMETERS 27" AND SMALLER
"A"= 6" FOR PIPE WITH OUTSIDE DIAMETERS 30" AND LARGER

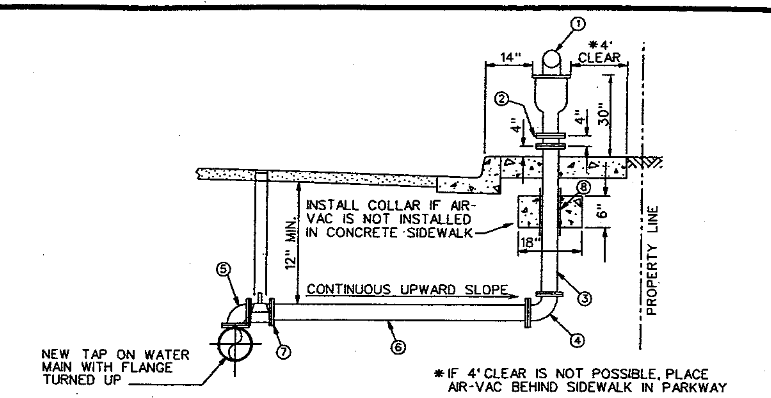
FLEXIBLE PIPE BEDDING



ITEM	QTY	DESCRIPTION
①	1 EA.	SELECT ONE OF THE FOLLOWING: A) 1" OR 2" AIR RELEASE VALVE - CRISPIN PL10A/PL20, APCO NO. 200A OR EQUAL B) 2" AIR VACUUM VALVE - CRISPIN A20, APCO 144, OR EQUAL C) 2" COMBINATION AIR AND VACUUM RELEASE VALVE - CRISPIN UNIVERSAL AIR RELEASE VALVE NO. U20, APCO NO. 145C, OR EQUAL
②	1.3 QU. FT.	¾" POORLY GRADED GRAVEL
③	1 EA.	2" BRONZE WHEEL VALVE
④	24 IN.	2" THREADED GALVANIZED IRON PIPE
⑤	12 IN.	3" FLEXIBLE VINYL SLEEVE
⑥	0.3 QU. FT.	2,000 PSI CONCRETE
⑦	1 EA.	2" GALVANIZED QUARTER BEND (FEM PIPE THREAD)
⑧	__ L.F.	2" TYPE L HARD COPPER TUBING (SBMWD APPROVED U.S. MANUFACTURE)
⑨	1 EA.	2" BRASS COMPRESSION QUARTER BEND
⑩	1 EA.	2" BRONZE CORPORATION STOP MUELLER H15023 OR EQUAL
⑪	1 EA.	___" x 2" SERVICE SADDLE OR 2" WELD-ON THREAD-O-LET
⑫	2 EA.	VALVE CAN PER CITY STANDARD
⑬	1 EA.	INSOLATOR COUPLING (COMPRESSION x MALE PIPE THREAD)

NOTE: USE 2" PIPE AND FITTINGS FOR ALL SIZE AIR RELEASES

1" AND 2" AIR RELEASE VALVES, 2" VACUUM VALVE, AND 2" COMBINATION VALVE

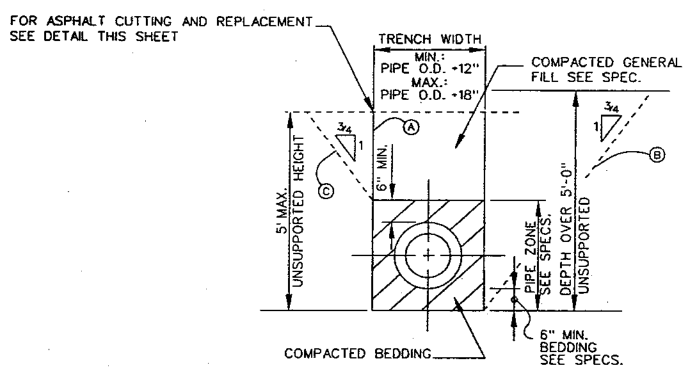


NOTE: PROVIDE ADEQUATE DRAINAGE FOR AIR VAC. IF ADEQUATE SURFACE DRAINAGE IS NOT PRACTICAL, USE A 2 CUBIC FOOT GRAVEL FILLED SEEPAGE PIT TO AVOID POSSIBLE DAMAGE CAUSED BY SURFACE WATER RUN OFF.

