

# CITY OF PITTSBURG

## ENGINEERING DIVISION

### CONTRACT NO. 97-06

# 6 MG RESERVOIR REPLACEMENT PROJECT

## MAY, 1998

### RECORD DRAWINGS

FEBRUARY, 2000

### CONTRACT DOCUMENT VOLUME II - DRAWINGS

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THE CITY OF PITTSBURG ASSUMES NO LIABILITY FOR LOSS OR DAMAGE RESULTING FROM RELIANCE THEREON.

RECORD DRAWING  
DATE 11/27/2000 BY [Signature]

#### - CITY COUNCIL -

MAYOR ..... Frank Quesada

VICE MAYOR ..... Federal Glover

COUNCIL MEMBERS ..... Frank Aiello  
Lori Anzini  
Robert Lewis

CITY MANAGER ..... Jeffrey Kolin  
CITY TREASURER ..... John Garcia  
CITY ATTORNEY ..... Michael Woods  
CITY CLERK ..... Lillian Pride

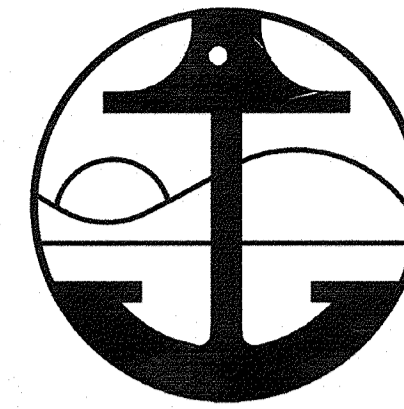
COMMUNITY DEVELOPMENT DIRECTOR/ ..... Nasser Shirazi  
CITY ENGINEER

## CDM

 Camp Dresser & McKee Inc.

consulting  
engineering  
construction  
operations

CONSULTING ENGINEERS  
WALNUT CREEK, CALIFORNIA



# CITY OF PITTSBURG

ENGINEERING DIVISION

CONTRACT NO. 97-06

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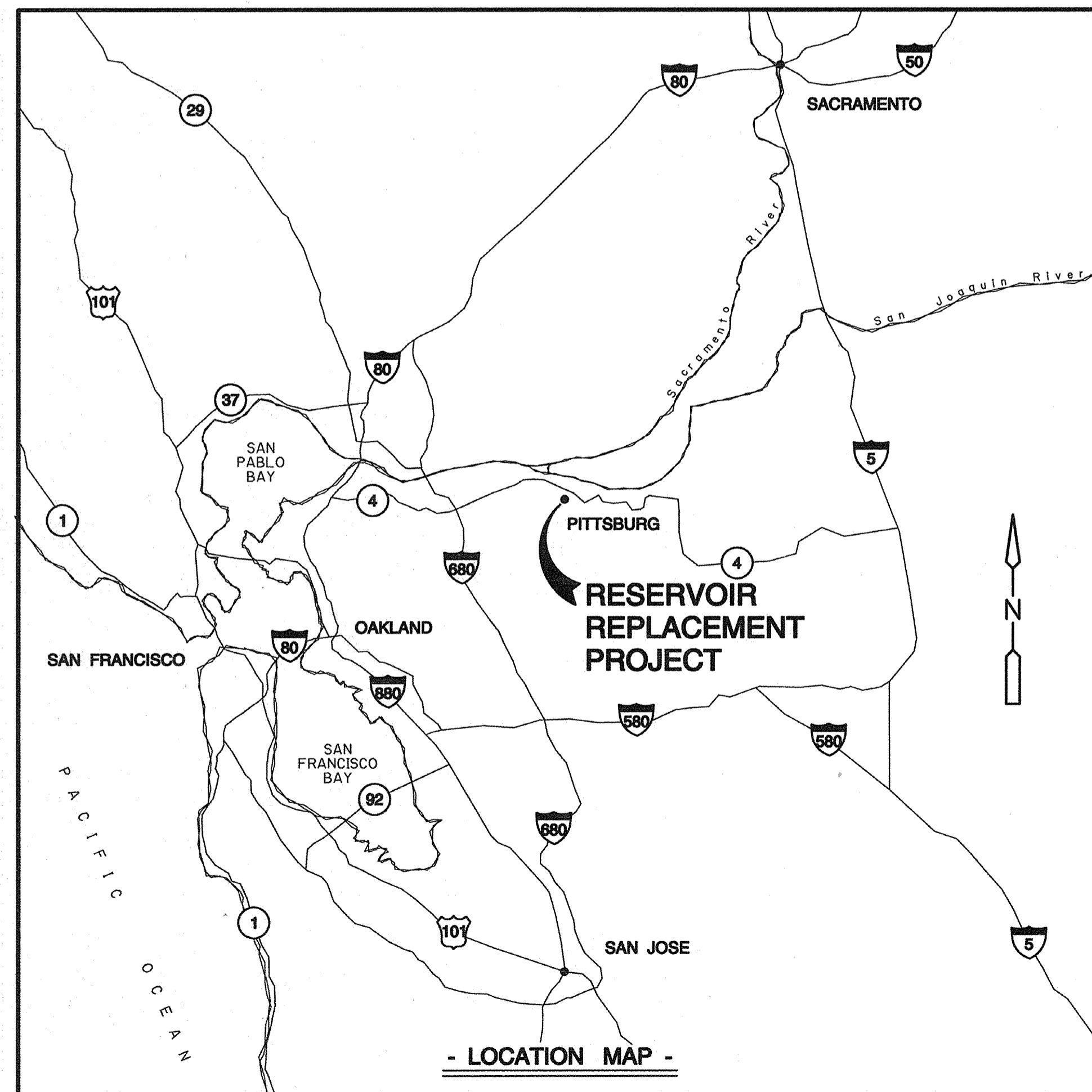
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RECORD DRAWING

DATE: 11/22, 2000 BY: M.J. DeK.

## 6 MG RESERVOIR REPLACEMENT PROJECT

MAY, 1998



SUBMITTED

J. T. 5-20-98

Jon Toyoda, PROJECT MANAGER  
RCE 30940 Exp. Date 03/31/00

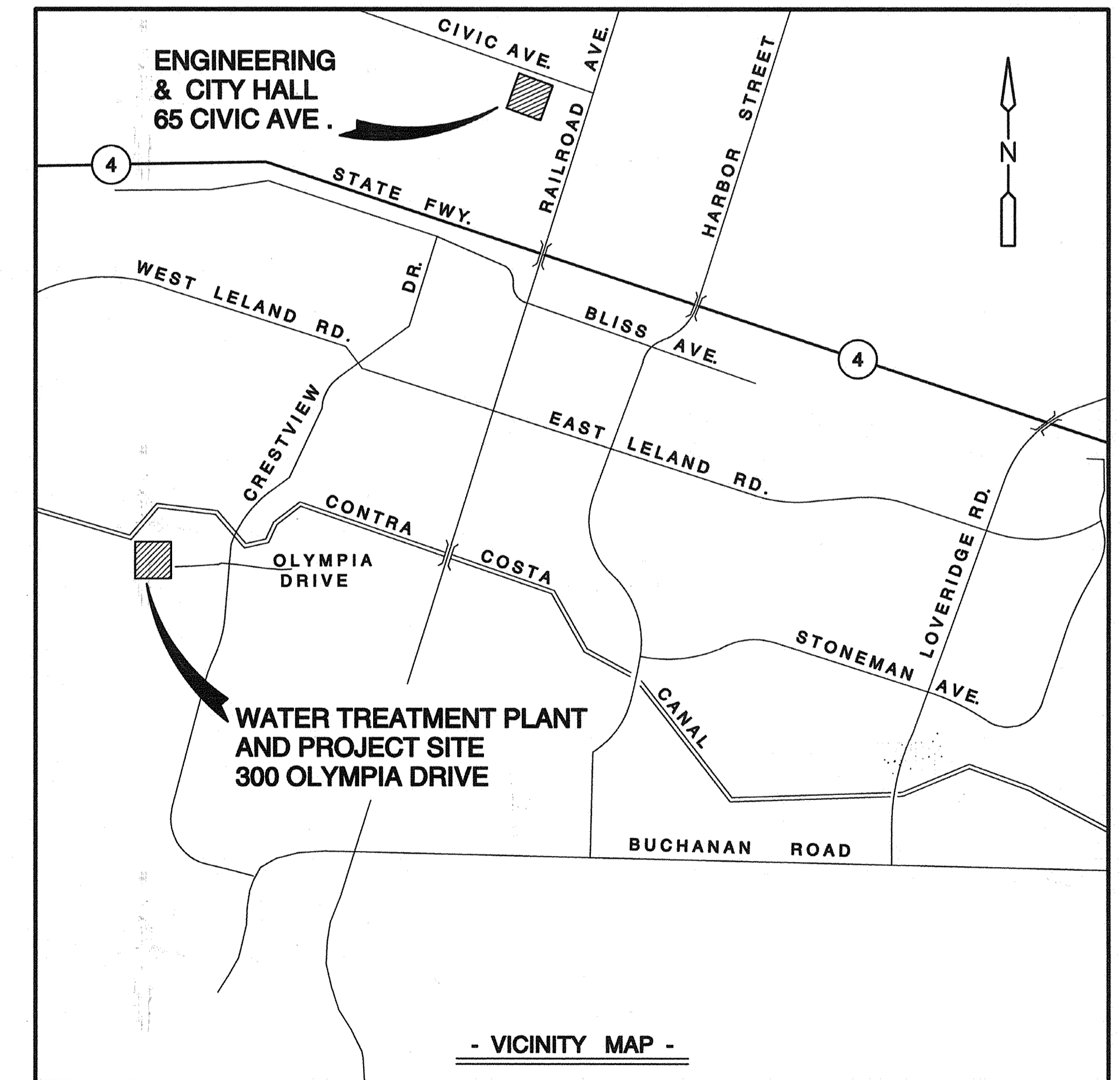
B. D. 5-20-98

Brian Dunstan, PROJECT ENGINEER  
RCE 45650 Exp. Date 12/31/98

APPROVED

W.E. Girard (W.G.) for N.S. 5-21-98

Nasser Shirazi, CITY ENGINEER  
RCE 42955



DESIGNED BY:	AW
DRAWN BY:	SH
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

CAMP DRESSER & McKEE INC.  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

environmental engineers, scientists,  
planners, & management consultants



CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

PROJECT LOCATION MAPS

PROJECT NO. 1358-22097  
FILE NAME: 60000001

SHEET NO.

G-1

**GENERAL NOTES**

- AERIAL PHOTOGRAPHY AND SURVEY WERE PERFORMED IN THE SPRING OF 1997 BY GOVERS ENGINEERS. THE PHOTOMETRIC AND FIELD SURVEY ARE IN CONFORMANCE WITH THE NATIONAL MAP ACCURACY STANDARDS AND THE LAND SURVEYOR'S ACT OF THE STATE OF CALIFORNIA. CONTRACTOR SHALL USE BENCHMARKS PROVIDED BY THE CITY TO LAYOUT WORK AND COORDINATE WITH EXISTING UTILITIES AND POINTS OF CONNECTION.
- PRESERVE OR RE-ESTABLISH ANY REFERENCE SURVEY MONUMENTS DESTROYED, DISTURBED, OR BURIED AS A RESULT OF THE CONSTRUCTION.
- A GEOTECHNICAL INVESTIGATION OF THE SITE HAS BEEN PERFORMED BY ENGOE INC. COPIES OF THEIR REPORT ARE AVAILABLE FOR REVIEW AT CITY HALL, 65 CIVIC DRIVE, PITTSBURG. COPIES OF THE BORING LOGS ARE INCLUDED IN APPENDIX A OF VOLUME 1 OF THE CONTRACT DOCUMENTS.
- THE CONTRACTOR IS ADVISED THAT THE WORK ON THIS PROJECT MAY INVOLVE WORKING IN A CONFINED AIR SPACE. CONTRACTOR SHALL BE RESPONSIBLE FOR "CONFINED AIR SPACE", ARTICAL 108, TITLE 8 CALIFORNIA ADMINISTRATIVE AND ALL OTHER SAFETY REGULATIONS FOR CONSTRUCTION.
- CONTACT UNDERGROUND SERVICES ALERT (800) 227-2600 FOR SUPPLEMENTARY UTILITIES INFORMATION. ALL KNOWN PLANT UTILITIES ARE SHOWN ON THE DRAWINGS.
- EXISTING UTILITIES AND STRUCTURES ARE SHOWN ON THE DRAWINGS BASED ON AVAILABLE RECORD DRAWINGS AND LIMITED FIELD POTHOLOGING. ACTUAL LOCATIONS MAY VARY. SMALLER UTILITIES MAY NOT BE SHOWN AT ALL. CONTRACTOR SHALL FIELD VERIFY FEATURES WHICH MIGHT AFFECT INSTALLATION OF THE NEW WORK. THIS SHALL INCLUDE POTHOLOGING AND VERIFYING FEATURES SUCH AS PIPE DIAMETER AND DEPTH AT TIE-IN POINTS AND CROSSINGS. FIELD DATA SHALL BE GATHERED IN A TIMELY FASHION SO THAT IT CAN BE INCLUDED IN SUBMITTALS FOR PIPING LAYOUTS. PIPE LAYOUT SUBMITTALS WILL BE REJECTED IF THERE IS NO POTHOLOGING DATA SHOWN ON THE SUBMITTAL DRAWINGS.
- PIPING LAYOUTS SHALL INCLUDE CUT-TO-FIT PIECES AS NECESSARY TO ACCOMMODATE FIELD VARIATIONS. PIPE LAYOUT SUBMITTALS WILL BE REJECTED IF THERE ARE NO CUT-TO-FIT SEGMENTS SHOWN.
- CONTRACTOR SHALL ASSUME THAT EXISTING VALVING WILL NOT PROVIDE COMPLETE PIPELINE SHUT-OFF. CONTRACTOR SHALL PROVIDE DEWATERING PROVISIONS WHEN MAKING ANY CONNECTION TO EXISTING PIPING.
- CONCRETE THRUST BLOCKS FOR EXISTING PIPING AND FOR PIPING TO BE REMOVED OR ABANDONED ARE NOT GENERALLY SHOWN. CONTRACTOR SHALL ANTICIPATE THRUST BLOCKS AT ALL EXISTING FITTINGS AND SHALL ALLOW FOR THE REMOVAL OF THRUST BLOCKS AND/OR BRACING OF UTILITIES IN SERVICE AS REQUIRED FOR THE WORK.
- CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT EXISTING FACILITIES WHICH ARE TO REMAIN IN PLACE. FACILITIES DAMAGED BY CONTRACTOR'S ACTIVITIES SHALL BE EXPEDITIOUSLY REPAIRED TO THE CITY'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
- UPPER LAGOON: THE UPPER LAGOON IS USED FOR DRYING SOLIDS REMOVED FROM THE LOWER LAGOON. USE OF TYPICAL CONSTRUCTION EQUIPMENT IN THE UPPER LAGOON MAY NOT BE POSSIBLE DUE TO THE MOISTURE CONDITION OF THE SOLIDS. EVERY EFFORT HAS BEEN MADE TO ENSURE THAT SOLIDS ARE DRY AS POSSIBLE BY THE START OF CONSTRUCTION. DO NOT REMOVE SOLIDS FROM THE LAGOON, OR MIX WITH STOCKPILE SOILS OR SOILS TO BE INCORPORATED INTO THE WORK.
- THE UPPER LAGOON ALSO SERVES AS A COLLECTION POINT FOR SITE RUN-OFF. TO MINIMIZE THE IMPACTS OF COLLECTED RUN-OFF, CONTRACTOR SHALL CHANNELIZE AND BERM UPPER LAGOON AS NECESSARY TO COMPLETE THE WORK.
- DUST CONTROL: AT ALL TIMES DURING CONSTRUCTION AND UNTIL FINAL COMPLETION, PREVENT THE FORMATION OF AIRBORNE NUISANCE BY WATERING AND/OR TREATING THE SITE TO CONFINE DUST PARTICLES.
- TO PROTECT THE RESERVOIR AND SITE FOUNDATIONS, PONDING OF WATER IS NOT ALLOWED AT ANY TIME DURING THE CONSTRUCTION. PROVIDE ADEQUATE DRAINAGE PROVISIONS TO PREVENT WATER PONDING AT ALL TIMES. USE OF THE RESERVOIR UNDERDRAIN SYSTEMS WILL NOT BE ALLOWED FOR THE COLLECTION OF STORM WATER DURING CONSTRUCTION.
- THE SCHEDULE FOR THIS PROJECT REQUIRES THAT THE CONTRACTOR WORK UNINTERRUPTED THROUGHOUT THE WINTER MONTHS DESPITE ADVERSE WEATHER CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING AND SPECIAL CONSTRUCTION PROVISIONS THAT MAY BE REQUIRED TO ALLOW CONSTRUCTION TO PROCEED UNHINDERED THROUGHOUT THE ENTIRE CONTRACT PERIOD.
- DIMENSIONED DISTANCES SHALL TAKE PRECEDENCE OVER SCALED DISTANCES.
- THRUST BLOCKS: THRUST BLOCKS ARE REQUIRED WHERE SHOWN ON THE DRAWINGS. ADDITIONAL THRUST BLOCKS WHICH MAY BE NECESSARY TO PUT NEW PIPELINES IN SERVICE ARE ALSO REQUIRED ALTHOUGH NOT NECESSARILY SHOWN. THRUST BLOCKS SHALL BE INSTALLED IN ACCORDANCE WITH THE DRAWING DETAILS.
- ALL VALVES 4-IN. AND LARGER ARE FLANGED BUTTERFLY VALVES UNLESS NOTED OTHERWISE. FOUR MOTORIZED VALVES ARE NOTED ON THE DRAWINGS. VALVE INSTALLATION SHALL BE IN ACCORDANCE WITH DETAIL D501. ALL VALVES SHALL INCLUDE A VALVE BOX AND RISER UNLESS NOTED OTHERWISE.
- THE WATER TREATMENT PLANT MUST REMAIN IN OPERATION AT ALL TIMES. THE CITY RESERVES THE RIGHT TO HALT ANY CONTRACTOR ACTIVITIES WHICH THE CITY CONSIDERS TO POSE A THREAT TO THE PLANT OPERATION.
- CONCRETE TRUCKS AND HEAVY EQUIPMENT ARE NOT ALLOWED OVER THE EXISTING 24-WW-RCPP, 24-TW-RCPP, 20-FW-SMLC, AND 18-ACP-FW PIPELINES WHERE COVER IS LESS THAN 6-FT UNLESS STEEL PLATE PROTECTION IS PROVIDED PER SECTION 3, SHEET C-27. THESE PIPELINES WERE CONSTRUCTED WITH THE TREATMENT PLANT IN 1951 AND ARE NOT DESIGNED FOR HEAVY LIVE LOADS.
- WHEN CROSSING UNDER EXISTING PIPELINES MINIMIZE TRENCH WIDTHS, SUPPORT PIPELINES CONTINUOUSLY, AND BACKFILL WITH CONCRETE SUPPORTS AS SHOWN ON THE DRAWINGS.
- THE CONTRACTOR SHALL USE HAND DIGGING METHODS WHEN WORKING WITHIN 2-FT OF EXISTING UTILITIES.
- THE CONTRACTOR SHALL AT NO EXTRA COST TO THE CITY INSTALL AND MAINTAIN TEMPORARY GRAVEL ACCESS ROADS AS NECESSARY TO ACCESS THE WORK YEAR-ROUND. EXISTING SOILS OFF THE PAVEMENT WILL NOT SUPPORT CONCRETE TRUCKS AND CONSTRUCTION EQUIPMENT WHEN WET.
- STANDARD DETAILS ON SHEETS CD-1 THROUGH CD-7 SHALL APPLY TO ALL THE WORK, ALTHOUGH NOT ALWAYS REFERENCED.

**SHEET INDEX**

	COVER SHEET	CD-1	STANDARD DETAILS
G-1	PROJECT LOCATION MAPS	CD-2	STANDARD DETAILS
G-2	SHEET INDEX, AND GENERAL NOTES	CD-3	STANDARD DETAILS
G-3	SURVEY NOTES, LEGEND, AND SYMBOLS	CD-4	STANDARD DETAILS
G-4	ABBREVIATIONS	CD-5	STANDARD DETAILS
G-5	NEW RESERVOIRS - OPERATIONAL OVERVIEW SCHEMATIC	CD-6	STANDARD DETAILS
G-6	REQUIRED CONSTRUCTION SEQUENCE - STAGES 1, 2, AND 3	CD-7	STANDARD DETAILS
G-7	REQUIRED CONSTRUCTION SEQUENCE - STAGES 4, 5, AND 6		
C-1	SITE OVERVIEW AND CONSTRUCTION CONSTRAINTS	L-1	LANDSCAPE PLAN
C-2	SITE PROFILE AND EARTHWORK REQUIREMENTS	L-2	LANDSCAPE DETAILS
C-3	SITE PROFILES	L-3	IRRIGATION PLAN
C-4	SITE GRADING AND PAVING PLAN	L-4	IRRIGATION DETAILS
C-5	--NOT USED--		
C-6	--NOT USED--	S-1	GENERAL NOTES, ABBREVIATIONS AND LEGEND
C-7	STORM DRAIN AND SUBDRAIN PLAN	S-2	5 MG RESERVOIR - PLAN AND SECTION
C-8	INTERIM DRAINAGE PLAN	S-3	5 MG RESERVOIR - WALL DETAILS
C-9	YARD PIPING	S-4	5 MG RESERVOIR - SECTIONS
C-10	YARD PIPING	S-5	1 MG RESERVOIR - PLANS, SECTION AND DETAIL
C-11	YARD PIPING	S-6	1 MG RESERVOIR - WALL DETAILS
C-12	--NOT USED--	S-7	1 MG RESERVOIR - SECTIONS
C-13	--NOT USED--	S-8	PRESTRESSING DETAILS, MISCELLANEOUS JOINT DETAILS, SEISMIC CABLE DETAILS
C-14	RESERVOIR ROOF PLANS	S-9	OVERFLOW AND DRAINS OUTLET STRUCTURE, STRUCTURAL STANDARD DETAILS
C-15	OLD BOOSTER PUMP STATION DEMOLITION SECTIONS AND DETAILS - ALTERNATE BID ITEM #3	S-10	STRUCTURAL STANDARD DETAILS AND SECTIONS
C-16	REFERENCE DRAWING - EXISTING 6 MG RESERVOIR - DRAWING NO. 170	S-11	TYPICAL RESERVOIR OVERFLOW STRUCTURAL DETAILS
C-17	REFERENCE DRAWING - EXISTING 6 MG RESERVOIR - DRAWING NO. 171		
C-18	REFERENCE DRAWING - EXISTING 6 MG RESERVOIR - DRAWING NO. 172	E-1	ELECTRICAL LEGEND AND ABBREVIATIONS
C-19	REFERENCE DRAWING - EXISTING 6 MG RESERVOIR - DRAWING NO. 173	E-2	ELECTRICAL SINGLE LINE DIAGRAM, CONTROL SCHEMATICS AND PANELBOARD SCHEDULE
C-20	REFERENCE DRAWING - EXISTING 6 MG RESERVOIR - DRAWING NO. 174	E-3	ELECTRICAL PLAN - POWER, LIGHTING, AND INSTRUMENTATION
C-21	TYPICAL GRADING PROFILES - RESERVOIR PERIMETER	E-4	MOTORIZED VALVES - POWER AND INSTRUMENTATION PLANS
C-22	OVERFLOW AND DRAINS OUTLET STRUCTURE - SECTIONS AND DETAILS	ED-1	STANDARD ELECTRICAL DETAILS
C-23	RESERVOIR PIPING - DETAILS AND SECTIONS	ES-1	ELECTRICAL CONTROL SCHEMATIC - MOTORIZED VALVES AND PLC INPUT/OUTPUT SCHEDULE
C-24	RESERVOIR PIPING - DETAILS AND SECTIONS		
C-25	METERING VAULTS AND ELECTRICAL/INSTRUMENTATION STATION PLANS AND SECTIONS	I-1	INSTRUMENTATION LEGEND
C-26	UNDERDRAIN AND INTERIM DRAINAGE - DETAILS AND SECTIONS	I-2	PIPING AND INSTRUMENTATION DIAGRAM
C-27	TYPICAL ACCESS ROAD SECTIONS AND PIPELINE STEEL PLATE PROTECTION		

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**RECORD DRAWING**  
DATE: 1/12/2000 BY: [Signature]

APPROVED \_\_\_\_\_ W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY: _____ BPD	CAMP DRESSER & MCKEE INC.
DRAWN BY: _____ RD, RAC	One Walnut Creek Center
SHEET CHK'D BY: _____	100 Pringle Avenue, Suite 300
CROSS CHK'D BY: _____	Walnut Creek, California 94596
APPROVED BY: _____ JRT	(510) 933-2900
DATE: _____ MAY 1998	

**CDM**  
environmental engineers, scientists, planners, & management consultants

**CITY OF PITTSBURG  
ENGINEERING DIVISION**  
**6 MG RESERVOIR  
REPLACEMENT PROJECT**

**SHEET INDEX AND GENERAL NOTES**

PROJECT NO. 1358-22097  
FILE NAME: 60000002  
SHEET NO. **G-2**

**SURVEY NOTES:**

**HORIZONTAL DATUM:**

THE HORIZONTAL BEARINGS SHOWN HEREON ARE BASED ON THE BEARING N49°55'42"E BETWEEN STD. CITY MONUMENTS ON CRESTVIEW DRIVE AND ITS INTERSECTIONS WITH ROBINSON AVENUE AND REVINE DRIVE AS SHOWN ON THE MAP OF SUBDIVISION 3648, "COUNTRY CLUB PARK", RECORDED APRIL 30, 1971 IN BOOK 136 OF MAPS AT PAGE 32, CONTRA COSTA COUNTY RECORDS.

**VERTICAL DATUM (BENCHMARK):**

EBMUD BRASS DISC SET IN PAVEMENT AT THE INTERSECTION OF THE CENTERLINE OF 100' EBMUD RIGHT-OF-WAY AND CRESTVIEW DRIVE. EBMUD STA. P3586+14.18, ELEVATION = 90.011.

**CONTROL POINTS**

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION	APPARENT STREET INTERSECTION
1	5000.000	10000.000	109.660	STREET MONUMENT	ROBINSON AVE. & CRESTVIEW DRIVE
2	4737.288	9687.675	106.996	STREET MONUMENT	RAVINE DRIVE & CRESTVIEW DRIVE
3	3221.778	9219.388	157.044	STREET MONUMENT	CHATSWORTH & CRESTVIEW DRIVE

**SOIL BORING LOCATIONS**

BORING NO.	NORTHING	EASTING
B-1	3782.4	8665.0
B-2	3706.7	8602.8
B-3	3674.4	8421.8
B-4	3392.6	8741.7

NOTE: B-4 CONVERTED TO MONITORING WELL.

**POTHOLE INDEX**

POTHOLE #	DESCRIPTION	NORTHING	EASTING	T.O.P. EL
1	20-FW-SMLC	3777.0	8738.9	153.4
2	18-FW-ACP	3777.9	8732.9	157.7
3	18-FW-ACP	3706.7	8806.9	154.7
4	20-FW-SMLC in M. Vault	3883.3	8755.8	147.0
5	30"X24" TEE	3844.4	8533.0	157.4
6	Elect Ductbank	3844.1	8525.2	161.0
7	2" Utility Water	3762.8	8534.5	168.6
8	24"-TW-RCPP	3768.4	8481.1	168.6
9	14"-FW-DIP in Meter Vault	3825.2	8482.8	164.2

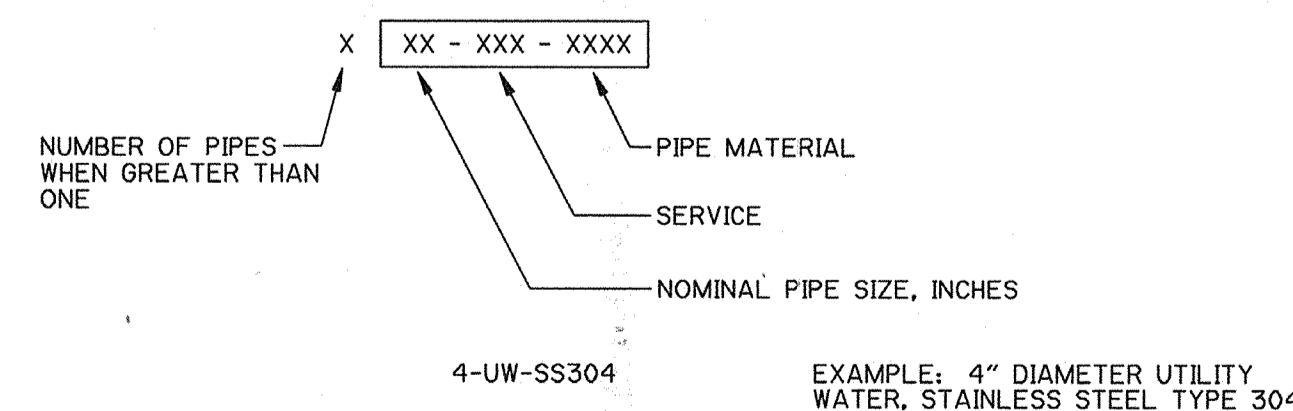
**LEGEND**

**EXISTING TOPOGRAPHY**

- ELEC UNDERGROUND CABLE/DUCT
- TEL UNDERGROUND TELEPHONE LINE
- G UNDERGROUND GAS LINE
- OT OVERHEAD TELEPHONE LINE
- OE OVERHEAD ELECTRIC
- SS UNDERGROUND SANITARY SEWER LINE
- W UNDERGROUND WATER LINE
- FM UNDERGROUND FORCE MAIN
- CATV UNDERGROUND CABLE TV
- SD UNDERGROUND STORM DRAIN LINE
- OTV OVERHEAD TV
- MH MANHOLE
- POWER POLE
- LIGHT POLE
- SIGN
- TREE/BUSH
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- EXISTING BUILDING
- CHAIN LINK FENCE
- WALL
- EDGE OF PAVEMENT

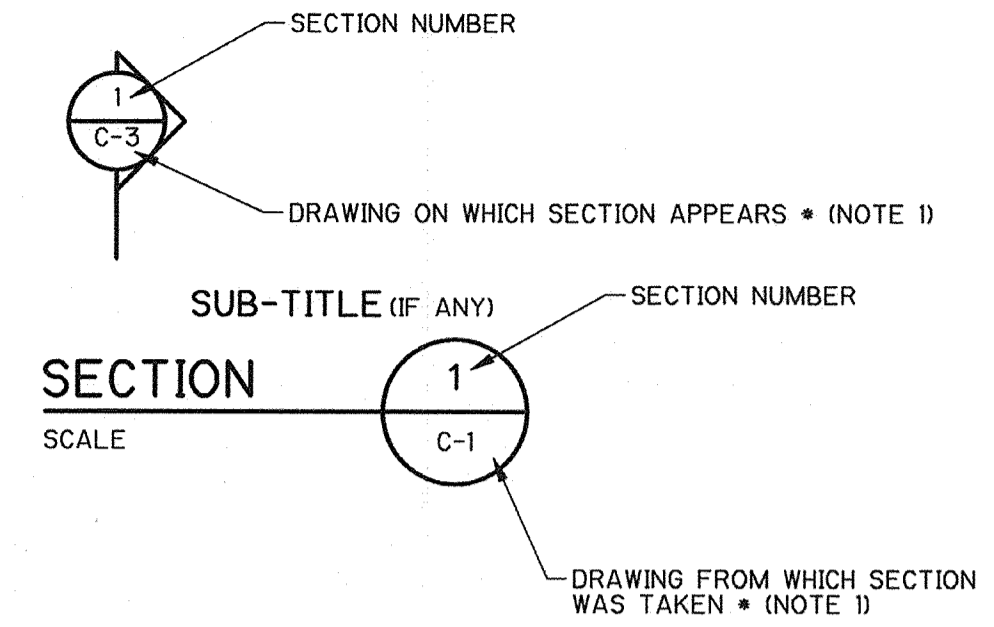
**PROPOSED WORK**

- PROPERTY LINE/RIGHT-OF-WAY
- PROPOSED PIPELINE
- PIPELINE (NOT IN CONTRACT)
- STREET CENTERLINE
- CONTOUR
- BORING LOCATION/BORING NUMBER
- SURVEY CONTROL PT
- FILL AREA
- BLOW OFF
- AIR VALVE
- FIRE HYDRANT
- MANHOLE
- THRUST BLOCK LENGTH = 4 FEET
- INSULATING JOINT TEST STATION

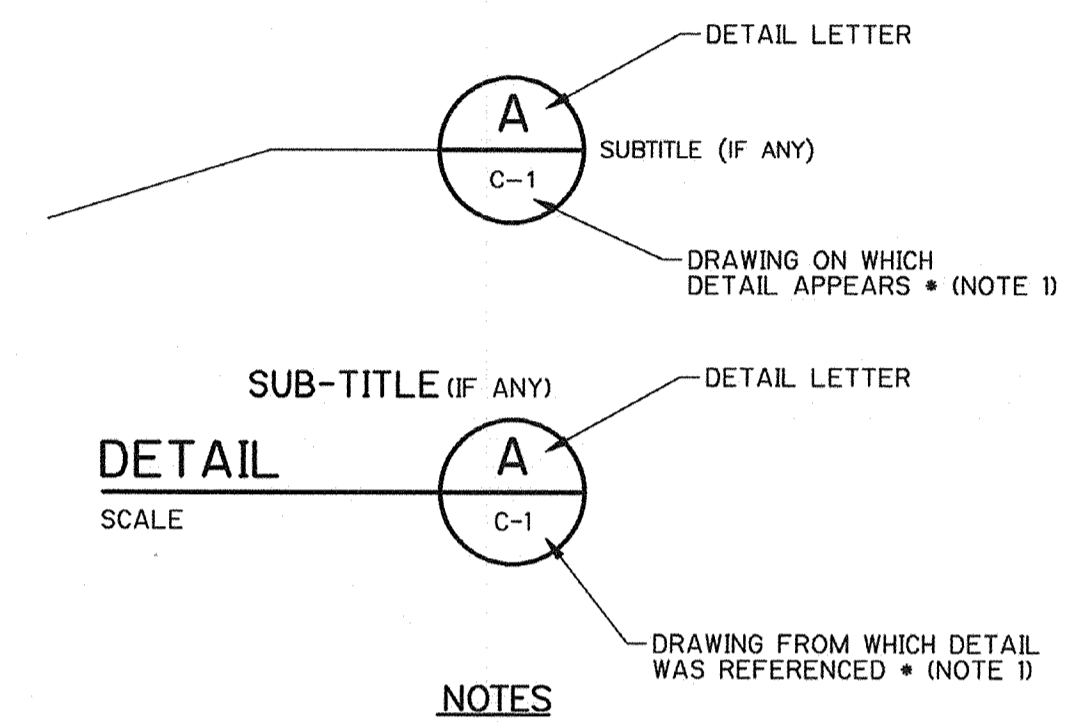


**SYMBOLS**

**SECTION IDENTIFICATION**



**DETAIL IDENTIFICATION**



**NOTES**

- IF SECTION OR DETAIL APPEARS ON THE SAME DRAWING AS THE CALL-OUT, THE DRAWING NUMBER IS REPLACED WITH A DASH.
- IF DRAWING NUMBER IS IN THE FORM "DXXX", IT REFERS TO THE STANDARD DETAIL SHEETS.

- NEW FACILITY OR FEATURE
- EXISTING FACILITY OR FEATURE
- FACILITY TO BE REMOVED OR DEMOLISHED
- UNDISTURBED EARTH, STRUCTURAL FILL OR BACKFILL AS NOTED
- CLASS 2 PERMEABLE MATERIAL, AND AGGREGATE BASE CL2, 95% REL COMP
- CONCRETE
- ASPHALT CONCRETE PAVEMENT - PLAN
- ASPHALT CONCRETE PAVEMENT - SECTION
- NORTH ARROW

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**RECORD DRAWING**  
DATE: 11/21/98 BY: [Signature]

APPROVED: W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00	EPM	BPD		RECORD DRAWINGS

DESIGNED BY: BPD  
DRAWN BY: RD  
SHEET CHK'D BY:  
CROSS CHK'D BY:  
APPROVED BY: JRT  
DATE: MAY 1998

**CAMP DRESSER & McKEE INC.**  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

environmental engineers, scientists,  
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**CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT**

**SURVEY NOTES, LEGEND, AND SYMBOLS**

PROJECT NO. 1358-22097  
FILE NAME: 60000003

SHEET NO.

**G-3**

# GENERAL ABBREVIATIONS

#	NUMBER	CMU	CONCRETE MASONRY UNITS	FHWS	FLATHEAD WOOD SCREW	MA	MILLIAMPER	OCV	QUICK CONNECT VALVE	TW	TREATED WATER
&	AND	CND	CONDUIT	FIG	FIGURE	MATL	MATERIAL	QTY	QUALITY OR QUANTITY	TYP	TYPICAL
<	ANGLE	CO	CLEAN OUT	FIN	FINISH (ED)	MAX	MAXIMUM	R	RISER(S), RADIUS		
@	AT	COL	COLUMN	FL	FLASHING, FLOW LINE, FLOOR	NB	MACHINE BOLTS	R+S	BACKER ROD & SEALANT	UD	UNDER DRAIN
A	AIR (COMPRESSED)	COMB	COMBINATION	FLA	FULL LOAD AMPS	NBH	THOUSAND BTU PER HOUR	R/W	RIGHT OF WAY	UGND	UNDERGROUND
A, AMP	AMPERE	COMP	COMPRESSIBLE, COMPACTION	FLEX	FLEXIBLE	MC	STEEL MISCELLANEOUS CHANNEL	RAD	RADIUS	UH	UNIT HEATER
AB	ANCHOR BOLT, AGGREGATE BASE	COMP JT	COMPRESSION JOINT	FLG	FLANGE (D)	MCC	MOTOR CONTROL CENTER	RC	REINFORCED CONCRETE	UN	UNION
ABAN	ABANDON	CONC	CONCRETE	FLR	FILLER	MECH	MECHANICAL	RCP	REINFORCED CONCRETE PRESSURE PIPE	UNO	UNLESS NOTED OTHERWISE
ABV	ABOVE	COND	CONDUCTIVITY	FO	FAIL OPEN	MFR	MANUFACTURER	RCPP	REINFORCED CONCRETE PIPE	UON	UNLESS OTHERWISE NOTED
AC	ALTERNATING CURRENT, ASPHALTIC CONCRETE	CONN	CONNECTION	FPM	FEET PER MINUTE	MG	MILLION GALLON	RD	ROAD	UW	UTILITY WATER
ACP	ASBESTOS CEMENT PIPE	CONST	CONSTRUCTION	FPT	FEMALE PIPE THREAD	MG/L	MILLIGRAMS PER LITER	RDWD	REDWOOD		
AD	ACCESS DOOR	CONT	CONTINUOUS	FRP	FIBERGLASS REINFORCED PLASTIC	MH	MANHOLE	RECIR	RECIRCULATION	V	VOLTS, VALVE, VENT
ADDL	ADDITIONAL	COR	CORNER(S)	FS	FLOOR STAND	MIN	MINIMUM	RECT	RECEPTACLE	VA	VENT AIR
ADH	ADHESIVE	CORR	CORRUGATED	FT	FEET/FOOT	MISC	MISCELLANEOUS	RED	REDUCER	VAC	VACUUM, VOLTS ALTERNATING CURRENT
ADJ	ADJUSTABLE, ADJUST	CP	CATHODIC PROTECTION, CONTROL PANEL	FTG	FOOTING/FITTING	MJ	MECHANICAL JOINT	REF	REFERENCE/REFER	VAR	VARIOUS/VARIABLE
ADPT	ADAPTER	CPLG	COUPLING	FU	FUSE	MK	MARK	REG	REGISTER	VB	VALVE BOX, VAPOR BARRIER
AFF	ABOVE FINISHED FLOOR	CPT	CONTROL POWER TRANSFORMER	FURN	FURNISHED	MOD	MODEL	REINF	REINFORCE (D, ING)	VBR	VACUUM BREAKER
AFG	ABOVE FINISHED GRADE	CR	CONTROL RELAY	FW	FINISHED WATER	MON	MONUMENT	REL	RELATIVE	VC	VICTAULIC COUPLING (SHOULDERED ENDS)
AGG	AGGREGATE	CRS	COURSE(S)	FXD	FIXED	MOT	MOTOR	REQD	REQUIRED	VCP	VITRIFIED CLAY PIPE
AI	ANALOG INPUT	CS	CARBON STEEL, CONTROL SWITCH, CENTER STRIP			MPT	MALE PIPE THREAD	REV	REVISION	VEL	VELOCITY
AL, ALUM	ALUMINUM	CSK	COUNTERSINK	G	NATURAL GAS	MS	MIDDLE STRIP	RF	ROOF FAN	VERT	VERTICAL
ALT	ALTERNATE (ING), ALTITUDE	CT	CURRENT TRANSFORMER	GA	GAGE	MTL	METAL	RJ	RESTRAINED JOINT	VIB	VIBRATION
ANOD	ANODIZE	CTJ	CONTROL JOINT	GALV	GALVANIZED	MW	MONITORING WELL	RM	ROOM	VIF	VERIFY IN FIELD
AO	ANALOG OUTPUT	CTG	COATING	GALVS	GALVANIZED STEEL	N	NORTH, NORTHING	RMS	ROOT MEAN SQUARE	VOL	VOLUME
AP	ACCESS PANEL	CTR or CRTD	CENTER(ED)	GFI	GROUND FAULT INTERRUPTER	N/A	NOT APPLICABLE	RND	ROUND	VS	VARIABLE SPEED
AR	AIR RELEASE	CTU	CENTRAL TELEMETRY UNIT	GI	GALVANIZED IRON	NBR	NITRILE RUBBER	RO	ROUGH OPENING	VT	VENT
APPROX	APPROXIMATE (LY)	CU	COPPER, COPPER PIPE, CUBIC	GL	GLASS	NC	NORMALLY CLOSED	RP	REDUCED PRESSURE PRINCIPLE	VTR	VENT THRU ROOF
ARND	AROUND	CU FT	CUBIC FOOT (FEET)	GND	GROUND	NEUT	NEUTRAL	RPM	REVOLUTIONS PER MINUTE	W	WEST, WATER
ARV	AIR RELEASE VALVE	CU YD	CUBIC YARD	GOV	GLOBE VALVE	NF	NEAR FACE	RSTR	RESTRAINED	W/	WIDE
ASPH	ASPHALT	CV	CHECK VALVE	GPD	GALLONS PER DAY	NIC	NOT IN CONTRACT	RT	RIGHT, RUNNING TIME METER	W/	WITH
ASSOC	ASSOCIATION	CW	CLOCKWISE	GPM	GALLONS PER MINUTE	NO	NORMALLY OPEN OR NUMBER	RTU	REMOTE TRANSMITTER UNIT	W/A	WHERE APPLICABLE
ASSY	ASSEMBLY			GR	GRADE, GUARD RAIL	NOM	NOMINAL	RVNR	REDUCE VOLTAGE NON-REVERSING	W/O	WITHOUT
ATC	AUTOMATIC TEMPERATURE CONTROL	d	PENNY	GRS	GALVANIZED RIGID STEEL	NPT	AMERICAN NATIONAL TAPER PIPE THREAD	S	SOUTH, SEWER	WD	WALL DRAIN, WIDTH, WOOD
ATS	AUTOMATIC TRANSFER SWITCH	D	DRAIN, DEEP	GRTG	GRATING	NPET	NON-PERFORATED POLYETHYLENE TUBING	SA	SAMPLE	WF	WIDE FLANGE
AUTO	AUTOMATIC	dB	DECIBEL	GSKT	GASKET	NPW	(NON-POTABLE) RAW WATER	SAN	SANITARY	WHM	WATTHOUR METER
AUX	AUXILIARY	DC	DIRECT CURRENT	GSP	GALVANIZED STEEL PIPE	NR	NATURAL RUBBER	SC	SURGE CAPACITOR	WL	WATER LEVEL
AVG	AVERAGE	DCV	DOUBLE CHECK VALVE	GV	GATE VALVE	NRS	NON-RISING STEM	SCH, SCHED	SCHEDULE	WM	WATTMETER
AWG	AMERICAN WIRE GAUGE	DEG	DEGREE(S)			NTS	NOT TO SCALE	SCJ	SLAB CONTROL JOINT	WP	WEATHERPROOF
AX	CURRENT TRANSDUCER	DEMO	DEMOLITION	H	HEIGHT			SD	SILENT CHECK VALVE	WPG	WATERPROOFING
		DET	DETAIL	HB	HOSE BIBB			SDR	STORM DRAIN	WS	WATER SURFACE, WATERSTOP
B TO B	BACK TO BACK	DI	DIGITAL OR DISCRETE INPUT, DUCTILE IRON	HG	HEAVY DUTY			SE	SECONDARY	WT	STEEL TEE-SHAPE DESIGNATION, WEIGHT
B & S	BELL AND SPIGOT	DIA	DIAMETER	HDP	HOT DIP GALVANIZED			SEC	SECONDS	WWF	WELDED WIRE FABRIC
BC	BEGINNING OF CURVE	DIAG	DIAGONAL	HDR	HIGH DENSITY POLYETHYLENE	OC	ON CENTER OR ODOR CONTROL	SECT	SECTION	XFER	TRANSFER
BCV	BALL CHECK VALVE	DIF	DIELECTRIC ISOLATION FLANGE	HDR	HEADER	OCEW	ON CENTER EACH WAY	SEJ	SEAM JOINT	XFMR	TRANSFORMER
BD	BOARD	DIM	DIMENSION	HDWR	HARDWARE	OCL	SODIUM HYPOCHLORITE	SEF	SQUARE FEET	XP	EXPLOSION PROOF
BEL	BELOW	DIP	DUCTILE IRON PIPE	HEX	HEXAGON	OD	OUTSIDE DIAMETER	SG	SHUICE GATE		
BEV	BEVEL (ED)	DIR	DIRECTION	HGR	HANGER	OE	OVERHEAD ELECTRIC	SH	SHIELDED	YD	YARD
BF	BLIND FLANGE	DISCH	DISCHARGE	HGT	HEIGHT	OF	OVERFLOW, OUTSIDE FACE	SHT	SHEET	YR	YEAR
BFP	BACK FLOW PREVENTER	DIV	DIVISION	HH	HANDHOLE	OL	OVERLOAD	SIM	SIMILAR		
BFV	BUTTERFLY VALVE	DL	DEAD LOAD	HM	HOLLOW METAL	OPER	OPERATOR	SJ	SOLDERED JOINT		
BHP	BRAKE HORSEPOWER	DN	DOWN	HOA	HAND-OFF-AUTO	OPNG	OPENING	SL	SIGNAL LINE		
BITUM	BITUMINOUS	DP	DAMPROOFING	HORIZ	HORIZONTAL	OPP	OPPOSITE	SLNT	SEALANT		
BL	BASELINE	DR	DRIVE	HP	HIGH POINT, HORSEPOWER	OPP HD	OPPOSITE HAND	SLV	SLEEVE		
BLDG	BUILDING	DTL	DETAIL	HR	HANDRAIL	OPT	OPTION (AL)	SLMC	STEEL CEMENT MORTAR LINED AND COATED		
BLK	BLOCK	DY	DIAPHRAGM VALVE	HS	HIGH STRENGTH	OT	OVERHEAD TELEPHONE	SOLV	SOLENOID VALVE		
BLKG	BLOCKING	DWG	DRAWING	HVAC	HEATING, VENTILATING & AIR CONDITIONING	OV	OVER	SP	SPACE (S, ED)		
BM	BENCHMARK	DWL	DOWEL	HWA	HIGH WATER ALARM			SPEC	SPECIFICATION, SPECIFIED		
BO	BLOW OFF			HWL	HIGH WATER LEVEL			SPL	SAMPLE, SAMPLE LINE		
BOT	BOTTOM			HZ	HERTZ			SPR	SPRING, SPRINKLER LINE		
BRG	BEARING	E	ELECTRIC, EASTING, EAST					SQ	SQUARE		
BR	BRASS	EA	EACH					SS304	STAINLESS STEEL, TYPE 304		
BRK	BREAK	EB	EXPANSION BOLT					SS316	STAINLESS STEEL, TYPE 316		
BRZ	BRONZE	EC	EMPTY CONDUIT, END OF CURVE					SS	SANITARY SEWER, STAINLESS STEEL		
BS	BOTH SIDES	ECC	ECCENTRIC					SST	STAINLESS STEEL		
BSP	BLACK STEEL PIPE	EF	EACH FACE					ST PR	STATIC PRESSURE		
BTU	BRITISH THERMAL UNIT	EGC	EQUIPMENT GROUNDING CONDUCTOR					STA	STATION		
BTWN	BETWEEN	EL	ELEVATION					STD	STANDARD		
BV	BALL VALVE	ELEC	ELECTRIC (AL)					STIF	STIFFENER		
BYP	BYPASS	ELEV	ELEVATION					STR	STIRRUP (S)		
		ELL	ELBOW					STL	STEEL		
C TO C	CENTER TO CENTER	EMERG	EMERGENCY					STOR	STORAGE		
CAB	CABINET	ENT	ENTERING, ENTRANCE					STRUC	STRUCTURE (S, URAL)		
CAD	COMPRESSED AIR, DRIED	EP	ELECTRICAL PANEL, EDGE OF PAVEMENT					SUSP	SUSPENDED		
CAP	CAPACITY	EPDM	ETHYLENE PROPYLENE RUBBER					SW	SWITCH		
CATV	CABLE TV	EO	EQUAL (LY)					SWBD	SWITCHBOARD		
CAV	COMBINATION AIR VALVE	EOP	EQUIPMENT					SWGR	SWITCHGEAR		
CB	CATCH BASIN, CIRCUIT BREAKER	EQUIV	EQUIVALENT					SYM	SYMMETRICAL		
CC	COOLING COIL, CONTROL CONDUIT	ES	EACH SIDE, ELECTRIC SUPPLY, END STRIP					T	TREAD(S), TELEPHONE		
CCW	COUNTER CLOCKWISE	ESMT	EASEMENT					T&B	TOP AND BOTTOM		
CCWD	CONTRA COSTA WATER DISTRICT	EST	ESTIMATE (D)					T&G	TONGUE AND GROOVE		
CD	CONDENSATE DRAIN	ETC	ETCETERA					TAN	TANGENCY		
CEM	CEMENT	ETS	ELECTROLYSIS TEST STATION					TB	THRUST BLOCK		
CENT	CENTRIFUGAL	EW	EACH WAY					TD	TRENCH DRAIN		
CF	COMPRESSIBLE FILLER, CUBIC FEET	EXA	EXHAUST AIR					TDC	TIME DELAY ON CLOSING		
CFM	CUBIC FEET PER MINUTE	EXH	EXHAUST					TDD	TIME DELAY AFTER DEENERGIZATION-OFF DELAY		
CFS	CUBIC FEET PER SECOND	EXP	EXPANSION, EXPOSED					TDE	TIME DELAY AFTER ENERGIZATION-ON DELAY		
CHAM	CHAMFER	EXP JT	EXPANSION JOINT					TDO	TIME DELAY ON OPENING		
CHAN	CHANNEL	EXIST	EXISTING					TECH	TECHNICAL		
CHKD	CHECKERED	EXT	EXTERIOR					TEL	TELEPHONE		
CI	CURB INLET, CAST IRON	EXTD	EXTENDED					TEMP	TEMPERATURE, TEMPERED, TEMPORARY		
CIP	CAST IN PLACE, CAST IRON PIPE							TF	TOP FACE/TOP OF FOOTING		
CIR	CIRCLE	F	FAHRENHEIT					THD	THREADED		
CIRC	CIRCUMFERENTIAL	f/c	FAHRENHEIT					THK	THICK (NESS)		
CISP	CAST IRON SOIL PIPE	FAB	FABRICATED (OR, ED)					TM	TELEMETRY OR TIME		
CJ	CONSTRUCTION JOINT	FAC	FACILITY					T.O.	TOP OF		
CKT	CIRCUIT	FBO	FURNISHED BY OTHERS					TOB	TOP OF BERM/BANK		
CL	CLASS	FC	FAIL CLOSED, FACE OF CURB, FLEX CONNECTION					TOC	TOP OF CURB/CONCRETE		
CL or E	CENTERLINE	FCA	FLANGED COUPLING ADAPTER					TOE	THREAD ONE END		
CLF	CURRENT LIMITING FUSE	FD	FLOOR DRAIN					TOS	TOP OF STEEL, TOP OF SLAB		
CLG	CELLING	FDN	FOUNDATION					TOW	TOP OF WALL		
CLJ	CONTROL JOINT	FE	FIRE EXTINGUISHER					TP	TURNING POINT		
CLKG	CAULKING	FF	FACTORY FINISH, FAR FACE					TRANS	TRANSMITTER		
CLR	CLEAR	FG	FINISHED GRADE					TS	STRUCTURAL TUBING (STEEL UNLESS NOTED)		
CM	CORRUGATED METAL	FGL	FIBERGLASS								
CMP	CORRUGATED METAL PIPE	FH	FIRE HYDRANT								
		FHMS	FLATHEAD MACHINE SCREW								

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NOTE:  
1. SEE STRUCTURAL, ELECTRICAL, AND INSTRUMENTATION DRAWINGS FOR ADDITIONAL ABBREVIATIONS.

**RECORD DRAWING**  
DATE: 11/22/2001 BY: [Signature]

APPROVED \_\_\_\_\_ W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS

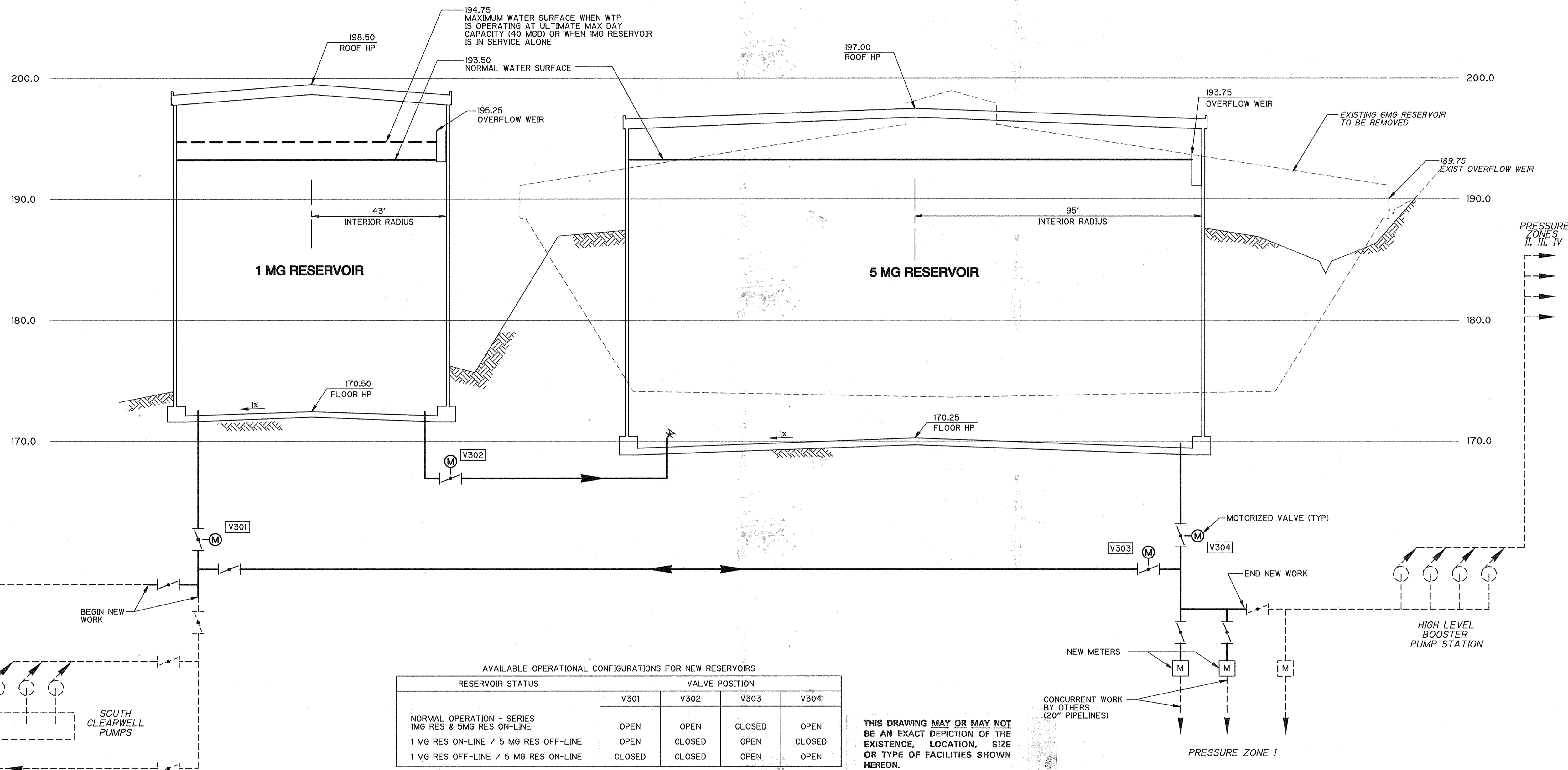
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APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_ MAY 1998

**CAMP DRESSER & McKEE INC.**  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900  
*environmental engineers, scientists,  
planners, & management consultants*

**CITY OF PITTSBURG  
ENGINEERING DIVISION**  
  
**6 MG RESERVOIR  
REPLACEMENT PROJECT**

**ABBREVIATIONS**

PROJECT NO. 1358-22097  
FILE NAME: 60000004  
SHEET NO. **G-4**



AVAILABLE OPERATIONAL CONFIGURATIONS FOR NEW RESERVOIRS

RESERVOIR STATUS	VALVE POSITION			
	V301	V302	V303	V304
NORMAL OPERATION - SERIES 1 MG RES & 5 MG RES ON-LINE	OPEN	OPEN	CLOSED	OPEN
1 MG RES ON-LINE / 5 MG RES OFF-LINE	OPEN	CLOSED	OPEN	CLOSED
1 MG RES OFF-LINE / 5 MG RES ON-LINE	CLOSED	CLOSED	OPEN	OPEN

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APPROVED BY:	JRT
DATE:	MAY 1998

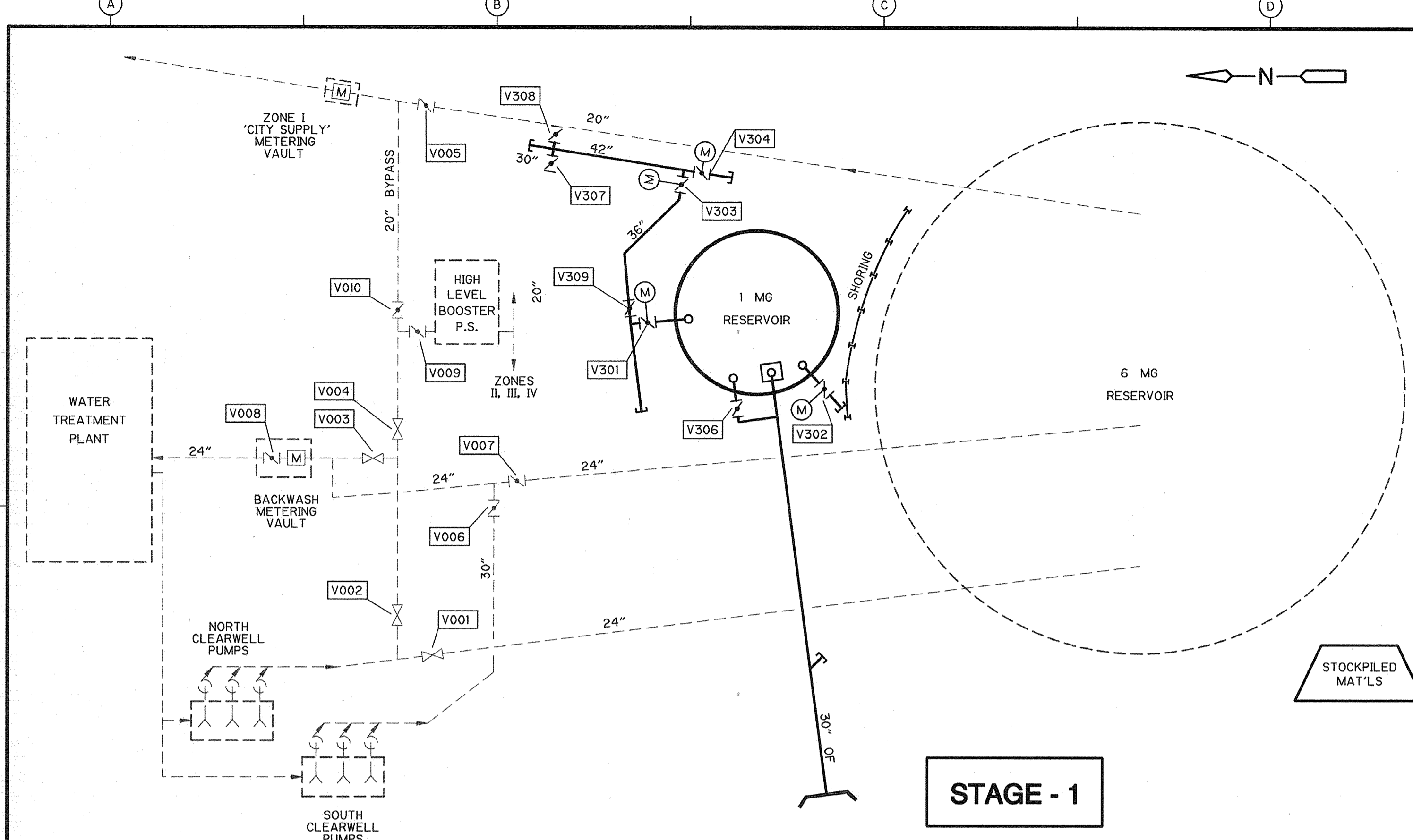
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One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

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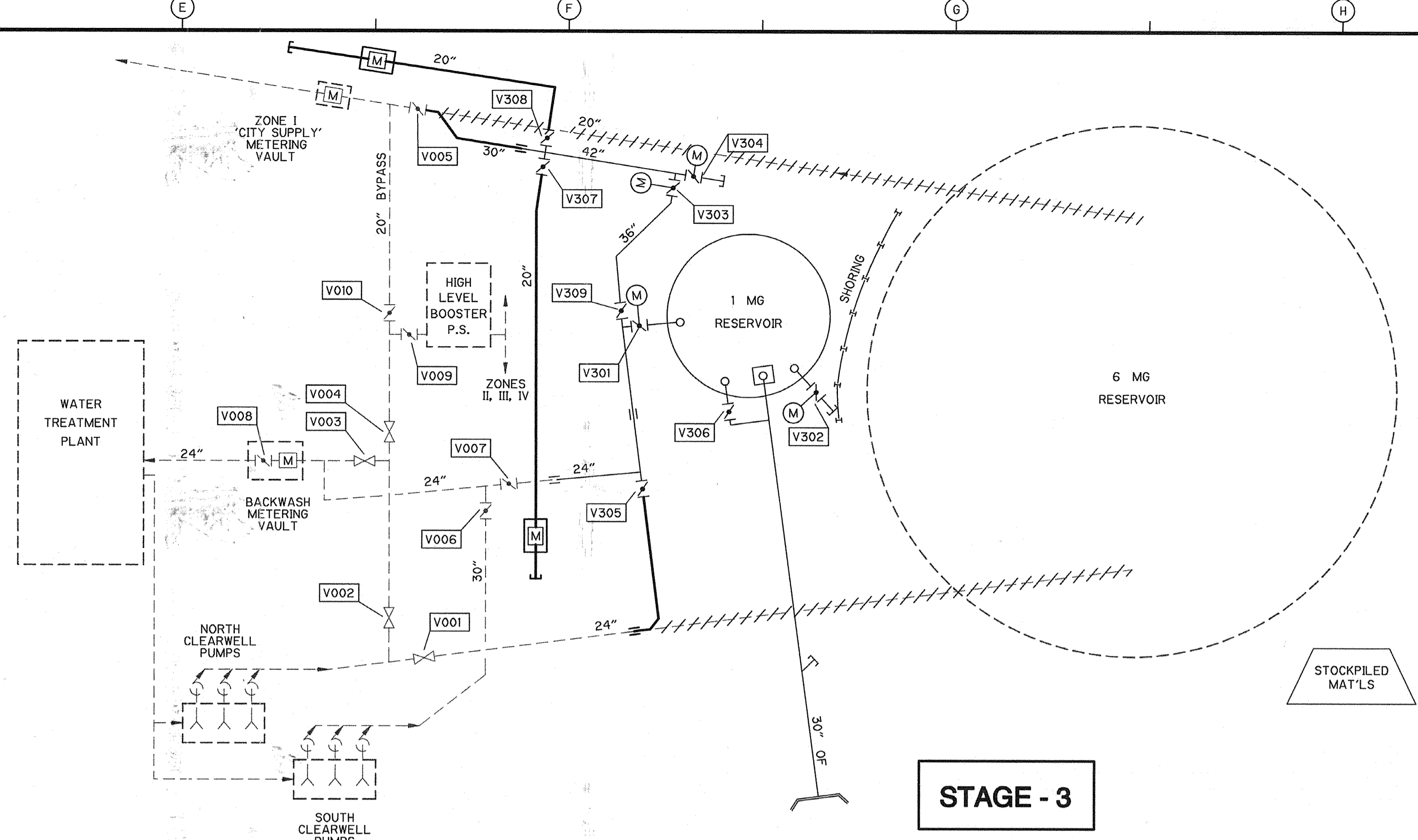
CITY OF PITTSBURG  
ENGINEERING DIVISION  
**6 MG RESERVOIR  
REPLACEMENT PROJECT**

**NEW RESERVOIRS  
OPERATIONAL OVERVIEW SCHEMATIC**

PROJECT NO. 1358-22097  
FILE NAME: 60000005  
SHEET NO. **G-5**



**STAGE - 1**



**STAGE - 3**

**LEGEND**

---	EXIST FEATURES
---	NEW WORK - CONSTRUCTED UNDER REFERENCED STAGE
---	NEW WORK - CONSTRUCTED UNDER PREVIOUS STAGES

**REQUIRED CONSTRUCTION SEQUENCE STAGES 1, 2 AND 3**

**STAGE - 1**

- INSTALL PIPE PROTECTION FOR 18" ACP WATER MAIN.
- INSTALL SHORING BETWEEN 6 MG RES AND PAD FOR NEW 1 MG RES
- GRADE PAD FOR 1 MG RES - STOCKPILE OVEREXCAVATED MATERIAL
- INSTALL PIPING AND VALVING FOR 1 MG RES
- CONSTRUCT 1 MG RES
- INSTALL ELECTRICAL AND INSTRUMENTATION FEATURES FOR REMOTE LEVEL MONITORING - 1 MG RES
- DISINFECT AND PRESSURE TEST 1 MG RES AND PIPING

SCHEDULING RESTRICTIONS:  
PRESSURE AND DISINFECTION TEST RESULTS SHALL BE ACCEPTABLE TO THE CITY PRIOR TO PROCEEDING WITH STAGE-2 WORK.

**STAGE - 2**

- USE THE 'BY-PASS' PIPE MODE TO DIVERT PLANT FLOW TO THE HIGH LEVEL BOOSTER PUMP STATION AND ZONE-I
- EMPTY THE 6 MG RES
- TIE-IN THE 1 MG RES AND NEW PIPING TO THE EXISTING 24-IN. WASHWATER HEADER, UP TO AND INCLUDING VALVE V305

SCHEDULING RESTRICTIONS:  
PIPING TIE-IN CANNOT PROCEED UNTIL THE 6 MG RES IS COMPLETELY DRAINED. THE 6 MG RES SHALL NOT BE TAKEN OFF-LINE PRIOR TO OCTOBER 6, 1998.

THE STAGE-2 SCHEDULE SHALL ALLOW 3 DAYS TO EMPTY THE 6 MG RES, AND SHALL LIMIT THE TIME IN THE 'BY-PASS' MODE TO 36-HOURS AFTER WHICH TIME THE 1 MG RES SHALL BE ON-LINE AND FULLY FUNCTIONAL.

**STAGE - 3**

- TIE-IN NEW 30-IN. PIPELINE AT VALVE V005
- COMPLETE PIPING TIE-IN TO 24-IN HEADER FROM NORTH CLEARWELL (TO DRAIN HEADER; CLOSE V002; OPEN V001; AND OPEN DRAIN VALVE ON HEADER AT NORTH CLEARWELL)
- COMPLETE INSTALLATION AND TESTING OF TWO NEW 20-IN PIPELINES W/ FLOW METERS.

SCHEDULING RESTRICTIONS:  
WORK ITEM 'A' AND 'B' SHALL BE COMPLETE WITHIN 3-CALENDAR DAYS AFTER CONNECTION OF STAGE-2 WORK.

20" PIPELINES SHALL BE ACCEPTED AND READY FOR TIE-IN BY NOVEMBER 3, 1998. OKAY TO BEGIN 20" PIPELINES CONSTRUCTION IN STAGES 1, 2, OR 3.

**NOTES:**

- REFER TO SPECIFICATION SECTION 0100 FOR FURTHER CONSTRUCTION SEQUENCING AND SCHEDULING REQUIREMENTS.
- ALL VALVE OPERATION SHALL BE REQUESTED IN WRITING BY THE CONTRACTOR AND APPROVED BY THE CITY. VALVE OPERATION SHALL BE PERFORMED UNDER DIRECT SUPERVISION OF CITY PERSONNEL.
- EXISTING VALVING MAY NOT PROVIDE COMPLETE SHUT-OFF, PROVIDE DEWATERING WHEN MAKING PIPING CUT-INS.

- VALVE / RESERVOIR STATUS -

DESCRIPTION VALVE/RESERVOIR	STATUS PRIOR TO CONSTRUCTION	STATUS IN 'BYPASS' MODE	STATUS AT COMPLETION STAGE - 1	STATUS AT COMPLETION STAGE - 2	STATUS AT COMPLETION STAGE - 3
6-MG RESERVOIR	13-16 FT.	OFF-LINE	ON-LINE	OFF-LINE	OFF-LINE
1-MG RESERVOIR	-	-	OFF-LINE	ON-LINE	ON-LINE
5-MG RESERVOIR	-	-	-	-	-
N. CLEARWELL PUMPS	AUTO	AUTO	AUTO	AUTO	AUTO
S. CLEARWELL PUMPS	AUTO	AUTO	AUTO	AUTO	AUTO
V001	OPEN	CLOSED	OPEN	OPEN	OPEN
V002	CLOSED	OPEN	CLOSED	OPEN	OPEN
V003	CLOSED	OPEN	CLOSED	OPEN	OPEN
V004	CLOSED	OPEN	CLOSED	OPEN	OPEN
V005	OPEN	CLOSED	OPEN	CLOSED	OPEN
V006	OPEN	OPEN	OPEN	OPEN	OPEN
V007	OPEN	CLOSED	OPEN	OPEN	OPEN
V008	O/C	O/C	O/C	O/C	O/C
V009	OPEN	OPEN	OPEN	OPEN	OPEN
V010	OPEN	OPEN	OPEN	OPEN	OPEN
V301	-	-	CLOSED	OPEN	OPEN
V302	-	-	CLOSED	CLOSED	CLOSED
V303	-	-	CLOSED	CLOSED	OPEN
V304	-	-	CLOSED	CLOSED	CLOSED
V305	-	-	-	CLOSED	OPEN
V306	-	-	CLOSED	CLOSED	CLOSED
V307/V308	-	-	OPEN	OPEN	OPEN
V309	-	-	OPEN	OPEN	OPEN
V310	-	-	-	-	-
V311	-	-	-	-	-

**RECORD DRAWING**  
DATE: *11/22/98* BY: *[Signature]*

APPROVED \_\_\_\_\_ W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

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DESIGNED BY: BPD	CAMP DRESSER & McKEE INC.
DRAWN BY: TVN	One Walnut Creek Center 100 Pringle Avenue, Suite 300 Walnut Creek, California 94596 (510) 933-2900
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY: JRT	
DATE: MAY 1998	

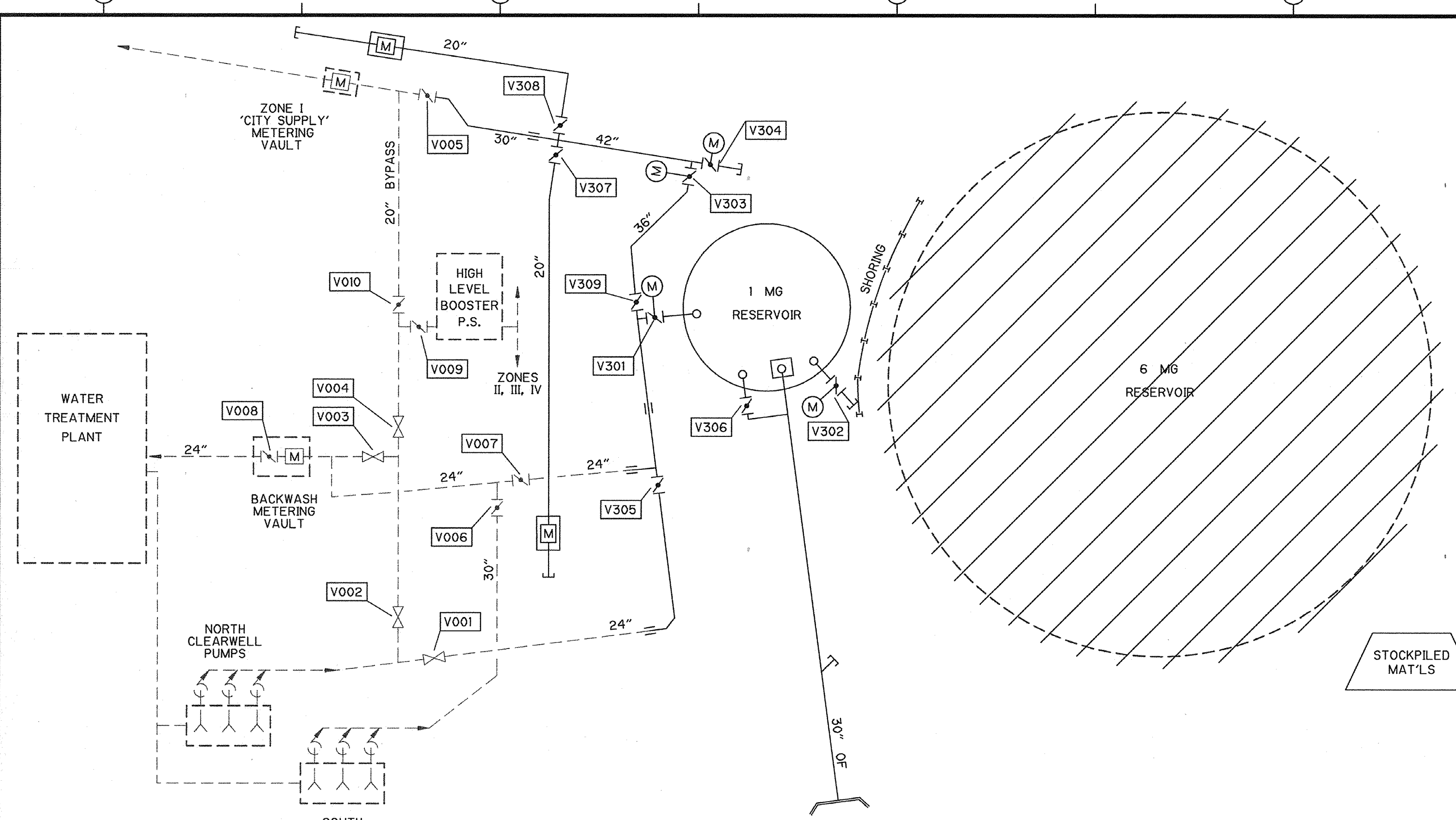
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environmental engineers, scientists,  
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**CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT**

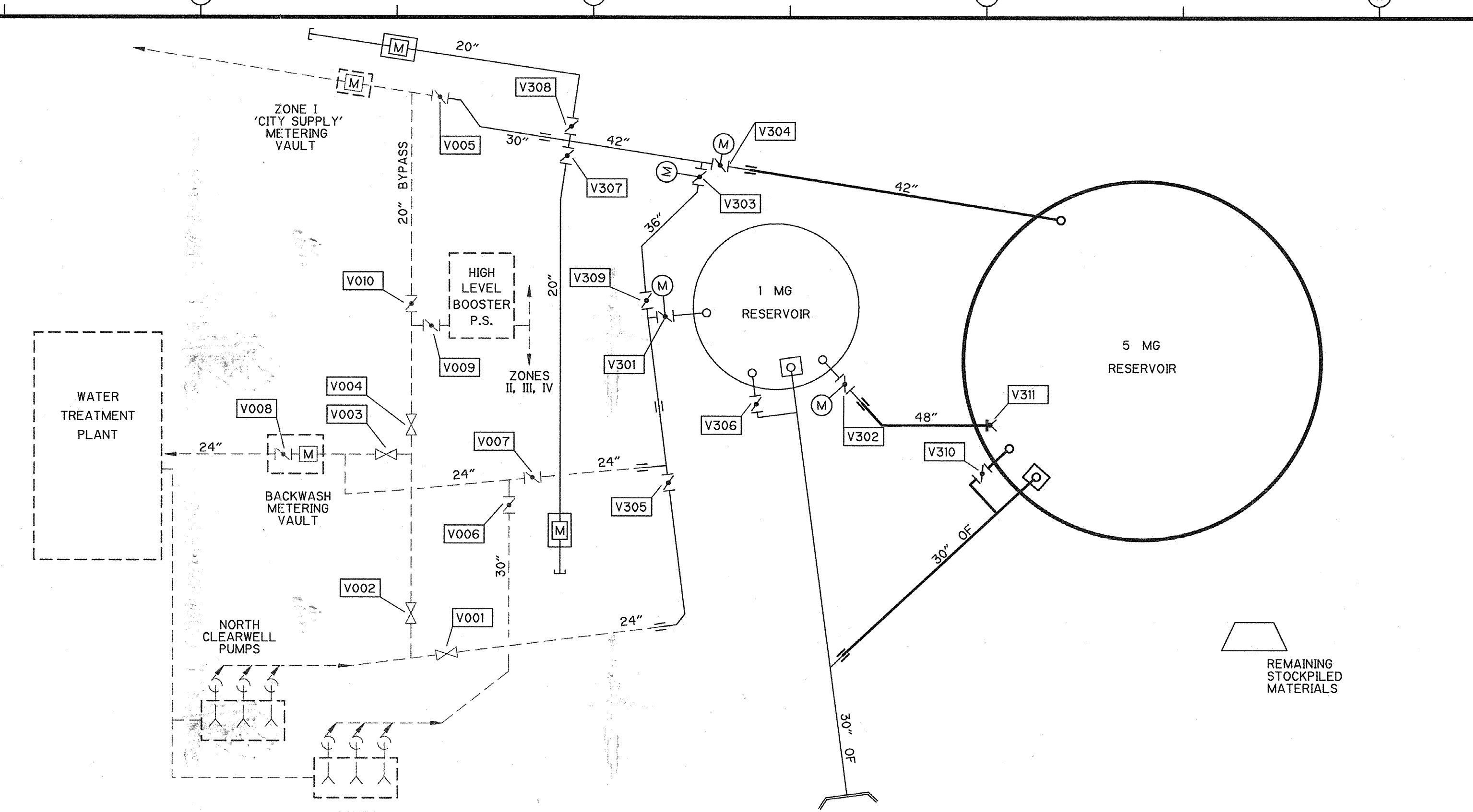
**REQUIRED CONSTRUCTION SEQUENCE  
STAGES 1, 2, AND 3**

PROJECT NO. 1358-22097  
FILE NAME: 6000006

SHEET NO. **G-6**



**STAGE - 4**



**STAGE - 5**

**RECORD DRAWING**  
 DATE: 11/22/98  
 BY: [Signature]

**LEGEND**

---	EXIST FEATURES
---	NEW WORK - CONSTRUCTED UNDER REFERENCED STAGE
---	NEW WORK - CONSTRUCTED UNDER PREVIOUS STAGES

**REQUIRED CONSTRUCTION SEQUENCE STAGES 4, 5 AND 6**

**STAGE - 4**  
 A. DEMOLISH AND REMOVE THE EXISTING 6 MG RES  
 SCHEDULING RESTRICTIONS:  
 THE 6 MG RES SHALL NOT BE TAKEN OFF-LINE PRIOR TO OCTOBER 6, 1998. STAGE 2 AND 3 WORK SHALL BE COMPLETED BEFORE PROCEEDING W/ STAGE 4 WORK.

**STAGE - 5**  
 A. GRADE PAD AREA FOR NEW 5 MG RES  
 B. REMOVE SHORING BETWEEN 1 MG AND 5 MG RES  
 C. INSTALL NEW PIPING AND VALVING FOR 5 MG RES  
 D. INSTALL TEMPORARY DRAINAGE SYSTEM  
 E. CONSTRUCT NEW 5 MG RES  
 F. INSTALL ELECTRICAL AND INSTRUMENTATION FEATURES FOR REMOTE LEVEL MONITORING - 5 MG RES  
 G. DISINFECT, TEST AND PUT NEW 5 MG RES-ON-LINE  
 SCHEDULING RESTRICTIONS:  
 ALL STAGE-5 WORK SHALL BE COMPLETE AND BOTH THE 1 MG AND THE 5 MG RES SHALL BE ON-LINE AND FUNCTIONAL BY MAY 4, 1999. THE 5 MG RES SHALL NOT BE BROUGHT ON-LINE UNTIL ALL PRESSURE AND DISINFECTION TESTS HAVE BEEN ACCEPTED BY THE CITY.

**STAGE - 6**  
 A. COMPLETE BACKFILL, GRADING, PAVING AND BALANCE OF WORK  
 SCHEDULING RESTRICTIONS:  
 COMPLETE AS SPECIFIED IN SPECIFICATION SECTION 01000 - TIME OF COMPLETION.

- NOTES:**
- REFER TO SPECIFICATION SECTION 01000 FOR FURTHER CONSTRUCTION SEQUENCING AND SCHEDULING REQUIREMENTS.
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  - EXISTING VALVING MAY NOT PROVIDE COMPLETE SHUT-OFF. PROVIDE DEWATERING WHEN MAKING PIPING CUT-INS.