ITEM	QTY	DESCRIPTION
①	1 EA.	* " AIR VACUUM VALVE [COMBINATION HIGH PRESSURE AIR RELEASE AND VACUUM VALVE] DIRECT BLOW OFF TOWARD THE CURB USING GALVANIZED PIPING [CRISPIN, APCO, OR APPROVED EQUAL]
②	1 EA	* " FLANGED BREAKAWAY EXTENSION SPOOL. MORTAR LINED AND PAINTED TO MATCH AIR-VAC (INCLUDE HOLLOW BREAKAWAY BOLTS). FOR 3" AIR-VAC USE A 3" x 4" ADAPTOR SPOOL
③	_____LF	* " SCH. 40 STEEL PIPE RISER. FOR 3" AIR VAC USE 4" PIPE
④	_____LF	* " 90° DUCTILE IRON BEND (MJxFLG).
⑤	1 EA	* " 90° DUCTILE IRON BEND (FLGxPE).
⑥	_____LF	* " PRESSURE CLASS 150 (THICKNESS CLASS 51) DUCTILE IRON PIPE WITH FIELD LOCK GASKETS
⑦	1 EA	* " MJ BUTTERFLY VALVE ASSEMBLY PER SBMWD STD. NO W3.2 WITH MEGALUG RETAINER RING
⑧	12 IN	10" FLEXIBLE VINYL SLEEVE

* MATCH SIZE OF VALVE INLET

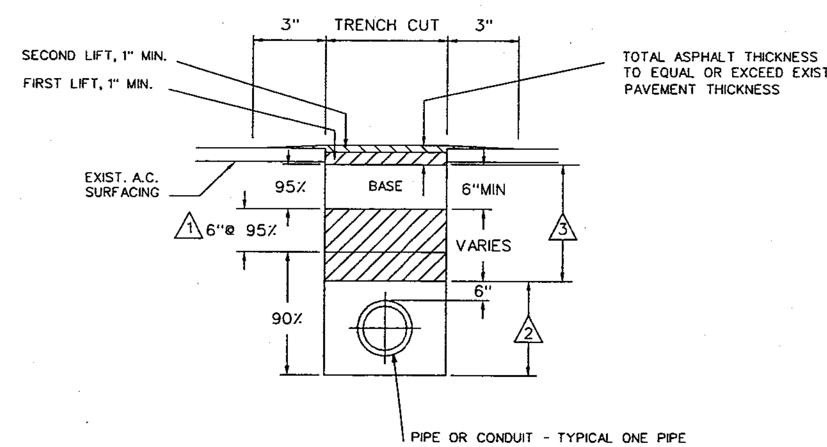
3" AND LARGER COMBINATION AIR VACUUM AND RESEASE VALVE AND AIR VACUUM VALVE



1. ALTERNATIVE TRENCH SECTIONS (A, B, AND C) ARE FOR USE ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. WHERE BOULDERS OR LARGE CONSTRUCTIONS ARE ENCOUNTERED, THE TRENCH SECTIONS MAY BE WIDER & DEEPER THAN THAT SHOWN:
   - A. VERTICAL TRENCH WALLS - SECTION
     1. FOR DEPTHS UP TO 5 FEET, NO TRENCH SUPPORT IS REQUIRED.
     2. FOR DEPTHS EXCEEDING 5 FEET, SHORING OR SOLID SHEATHING IS REQUIRED.
   - B. SLOPING TRENCH WALLS - SECTION
     1. SLOPING TRENCH WALL SECTION SHALL NOT BE USED WITHOUT APPROVAL OF ENGINEER, UNLESS SPECIFICALLY DESIGNATED ON PLANS OR SPECIFICATIONS.
     2. EXCEPT AS APPROVED BY ENGINEER. UNSUPPORTED SLOPING TRENCH WALL SHALL NOT BE STEEPER THAN ¾ HORIZ. TO 1 VERT. OR AS SHOWN IN SOILS REPORT WHICH SHALL CONTROL.
   - C. COMBINATION OF VERTICAL AND SLOPING TRENCH WALLS - SECTION
     1. TRENCH DEPTHS NOT EXCEEDING 5 FEET SHALL HAVE VERTICAL WALLS IN PIPE ZONE UNLESS OTHERWISE APPROVED, BY ENGINEER, OR WHERE SPECIFIED.
     2. FOR TRENCHES WITH COMBINED WALLS AND ANY DEPTH EXCEEDING 5 FEET, DESIGN CALCULATIONS BY A REGISTERED CIVIL ENGINEER AND APPORVAL BY GOVERNING AGENCY OF SUPPORTED METHODS ARE REQUIRED.
2. WHERE WET, UNSTABLE OR RUNNING SOIL IS ENCOUNTERED, SOLID SHEATING IS REQUIRED FOR ALL VETICAL TRENCH WALLS.
3. ASPHALT PAVEMENT SHALL BE A MINIMUM THICKNESS EQUAL TO THE EXISTING SECTION.