**- VALVE / RESERVOIR STATUS -**

DESCRIPTION VALVE/RESERVOIR	STATUS PRIOR TO CONSTRUCTION	STATUS IN 'BYPASS' MODE	STATUS AT COMPLETION STAGE - 4	STATUS AT COMPLETION STAGE - 5
6-MG RESERVOIR	13-16 FT.	OFF-LINE	DEMOLISH	-
1-MG RESERVOIR	-	-	ON-LINE	ON-LINE
5-MG RESERVOIR	-	-	-	ON-LINE
N. CLEARWELL PUMPS	AUTO	AUTO	AUTO	AUTO
S. CLEARWELL PUMPS	AUTO	AUTO	AUTO	AUTO
V001	OPEN	CLOSED	OPEN	OPEN
V002	CLOSED	OPEN	CLOSED	CLOSED
V003	CLOSED	OPEN	CLOSED	CLOSED
V004	CLOSED	OPEN	CLOSED	CLOSED
V005	OPEN	CLOSED	OPEN	OPEN
V006	OPEN	OPEN	OPEN	OPEN
V007	OPEN	CLOSED	OPEN	OPEN
V008	O/C	O/C	O/C	O/C
V009	OPEN	OPEN	OPEN	OPEN
V010	OPEN	OPEN	OPEN	OPEN
V301	-	-	OPEN	OPEN
V302	-	-	CLOSED	OPEN
V303	-	-	OPEN	CLOSED
V304	-	-	CLOSED	OPEN
V305	-	-	OPEN	OPEN
V306	-	-	OPEN	OPEN
V307/V308	-	-	OPEN	OPEN
V309	-	-	OPEN	OPEN
V310	-	-	-	CLOSED
V311	-	-	-	O/C

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DESIGNED BY:	BPD
DRAWN BY:	TVN
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

**CAMP DRESSER & McKEE INC.**  
 One Walnut Creek Center  
 100 Pringle Avenue, Suite 300  
 Walnut Creek, California 94596  
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**ENGINEERING DIVISION**  
**6 MG RESERVOIR**  
**REPLACEMENT PROJECT**

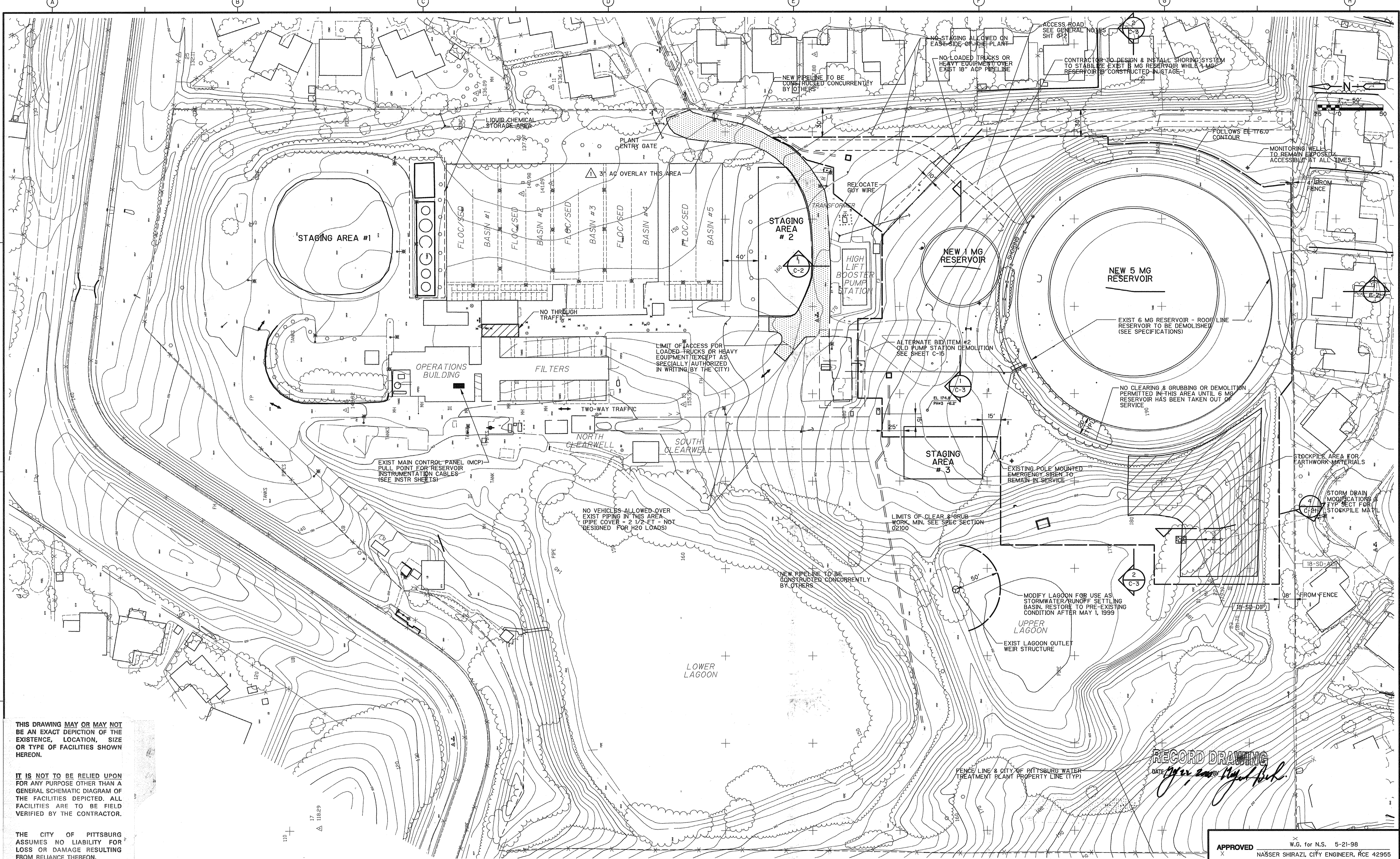
**REQUIRED CONSTRUCTION SEQUENCE**  
**STAGES 4, 5 AND 6**

APPROVED: W.G. for N.S. 5-21-98  
 NASSER SHIRAZI, CITY ENGINEER, RCE 42955

PROJECT NO. 1358-22097  
 FILE NAME: 60000007

SHEET NO. **G-7**





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**RECORD DRAWING**  
 DATE: 05/22/99  
 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
 NAËSSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY:	BPD
DRAWN BY:	TVN
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

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 One Walnut Creek Center  
 100 Pringle Avenue, Suite 300  
 Walnut Creek, California 94596  
 (510) 933-2900  
 environmental engineers, scientists,  
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**CDM**

**CITY OF PITTSBURG  
 ENGINEERING DIVISION**  
**6 MG RESERVOIR  
 REPLACEMENT PROJECT**

**SITE OVERVIEW AND  
 CONSTRUCTION CONSTRAINTS**

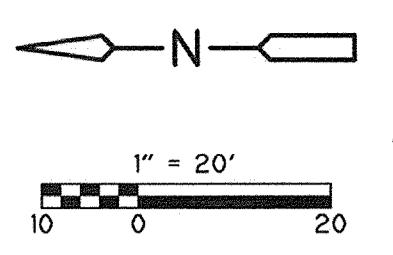
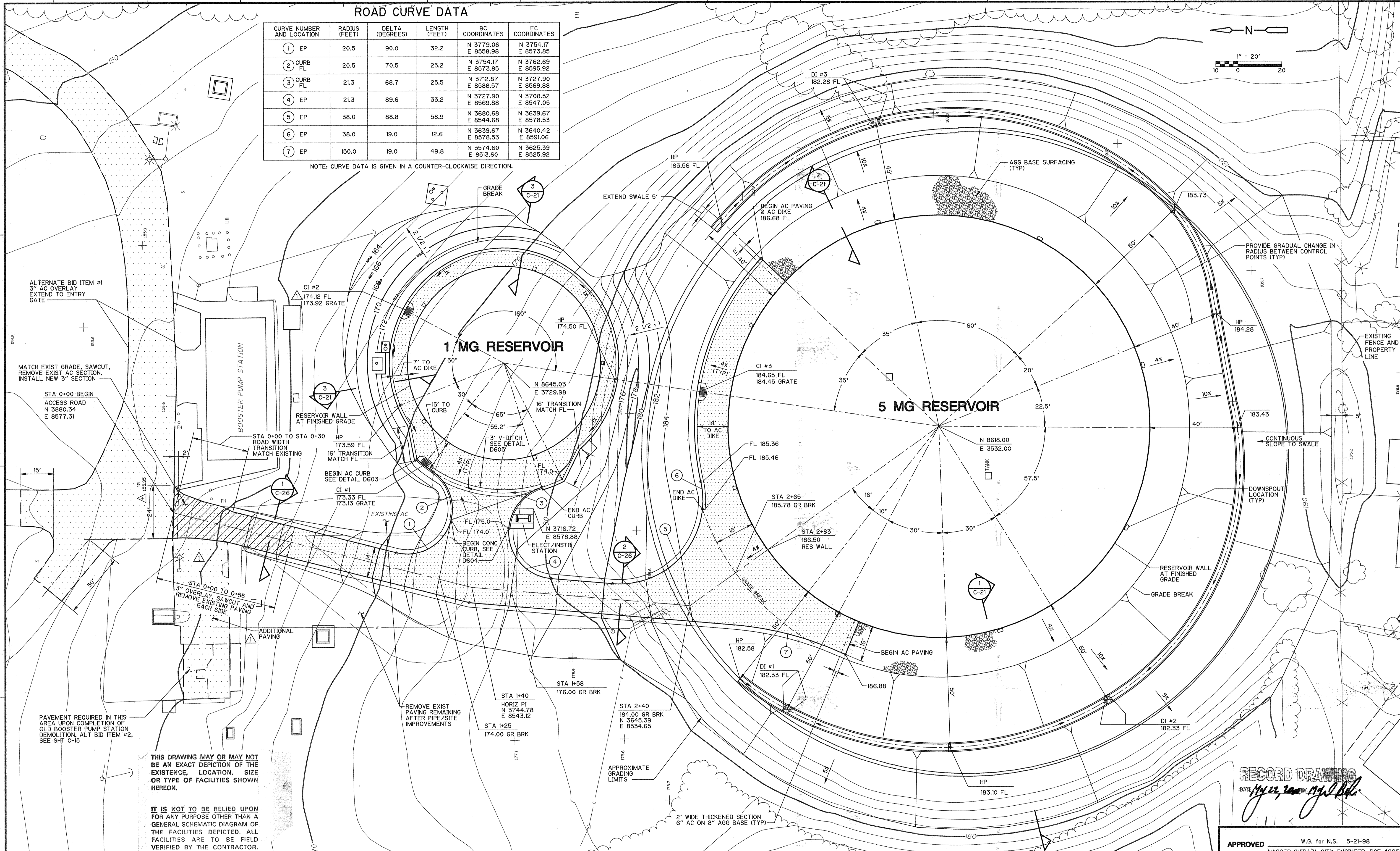
PROJECT NO. 1358-22097  
 FILE NAME: C0000001  
 SHEET NO. **C-1**

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

ROAD CURVE DATA

CURVE NUMBER AND LOCATION	RADIUS (FEET)	DELTA (DEGREES)	LENGTH (FEET)	BC COORDINATES	EC COORDINATES
① EP	20.5	90.0	32.2	N 3779.06 E 8558.98	N 3754.17 E 8573.85
② CURB FL	20.5	70.5	25.2	N 3754.17 E 8573.85	N 3762.69 E 8595.92
③ CURB FL	21.3	68.7	25.5	N 3712.87 E 8588.57	N 3727.90 E 8569.88
④ EP	21.3	89.6	33.2	N 3727.90 E 8569.88	N 3708.52 E 8547.05
⑤ EP	38.0	88.8	58.9	N 3680.68 E 8544.68	N 3639.67 E 8578.53
⑥ EP	38.0	19.0	12.6	N 3639.67 E 8578.53	N 3640.42 E 8591.06
⑦ EP	150.0	19.0	49.8	N 3574.60 E 8513.60	N 3625.39 E 8525.92

NOTE: CURVE DATA IS GIVEN IN A COUNTER-CLOCKWISE DIRECTION.



ALTERNATE BID ITEM #1  
3" AC OVERLAY  
EXTEND TO ENTRY  
GATE

MATCH EXIST GRADE, SAWCUT,  
REMOVE EXIST AC SECTION,  
INSTALL NEW 3" SECTION

STA 0+00 BEGIN  
ACCESS ROAD  
N 3880.34  
E 8577.31

STA 0+00 TO 0+55  
3" OVERLAY, SAWCUT AND  
REMOVE EXISTING PAVING  
EACH SIDE

PAVEMENT REQUIRED IN THIS  
AREA UPON COMPLETION OF  
OLD BOOSTER PUMP STATION  
DEMOLITION, ALT BID ITEM #2,  
SEE SHIT C-15

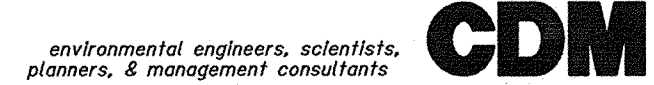
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LOSS OR DAMAGE RESULTING  
FROM RELIANCE THEREON.

DESIGNED BY: BPD  
DRAWN BY: IVN, RAC  
SHEET CHK'D BY:  
CROSS CHK'D BY:  
APPROVED BY:  
DATE: MAY 1998

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CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

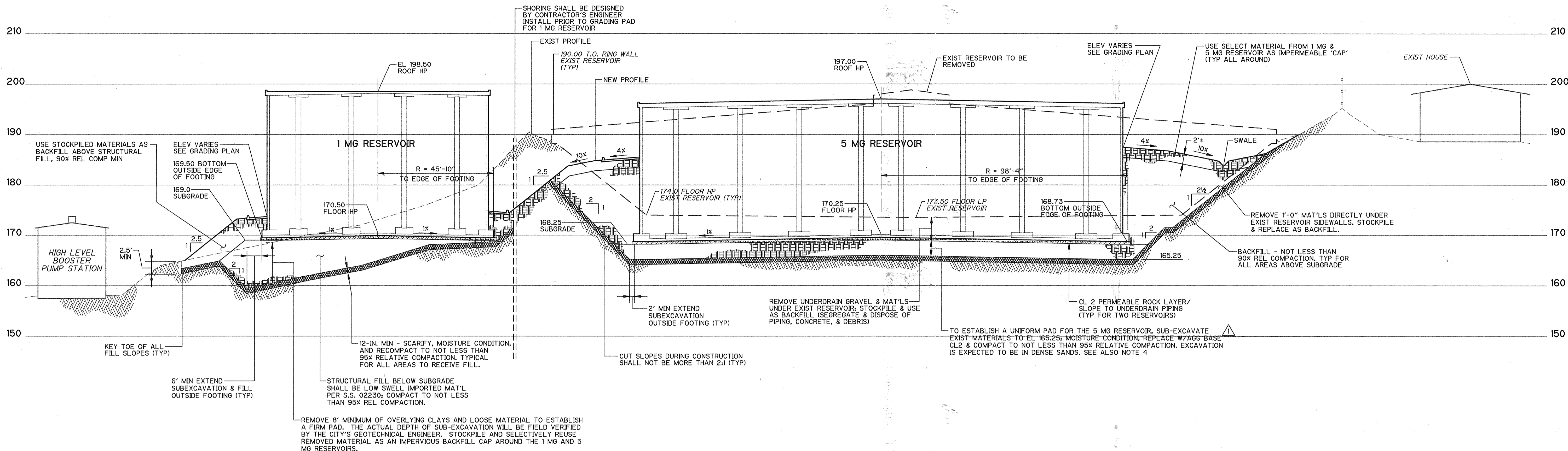
SITE GRADING AND PAVING PLAN

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

PROJECT NO. 1358-22097  
FILE NAME: C0000004

SHEET NO.  
C-4

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00	EPM	BPD		RECORD DRAWINGS



PROFILE - VIEW FROM WEST 1  
 HORIZ: 1" = 20'  
 VERT: 1" = 10'

- NOTES:
1. THE GEOTECHNICAL REPORT PREPARED DURING THE PROJECT DESIGN IS AVAILABLE FROM THE CITY'S ENGINEER FOR REVIEW. COPIES OF THE BORING LOGS FROM THE REPORT ARE INCLUDED IN VOLUME 1 OF THE CONTRACT DOCUMENTS.
  2. SITE PREPARATION: REMOVE, AND DISPOSE OFF-SITE, THE UPPER 6-IN OF EXISTING MATERIALS BEFORE PROCEEDING WITH ANY CUT OR FILL EARTHWORK. SEE ALSO S.S. 02100 AND 02230.
  3. BACKFILL AND FILL MATERIALS: RELATIVE COMPACTION SHALL BE DETERMINED BY ASTM D1557. MOISTURE CONTENT SHALL NOT BE LESS THAN 3% ABOVE OPTIMUM FOR CLAY SOILS AND NOT LESS THAN OPTIMUM MOISTURE FOR SANDS. COMPACT TO NOT LESS THAN 95% RELATIVE COMPACTION. MATERIALS SHALL BE SPREAD IN UNIFORM LIFTS NOT EXCEEDING 8-IN. IN UNCOMPACTED THICKNESS.
  4. SUBGRADE AND ALL AREAS TO RECEIVE FILL SHALL BE PROTECTED FROM DESICCATION. PROMPTLY INSTALL POLYETHYLENE MEMBRANE AFTER SUBGRADE HAS BEEN PREPARED UNDER RESERVOIRS. AREAS WHICH HAVE BEEN ALLOWED TO DESICCATE SHALL BE SCARIFIED AND RECONDITIONED PRIOR TO INSTALLING FURTHER FILL.
  5. ACCEPTABILITY OF EXISTING MATERIALS AT EL 165.25 UNDER THE 5 MG RESERVOIR WILL BE DETERMINED IN THE FIELD BY THE CITY'S GEOTECHNICAL ENGINEER. ADDITIONAL SUB-EXCAVATION MAY BE REQUIRED ESPECIALLY IN THE NORTH EAST QUADRANT OF THE RESERVOIR.

REFERENCE NOTE:  
 IT IS THE RECOMMENDATION OF THE GEOTECHNICAL ENGINEER THAT IRRIGATION SPRINKLER SYSTEMS SHOULD NOT BE INSTALLED WHERE THEY MAY CAUSE PONDING OR SATURATION OF FOUNDATION SOILS WITHIN 3-FT. OF WALLS AND PAVING. EXCESSIVE IRRIGATION COULD RESULT IN SATURATING, WEAKENING, AND POSSIBLE SWELLING OF FOUNDATION SOILS.

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RECORD DRAWING  
 DATE: 11/22/2000 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
 NASSER SHIRAZI, CITY ENGINEER, RCE 42955

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DRAWN BY:	TVN, CA
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

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CITY OF PITTSBURG  
 ENGINEERING DIVISION  
 6 MG RESERVOIR  
 REPLACEMENT PROJECT

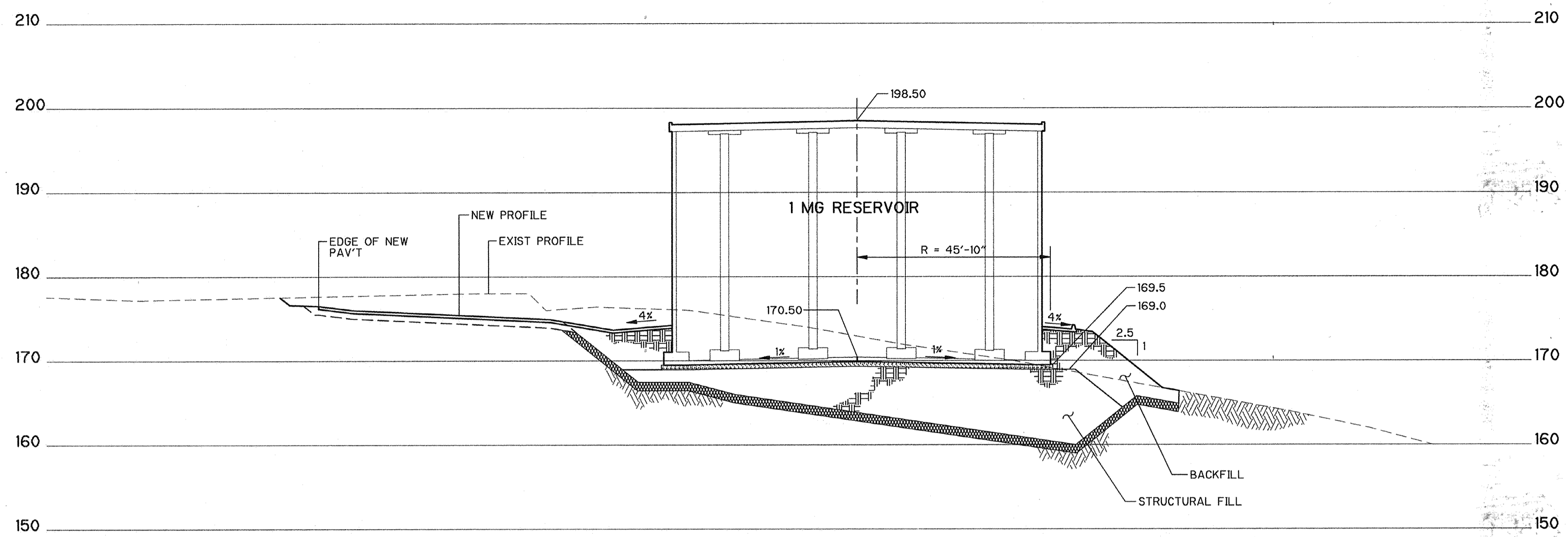
SITE PROFILE AND  
 EARTHWORK REQUIREMENTS

PROJECT NO. 1358-22097  
 FILE NAME: C0000002  
 SHEET NO. C-2

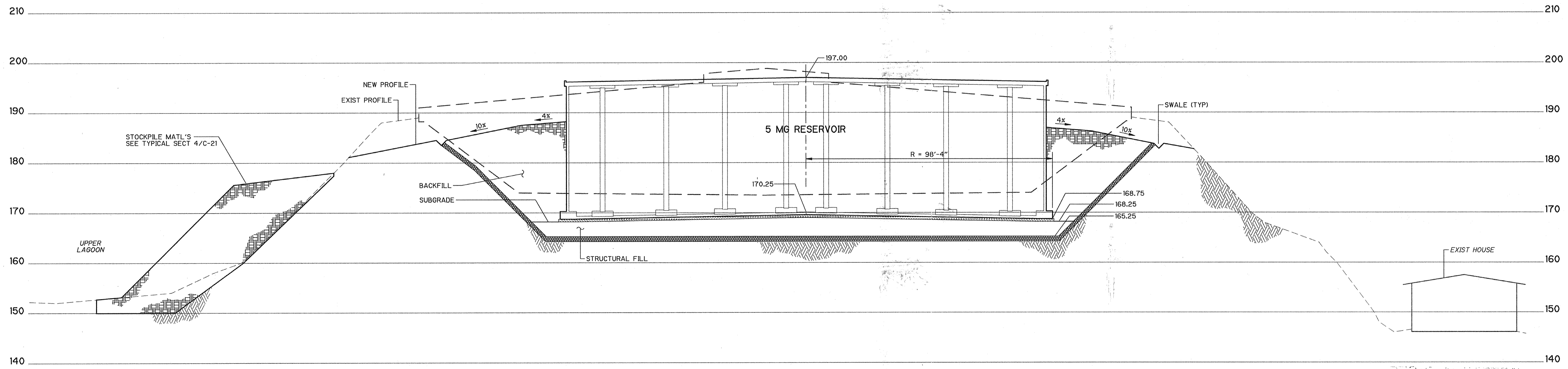
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PROFILE - VIEW FROM SOUTH 1  
 C-1  
 HORIZ: 1" = 20'  
 VERT: 1" = 10'



PROFILE - VIEW FROM SOUTH 2  
 C-1  
 HORIZ: 1" = 20'  
 VERT: 1" = 10'

**RECORD DRAWING**  
 DATE: 10/22/2000 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
 NASSER SHIRAZI, CITY ENGINEER, RCE 42955

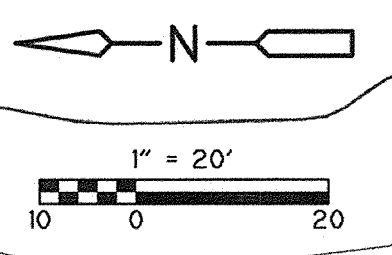
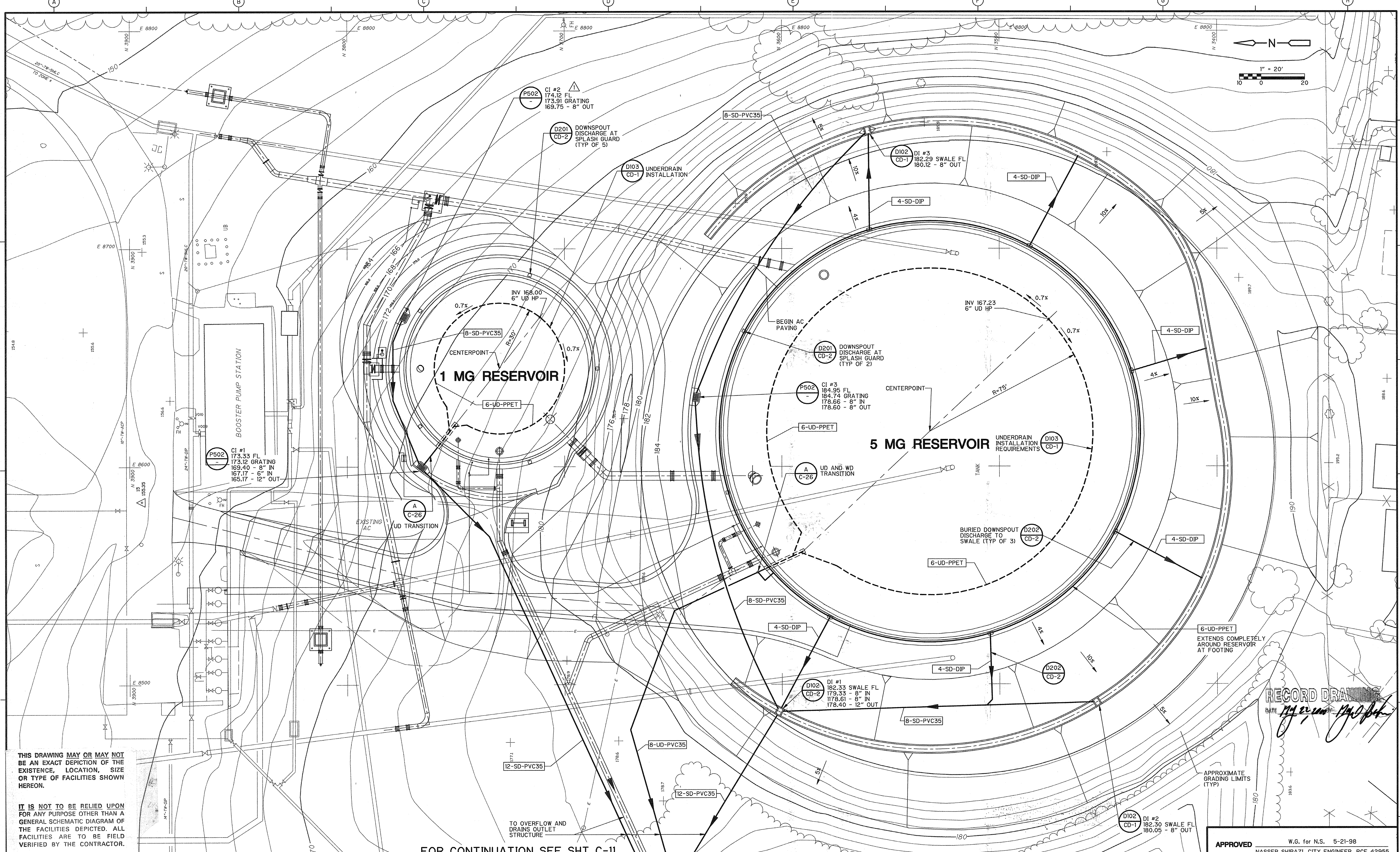
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**CITY OF PITTSBURG  
 ENGINEERING DIVISION**  
**6 MG RESERVOIR  
 REPLACEMENT PROJECT**

**SITE PROFILES**

PROJECT NO. 1358-22097  
 FILE NAME: C0000003  
 SHEET NO. **C-3**



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FOR CONTINUATION SEE SHT C-11

**RECORD DRAWING**  
DATE: 11/22/98 BY: [Signature]

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NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

DESIGNED BY: BPD  
DRAWN BY: TVN, RAC  
SHEET CHK'D BY:  
CROSS CHK'D BY:  
APPROVED BY: JRT  
DATE: MAY 1998

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**CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT**

**STORM DRAIN AND UNDERDRAIN PLAN**

PROJECT NO. 1358-22097  
FILE NAME: C0000007

SHEET NO. **C-7**

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ROCK STABILIZED EXIT 6" AB CL2, 1 1/2" MIX 95% REL COMP MAINTAIN REPLACE AFTER INSTALLATION OF NEW 20" PIPELINE BY OTHERS

CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF ACCESS ROAD AS NECESSARY TO ACCESS THE WORK AREAS OFF THE EXISTING PAVEMENT WILL NOT SUPPORT CONSTRUCTION EQUIPMENT ESPECIALLY WHEN WET

APPROX EDGE OF EXCAVATION FOR CONSTRUCTION

INSTALL 6" AGG BASE CL2, 95% REL COMP AROUND TWO RESERVOIRS

PROVIDE 4" AGG BASE CL2, 1 1/2" MIX, 95% REL COMP FOR STAGING AREAS; PARKING AREAS; AREAS SUBJECT TO CONSTRUCTION TRAFFIC; AND OTHER AREAS AS NECESSARY TO COMPLETE THE WORK (TYP)

FENCING AND STEEL PLATE PIPE PROTECTION

INSTALL TEMPORARY DRAIN PIPING TO CONNECT DOWNSPOTS W/ CI #1 AND CI #2

DOWNSPOUT CONNECTION (TYP OF 5)

1 MG RESERVOIR

5 MG RESERVOIR

TEMPORARY DROP INLET (TYP OF 5)

CI #2 PERMANENT

CI #1 PERMANENT

INSTALL 6" AB CL2 95% REL COMP (TYP) BETWEEN PAVEMENT AND WORK AREAS

6-SD-PVC35 TEMPORARY

8-SD-PVC35 TEMPORARY

12-SD-PVC35

CONNECT TEMPORARY DRAIN PIPING TO 12-SD-PVC35 WHERE GRADES ARE COMPATIBLE

PORTION TO BE INSTALLED AFTER CONSTRUCTION AND BACKFILL OF 5 MG RESERVOIR

**NOTES:**

- PONDING OF WATER IS NOT ALLOWED IN ANY AREA OF CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE DRAINAGE PROVISIONS TO ENSURE THAT THE WORK PROCEEDS YEAR-ROUND DESPITE ADVERSE WEATHER CONDITIONS. THIS IS IN ADDITION TO REQUIREMENTS SPECIFIED ON THIS SHEET OR OTHERWISE DESCRIBED IN THE CONTRACT DOCUMENTS.
- DRAINAGE PROVISIONS SHOWN ON THIS SHEET EXCEPT FOR THOSE AROUND THE 5 MG RESERVOIR PAD SHALL BE IN PLACE AND OPERATIONAL BY OCTOBER 30, 1998. DRAINAGE PROVISIONS FOR THE 5 MG RESERVOIR PAD SHALL BE INSTALLED IMMEDIATELY AFTER THE PAD IS PREPARED.
- MAINTAIN ALL DRAINAGE PROVISIONS IN GOOD WORKING ORDER AT ALL TIMES. REMOVE DEBRIS FROM DROP INLETS AND FLUSH STORM DRAINS AS NECESSARY TO MAINTAIN DRAINAGE.
- 5 MG RESERVOIR UNDERDRAIN PIPING - UNDERDRAIN PIPING BETWEEN THE RESERVOIR PAD AND THE OUTLET STRUCTURE SHALL BE IN PLACE PRIOR TO INSTALLING THE RESERVOIR UNDERDRAIN COLLECTION SYSTEM. THE UNDERDRAIN PIPING SHALL BE CONNECTED AND MADE FULLY OPERATIONAL UPON COMPLETION OF THE COLLECTION SYSTEM INSTALLATION. AT NO TIME DURING CONSTRUCTION SHALL THE UNDERDRAIN SYSTEM FOR THE 5 MG RESERVOIR BE USED TO DRAIN RUN-OFF FROM THE PAD.
- ALL SURFACE DRAINAGE SHALL BE ROUTED TO THE UPPER LAGOON. THE UPPER LAGOON SHALL BE USED AS A SETTLING BASIN. PROVIDE TEMPORARY BERMING OR MODIFICATIONS AS NECESSARY. RESTORE LAGOON CONFIGURATION TO ORIGINAL CONDITION AS A REQUIREMENT FOR PROJECT COMPLETION.
- ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIALS AND DEBRIS. THE SITE SHALL BE MAINTAINED TO PREVENT SEDIMENT LOADED RUN-OFF FROM LEAVING THE SITE.
- ALL TEMPORARY DROP INLETS, PIPING, ETC., SHALL BE REMOVED AND DISPOSED OF PRIOR TO BACKFILL AND PROJECT COMPLETION.

RECORD DRAWING  
DATE: May 22, 1998  
Hajj Beh.

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY:	BPD
DRAWN BY:	TVN, RAC
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	
DATE:	MAY 1998

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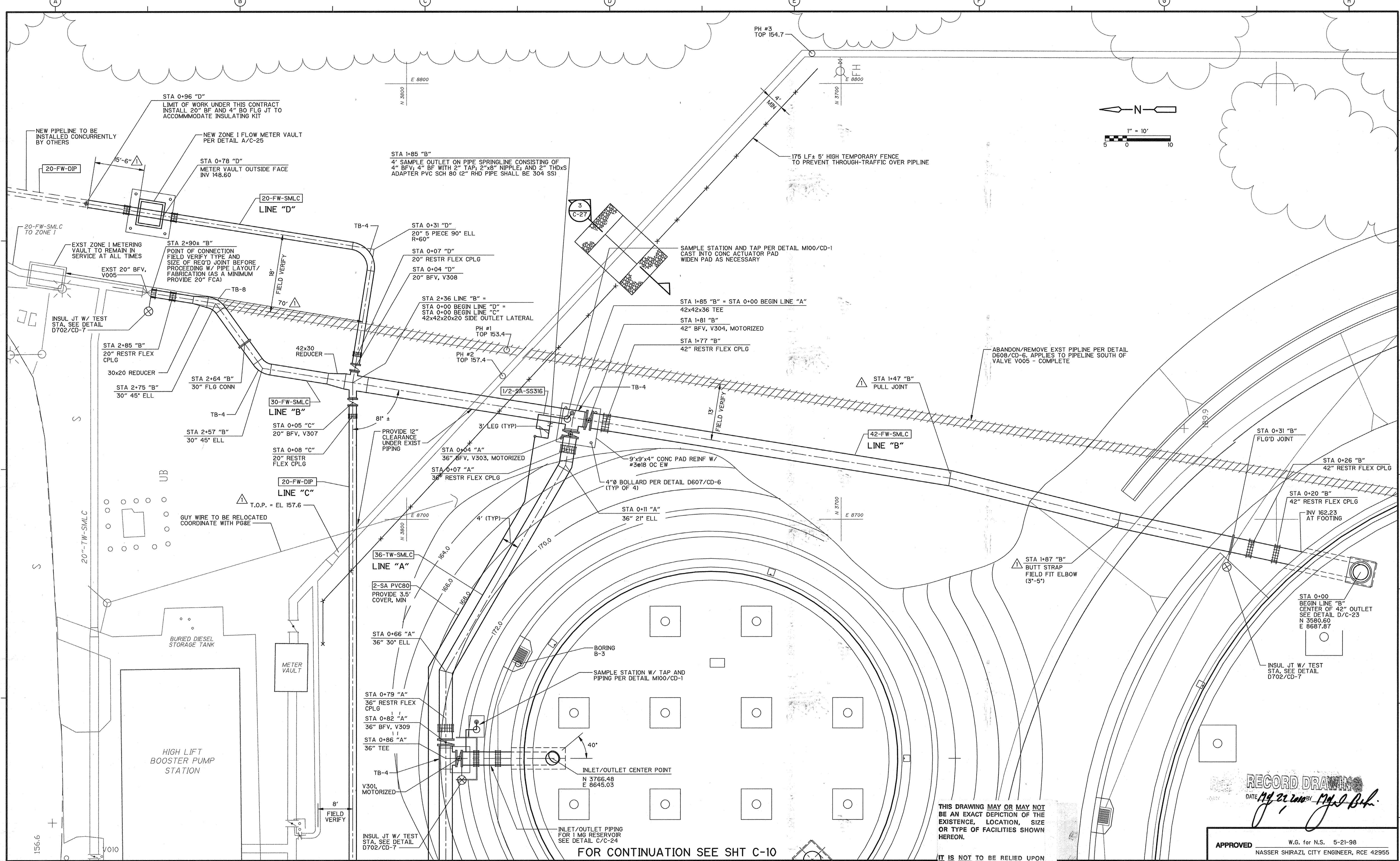
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CITY OF PITTSBURGH  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

INTERIM DRAINAGE PLAN

PROJECT NO.	1358-22097
FILE NAME:	C000008
SHEET NO.	C-8

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS



REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00	EPM	BPD		RECORD DRAWINGS

DESIGNED BY: BPD  
 DRAWN BY: TVN, RAC  
 SHEET CHK'D BY:  
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 APPROVED BY: JRT  
 DATE: MAY 1998

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**CITY OF PITTSBURG  
 ENGINEERING DIVISION**

**6 MG RESERVOIR  
 REPLACEMENT PROJECT**

FOR CONTINUATION SEE SHT C-10

**YARD PIPING**

APPROVED: W.G. for N.S. 5-21-98  
 NASSER SHIRAZI, CITY ENGINEER, RCE 42955

PROJECT NO. 1358-22097  
 FILE NAME: C0000009

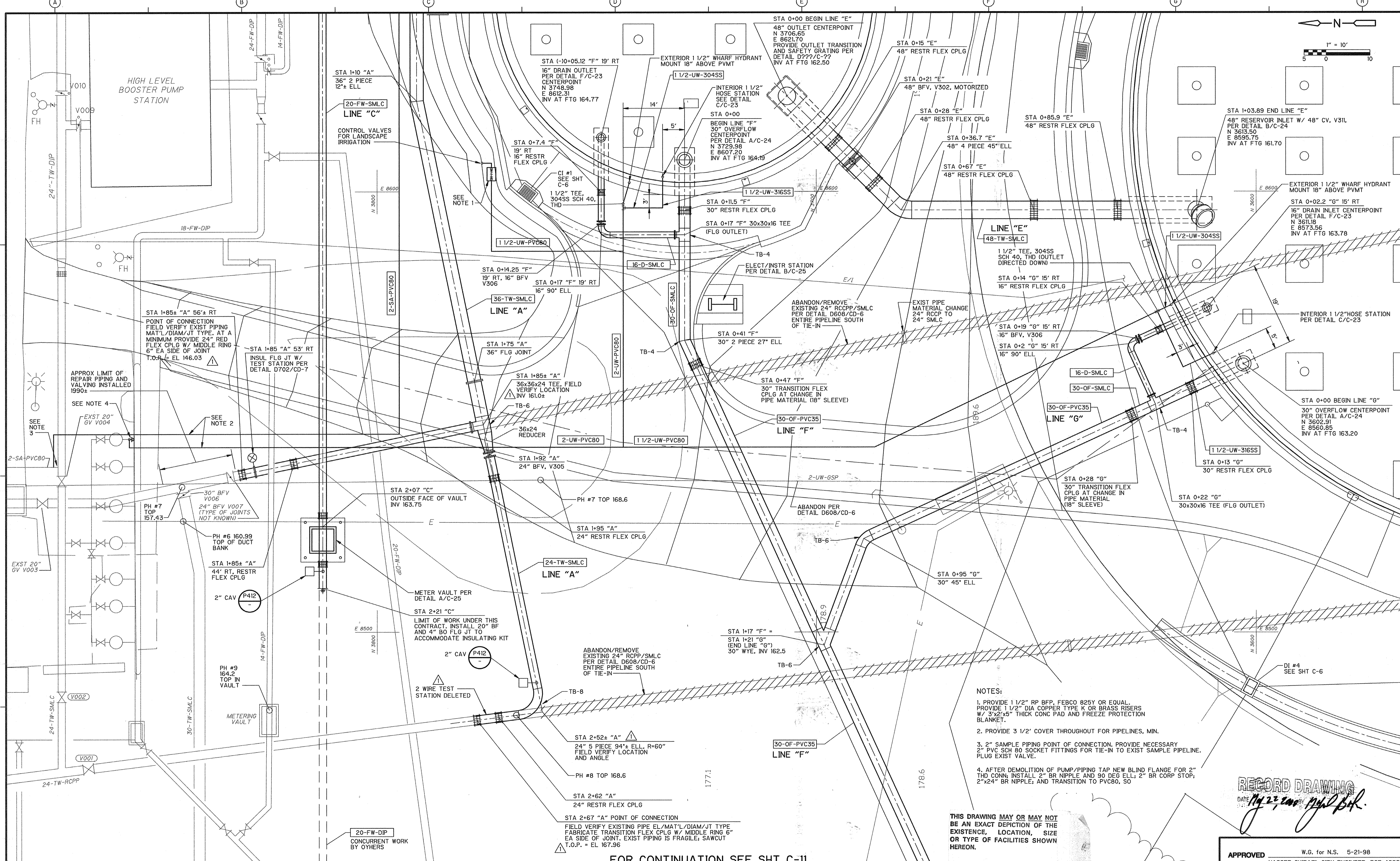
SHEET NO. **C-9**

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**RECORD DRAWING**  
 DATE: 11/21/00 BY: [Signature]



- NOTES:
1. PROVIDE 1 1/2" RP BFP, FEBCO 825Y OR EQUAL. PROVIDE 1 1/2" DIA COPPER TYPE K OR BRASS RISERS W/ 3"x2"x5" THICK CONC PAD AND FREEZE PROTECTION BLANKET.
  2. PROVIDE 3 1/2" COVER THROUGHOUT FOR PIPELINES, MIN.
  3. 2" SAMPLE PIPING POINT OF CONNECTION, PROVIDE NECESSARY 2" PVC SCH 80 SOCKET FITTINGS FOR TIE-IN TO EXIST SAMPLE PIPELINE. PLUG EXIST VALVE.
  4. AFTER DEMOLITION OF PUMP/PIPING TAP NEW BLIND FLANGE FOR 2" THD CONN; INSTALL 2" BR NIPPLE AND 90 DEG ELL; 2" BR CORP STOP; 2"x24" BR NIPPLE; AND TRANSITION TO PVC80, SO

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FOR CONTINUATION SEE SHT C-11

**RECORD DRAWING**  
 DATE: 11/27/2000  
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REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00	EPM	BPD		RECORD DRAWINGS

DESIGNED BY: BPD  
 DRAWN BY: TVN, RAC  
 SHEET CHK'D BY:  
 CROSS CHK'D BY:  
 APPROVED BY: JRT  
 DATE: MAY 1998

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**CITY OF PITTSBURG**  
 ENGINEERING DIVISION  
**6 MG RESERVOIR**  
 REPLACEMENT PROJECT

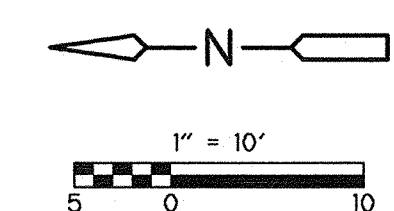
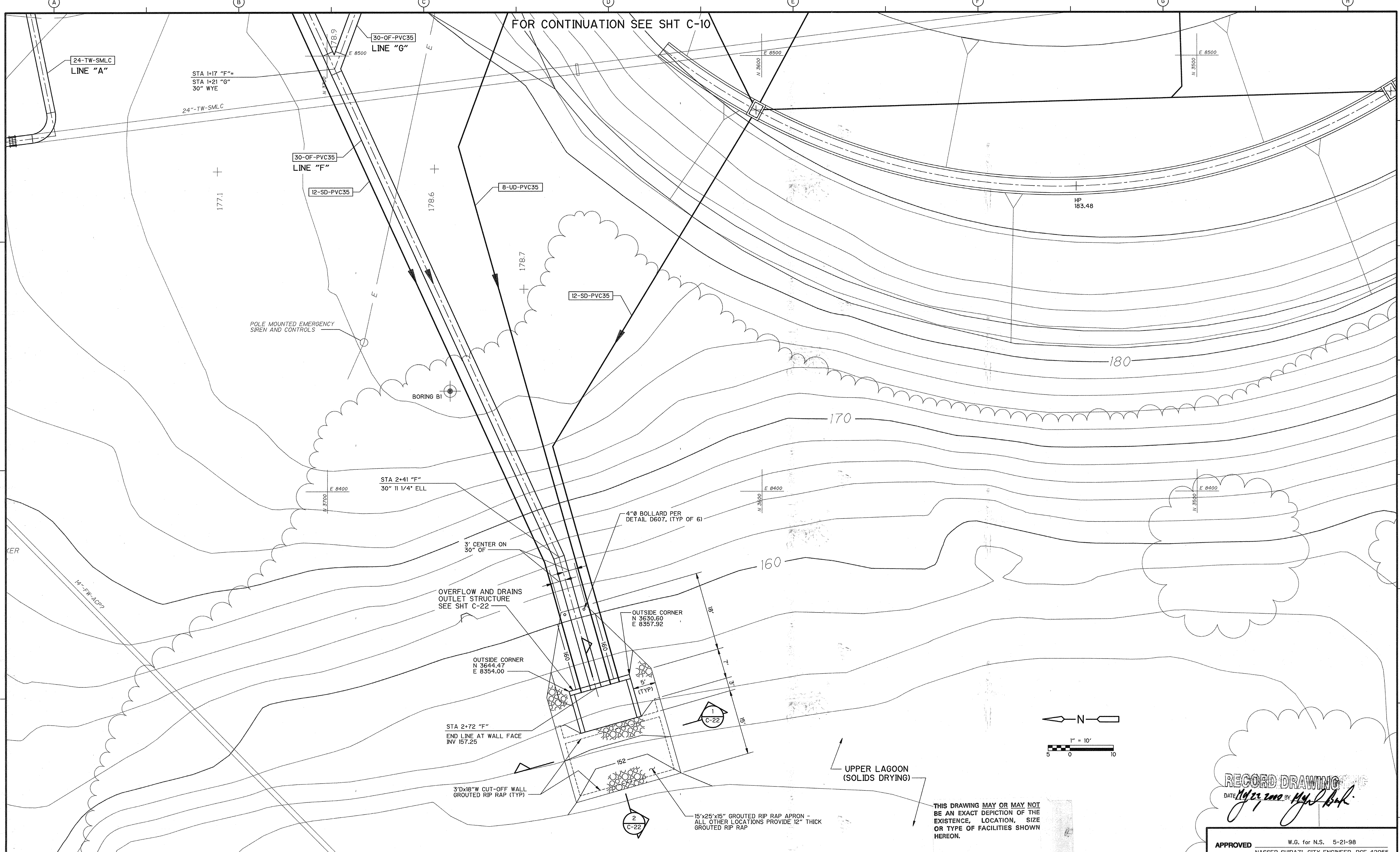
**YARD PIPING**

PROJECT NO. 1358-22097  
 FILE NAME: C0000010

SHEET NO. **C-10**



FOR CONTINUATION SEE SHT C-10



**RECORD DRAWING**  
 DATE: *11/22/2000* BY: *H. J. ...*

**APPROVED** W.G. for N.S. 5-21-98  
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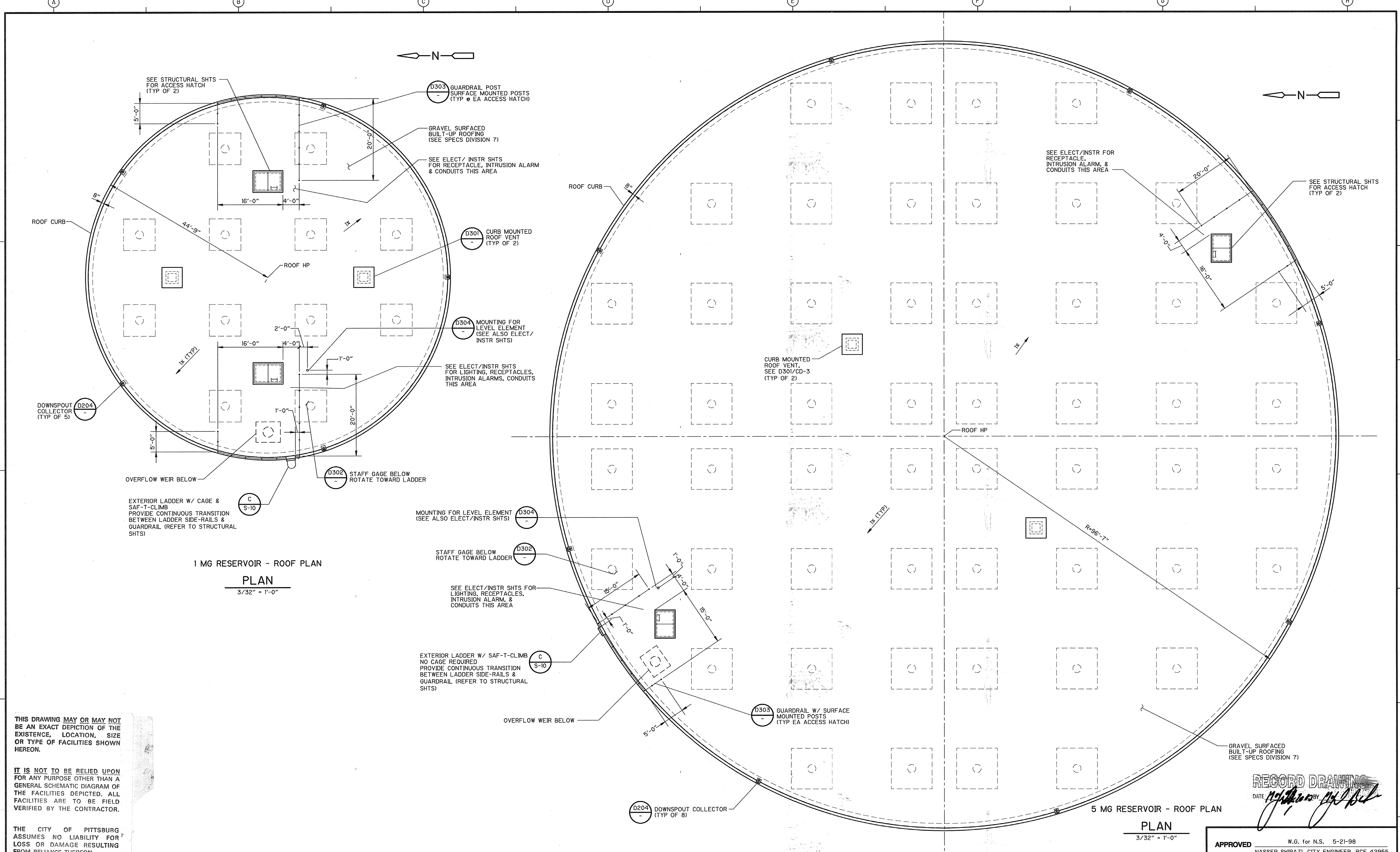
**CITY OF PITTSBURG  
 ENGINEERING DIVISION**

**6 MG RESERVOIR  
 REPLACEMENT PROJECT**

**YARD PIPING**

PROJECT NO. 1358-22097  
 FILE NAME: C0000011

SHEET NO. **C-11**



1 MG RESERVOIR - ROOF PLAN  
 PLAN  
 3/32" = 1'-0"

5 MG RESERVOIR - ROOF PLAN  
 PLAN  
 3/32" = 1'-0"

CITY OF PITTSBURGH  
 ENGINEERING DIVISION  
 6 MG RESERVOIR  
 REPLACEMENT PROJECT

RESERVOIR ROOF PLANS

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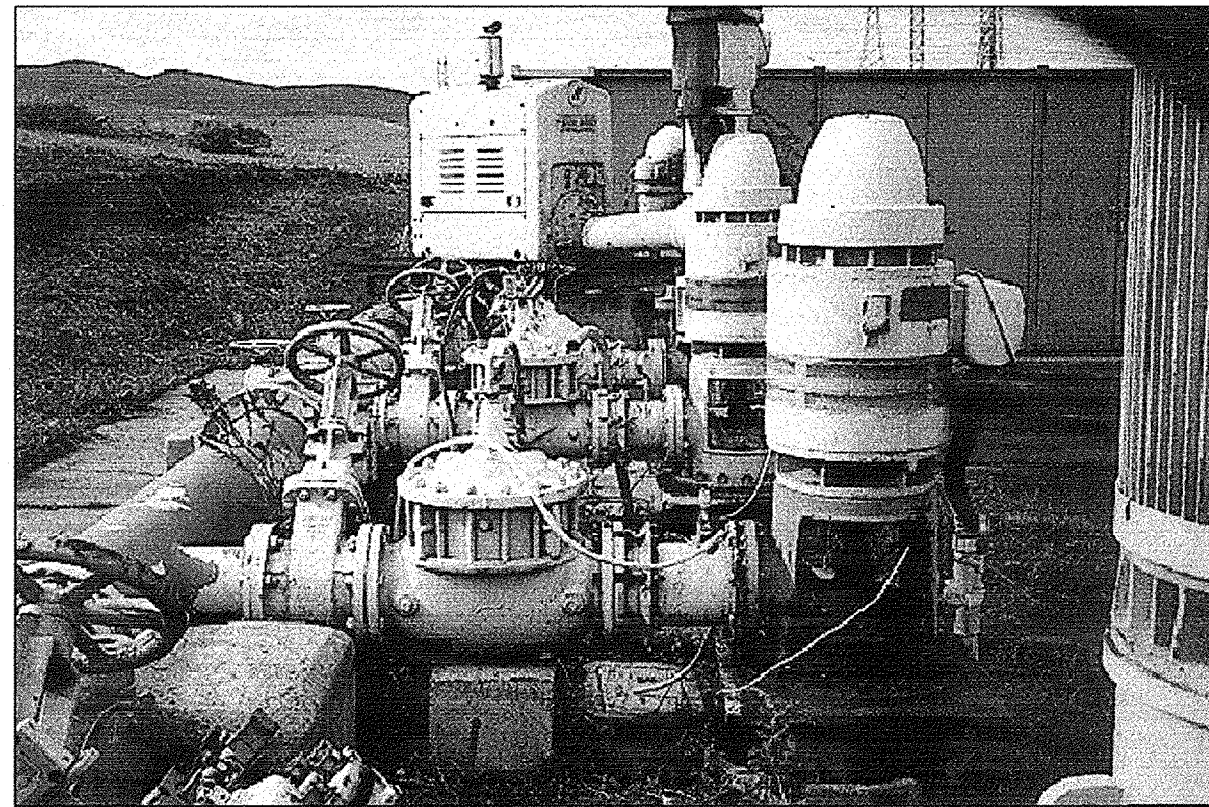
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**CDM**

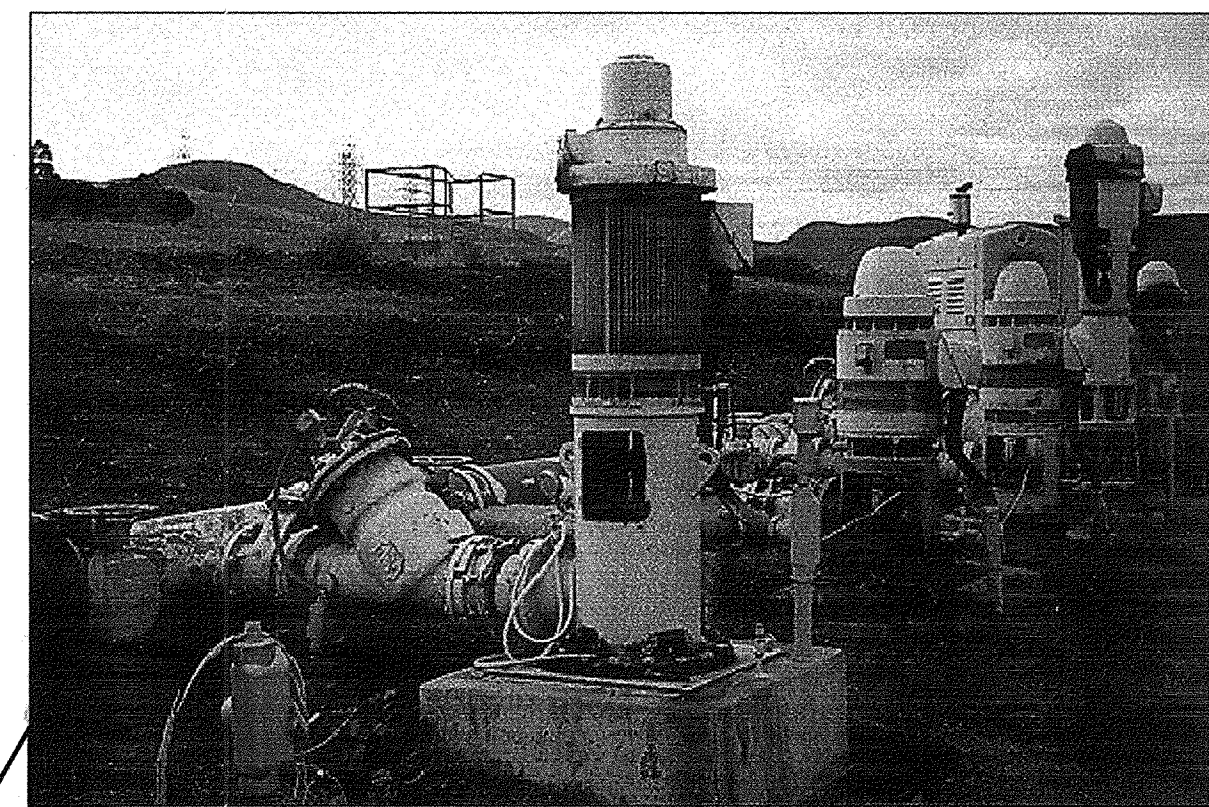
PROJECT NO.	1358-22097
FILE NAME:	C0000014
SHEET NO.	C-14

**ELECTRICAL DECOMMISSION NOTES:**

1. REMOVE ALL WIRING AND CONDUITS IN AREA NOTED FOR DEMOLITION. REMOVE WIRE, CUT CONDUITS OFF, AND PLUG CONDUITS WITH NON-SHRINK GROUT WHERE PENETRATING THROUGH CONCRETE PAD.
2. IT IS THE CITY'S UNDERSTANDING THAT ALL WIRE AND CONDUIT WITHIN THE DECOMMISSIONING LIMITS IS OUT OF SERVICE. PRIOR TO DEMOLITION CONTRACTOR SHALL IDENTIFY AND CONFIRM STATUS WITH CITY OF ANY CONDUIT OR WIRE WHERE THE STATUS IS NOT SHOWN.



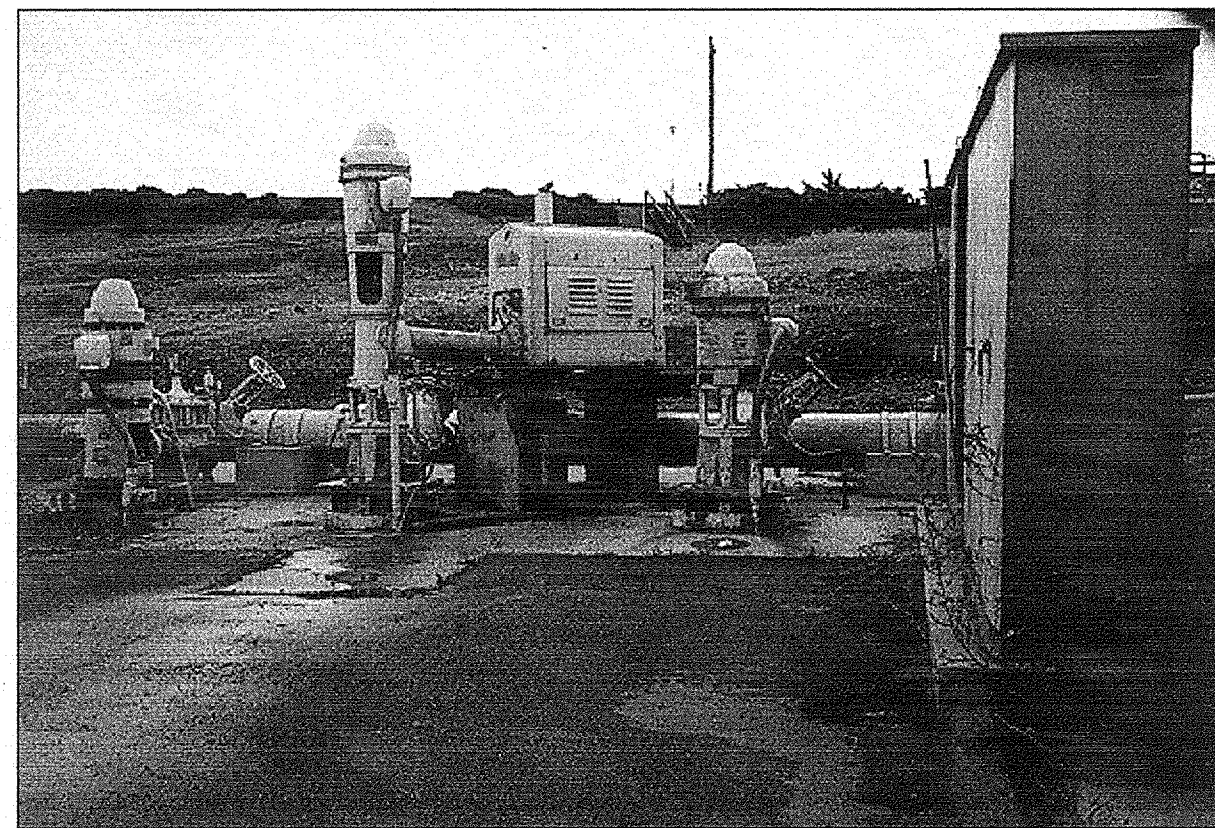
LOOKING WEST FROM HERE



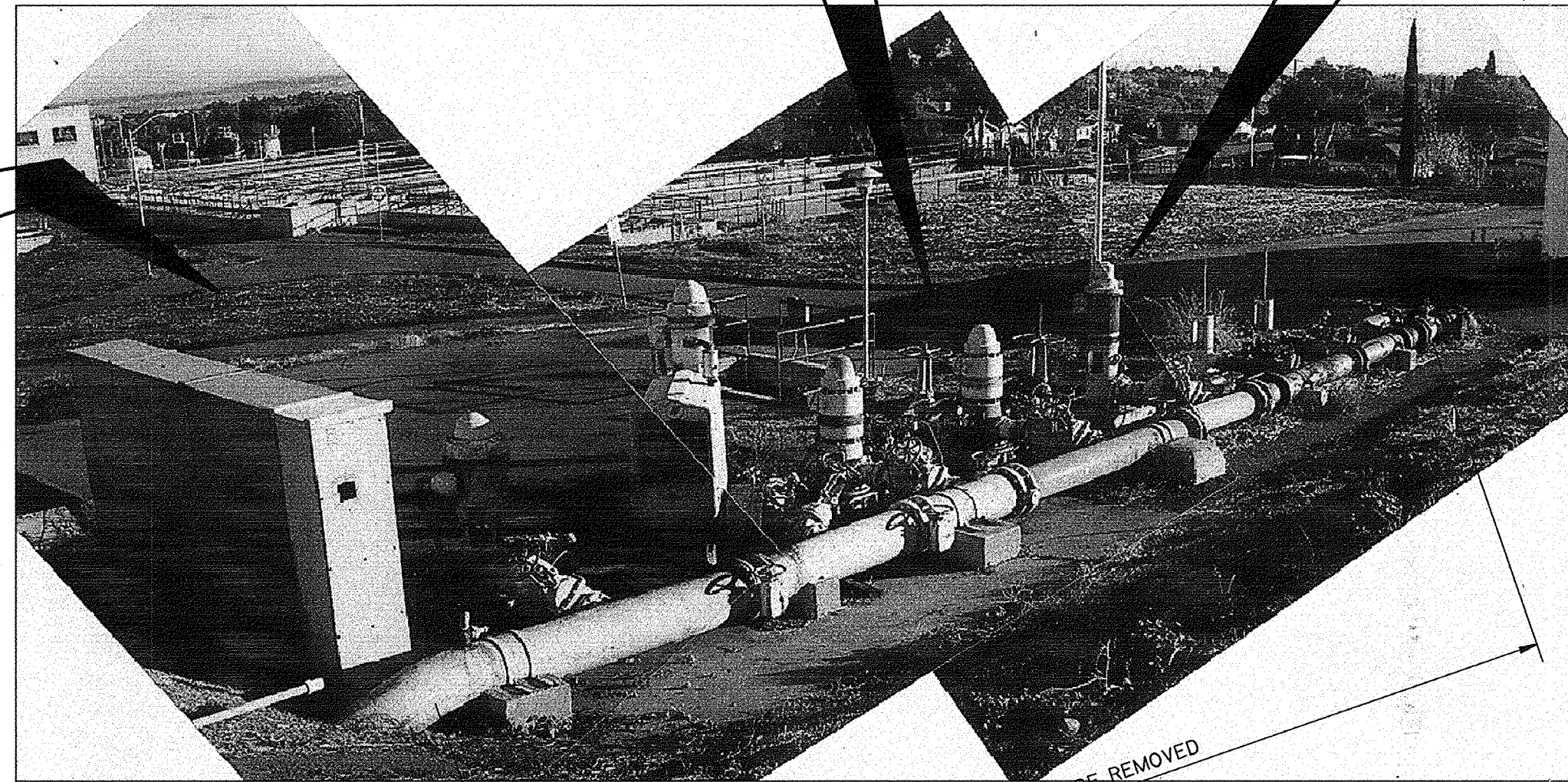
LOOKING WEST FROM HERE

**MECHANICAL DECOMMISSION NOTES:**

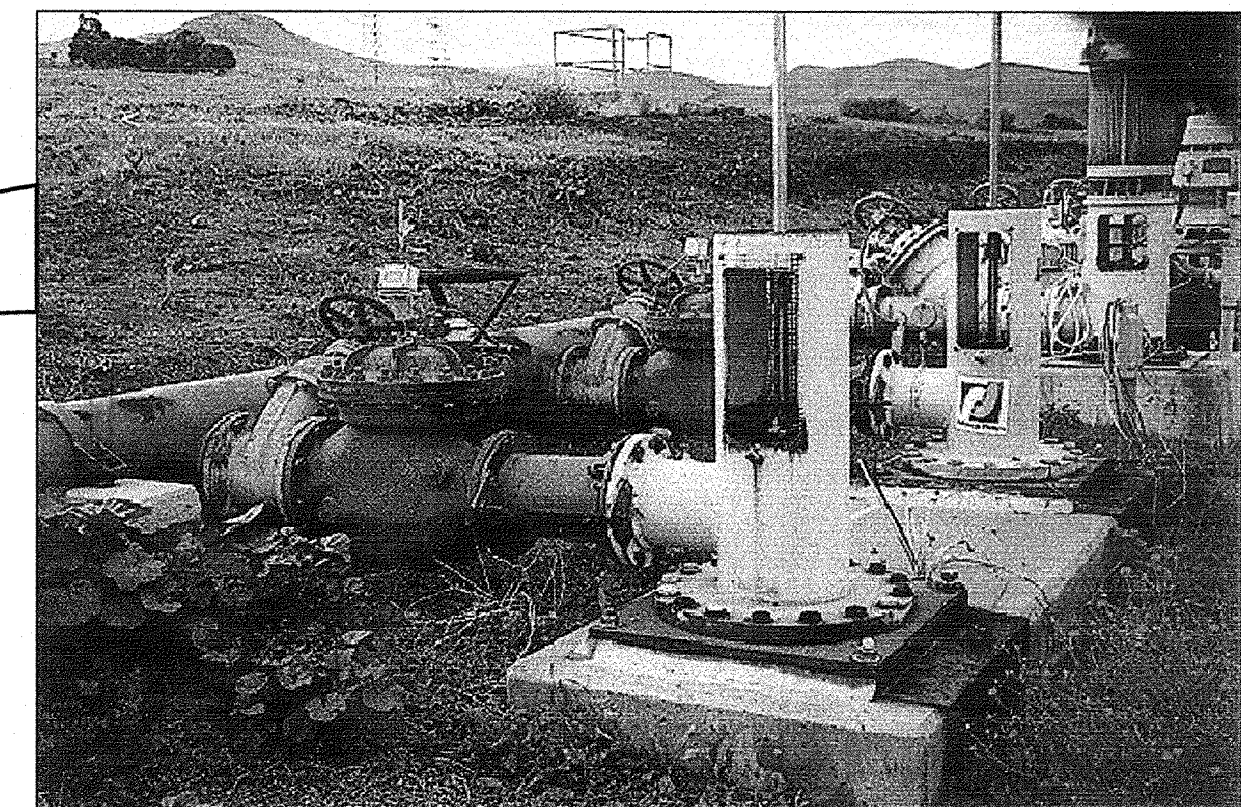
1. PUMP, PIPE AND FITTINGS BETWEEN THE FLANGES SHOWN SHALL BE REMOVED, INCLUDING CONCRETE PADS, ELECTRICAL WIRE AND CONDUIT, ENGINE AND ALL OTHER INCIDENTAL APPURTENANCES.
2. AFTER COORDINATING SUCTION AND DISCHARGE HEADER SHUTDOWN WITH PLANT OPERATIONS, REMOVE GATE VALVES ABUTTING THESE PIPES AND REPLACE THEM WITH 125 LB RATED BLIND FLANGES.
3. AS PART OF DEMOLITION, BACKFILL ALL EXCAVATIONS WITH STRUCTURAL FILL, COMPACT TO 90% REL COMP.
4. SALVAGE ALL PIPE, FITTINGS, PUMPS AND MOTORS. TRANSPORT TO CITY DESIGNATED LOCATION ON WTP SITE FOR STORAGE.
5. **B** → POSITION AND DIRECTION FROM WHERE PHOTOGRAPH WAS TAKEN.
6. MOTORS HAVE BEEN REMOVED.



LOOKING SOUTH FROM HERE



LOOKING NORTH EAST  
OLD BOOSTER PUMP STATION

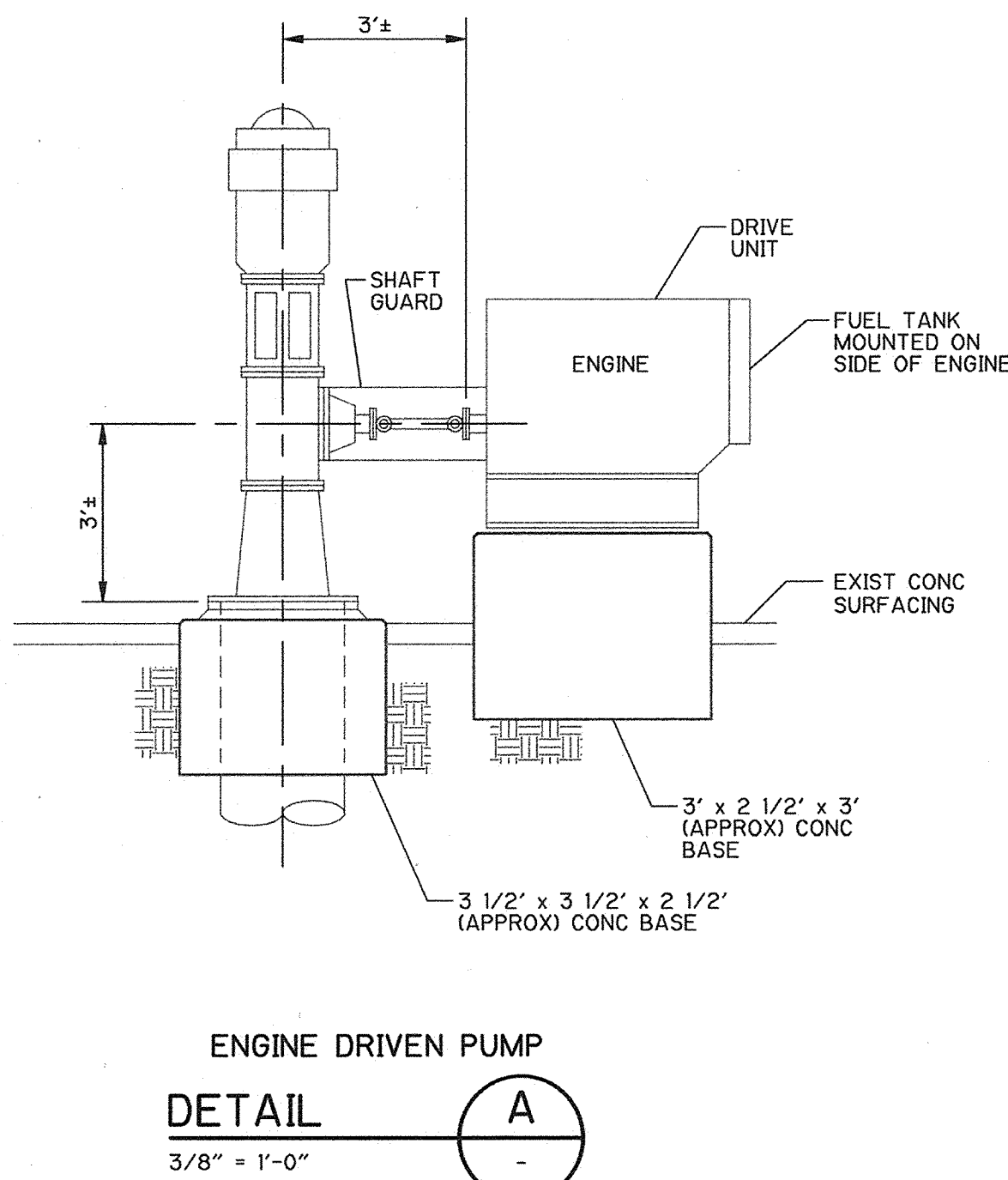


LOOKING WEST FROM HERE

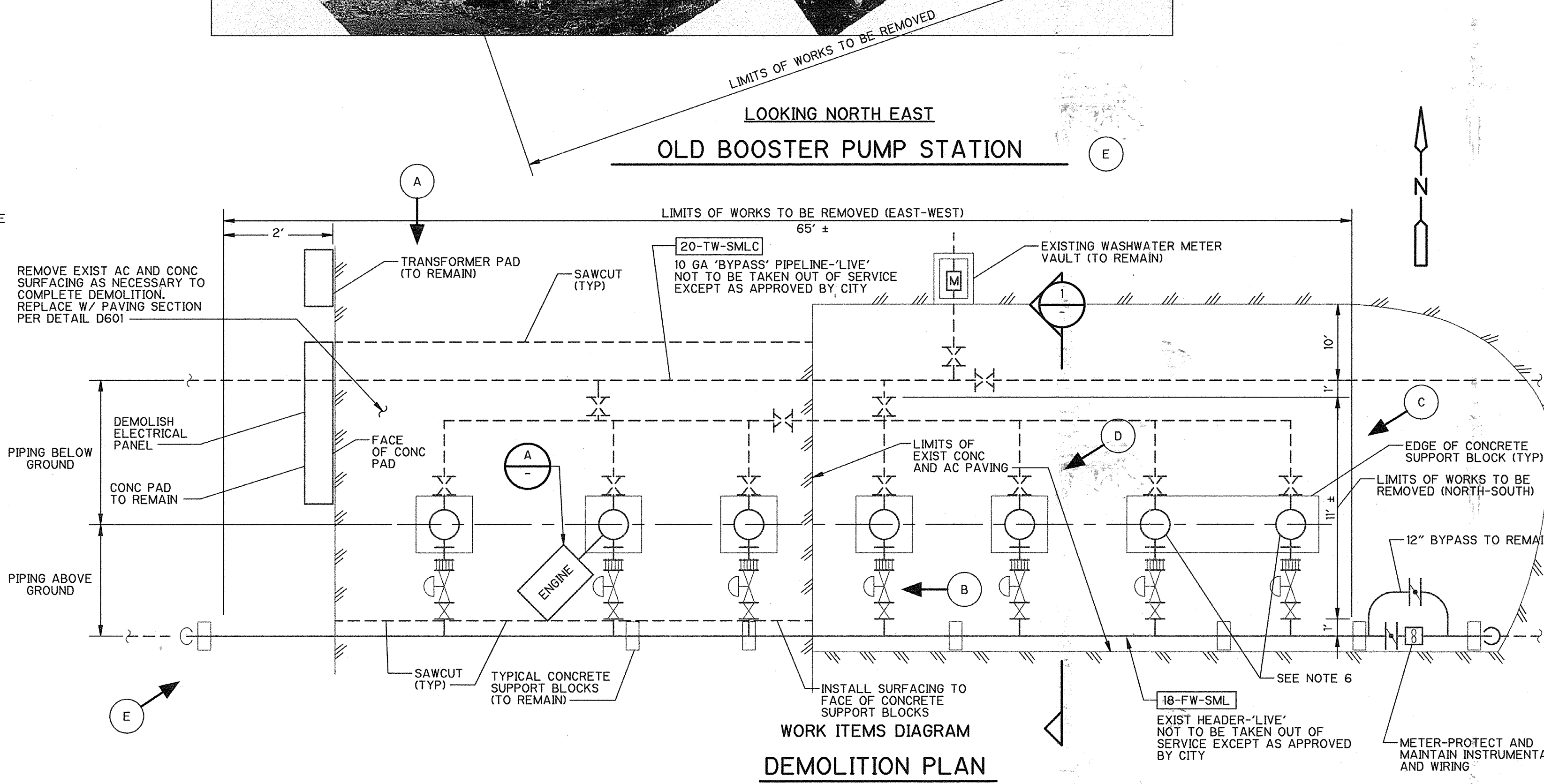
THIS DRAWING MAY OR MAY NOT BE AN EXACT DEPICTION OF THE EXISTENCE, LOCATION, SIZE OR TYPE OF FACILITIES SHOWN HEREON.

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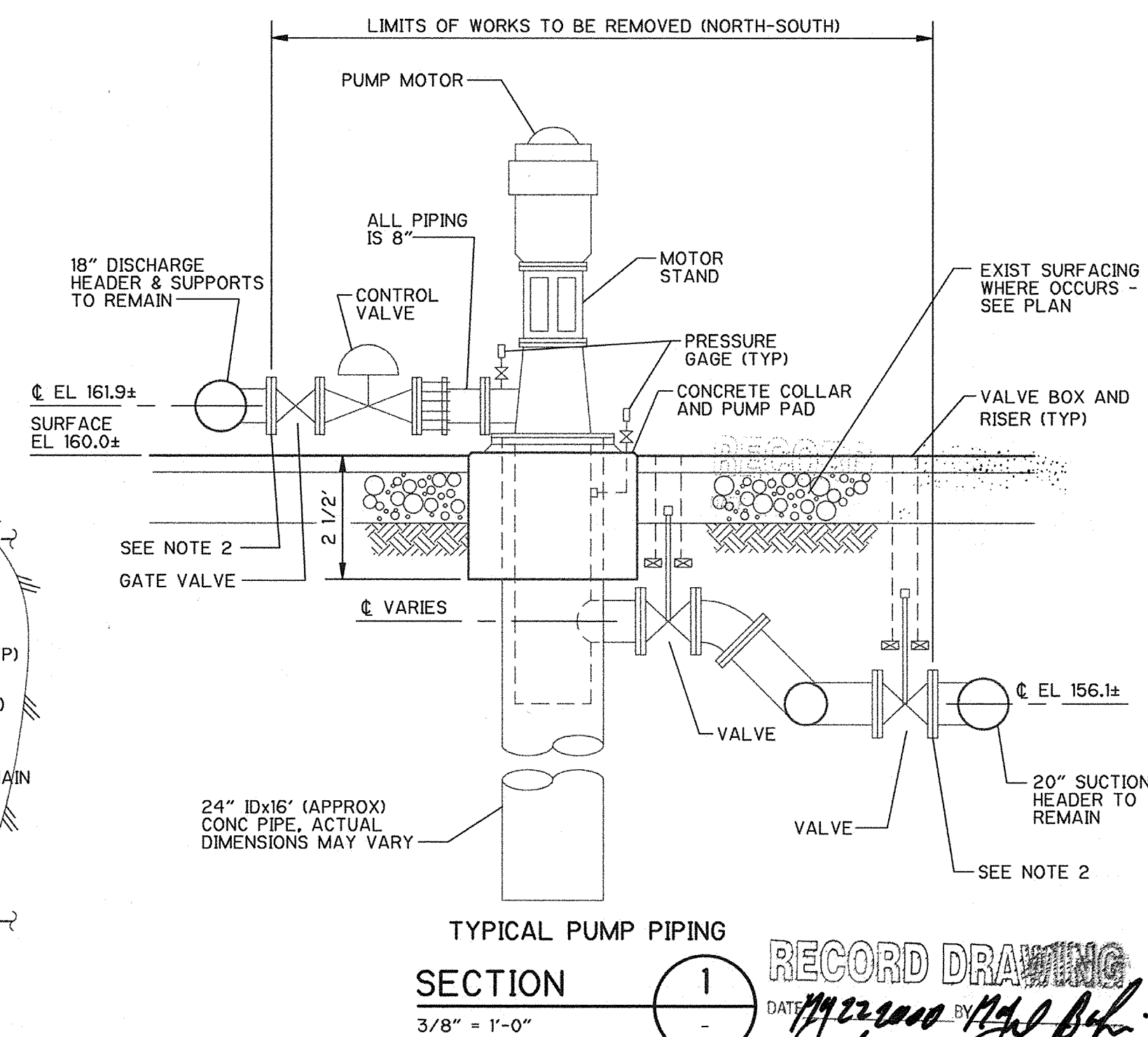
THE CITY OF PITTSBURG ASSUMES NO LIABILITY FOR LOSS OR DAMAGE RESULTING FROM RELIANCE THEREON.