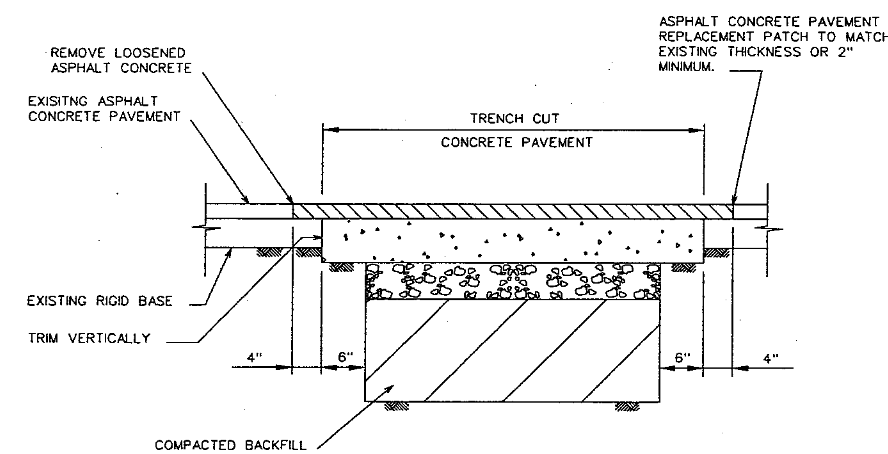
NOTE: TRENCH SECTIONS SHOWN DO NOT DESIGNATE PAY LINES.

TYPICAL TRENCH SECTION



1. THE TOP 6" OF SUBGRADE SHALL BE COMPACTED TO 95% RELATIVE DENSITY.
2. SAND EQUIVALENT AND PERMEABILITY SHALL COMPLY WITH SPECIFICATIONS.
3. TRENCH BACKFILL SHALL BE PER STANDARD SPECIFICATION
4. ALL WORK AREA PROTECTION SHALL BE IN ACCORDANCE WITH THE STATE MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES.

ASPHALT PAVEMENT PATCHING DETAIL



RECORD DRAWING

IF SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

PAVEMENT PATCHING DETAIL
RIGID PAVEMENT WITH ASPHALTIC CONCRETE SURFACE

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
	3/99	RECORD DRAWING			

REVISIONS

DESIGNED BY: STL
DRAWN BY: JW
CHECKED BY: DHD

URS URS Consultants, Inc.
CONSULTING ENGINEERS
SACRAMENTO CALIFORNIA

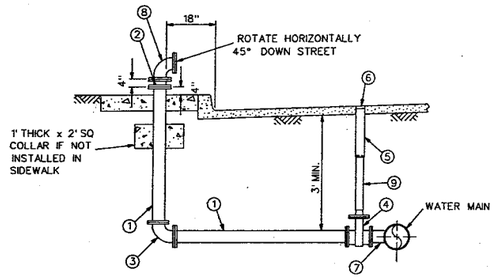
JOB No. 62370

NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

MISCELLANEOUS DETAILS

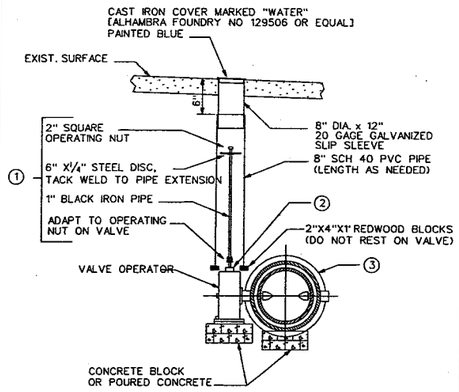
Scale: NO SCALE | Date: 9/25/97 | Dwg. No.: 22