ENGINE DRIVEN PUMP  
DETAIL  
3/8" = 1'-0"



WORK ITEMS DIAGRAM  
NTS



TYPICAL PUMP PIPING  
SECTION  
3/8" = 1'-0"

RECORD DRAWING  
DATE: 11/22/98 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY: AW	CAMP DRESSER & MCKEE INC.
DRAWN BY: RAC, AT	One Walnut Creek Center
SHEET CHK'D BY:	100 Pringle Avenue, Suite 300
CROSS CHK'D BY:	Walnut Creek, California 94596
APPROVED BY: JRT	(510) 933-2900
DATE: MAY 1998	

**CITY OF PITTSBURG  
ENGINEERING DIVISION**

**6 MG RESERVOIR  
REPLACEMENT PROJECT**

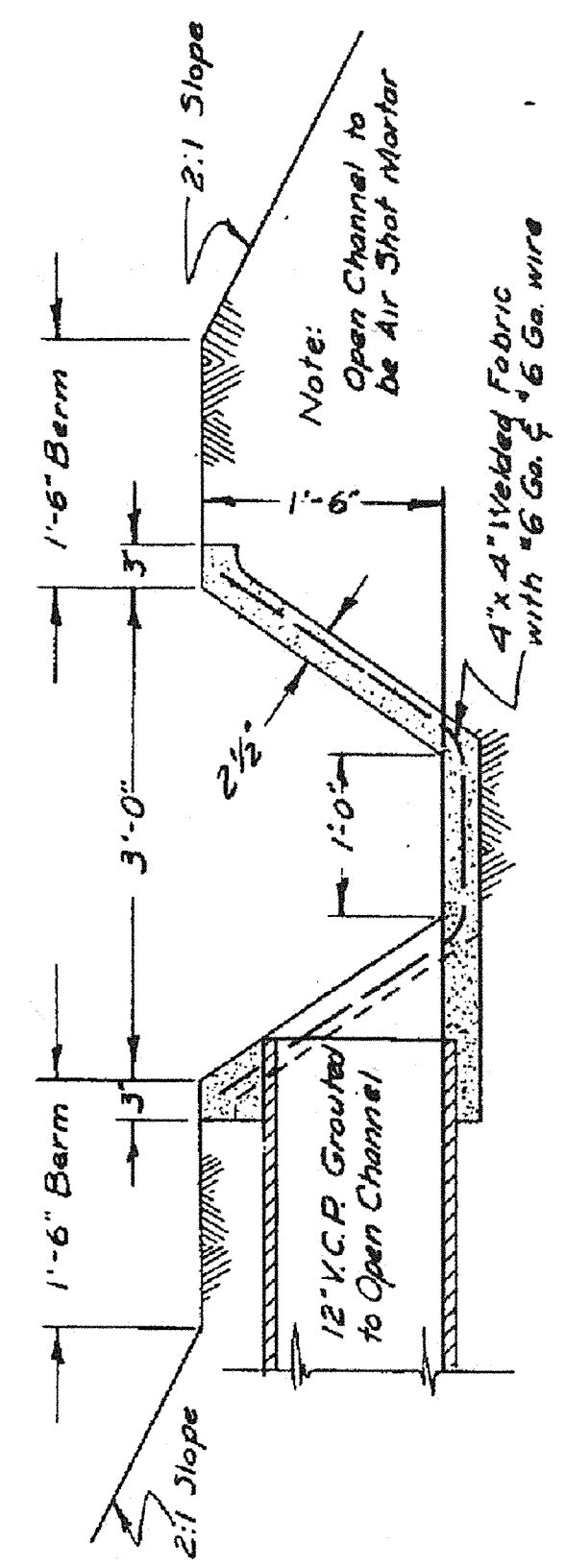
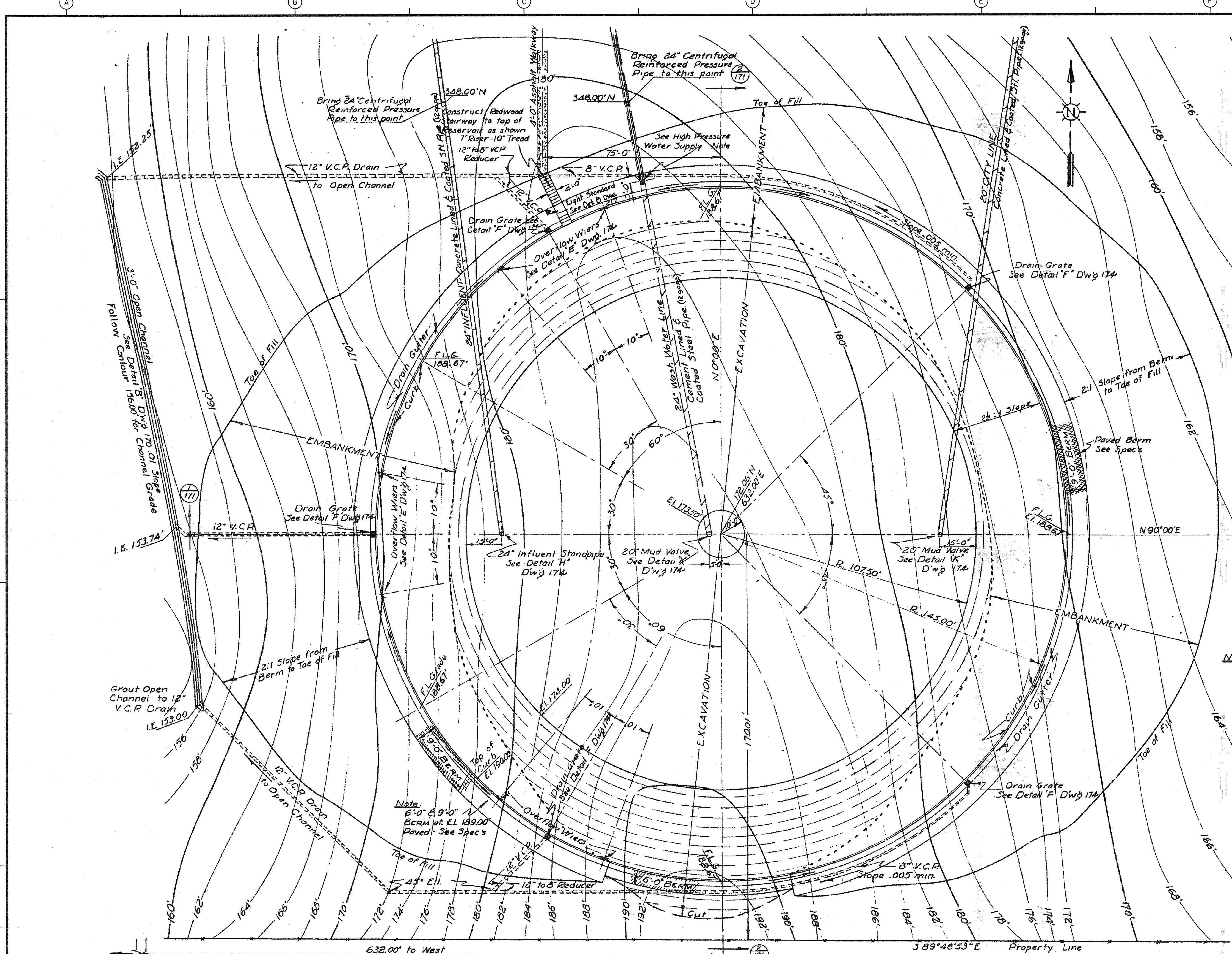
**CDM**  
environmental engineers, scientists,  
planners, & management consultants

**OLD BOOSTER PUMP STATION  
DEMOLITION PLAN, SECTIONS AND DETAILS  
ALTERNATIVE BID ITEM #2**

PROJECT NO. 1358-22097  
FILE NAME: C0000015

SHEET NO. **C-15**

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00	EPM	BPD		RECORD DRAWINGS



**DETAIL OPEN CHANNEL**  
Scale: 1"=1'

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- NOTES:**
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  2. THIS DRAWING IS TO BE USED FOR REFERENCE ONLY. ACTUAL INSTALLATION MAY VARY FROM THAT SHOWN. IN ADDITION, CERTAIN MINOR MODIFICATIONS HAVE BEEN MADE SINCE THIS DRAWING WAS MADE, INCLUDING; RE-ROOFING; AND CAULKING REPAIR OF CONCRETE LINING. VALVING SHOWN IS INOPERABLE.

**Note:**  
Elevation of all Drain Grates at top rim of Grate is 188.17'  
For Trenching & Backfill see Specifications.

1.E - Invert Elevation  
F.L.G. - Flow Line Grade.

2" High Pressure Water Line  
Use 1" Hose Gate Valve w/ Cap & Cham-Grane # 451 on 1" Standpipe Valve Located 3'-0" from edge of Berm.  
Construct Catch Basin below Valve & Connect to Y" Bend in 8" V.C.P.

**RECORD DRAWING**  
DATE: 12/22/2000 BY: [Signature]

PITTSBURG, CALIFORNIA	
WATER - WORKS - IMPROVEMENTS	
6 MG RESERVOIR LAYOUT & TOPOGRAPHY	
LAWRENCE H. COOK Consulting Eng. MENLO PARK, CALIF.	
DRAWN BY: R. J. O.	CHECKED BY: [Signature]
APPROVED BY: [Signature]	
DATE: 12-25-51	Scale as Noted DWG NO 170

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY:	AW
DRAWN BY:	AT
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

**CAMP DRESSER & MCKEE INC.**  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

**CDM**  
environmental engineers, scientists,  
planners, & management consultants

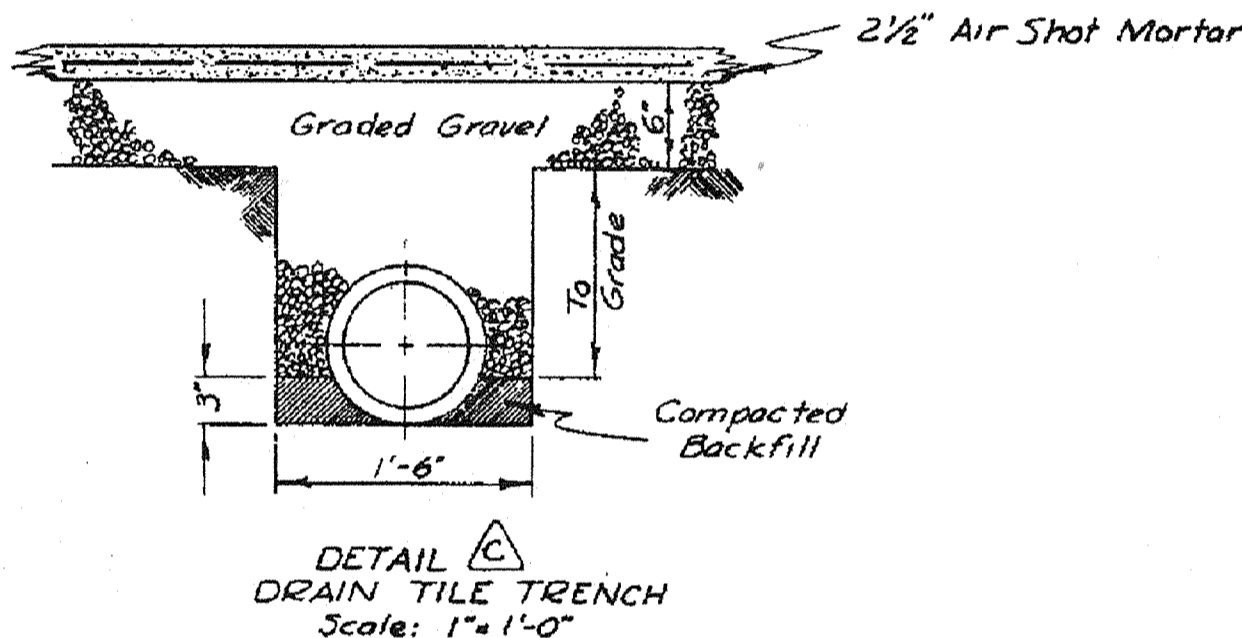
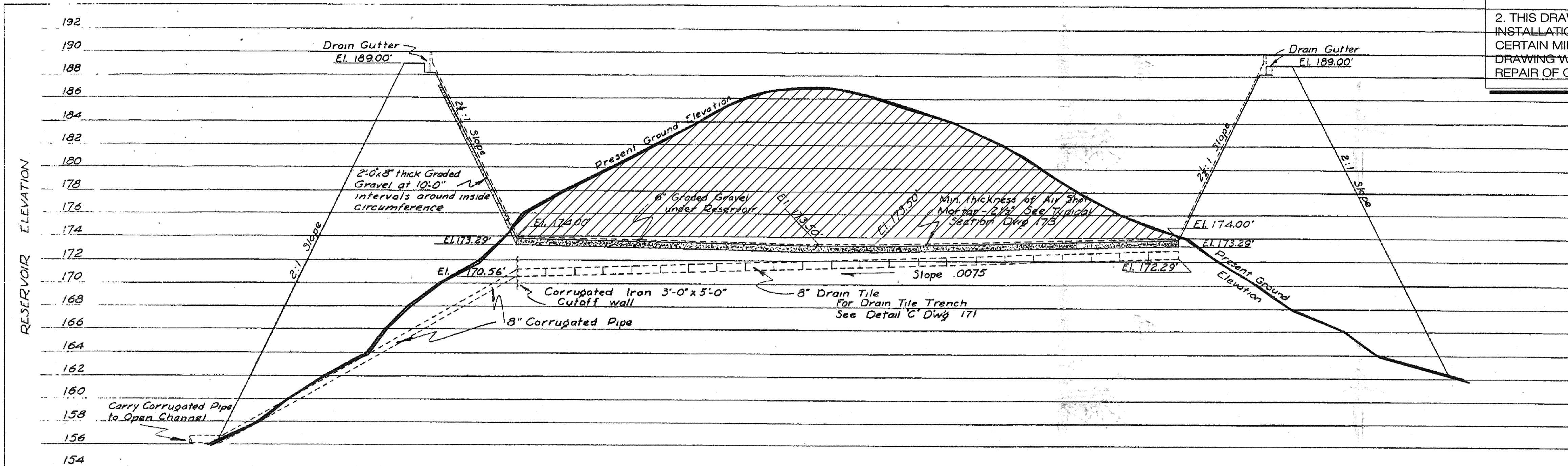
**CITY OF PITTSBURG**  
ENGINEERING DIVISION

**6 MG RESERVOIR**  
REPLACEMENT PROJECT

**REFERENCE DRAWING**  
EXISTING 6 MG RESERVOIR  
DRAWING NO. 170

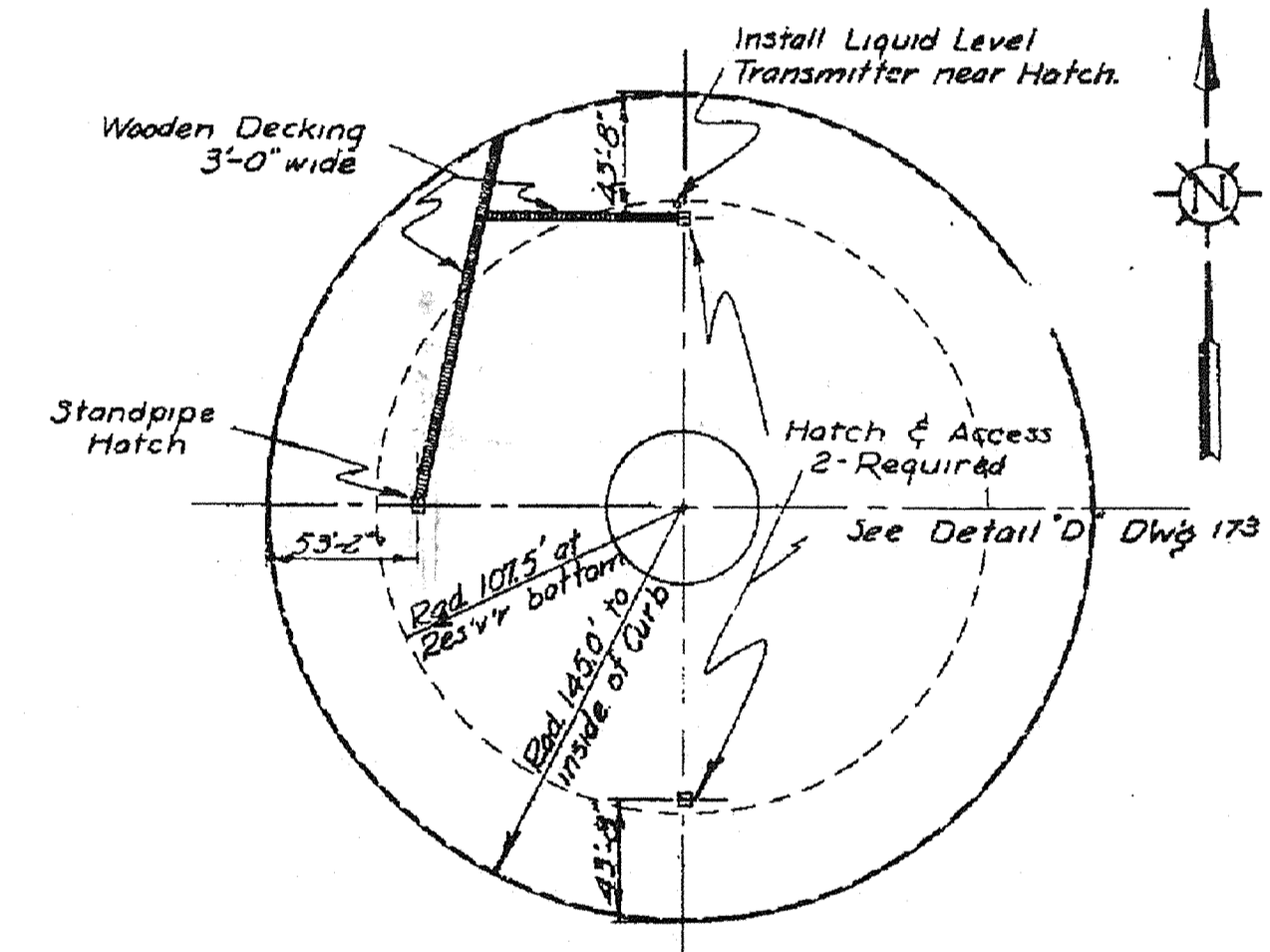
PROJECT NO. 1358-22097  
FILE NAME: C0000016  
SHEET NO. C-16

NOTES:  
 1. THIS RESERVOIR IS TO BE DEMOLISHED. SEE SPECIFICATIONS FOR REQUIREMENTS.  
 2. THIS DRAWING IS TO BE USED FOR REFERENCE ONLY. ACTUAL INSTALLATION MAY VARY FROM THAT SHOWN. IN ADDITION, CERTAIN MINOR MODIFICATIONS HAVE BEEN MADE SINCE THIS DRAWING WAS MADE, INCLUDING; RE-ROOFING; AND CAULKING REPAIR OF CONCRETE LINING. VALVING SHOWN IS INOPERABLE.

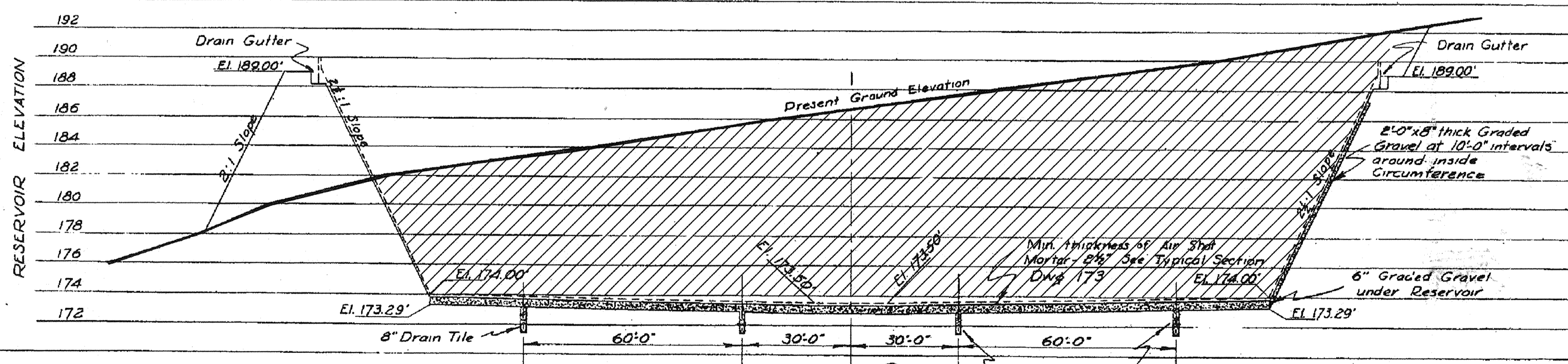


SECTION 170  
 Horiz. Scale: 1" = 20'  
 Vert. Scale: 1" = 5'

NOTE:  
 Drain Gates & Water Mains not shown.



DETAIL A  
 ROOF HATCH PLAN  
 Scale: 1" = 60"



SECTION 171  
 Horiz. Scale: 1" = 20'  
 Vert. Scale: 1" = 5'

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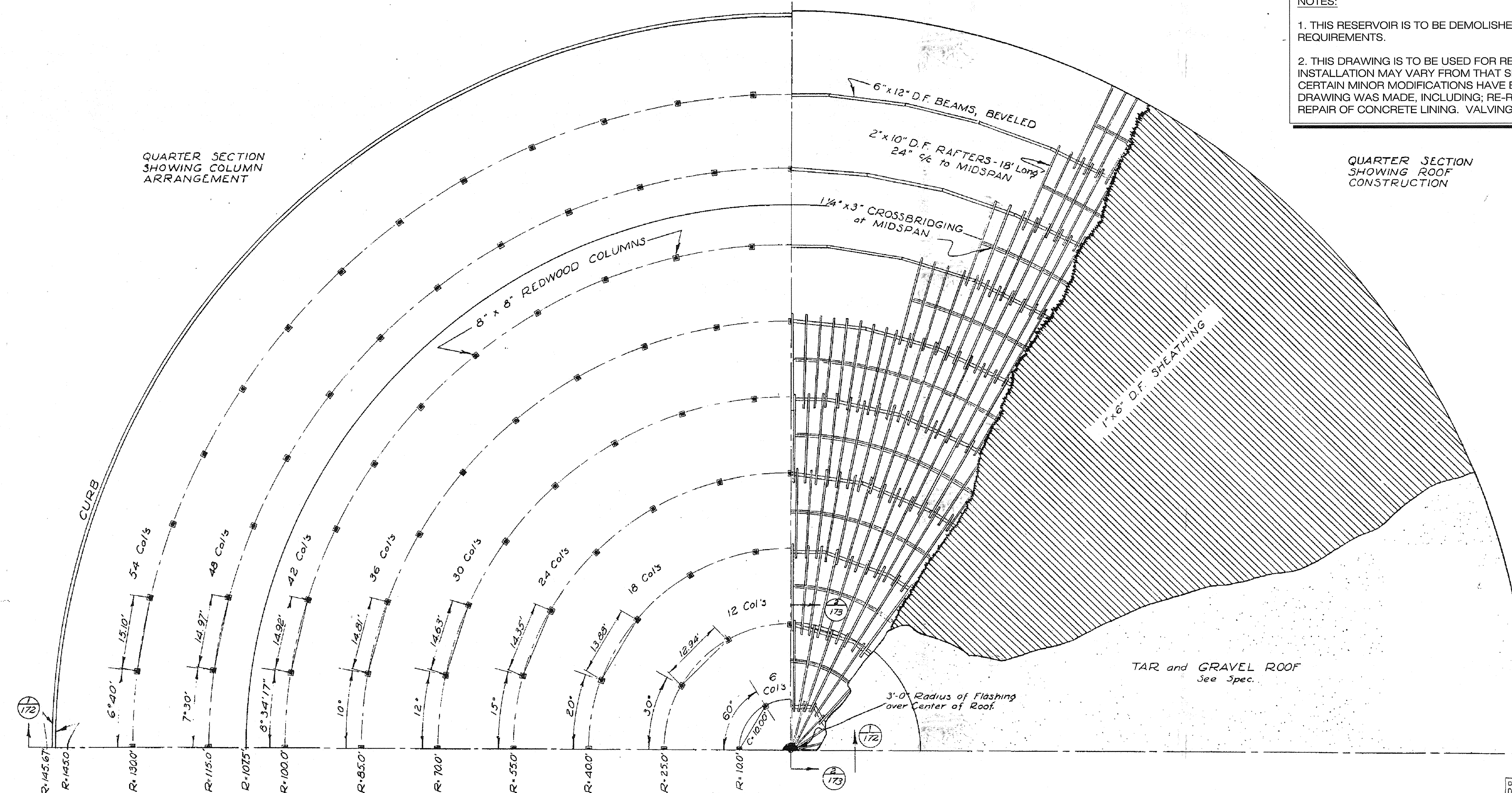
RECORD DRAWING  
 DATE: 12/22/2000 BY: [Signature]

PITTSBURG, CALIFORNIA WATER - WORKS - IMPROVEMENTS		
6 MG RESERVOIR PROFILE & UNDERDRAINS		
LAWRENCE H. COOK Consulting Eng. MENLO PARK, CALIF.		
DRAWN BY: R. J. D.	CHECKED BY: [Signature]	APPROVED BY: [Signature]
DATE: 12-25-97	Scale as Noted	DWG NO 171

APPROVED W.G. for N.S. 5-21-98  
 NASSER SHIRAZI, CITY ENGINEER, RCE 42955

<table border="1"> <tr> <td>2/00</td> <td>EPM</td> <td>BPD</td> <td>RECORD DRAWINGS</td> </tr> <tr> <td>REV. NO.</td> <td>DATE</td> <td>DRWN</td> <td>CHKD</td> </tr> </table>	2/00	EPM	BPD	RECORD DRAWINGS	REV. NO.	DATE	DRWN	CHKD	THE CITY OF PITTSBURG ASSUMES NO LIABILITY FOR LOSS OR DAMAGE RESULTING FROM RELIANCE THEREON.	DESIGNED BY: AW DRAWN BY: AT SHEET CHK'D BY: CROSS CHK'D BY: APPROVED BY: JRT DATE: MAY 1998	CAMP DRESSER & MCKEE INC. One Walnut Creek Center 100 Pringle Avenue, Suite 300 Walnut Creek, California 94596 (510) 933-2900	CITY OF PITTSBURG ENGINEERING DIVISION 6 MG RESERVOIR REPLACEMENT PROJECT	PROJECT NO. 1358-22097 FILE NAME: C0000017 SHEET NO. C-17
2/00	EPM	BPD	RECORD DRAWINGS										
REV. NO.	DATE	DRWN	CHKD										

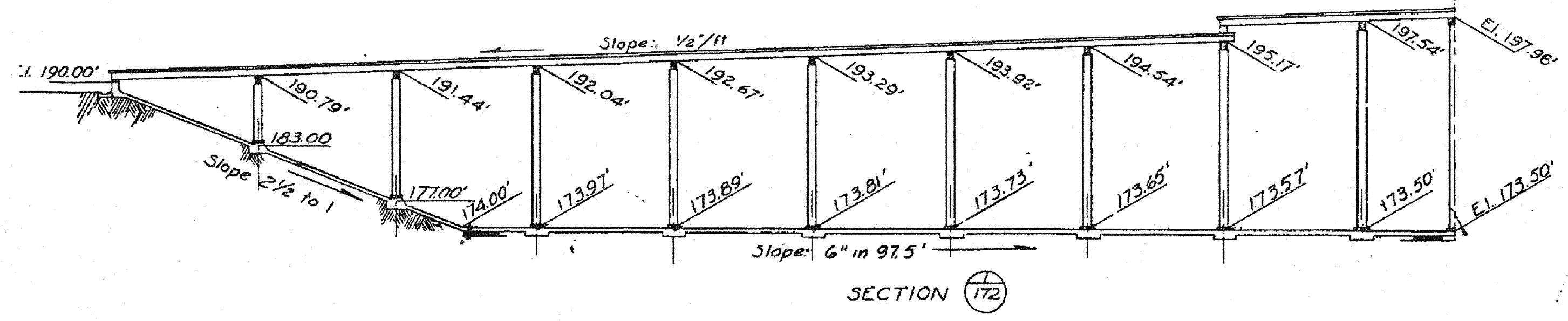
NOTES:  
 1. THIS RESERVOIR IS TO BE DEMOLISHED. SEE SPECIFICATIONS FOR REQUIREMENTS.  
 2. THIS DRAWING IS TO BE USED FOR REFERENCE ONLY. ACTUAL INSTALLATION MAY VARY FROM THAT SHOWN. IN ADDITION, CERTAIN MINOR MODIFICATIONS HAVE BEEN MADE SINCE THIS DRAWING WAS MADE, INCLUDING; RE-ROOFING; AND CAULKING REPAIR OF CONCRETE LINING. VALVING SHOWN IS INOPERABLE.



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HALF CONSTRUCTION PLAN

RECORD DRAWING  
 DATE 11/22/2001 BY [Signature]



SECTION 172

PITTSBURG, CALIFORNIA  
 WATER WORKS IMPROVEMENTS  
 6 MG RESERVOIR  
 COVER PLAN  
 LAWRENCE H. COOK Consulting Eng.  
 MENLO PARK, CALIF.  
 DRAWN BY: R.J.D. CHECKED BY: [Signature] APPROVED BY: [Signature]  
 DATE 12-25-51 SCALE 1" = 10' DWG NO 172

APPROVED W.G. for N.S. 5-21-98  
 NASSER SHIRAZI, CITY ENGINEER, RCE 42955

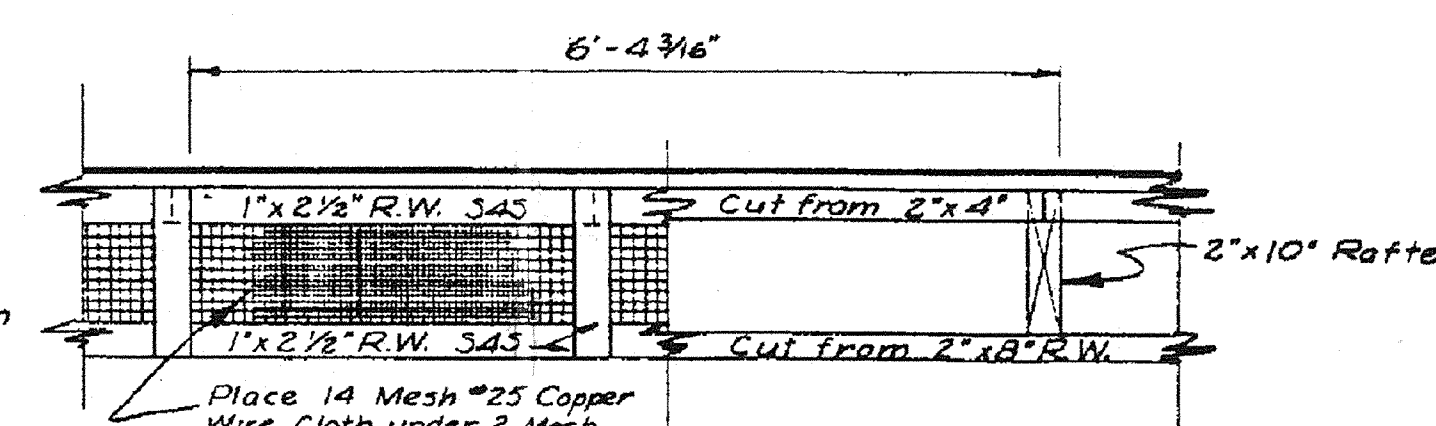
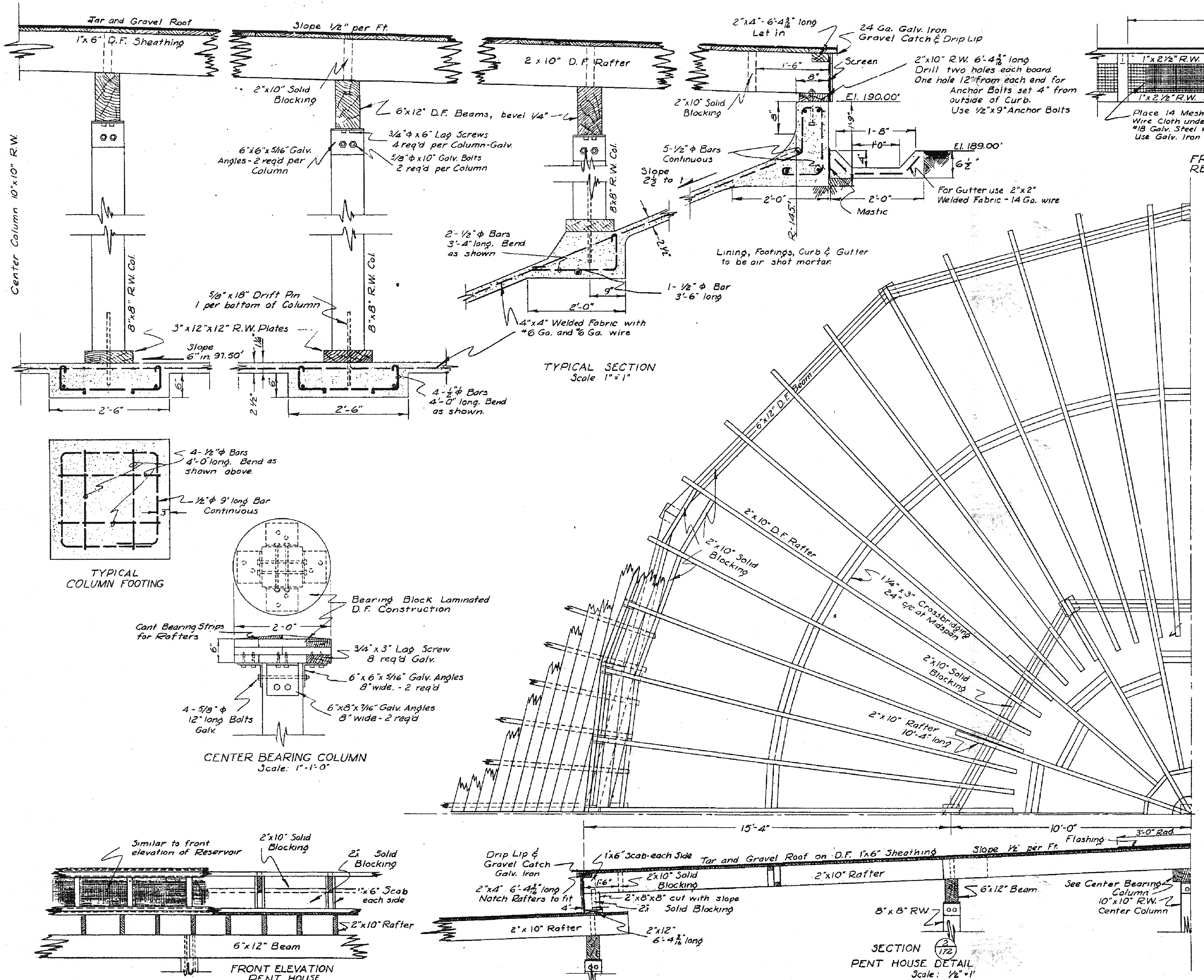
DESIGNED BY:	AW
DRAWN BY:	AT
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

CAMP DRESSER & MCKEE INC.  
 One Walnut Creek Center  
 100 Pringle Avenue, Suite 300  
 Walnut Creek, California 94596  
 (510) 933-2900  
 environmental engineers, scientists,  
 planners, & management consultants

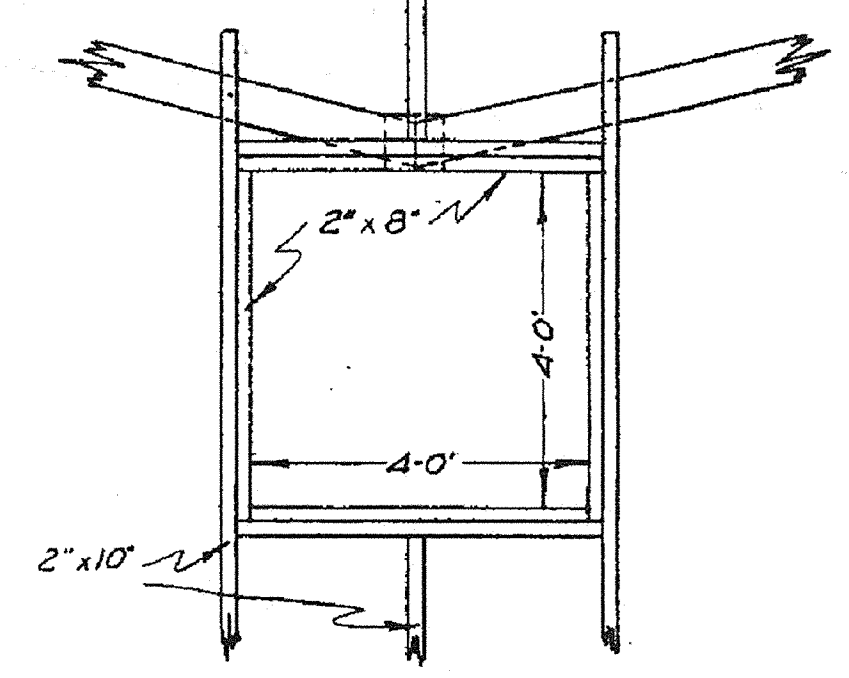
CITY OF PITTSBURG  
 ENGINEERING DIVISION  
 6 MG RESERVOIR  
 REPLACEMENT PROJECT

REFERENCE DRAWING  
 EXISTING 6 MG RESERVOIR  
 DRAWING NO. 172

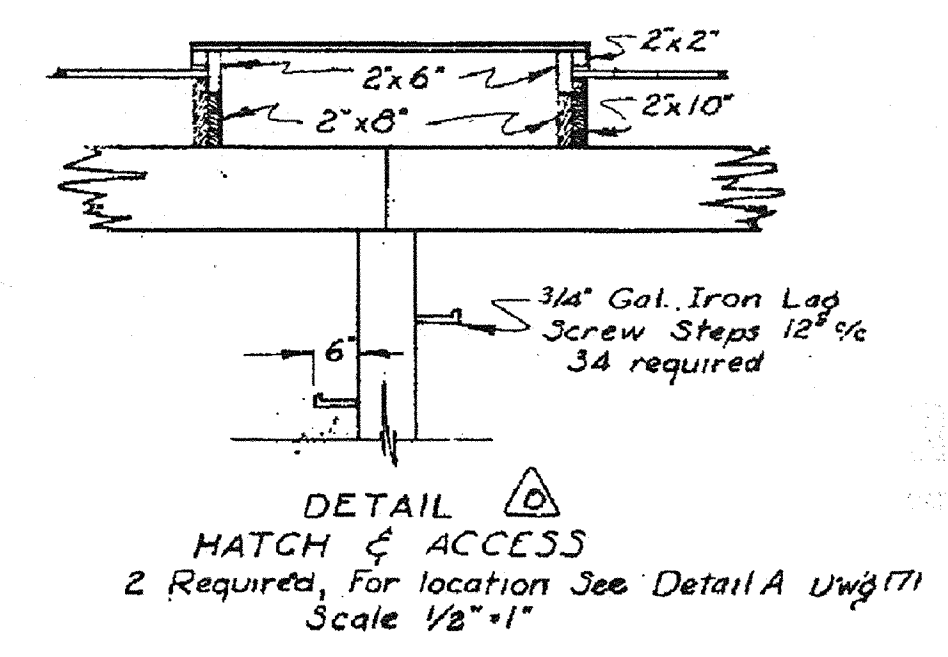
PROJECT NO. 1358-22097  
 FILE NAME: C0000018  
 SHEET NO. C-18



NOTES:  
 1. THIS RESERVOIR IS TO BE DEMOLISHED. SEE SPECIFICATIONS FOR REQUIREMENTS.  
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PITTSBURG, CALIFORNIA  
 WATER WORKS - IMPROVEMENTS  
 6 M.G. RESERVOIR  
 COVER DETAILS  
 LAWRENCE H. COOK Consulting Eng  
 MENLO PARK, CALIF.  
 DRAWN BY: R.J.D. CHECKED BY: [Signature] APPROVED BY: [Signature]  
 Date 12-25-51 Scale as Noted DWG NO. 173

APPROVED W.G. for N.S. 5-21-98  
 NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY:	AW
DRAWN BY:	AT
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

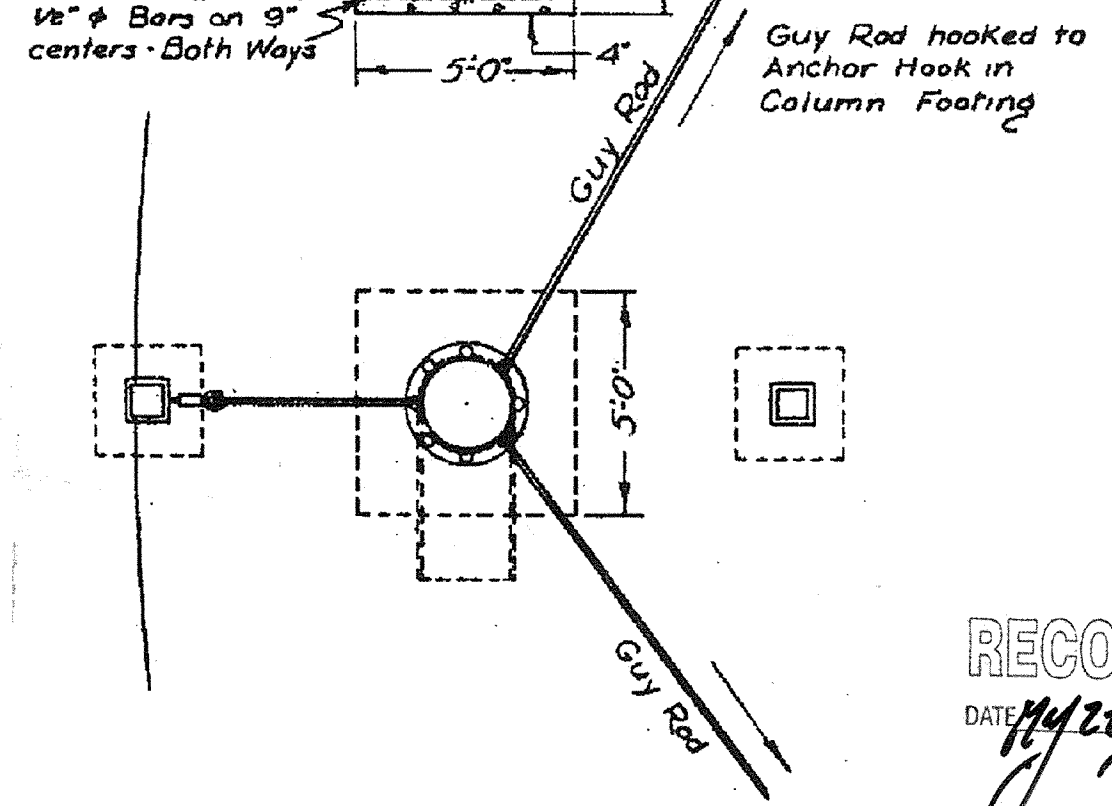
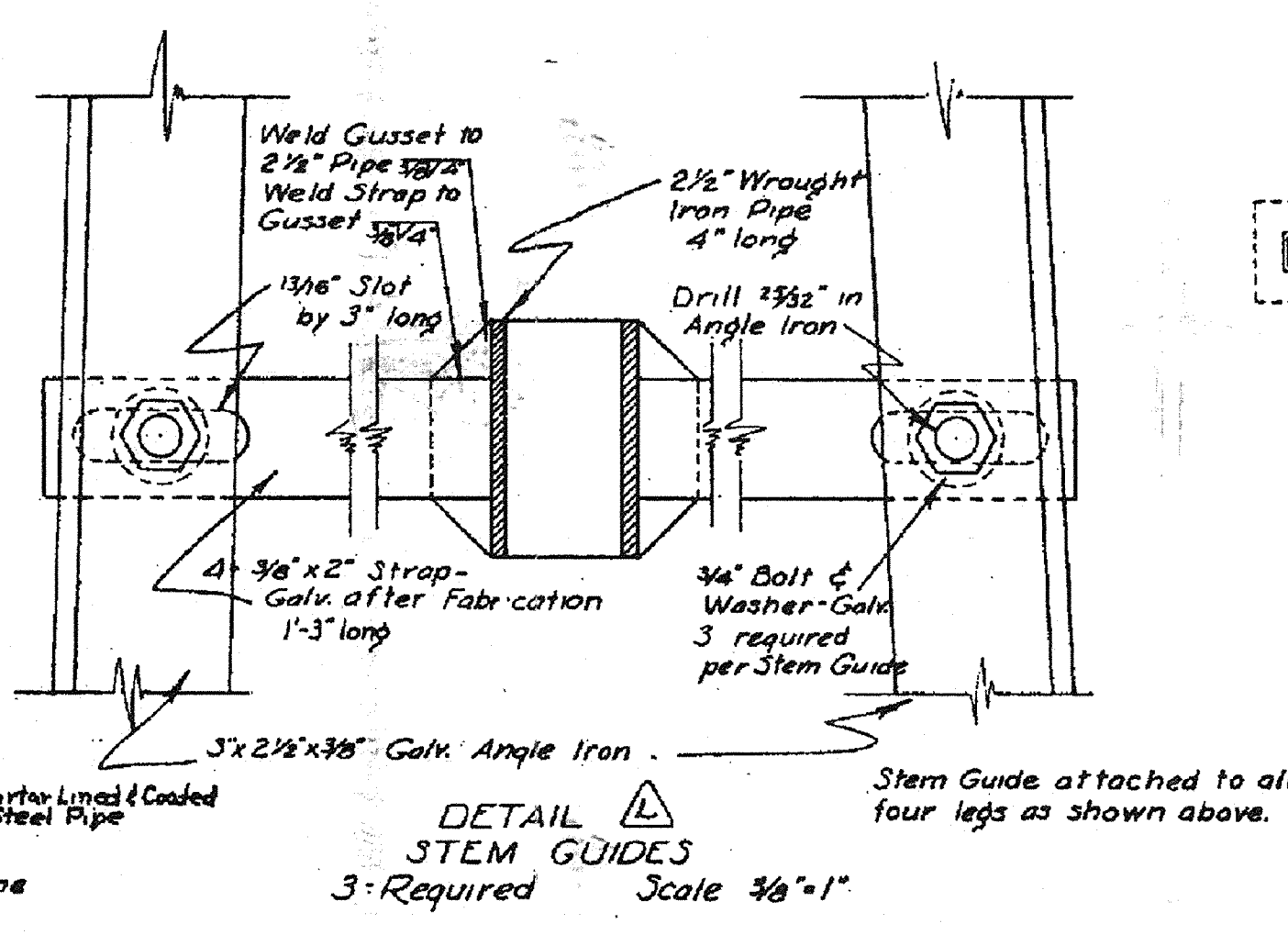
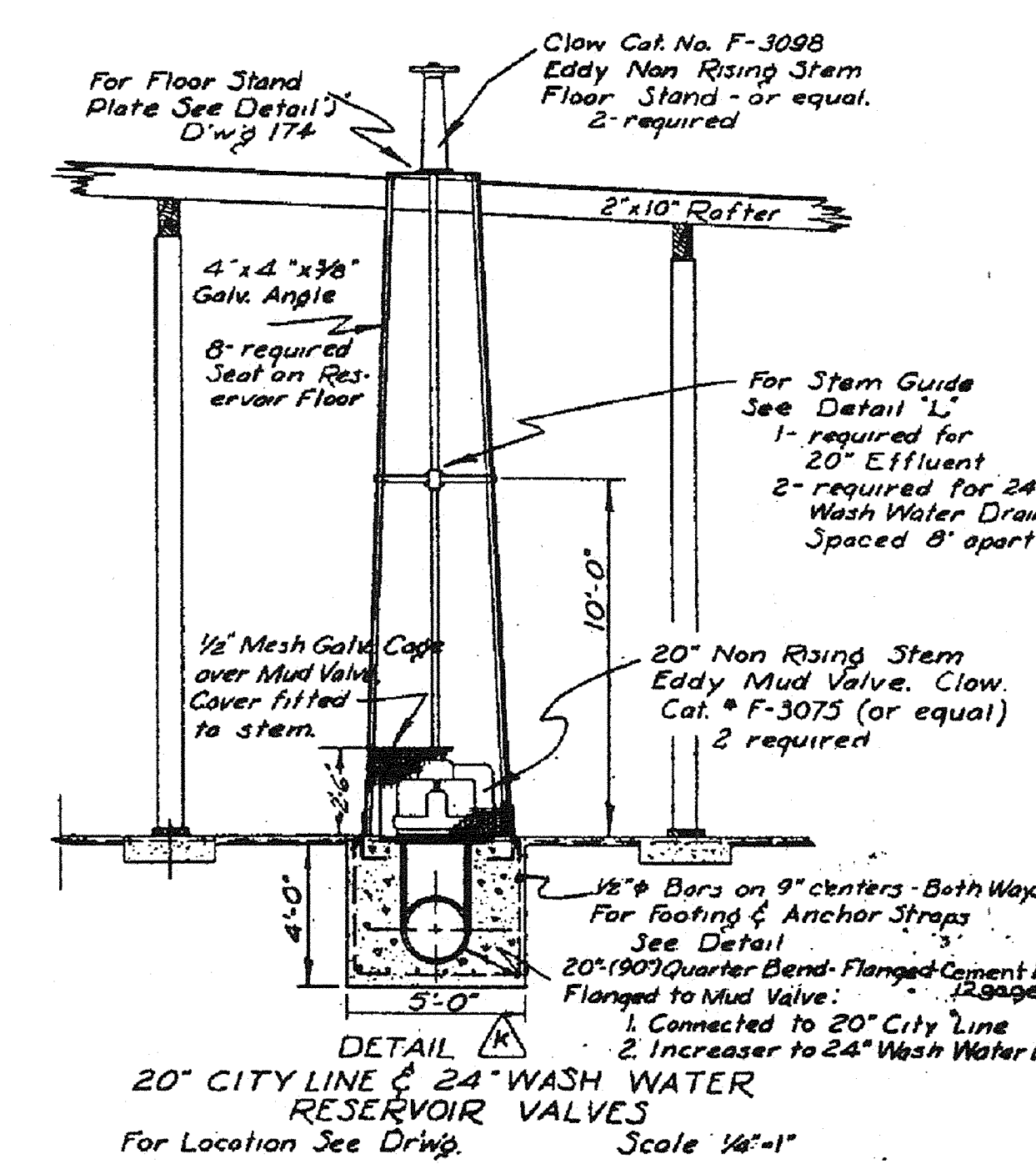
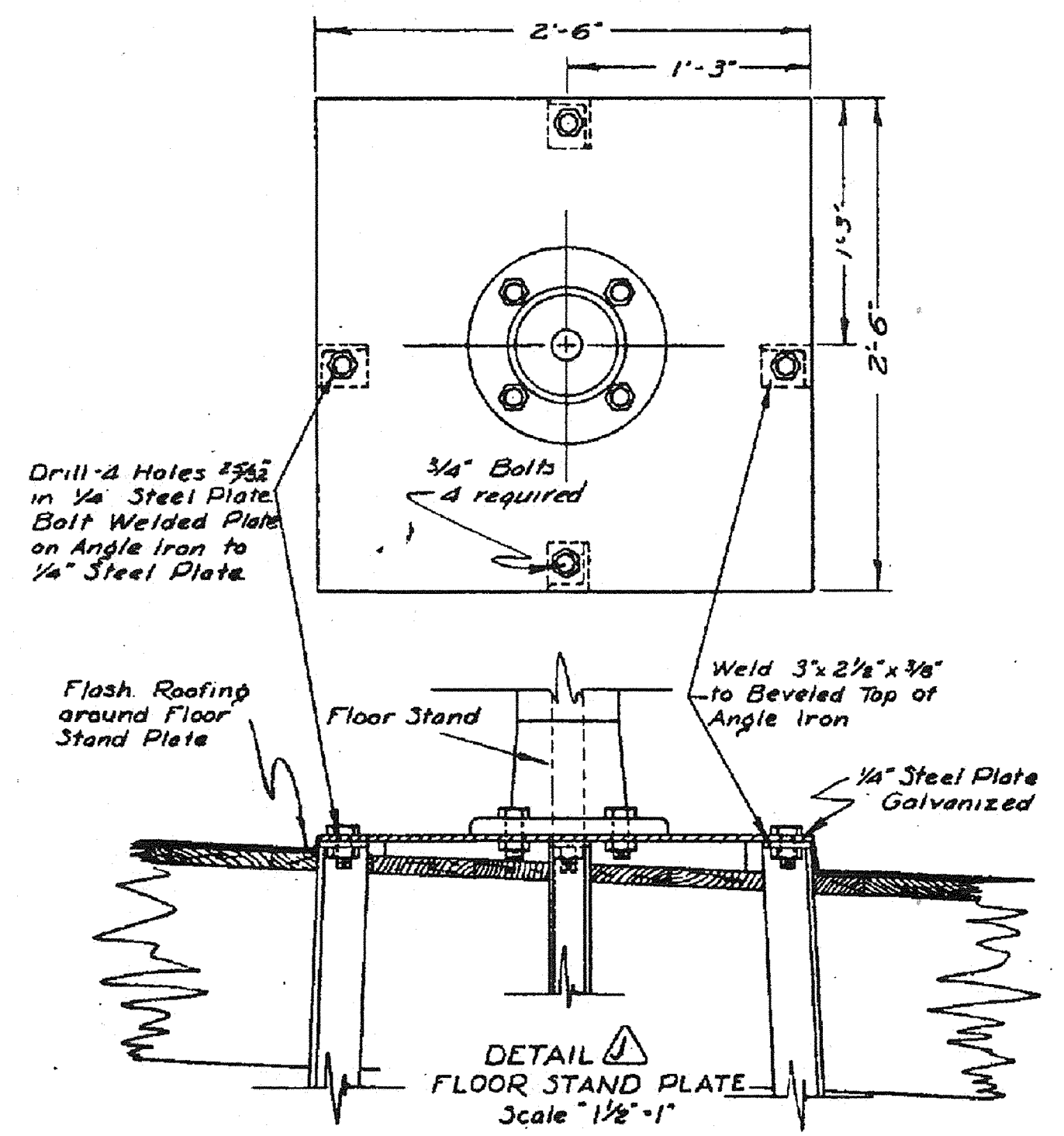
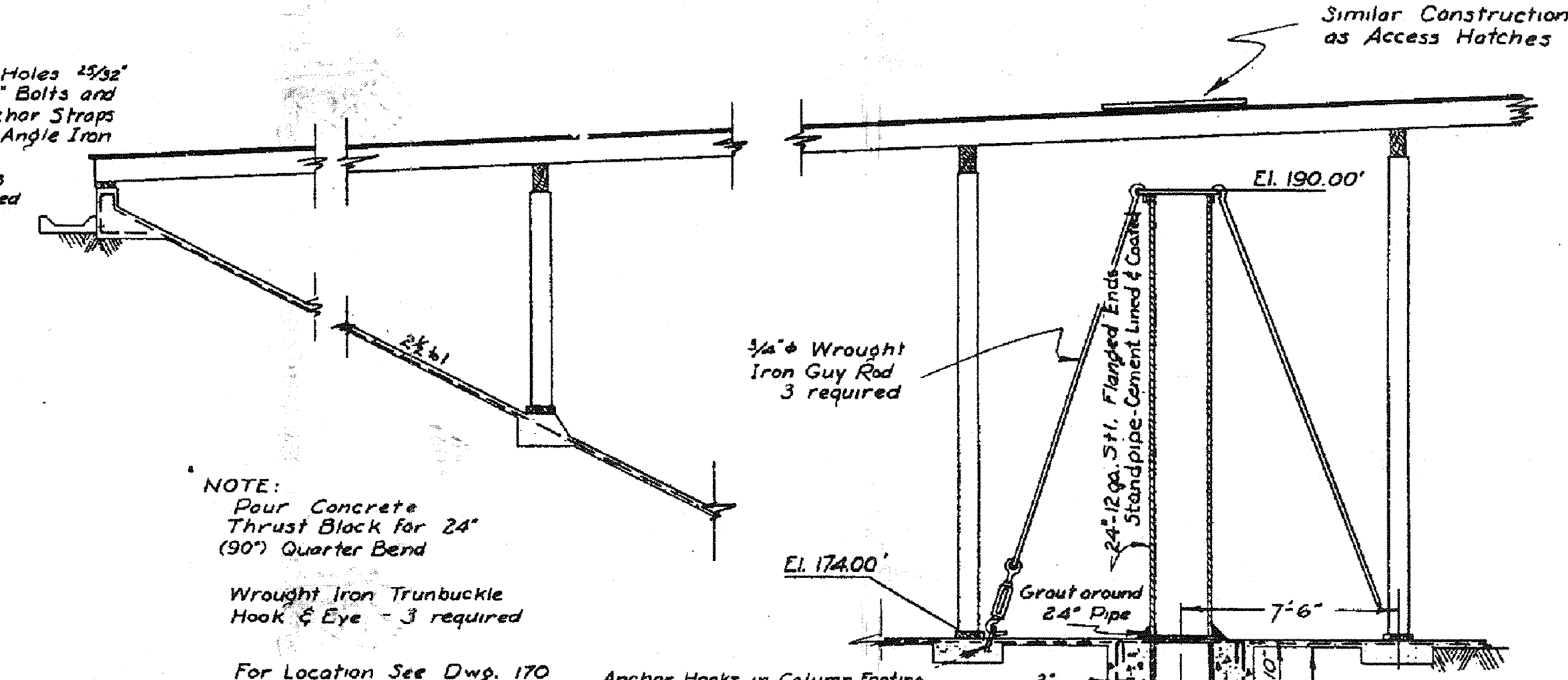
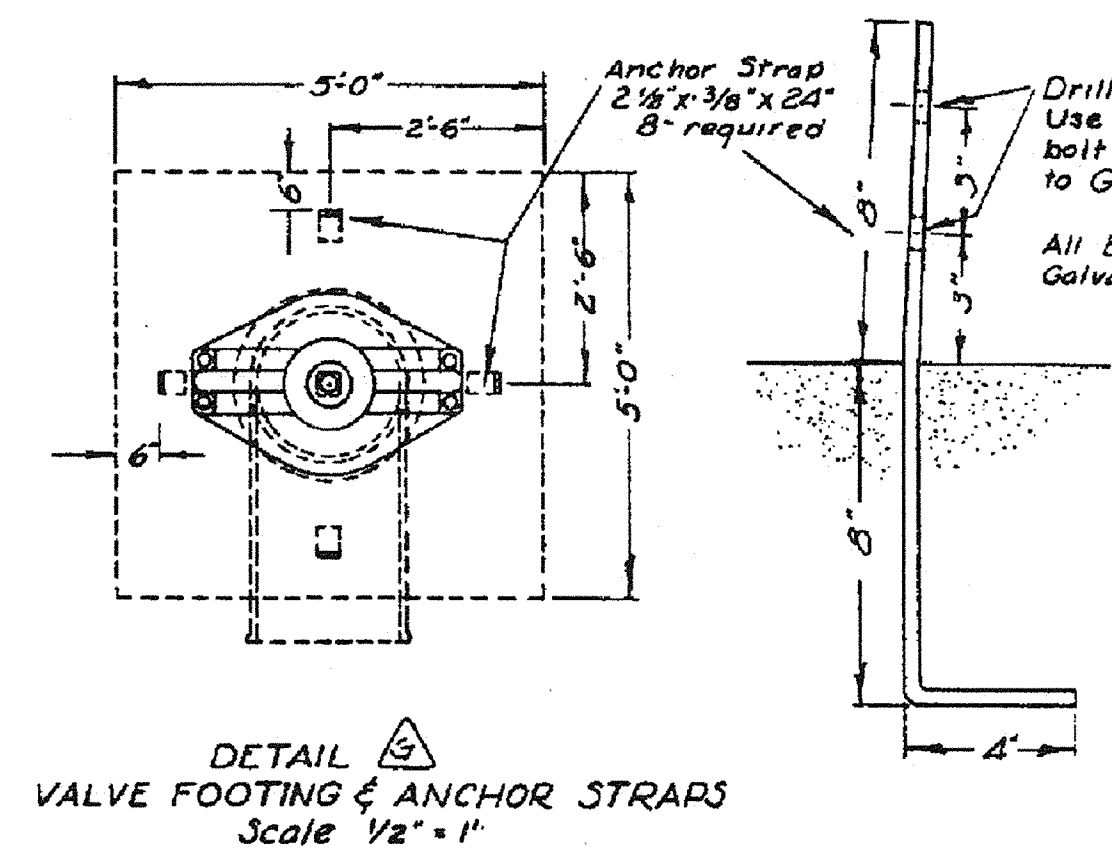
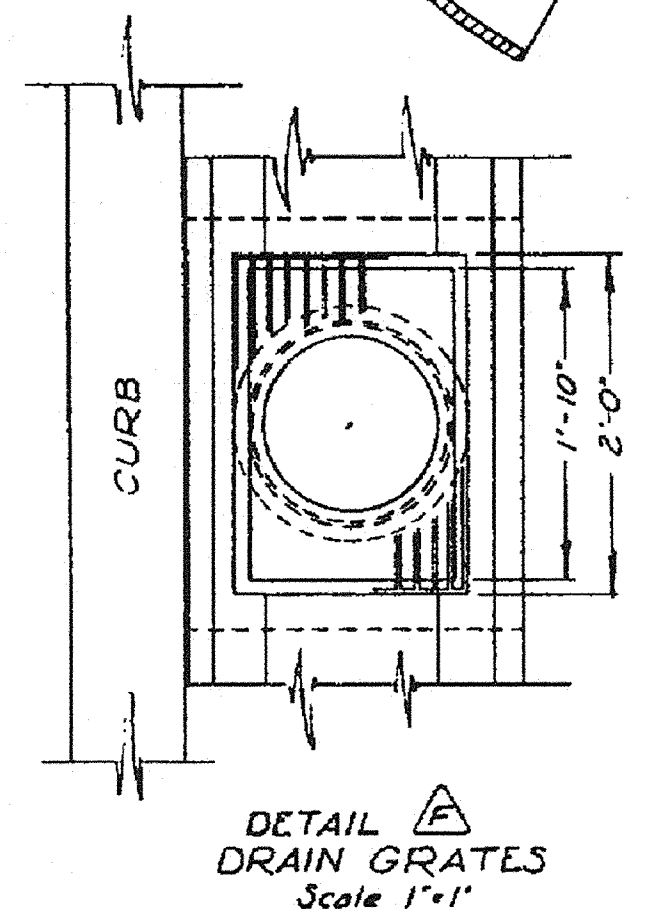
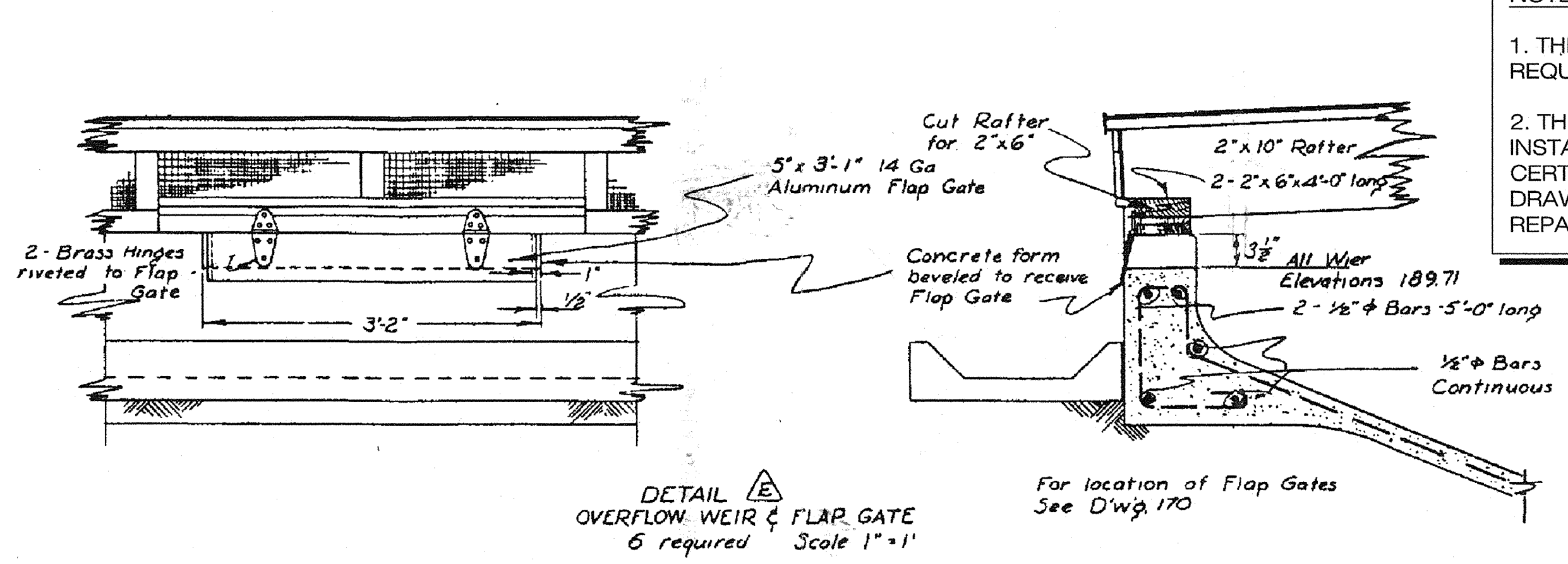
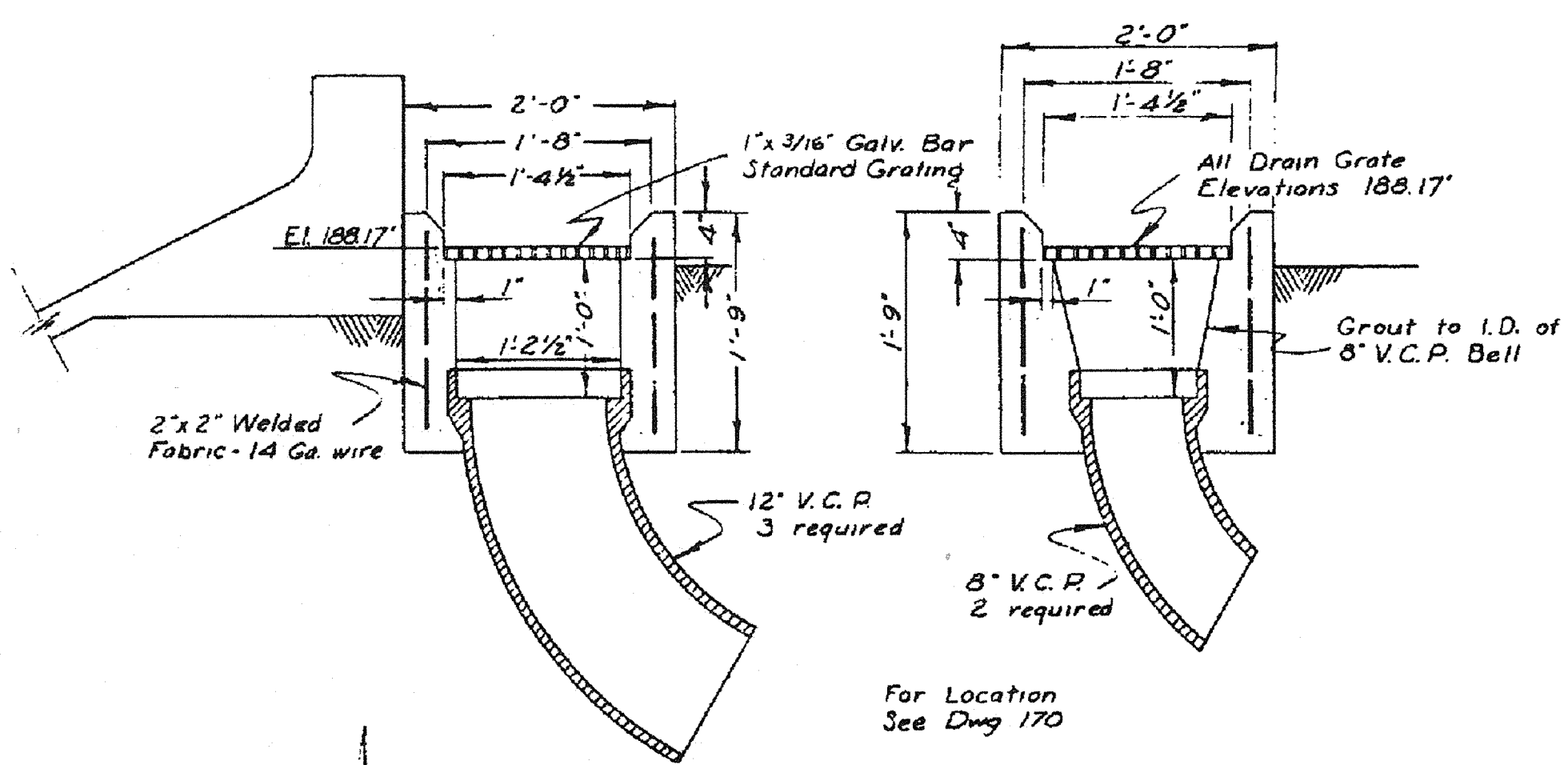
CAMP DRESSER & MCKEE INC.  
 One Walnut Creek Center  
 100 Pringle Avenue, Suite 300  
 Walnut Creek, California 94596  
 (510) 933-2900  
**CDM**  
 environmental engineers, scientists,  
 planners, & management consultants

CITY OF PITTSBURG  
 ENGINEERING DIVISION  
 6 MG RESERVOIR  
 REPLACEMENT PROJECT

REFERENCE DRAWING  
 EXISTING 6 MG RESERVOIR  
 DRAWING NO. 173  
 PROJECT NO. 1358-22097  
 FILE NAME: C0000019  
 SHEET NO. C-19

**NOTES:**

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**RECORD DRAWING**  
 DATE: 12-25-51 BY: M.J.B.

PITTSBURG, CALIFORNIA  
**WATER - WORKS - IMPROVEMENTS**

6 M.G. RESERVOIR  
 MISCELLANEOUS DETAILS

LAWRENCE H. COOK Consulting Eng.  
 MENLO PARK, CALIF.

DRAWN BY: R.J.D. CHECKED BY: APPROVED BY:  
 DATE 12-25-51 Scale as Noted DWG. NO. 174

APPROVED W.G. for N.S. 5-21-98  
 NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY: AW	CAMP DRESSER & MCKEE INC.
DRAWN BY: AT	One Walnut Creek Center
SHEET CHK'D BY:	100 Pringle Avenue, Suite 300
CROSS CHK'D BY:	Walnut Creek, California 94596
APPROVED BY: JRT	(510) 933-2900
DATE: MAY 1998	

CITY OF PITTSBURG  
 ENGINEERING DIVISION

6 MG RESERVOIR  
 REPLACEMENT PROJECT

environmental engineers, scientists,  
 planners, & management consultants

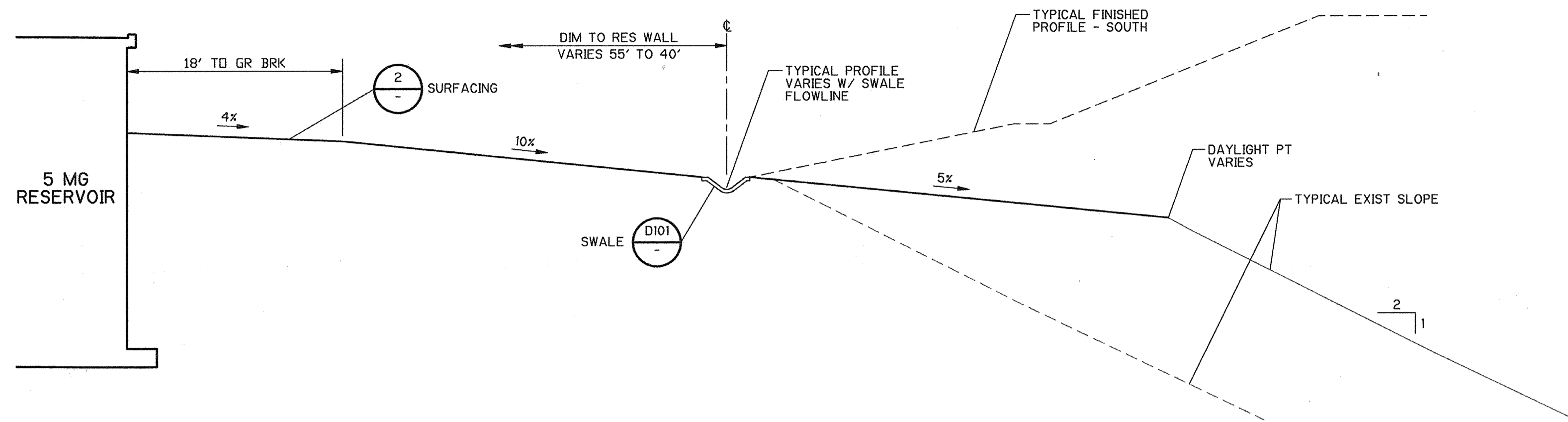
**CDM**

REFERENCE DRAWING  
 EXISTING 6 MG RESERVOIR  
 DRAWING NO. 174

PROJECT NO. 1358-22097  
 FILE NAME: C0000020

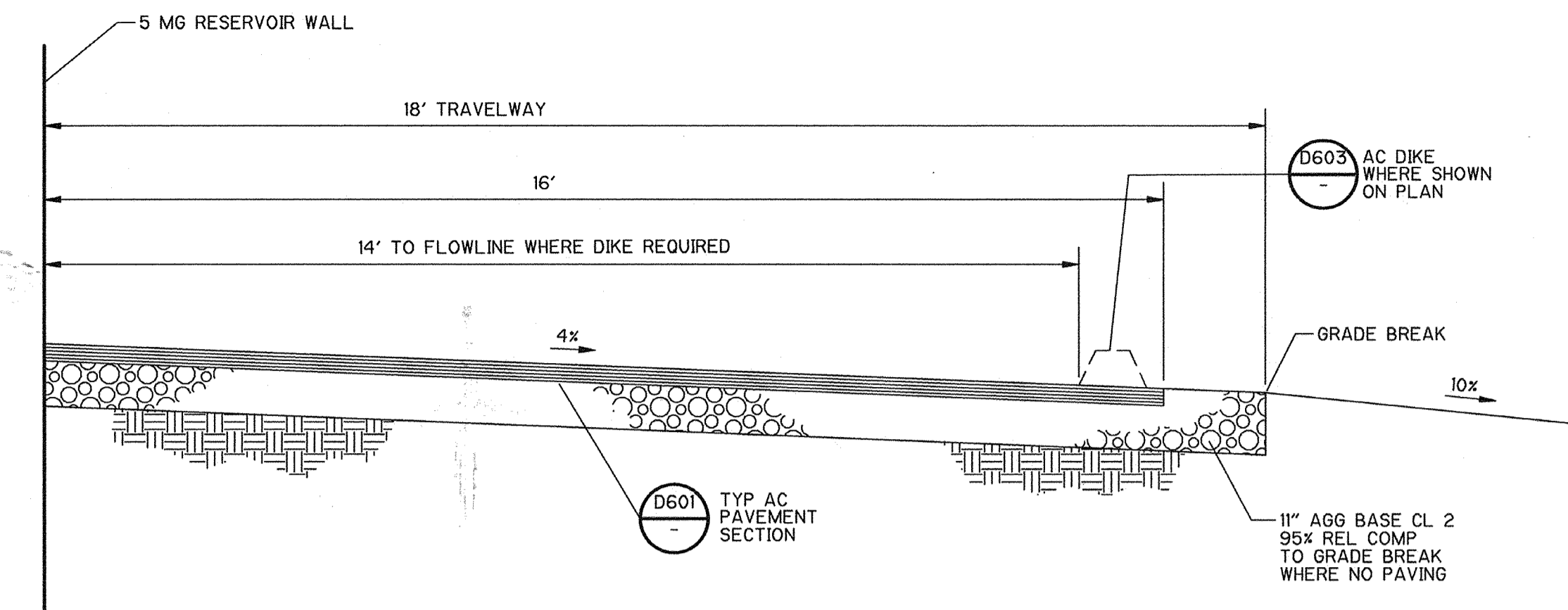
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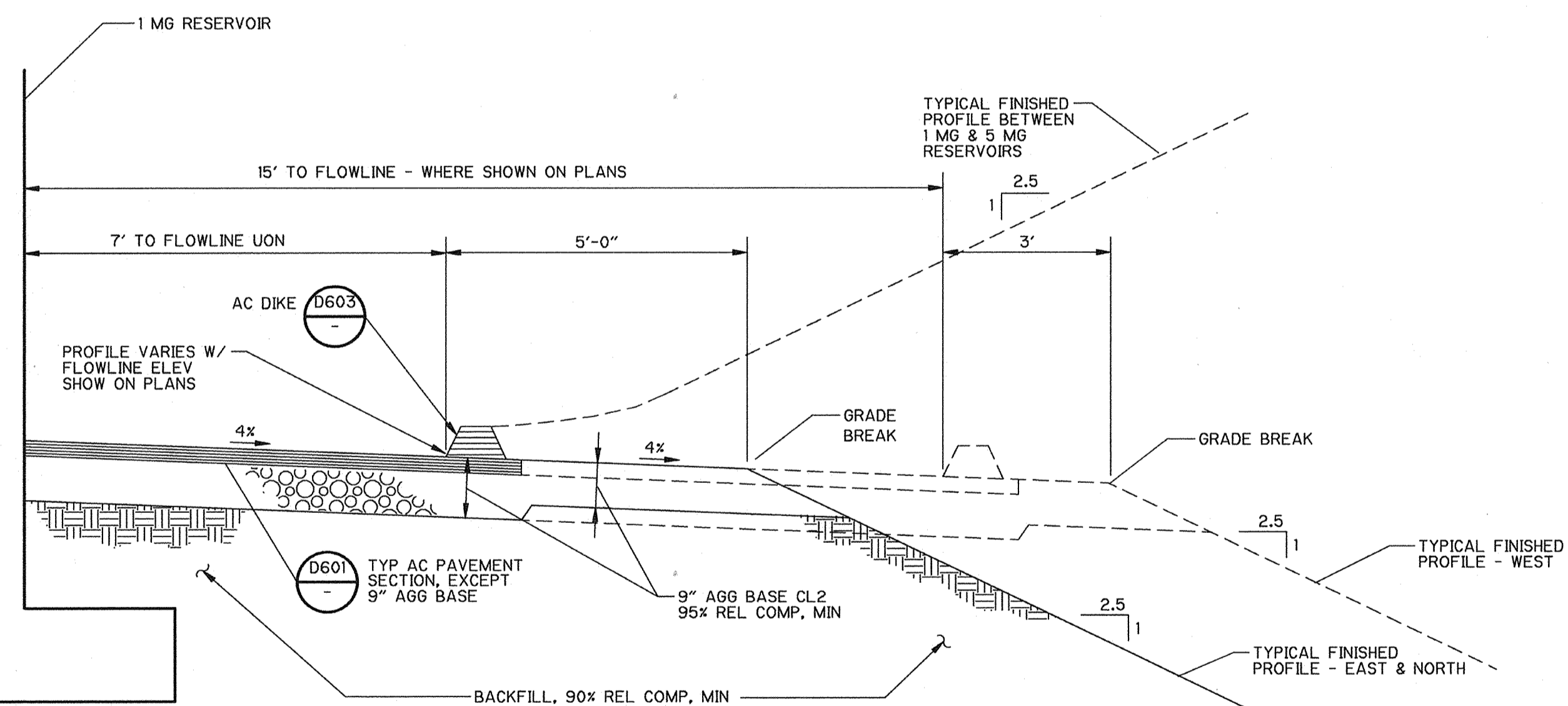
TYPICAL FINISHED PROFILES - 5 MG RESERVOIR PERIMETER

SECTION 1  
1/8" = 1'-0" C-4



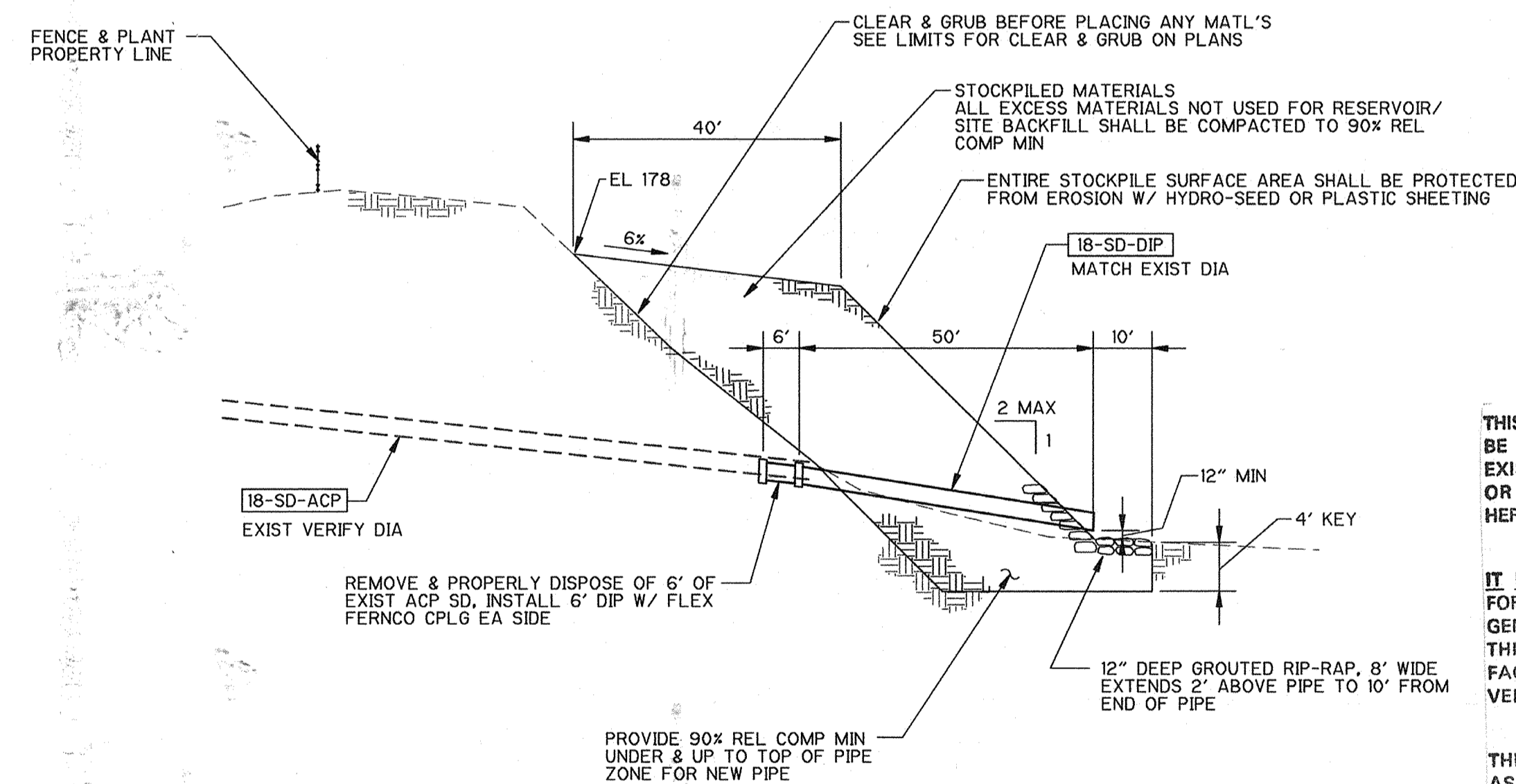
TYPICAL TRAVELWAY SURFACING REQUIREMENTS  
5 MG RESERVOIR PERIMETER

SECTION 2  
1/2" = 1'-0" C-4



TYPICAL SURFACING & PROFILE REQUIREMENTS  
1 MG RESERVOIR PERIMETER

SECTION 3  
1/2" = 1'-0" C-4



STORM DRAIN MODIFICATIONS & TYPICAL SECTION FOR STOCKPILED MATERIALS

SECTION 1  
1" = 20' HORIZ  
1" = 10' VERT C-1

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RECORD DRAWING  
DATE: 11/22/2000 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY:	BPD
DRAWN BY:	EPM
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

CAMP DRESSER & MCKEE INC.  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

environmental engineers, scientists,  
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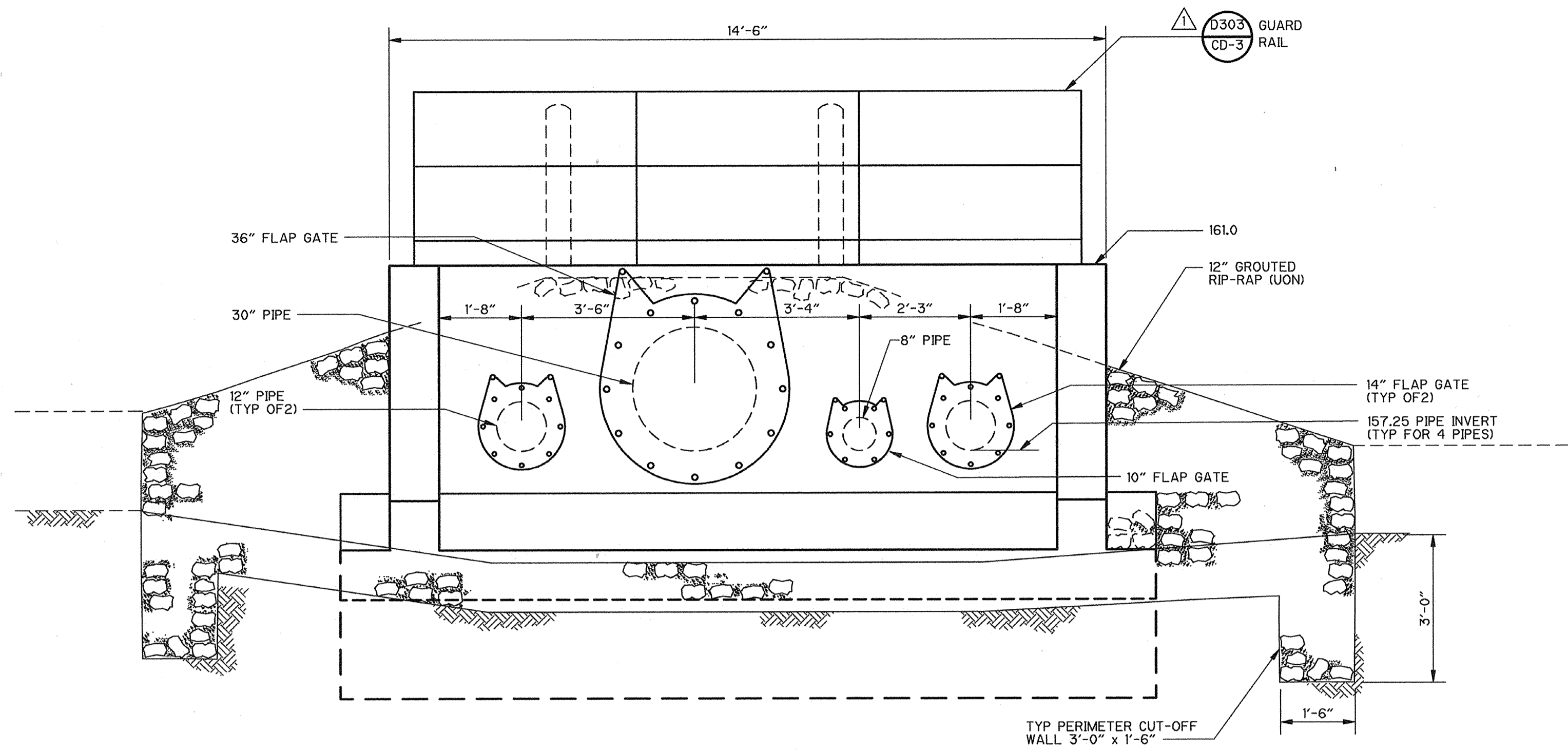
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

TYPICAL GRADING PROFILES  
RESERVOIR PERIMETERS

PROJECT NO. 1358-22097  
FILE NAME: C0000021

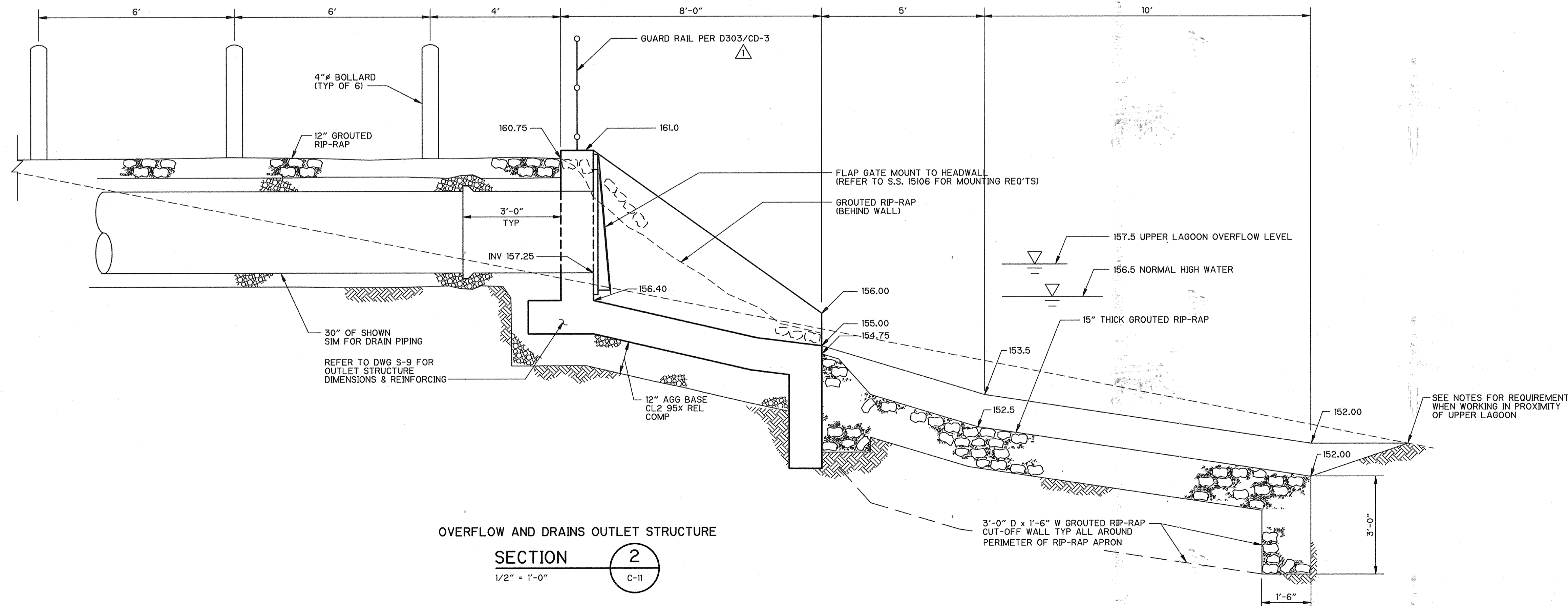
SHEET NO.