UST5\PROJ\SANBRDO\RECORD\SHT22.DGN



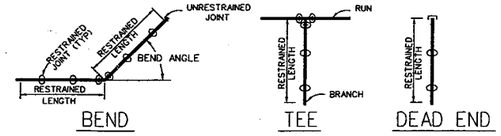
① 6" CLASS 150 DI PIPE RESTRAINED WITH MEGALUG OR EQUAL
② 6" FLANGE BREAKAWAY SPOOL MOTAR LINED (INCLUDE HOLLOW BREAKAWAY BOLTS)
③ 6" DMJ 90° ELBOW RESTRAINED
④ 6" GATE VALVE-FLG x MJ
⑤ 8" DIA. x 12" 20 GAGE GALV. SLIP SLEEVE
⑥ CAST IRON COVER MARKED "WATER" (ALHAMBRA FOUNDRY NO. 129506 OR EQUAL) PAINTED BLUE
⑦ MJ x FL TEE
⑧ 6" FL STEEL 90° BEND W/ BLIND FLANGE
⑨ 8" SCH 40 PVC PIPE (LENGTH AS NEEDED)

BLOW-OFF



NOTE:
① PROVIDE VALVE STEM EXTENSION AS SHOWN IF VALVE NUT BURY DEPTH EXCEEDS 5.0 FEET.
② BACKFILL VALVE WITH SAND UP TO PACKING
③ VALVE SHALL BE A RUBBER SEATED BUTTERFLY VALVE FURNISHED WITH FLANGED ENDS, A CAST IRON BODY AND DISC, AND MOLDED RUBBER SEAT. THE INTERIOR SHALL BE CLASS 150 UNLESS OTHERWISE SPECIFIED AND SHALL CONFORM TO AWWA C504 SPECS.

TYPICAL BUTTERFLY VALVE INSTALLATION

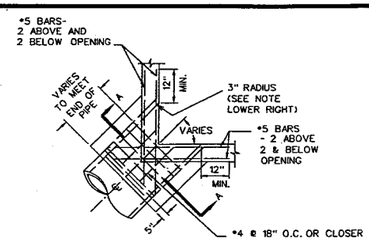


BEND TEE DEAD END

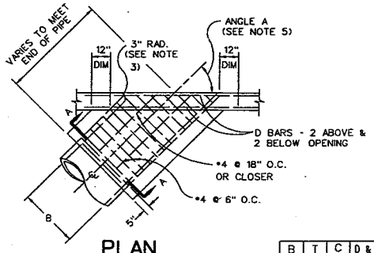
PIPE SIZE	11½° BEND	22½° BEND	45° BEND	90° BEND	TEE	DEAD END
4"	2'	5'	10'	24'	7'	50'
6"	3'	7'	14'	34'	10'	70'
8"	4'	9'	18'	43'	18'	90'
10"	5'	10'	21'	52'	35'	109'
12"	6'	12'	25'	60'	53'	127'
16"	7'	15'	31'	74'	76'	161'
20"	9'	17'	36'	88'	141'	193'
24"	10'	20'	42'	100'	170'	223'

NOTES:
1. USE THE FOLLOWING GUIDELINES WHEN OTHER PIPE JOINTS ARE WITHIN 10 FEET OF THE JOINT BEING RESTRAINED:
   A) USE THE "DEAD END" LENGTH FOR CONNECTIONS TO ANY MATERIAL EXCEPT DUCTILE IRON AND CAST IRON.
   B) USE THE "DEAD END" LENGTH WHEN ANOTHER PIPE JOINT IS WITHIN 10 FEET OF A BEND BEING RESTRAINED.
   C) USE THE "90° BEND" LENGTH WHEN ANOTHER PIPE JOINT IS WITHIN 10 FEET OF A TEE BEING RESTRAINED.
2. DIVIDE RESTRAINDED LENGTH BY 0.85 FOR SILTY SOIL.
3. THIS TABLE IS BASED ON THE ASSUMPTION THAT THE TRENCH IS BACKFILLED TO A MINIMUM DEPTH OF 2.5 FEET WITH A SILTY SAND WHICH HAS BEEN LIGHTLY COMPACTED.
4. RESTRAINED LENGTH ON TEES ASSUMES THE SAME SIZE BRANCH AND RUN. TEES WHICH HAVE BRANCH DIAMETERS LESS THAN THE DIAMETER OF THE RUN MAY REQUIRE A SHORTER RESTRAINED LENGTH.