C-21



OVERFLOW AND DRAINS OUTLET STRUCTURE

SECTION 1  
1/2" = 1'-0"  
C-11



OVERFLOW AND DRAINS OUTLET STRUCTURE

SECTION 2  
1/2" = 1'-0"  
C-11

- NOTES:
1. THE UPPER LAGOON IS USED FOR DEWATERING SOLIDS REMOVED FROM THE LOWER LAGOON. AREAS OF THE UPPER LAGOON MAY NOT SUPPORT STANDARD CONSTRUCTION EQUIPMENT. CONTRACTOR SHALL PROVIDE THE NECESSARY PROVISIONS FOR COMPLETING THE WORK UNDER THESE CONDITIONS.
  2. THE UPPER LAGOON ALSO FUNCTIONS AS A STORM WATER COLLECTION POND. PROVIDE THE NECESSARY TEMPORARY BERMING AND CHANNELING TO DIVERT RUN-OFF FROM INTERFERING WITH COMPLETION OF WORK.
  3. LAGOON SOLIDS SHALL NOT BE REMOVED FROM THE UPPER LAGOON. UPON COMPLETION OF THE WORK, RESTORE GRADES AROUND RIP-RAP APRON TO PRECONSTRUCTION GRADES AS CLOSELY AS POSSIBLE. EXCAVATED NATIVE MATERIAL SHALL BE REMOVED AND STOCKPILED IN LOCATIONS SHOWN ELSEWHERE.
  4. MATERIALS FOR GROUTED RIP-RAP SHALL BE IN ACCORDANCE W/ CALTRANS SPECIFICATION 72-4.02 AS MODIFIED BY SECTION 72-4, CONTRA COSTA COUNTY STANDARDS.

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RECORD DRAWING  
DATE 10/11/2000 BY [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

DESIGNED BY: BPD  
DRAWN BY: EPM  
SHEET CHK'D BY:  
CROSS CHK'D BY:  
APPROVED BY: JRT  
DATE: MAY 1998

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One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

environmental engineers, scientists,  
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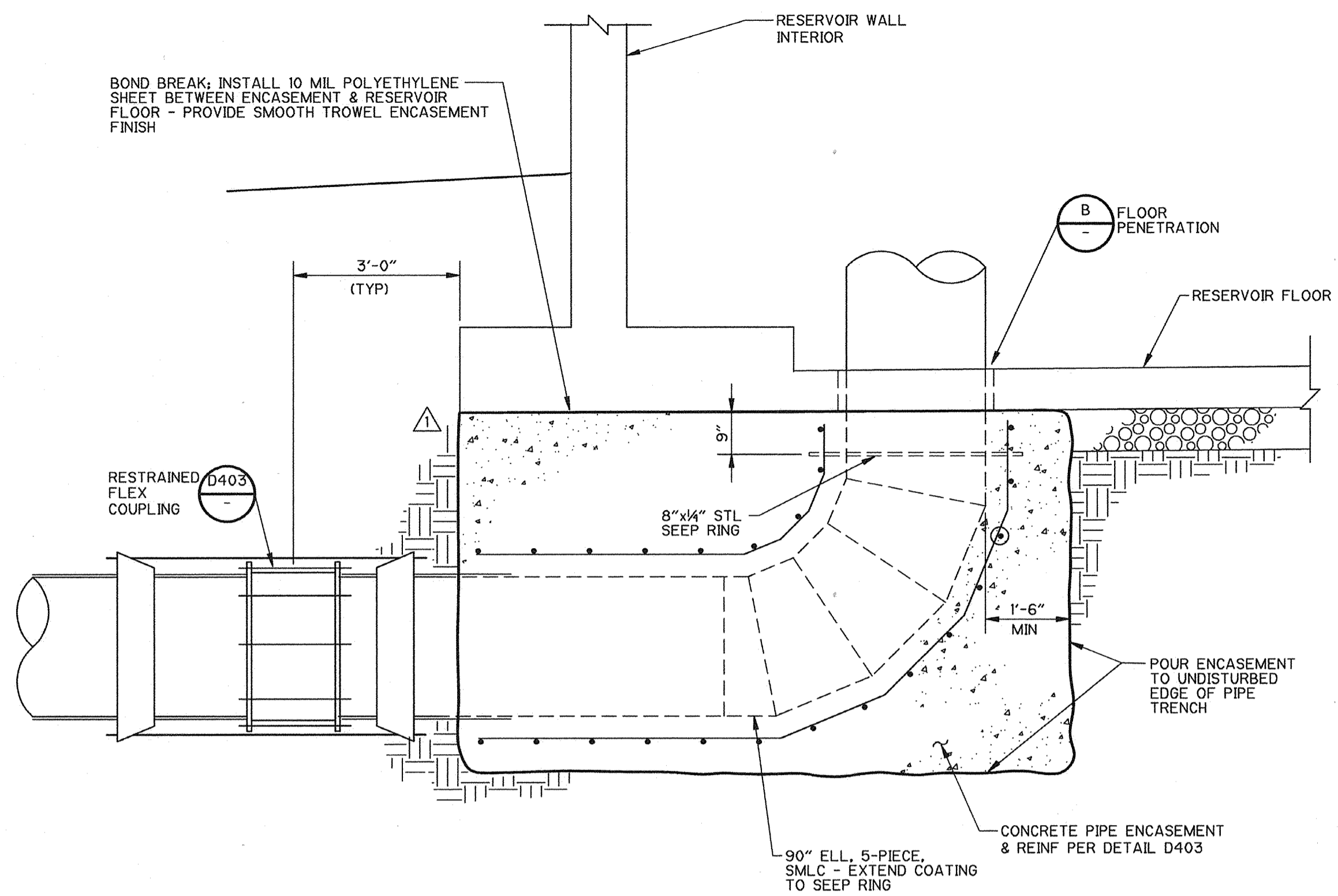
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

OVERFLOW AND DRAINS OUTLET STRUCTURE  
SECTIONS AND DETAILS

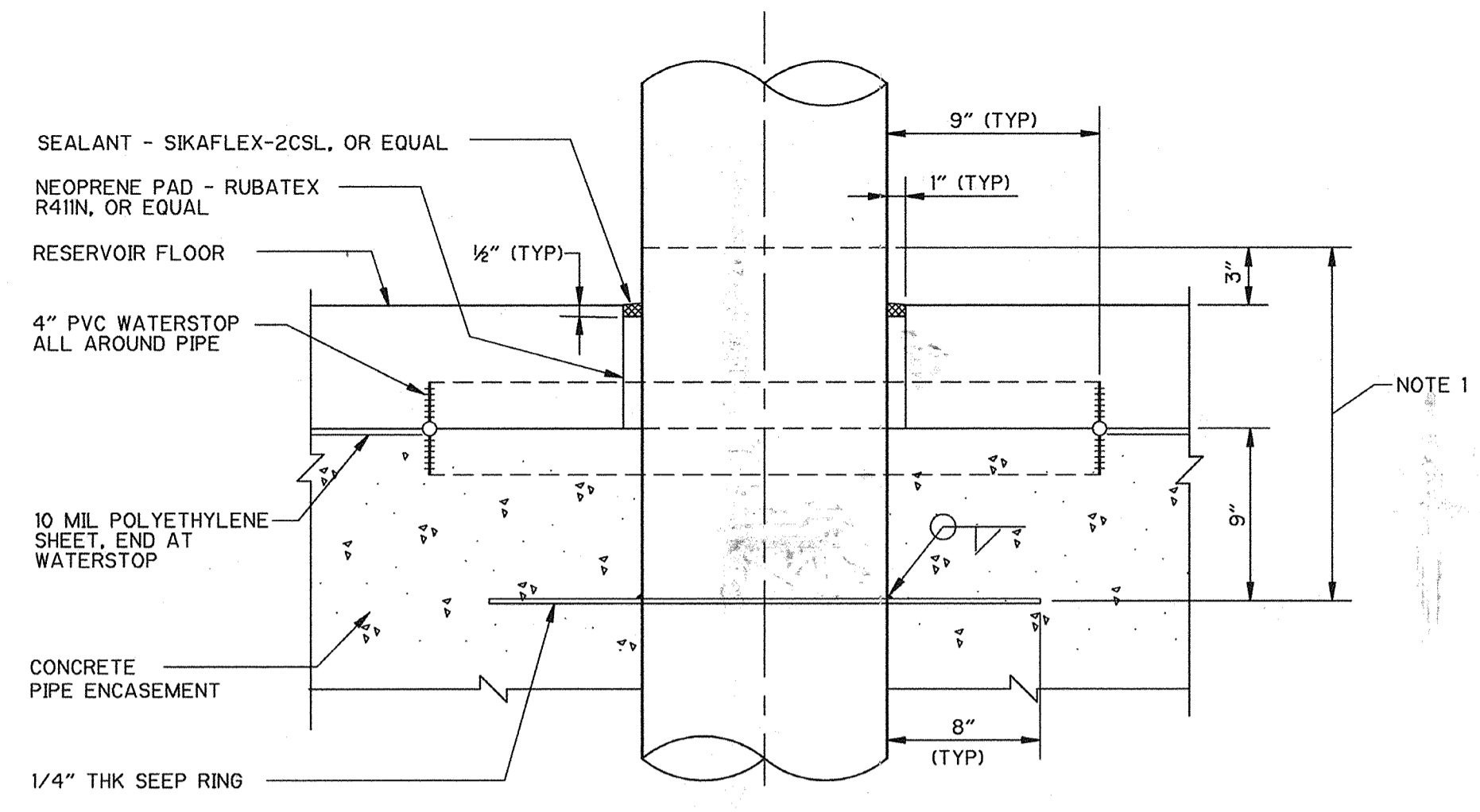
PROJECT NO. 1358-22097  
FILE NAME: C0000022

SHEET NO.

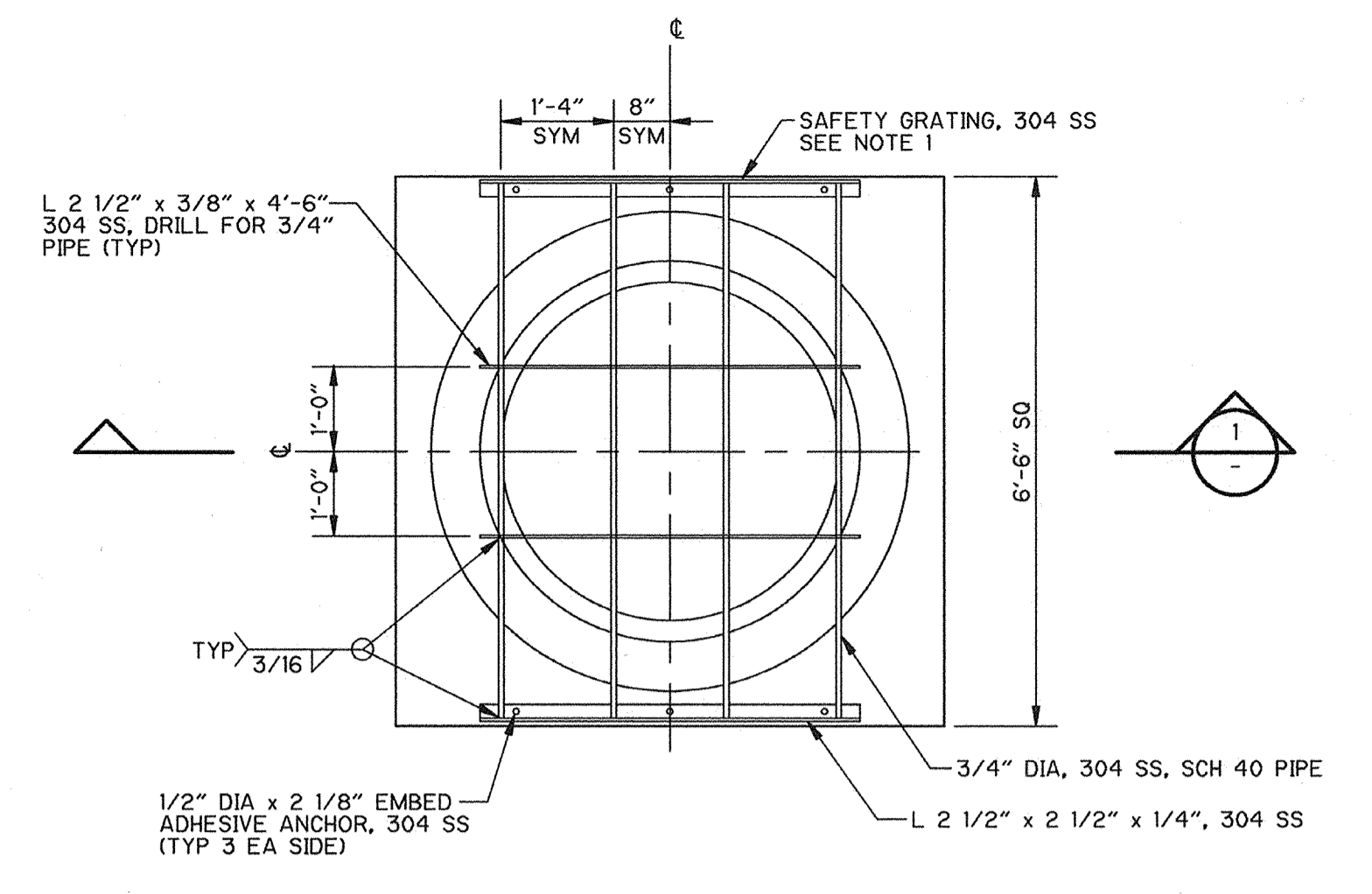
C-22



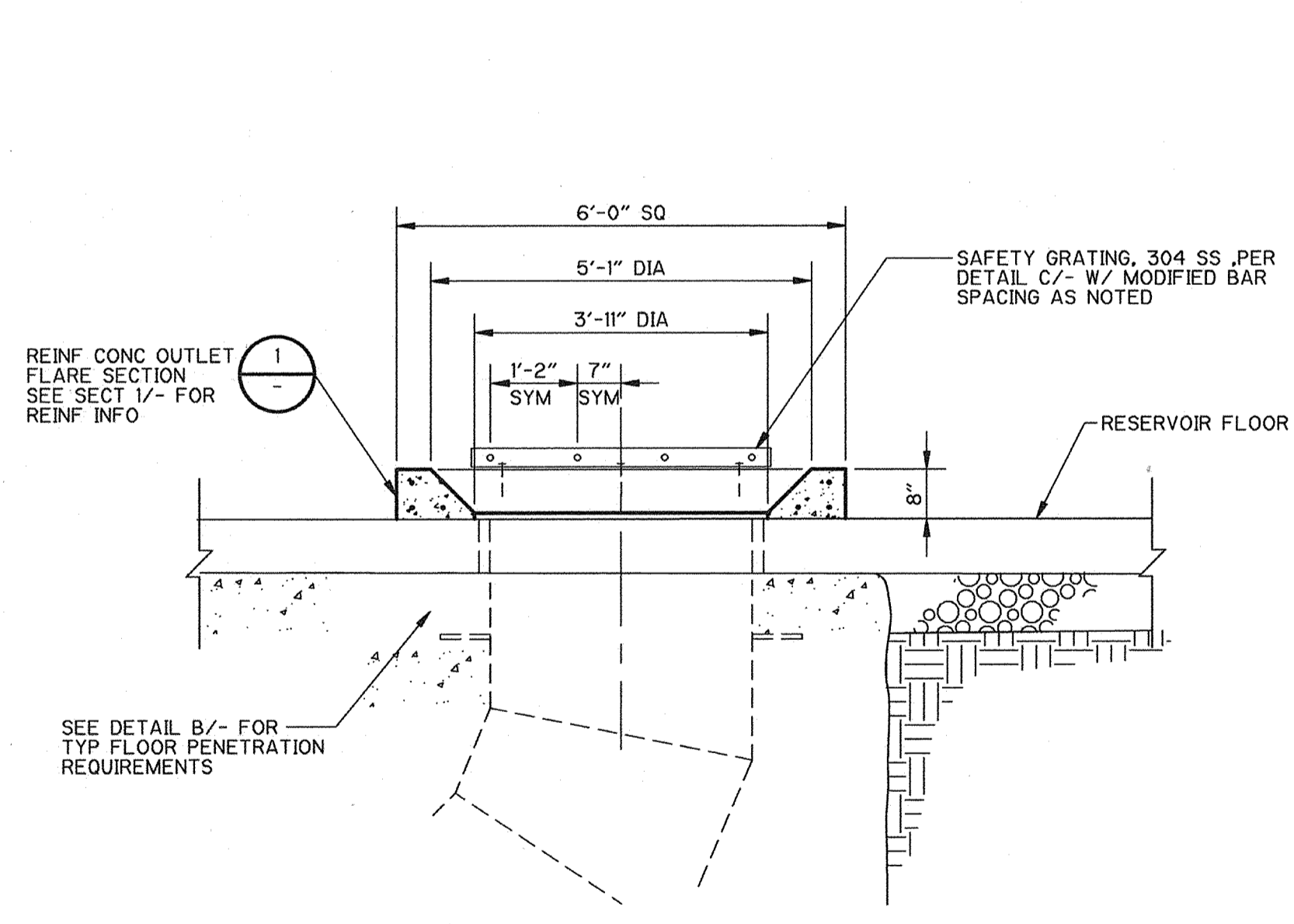
TYPICAL PIPING & ELBOW INSTALLATION UNDER RESERVOIR  
**DETAIL A**  
 1/2" = 1'-0"  
 VARIES



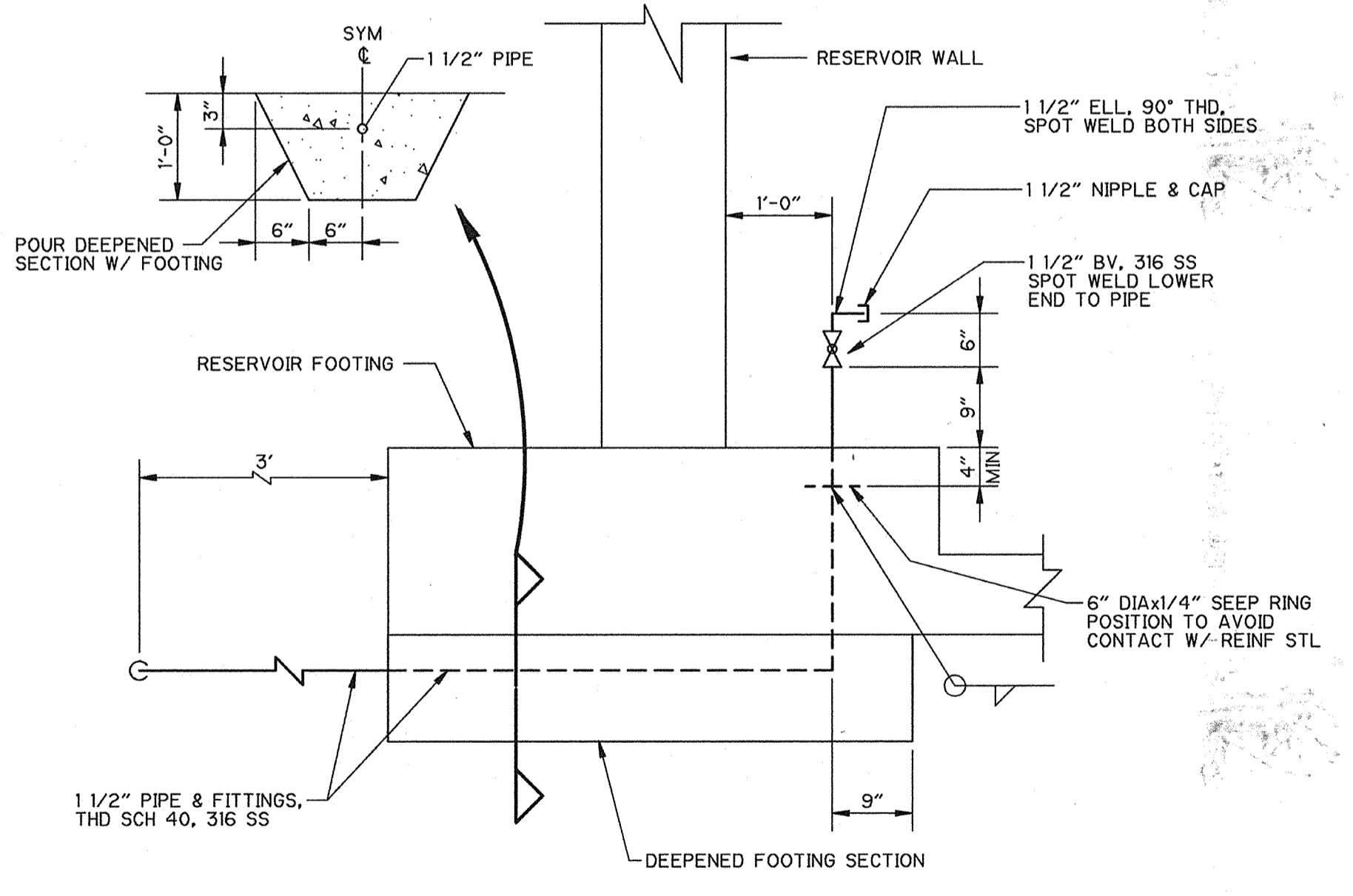
TYPICAL WATERTIGHT PIPE PENETRATION THROUGH RESERVOIR FLOOR  
**DETAIL B**  
 NOT TO SCALE  
 VARIES



NOTE:  
 1. GRIND & CHAMFER SAFETY GRATING EDGES.  
 48" OUTLET - 1 MG RESERVOIR  
**DETAIL C**  
 1/2" = 1'-0"  
 C-10

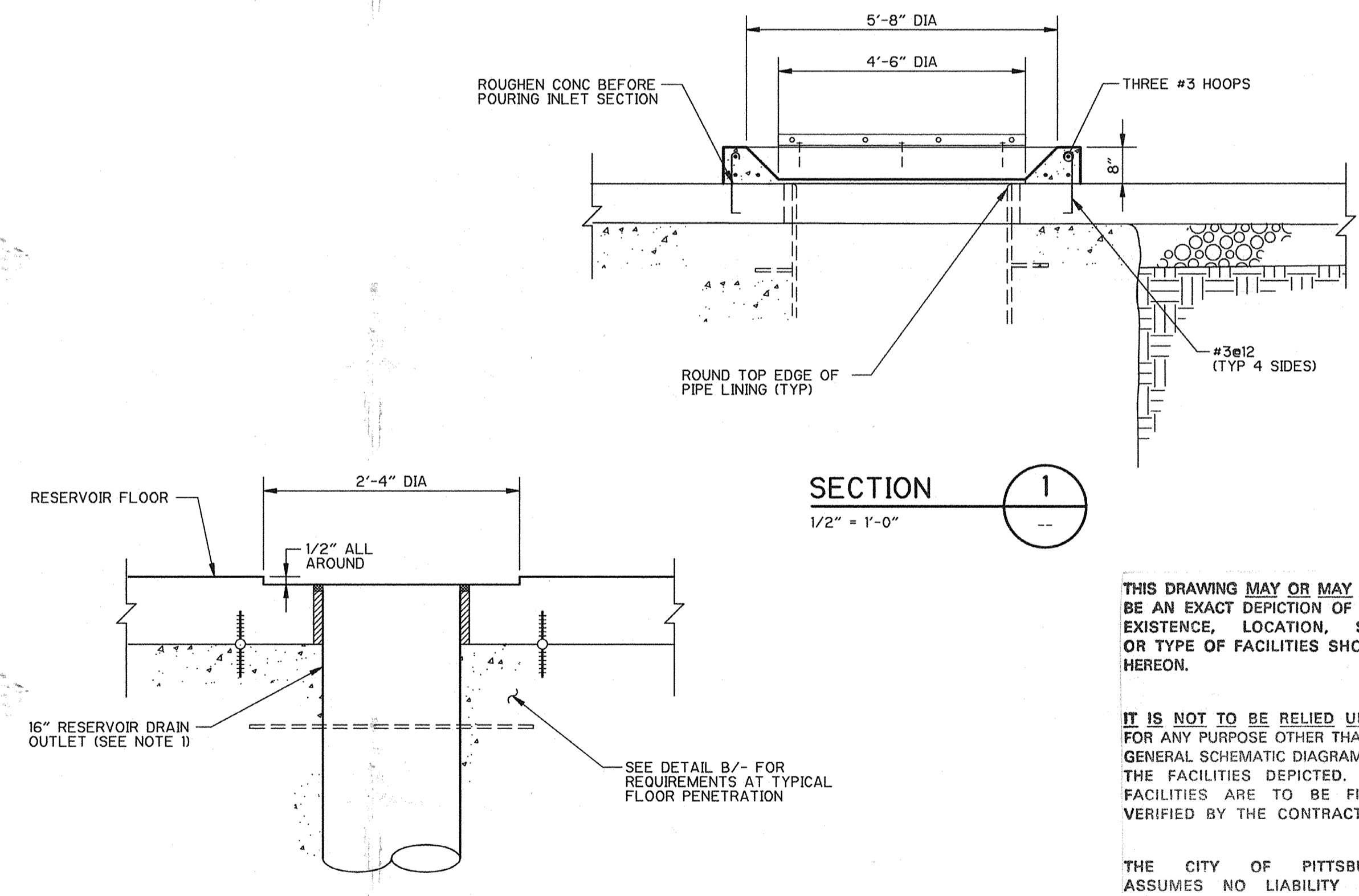


42" OUTLET - 5 MG RESERVOIR  
**DETAIL D**  
 1/2" = 1'-0"  
 C-9



NOTE:  
 1. ALL PIPE & FITTINGS SHOWN SHALL BE 316 SS.

TYPICAL HOSE STATION - RESERVOIR INTERIOR  
**DETAIL E**  
 3/4" = 1'-0"  
 C-10



NOTE:  
 1. NO BARE STEEL PERMITTED ON WATER SIDE, EXTEND GEMENT MORTAR LINING FLUSH WITH TOP OF PIPE, EXTEND 7 MIL EPOXY COATING FROM END OF PIPE TO SEEP RING.

TYPICAL RESERVOIR DRAIN OUTLET  
**DETAIL F**  
 NOT TO SCALE  
 C-10

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 DATE: 1/22/99 BY: [Signature]

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DESIGNED BY:	BPD
DRAWN BY:	EPM
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

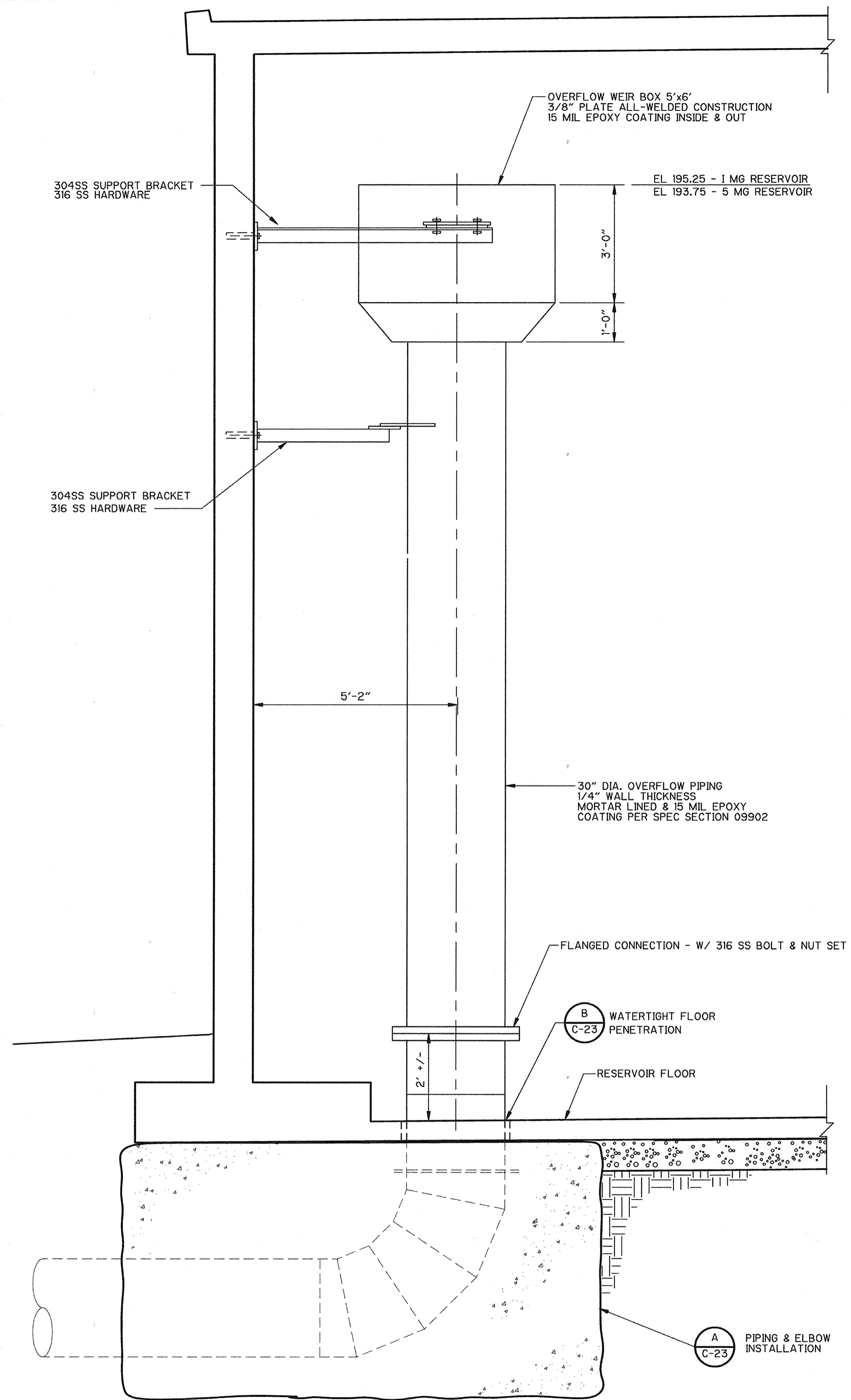
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 DRAWN BY: EPM  
 SHEET CHK'D BY:  
 CROSS CHK'D BY:  
 APPROVED BY: JRT  
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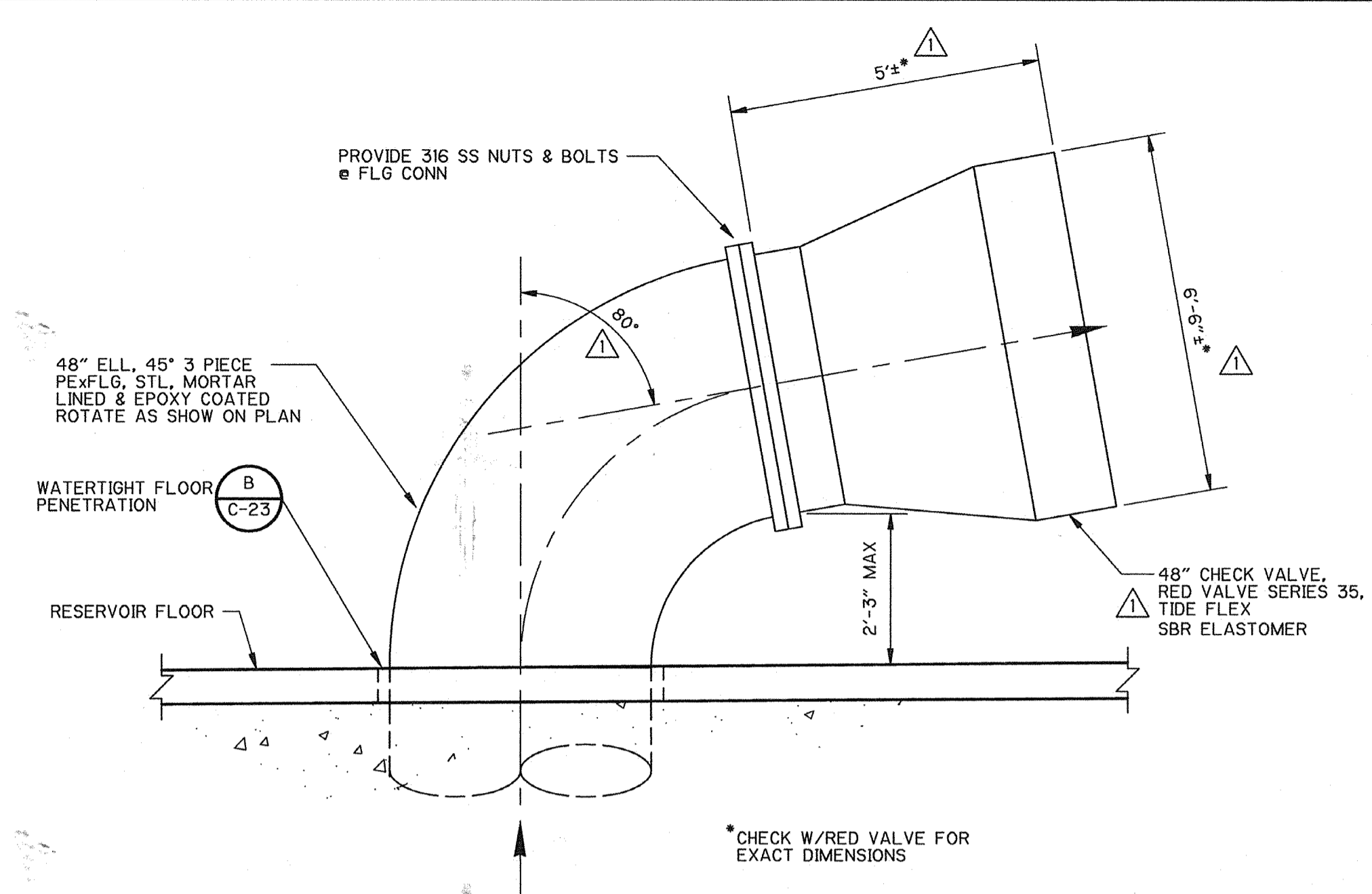
CITY OF PITTSBURG  
 ENGINEERING DIVISION  
 6 MG RESERVOIR  
 REPLACEMENT PROJECT

PROJECT NO. 1358-22097  
 FILE NAME: C0000023  
 SHEET NO. C-23

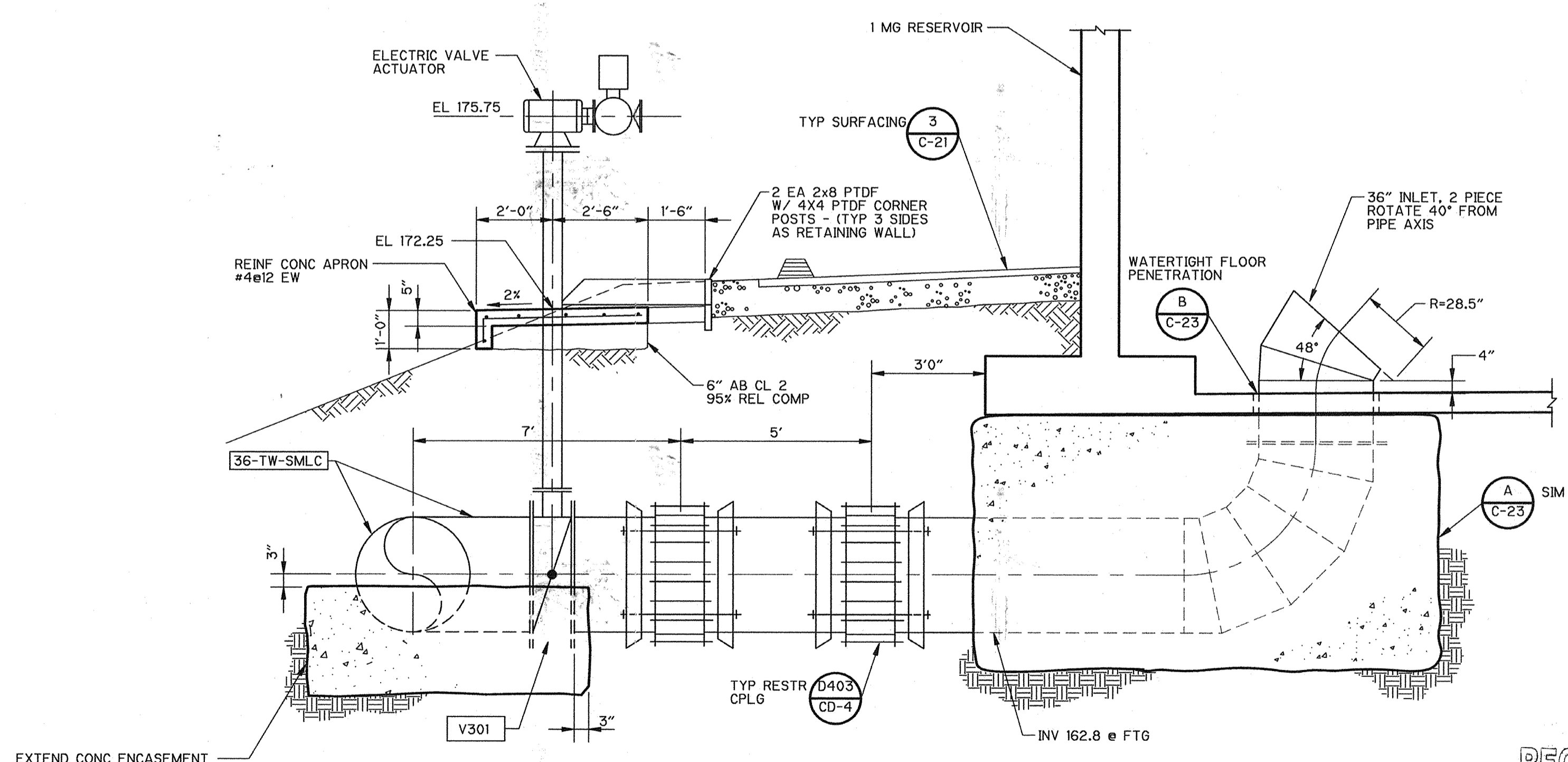


TYPICAL RESERVOIR OVERFLOW PIPING AND SUPPORTS

DETAIL A  
1/2" = 1'-0"



5 MG RESERVOIR - 48" INLET PIPING AND CHECK VALVE V311  
DETAIL B  
NTS



INLET/OUTLET - 1 MG RESERVOIR  
SECTION 2  
3/8" = 1'-0"

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NASSER SHIRAZI, CITY ENGINEER, RCE 42955

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CROSS CHK'D BY:	
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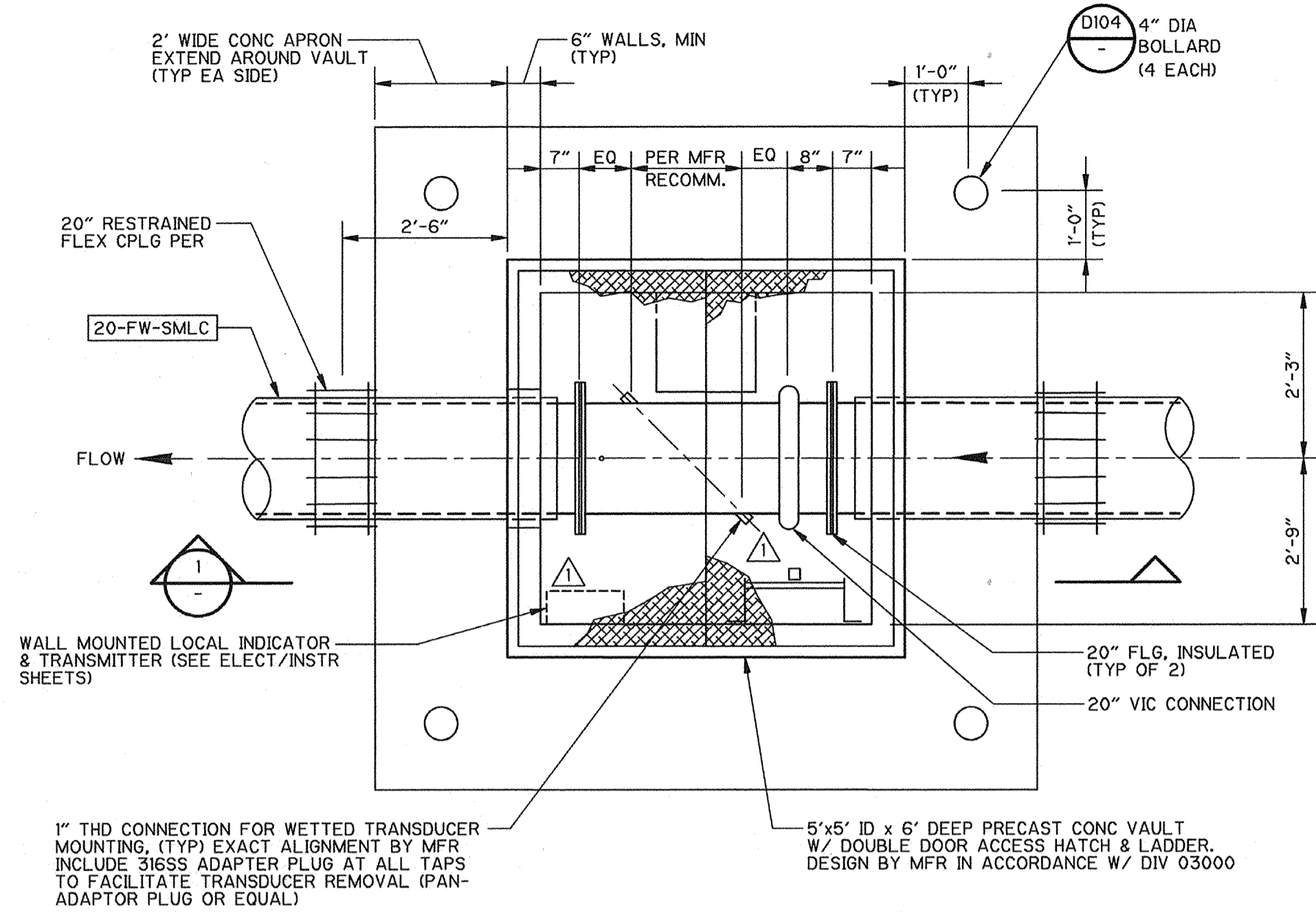
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CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

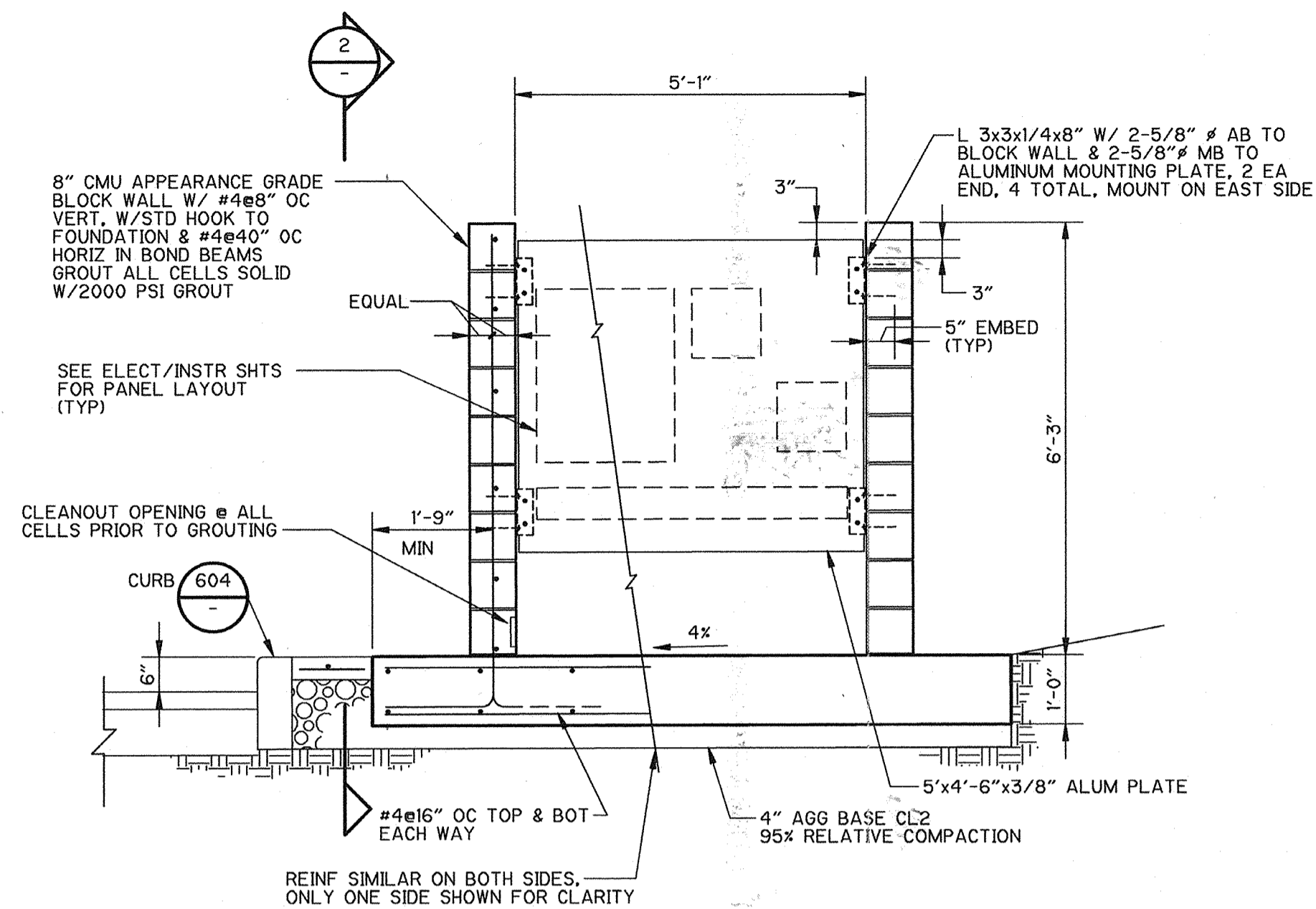
RESERVOIR PIPING  
DETAILS AND SECTIONS

PROJECT NO. 1358-22097  
FILE NAME: C000024  
SHEET NO. C-24



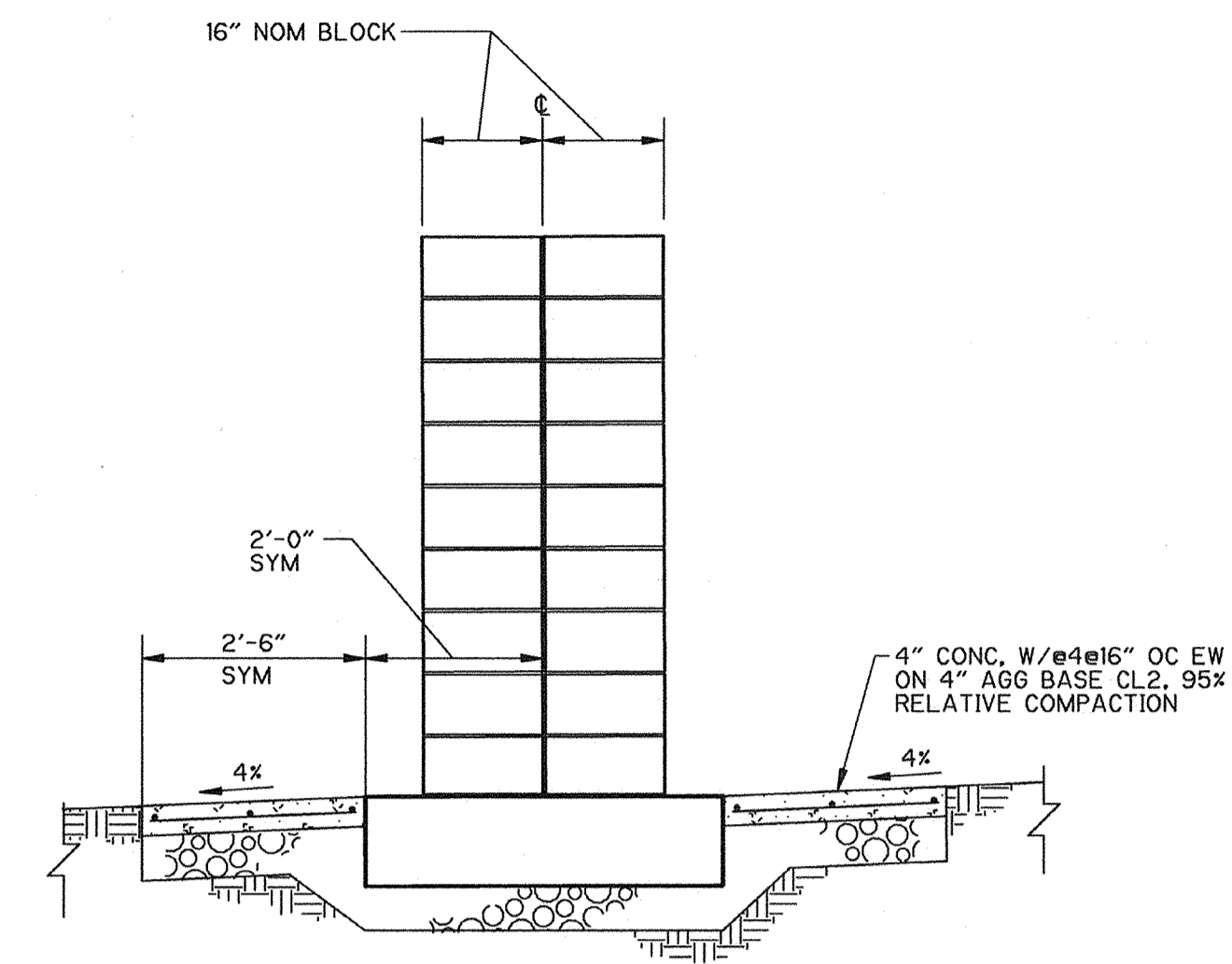
TYPICAL FLOW METERING VAULT PLAN

DETAIL **A**  
1/2" = 1'-0"



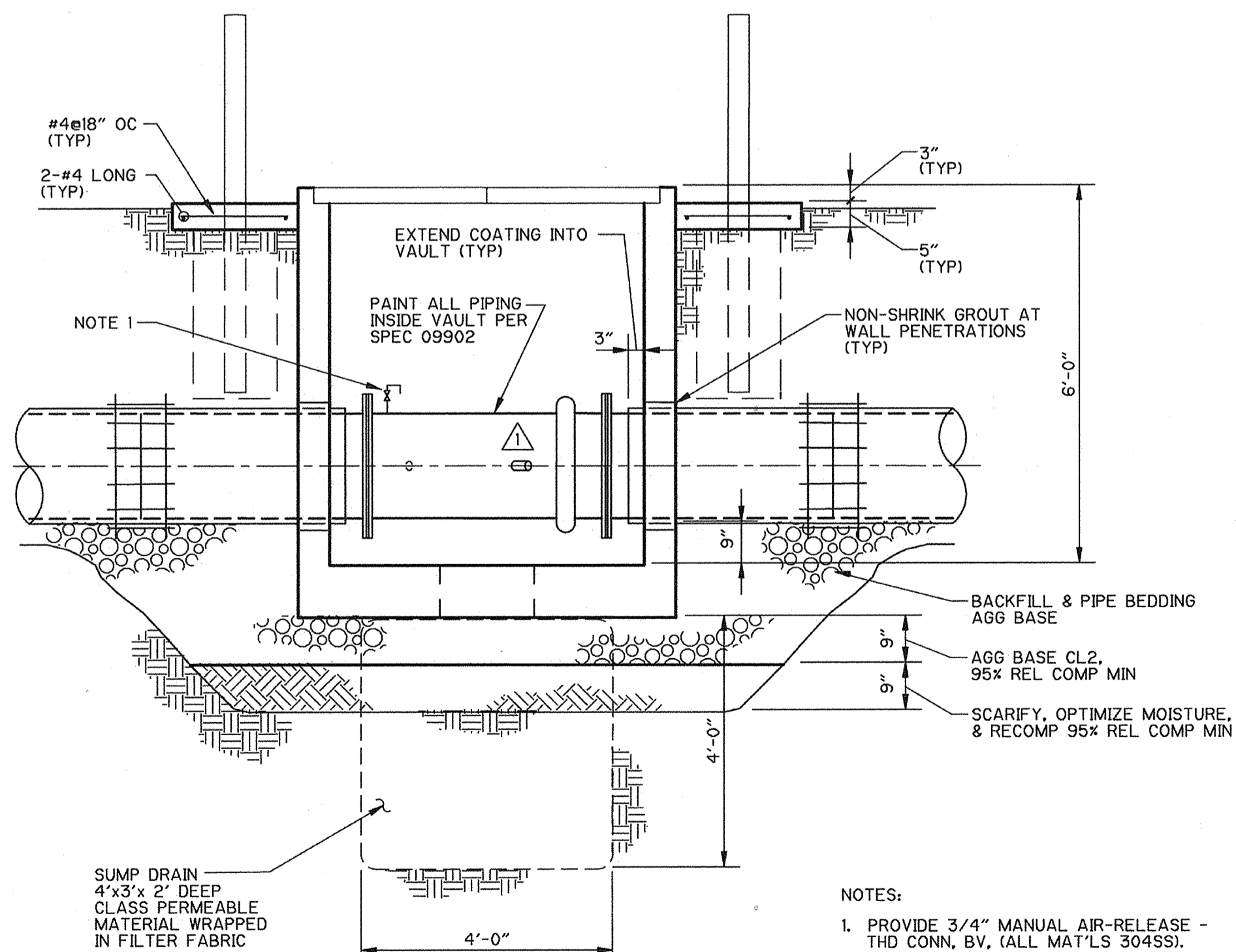
ELECTRICAL/INSTRUMENTATION STATION (LOOKING EAST)

DETAIL **B**  
1/2" = 1'-0"



ELECTRICAL/INSTRUMENTATION STATION (LOOKING SOUTH)

SECTION **2**  
1/2" = 1'-0"



SECTION **1**  
1/2" = 1'-0"

- NOTES:
1. PROVIDE 3/4" MANUAL AIR-RELEASE - THD CONN, BV, (ALL MAT'LS 30455).

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DATE: 11/22/2000 BY: [Signature]

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NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

DESIGNED BY: BPD  
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SHEET CHK'D BY:  
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APPROVED BY: JRT  
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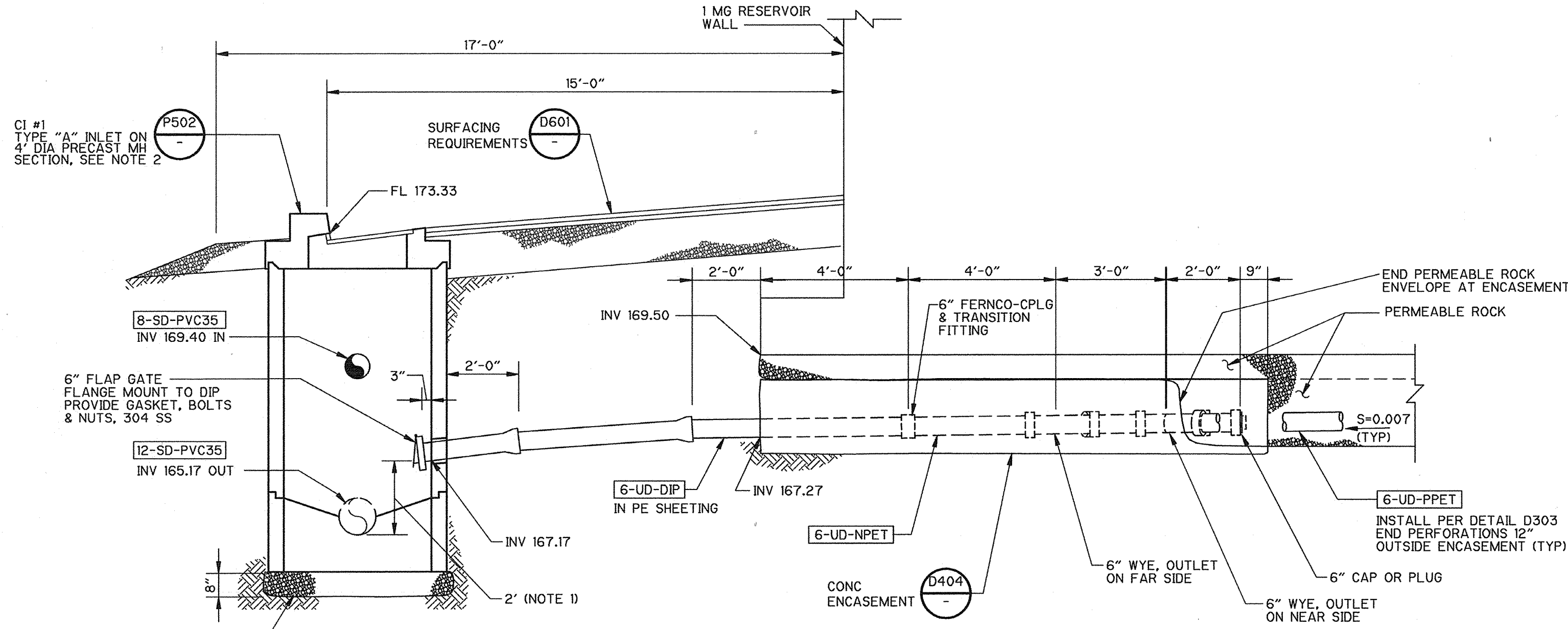
environmental engineers, scientists, planners, & management consultants **CDM**

CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

METERING VAULTS AND ELECTRICAL/  
INSTRUMENTATION STATION  
PLANS AND SECTIONS

PROJECT NO. 1358-22097  
FILE NAME: C0000025

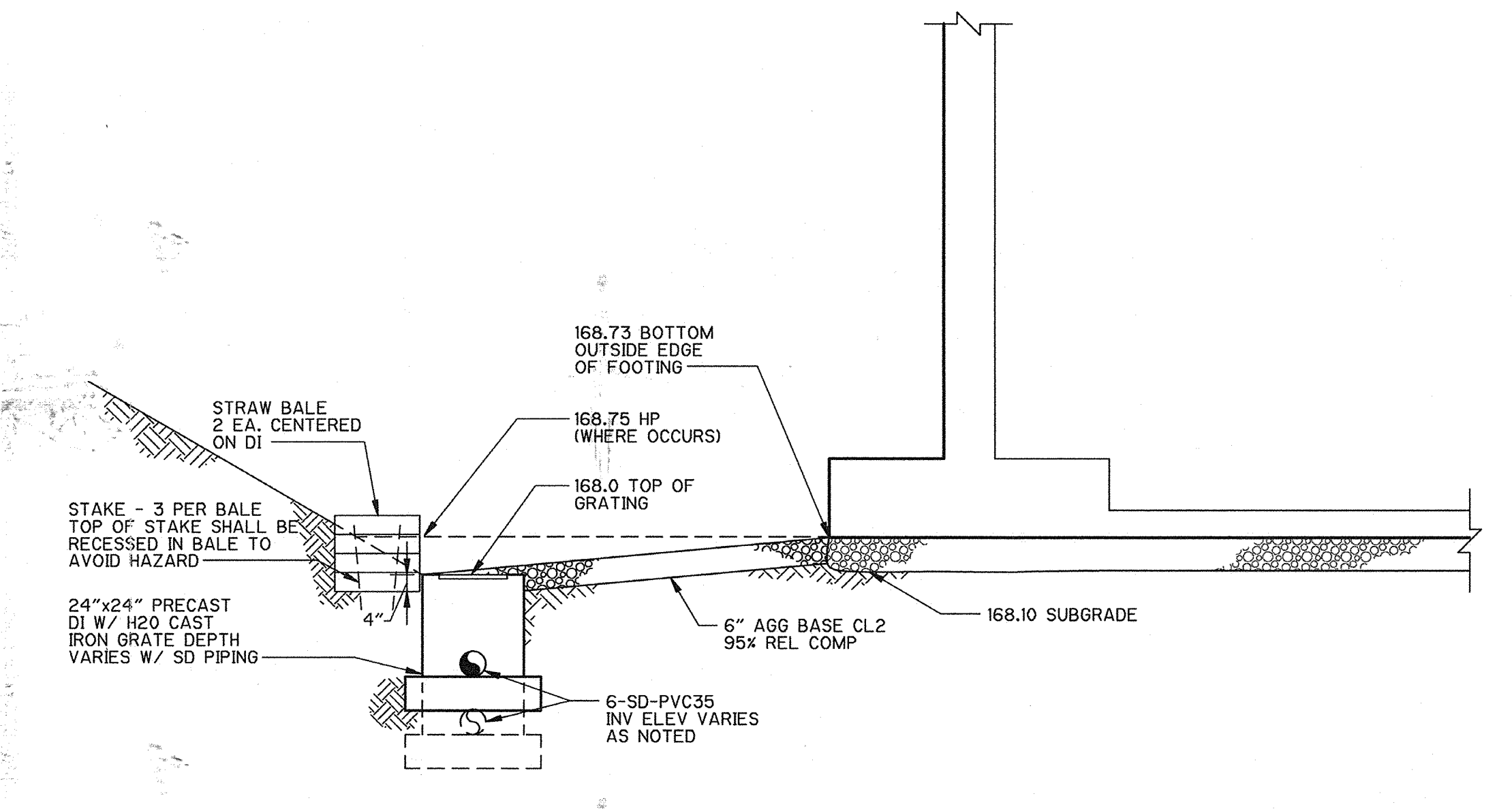
SHEET NO.  
**C-25**



- NOTES:
1. MAINTAIN 2' CLEARANCE TO MINIMIZE OPPORTUNITY FOR CROSS-CONNECTION BETWEEN UNDERDRAIN AND STORM DRAIN PIPING.
  2. CURB INLET REQUIREMENTS ARE PER CITY OF PITTSBURG STANDARD DETAIL SD-502, AND SD-512 REQUIREMENTS FOR INLET GRATING & FRAME. A PRECAST MANHOLE BARREL IS REQUIRED WHEN DEPTH "H" IS GREATER THAN 6 FEET.

CURB INLET #1 AND 1 MG RESERVOIR UNDERDRAIN CONNECTION

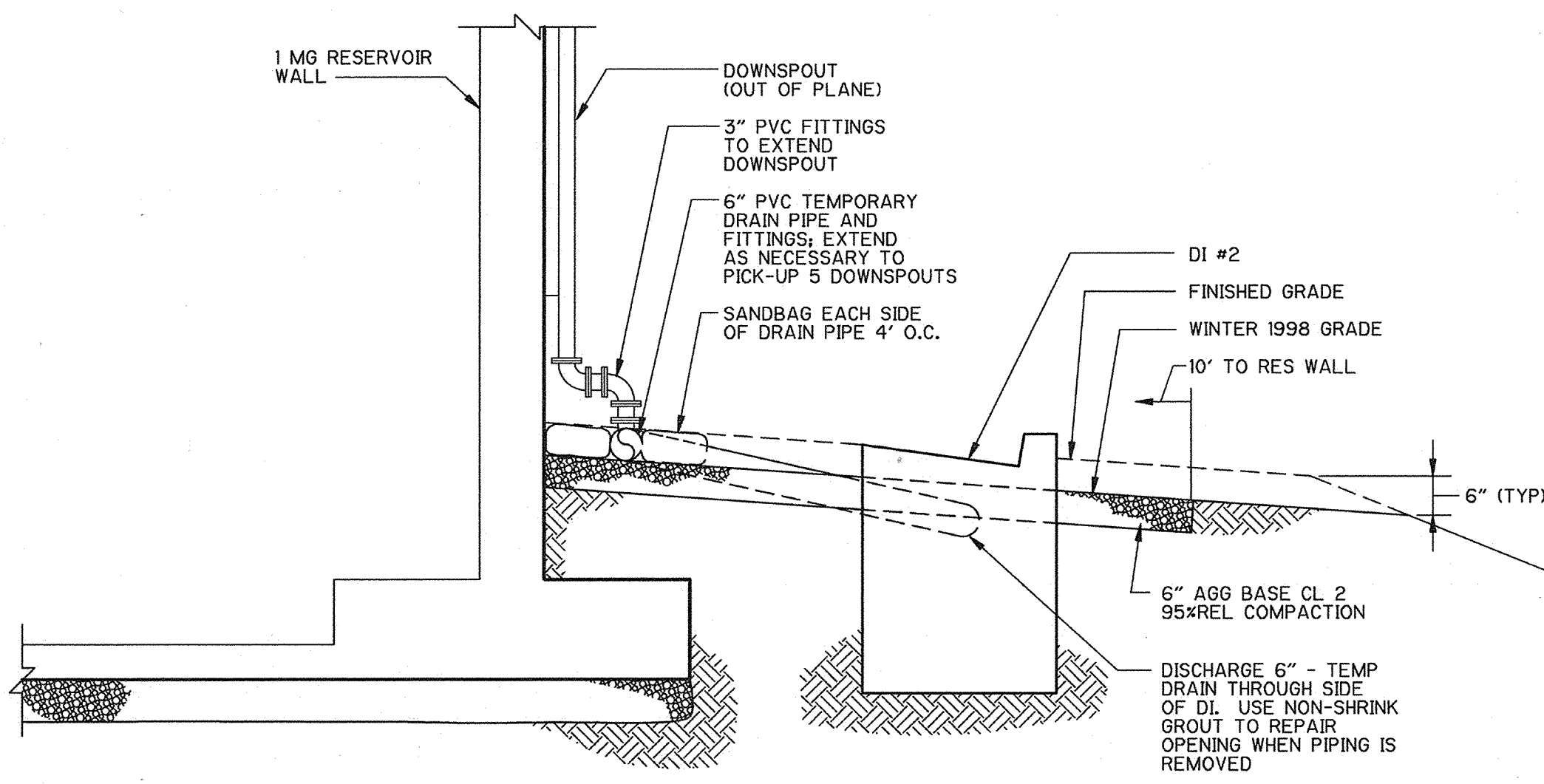
DETAIL A  
3/8" = 1'-0"



- NOTES:
1. TEMPORARY DRAINAGE PROVISIONS SHALL ACCOMMODATE THE WEIGHT OF CONSTRUCTION EQUIPMENT.
  2. REMOVE ALL TEMPORARY DRAINAGE PIPING, INLETS, ETC PRIOR TO RESERVOIR BACKFILL.

TYPICAL SECTION - 5 MG RESERVOIR PERIMETER  
MINIMUM TEMPORARY DRAINAGE PROVISIONS - WINTER 1998

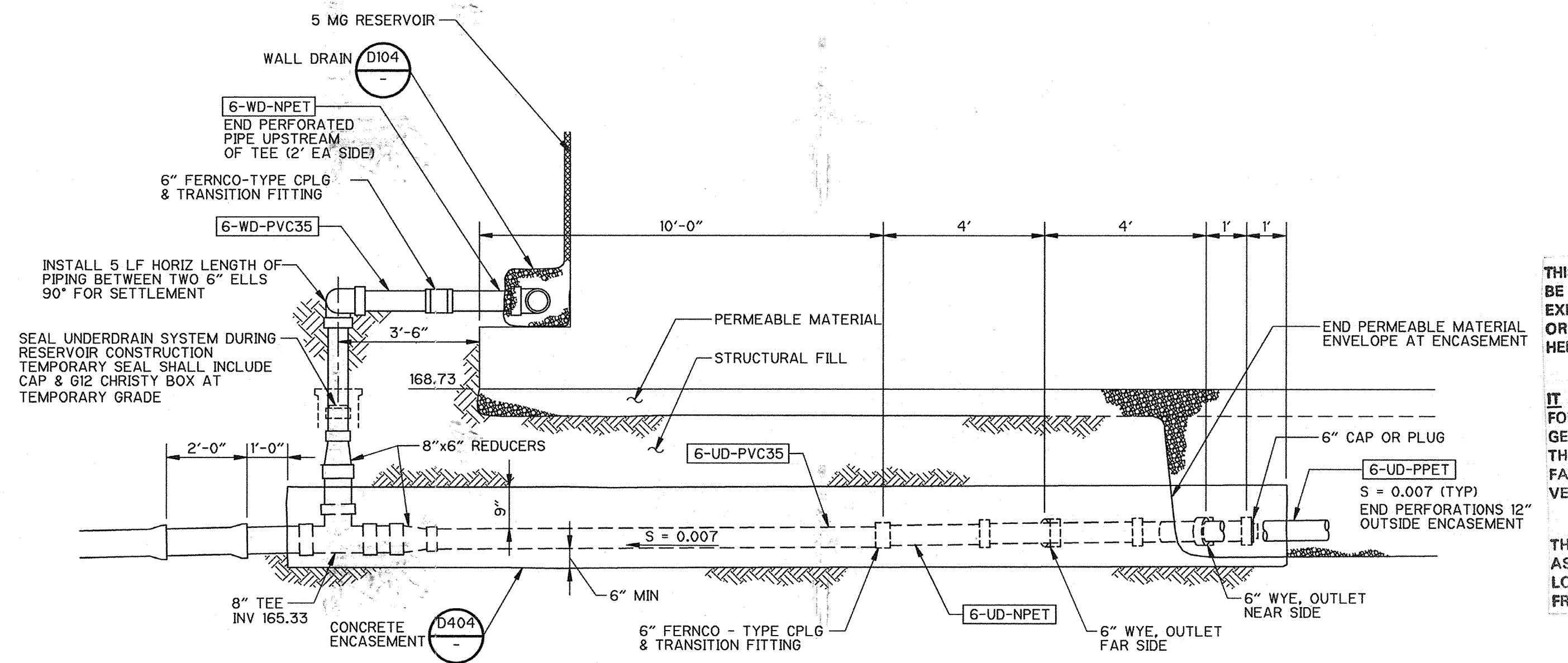
SECTION 2  
3/8" = 1'-0"



- NOTES:
1. REMOVE ALL TEMPORARY DRAINAGE PROVISIONS PRIOR TO FINAL GRADING/PAVING.

TYPICAL SECTION - 1 MG RESERVOIR PERIMETER  
MINIMUM TEMPORARY DRAINAGE PROVISIONS - WINTER 1998

SECTION 8  
3/8" = 1'-0"



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UNDERDRAIN & WALL DRAIN PIPING TRANSITION/  
CONNECTION AT FOOTING - 5 MG RESERVOIR

DETAIL B  
3/8" = 1'-0"

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DATE: 1/22/98 BY: [Signature]

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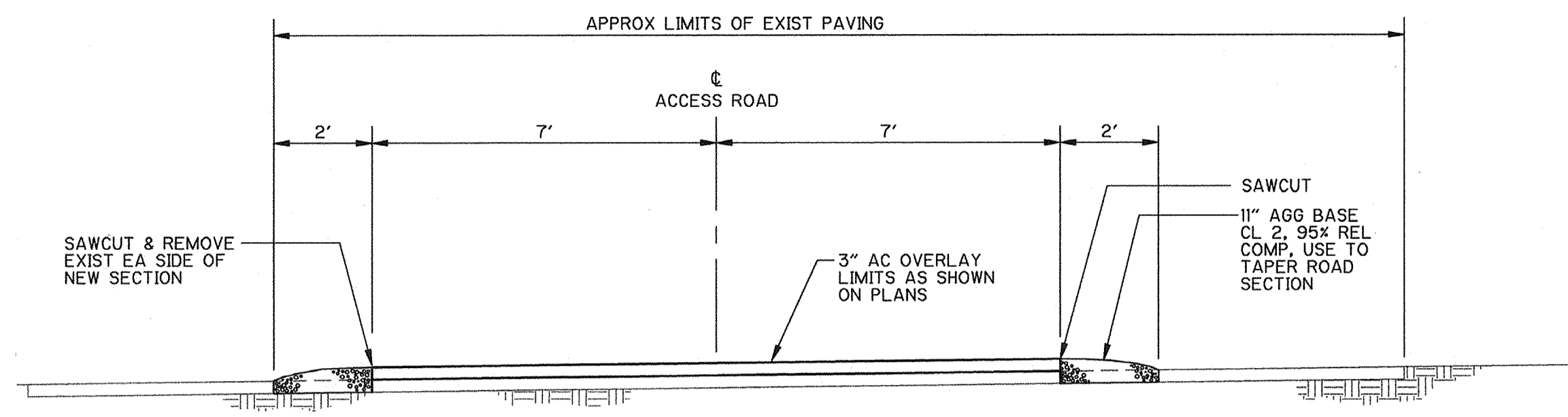
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CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

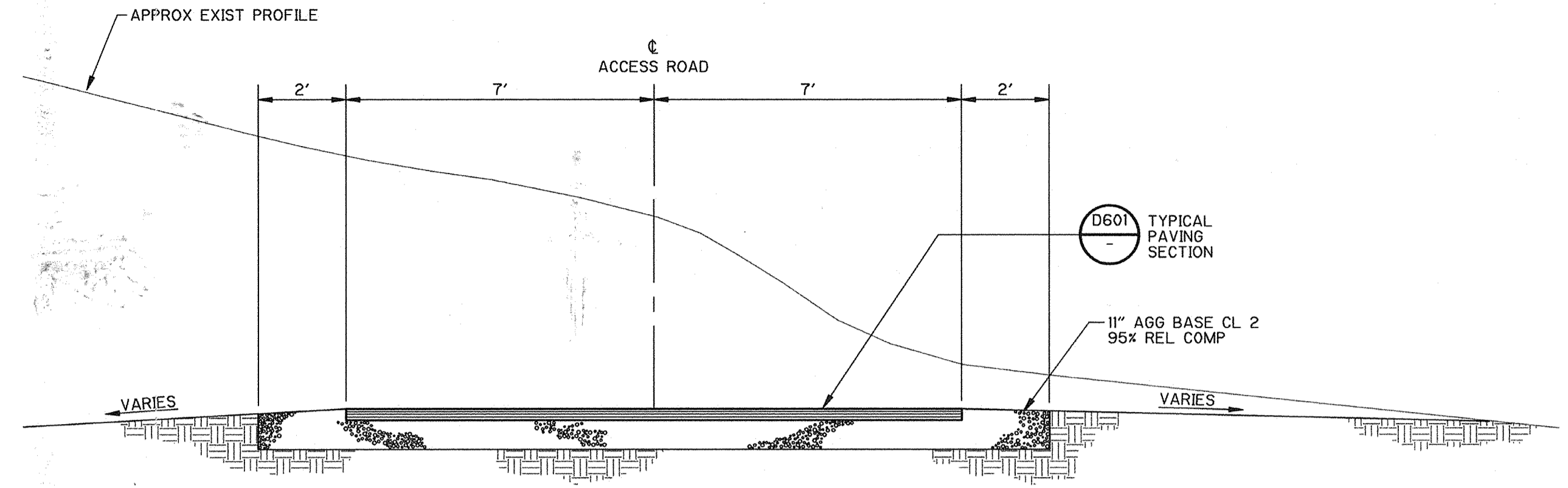
UNDERDRAIN AND INTERIM DRAINAGE  
DETAILS AND SECTIONS

PROJECT NO. 1358-22097  
FILE NAME: C0000026  
SHEET NO. C-26



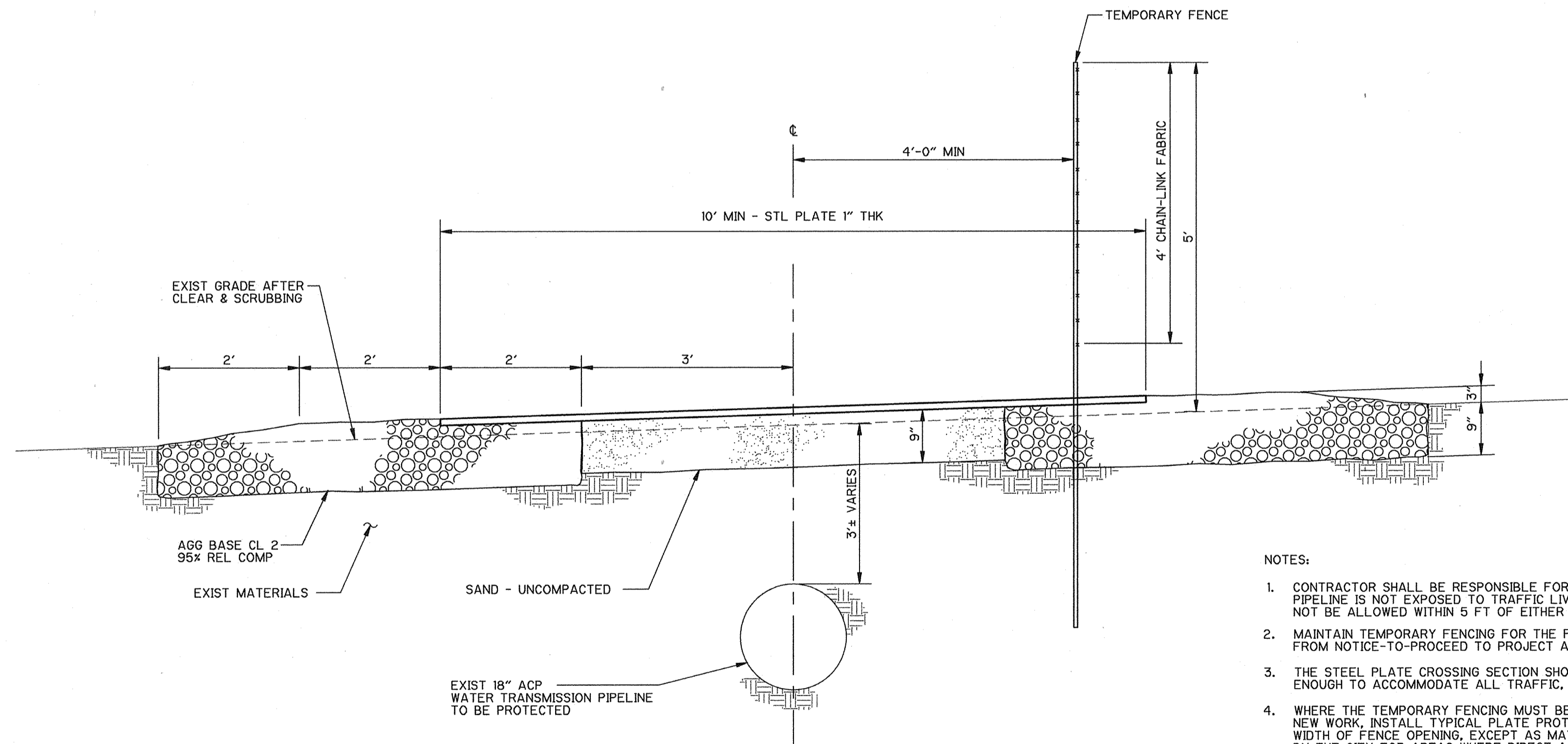
TYPICAL ACCESS ROAD SECTION  
W/ 3" AC OVERLAY

SECTION 1  
3/8" = 1'-0"



TYPICAL ACCESS ROAD SECTION  
STA 1+58 TO STA 2+42

SECTION 2  
3/8" = 1'-0"



TYPICAL PLATE PROTECTION AT PIPELINE CROSSING

SECTION 3  
3/4" = 1'-0"

NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE PIPELINE IS NOT EXPOSED TO TRAFFIC LIVE LOADS. VEHICLES SHALL NOT BE ALLOWED WITHIN 5 FT OF EITHER SIDE OF THE PIPELINE.
- MAINTAIN TEMPORARY FENCING FOR THE FULL CONTRACT PERIOD, FROM NOTICE-TO-PROCEED TO PROJECT ACCEPTANCE.
- THE STEEL PLATE CROSSING SECTION SHOWN SHALL BE WIDE ENOUGH TO ACCOMMODATE ALL TRAFFIC, 12 FT MIN.
- WHERE THE TEMPORARY FENCING MUST BE REMOVED TO INSTALL NEW WORK, INSTALL TYPICAL PLATE PROTECTION OVER THE FULL WIDTH OF FENCE OPENING, EXCEPT AS MAY BE APPROVED IN WRITING BY THE CITY FOR AREAS WHERE DIRECT ACCESS TO PIPELINE IS NECESSARY TO COMPLETE THE WORK.
- MOUNT FOUR SIGNS ON THE NORTH SIDE OF THE FENCE, WITH LETTERING VISIBLE FROM 50 FT AS FOLLOWS: "TO PROTECT BURIED PIPELINE IN THIS AREA, NO PARKING OR TRAFFIC ALLOWED WITHIN 9 FT OF THIS FENCE." SIGNAGE SHALL BE WEATHER-PROOF.
- AT PROJECT COMPLETION CONTRACTOR SHALL REMOVE SAND AND BASE MATERIALS AND RESTORE AREA TO PRECONSTRUCTION GRADES WITH NATIVE/EXISTING MATERIALS.
- TYPICAL SECTION APPLIES TO OTHER SITE PIPING AS NOTED ELSEWHERE.