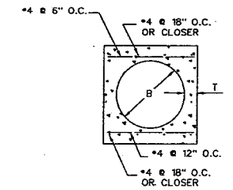
RESTRAINED JOINT DETAIL



PLAN
CORNER CONNECTION



PLAN
SIDE CONNECTION



SECTION A-A

NOTES:
1 REINFORCING STEEL SHALL BE 1½" CLEAR FROM FACE OF CONCRETE UNLESS OTHERWISE SHOWN.
2 REINFORCING STEEL FOR INSIDE FACE OF CATCH BASIN WALL SHALL BE CUT AT CENTER OF OPENING AND BENT INTO WALLS OF MONOLITHIC CONNECTION. REINFORCING STEEL FOR OUTSIDE FACE OF CATCH BASIN WALL SHALL BE CUT 2" CLEAR OF OPENING.
3 CONNECTION SHALL BE POURED MONOLITHIC WITH CATCH BASIN. THE ROUNDED EDGE OF OUTLET SHALL BE CONSTRUCTED BY POURING CONCRETE AGAINST A CURVED FORM WITH A RADIUS OF 3".
4 FLOOR OF STRUCTURE SHALL BE STEEL TROWELED TO SPRING LINE.
5 CONNECTIONS SHALL BE CONSTRUCTED WHEN:
a) PIPES, 12" THRU 72" IN DIAMETER, INLET OR OUTLET THRU CORNER OF CATCH BASIN.
b) ANGLE A, FOR PIPES 24" THRU 30" IN DIAMETER, IS 70° OR LESS.
c) PIPES, 33" THRU 72" IN DIAMETER, INLET OR OUTLET THRU THE SIDE WALL OF CATCH BASIN.

B	T	C BARS	D & E	B	T	C BARS	D & E
12"		*4 @ 6" O.C.	*5	42"		*5 @ 6" O.C.	*6
15"				45"			
18"				48"			
21"				51"			
24"				54"			
27"				60"			
30"				63"			
32"				66"			
36"				69"			
39"				72"			

12" WASTE LINE CONNECTION TO EXISTING CATCH BASIN DETAIL

RECORD DRAWING

SITE PLAN
SCALE: 1" = 10'-0"

ELEVATION
SCALE: ⅜" = 1'-0"

PLAN
SCALE: ⅜" = 1'-0"

PRESSURE REDUCING VALVE INSTALLATION DETAIL

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
	3/99	RECORD DRAWING			

REVISIONS

DESIGNED BY: STL
DRAWN BY: JW
CHECKED BY: DHD

URS Consultants, Inc.
CONSULTING ENGINEERS
SACRAMENTO CALIFORNIA

JOB No. 62370

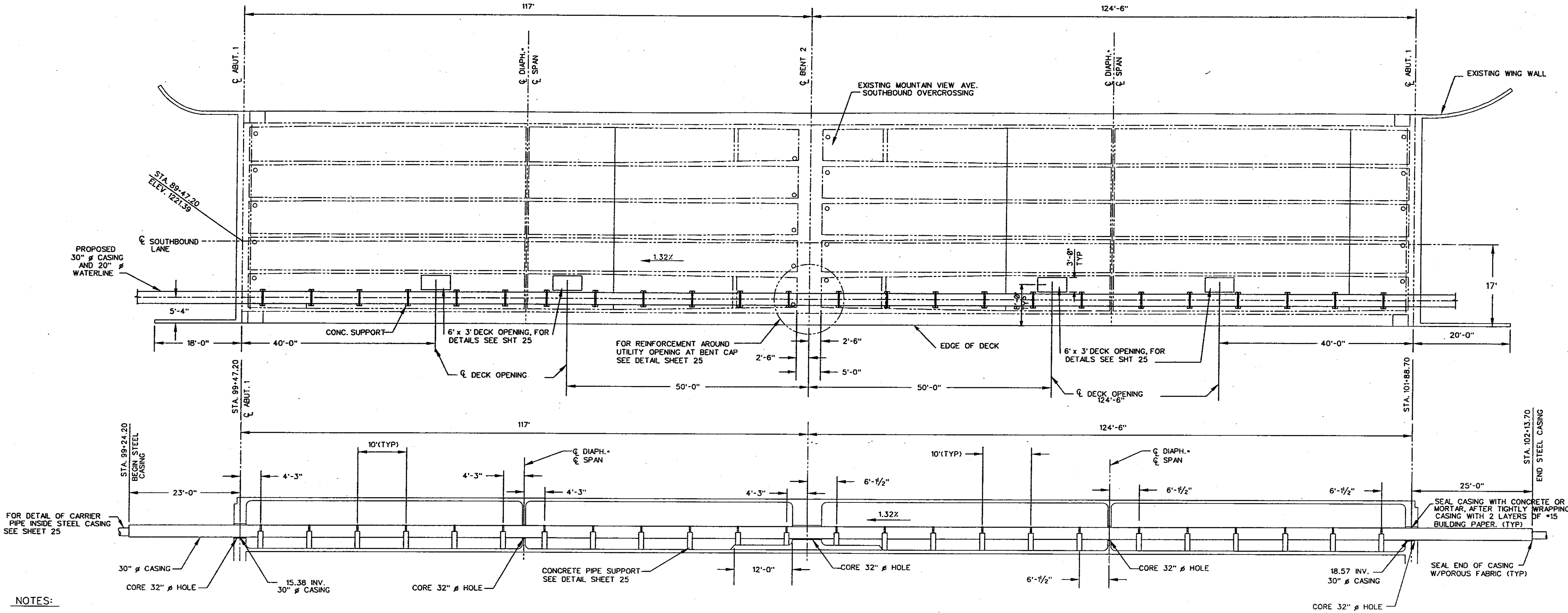
REGISTERED PROFESSIONAL ENGINEER — No. 34557 — Eugene K. Baumann — EXP. 3/30/98 — CIVIL — STATE OF CALIFORNIA

NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

MISCELLANEOUS DETAILS

Scale: NO SCALE | Date: 9/25/97 | Dwg. No.: 23

USTS\PROJ\SANBRDO\...\RECORD\SHT23.DGN



NOTES:

1. ALL WORK WITHIN CALTRANS RIGHT OF WAY SHALL CONFORM TO THE CALTRANS STANDARD PLANS AND SPECIFICATIONS, DATED JULY, 1992.
2. WHERE SURVEY MONUMENTS EXIST, SUCH MONUMENTS SHALL BE PROTECTED OR SHALL BE REFERENCED AND RESET PURSUANT TO BUSINESS AND PROFESSIONS CODE, SECTIONS 8700 TO 8805 (LAND SURVEYOR'S ACT).
3. NO EQUIPMENT OR MATERIALS SHALL BE STORED OR PARKED WITHIN THE CALTRANS RIGHT OF WAY.
4. TRAFFIC CONTROL SHALL BE AS PER THE CALTRANS STANDARD PLANS AND SPECIFICATIONS AND/OR AS DIRECTED BY THE STATE'S REPRESENTATIVE.
5. TRAFFIC SHALL NOT BE ALLOWED ON THE DECK CLOSURE WITHIN 28 DAYS AFTER THE PLACEMENT OF CONCRETE.

GENERAL NOTES:
LOAD FACTOR DESIGN

DESIGN: BRIDGE DESIGN SPECIFICATIONS (1983 AASHTO WITH INTERIMS AND REVISIONS BY CALTRANS)

DEAD LOAD: INCLUDES 35 psf FOR FUTURE WEARING SURFACE

LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD

REINFORCED CONCRETE: fy = 60,000 psi
f'c = 3,250 psi
n = 9
TRANSVERSE DECK SLABS (WORKING STRESS DESIGN)
fs = 20,000 psi
fc = 1,200 psi
n = 10

ABUTMENTS: (WORKING STRESS DESIGN)
fs = 20,000 psi
fc = 1,300 psi
n = 10

REINFORCEMENT AROUND UTILITY OPENINGS

RECORD DRAWING

IF SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

APPROVED: , 1997

J. STEJSKAL, DIRECTOR: ENGINEERING CONSTRUCTION-MAINTENANCE
CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
	3/99	RECORD DRAWING			

REVISIONS

DESIGNED BY: STL
DRAWN BY: JW
CHECKED BY: DHD

URS
URS Consultants, Inc.
CONSULTING ENGINEERS
SACRAMENTO CALIFORNIA

JOB No. 62370

NEWMARK OU REMEDIAL DESIGN
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE
SOUTH PLANT TRANSMISSION PIPELINE

MOUNTAIN VIEW AVE
OVERCROSSING
DETAILS

Scale: AS SHOWN | Date: 9/25/97 | Dwg. No.: 24

UST5\PROJ\SANBRDO\RECORD\SHT24.DGN