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DATE: 4/22/00 BY: [Signature]

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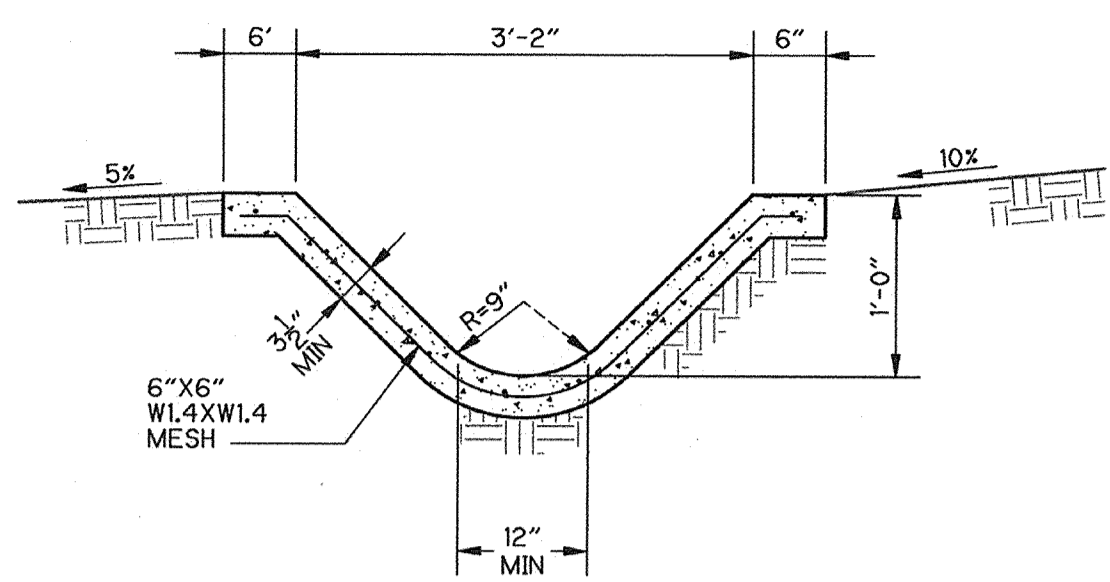
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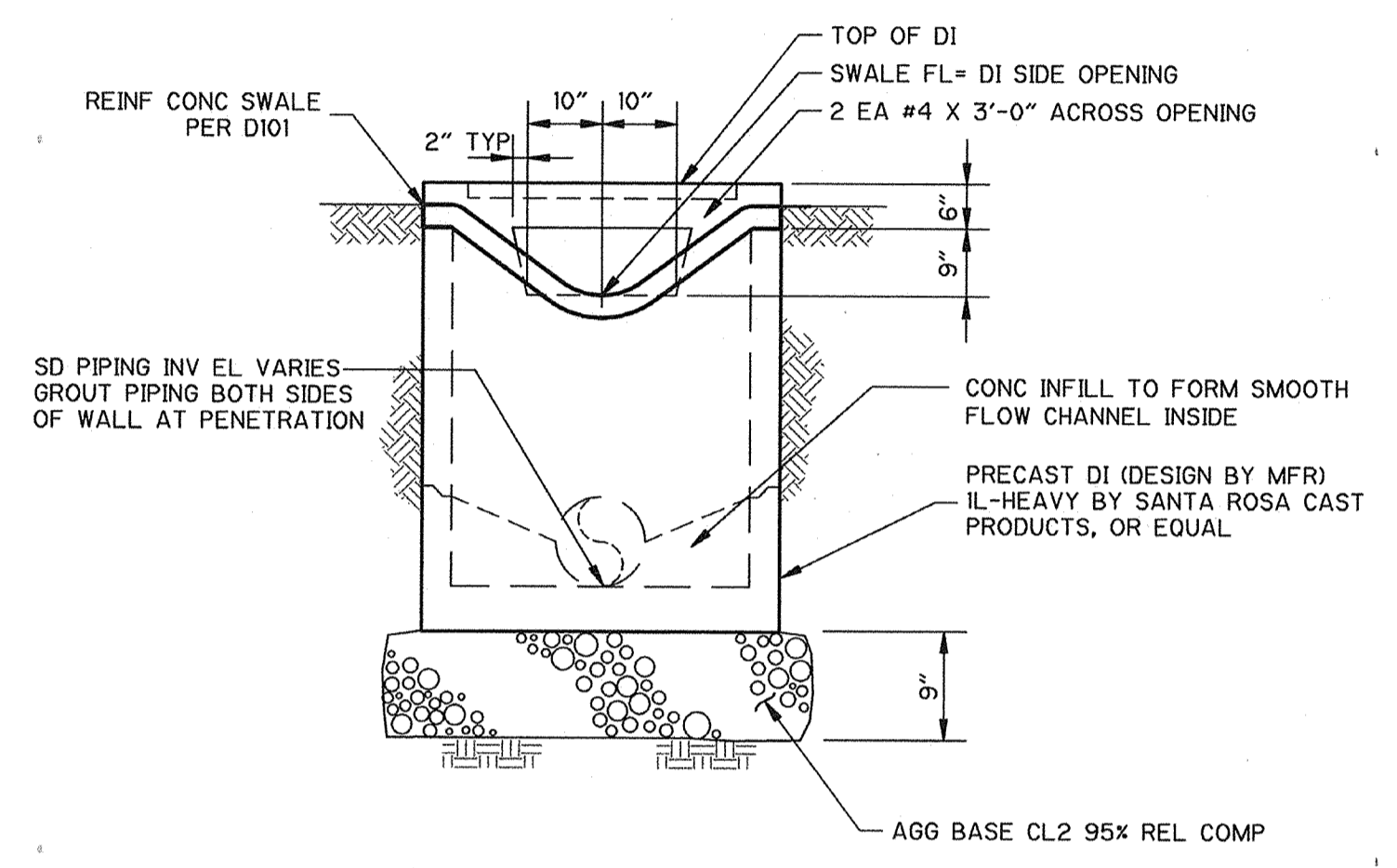
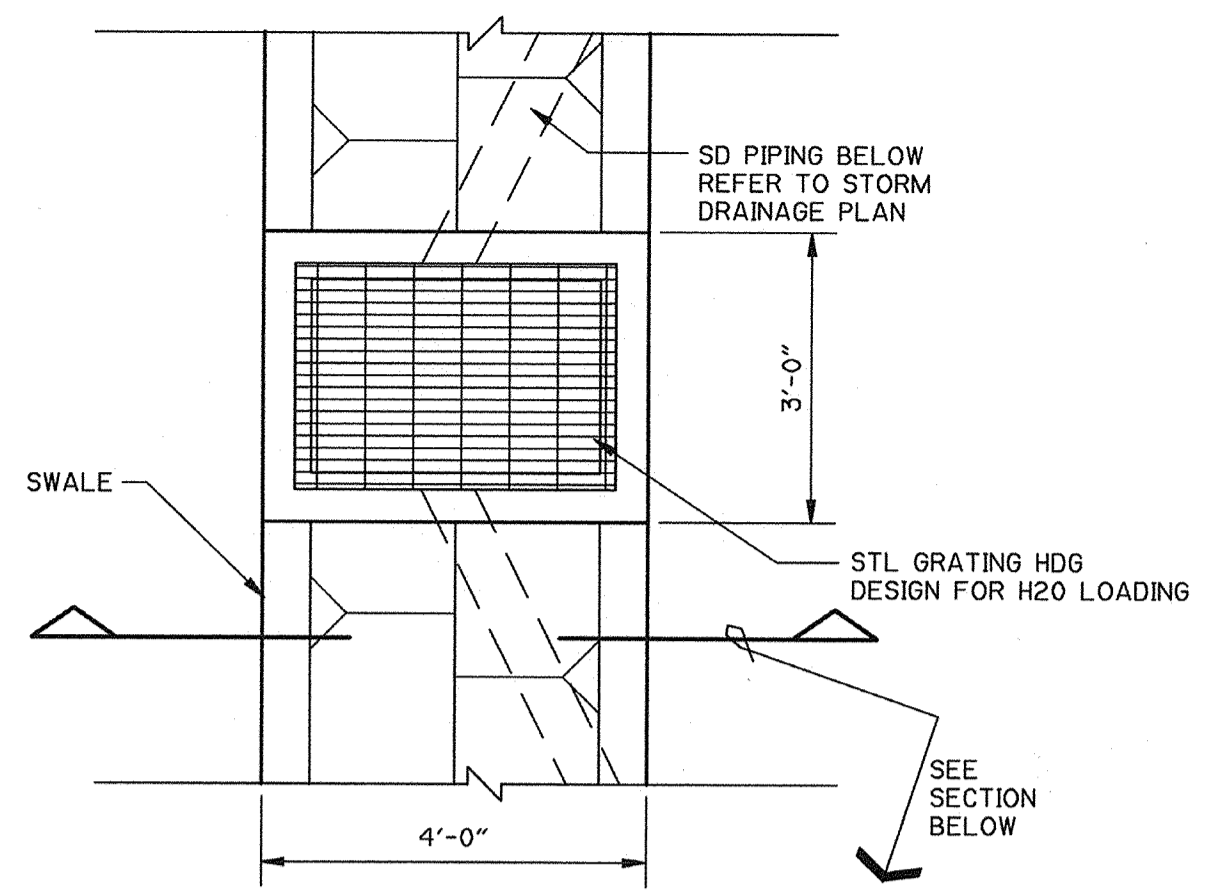
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

TYPICAL ACCESS ROAD SECTIONS  
AND PIPELINE STEEL PLATE PROTECTION

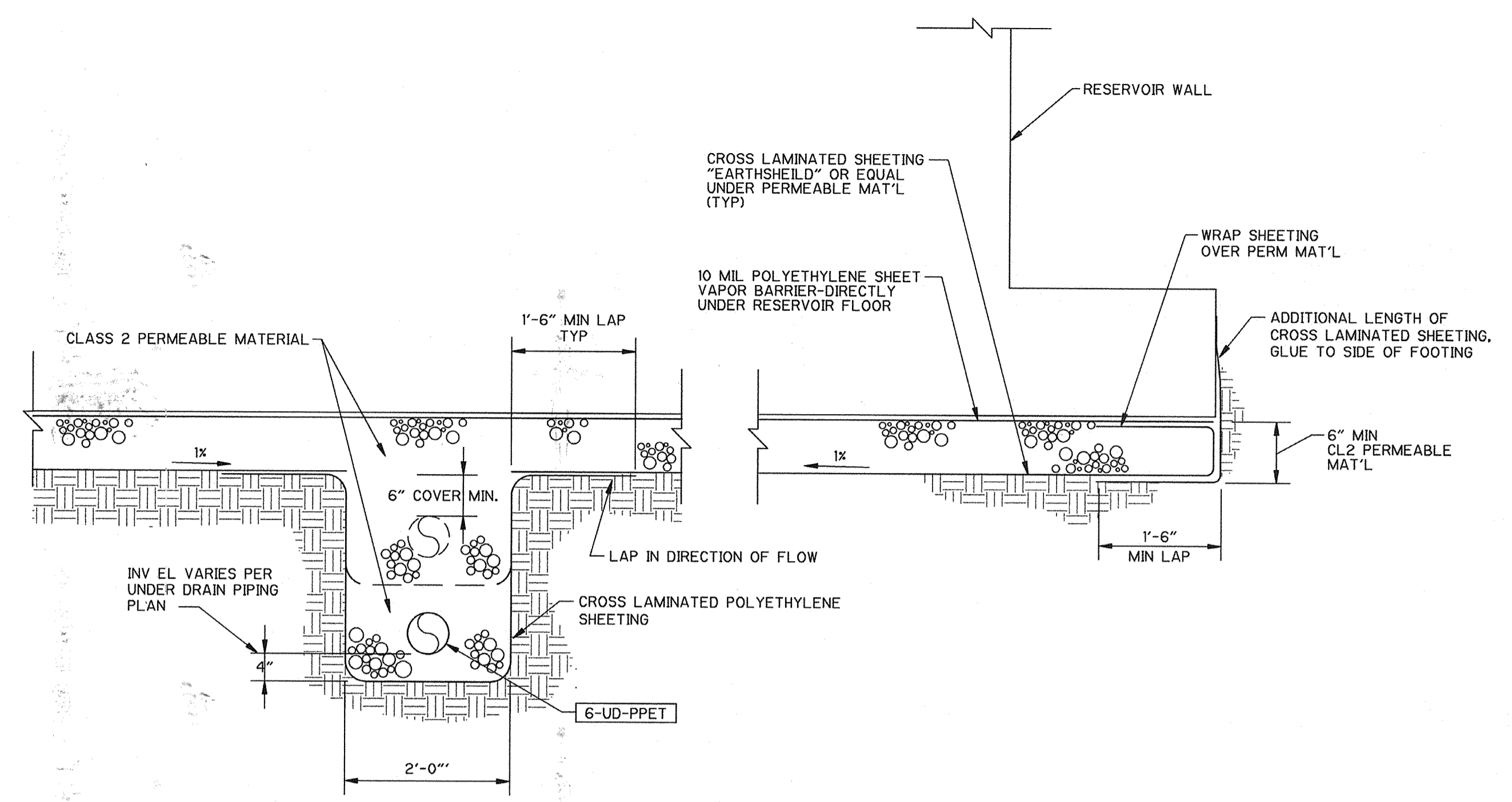
PROJECT NO. 1358-22097  
FILE NAME: C0000027  
SHEET NO. C-27



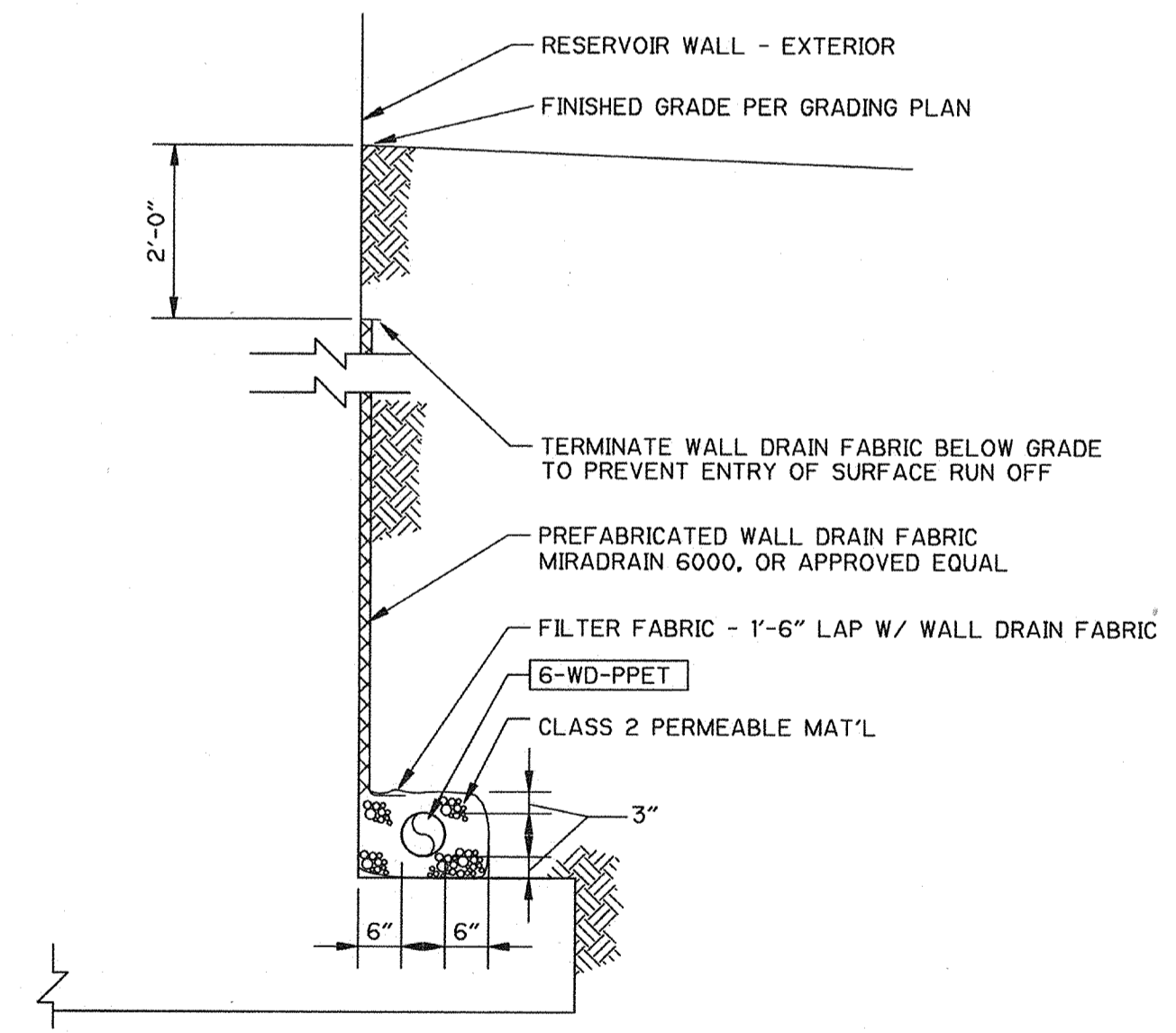
TYPICAL REINFORCED CONCRETE SWALE  
**DETAIL D101**  
 3/4" = 1'-0"



TYPICAL DROP INLET  
**DETAIL D102**  
 1/2" = 1'-0"



TYPICAL SECTION - UNDERDRAIN COLLECTION SYSTEM  
**DETAIL D103**  
 3/4" = 1'-0"



NOTE:  
 WALL DRAIN SYSTEM REQ'D FOR 5MG RESERVOIR ONLY  
 TYPICAL WALL DRAINAGE SYSTEM  
**DETAIL D104**  
 NOT TO SCALE

CITY OF PITTSBURG STANDARD AND MISCELLANEOUS DETAILS		
DRAWING REFERENCE	CITY OF PITTSBURG REFERENCE	TITLE AND SPECIAL REQUIREMENTS
P502	SD-502	TYPE "A" INLET CURB INLET WITH APRON DIMENSION "A" EQUAL TO 2'-FT; INCLUDE ALSO GRATING AND FRAME PER SD-512
	SD-512	INLET FRAMES, GRATE, AND COVER PLATE TO BE INCLUDED WITH STANDARD DETAIL SD-502
P412	W-412	1" AIR AND VACUUM RELEASE VALVE USE THIS DETAIL FOR 2" COMBINATION AIR RELEASE VALVE. USE 304SS SCH 40 THD PIPE AND FITTINGS IN PLACE OF COPPER OR PLASTIC TUBING. EXTEND CAV OUTLET TO GOOSENECK MOUNTED 12" ABOVE FINISHED GRADE. (REFER TO MODIFICATIONS SHOWN IN APPENDIX B.)
M100	----	SAMPLE STATION THIS IS A MISCELLANEOUS DETAIL, AND NOT A CITY STANDARD. WATER SAMPLE STATION SHALL INCLUDE TAP, PIPING AND FITTINGS COMPLETE.

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2/00	EPM	BPD		RECORD DRAWINGS

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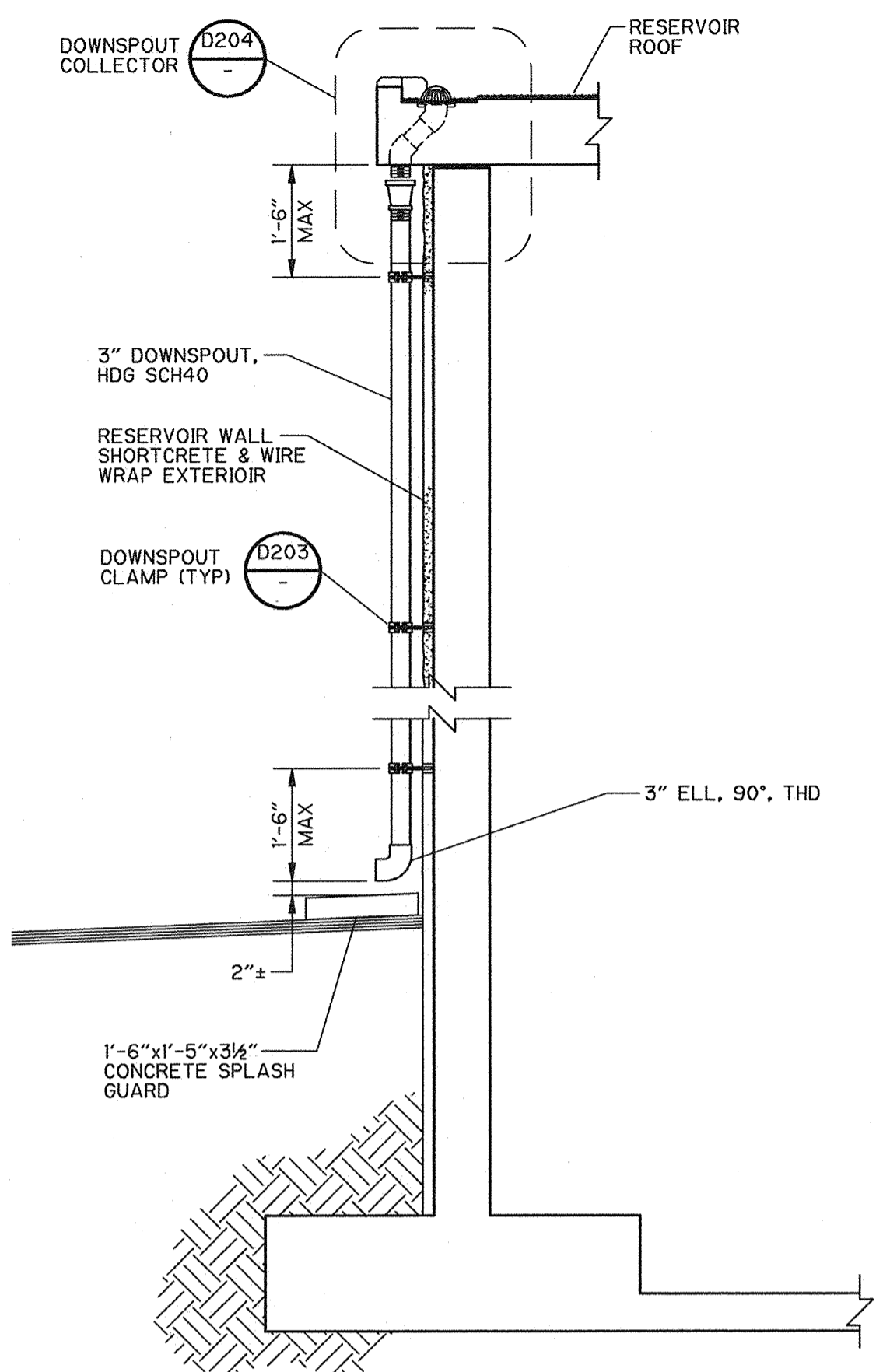
CITY OF PITTSBURG  
 ENGINEERING DIVISION  
 6 MG RESERVOIR  
 REPLACEMENT PROJECT

STANDARD DETAILS

PROJECT NO. 1358-22097  
 FILE NAME: COCD0001

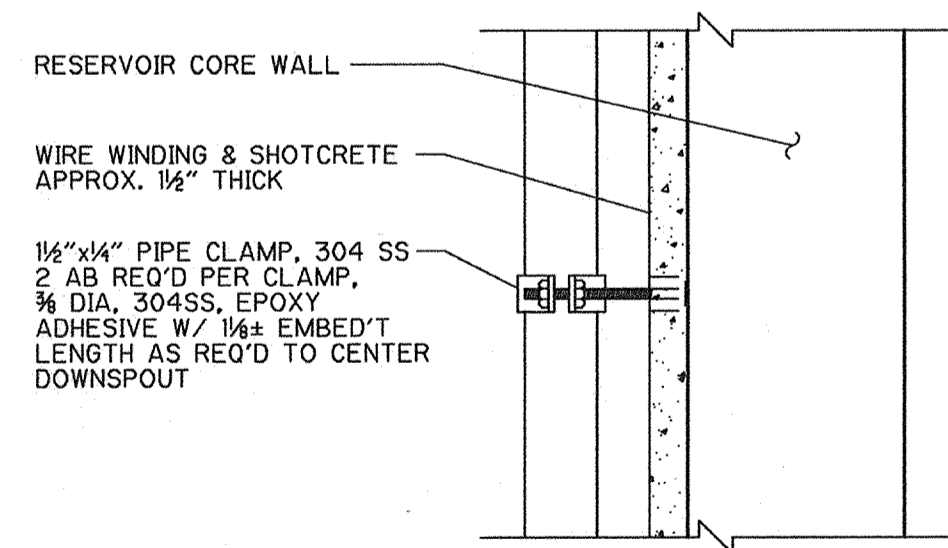
SHEET NO. CD-1





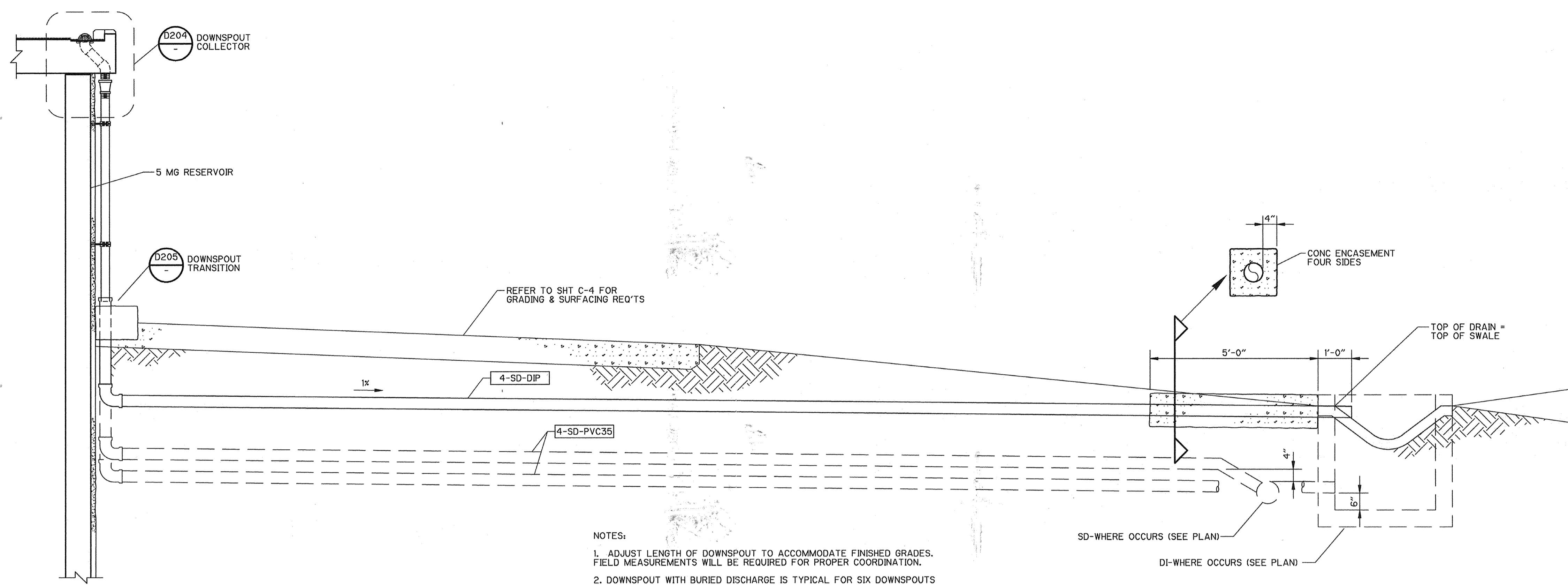
NOTES:  
 1. ADJUST LENGTH OF DOWNSPOUT TO ACCOMMODATE FINISHED GRADES. FIELD MEASUREMENTS WILL BE REQUIRED FOR PROPER COORDINATION.  
 2. DOWNSPOUT WITH SURFACE DISCHARGE IS TYPICAL FOR FOUR DOWNSPOUTS AT 1 MG RESERVOIR AND TWO DOWNSPOUTS FOR 5 MG RESERVOIR.

TYPICAL DOWNSPOUT W/ SURFACE DISCHARGE  
 DETAIL **D201**  
 1/2" = 1'-0"



NOTES:  
 1. TO AVOID DAMAGE TO PRESTRESSING WIRE, ANCHOR BOLT INSTALLATION SHALL BE AS REQUIRED BY PRESTRESSING SUBCONTRACTOR.  
 2. SPACE PIPE CLAMPS AS NOTED, MAXIMUM 5' O.C. MINIMUM TWO CLAMPS PER DOWNSPOUT.

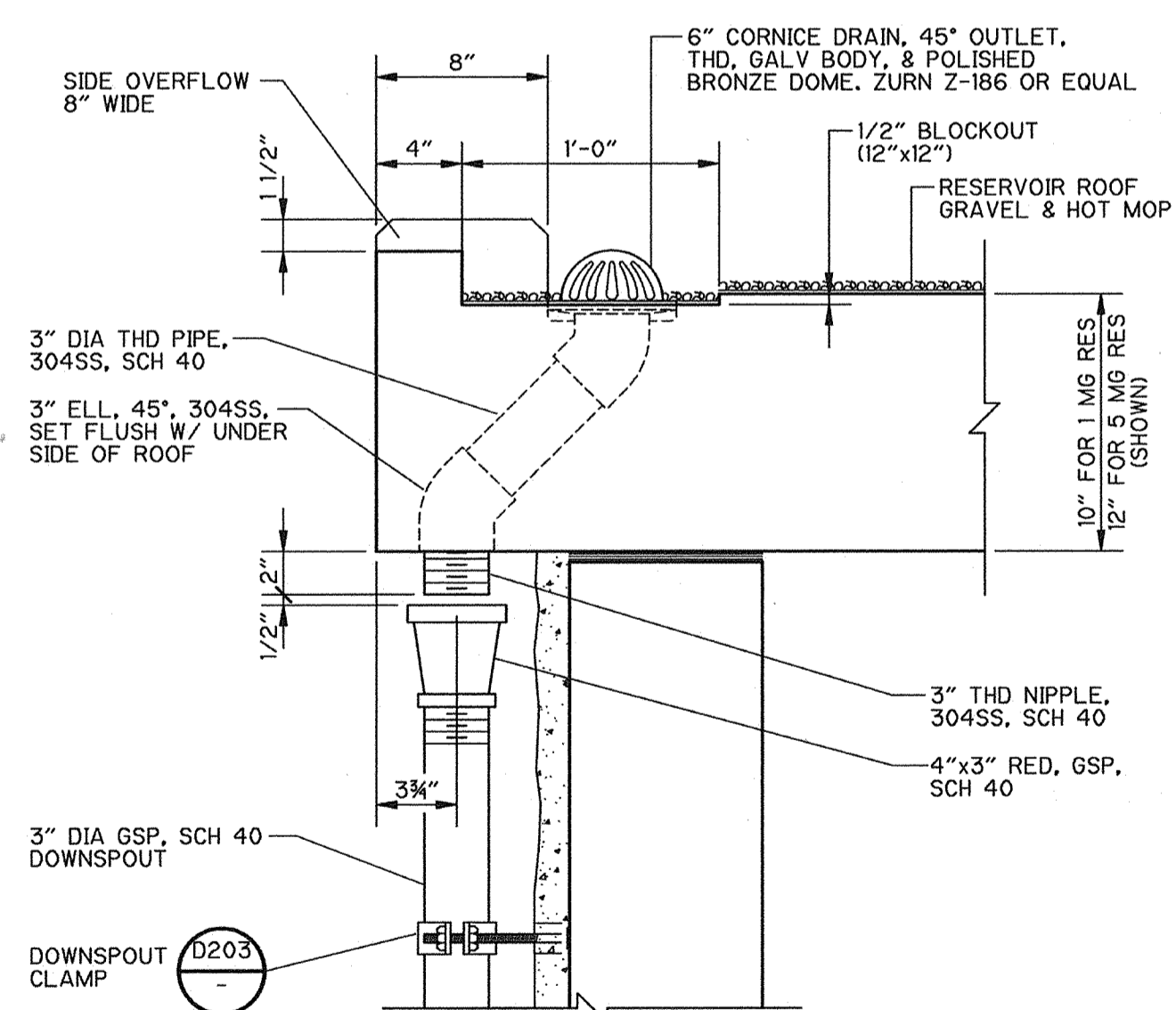
DOWNSPOUT CLAMP  
 DETAIL **D203**  
 1 1/2" = 1'-0"



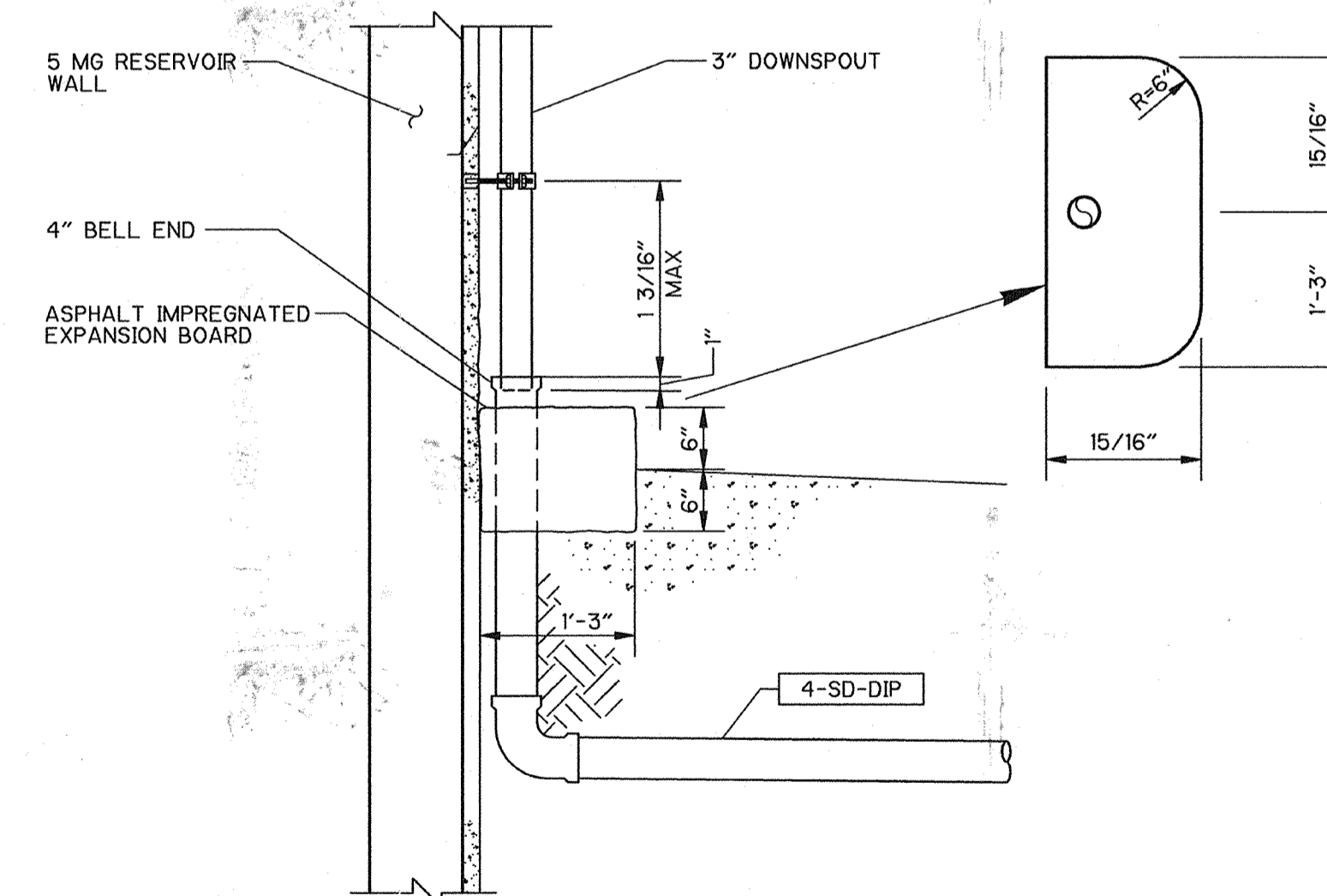
NOTES:  
 1. ADJUST LENGTH OF DOWNSPOUT TO ACCOMMODATE FINISHED GRADES. FIELD MEASUREMENTS WILL BE REQUIRED FOR PROPER COORDINATION.  
 2. DOWNSPOUT WITH BURIED DISCHARGE IS TYPICAL FOR SIX DOWNSPOUTS AT 5 MG RESERVOIR.

TYPICAL DOWNSPOUT W/ BURIED DISCHARGE  
 ALTERNATE PROFILES

DETAIL **D202**  
 1/2" = 1'-0"



DOWNSPOUT COLLECTOR  
 DETAIL **D204**  
 1 1/2" = 1'-0"



DOWNSPOUT TRANSITION FOR BURIED DISCHARGE  
 DETAIL **D205**  
 3/4" = 1'-0"

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RECORD DRAWING  
 DATE: 11/21/2000 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
 NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY:	BPD
DRAWN BY:	TVN, RAC
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

DESIGNED BY: BPD  
 DRAWN BY: TVN, RAC  
 SHEET CHK'D BY:  
 CROSS CHK'D BY:  
 APPROVED BY: JRT  
 DATE: MAY 1998

CAMP DRESSER & MCKEE INC.  
 One Walnut Creek Center  
 100 Pringle Avenue, Suite 300  
 Walnut Creek, California 94596  
 (510) 933-2900

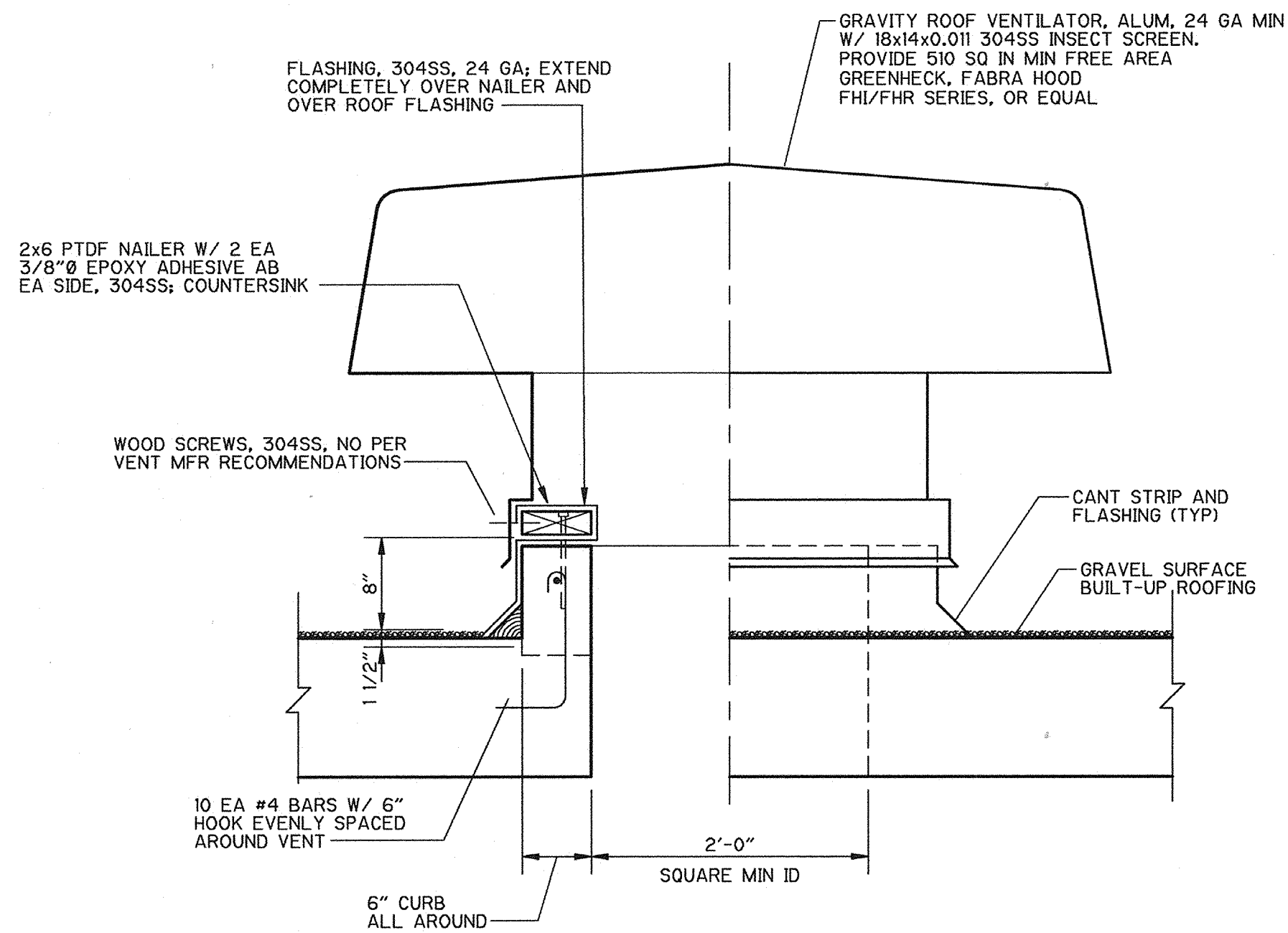
environmental engineers, scientists,  
 planners, & management consultants

**CDM**

CITY OF PITTSBURG  
 ENGINEERING DIVISION  
 6 MG RESERVOIR  
 REPLACEMENT PROJECT

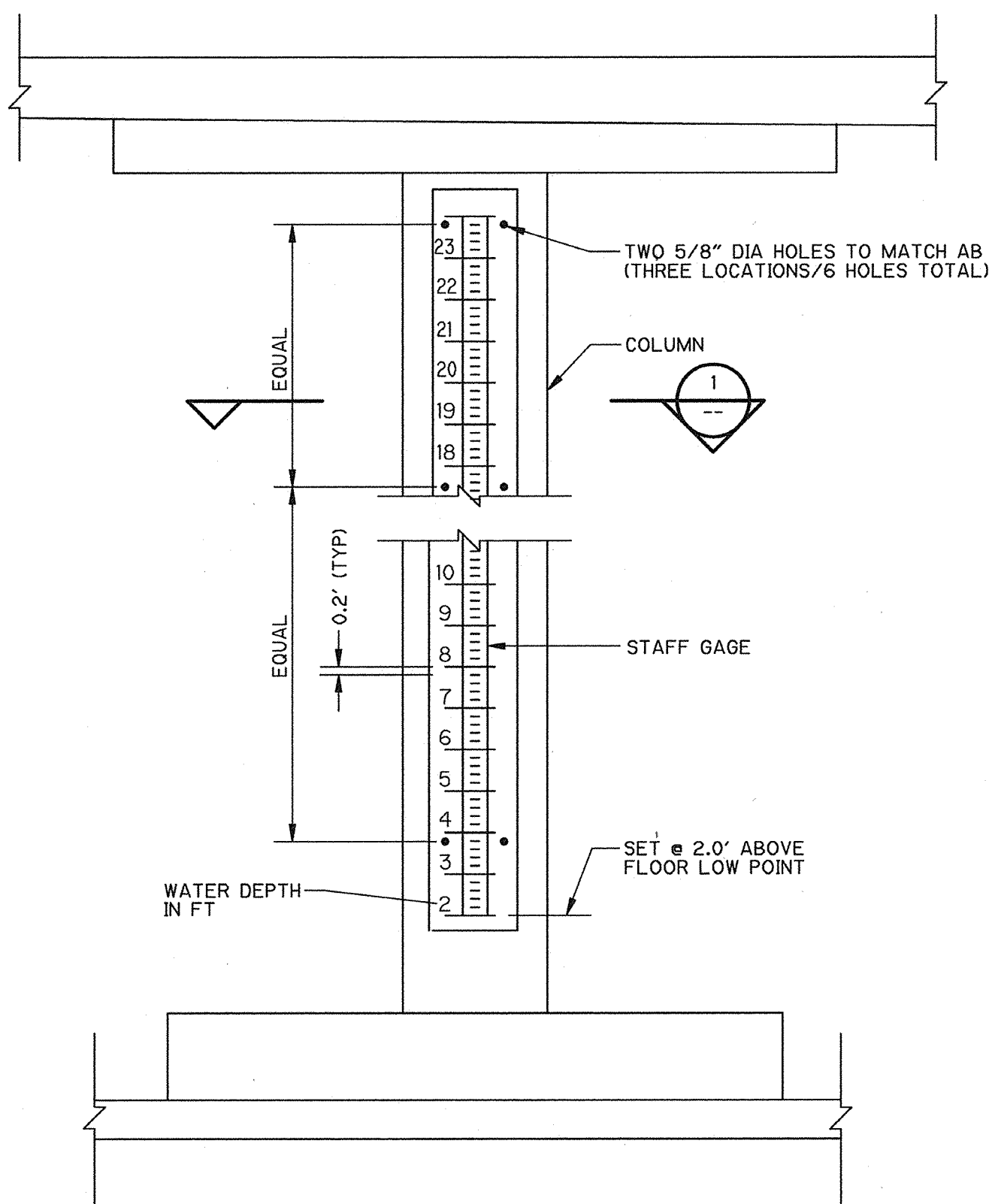
STANDARD DETAILS  
 SHEET NO.  
**CD-2**

PROJECT NO.	1358-22097
FILE NAME:	COCD0002
SHEET NO.	<b>CD-2</b>



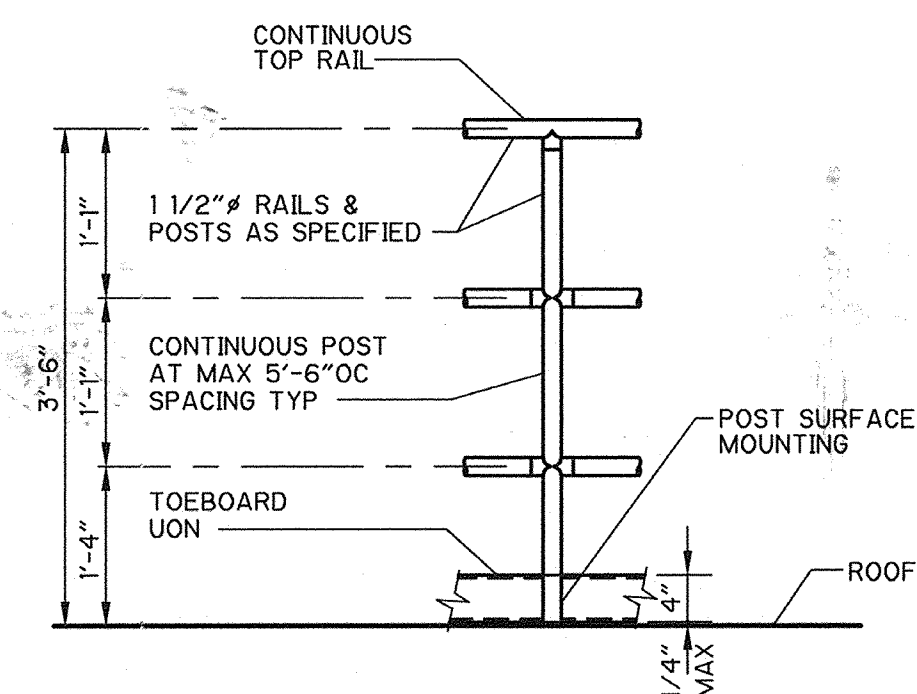
NOTE:  
1. PROVIDE EXTRA REINFORCING AT OPENING PER DETAIL C/S-9.

TYPICAL ROOF VENT  
DETAIL **D301**  
1" = 1'-0"



NOTES:  
1. STAFF GAGE: STAFF GAGE SHALL BE LEOPOLD & STEVENS, STYLE 'E', OR EQUAL. NUMBERS AND GRADATION SHALL BE ENAMELED. SHOW NUMBERS AT EACH FOOT AND MARK GRADATIONS AT 0.2 FT LEVELS. FASTENERS SHALL BE CHOSEN TO PREVENT DAMAGE TO ENAMEL.  
2. TWO STAFF GAGES REQUIRED WITH THE FOLLOWING GRADATIONS:  
1 MG RESERVOIR 2 22 + 3 x 0.2 GRADATIONS  
5 MG RESERVOIR 2 24 + 0 GRADATIONS  
3. LOCATION OF STAFF GAGES ARE SHOWN ON SHEET C-14.

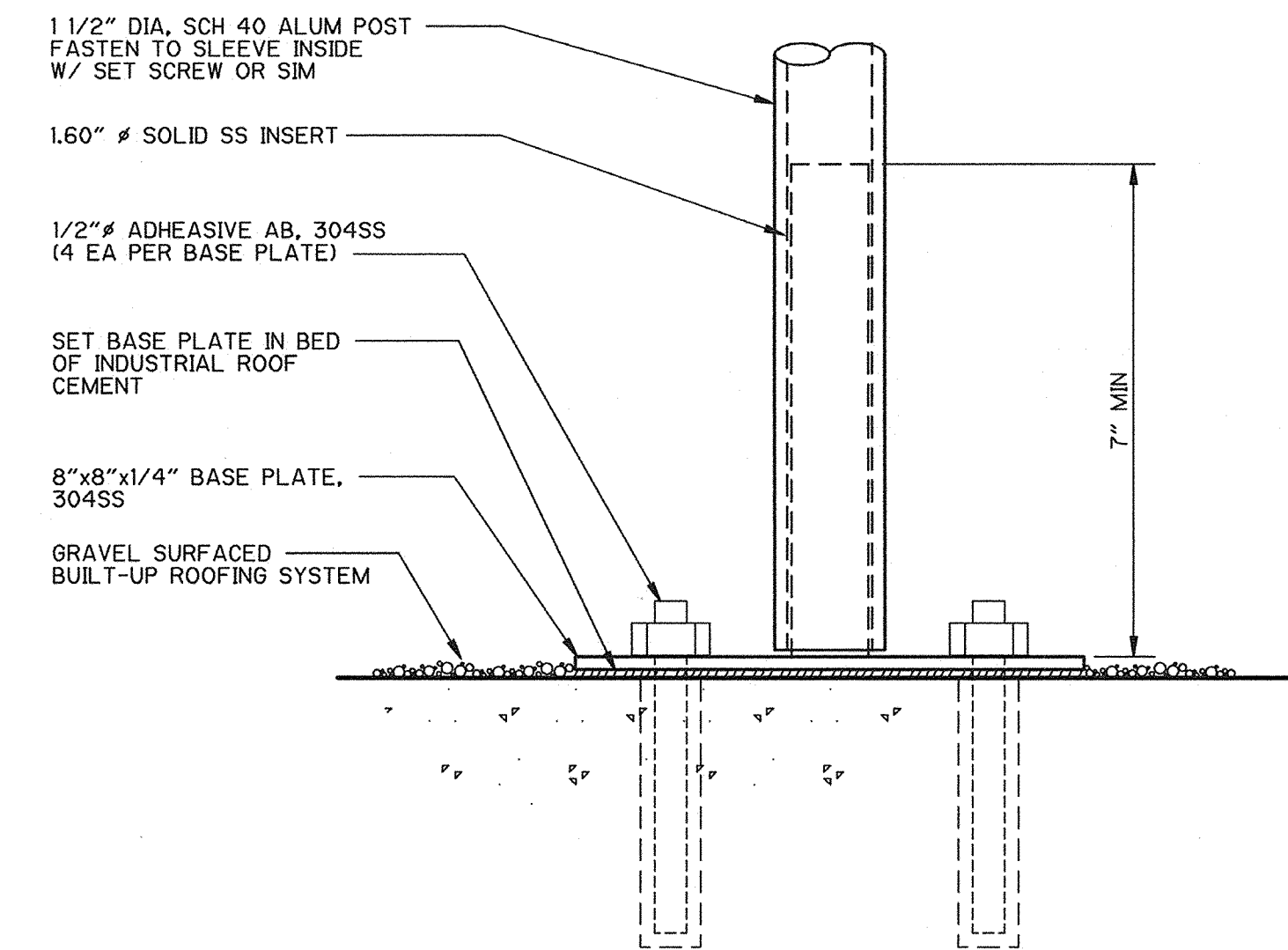
STAFF GAGE  
DETAIL **D302**  
NTS



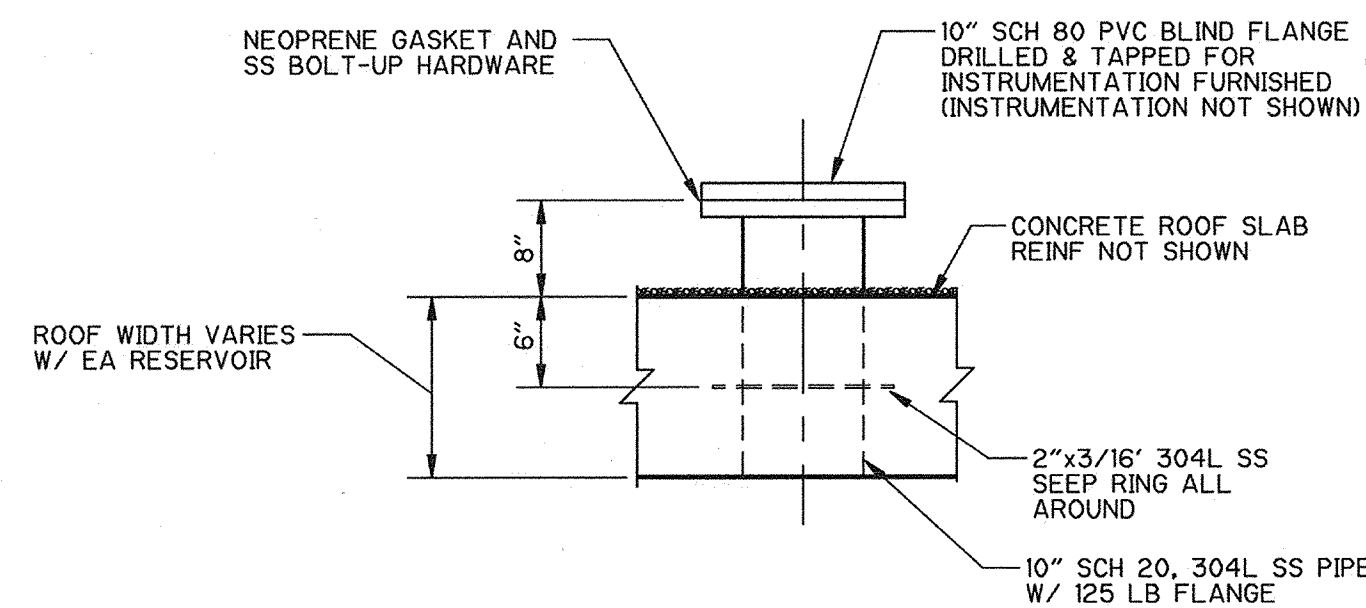
TYPICAL GUARDRAIL REQUIREMENTS

NOTE:  
1. ANCHOR BOLTS SHALL BE 304 SS. ALUMINUM MAY BE SUBSTITUTED FOR BASE AND INSERT.  
2. GUARDRAIL MOUNTING SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURER'S STANDARD INSTALLATION REQUIREMENTS AND AS NECESSARY TO MAINTAIN THE ROOFING GUARANTEE.  
3. DETAIL DOES NOT INCLUDE ROOFING WHERE GUARDRAIL IS INSTALLED ON RESERVOIR ROOF CURB.

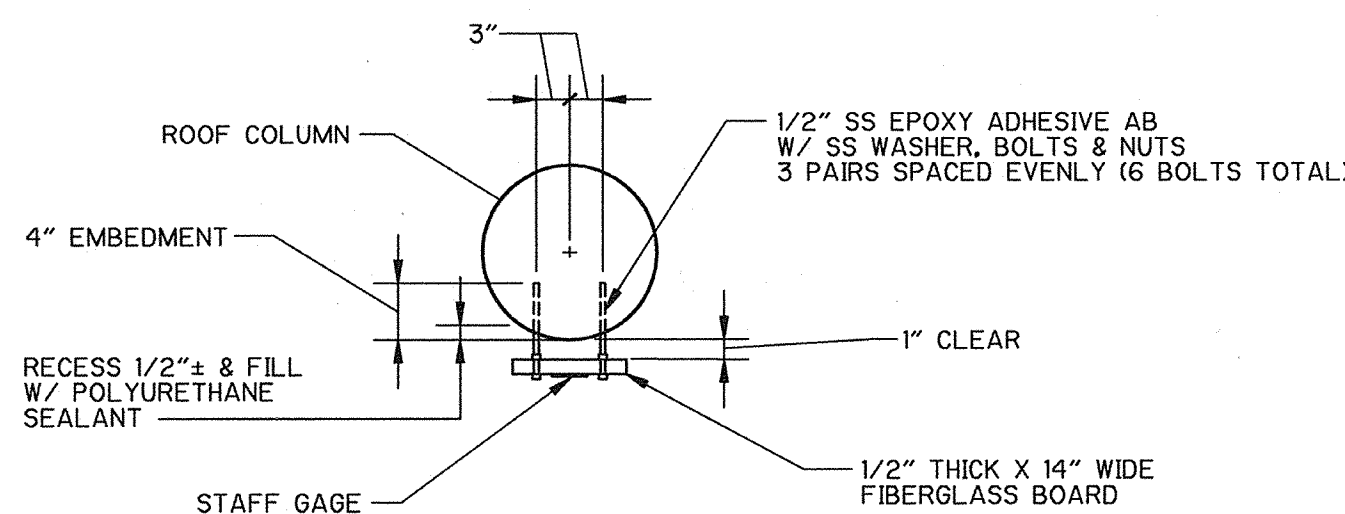
TYPICAL GUARDRAIL REQUIREMENTS  
DETAIL **D303**  
NTS



GUARDRAIL POST - SURFACE MOUNTING REQUIREMENTS



LEVEL ELEMENT RESERVOIR ROOF MOUNTING  
DETAIL **D304**  
3/4" = 1'-0"



SECTION **1**  
NTS

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RECORD DRAWING  
DATE 11/21/2000 BY [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY:	BPD
DRAWN BY:	EPM, RAC
SHEET CHK'D BY:	
CROSS CHK'D BY:	
APPROVED BY:	JRT
DATE:	MAY 1998

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One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

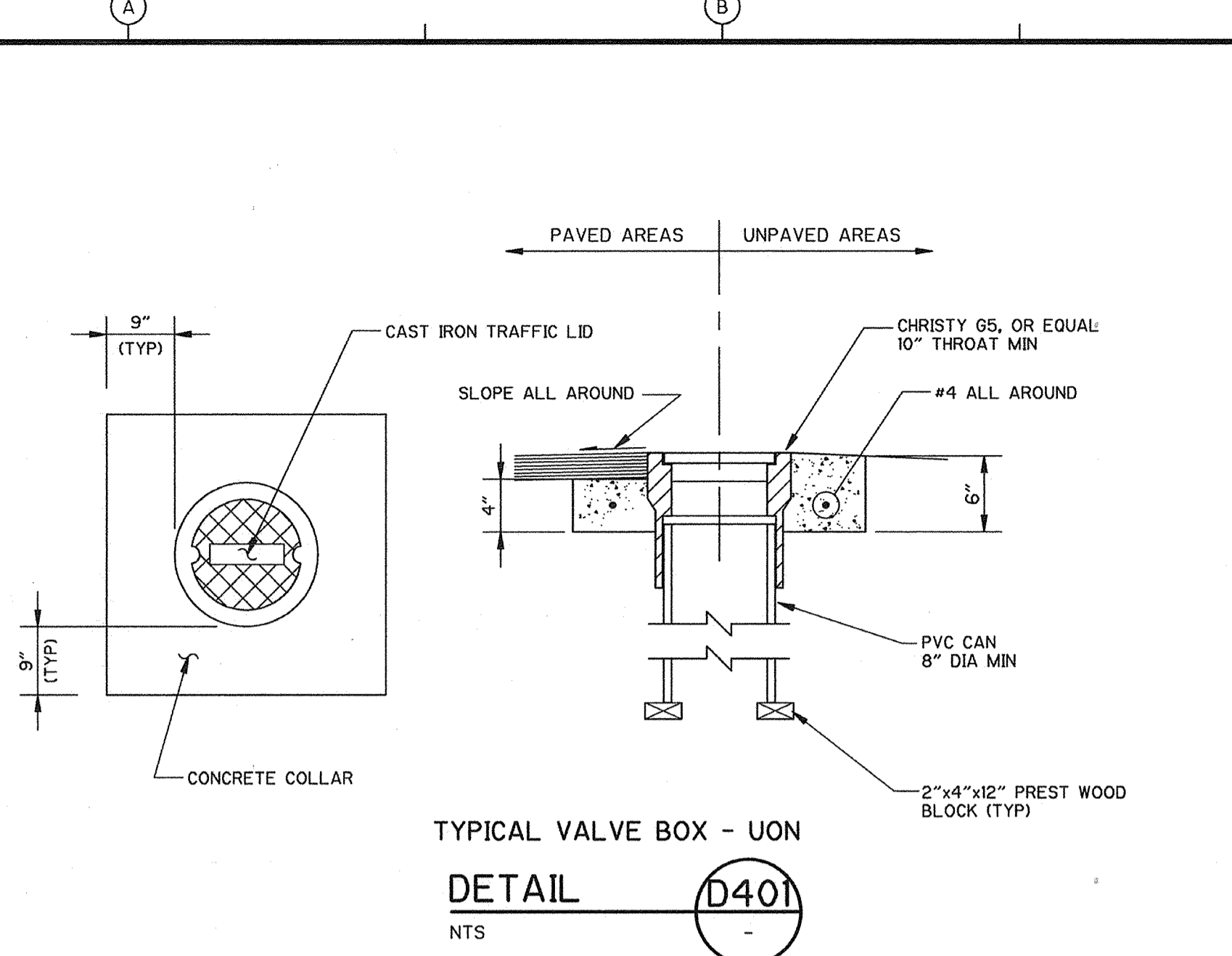
environmental engineers, scientists,  
planners, & management consultants

**CDM**

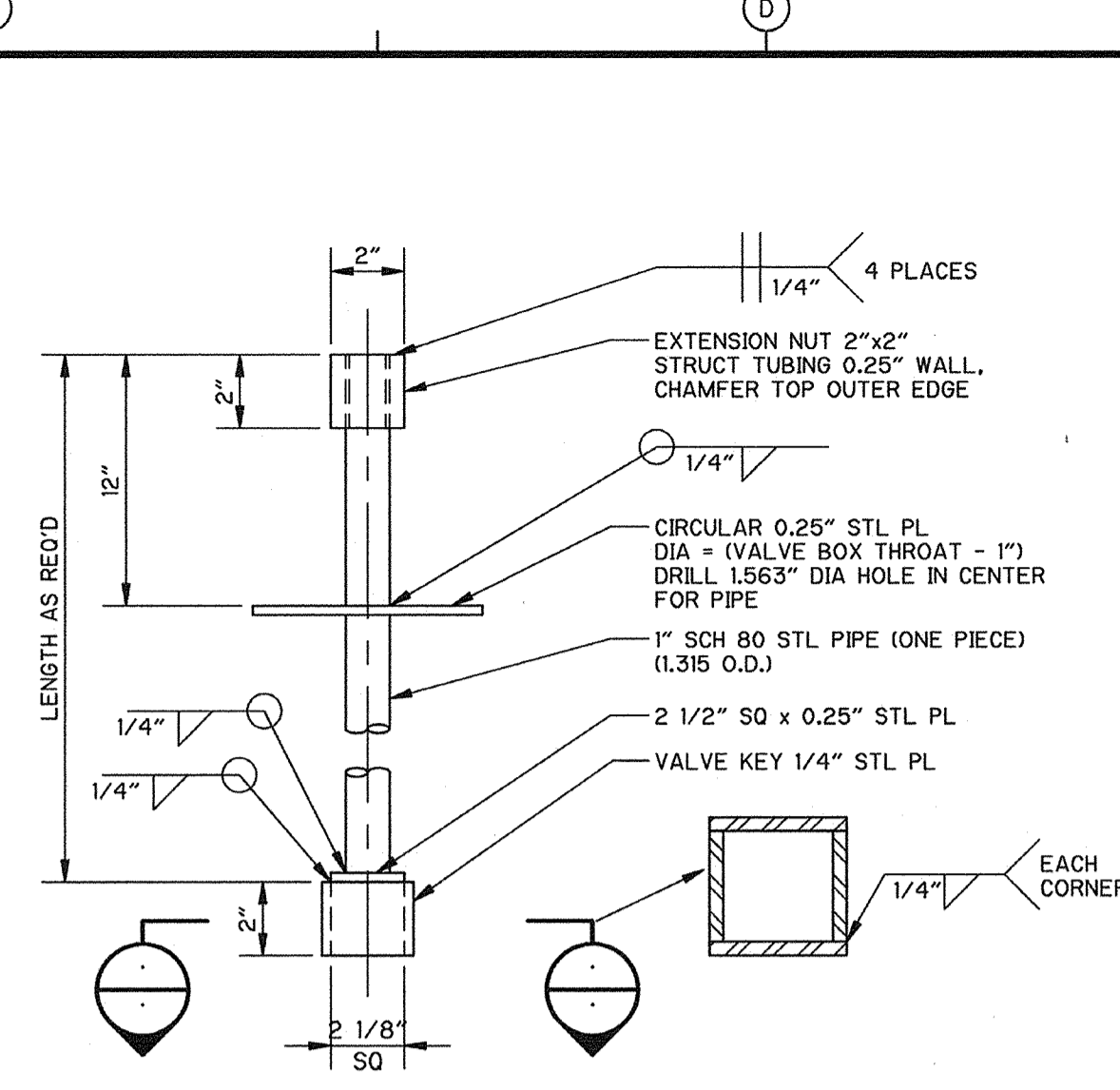
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

STANDARD DETAILS

PROJECT NO.	1358-22097
FILE NAME:	COCD0003
SHEET NO.	CD-3

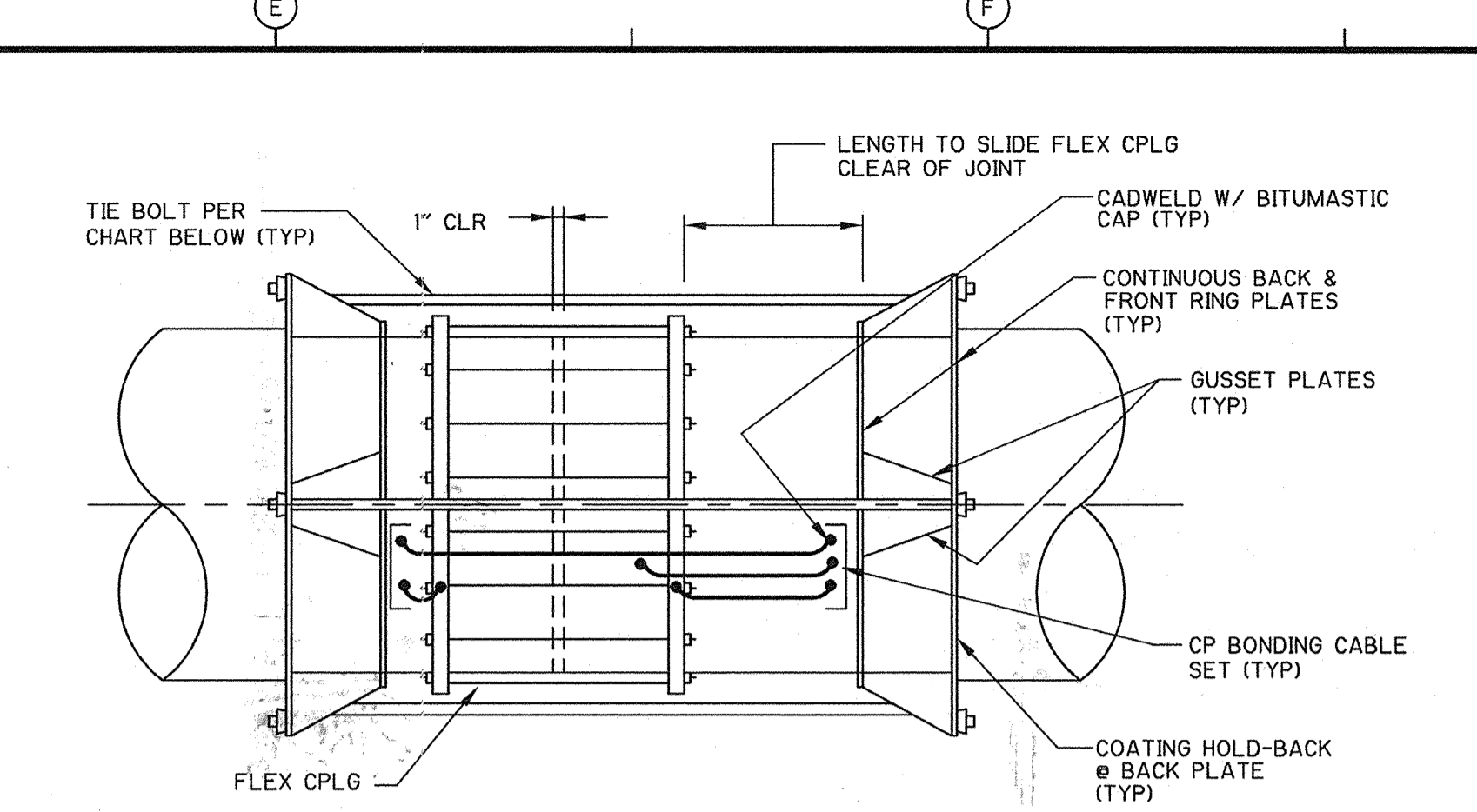


TYPICAL VALVE BOX - UON  
DETAIL D401  
NTS



- NOTES:
1. A VALVE OPERATING NUT EXTENSION IS REQUIRED WHEN THE VALVE OPERATING NUT IS NOT WITHIN 24" OF THE VALVE BOX LID.
  2. LENGTH OF EXTENSION IN INCHES SHALL BE INSCRIBED W/AN ARC WELD BEAD (2" MIN HEIGHT) ON TOP FACE OF CIRCULAR PLATE.
  3. VALVE KEY SHALL FIT OVER STD AWWA VALVE OPERATING NUT.
  4. EXTENSION NUT AND VALVE KEY TO BE IN LINE W/EACH OTHER.
  5. EXTENSION SHALL EXTEND TO WITHIN 6" OF SURFACE.

TYPICAL VALVE NUT EXTENSION  
DETAIL D402  
NTS



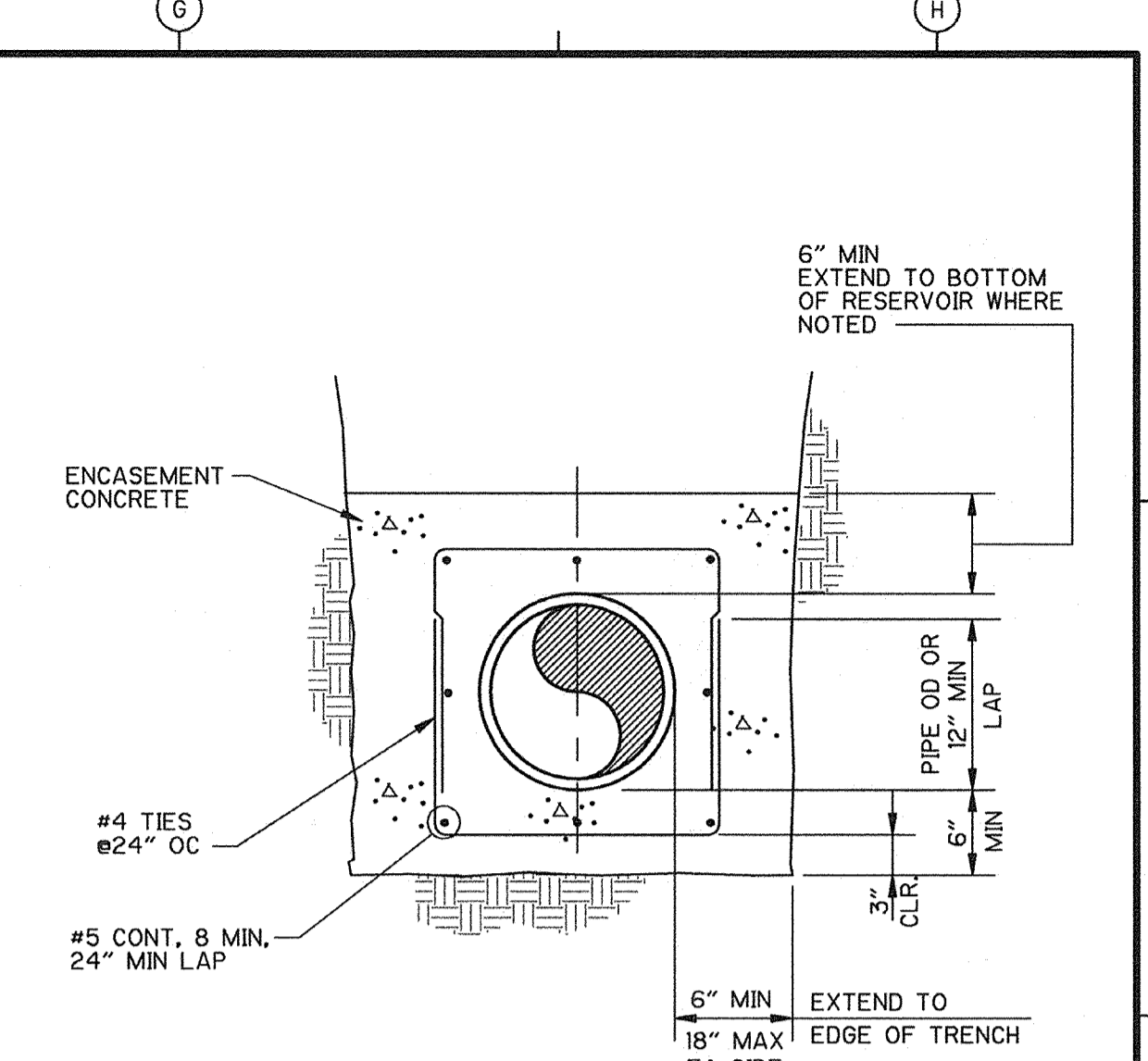
- NOTES:
1. THIS DETAIL APPLIES TO ALL RESTRAINED & UNRESTRAINED FLEXIBLE COUPLINGS WHETHER OR NOT SPECIFICALLY REFERENCED.
  2. HARNESS LUG DESIGN & DETAILS PER AWWA MANUAL M11, 3RD EDITION.
  3. MINIMUM COUPLING SLEEVE LENGTH SHALL BE AS FOLLOWS:

FLEX COUPLING	MIN SLEEVE LENGTH
≤ 12"	7"
14" TO 36"	10"
> 36"	18"

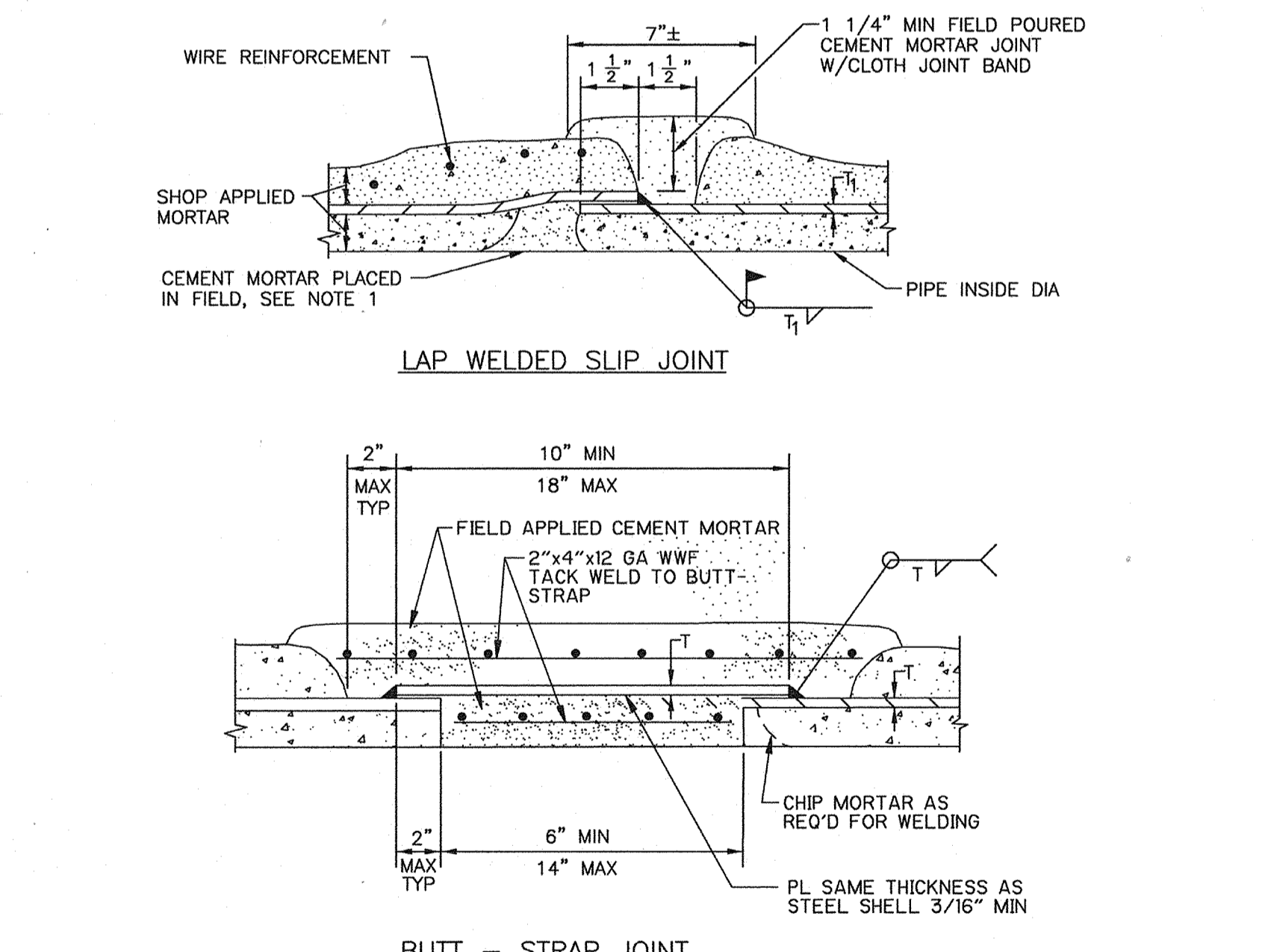
4. FLEX CPLG SLEEVE & FOLLOWER RINGS SHALL BE ELECTRICALLY BONDED TO THE PIPE WITH 6 AWG COPPER CATHODIC PROTECTION CABLES, 2 SETS PER COUPLING.
5. NUMBER OF TIE BOLTS SHALL BE AS FOLLOWS:

100 psi DESIGN PRESSURE		
PIPE DIAMETER	NO. OF TIE BOLTS	DIA OF TIE BOLTS
16"	2	3/4"
20"	2	7/8"
24"	4	3/4"
30"	4	1"
36"	4	1 1/4"
42"	4	1 1/2"
48"	4	1 3/8"

TYPICAL RESTRAINED FLEXIBLE COUPLING  
DETAIL D403  
NTS



TYPICAL PIPE CONCRETE ENCASEMENT  
DETAIL D404  
NOT TO SCALE



- NOTES:
1. FIELD APPLIED CEMENT MORTAR ON INSIDE PIPE JOINTS: LESS THAN 24": DAUB INSIDE OF BELL AT END OF SHOP APPLIED CEMENT MORTAR LINING BEFORE STABBING, THEN SWAB SMOOTH. 24" OR GREATER: POINT WITH CEMENT MORTAR AFTER BACKFILLING.

CEMENT MORTAR LINED AND COATED STEEL PIPE DETAILS  
DETAIL D405  
NOT TO SCALE

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RECORD DRAWING  
DATE: 11/22/2000 BY: M.J.S. Bk.

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

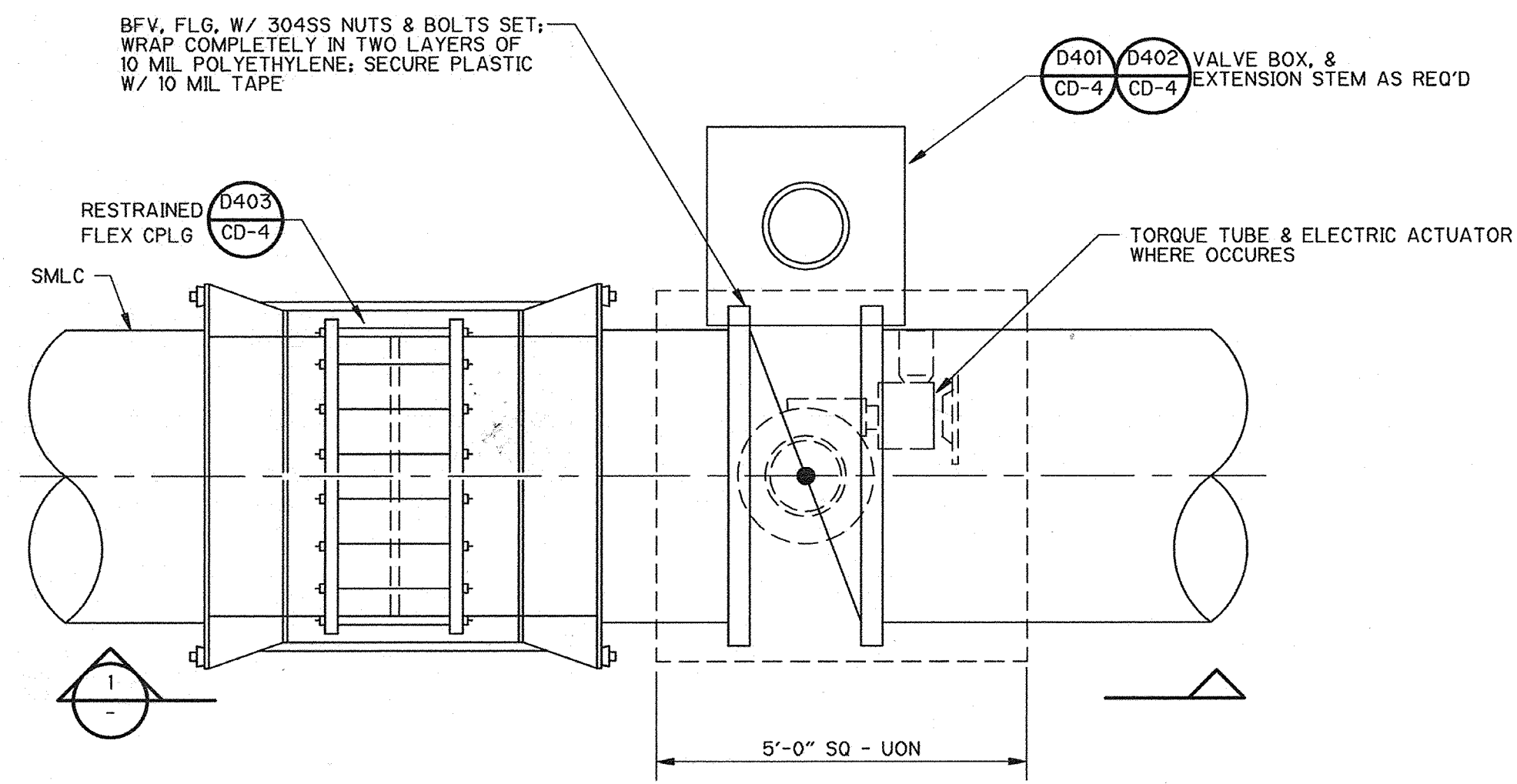
DESIGNED BY: BPD  
DRAWN BY: EPM  
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APPROVED BY: JRT  
DATE: MAY 1998

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100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

environmental engineers, scientists,  
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**CDM**

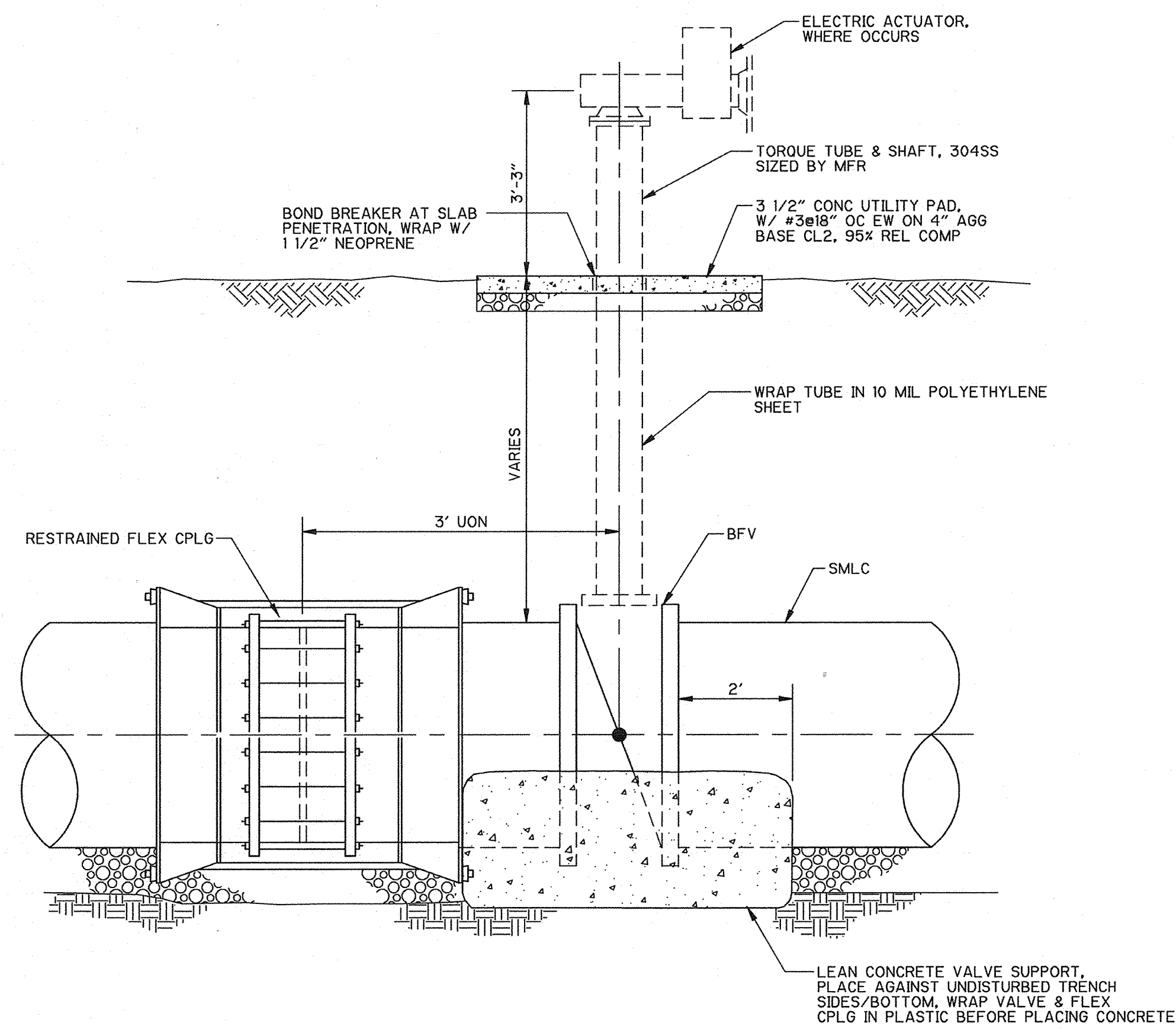
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

STANDARD DETAILS  
PROJECT NO. 1358-22097  
FILE NAME: COCD0004  
SHEET NO. CD-4



TYPICAL BUTTERFLY VALVE (BFV) INSTALLATION REQUIREMENTS

DETAIL C501  
NTS



SECTION 1  
NTS

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DATE: 11/22/2000 BY: [Signature]

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NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

DESIGNED BY: BPD  
DRAWN BY: EPM  
SHEET CHK'D BY:  
CROSS CHK'D BY:  
APPROVED BY: JRT  
DATE: MAY 1998

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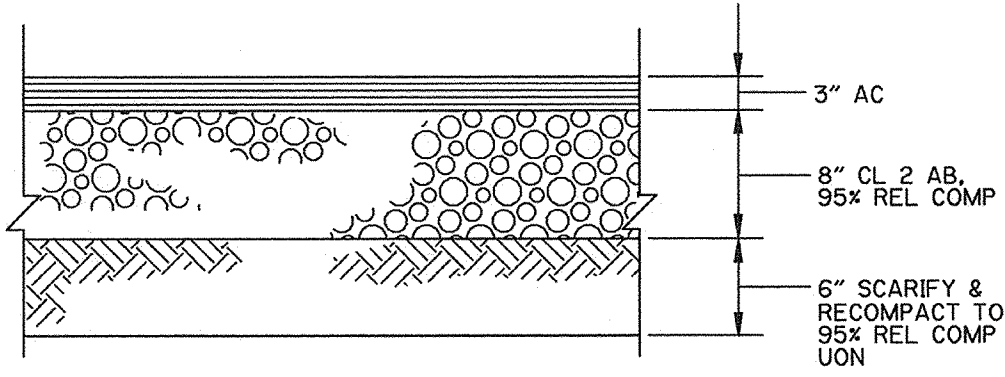
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

STANDARD DETAILS

PROJECT NO. 1358-22097  
FILE NAME: COCD0005

SHEET NO.

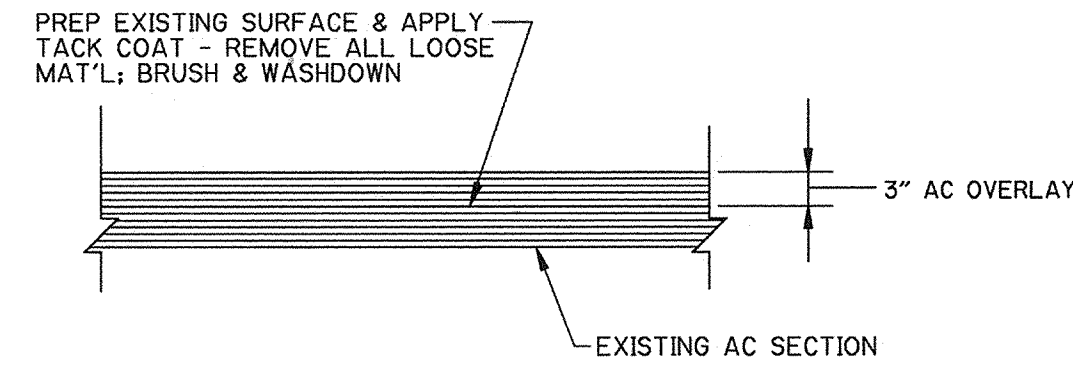
CD-5



NOTE: TYPICAL SECTION EXCEPT WHERE NOTED OTHERWISE.

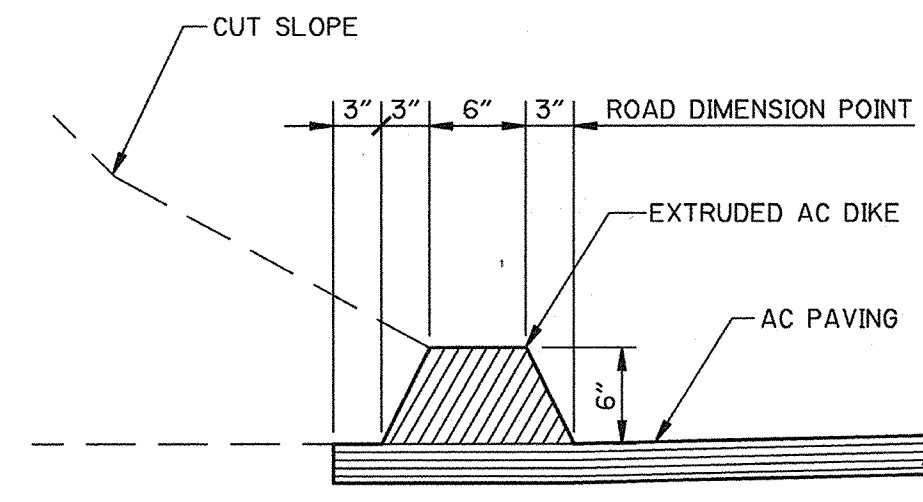
TYPICAL AC PAVEMENT SECTION

DETAIL D601  
NTS



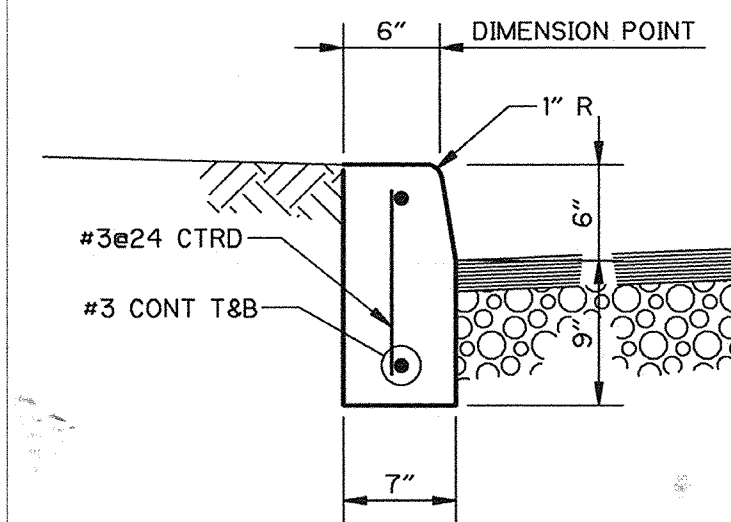
TYPICAL AC OVERLAY SECTION

DETAIL D602  
NTS



EXTRUDED AC DIKE

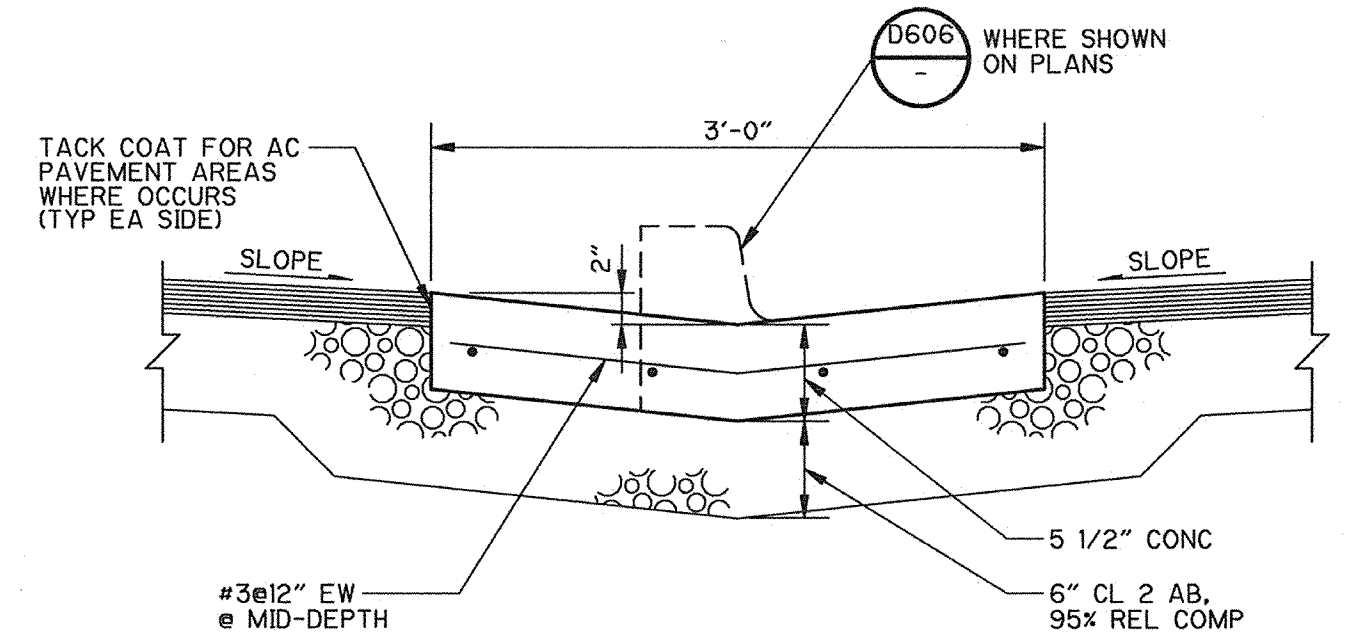
DETAIL D603  
1" = 1'-0"



TYPICAL CONCRETE CURB

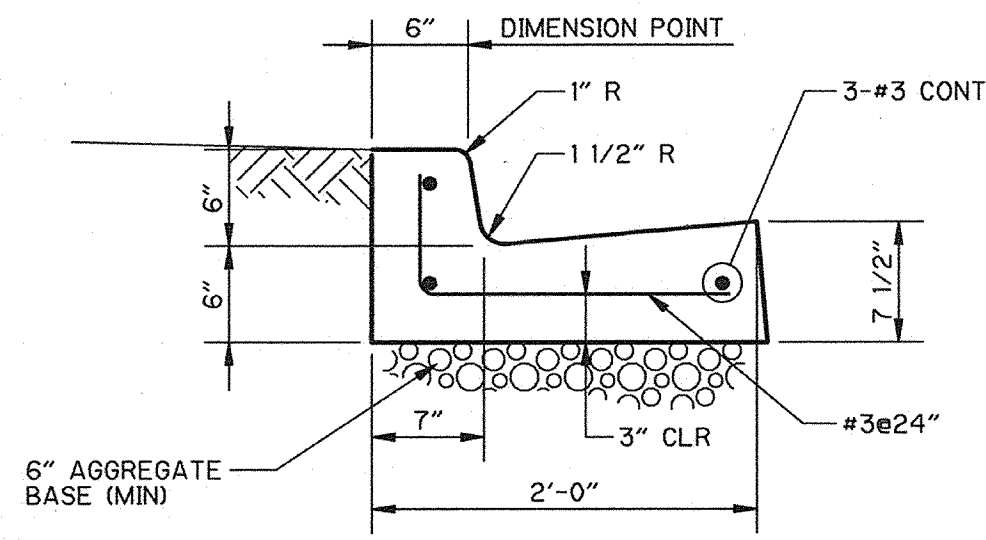
DETAIL D604  
1" = 1'-0"

- NOTES:
- WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT REGULAR INTERVALS, NOT TO EXCEED 20 FEET ON CENTER. EXPANSION JOINTS SHALL BE PLACED AT THE BC AND EC OF ALL CURVES.
  - CURB SHALL BE CONSTRUCTED SEPARATELY FROM ADJOINING SIDEWALK OR CONCRETE SLABS.
  - FINISH ADJOINING CONCRETE SLABS AND GROUND FLUSH WITH TOP OF CURB.



TYPICAL PC CONCRETE V-GUTTER

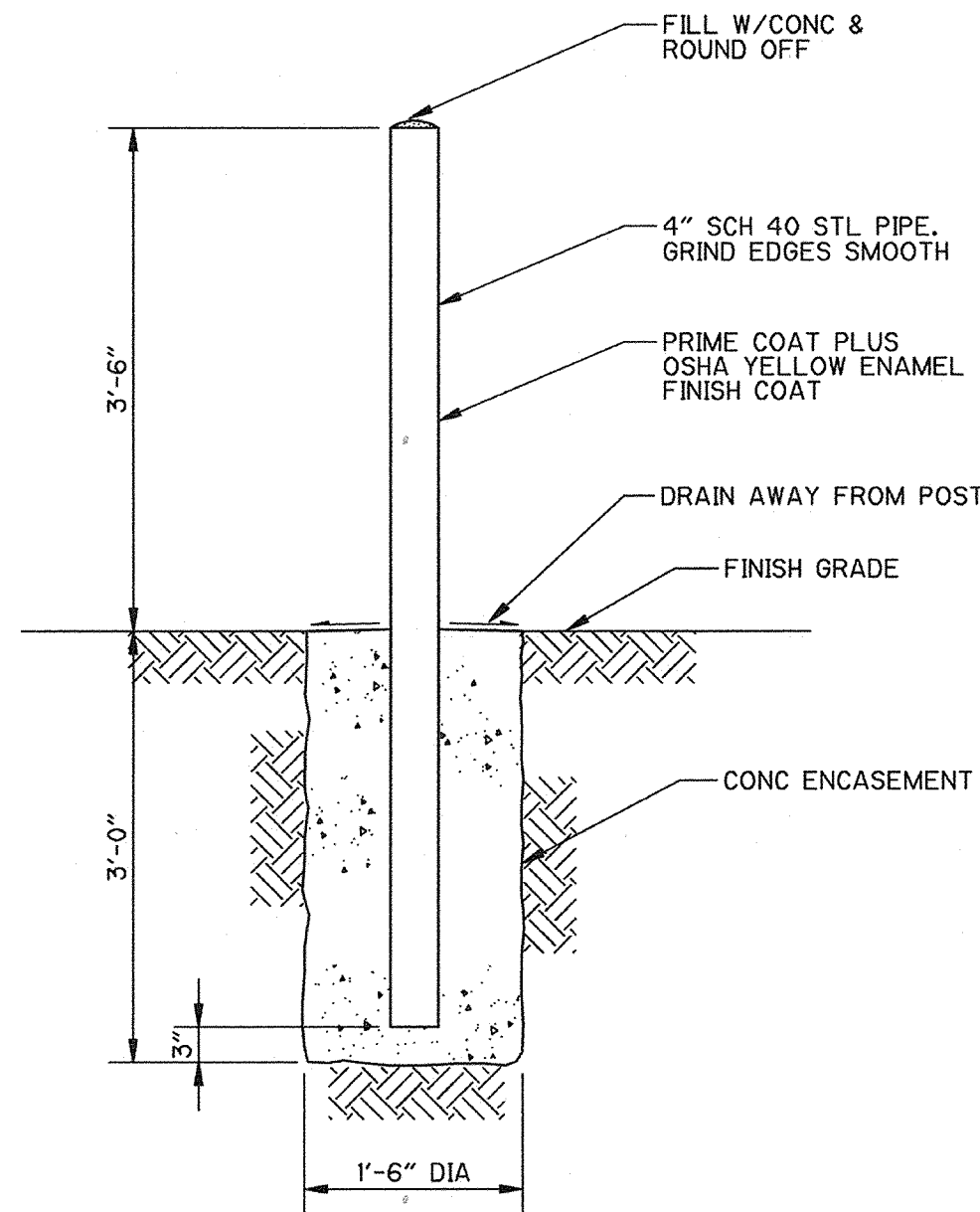
DETAIL D605  
N.T.S.



- NOTES:
- WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT REGULAR INTERVALS, NOT TO EXCEED 20 FEET ON CENTER. EXPANSION JOINTS SHALL BE PLACED AT THE BC AND EC OF ALL CURVES.
  - CURB AND GUTTER SHALL BE CONSTRUCTED SEPARATELY FROM ADJOINING SIDEWALK OR CONCRETE SLABS.
  - FINISH ADJOINING CONCRETE SLABS AND GROUND FLUSH WITH TOP OF CURB.

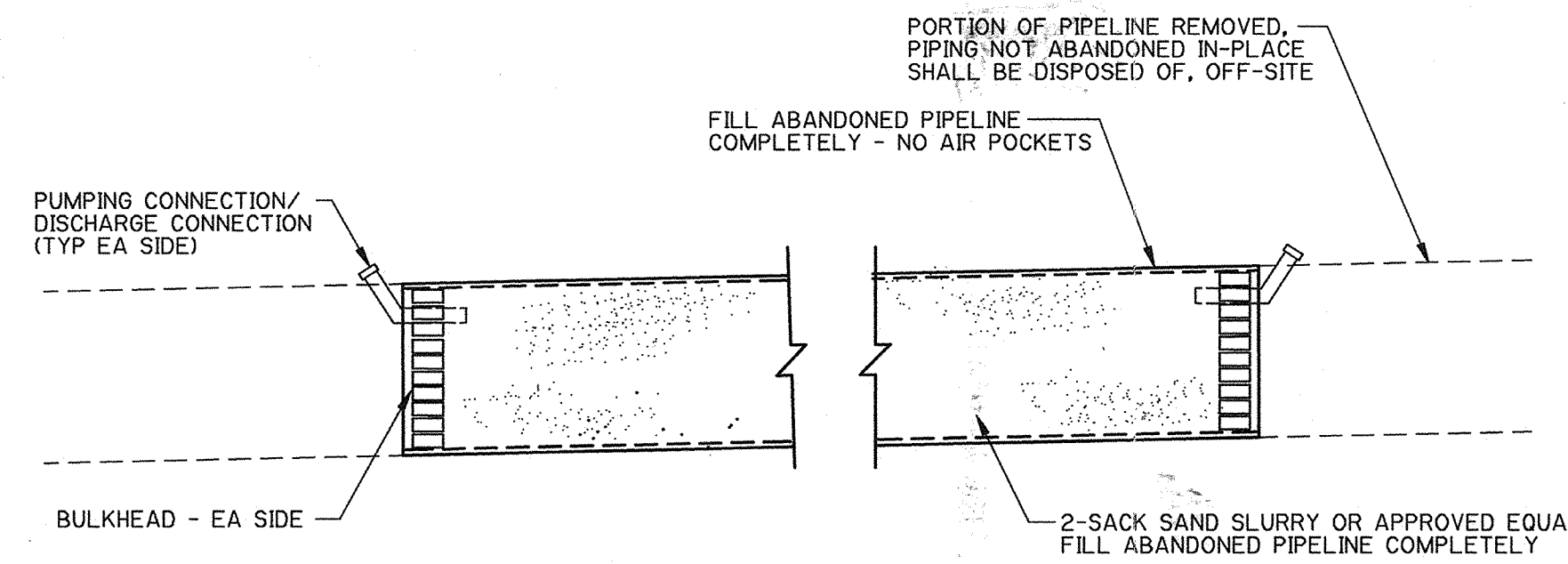
TYPICAL CONCRETE CURB & GUTTER

DETAIL D606  
1" = 1'-0"



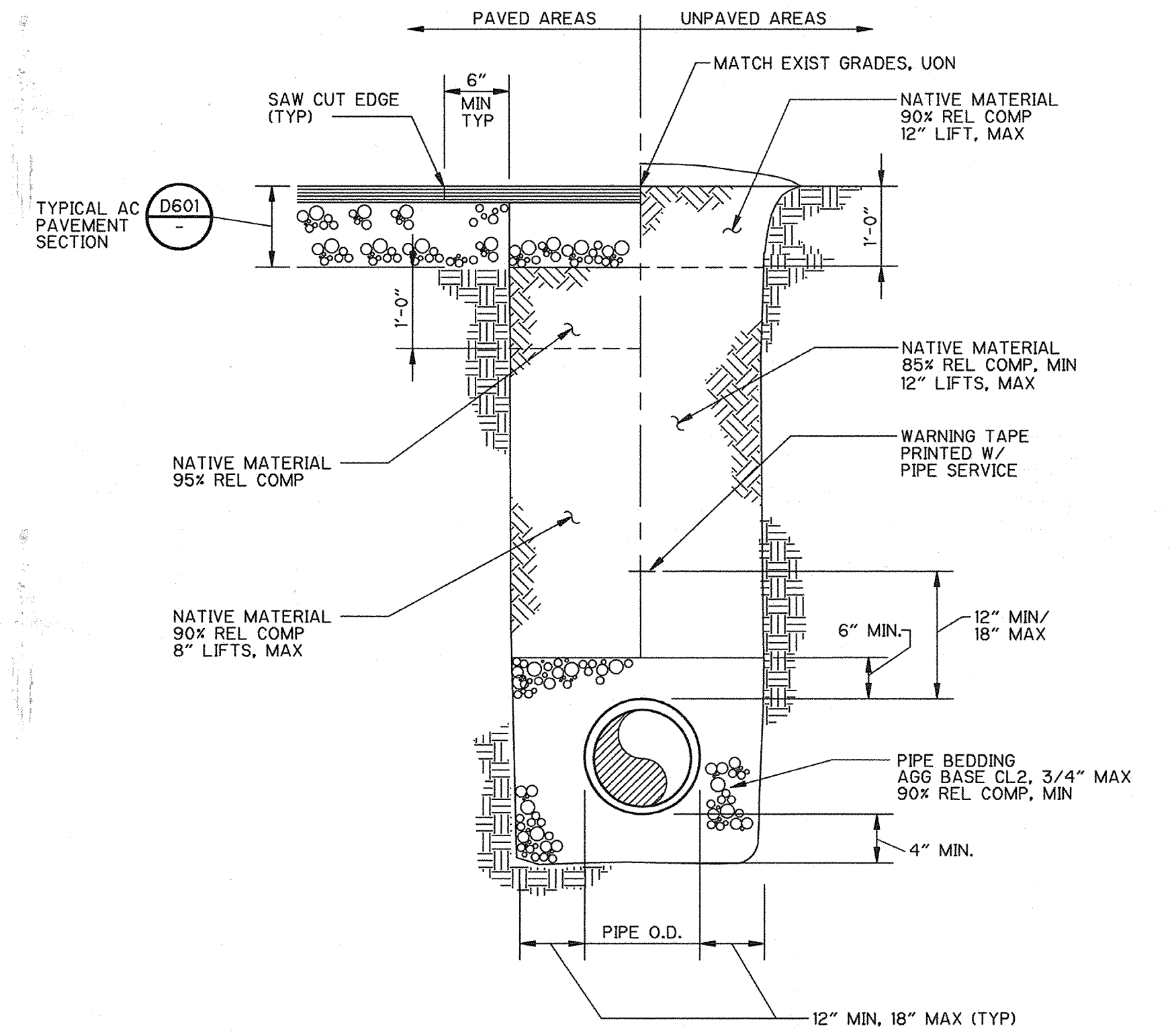
TYPICAL POST

DETAIL D607  
3/4" = 1'-0"



REQUIREMENTS TO ABANDON/REMOVE EXISTING PIPES

DETAIL D608  
NTS



TYPICAL PIPE TRENCH SECTION

DETAIL D609  
NTS

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RECORD DRAWING  
DATE: 11/22/2000

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

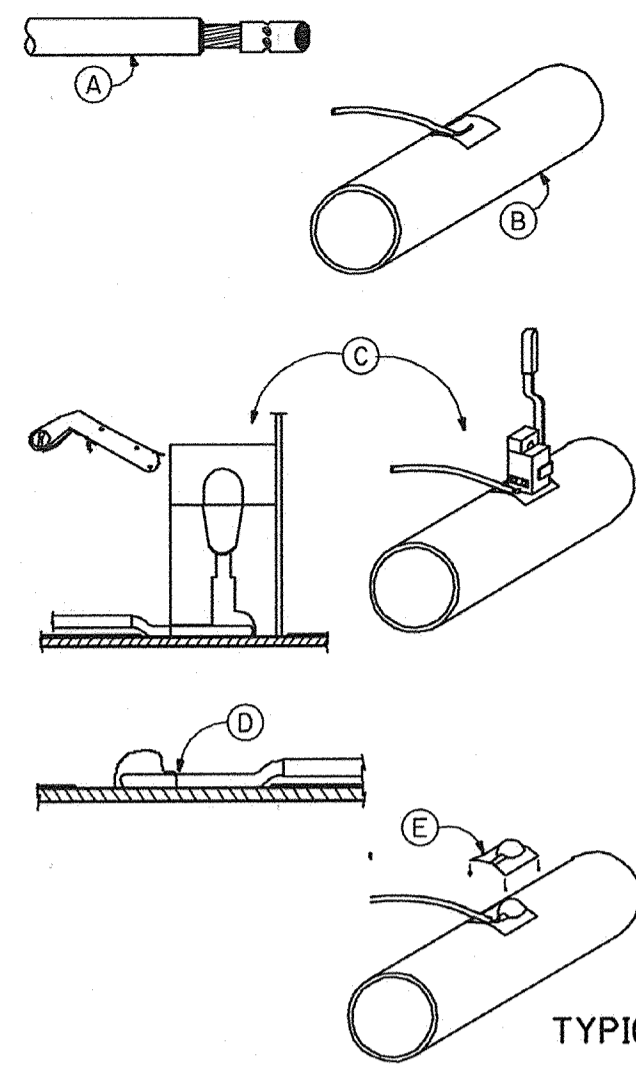
DESIGNED BY: BPD	CAMP DRESSER & MCKEE INC.
DRAWN BY: EPM, TVN	One Walnut Creek Center
SHEET CHK'D BY:	100 Pringle Avenue, Suite 300
CROSS CHK'D BY:	Walnut Creek, California 94596
APPROVED BY: JRT	(510) 933-2900
DATE: MAY 1998	

CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

environmental engineers, scientists,  
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STANDARD DETAILS

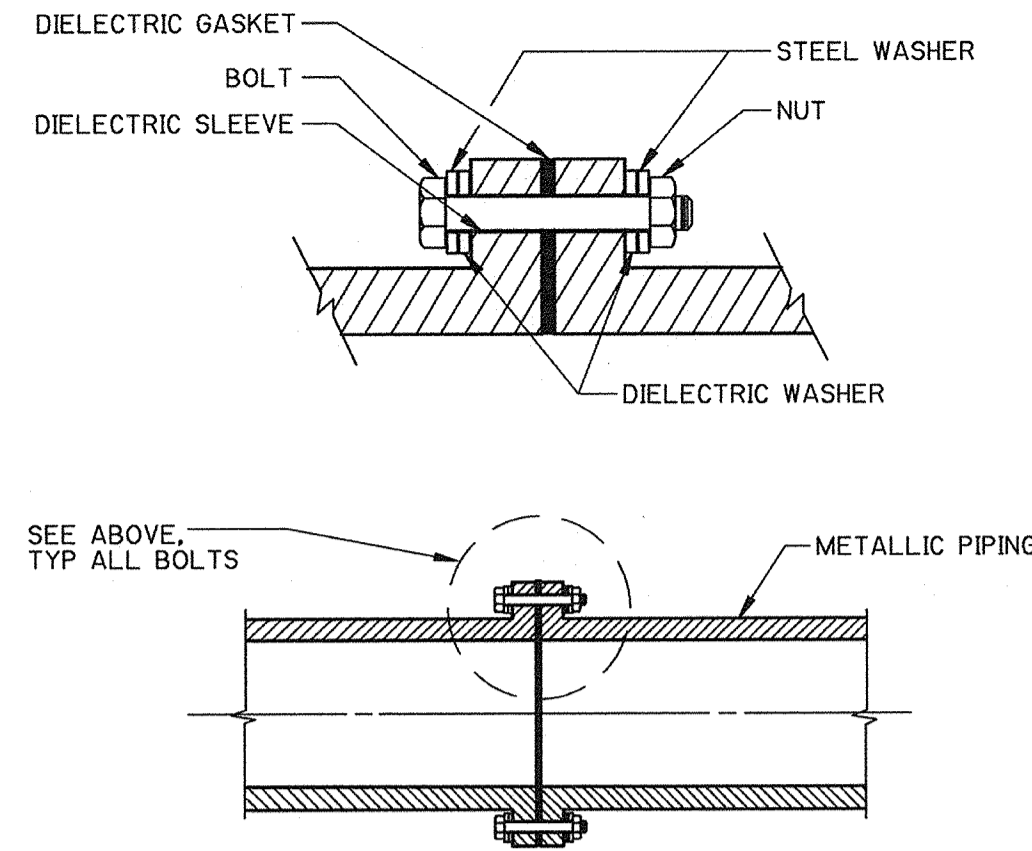
PROJECT NO. 1358-22097	FILE NAME: COCD006
SHEET NO. CD-6	



- A. REMOVE WIRE INSULATION TO ACCOMMODATE SLEEVE. INSERT WIRE INTO SLEEVE, AND CRIMP TO SECURE.
- B. REMOVE COATING FROM AREA SUFFICIENT TO SEAT WELDER MOLD ON METAL SURFACE. CLEAN AREA TO WHITE METAL WITH FILE, RASP, OR NON RESINOUS POWER TOOL. PEEN ATTACHMENT AREA. PLACE WIRE WITH SPECIFIED SLEEVE IN CENTER OF CLEAN AREA. BEND WIRE TO ALLOW SLEEVE TO FIT FLUSH WITH PIPE SURFACE.
- C. CLEAN MOLD. PLACE METAL DISC IN BOTTOM OF MOLD TO COVER HOLE. REMOVE CAP FROM WELD METAL CONTAINER. POUR WELD METAL INTO RECESS. PINCH BOTTOM OF CONTAINER TO LOOSEN STARTING POWDER, AND POUR POWDER ON TOP OF WELD METAL. CLOSE WELDER COVER. PLACE MOLD OVER WIRE IN CENTER OF ATTACHMENT AREA. HOLD MOLD FIRMLY AND IGNITE STARTING POWDER WITH FLINT GUN. AS POWDER MELTS TAP ON SIDE OF WELDER MOLD TO INSURE PROPER FLOW OF MOLTEN WELD METAL.
- D. REMOVE WELD MOLD. REMOVE SLAG FROM WELD BY STRIKING WELD WITH HAMMER SEVERAL TIMES. TEST WELD INTEGRITY BY SEVERAL SHARP BLOWS WITH A HAMMER. REMOVE ANY WELD METAL SPILLED UNDER THE MOLD.
- E. AFTER INSPECTION, COVER WELD PER D706.

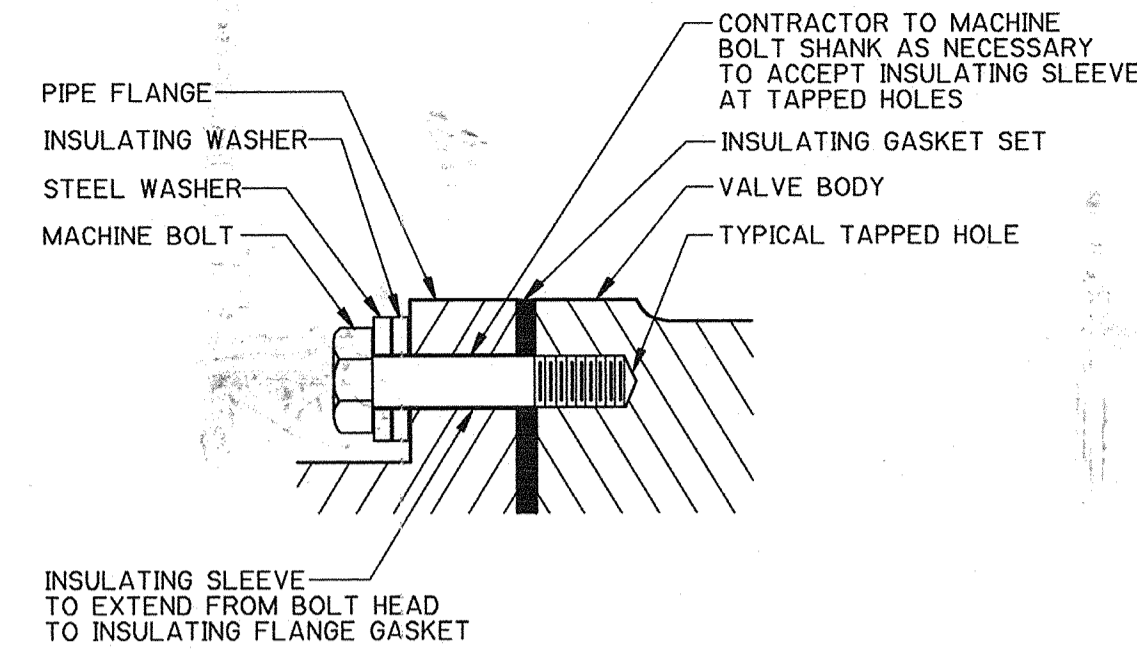
NOTE:  
ALL EXOTHERMIC WELDING SHALL BE IN ACCORDANCE WITH THE INSTRUCTIONS OF THE WELDING EQUIPMENT MANUFACTURER.

TYPICAL EXOTHERMIC WELD  
DETAIL **D701**  
N.T.S.

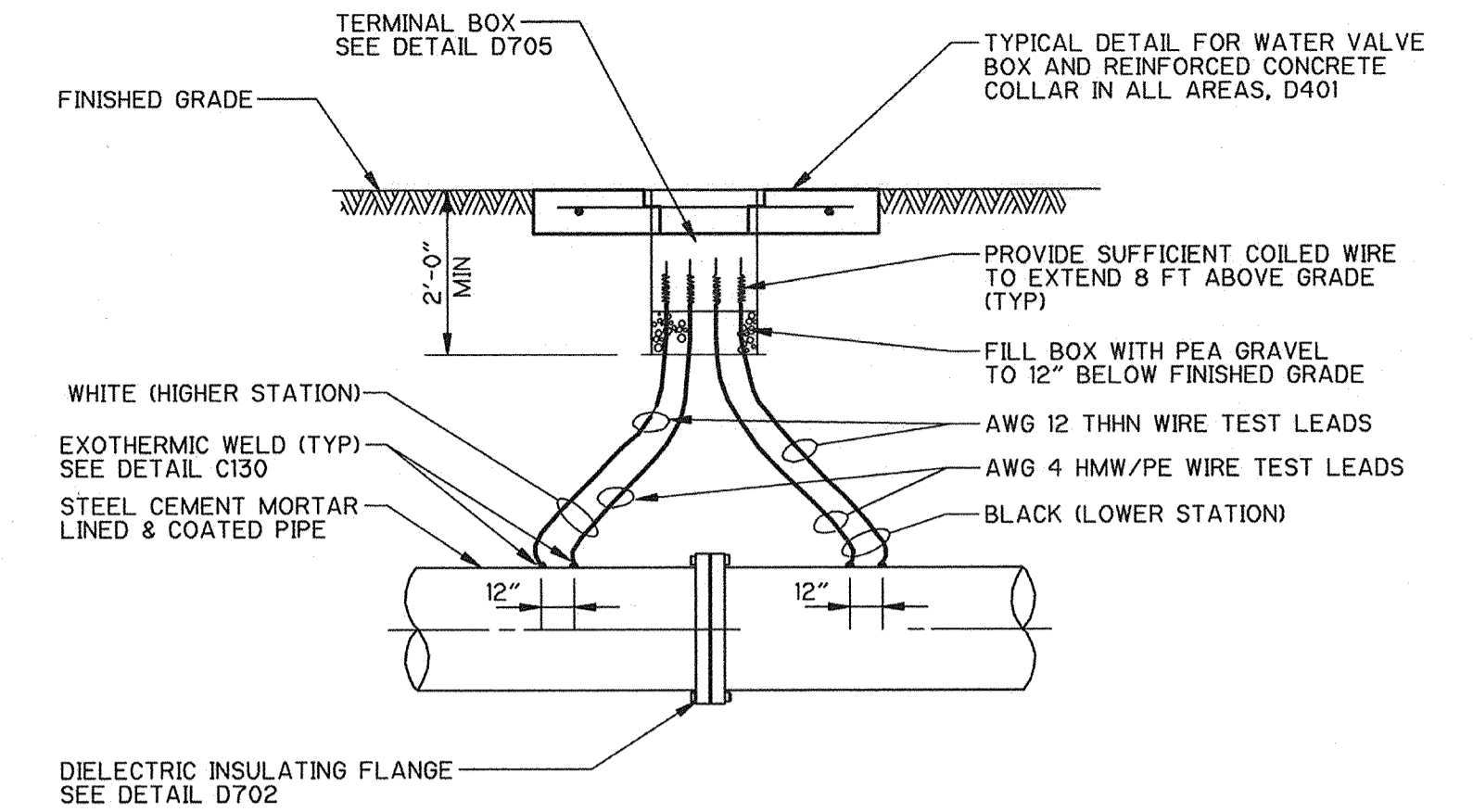


- NOTES:  
1. BURIED INSULATING JOINTS AND FLEXIBLE COUPLINGS SHALL BE COATED USING THE FOUR PART COATING SYSTEM SPECIFIED IN SECTION 1310.

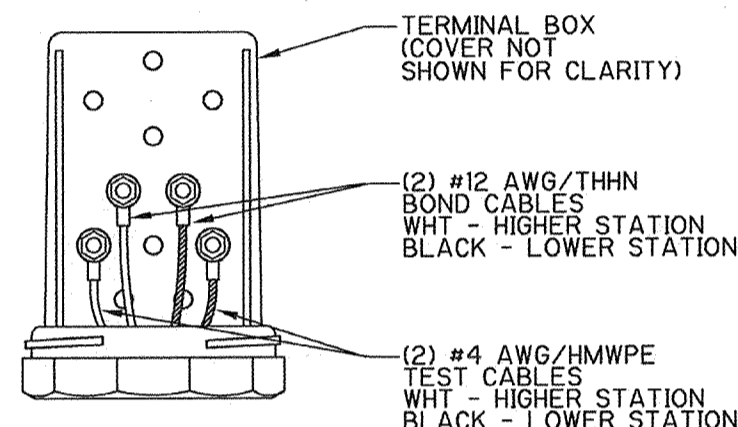
TYPICAL INSULATING FLANGE  
DETAIL **D702**  
N.T.S.



TYPICAL BUTTERFLY VALVE INSULATING METHOD AT TAPPED HOLES  
DETAIL **D703**  
N.T.S.

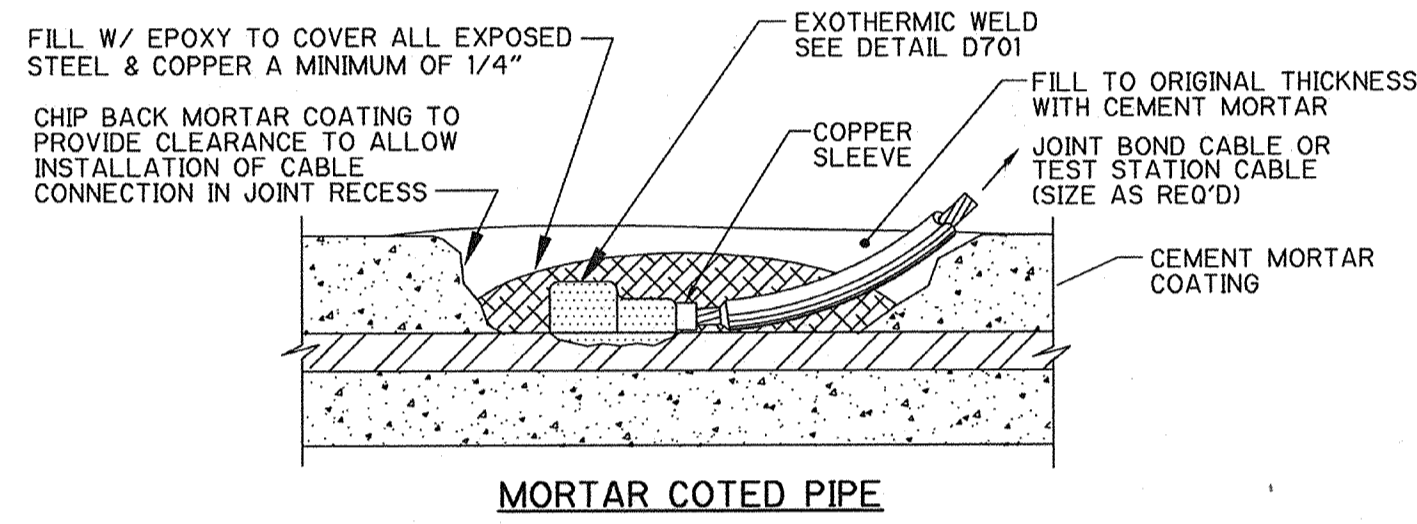


TYPICAL INSULATING FLANGE TEST STATION  
DETAIL **D704**  
N.T.S.

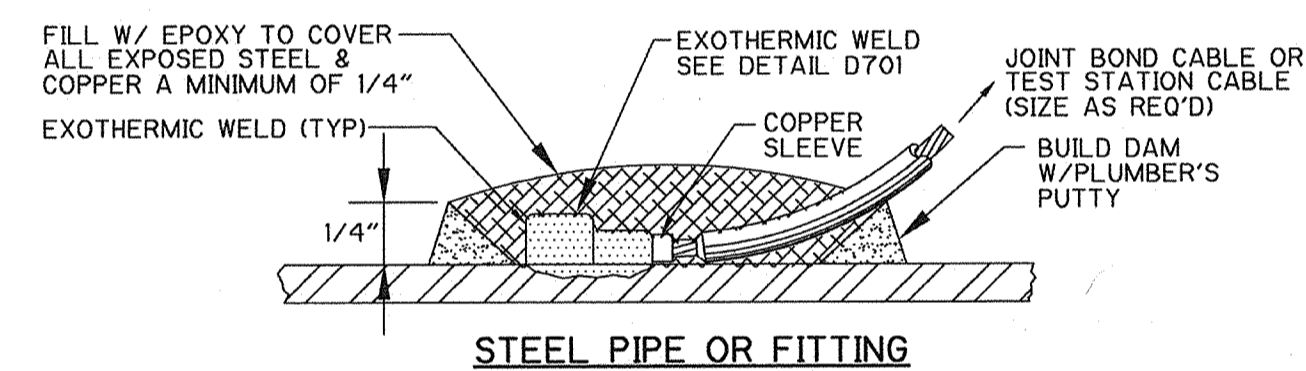


TYPICAL TERMINAL BOX  
AT INSULATING JOINT TEST STATION  
DETAIL **D705**  
N.T.S.

- NOTES:  
1. TEST STATIONS SHALL BE INSTALLED AT ALL BURIED INSULATING JOINTS.

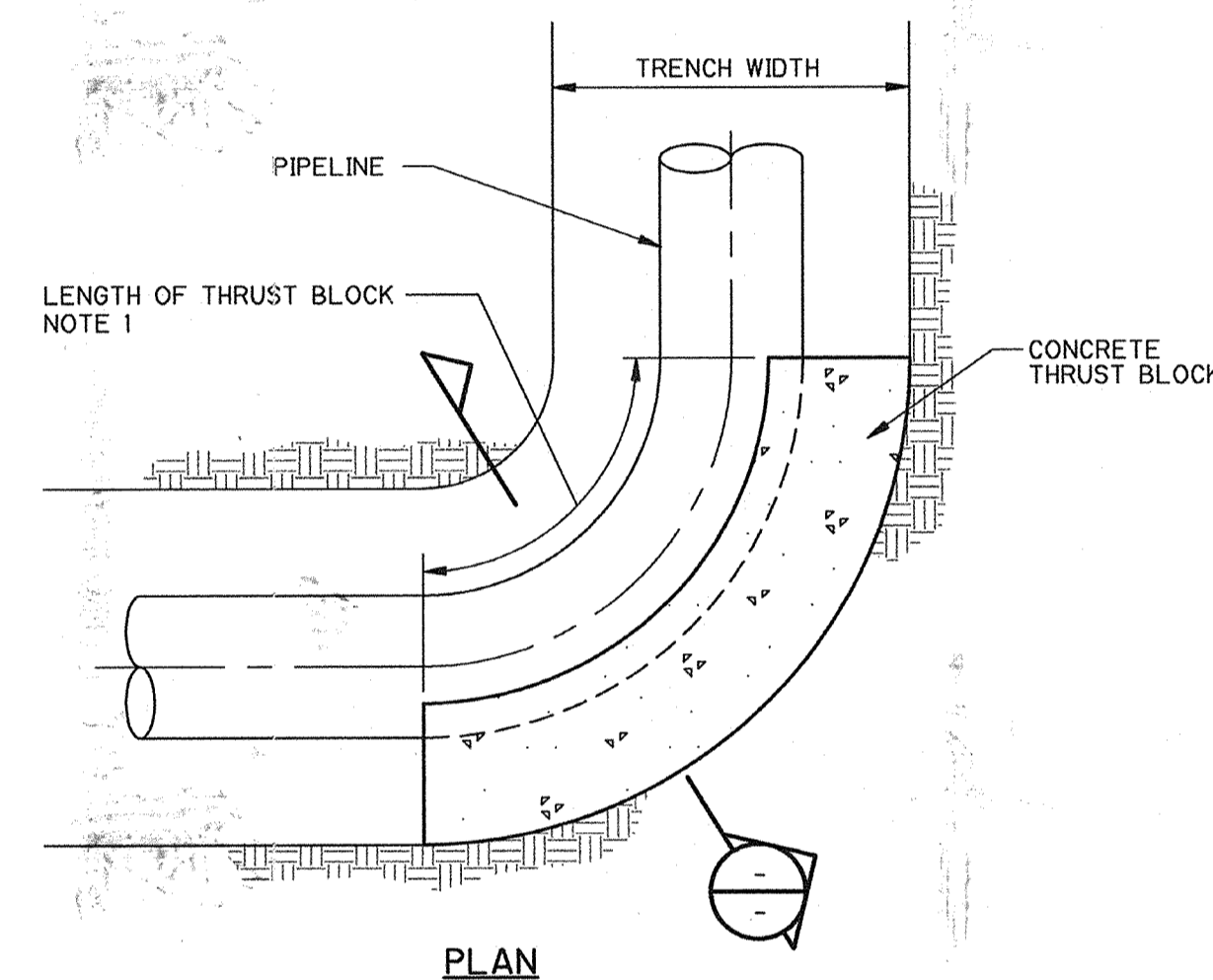


MORTAR COTED PIPE

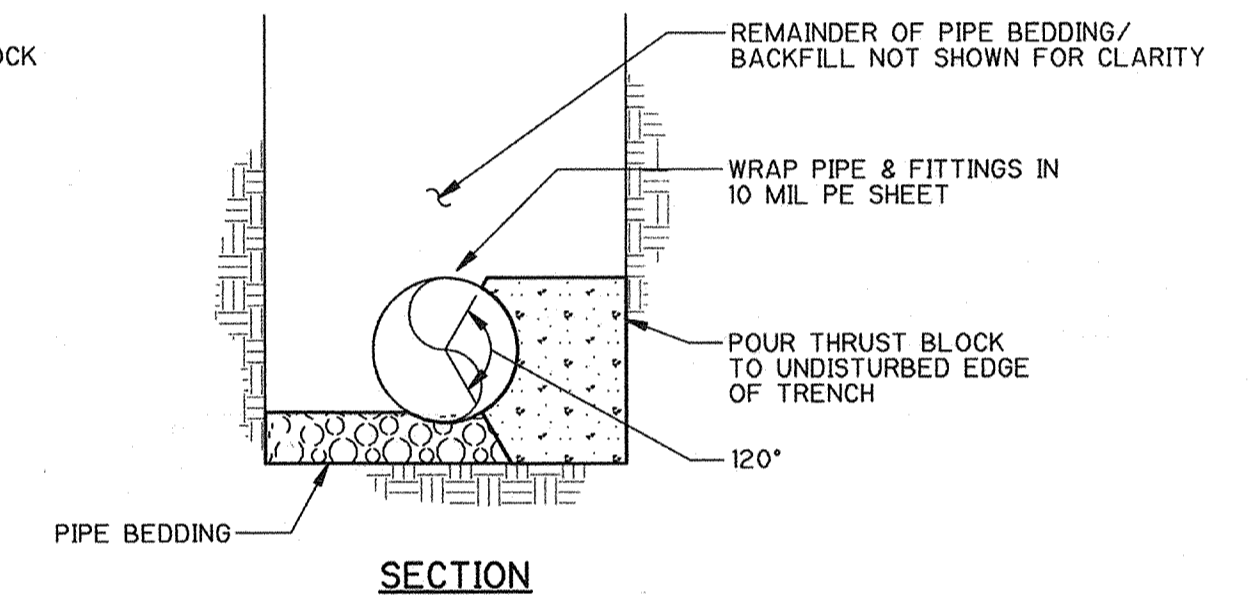


STEEL PIPE OR FITTING

TYPICAL CABLE-TO-PIPE CONNECTION  
DETAIL **D706**  
N.T.S.



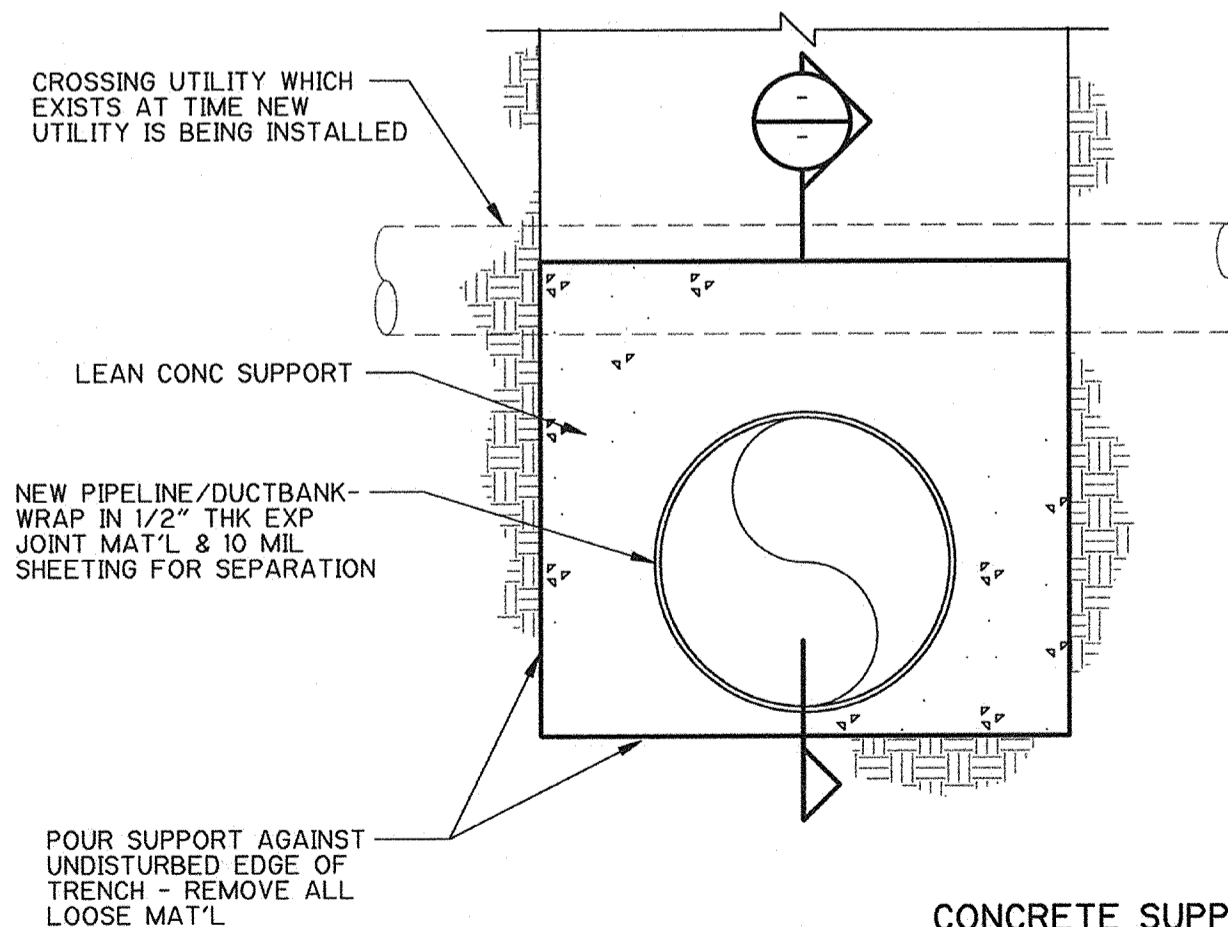
PLAN



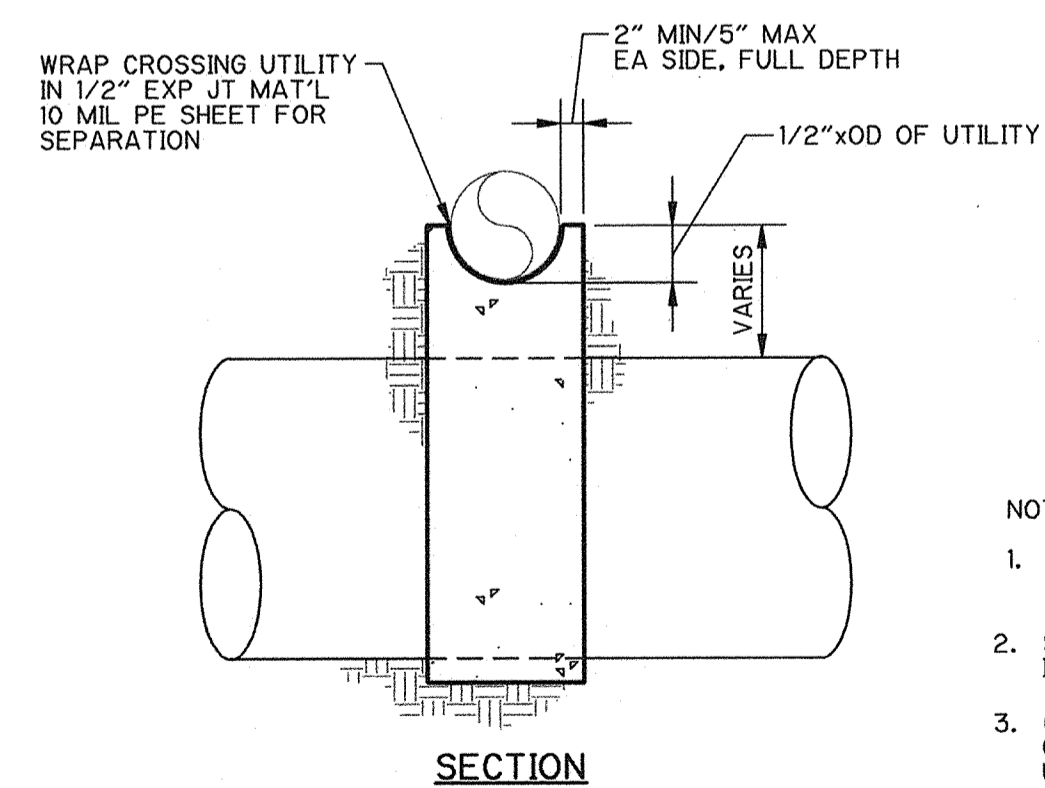
SECTION

TYPICAL REQUIREMENTS FOR THRUST BLOCKS  
DETAIL **D707**  
N.T.S.

- NOTES:  
1. LENGTH OF THRUST BLOCK ALONG PIPELINE CENTERLINE AS NOTED ON PLAN.  
EXAMPLE: TB-8 = THRUST BLOCK 8' IN LENGTH  
2. DETAIL REQUIRES MODIFICATION DEPENDING ON PIPE/FITTING TO BE RESTRAINED.



CONCRETE SUPPORT WHERE NEW PIPELINE/DUCTBANK CROSSES UNDER EXISTING UTILITY  
DETAIL **D708**  
N.T.S.



SECTION

- NOTES:  
1. THIS DETAIL APPLIES TO THE ENTIRE PROJECT ALTHOUGH IT MAY NOT BE REFERENCED AT SPECIFIC CROSSINGS.  
2. SUPPORTS ARE REQUIRED ONLY WHERE TOP UTILITY IS LARGER THAN 4\"/>

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RECORD DRAWING  
DATE: 11/21/2008 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42956

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00	EPM	BPD		RECORD DRAWINGS

DESIGNED BY: BPD  
DRAWN BY: EPM  
SHEET CHK'D BY:  
CROSS CHK'D BY:  
APPROVED BY: JRT  
DATE: MAY 1998

CAMP DRESSER & MCKEE INC.  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900  
environmental engineers, scientists,  
planners, & management consultants  
**CDM**

CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

STANDARD DETAILS  
SHEET NO.  
CD-7

PROJECT NO. 1358-22097  
FILE NAME: COCD0007  
SHEET NO. CD-7

**A. GENERAL NOTES**

1. CODE: UNIFORM BUILDING CODE (UBC) 1994 EDITION.
2. DATUM: SEE DRAWINGS.
3. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE CIVIL, ELECTRICAL, AND SHOP DRAWINGS AND THE PROJECT SPECIFICATIONS.
4. SEE ALL OTHER PROJECT DOCUMENTS FOR REGLETS, PIPE SLEEVES, CONDUITS OR OTHER ITEMS TO BE EMBEDDED OR PASSED THROUGH CONCRETE STRUCTURES.
5. PENETRATIONS THROUGH WALLS OR SLABS LESS THAN 12" IN DIAMETER MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS - REFER TO ASSOCIATED DOCUMENTS FOR LOCATIONS.
6. NO STRUCTURAL MEMBERS SHALL BE CUT FOR PIPES, DUCTS, ETC., UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
7. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED SIZES.
8. USE PERTINENT STANDARD DETAILS SHOWN, EVEN THOUGH THEY MAY NOT BE CALLED OUT AT LOCATIONS WHERE THEY APPLY.
9. UNLESS MODIFIED BY THIS NOTE, SPECIAL INSPECTION SHALL BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN SECTION 1701 OF THE UNIFORM BUILDING CODE, (UBC). THE FOLLOWING ITEMS, AS A MINIMUM, SHALL RECEIVE SPECIAL INSPECTION.
  - a) CONCRETE: THE PREPARATION OF COMPRESSION TEST SPECIMENS AND PLACEMENT OF ALL REINFORCED CONCRETE SHALL BE INSPECTED.
  - b) BOLTS INSTALLED IN CONCRETE: BOLTS SHALL BE INSPECTED PRIOR TO AND DURING CONCRETE PLACEMENT.
  - c) ADHESIVE ANCHOR SYSTEMS: THE INSPECTOR SHALL RECORD DRILL-BIT COMPLIANCE WITH ANSI B94.12-1977; HOLE DEPTH AND CLEANLINESS; PRODUCT DESCRIPTION, INCLUDING PRODUCT NAME, ROD DIAMETER AND LENGTH; ADHESIVE EXPIRATION DATE; AND VERIFICATION OF ANCHOR INSTALLATION WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS AND THE PROPER ICBO EVALUATION REPORT.
  - d) REINFORCING STEEL: REINFORCING STEEL AND PRESTRESSING STEEL TENDONS SHALL BE INSPECTED PRIOR TO CLOSING THE FORMS OR DELIVERY OF CONCRETE TO JOBSITE AND DURING ALL STRESSING AND GROUTING OF TENDONS IN THE CONCRETE COREWALL.
  - e) CIRCUMFERENTIAL PRESTRESSING STRAND: PERIODIC INSPECTION SHALL BE PROVIDED TO ENSURE THAT THE WRAPPING OPERATION AND DOCUMENTATION REQUIREMENTS ARE IN FULL COMPLIANCE WITH THE SPECIFICATIONS.
  - f) SHOTCRETE: THE PREPARATION OF COMPRESSION TEST SPECIMENS AND PLACEMENT OF ALL SHOTCRETE SHALL BE INSPECTED.
  - g) WELDING: THE INSPECTOR SHALL INSPECT ALL STRUCTURAL WELDING DONE IN THE FIELD.
10. STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURES. DURING CONSTRUCTION, STRUCTURES SHALL BE SUPPORTED BY BRACING OR SHORING WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR.
11. VISITS TO THE JOB SITE BY THE ENGINEER TO OBSERVE THE CONSTRUCTION DO NOT IN ANY WAY MEAN THAT THEY ARE GUARANTORS OF THE CONSTRUCTOR'S WORK, OR RESPONSIBLE FOR COMPREHENSIVE OR SPECIAL INSPECTIONS, COORDINATION, SUPERVISION, OR SAFETY AT THE JOB SITE.

**B. DESIGN CRITERIA**

RESERVOIR ROOF LOAD: 20 psf LIVE LOAD PLUS 10 psf PEA GRAVEL ROOFING (MAY BE REDUCED AS ALLOWED BY THE UBC)

ALLOWABLE SOIL BEARING PRESSURE: 3500 psf FOR DEAD PLUS LIVE LOADS  
4500 psf FOR TOTAL LOADS INCLUDING SEISMIC LOADS

LATERAL EARTH PRESSURE (AT-REST) FOR TANK WALL DESIGN

$0 < h < 0.2H =$	125 psf/ft
$0.2H < h < 0.425H =$	25H psf
$0.425H < h < H =$	40H psf

WHERE h = DEPTH BELOW FINISHED GRADE IN FEET  
H = BACKFILL HEIGHT IN FEET

COEFFICIENT OF FRICTION: 0.45

SEISMIC:

Z = 0.50
I = 1.25
C = 2.75
Rw = 4.5

PEAK HORIZONTAL GROUND ACCELERATION (PHGA) = 0.50g (10% IN 50 YEARS)

PEAK VERTICAL GROUND ACCELERATION (PVGA) = 2/3 \* (PHGA)

SEISMIC DESIGN OF THE PRESTRESSED CONCRETE TANK SHALL BE IN ACCORDANCE WITH SECTION 4 OF AWWA D110-95 STANDARD FOR WIRE AND STRAND-WOUND, CIRCULAR, PRESTRESSED CONCRETE WATER TANKS.

ADDITIONAL GEOTECHNICAL DESIGN PARAMETERS ARE PRESENTED IN GEOTECHNICAL EXPLORATION FOR 6 MG WATER STORAGE RESERVOIR PROJECT, PITTSBURG, CALIFORNIA PREPARED BY ENGEQ, INC.

**C. CAST-IN-PLACE CONCRETE NOTES**

1. REINFORCED CONCRETE SHALL CONFORM TO THE ACI SPECIFICATION 318-95 AND ACI 350R.
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 

ALL STRUCTURAL CONCRETE OTHER THAN TANK CORE WALL:	f'c = 4000 psi
TANK CORE WALL:	f'c = 5000 psi
SHOTCRETE:	f'c = 4000 psi
3. REINFORCING STEEL SHALL CONFORM TO THE LATEST EDITION OF ASTM SPECIFICATION A706 OR A615, GRADE 60 AS SPECIFIED IN SPECIFICATION SECTION 03200.
4. REINFORCING STEEL FABRICATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF CRSI MANUAL OF STANDARD PRACTICE.
5. REINFORCING SHALL HAVE THE FOLLOWING CLEAR CONCRETE COVER, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 

CONDITION	COVER
UNFORMED SURFACES IN CONTACT WITH EARTH	3"
FORMED SURFACES EXPOSED TO EARTH, WATER OR WEATHER	2"
BOTTOM SURFACES OF SLAB OVER WATER	2"
6. SPLICED BARS SHALL HAVE A MINIMUM LAP AS SPECIFIED IN LATEST EDITION OF THE ACI 315 DETAILING MANUAL AND ACI 318 CHAPTER 21 UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS. HOOKS OF REINFORCING STEEL SHALL COMPLY WITH ACI 318.
7. CONSTRUCTION JOINTS SHALL NOT BE PLACED AT LOCATIONS OTHER THAN THOSE SHOWN ON THE DRAWINGS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
8. ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE 3/4" MINIMUM CHAMFER, UNLESS NOTED OTHERWISE.
9. WRITTEN SPACING AND LOCATION OF REINFORCING SHALL TAKE PRECEDENCE OVER DEPICTED SPACING AND LOCATION.

**D. ANCHORAGE TO CONCRETE NOTES**

1. CAST-IN ANCHOR BOLTS SHALL CONFORM TO ASTM A307.
2. ADHESIVE AND EXPANSION ANCHORS SHALL CONFORM TO MANUFACTURER'S RECOMMENDATIONS AND ICBO REPORTS. ANCHORS WITHOUT ICBO REPORTS SHALL NOT BE USED.
3. CONTRACTOR SHALL LOCATE EXISTING REBAR USING NON-DESTRUCTIVE METHODS PRIOR TO DRILLING HOLES FOR ADHESIVE AND EXPANSION ANCHORS. ADJUST SPACING OF ANCHORS TO MISS EXISTING REINFORCING. TOTAL NUMBER OF ANCHORS PROVIDED SHALL BE EQUAL TO WHAT IS SHOWN ON THE DRAWINGS.
4. USE TYPE 316 STAINLESS STEEL FOR ALL BOLTS UNLESS NOTED OTHERWISE.
5. WHERE STAINLESS STEEL BOLTS ARE IN CONTACT WITH DISSIMILAR METALS, USE INSULATING SLEEVES AND PHENOLIC WASHERS TO ELECTROLYTICALLY ISOLATE THE BOLTS.
6. WHERE BOLTS ARE PLACED IN THE WALL EXTERIOR, DRILL AND PLACE AFTER WRAPPING AND BEFORE SHOTCRETING. TAKE EXTREME CARE TO AVOID DAMAGING PRESTRESSING STRAND. PLACE A STEEL PIPE AROUND THE DRILL BIT TO KEEP BIT FROM COMING IN CONTACT WITH THE STRAND. INSERT BOLTS BEFORE SHOTCRETING TO MARK HOLE LOCATION. PACK HOLE IN SHOTCRETE WITH EPOXY BEFORE FINAL INSTALLATION OF BOLTS TO INSURE COMPLETE COVERAGE OF STRAND.

**E. METAL NOTES**

1. STRUCTURAL SHAPES, PLATES AND BARS SHALL CONFORM TO ASTM A36.
2. ALL STRUCTURAL STEEL SHALL BE FABRICATED, ERECTED AND CONNECTED IN COMPLIANCE WITH THE LATEST AISC SPECIFICATIONS.
3. BOLTED CONNECTIONS SHALL BE MADE USING ASTM A325 HIGH-STRENGTH BOLTS UNLESS OTHERWISE SPECIFIED. ALL BOLTS SHALL BE 3/4" IN 13/16" HOLES UNLESS OTHERWISE SPECIFIED. PROVIDE A MINIMUM OF TWO BOLTS PER CONNECTION.
4. SHOP PAINTING AND FIELD PAINTING, IF REQUIRED, SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS. STRUCTURAL STEEL SHALL BE SHOP PRIMED UNLESS OTHERWISE NOTED.
5. ALL ALUMINUM EMBEDDED IN CONCRETE SHALL BE COATED IN ACCORDANCE WITH SPECIFICATION SECTION 05500.
6. SEE SECTION 05500 OF THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

**F. ALUMINUM GRATING NOTES**

1. GRATING AND SUPPORTS SHALL BE ALL ALUMINUM CONSTRUCTION UNLESS NOTED OTHERWISE. GRATING SHALL BE ALUMINUM ALLOY 6063-T6.
2. FASTENERS, ANCHORS, BOLTS, NUTS AND WASHERS FOR GRATING AND SUPPORTS SHALL BE TYPE 304 OR 316 STAINLESS STEEL.
3. BAND ALL GRATING ALONG EDGES AND AROUND OPENINGS WITH CONTINUOUS BAR EQUAL TO BEARING BARS.
4. ALL ANGLE FRAMES FOR GRATING ARE TO BE MITERED AND WELDED AT CORNERS.
5. ALL ALUMINUM GRATING IS TO BE SECURELY FASTENED TO SUPPORTS WITH STAINLESS STEEL GRATING CLIPS AND STAINLESS STEEL ANCHORS, UNLESS OTHERWISE NOTED.
6. ALUMINUM GRATING SIZE SHALL MEET THE FOLLOWING CRITERIA (UNLESS NOTED OTHERWISE):
 

SPAN	BEARING BAR SIZE
0'-0" TO 2'-11" USE	1 1/4" x 3/16" MIN
3'-0" TO 4'-11" USE	2" x 3/16" MIN
5'-0" TO 7'-0" USE	2 1/2" x 3/16" MIN
7. FIELD VERIFY GRATING SUPPORT LOCATIONS BEFORE FABRICATING GRATING. PLACE SUPPORTS WITH EXTREME CARE TO PROVIDE TOLERANCES SHOWN OR SPECIFIED.
8. REFER TO SPECIFICATION SECTION 05500 FOR ADDITIONAL METAL GRATING REQUIREMENTS.

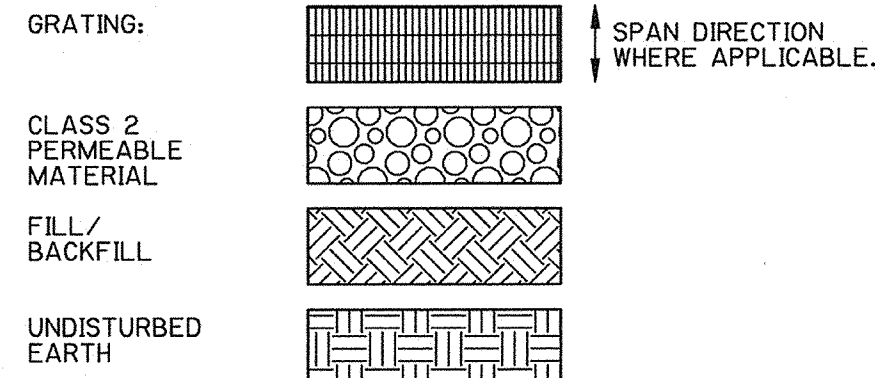
**G. JOINT NOTES**

1. ALL HORIZONTAL SLAB JOINTS WITHIN LIQUID CONTAINMENT STRUCTURES SHALL BE SEALED ON THE WATER SIDE OF THE WALL OR SLAB.
2. WATERSTOPS SHALL BE PROVIDED AT ALL JOINTS INDICATED ON THE DRAWINGS. WATERSTOPS SHALL ALSO BE PROVIDED IN ALL HORIZONTAL AND VERTICAL JOINTS IN WATER CONTAINMENT STRUCTURES TO PREVENT EXFILTRATION INTO SOIL. WATERSTOPS SHALL BE CONTINUOUS AROUND ALL CORNERS AND INTERSECTIONS. ALL JOINTS IN WATERSTOPS SHALL BE WELDED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

**H. DEFERRED SUBMITTALS**

1. THE FOLLOWING PORTIONS OF THE PROJECT ARE DEFERRED SUBMITTAL ITEMS AND HAVE NOT BEEN DESIGNED BY THE ENGINEER OF RECORD.
  - a) PRESTRESSED CONCRETE TANK WALL, INCLUDING CIRCUMFERENTIAL AND VERTICAL PRESTRESSING REINFORCEMENT, SEISMIC CABLES, AND BEARING PADS.
  - b) GUARDRAILS.
  - c) GRATING.
  - d) ACCESS HATCHES.
2. DEFERRED SUBMITTAL ITEMS WILL BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL DURING THE CONSTRUCTION PHASE OF THE PROJECT.
3. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE ENGINEER OF RECORD HAS REVIEWED THE SUBMITTAL DOCUMENTS & INDICATED THAT THEY HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE STRUCTURE.
4. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

**LEGEND:**



**STRUCTURAL ABBREVIATIONS**

AB	ANCHOR BOLT	FTG	FOOTING	SCH	SCHEDULE
ADDL	ADDITIONAL	GA	GAGE	SEC	SECTION
ALU	ALUMINUM	GALV	GALVANIZED	SHT(S)	SHEET(S)
ARND	AROUND	GRTG	GRATING	SIM	SIMILAR
				SL	SLOPE DOWN
BTWN	BETWEEN			SPC(S)	SPACE(S)
BOT	BOTTOM	HK	HOOK	SPEC(S)	SPECIFICATION(S)
BM	BEAM	HP	HIGH POINT	SO	SQUARE
		HWL	HIGH WATER LEVEL	SS	STAINLESS STEEL
CIRC	CIRCULAR			STIRR	STIRRUP
CJ	CONSTRUCTION JOINT	JT	JOINT	STL	STEEL
CLR	CLEAR	LP	LOW POINT	STD	STANDARD
COL(S)	COLUMN(S)				
COMP	COMPRESSIBLE			T.O.	TOP OF
CONC	CONCRETE	M	METER	T&B	TOP AND BOTTOM
CONT	CONTINUOUS	MIN	MINIMUM	TYP	TYPICAL
CTR	CENTER	MTL	METAL		
		MUS	MINIMUM ULTIMATE STRENGTH	UNO	UNLESS NOTED OTHERWISE
D	DEEP			W	WIDE
DET(S)	DETAIL(S)	OC	ON CENTER	W/	WITH
DJA	DIAMETER	OPNG(S)	OPENING(S)		
DIAG	DIAGONAL	OPP	OPPOSITE	Ø	DIAMETER
DWG(S)	DRAWING(S)	PJF	PREMOLDED JOINT FILLER	⊕	CENTER LINE
DWL(S)	DOWEL(S)	PL	PLATE		
EA	EACH				
EF	EACH FACE	REINF	REINFORCING		
EL	ELEVATION	REOD	REQUIRED		
EQ	EQUAL				
ES	EACH SIDE				
EW	EACH WAY				
EXP ANCH	EXPANSION ANCHOR				
EXP JT	EXPANSION JOINT				

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THE CITY OF PITTSBURG ASSUMES NO LIABILITY FOR LOSS OR DAMAGE RESULTING FROM RELIANCE THEREON.

RECORD DRAWING  
DATE: 11/22/2001 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

DESIGNED BY: LGS  
DRAWN BY: AT  
SHEET CHK'D BY: DMY  
CROSS CHK'D BY: DMY  
APPROVED BY: JRT  
DATE: MAY 1998

CAMP DRESSER & MCKEE INC.  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

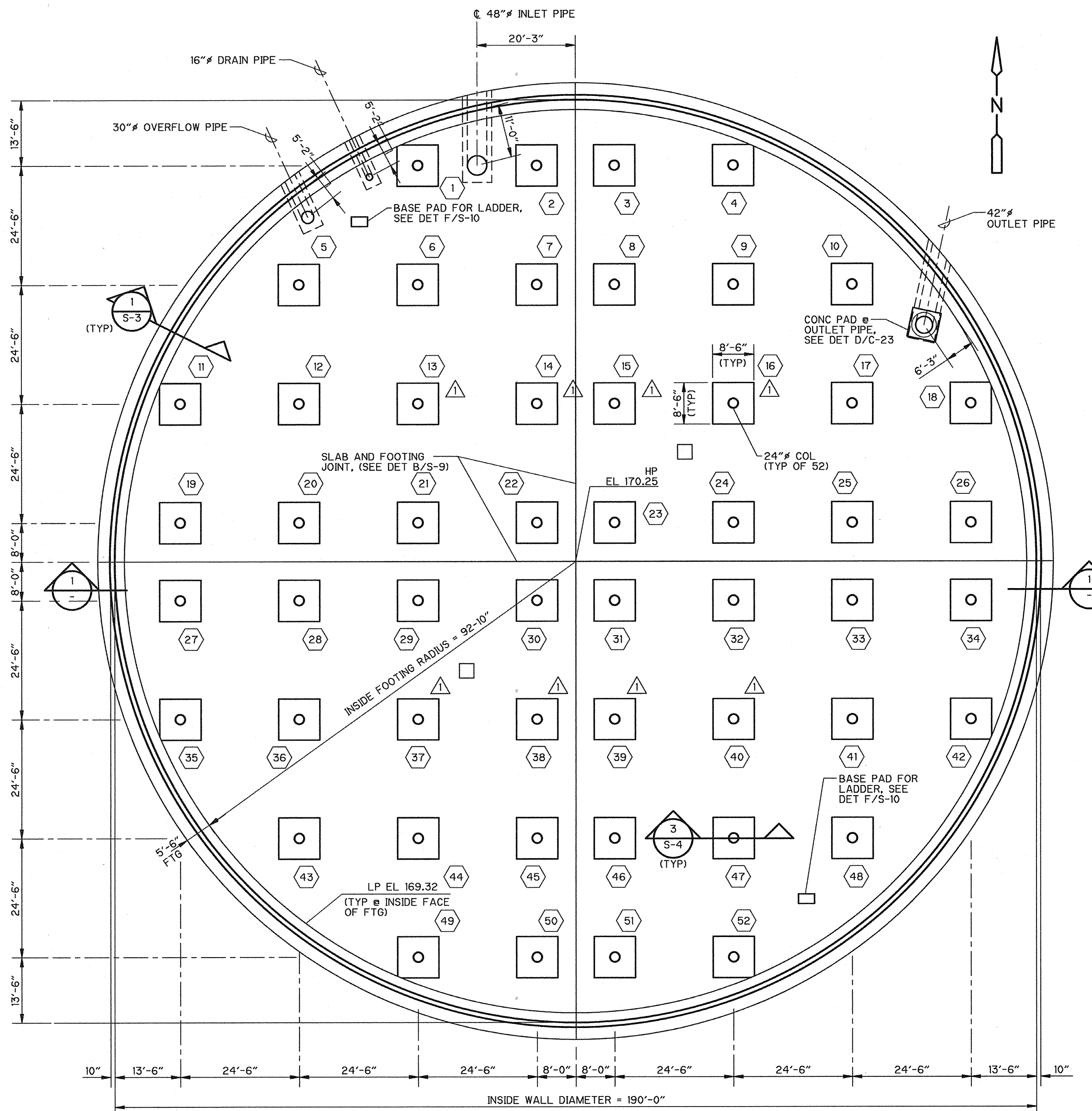
environmental engineers, scientists,  
planners, & management consultants

CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

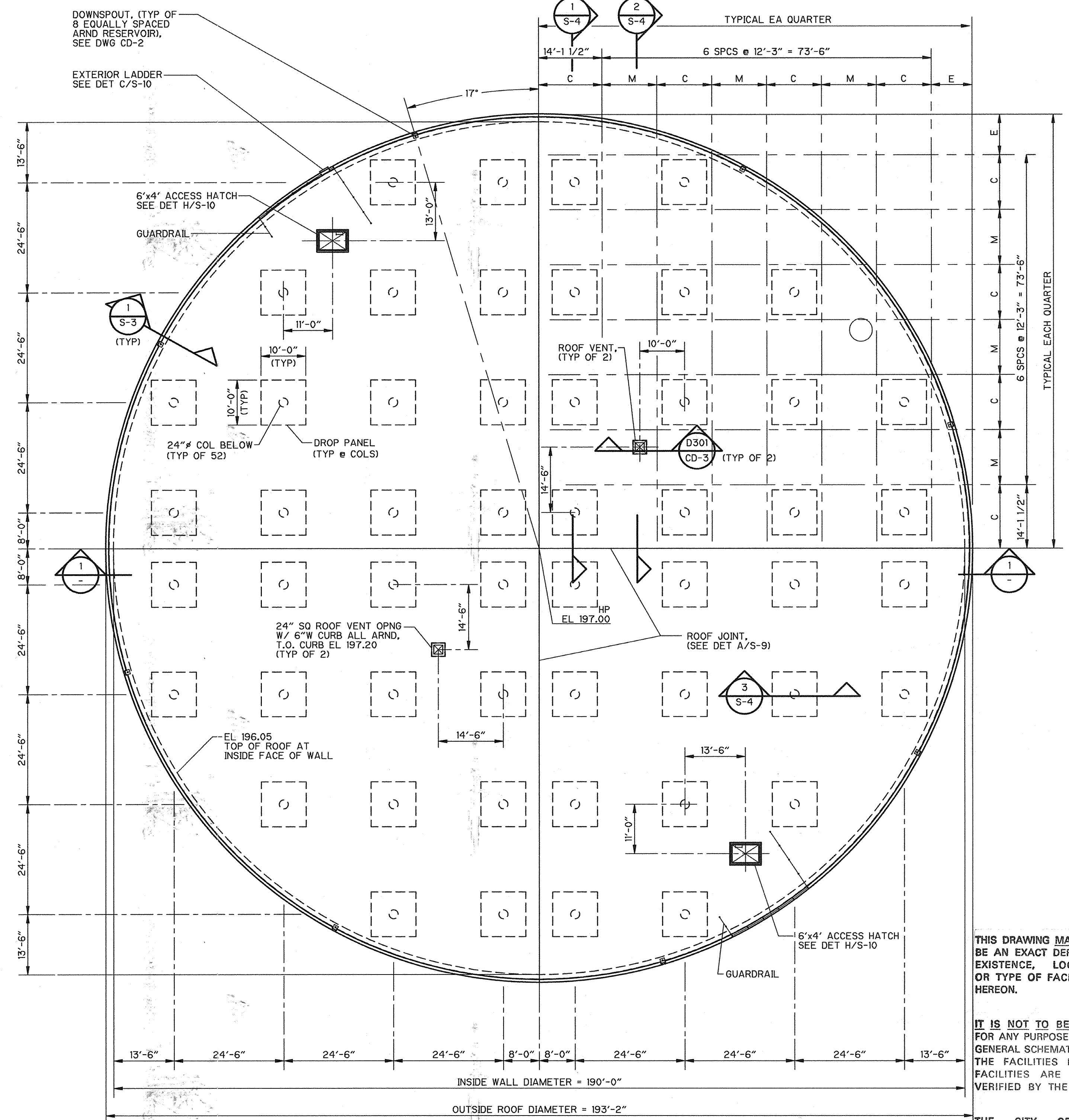
GENERAL NOTES, ABBREVIATIONS  
AND LEGEND

PROJECT NO. 1358-22097  
FILE NAME: 50000001

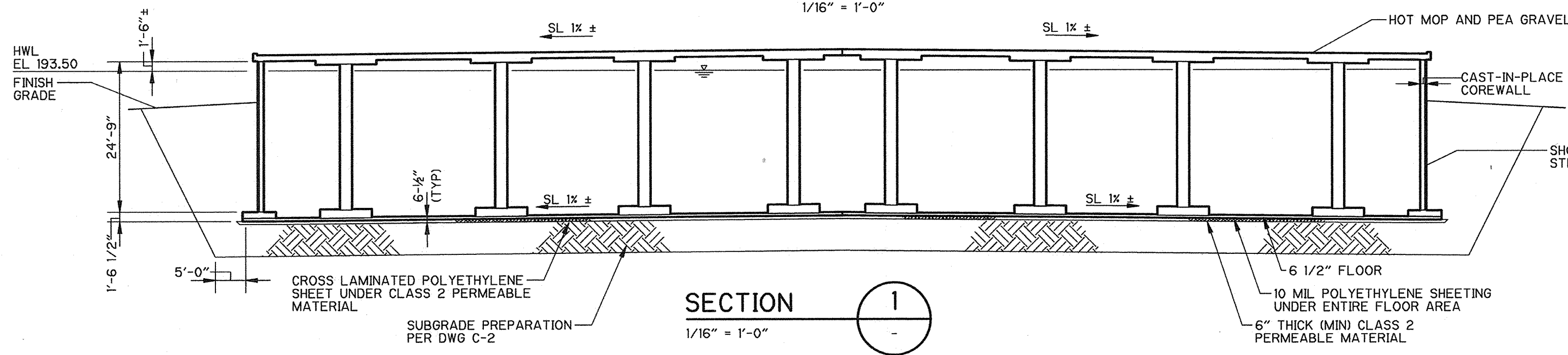
SHEET NO.  
S-1



**FOUNDATION PLAN**  
1/16" = 1'-0"



**ROOF PLAN**  
1/16" = 1'-0"



**SECTION 1**  
1/16" = 1'-0"

NOTES:  
C INDICATES COLUMN STRIP  
M INDICATES MIDDLE STRIP  
E INDICATES END STRIP

**RECORD DRAWING**  
DATE: 4/12/2000 BY: [Signature]

**APPROVED** W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00	EPM	BPD		RECORD DRAWINGS

DESIGNED BY: LGS.  
DRAWN BY: SGH.  
SHEET CHK'D BY: DMY.  
CROSS CHK'D BY: DMY.  
APPROVED BY: JRT.  
DATE: MAY 1998

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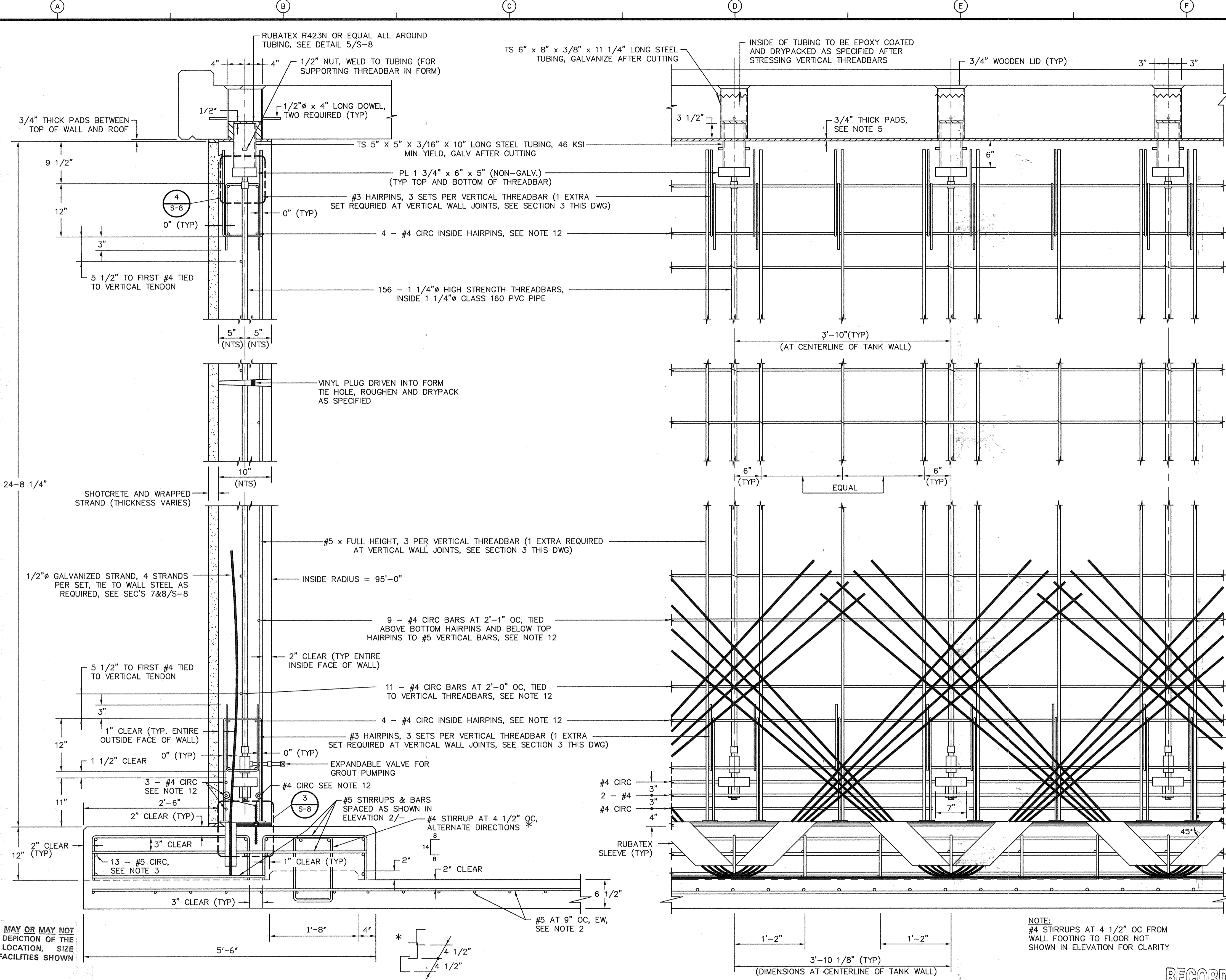
environmental engineers, scientists,  
planners, & management consultants **CDM**

**CITY OF PITTSBURG**  
ENGINEERING DIVISION  
**6 MG RESERVOIR**  
REPLACEMENT PROJECT

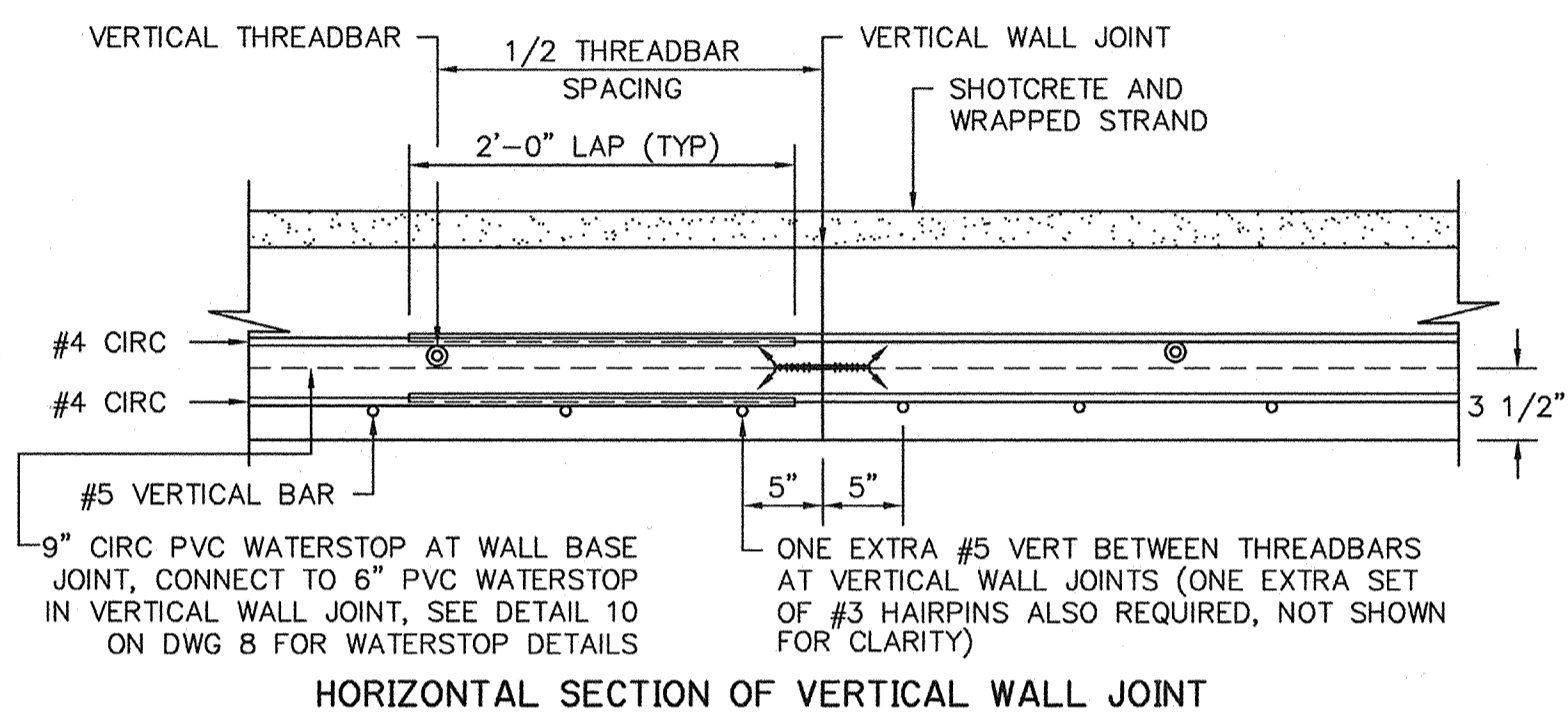
**5 MG RESERVOIR**  
PLANS AND SECTION

PROJECT NO. 1358-22097  
FILE NAME: S0000002  
SHEET NO. **S-2**

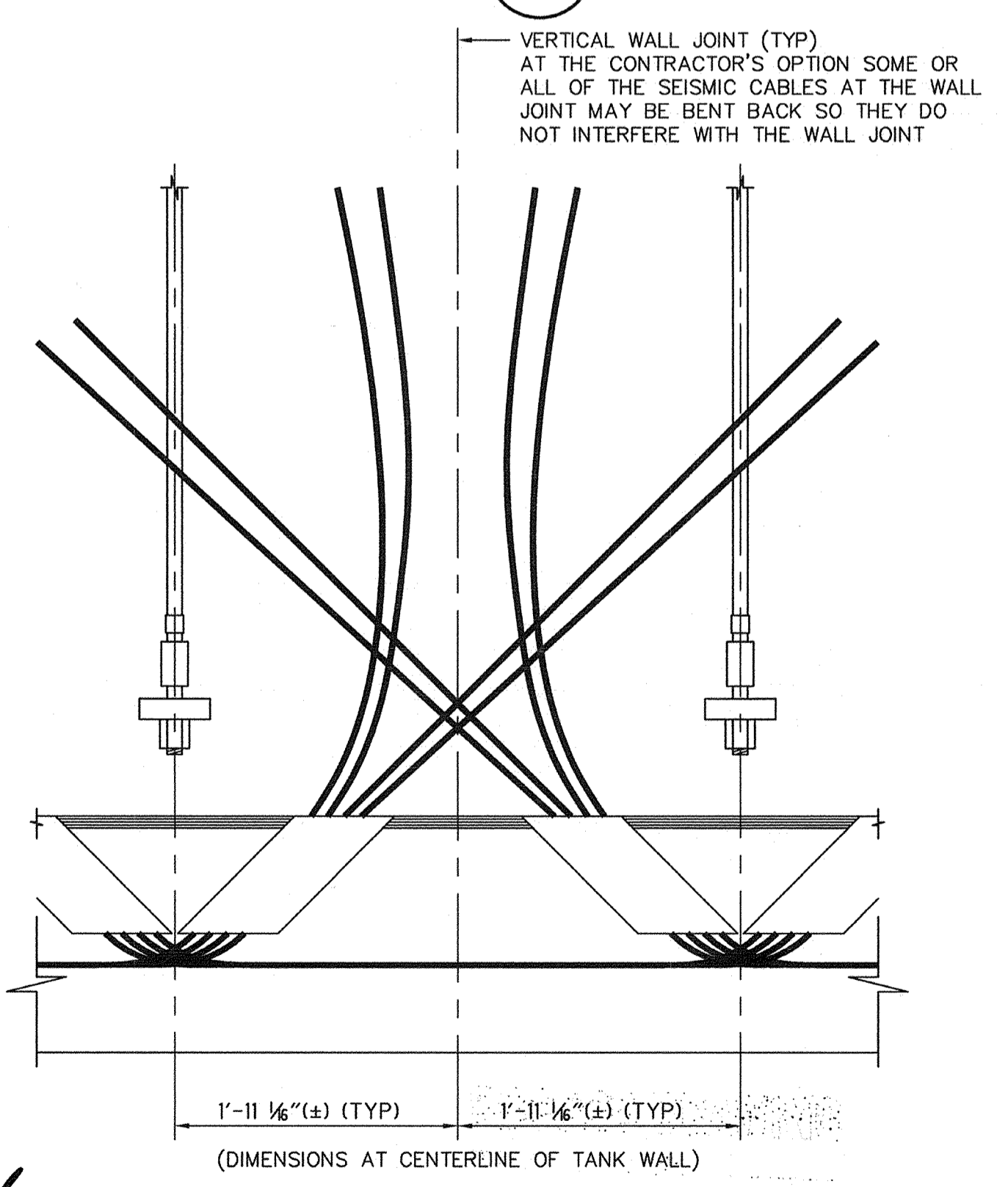




- NOTES:**
- 1) TIE OFF ALL WATERSTOPS AT 12" OC ON BOTH SIDES AND IN BOTH DIRECTIONS.
  - 2) REINFORCE THE FLOOR WITH #5 BARS AT 9" OC, EW, WITH 2'-3" STAGGERED LAPS.
  - 3) REINFORCE THE WALL FOOTING WITH 13 - #5 CIRC BARS WITH 2'-3" STAGGERED LAPS.
  - 4) SEE DETAILS 3 AND 6 ON S-8 FOR DETAILS OF THE WATERSTOP AND BEARING PADS AT THE BASE OF THE WALL.
  - 5) SEE DETAILS 5 AND 9 ON S-8 FOR THE ROOF SHEAR CONNECTION AND THE BEARING PADS AT THE TOP OF THE WALL.
  - 6) PLACE THE FLOOR, WALL FOOTING AND ROOF IN QUADRANTS.
  - 7) PLACE A 1" THICK LAYER OF A 1 PART CEMENT TO 1 PART SAND PASTE AT THE BASE OF THE WALL IMMEDIATELY PRIOR TO BEGINNING THE WALL PLACEMENT.
  - 8) FLOOR TO FOOTING INTERFACE SHALL BE ROUGHENED TO A 1/4"(±) AMPLITUDE AND CLEANED OF ALL CURING COMPOUNDS BY SANDBLASTING OR OTHER APPROVED METHOD PRIOR TO PLACING THE FOOTING. ADEQUATE PROTECTION FOR SEISMIC CABLES AND WATERSTOPS MUST BE PROVIDED DURING SANDBLASTING.
  - 9) THE TOP OF THE WALL FOOTING AND FLOOR SHALL RECEIVE A SMOOTH AND HARD STEEL-TROWELLED FINISH.
  - 10) MAINTAIN CLEARANCE BETWEEN THE INDIVIDUAL STRANDS IN THE SEISMIC CABLE SETS (DO NOT BUNDLE).
  - 11) SEISMIC CABLES MAY BE BENT PRIOR TO INSTALLATION.
  - 12) ALL CIRCUMFERENTIAL REINFORCING MUST EXTEND 2'-6"(±) PAST BOTH ENDS OF THE FIRST WALL SECTION AND ONE END OF ALL INTERMEDIATE WALL SECTIONS IN ORDER TO PROVIDE 2'-0" LAPS. CIRCUMFERENTIAL REINFORCING MAY NOT EXTEND PAST EITHER END OF THE LAST WALL SECTION.



**HORIZONTAL SECTION OF VERTICAL WALL JOINT**  
SECTION 3  
1" = 1'-0"



**VERTICAL WALL JOINT (12 EACH, EVENLY SPACED)**  
ELEVATION 4  
1" = 1'-0"

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THE CITY OF PITTSBURG ASSUMES NO LIABILITY FOR LOSS OR DAMAGE RESULTING FROM RELIANCE THEREON.	DESIGNED BY: LGS	CAMP DRESSER & MCKEE INC.
REV. NO.	DRAWN BY: RAC	One Walnut Creek Center
DATE	SHEET CHK'D BY: DMV	100 Pringle Avenue, Suite 300
DRWN	CROSS CHK'D BY: DMV	Walnut Creek, California 94596
CHKD	APPROVED BY: JRT	(510) 933-2900
RECORD DRAWINGS	DATE: MAY 1998	environmental engineers, scientists, planners, & management consultants
REMARKS		<b>CDM</b>

**RADIAL SECTION OF WALL AND WALL FOOTING**  
SECTION 1  
1" = 1'-0"

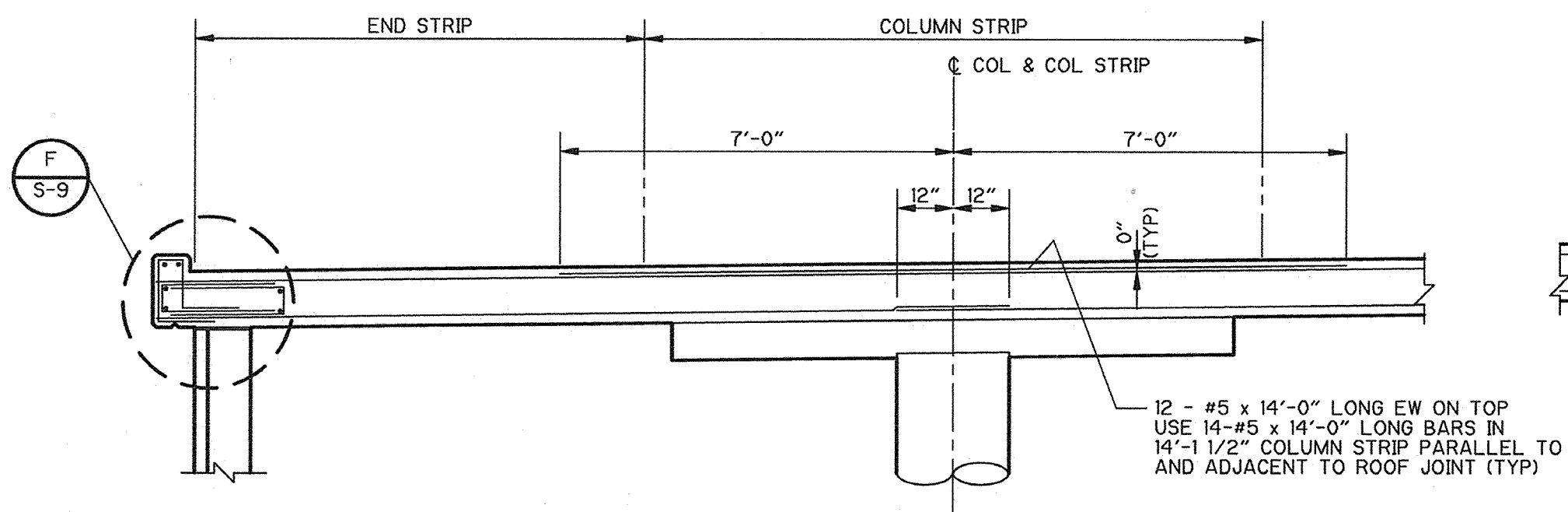
**WALL AND WALL FOOTING ELEVATION**  
SECTION 2  
1" = 1'-0"

**RECORD DRAWING**  
DATE: 4/22/2000 BY: M. J. Beck  
APPROVED: W.G. For N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

**CITY OF PITTSBURG ENGINEERING DIVISION**  
**6 MG RESERVOIR REPLACEMENT PROJECT**

**5 MG RESERVOIR WALL DETAILS**

PROJECT NO. 1358-22097  
FILE NAME: S0000003  
SHEET NO. S-3

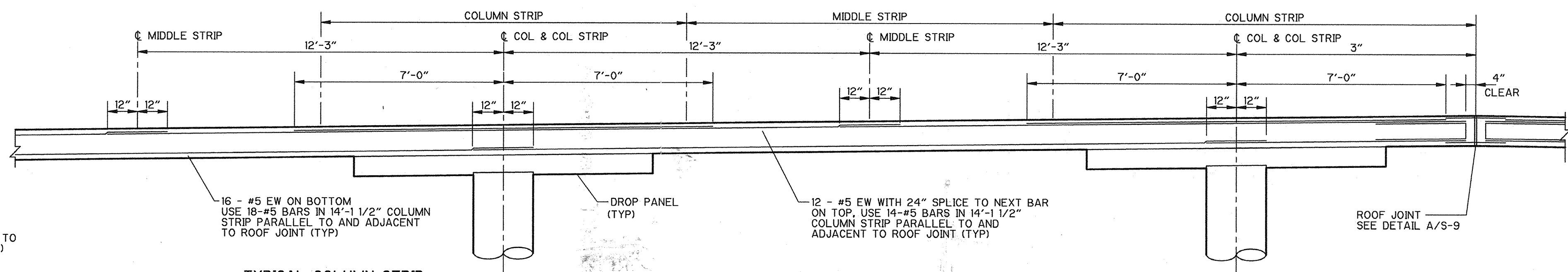


TYPICAL COLUMN STRIP

SECTION 1

3/8" = 1'-0"

S-2

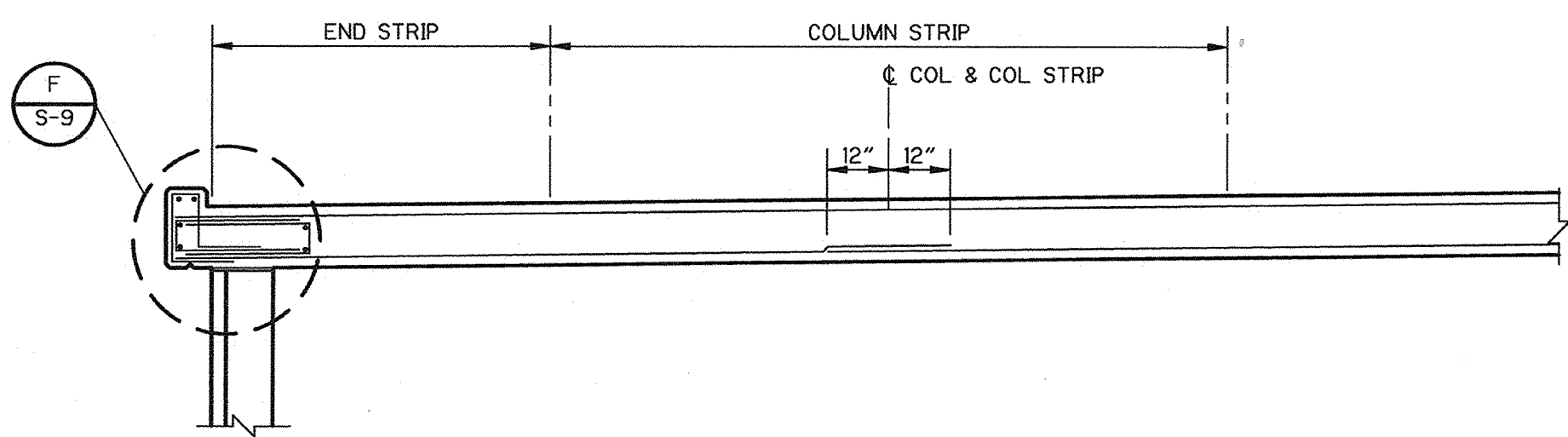


TYPICAL MIDDLE STRIP AND END STRIP

SECTION 2

3/8" = 1'-0"

S-2

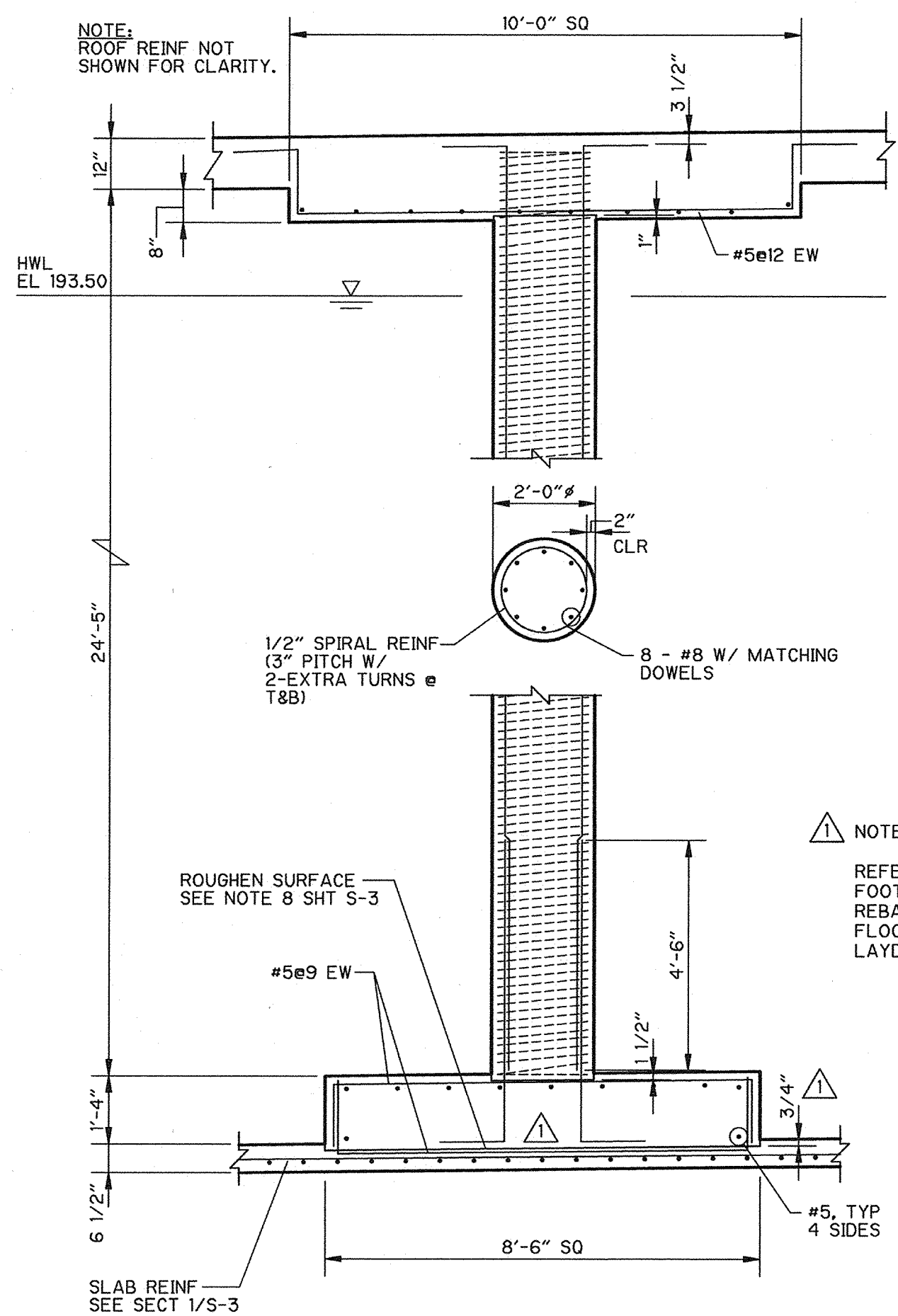


TYPICAL MIDDLE STRIP AND END STRIP

SECTION 2

3/8" = 1'-0"

S-2



SECTION 3

3/8" = 1'-0"

S-2

NOTE:

REFER TO SHEET S-2 FOR 6 COLUMN FOOTINGS WHERE DOWELS & BOTTOM REBAR MAT SET SEPARATELY FROM FLOOR POUR TO ACCOMMODATE CONTRACTOR'S LAYDOWN AREA.

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RECORD DRAWING  
DATE: 1/15/98 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

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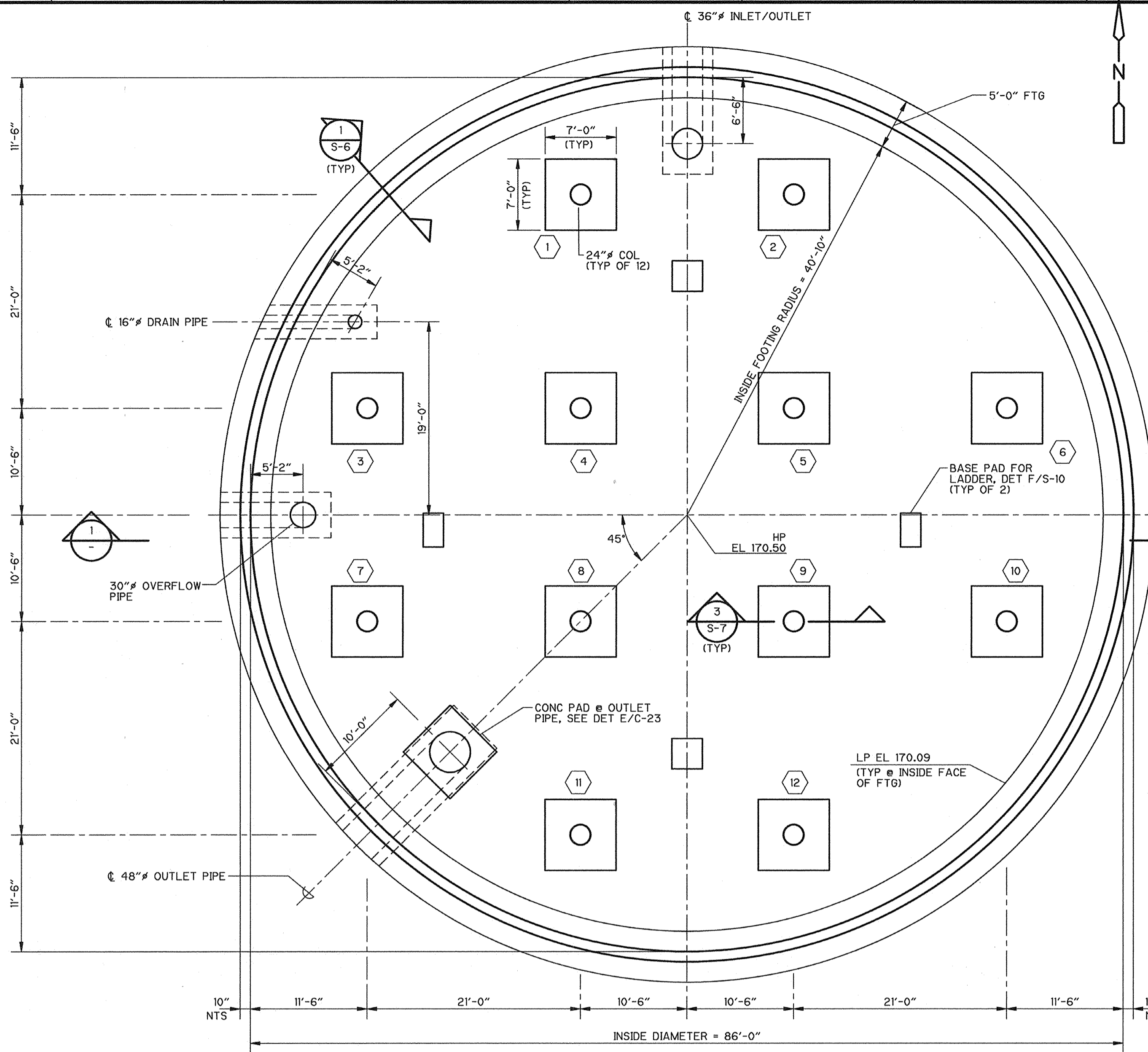
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

5 MG RESERVOIR  
SECTIONS

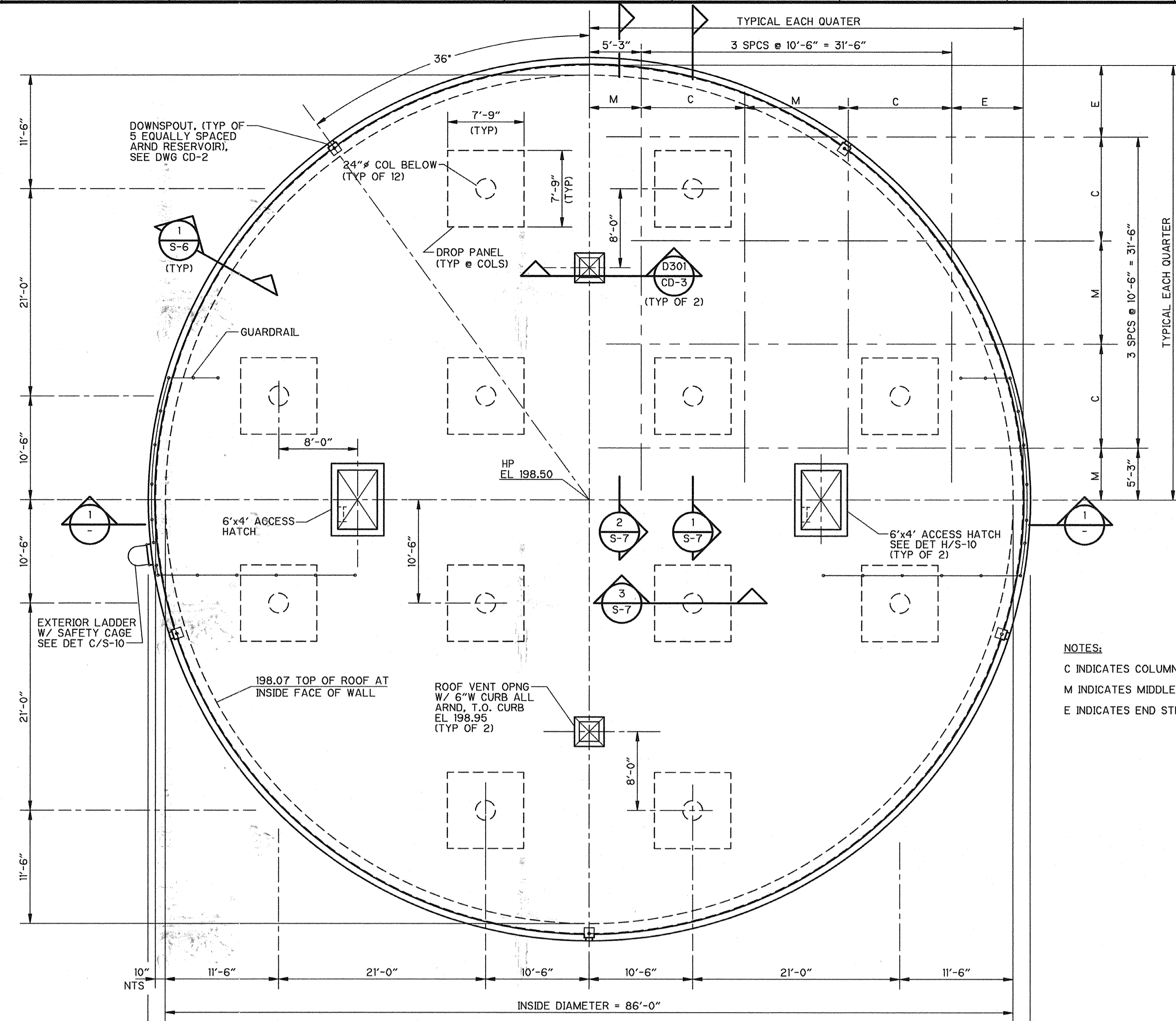
PROJECT NO. 1358-22097  
FILE NAME: S0000004

SHEET NO.

S-4



**FOUNDATION PLAN**  
1/8" = 1'-0"



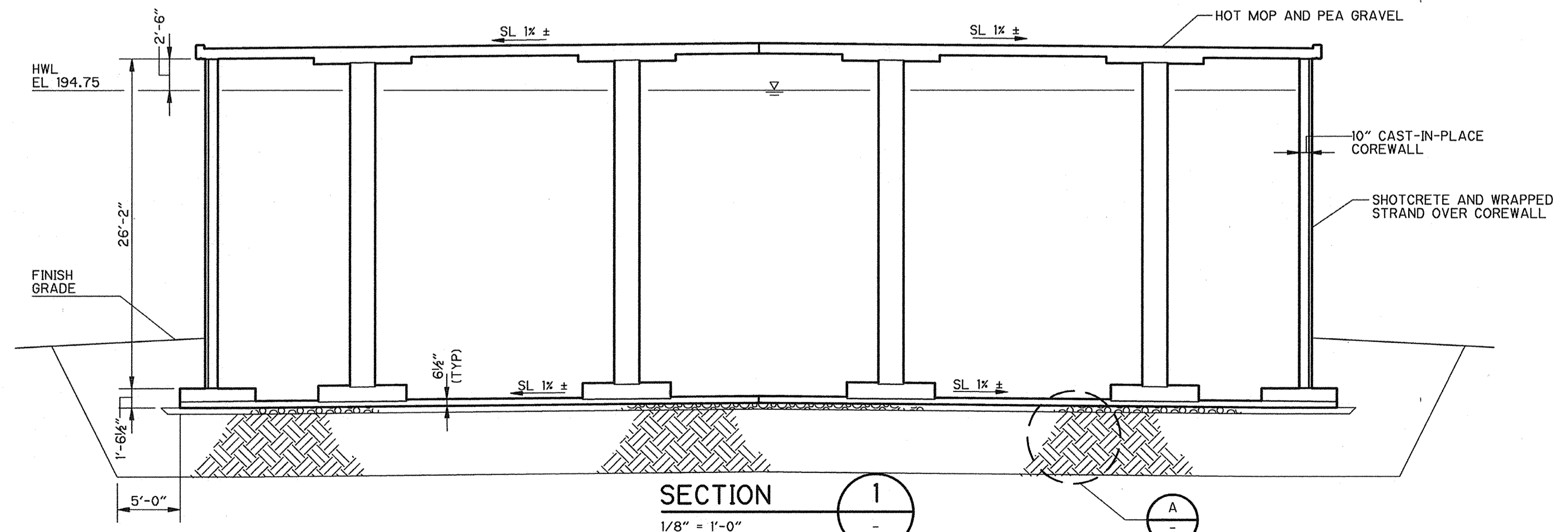
**ROOF PLAN**  
1/8" = 1'-0"

NOTES:  
C INDICATES COLUMN STRIP  
M INDICATES MIDDLE STRIP  
E INDICATES END STRIP

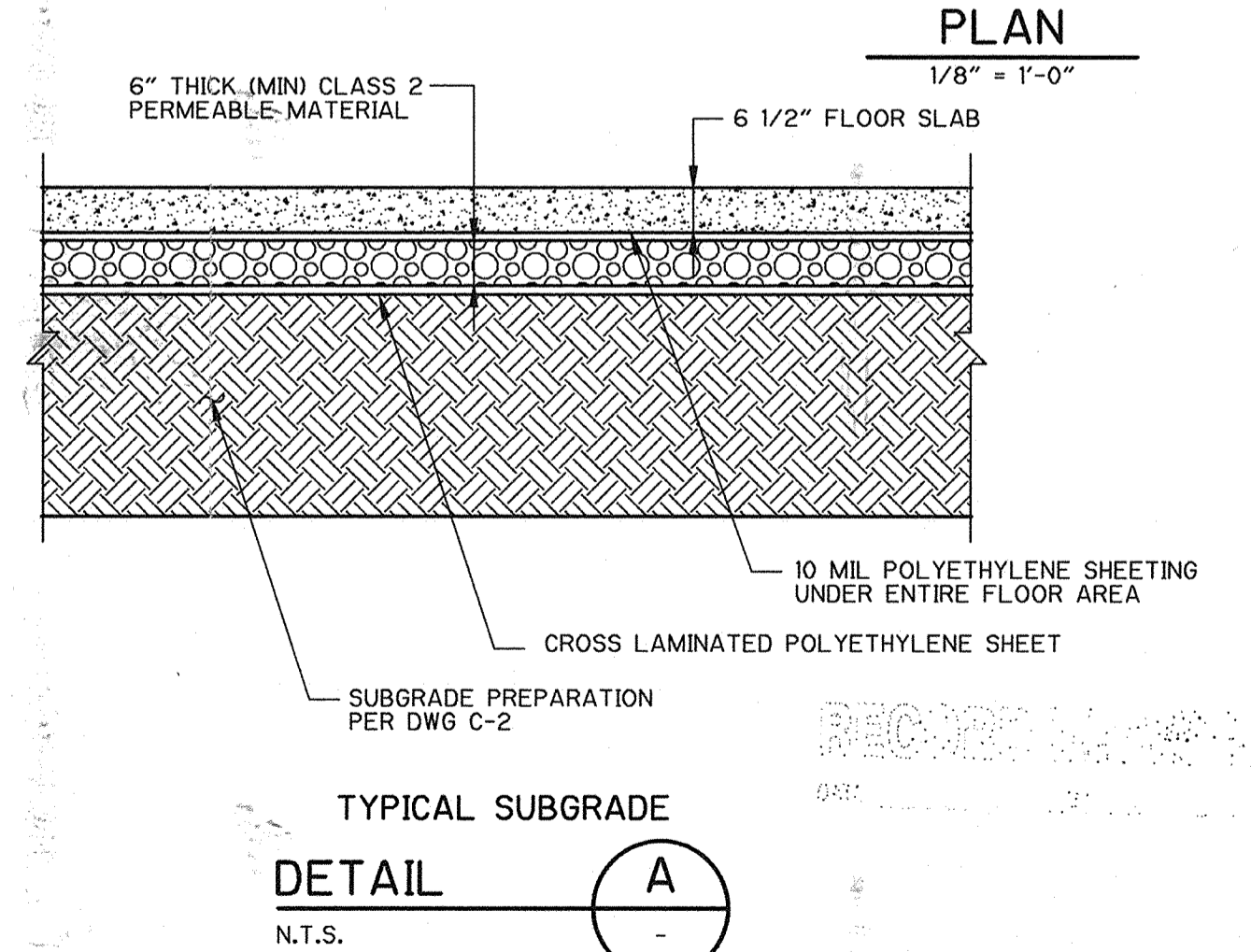
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THE CITY OF PITTSBURG ASSUMES NO LIABILITY FOR LOSS OR DAMAGE RESULTING FROM RELIANCE THEREON.



**SECTION 1**  
1/8" = 1'-0"



**TYPICAL SUBGRADE DETAIL A**  
N.T.S.

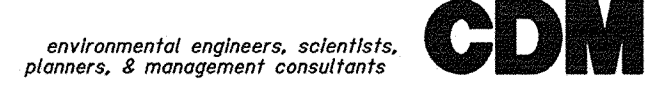
**RECORD DRAWING**  
DATE: 11/22/2000 BY: MJS/pak

APPROVED: W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00	EPM	BPD		RECORD DRAWINGS

DESIGNED BY: LGS  
DRAWN BY: SGH  
SHEET CHK'D BY: DMY  
CROSS CHK'D BY: DMY  
APPROVED BY: JRT  
DATE: MAY 1998

**CAMP DRESSER & MCKEE INC.**  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

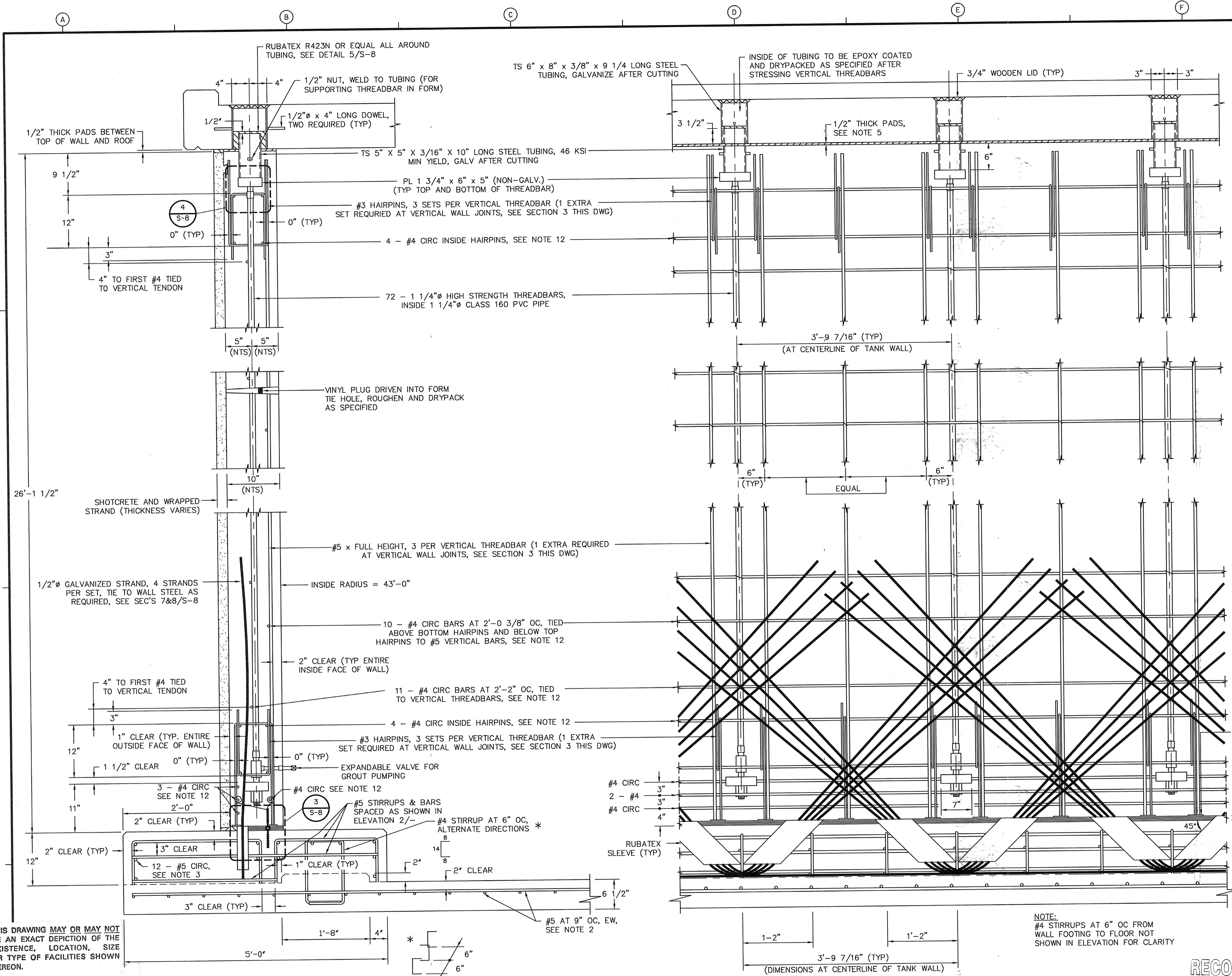


**CITY OF PITTSBURG ENGINEERING DIVISION**  
**6 MG RESERVOIR REPLACEMENT PROJECT**

**1 MG RESERVOIR PLANS, SECTION AND DETAIL**

PROJECT NO. 1358-22097  
FILE NAME: S0000005

SHEET NO. S-5



- NOTES:**
- 1) TIE OFF ALL WATERSTOPS AT 12" OC ON BOTH SIDES AND IN BOTH DIRECTIONS.
  - 2) REINFORCE THE FLOOR WITH #5 BARS AT 9" OC, EW, WITH 2'-3" STAGGERED LAPS.
  - 3) REINFORCE THE WALL FOOTING WITH 12 - #5 CIRC BARS WITH 2'-3" STAGGERED LAPS.
  - 4) SEE DETAILS 3 AND 6 ON S-8 FOR DETAILS OF THE WATERSTOP AND BEARING PADS AT THE BASE OF THE WALL.
  - 5) SEE DETAILS 5 AND 9 ON S-8 FOR THE ROOF SHEAR CONNECTION AND THE BEARING PADS AT THE TOP OF THE WALL.
  - 6) NOT USED
  - 7) PLACE A 1" THICK LAYER OF A 1 PART CEMENT TO 1 PART SAND PASTE AT THE BASE OF THE WALL IMMEDIATELY PRIOR TO BEGINNING THE WALL PLACEMENT.
  - 8) FLOOR TO FOOTING INTERFACE SHALL BE ROUGHENED TO A 1/4"(±) AMPLITUDE AND CLEANED OF ALL CURING COMPOUNDS BY SANDBLASTING OR OTHER APPROVED METHOD PRIOR TO PLACING THE FOOTING. ADEQUATE PROTECTION FOR SEISMIC CABLES AND WATERSTOPS MUST BE PROVIDED DURING SANDBLASTING.
  - 9) THE TOP OF THE WALL FOOTING AND FLOOR SHALL RECEIVE A SMOOTH AND HARD STEEL-TROWELLED FINISH.
  - 10) MAINTAIN CLEARANCE BETWEEN THE INDIVIDUAL STRANDS IN THE SEISMIC CABLE SETS (DO NOT BUNDLE).
  - 11) SEISMIC CABLES MAY BE BENT PRIOR TO INSTALLATION.
  - 12) ALL CIRCUMFERENTIAL REINFORCING MUST EXTEND 2'-6"(±) PAST BOTH ENDS OF THE FIRST WALL SECTION AND ONE END OF ALL INTERMEDIATE WALL SECTIONS IN ORDER TO PROVIDE 2'-0" LAPS. CIRCUMFERENTIAL REINFORCING MAY NOT EXTEND PAST EITHER END OF THE LAST WALL SECTION.

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**RADIAL SECTION OF WALL AND WALL FOOTING**  
**SECTION 1**  
 1" = 1'-0"

**WALL AND WALL FOOTING ELEVATION**  
**SECTION 2**  
 1" = 1'-0"

**RECORD DRAWING**  
 DATE: 5-21-98 BY: W.G. for N.S.

**APPROVED** W.G. for N.S. 5-21-98  
 NASSER SHIRAZI, CITY ENGINEER, RCE 42955

**VERTICAL WALL JOINT ELEVATION**  
**SECTION 3**  
 1" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	RECORD DRAWINGS	REMARKS
2/00		EPM	BPD		

DESIGNED BY: LGS  
 DRAWN BY: RAC  
 SHEET CHK'D BY: DMY  
 CROSS CHK'D BY: DMY  
 APPROVED BY: JRT  
 DATE: MAY 1998

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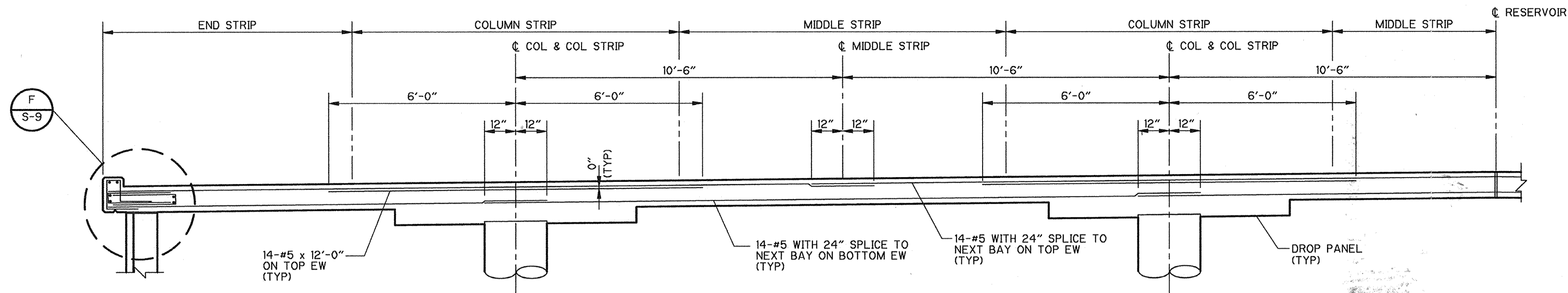


**CITY OF PITTSBURG ENGINEERING DIVISION**  
**6 MG RESERVOIR REPLACEMENT PROJECT**

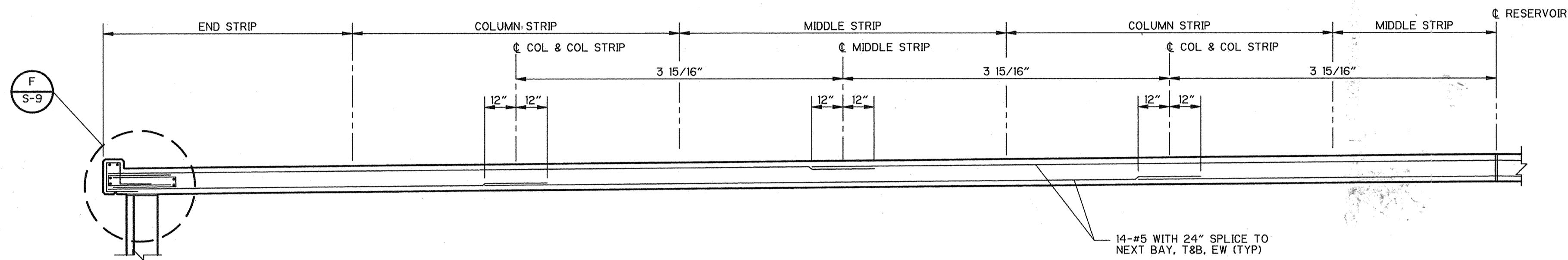
**1 MG RESERVOIR WALL DETAILS**

PROJECT NO. 1358-22097  
 FILE NAME: S0000006

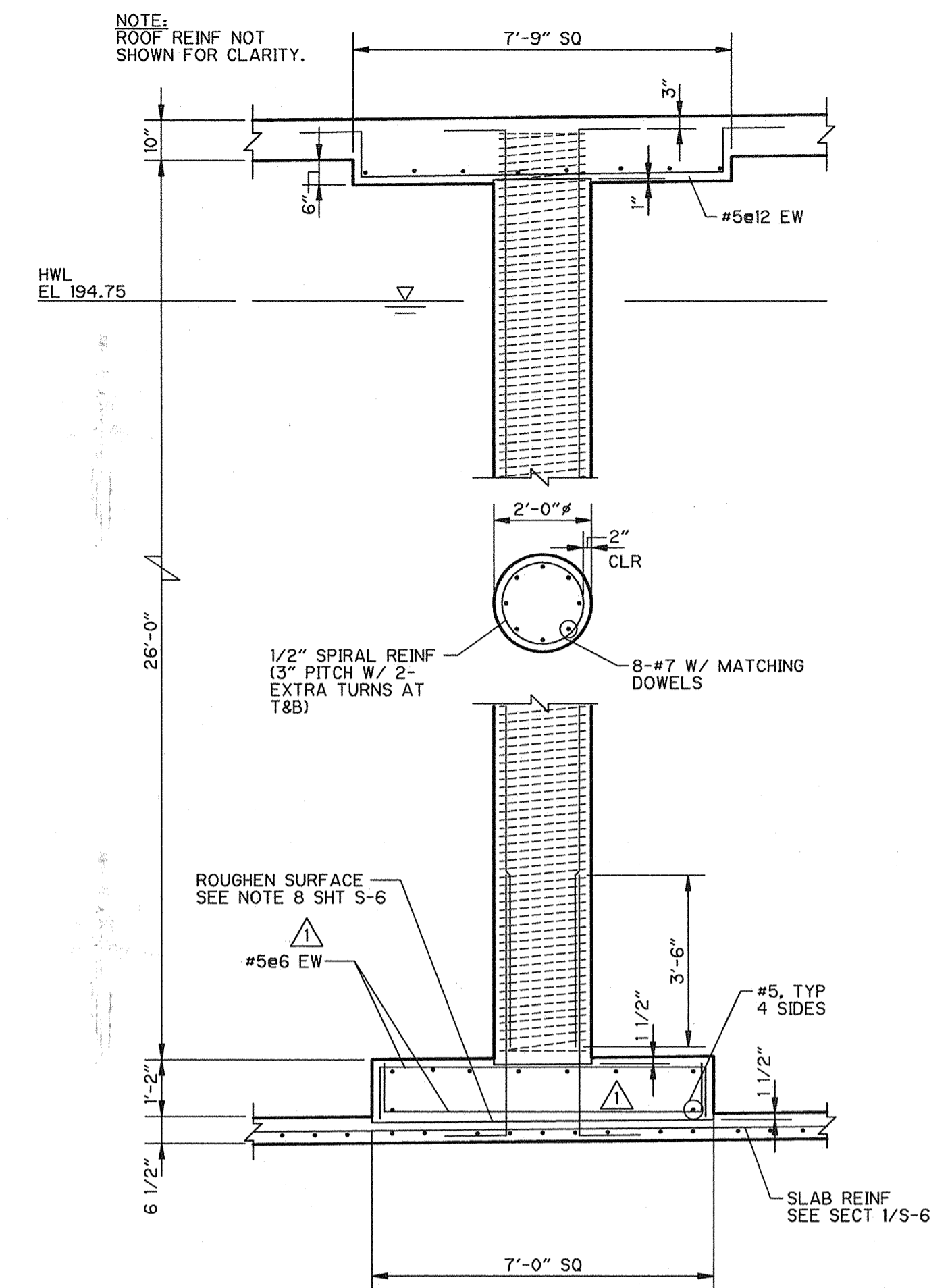
SHEET NO. **S-6**



TYPICAL COLUMN STRIP  
SECTION 1  
3/8" = 1'-0"



TYPICAL MIDDLE STRIP AND END STRIP  
SECTION 2  
3/8" = 1'-0"



SECTION 3  
3/8" = 1'-0"

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RECORD DRAWING  
DATE: 11/22/2000 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY:	LGS
DRAWN BY:	AT
SHEET CHK'D BY:	DMY
CROSS CHK'D BY:	DMY
APPROVED BY:	JRT
DATE:	MAY 1998

CAMP DRESSER & MCKEE INC.  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

environmental engineers, scientists,  
planners, & management consultants

**CDM**

CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

1 MG RESERVOIR  
SECTIONS

PROJECT NO. 1358-22097  
FILE NAME: S0000007  
SHEET NO. S-7

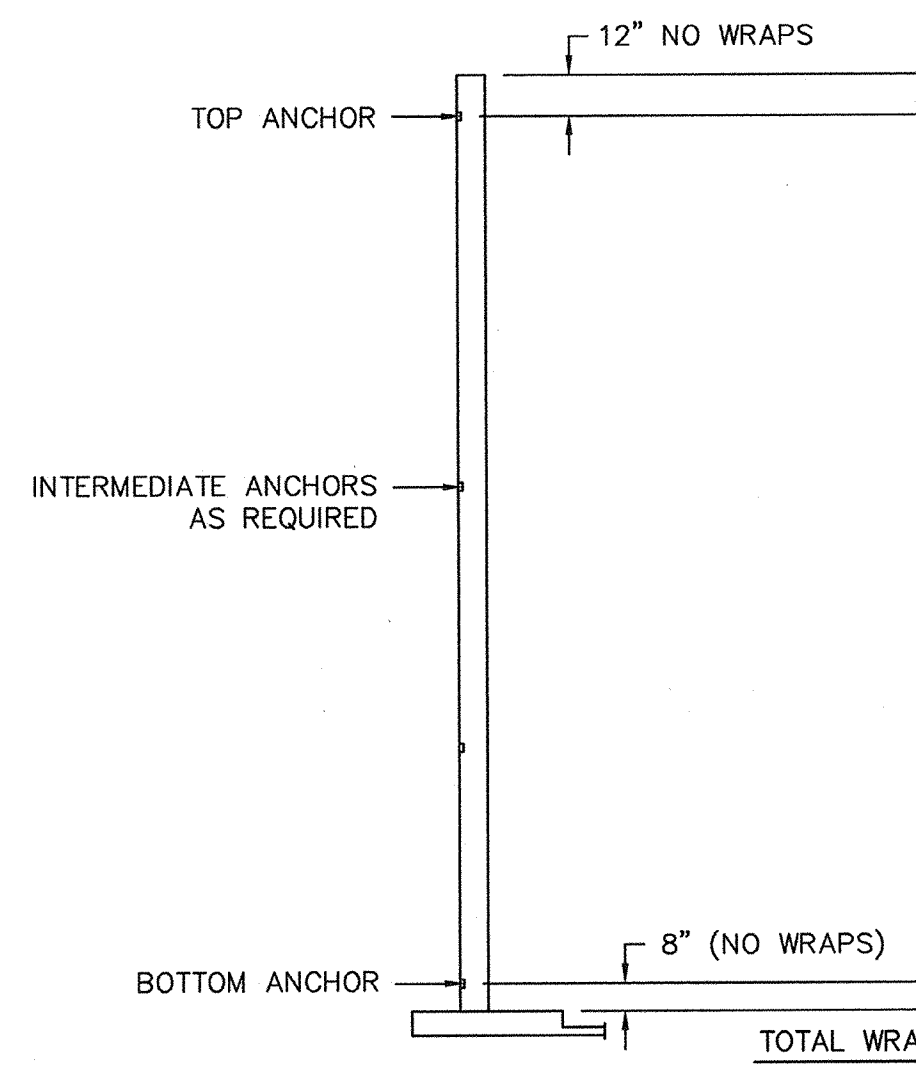
**CIRCUMFERENTIAL PRESTRESSING NOTES**

- THE MAXIMUM STRESS TOLERANCE IN ANY STRAND AT ANY POINT AT ANY ELEVATION ON THE TANK WALL AT ANY TIME DURING THE WRAPPING OPERATION SHALL NOT EXCEED ± 320 POUNDS FROM THE AVERAGE FORCE SETTING OF 14,950 POUNDS.
- THE CONTRACTOR SHALL PROVIDE A CONTINUOUSLY ELECTRONICALLY RECORDED FORCE APPLICATION GRAPH FOR THE FULL LENGTH OF ALL WRAPPED STRAND AS PERMANENT DOCUMENTED EVIDENCE THAT THE FORCE APPLICATION REQUIREMENTS HAVE BEEN MET. ALL SUCH FORCE READINGS MUST BE BASED ON CONTINUOUS SENSING OF THE STRAND BETWEEN THE TENSIONING DRUM AND THE WALL AS THE STRAND IS BEING LAID ON THE WALL.
- MANUAL, INDIVIDUAL, OR INTERMITTENT FORCE READINGS TAKEN WHEN THE STRAND IS IN FULL BODILY CONTACT WITH THE WALL WILL NOT BE ACCEPTED.
- FORCE READINGS BASED ON ANYTHING OTHER THAN INSTANTANEOUS MONITORING AS THE STRAND IS BEING TENSIONED WILL NOT BE ACCEPTED.
- INTERNAL TENDONS PLACED CIRCUMFERENTIALLY INSIDE THE COREWALL WILL NOT BE ACCEPTED.
- THE STRAND SHALL BE 3/8" BEFORE GALVANIZING WITH A MINIMUM GALVANIZING OF 0.85 OUNCES PER SQUARE FOOT AND A MINIMUM BREAKING STRENGTH OF 21,400 POUNDS AFTER GALVANIZING.
- THE STRAND SHALL BE INSTALLED AS INDICATED BY WRAPPING REQUIREMENTS.
- PRIOR TO APPLYING THE CIRCUMFERENTIAL PRESTRESSING STRAND, APPLY A 3/8" THICK LAYER OF SHOTCRETE OVER THE ENTIRE COREWALL.
- IF MULTIPLE LAYERS OF STRAND ARE REQUIRED, PROVIDE 3/8" MINIMUM OF SHOTCRETE COVERAGE BETWEEN LAYERS.
- PROVIDE 1 1/2" MINIMUM OF SHOTCRETE COVERAGE OVER THE OUTER LAYER OF STRAND.
- ALL SHOTCRETE TO BE APPLIED WITH AN AUTOMATED PROCESS KEEPING THE NOZZLE AT A CONSTANT DISTANCE AND ANGLE AS IT TRAVELS AT A UNIFORM BI-DIRECTIONAL SPEED. FINAL SHOTCRETE COVER TO HAVE A NATURAL GUN FINISH.

**VERTICAL PRESTRESSING NOTES**

- PRESTRESSING STEEL SHALL BE 1-1/4" Ø THREADBARS MEETING THE TENSILE, PHYSICAL, AND DEFORMATION REQUIREMENTS FOR ASTM A-722 TYPE II BARS.
  - THREADBARS TO BE HOT-DIP GALVANIZED TO PROVIDE A MINIMUM WEIGHT OF ZINC COATING EQUAL TO 0.85 OUNCES PER SQUARE FOOT. THREADBARS WITH QUENCHED OR TEMPERED STEELS WILL NOT BE ALLOWED.
  - THREADBARS SHALL HAVE A MAXIMUM CARBON CONTENT OF 0.55%.
  - DEFORMATIONS SHALL BE UNIFORM AND SUCH THAT ANY LENGTH OF BAR MAY BE CUT AT ANY POINT AND THE INTERNAL THREADS OF THE PROPER NUT CAN BE FREELY THREADED ONTO THE BAR.
  - MINIMUM ULTIMATE STRENGTH OF THE NUT MUST EQUAL AT LEAST 95% OF THE MINIMUM ULTIMATE STRENGTH OF THE BAR.
  - DURING EACH WALL PLACEMENT, FLUSH THE VERTICAL THREADBARS WITH CLEAN WATER FROM A HOSE PLACED THROUGH AN OPENING IN THE WOODEN CAP OVER THE WALL TUBE.
  - EACH VERTICAL TENDON SHALL BE STRESSED AS FOLLOWS:
- |                 | INITIAL FORCE | ELONGATION |        |
|-----------------|---------------|------------|--------|
| BEFORE WRAPPING | 137.3 K       | 1.14"      | 1.0 MG |
|                 | 137.3 K       | 1.07"      | 5.0 MG |
- GROUT PUMP EACH VERTICAL THREADBAR FROM THE BOTTOM GROUT CONNECTION WITH A 2-PART WATER INSENSITIVE EPOXY UNTIL THE ENTIRE NUT AT THE TOP ANCHOR CONNECTION HAS BEEN COVERED. THEN DRYPACK THE REMAINDER OF THE TUBING WITH A 1C:1S MIX IMMEDIATELY AFTER THE INSIDE OF THE TUBING HAS BEEN COATED WITH EPOXY. IN LIEU OF DRYPACKING, THE TUBING MAY BE FILLED WITH PEAGRAVEL PRIOR TO GROUT PUMPING AND THE ENTIRE TUBING MAY BE PUMPED FULL OF GROUT.
  - INSTALLATION OF THE VERTICAL THREADBARS IS SHOWN ON SHT S-3 AND S-6.

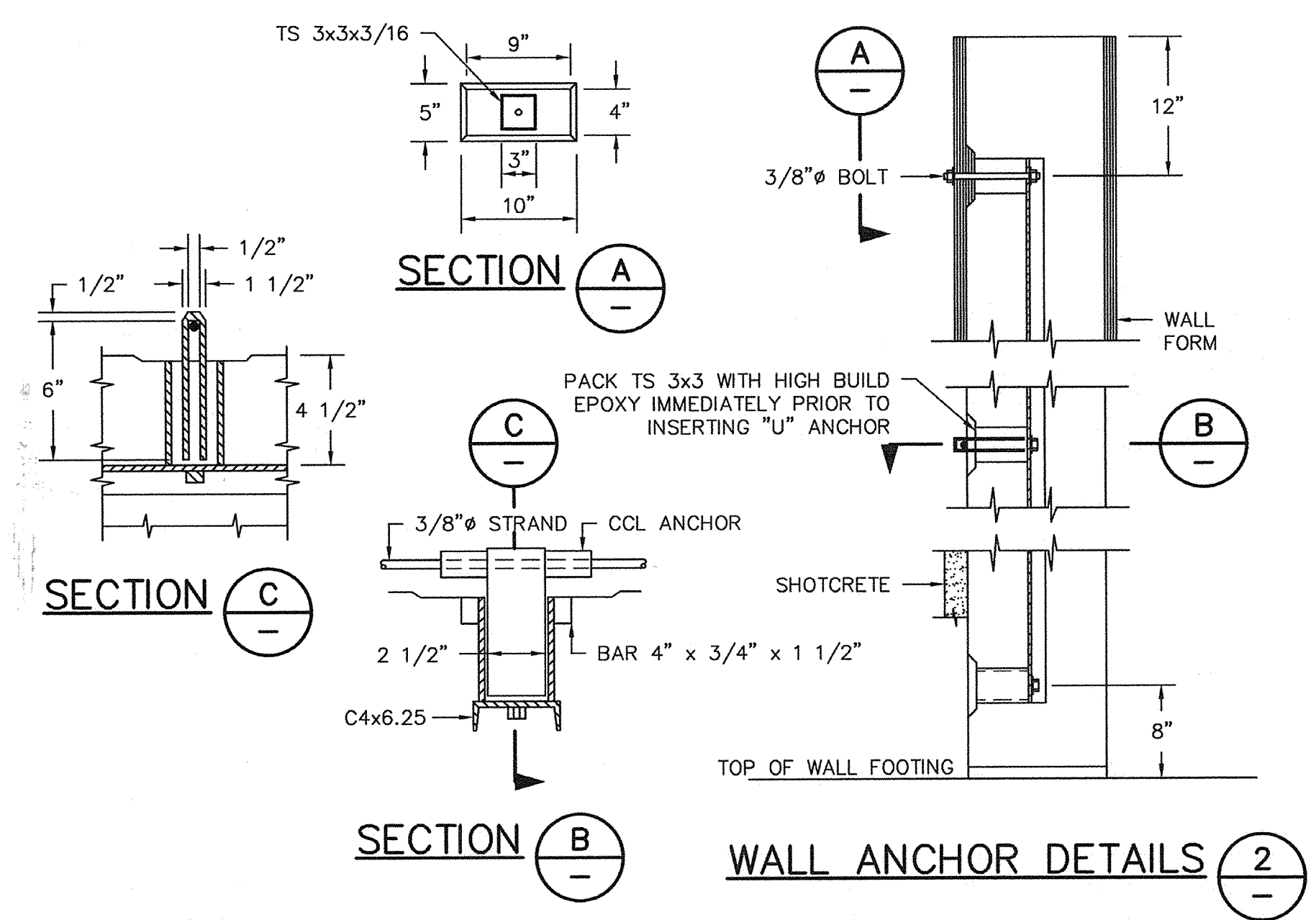
5 MG RESERVOIR			1 MG RESERVOIR		
2 <sup>ND</sup> LAYER	1 <sup>ST</sup> LAYER	HEIGHT ABOVE TOP OF FOOTING	NUMBER OF WRAPS	1 <sup>ST</sup> LAYER	HEIGHT ABOVE TOP OF FOOTING
		23'-9"			25'-2"
0	11	21'-0"		13	21'-0"
0	14	18'-0"		11	18'-0"
0	18	15'-0"		12	15'-0"
0	22	12'-0"		14	12'-0"
0	25	9'-0"		16	9'-0"
0	30	6'-0"		18	6'-0"
2	32	3'-0"		20	3'-0"
11	28	0'-0"		22	0'-0"
TOTAL WRAPS			13	180	126



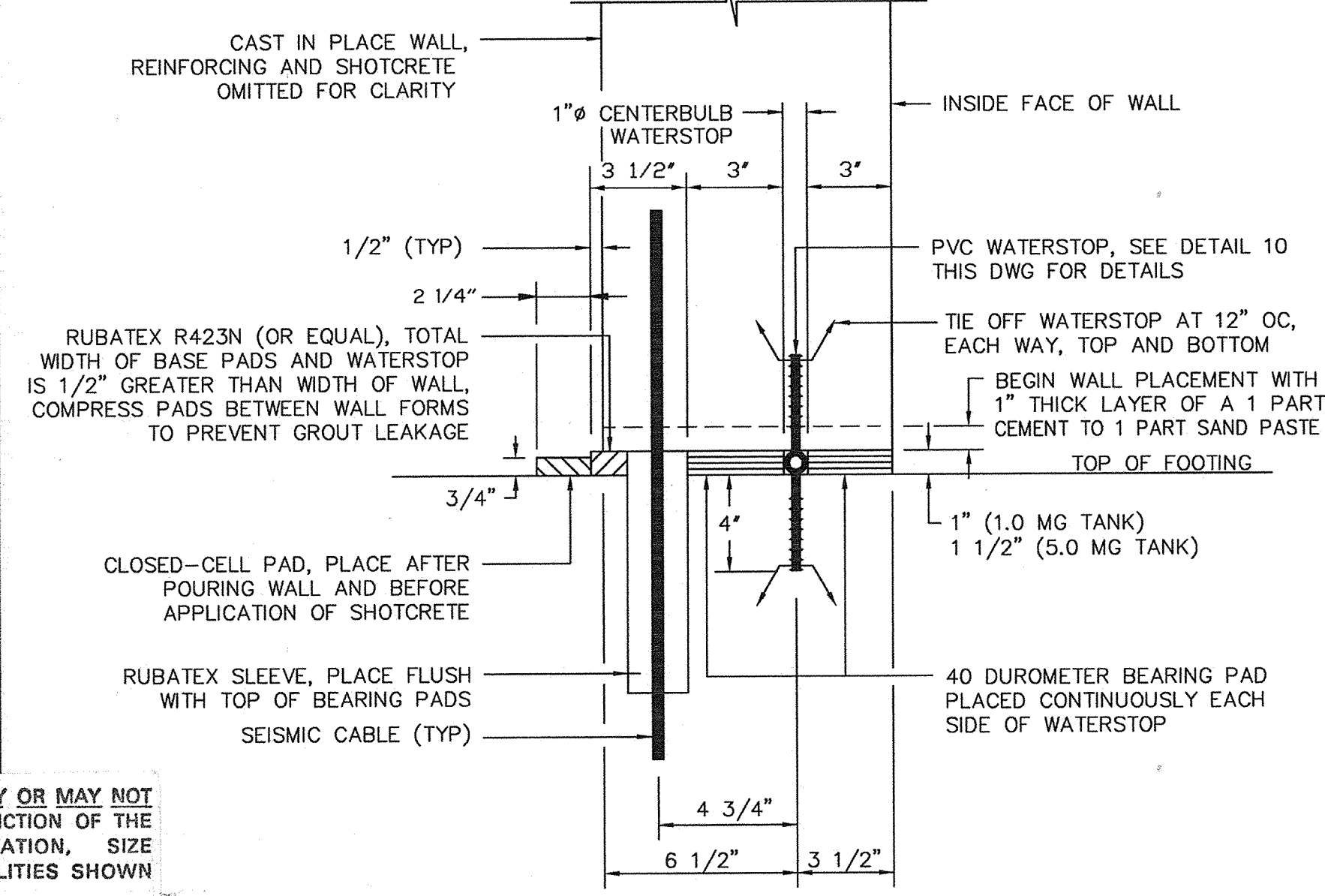
**WALL ANCHOR**

**WRAPPING REQUIREMENTS**

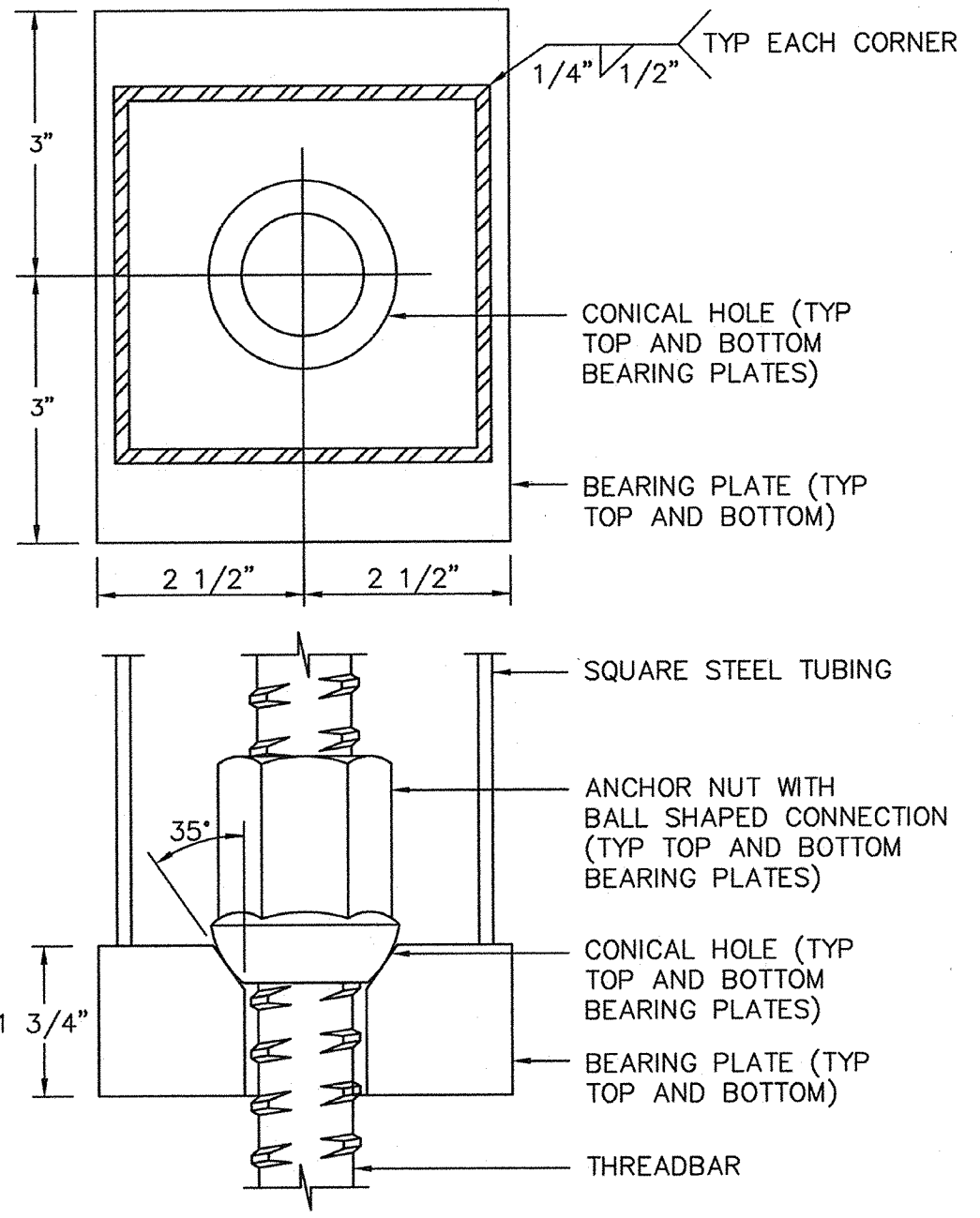
(WRAPPING REQUIREMENTS ARE BASED STRICTLY ON THE FORCES AND TOLERANCES SPECIFIED IN THE CIRCUMFERENTIAL PRESTRESSING NOTES AND IN THE SPECIFICATIONS)



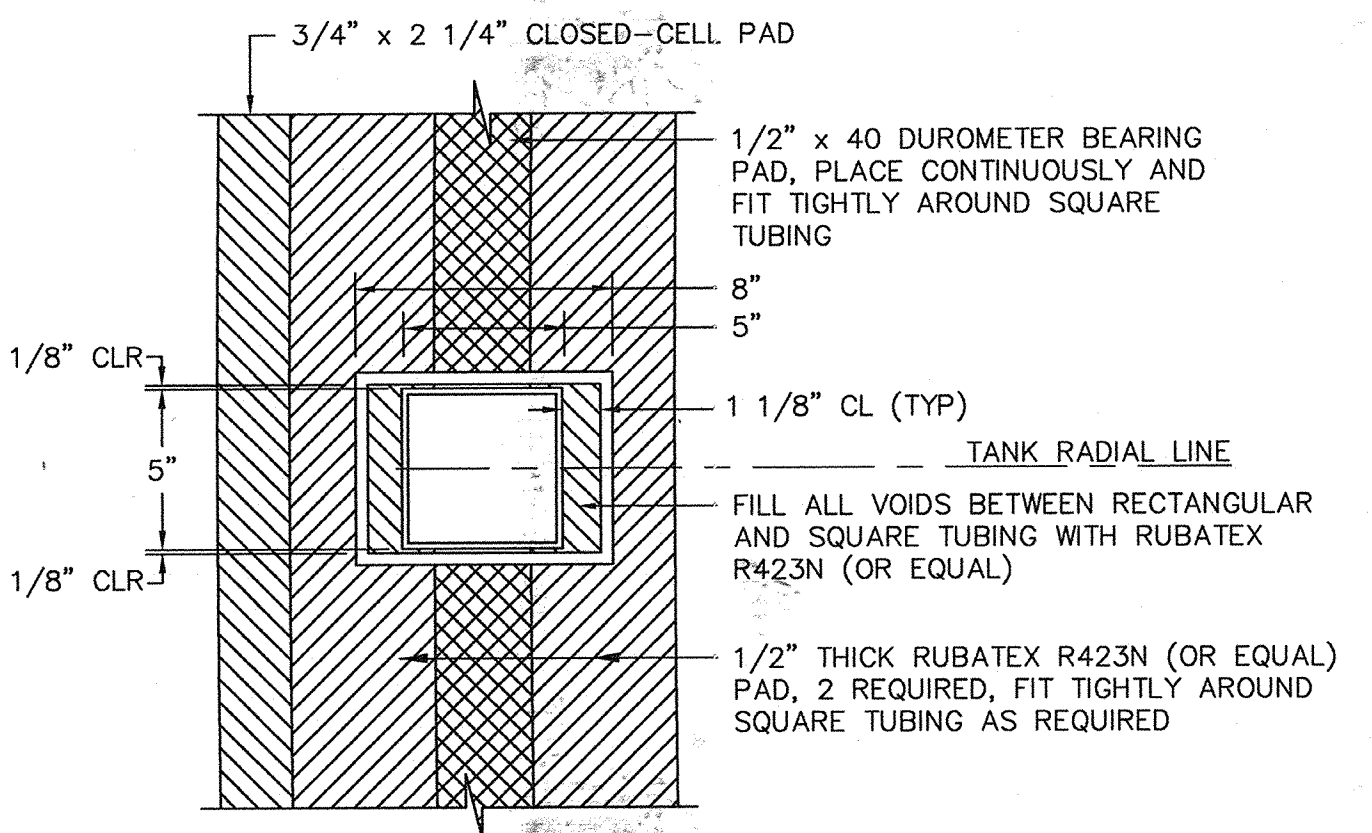
**WALL ANCHOR DETAILS**



**WALL BASE JOINT DETAILS**



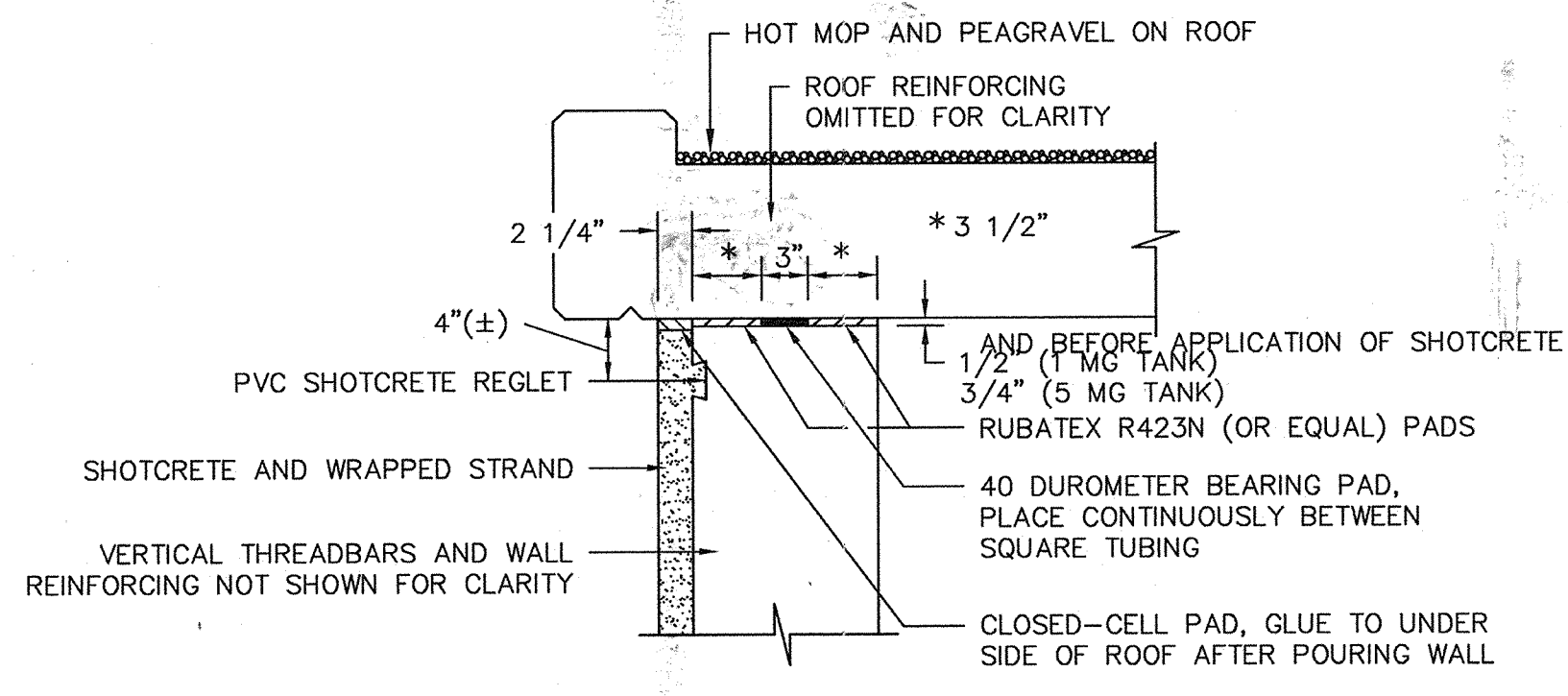
**THREADBAR, NUT, AND BEARING PLATE DETAILS**



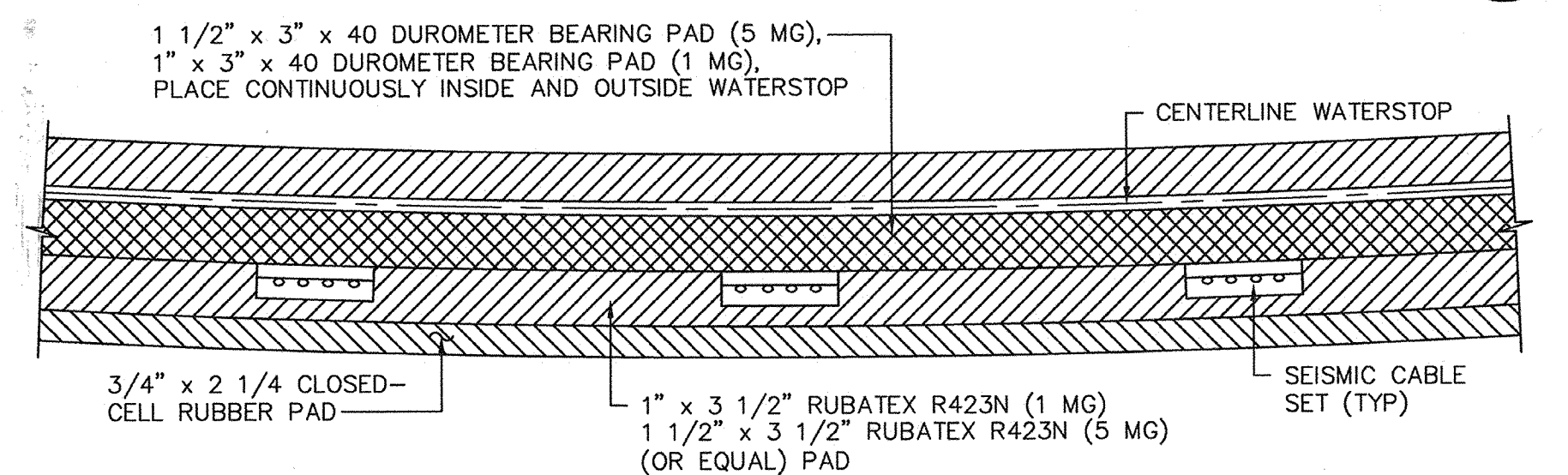
**PLAN OF ROOF SHEAR CONNECTION**

(VERTICAL THREADBARS, NUTS, AND BEARING PLATES OMITTED FOR CLARITY. VERIFY ALIGNMENT AND CLEARANCES DURING WALL AND ROOF PLACEMENTS)

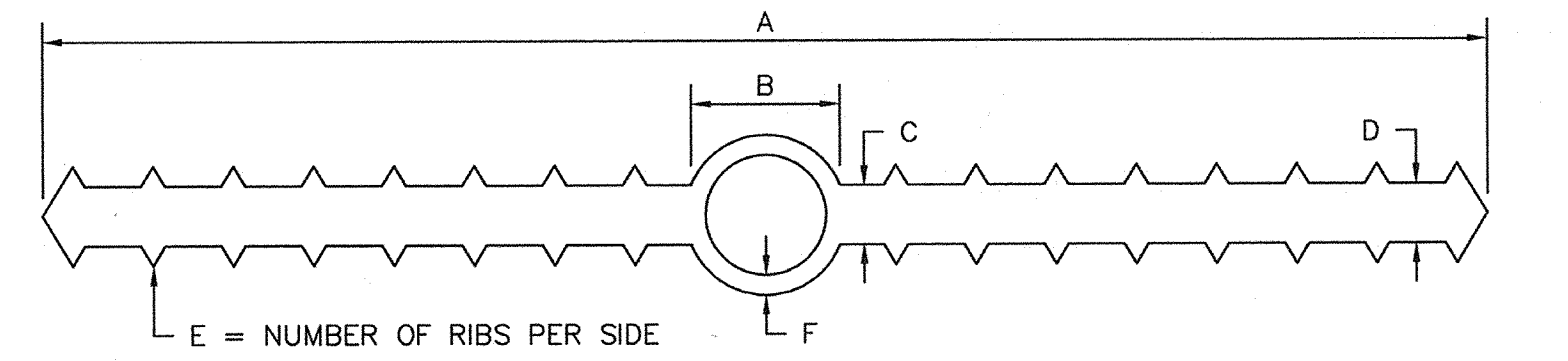
- WALL TO ROOF CONNECTION NOTES:**
- GLUE ALL PADS TO TOP OF WALL WITH CONTACT CEMENT EXCEPT CLOSED-CELL PAD WHICH IS GLUED TO UNDERSIDE OF ROOF AFTER WALL IS PLACED.
  - FILL ALL VOIDS BETWEEN WALL, ROOF PADS AND TUBING WITH A SOFT MASTIC.



**WALL TO ROOF CONNECTION DETAILS**



**PLAN OF PADS AT WALL BASE JOINT**



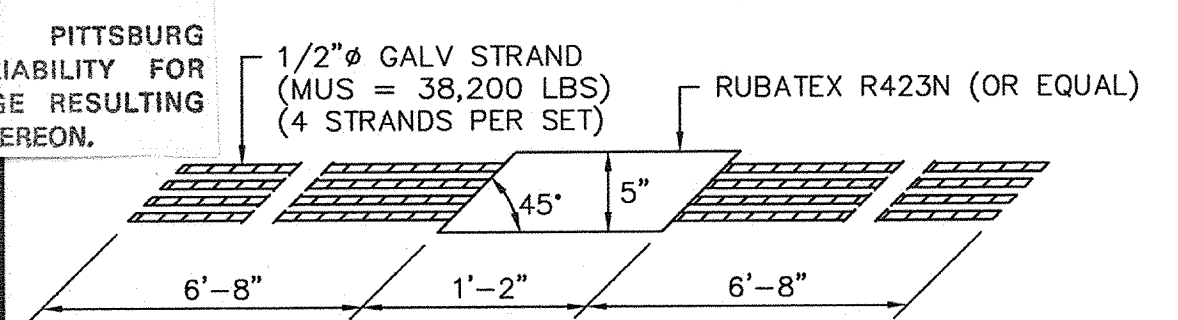
LOCATION	A	B	C	D	E	F	VINYLEX	GREEN-STREAM
WALL TO WALL FOOTING	9"	1 1/2"	3/8"	1/4"	8	1/4" TO 5/16"	RLB-38	696
VERTICAL WALL JOINTS*, FLOOR SLAB JOINT	6"	-	3/8"	3/8" OR 7/16"	7	-	R6-38	679
FLOOR TO PIPE BLOCKS	4"	5/8" OR 3/4"	3/16"	5/32" OR 3/16"	5	3/32" OR 1/4"	RB4-316	702
ROOF JT	6"	1"	3/8"	3/8"	7 OR 8	1/4"	RB6-38H	717

\*SEE NOTE 1 BELOW

**WATERSTOP NOTES:**

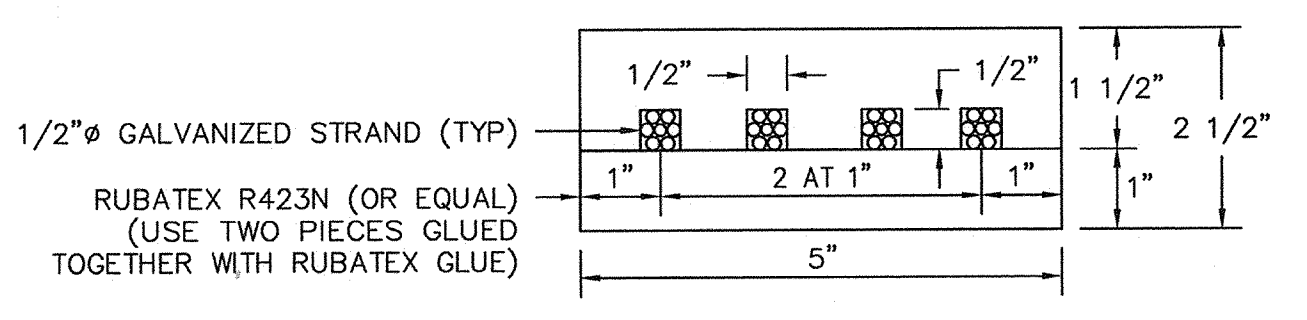
- NO CENTERBULB ALLOWED IN THE WATERSTOP FOR THE VERTICAL WALL JOINTS.
- SEE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.
- ALL SPLICES SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

**WATERSTOP SCHEDULE**



**PLAN OF SEISMIC CABLE SET**

(156 SETS IN EACH DIRECTION, 312 SETS TOTAL FOR 5.0 MG TANK)  
(72 SETS IN EACH DIRECTION, 144 SETS TOTAL FOR 1.0 MG TANK)



**SECTION OF SEISMIC CABLE SET**

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

DESIGNED BY: LGS  
DRAWN BY: RAC  
SHEET CHK'D BY: DMY  
CROSS CHK'D BY: DMY  
APPROVED BY: JRT  
DATE: MAY 1998

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**environmental engineers, scientists, planners, & management consultants**

**CITY OF PITTSBURG ENGINEERING DIVISION**

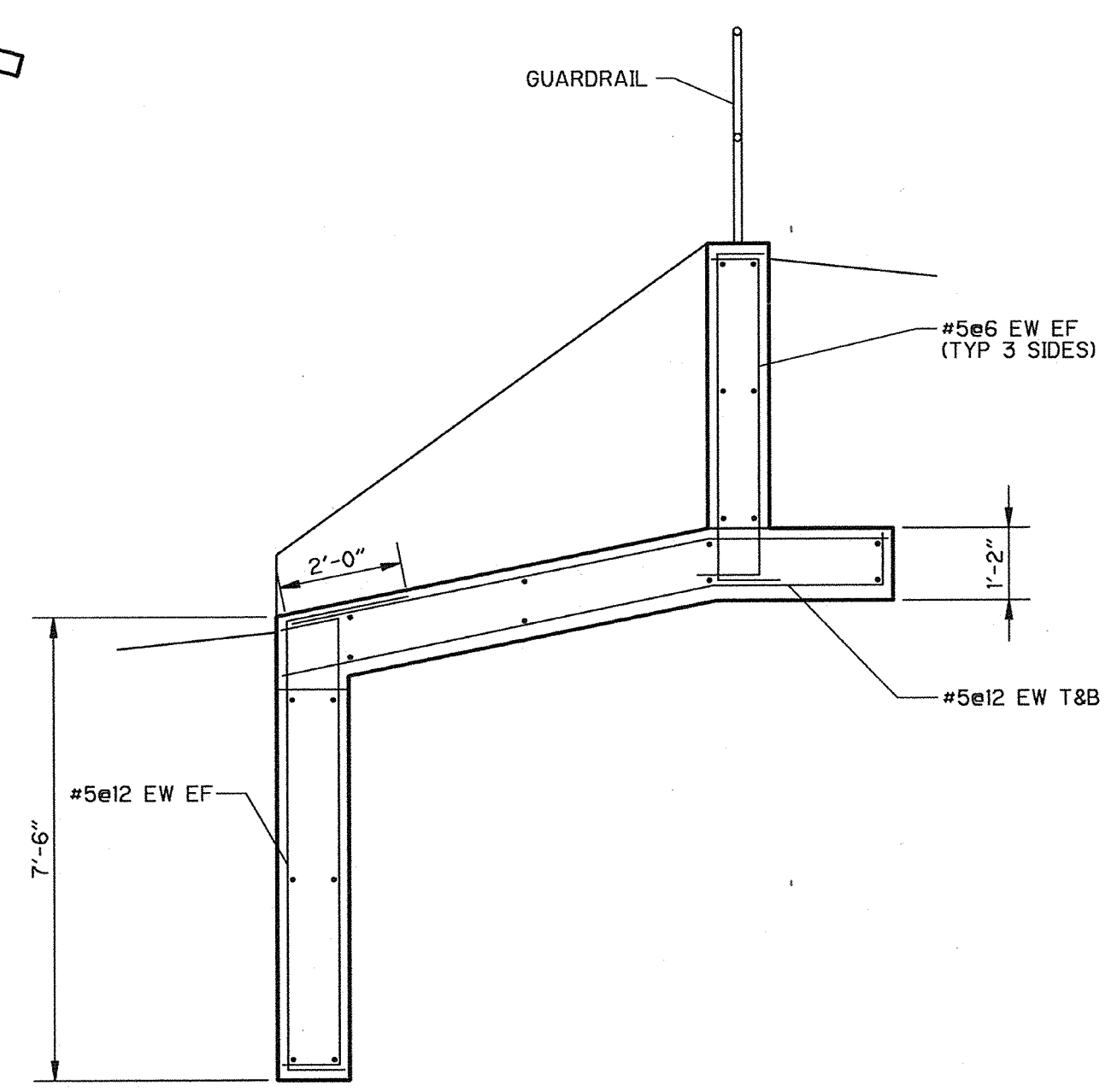
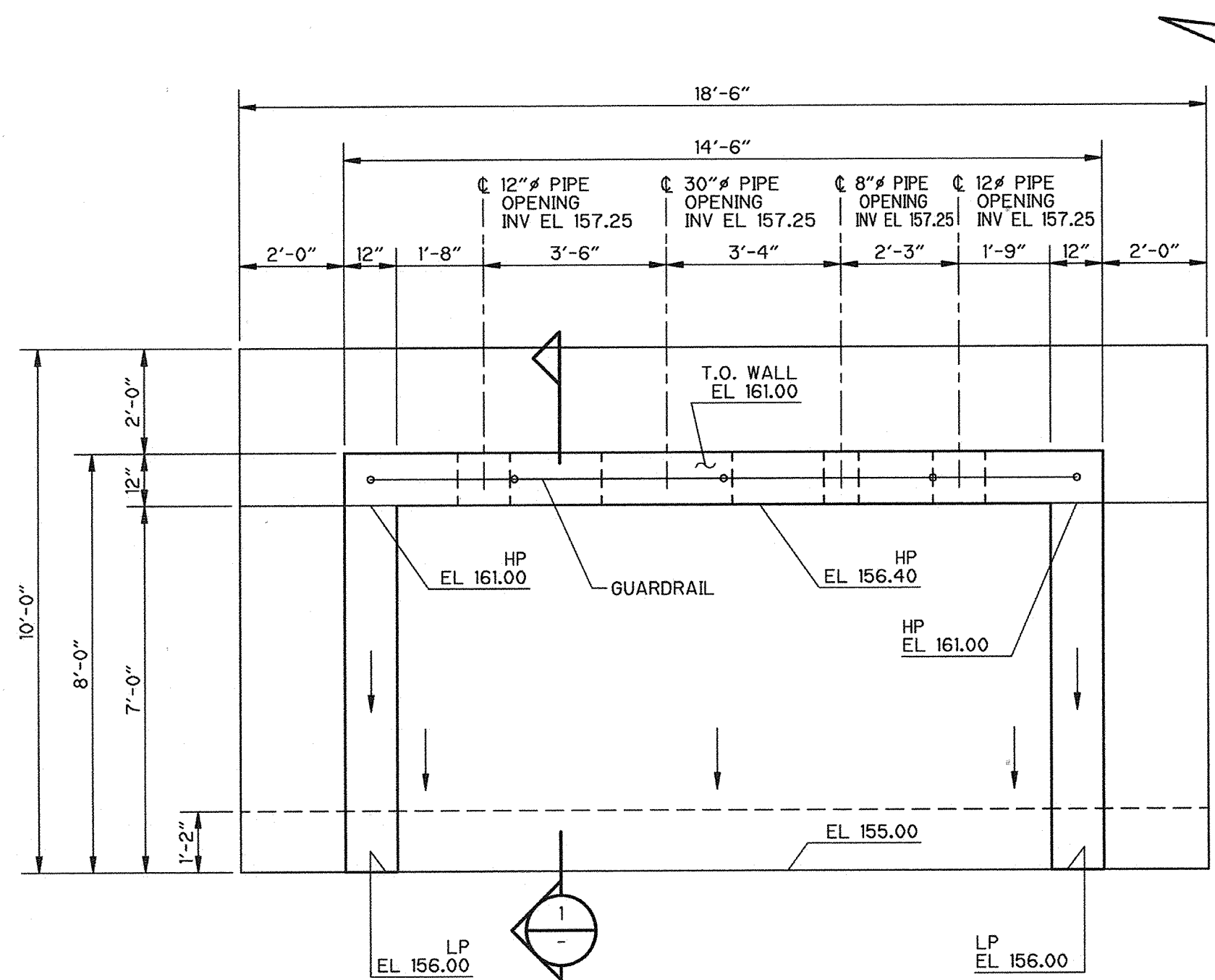
**6 MG RESERVOIR REPLACEMENT PROJECT**

**PRESTRESSING DETAILS MISCELLANEOUS JOINT DETAILS SEISMIC CABLE DETAILS**

PROJECT NO. 1358-22097  
FILE NAME: S0000008  
SHEET NO. S-8

RECORD DRAWING  
DATE: 11/22/2000 BY: [Signature]

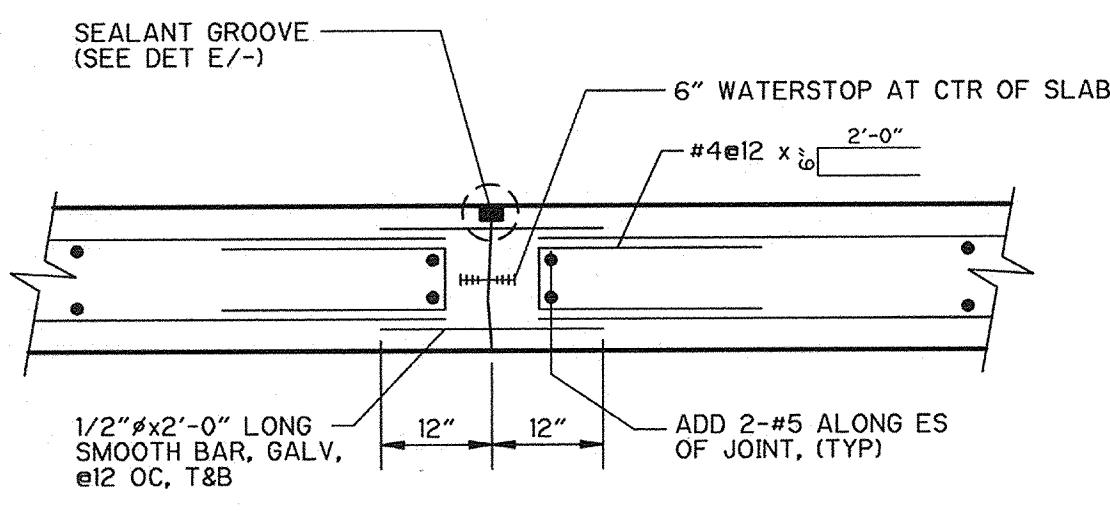
APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955



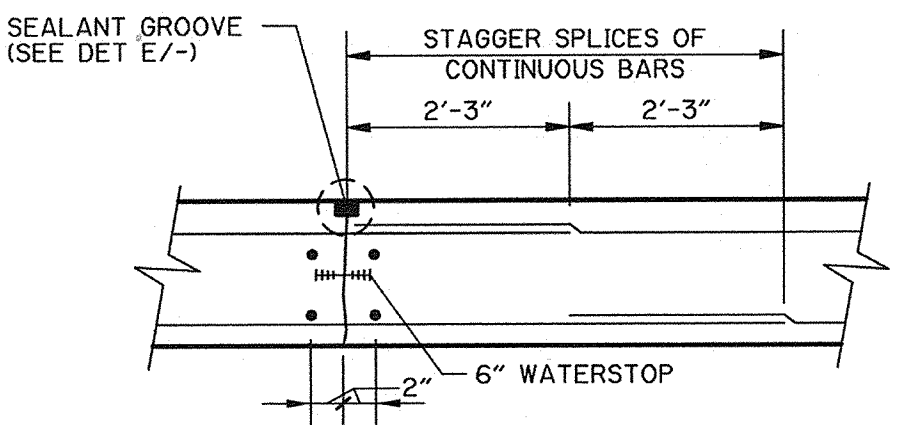
NOTES:  
1. SEE DWG C-22 FOR ADDITIONAL INFORMATION.

OUTLET STRUCTURE  
PLAN  
3/8" = 1'-0"

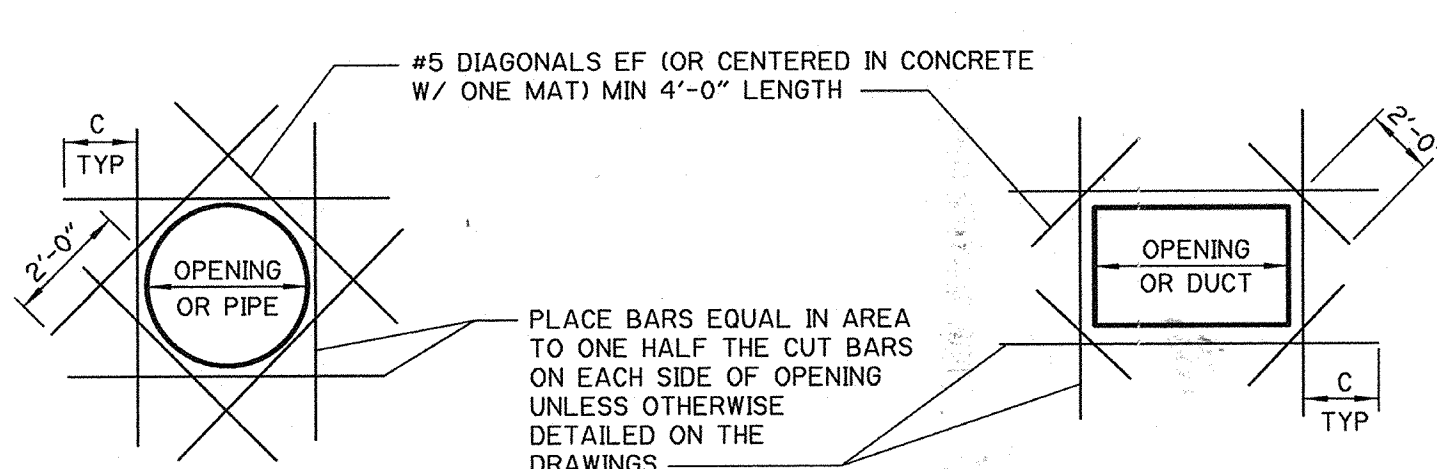
SECTION 1  
3/8" = 1'-0"



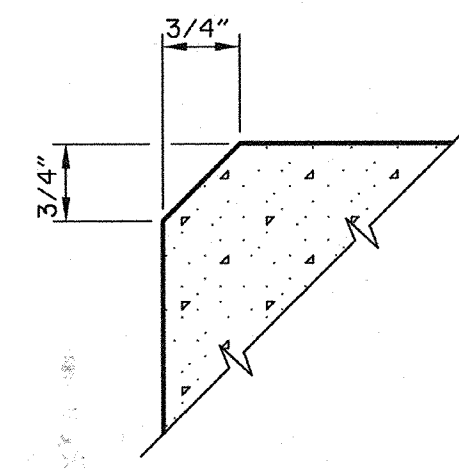
DETAIL A  
ROOF JOINT  
NTS



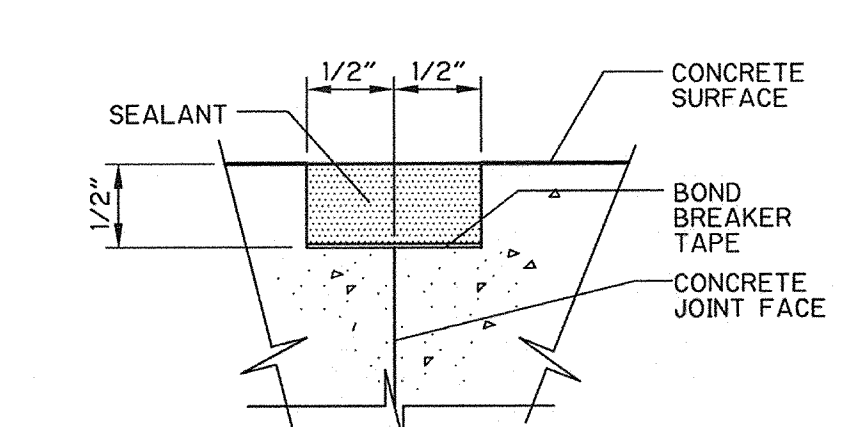
DETAIL B  
SLAB JOINT  
NTS



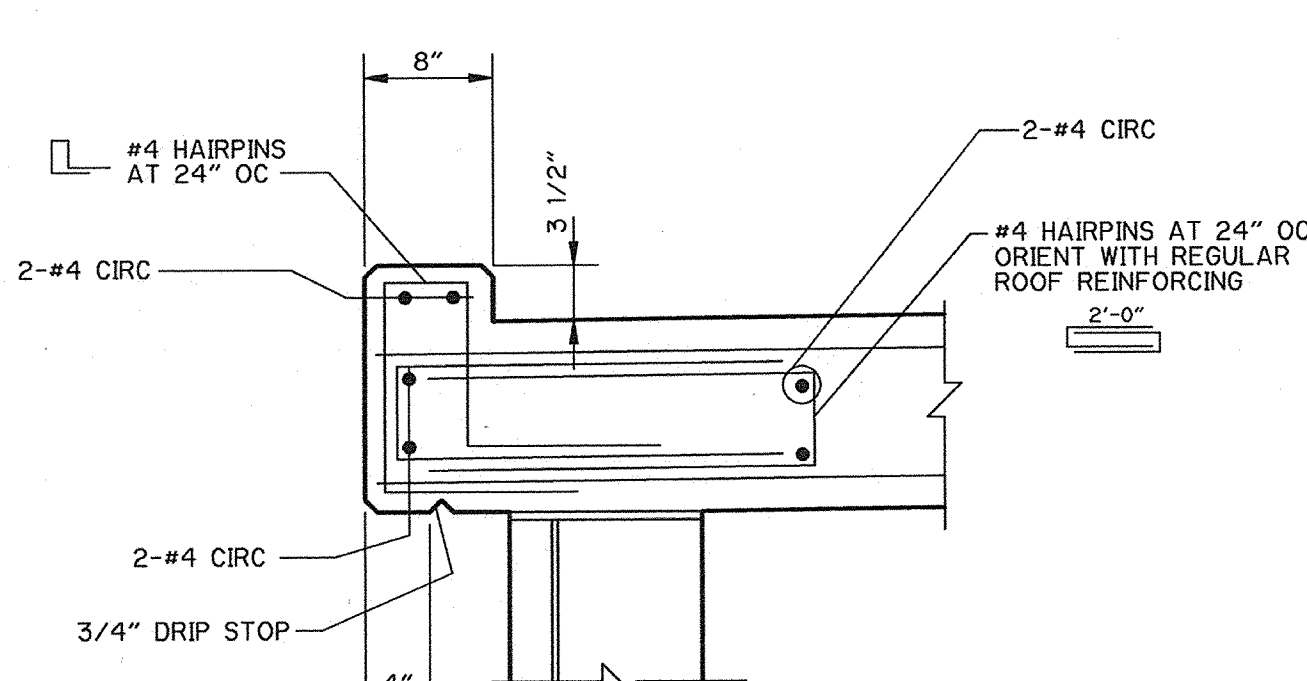
DETAIL C  
EXTRA REINFORCEMENT AT OPENINGS  
NTS



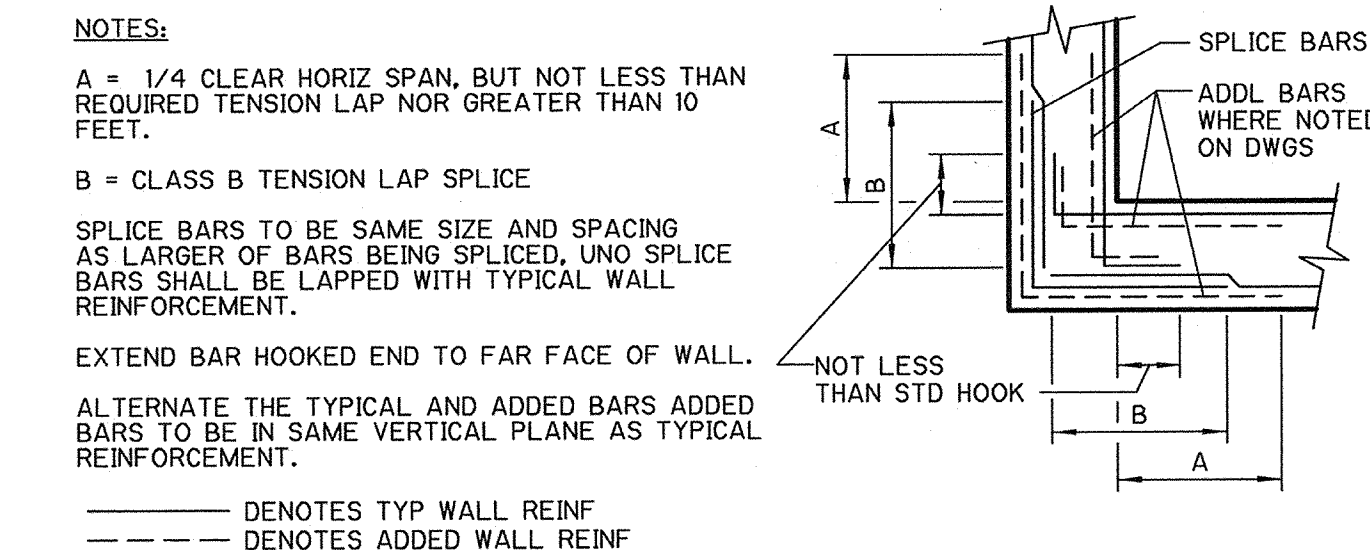
DETAIL D  
CONCRETE CHAMFER  
NTS



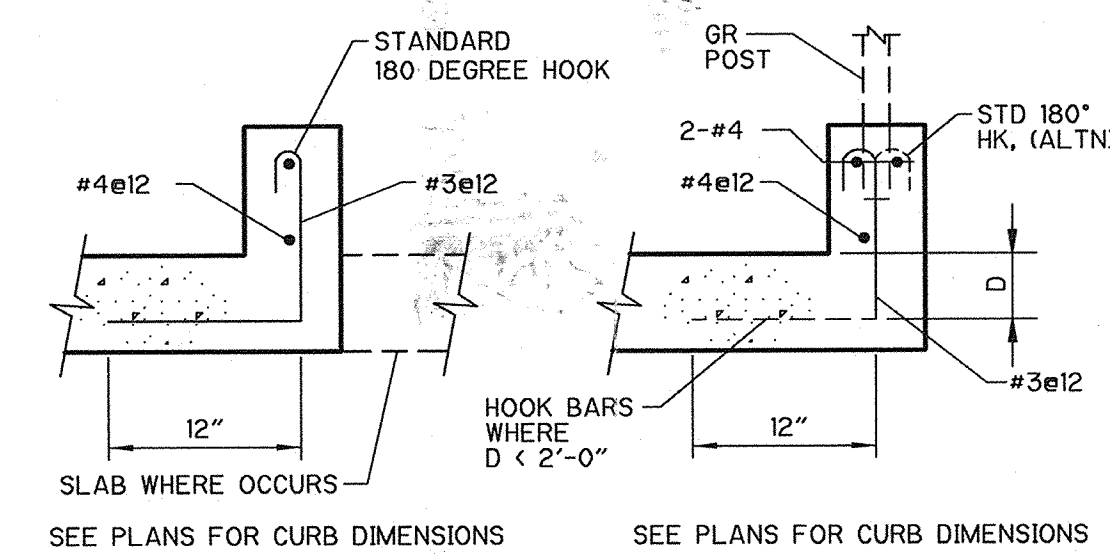
DETAIL E  
SEALANT GROOVE  
NTS



DETAIL F  
TYPICAL RESERVOIR TOP PERIMETER DETAIL  
1" = 1'-0"



DETAIL G  
WALL CORNER REINFORCEMENT  
NTS



DETAIL H  
CONC CURB  
NTS

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RECORD DRAWING  
DATE 11/22/2002 BY [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

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2/00		EPM	BPD	RECORD DRAWINGS

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DATE: MAY 1998

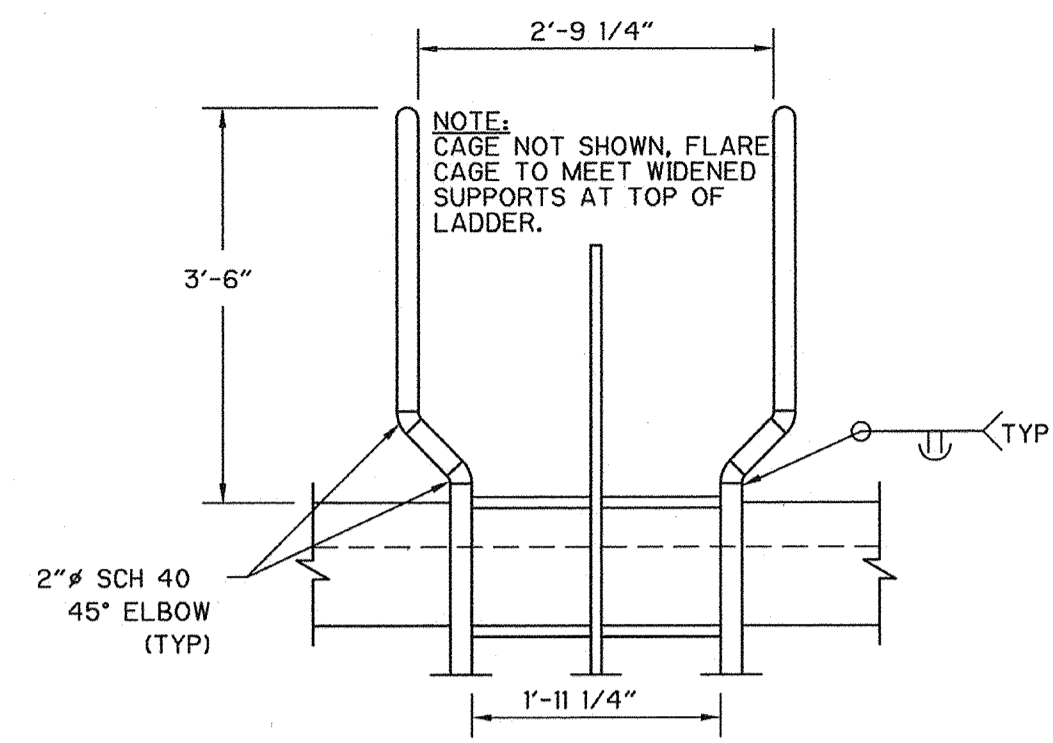
CAMP DRESSER & MCKEE INC.  
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environmental engineers, scientists, planners, & management consultants

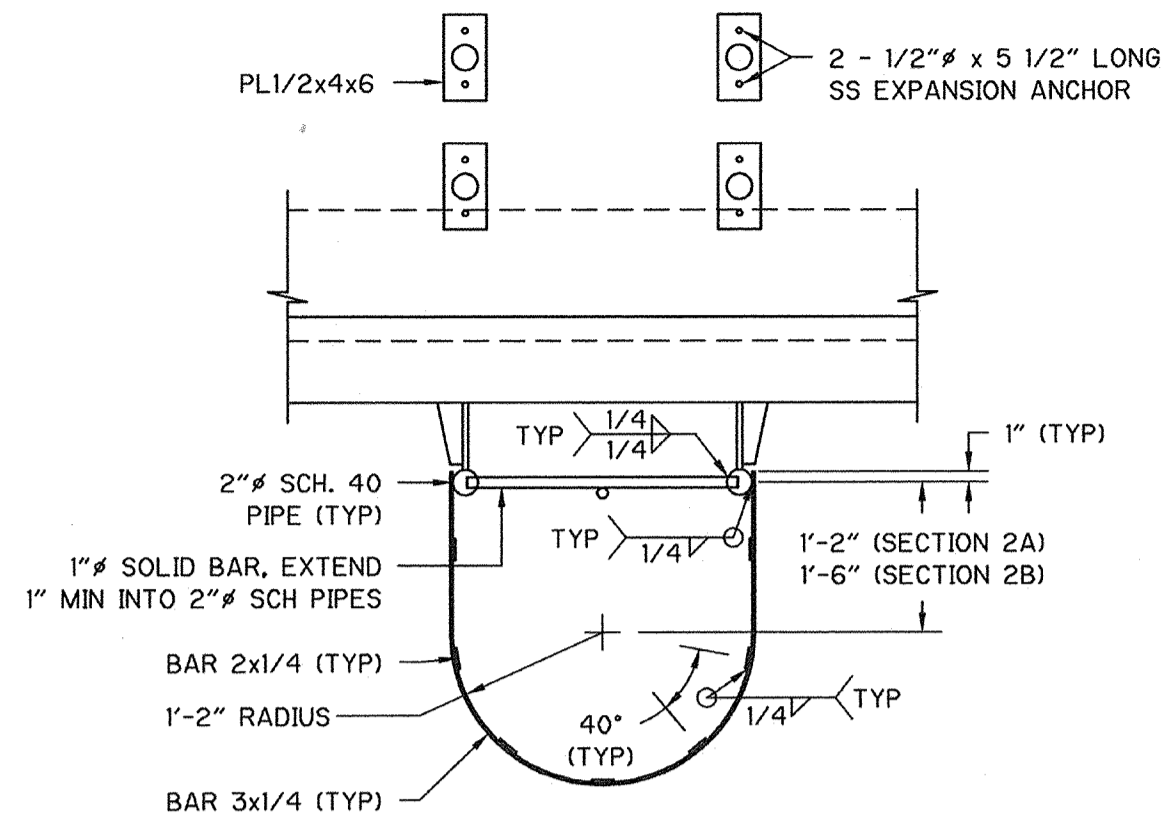
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

OVERFLOW AND DRAINS OUTLET STRUCTURE  
STRUCTURAL STANDARD DETAILS

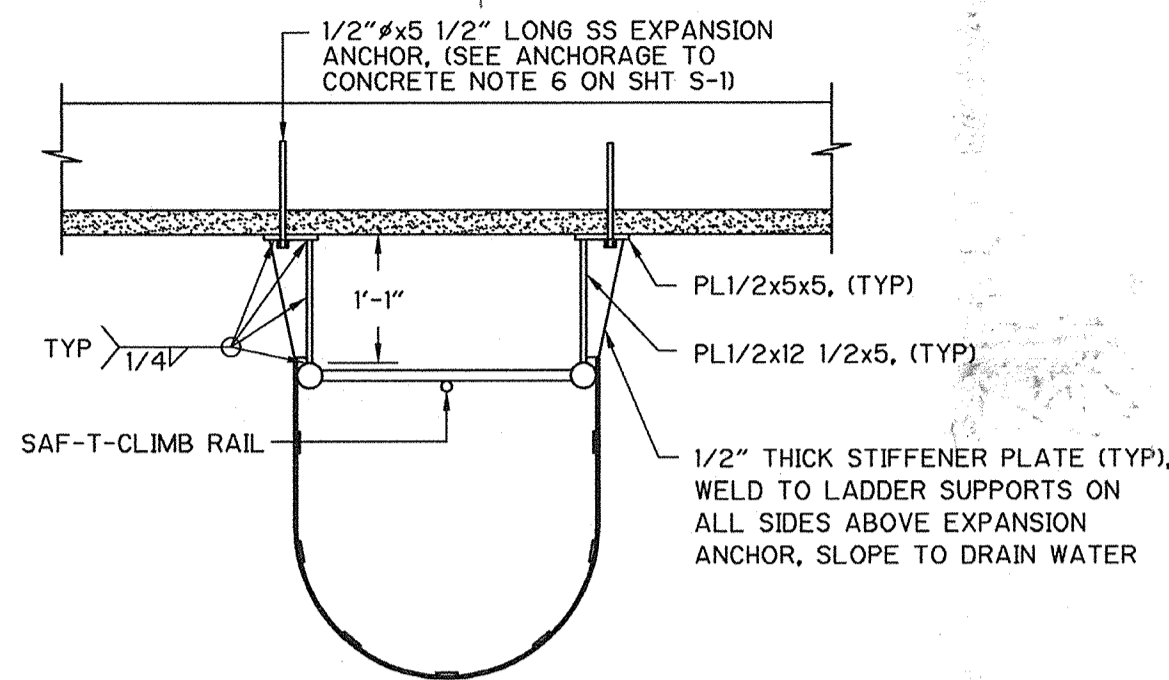
PROJECT NO. 1358-22097  
FILE NAME: S0000009  
SHEET NO. S-9



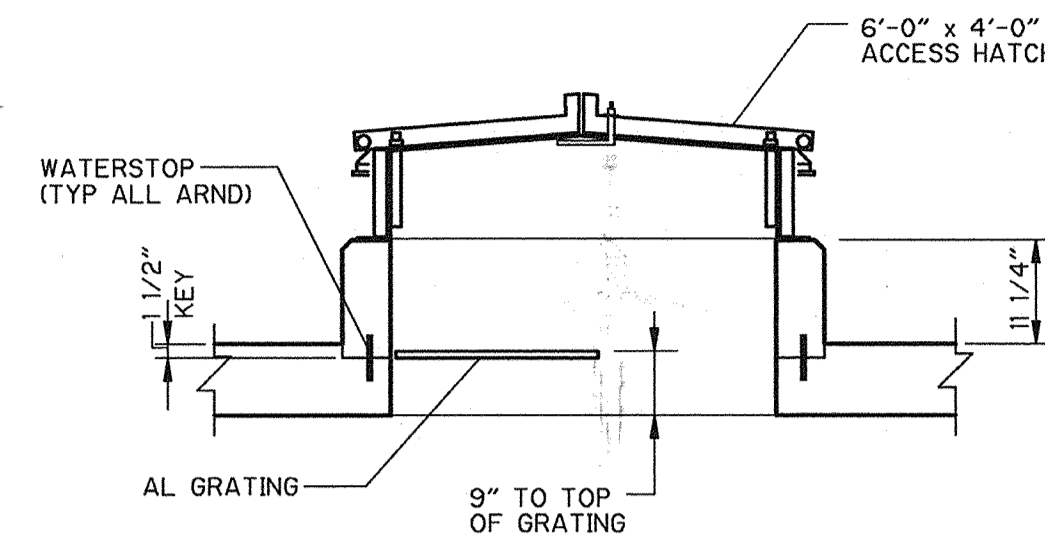
LADDER FLARE  
SECTION 1  
NOT TO SCALE



SECTION 2A 2B  
NOT TO SCALE



SECTION 3  
NOT TO SCALE



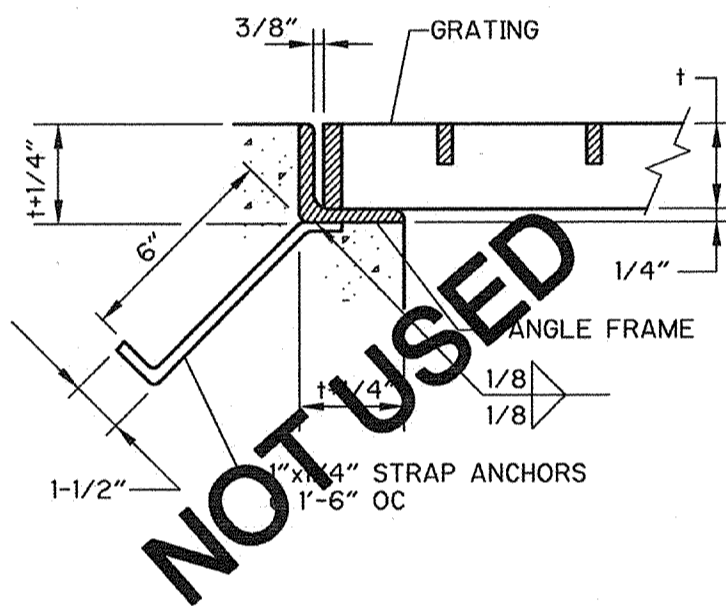
SECTION 4  
NTS

NOTES:  
1. SEE DET H/S-9 FOR TYPICAL CURB REINFORCING.  
2. PROVIDE EXTRA REINFORCING AT OPENING PER DET C/S-9.

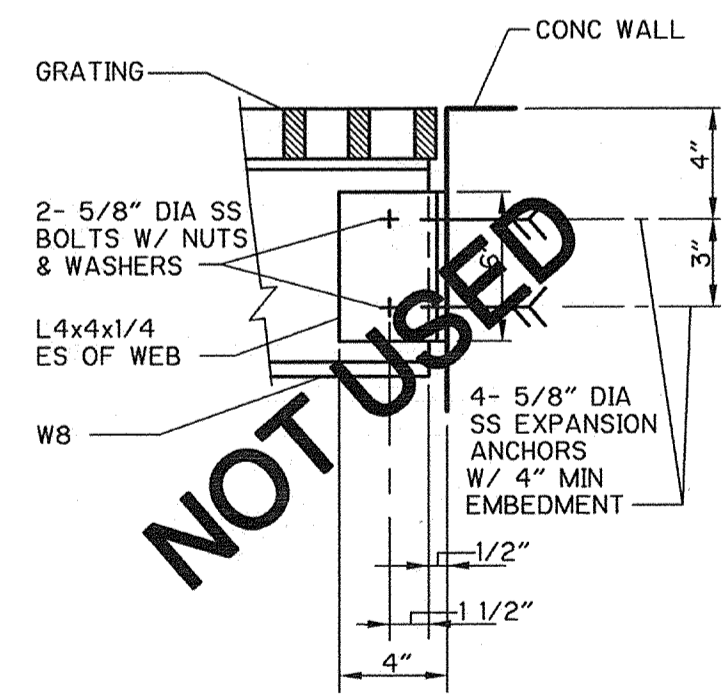
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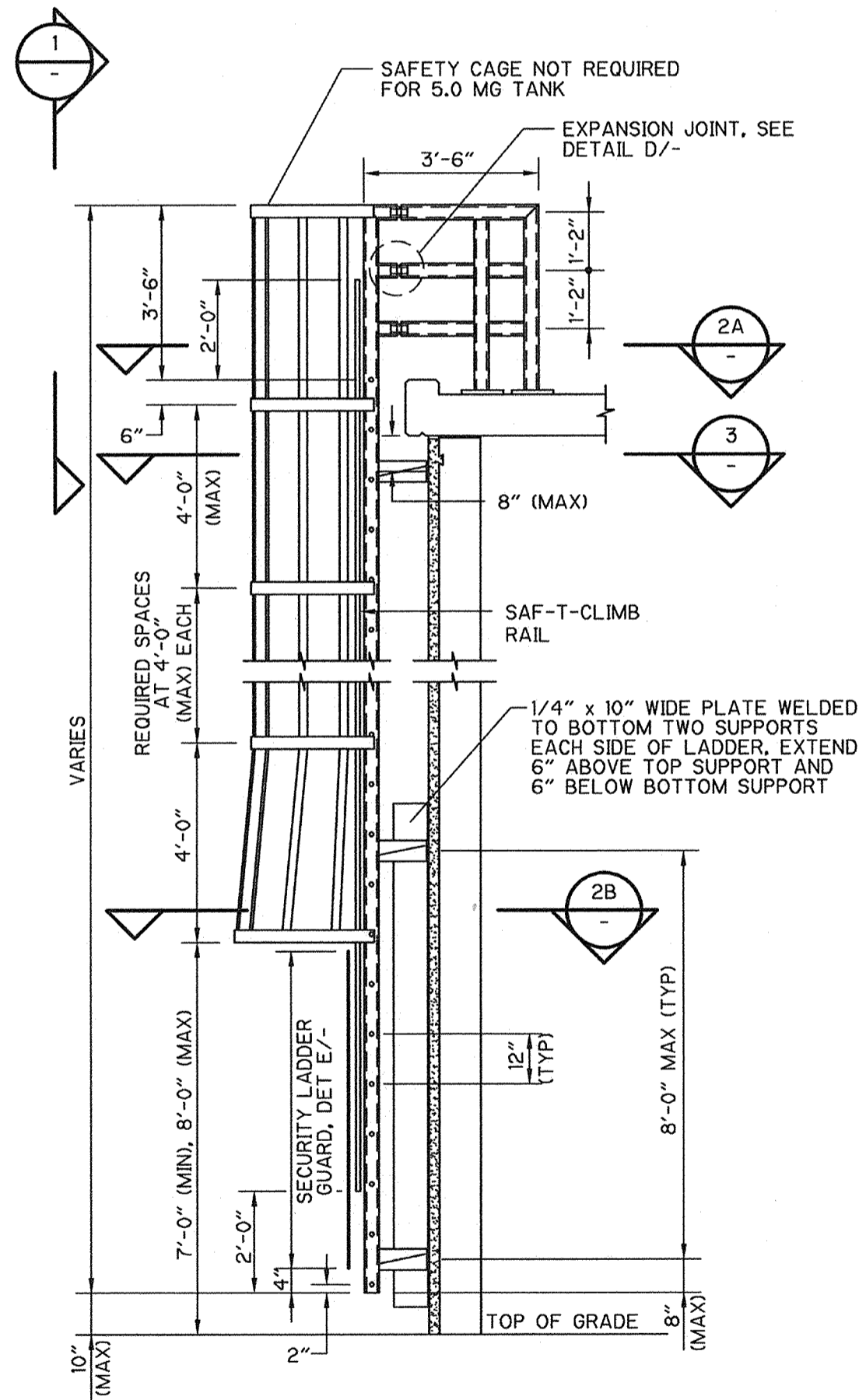
THE CITY OF PITTSBURG ASSUMES NO LIABILITY FOR LOSS OR DAMAGE RESULTING FROM RELIANCE THEREON.



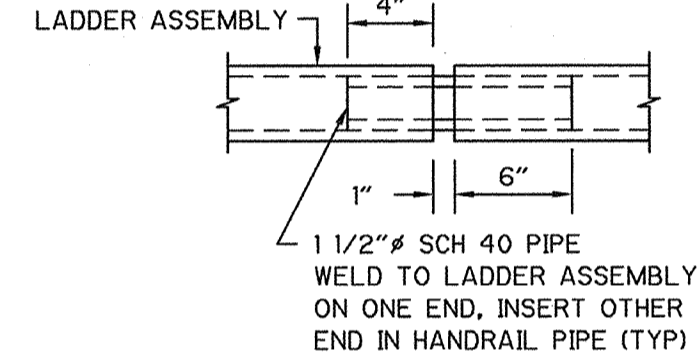
GRATING SEAT  
DETAIL A  
NTS



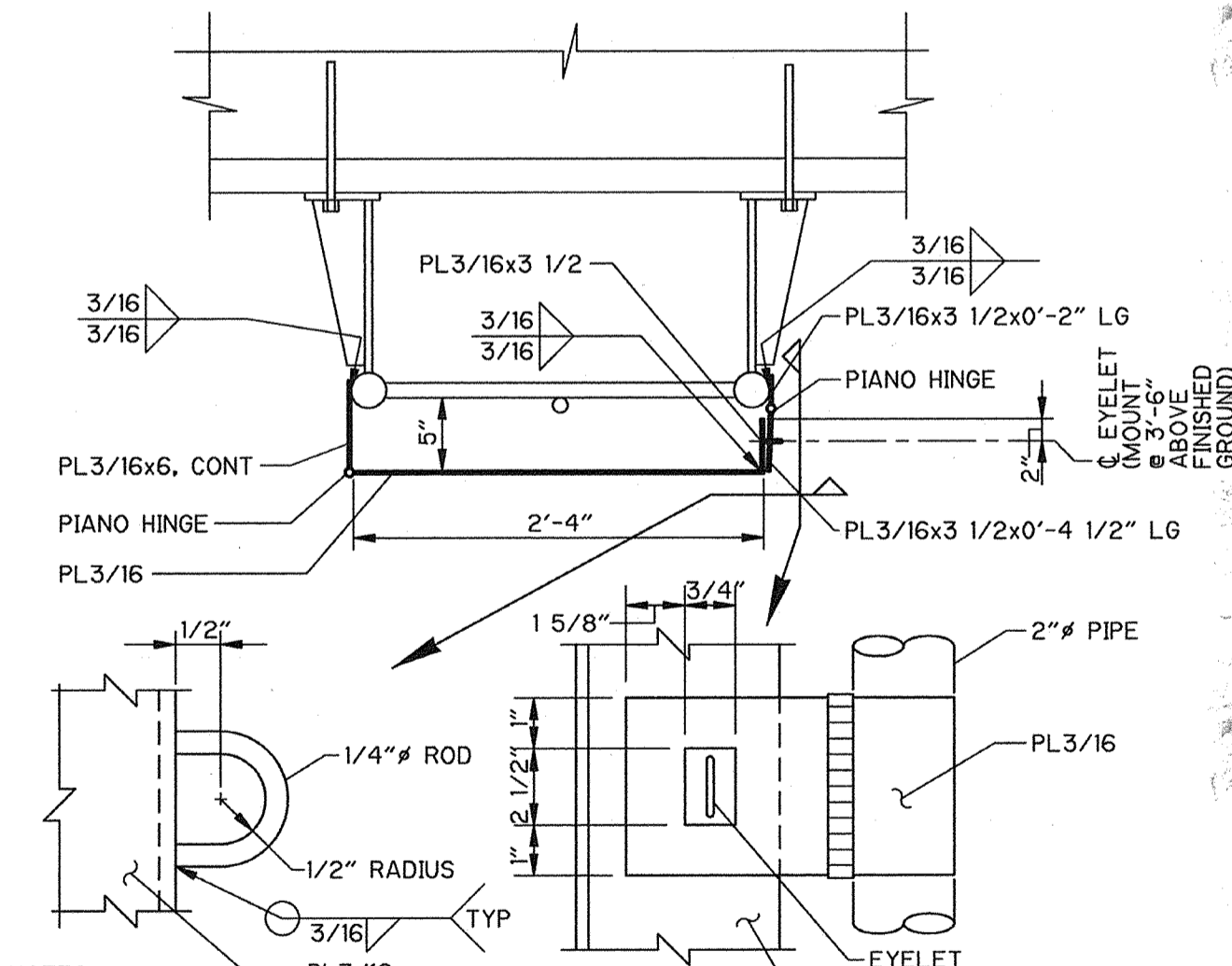
GRATING SUPPORT  
DETAIL B  
NTS



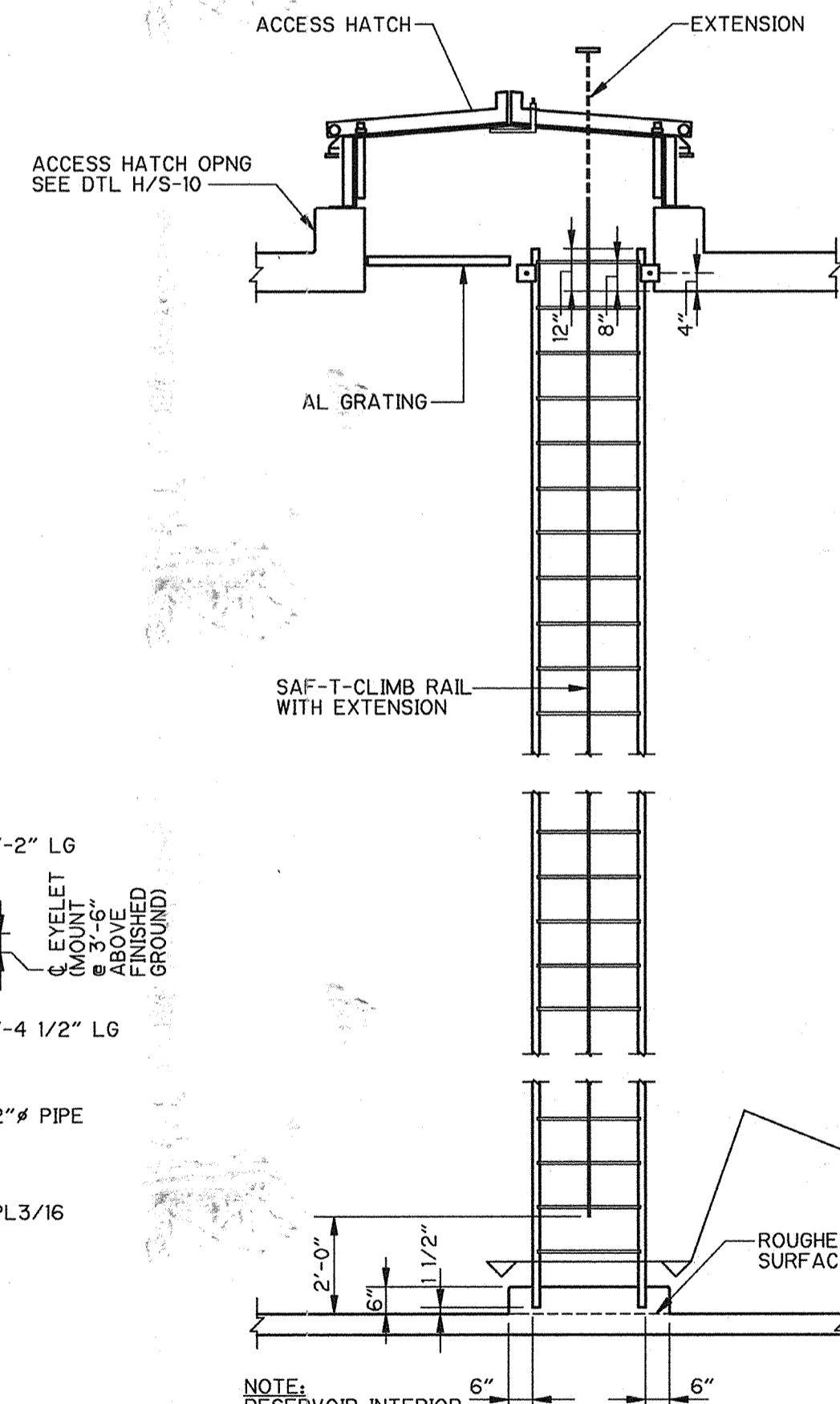
EXTERIOR LADDER ELEVATION  
DETAIL C  
NTS



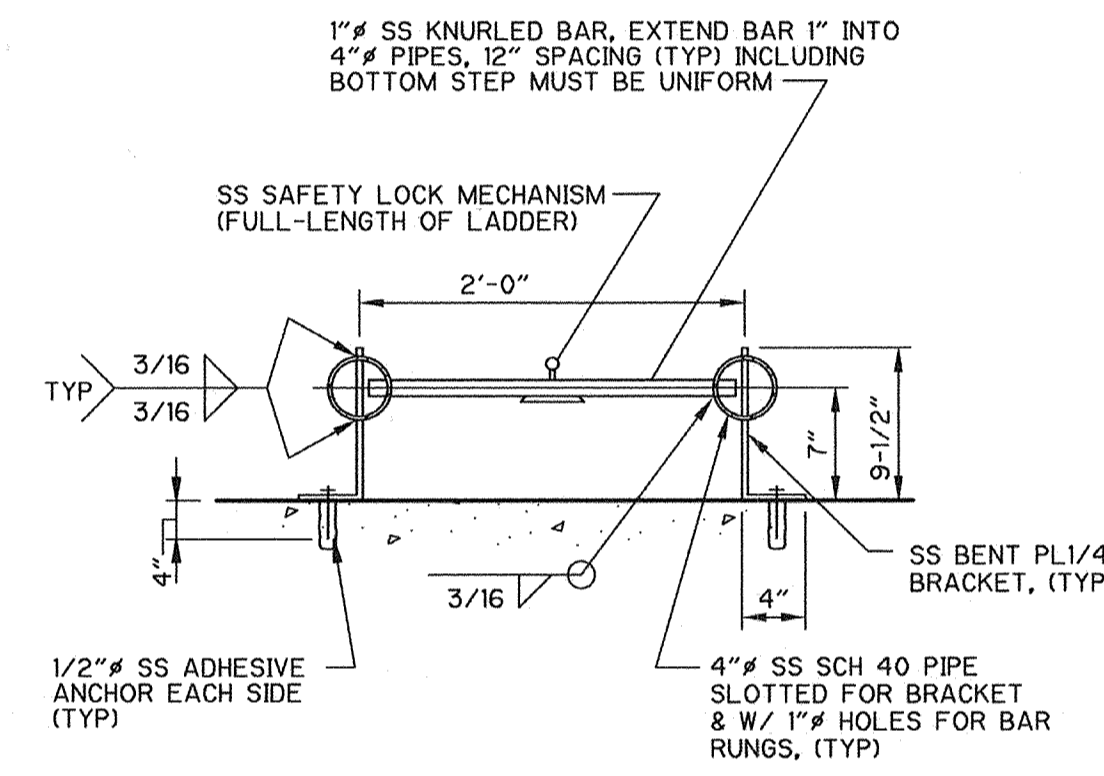
EXPANSION JOINT  
DETAIL D  
NOT TO SCALE



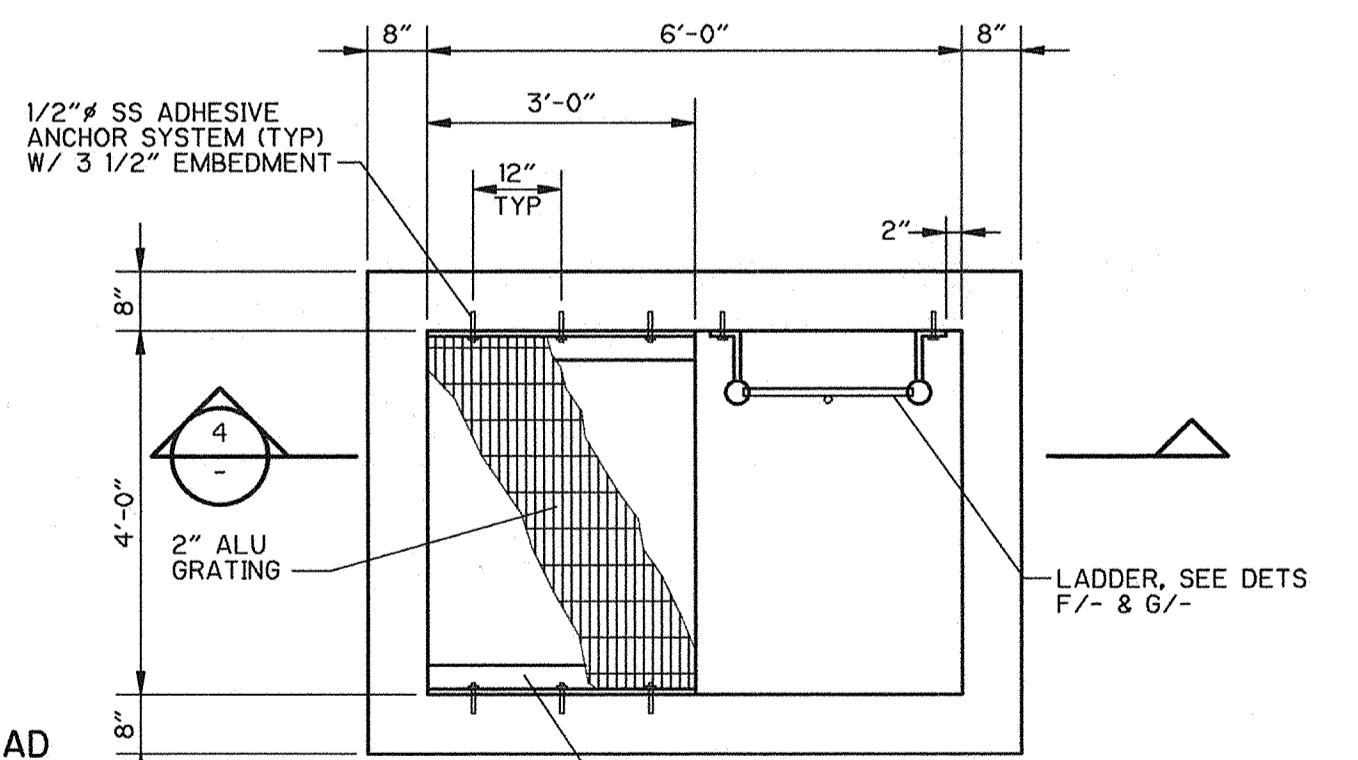
SECURITY LADDER GUARD  
DETAIL E  
NTS



INTERIOR LADDER  
DETAIL F  
NOT TO SCALE



INTERIOR LADDER PLAN  
DETAIL G  
NTS



ACCESS HATCH OPENING  
DETAIL H  
NTS

RECORD DRAWING  
DATE: 11/22/2000 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00	EPM	BPD		RECORD DRAWINGS

DESIGNED BY: LGS  
DRAWN BY: SGH  
SHEET CHK'D BY: DMY  
CROSS CHK'D BY: DMY  
APPROVED BY: JRT  
DATE: MAY 1998

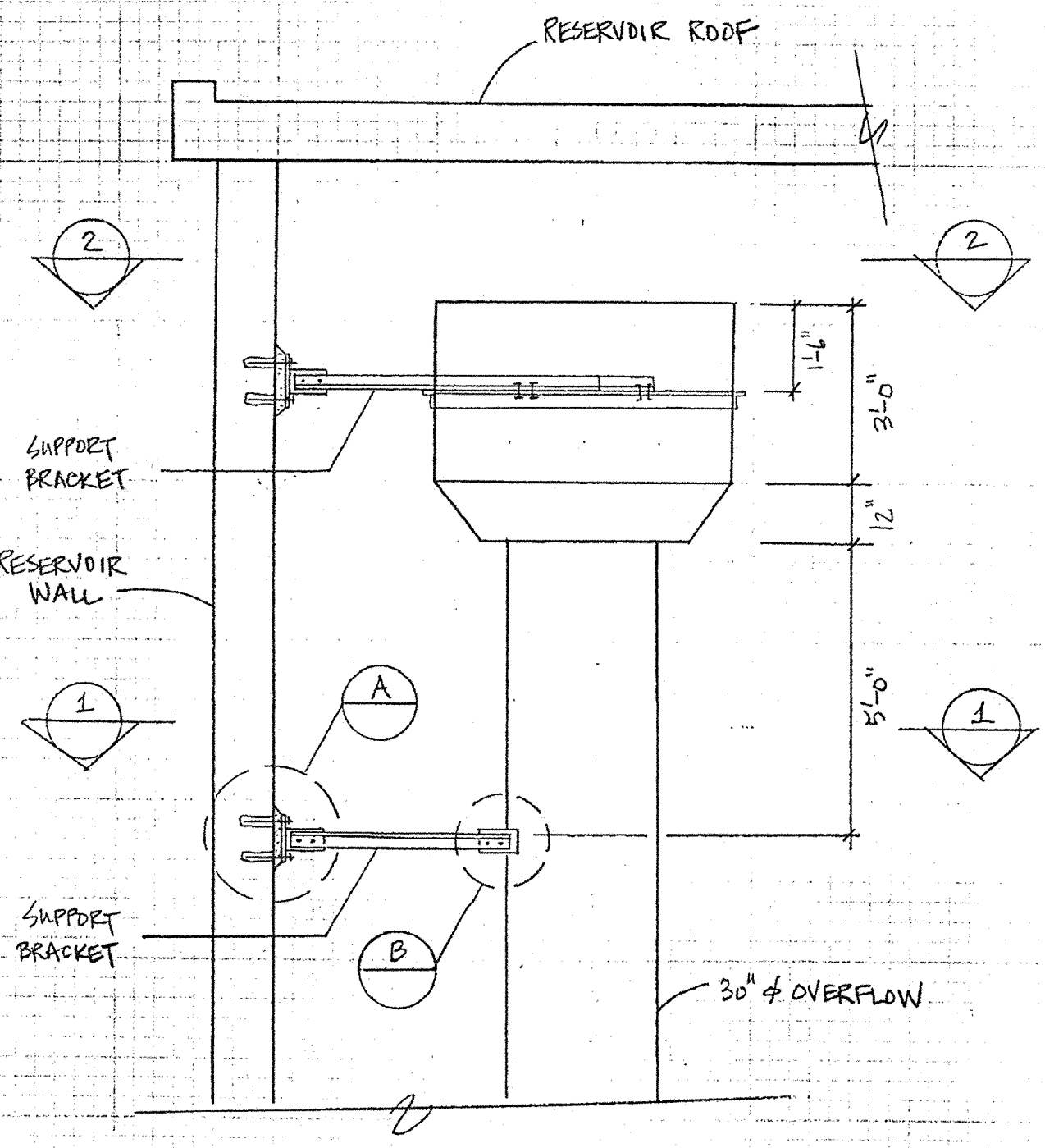
CAMP DRESSER & McKEE INC.  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900  
environmental engineers, scientists,  
planners, & management consultants  
**CDM**

CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

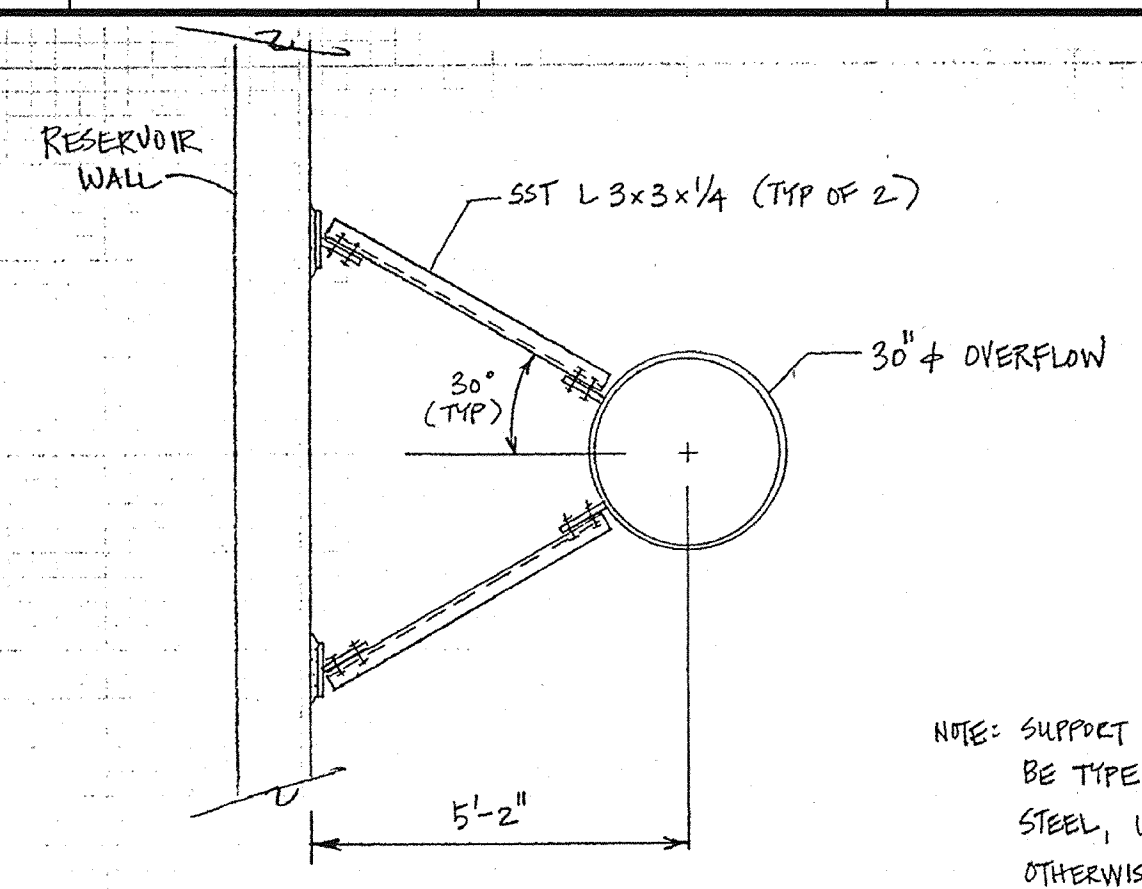
STRUCTURAL STANDARD DETAILS  
AND SECTIONS

PROJECT NO. 1358-22097  
FILE NAME: S0000012  
SHEET NO. S-10



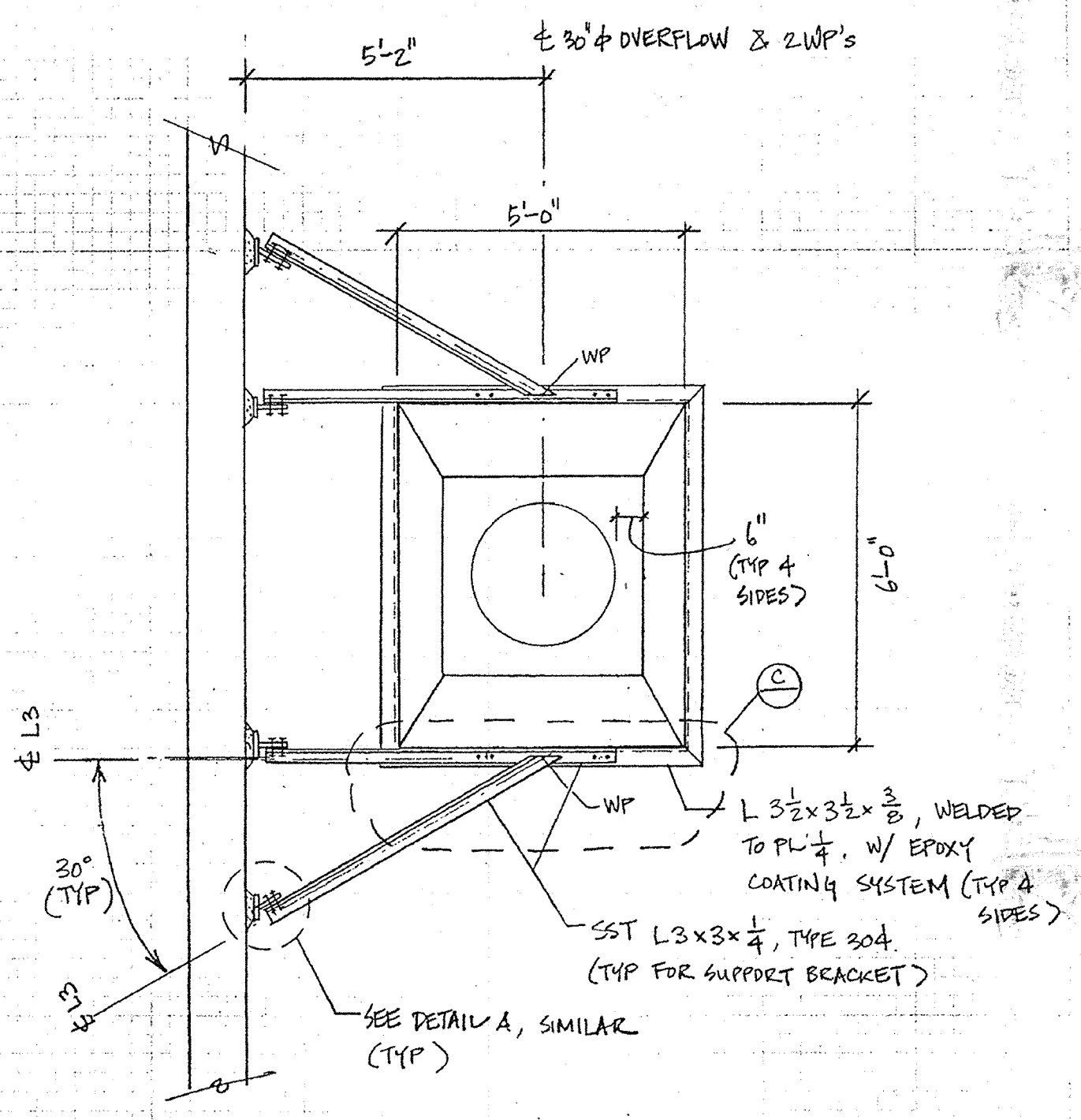


ELEVATION  
3/8" = 1'-0"

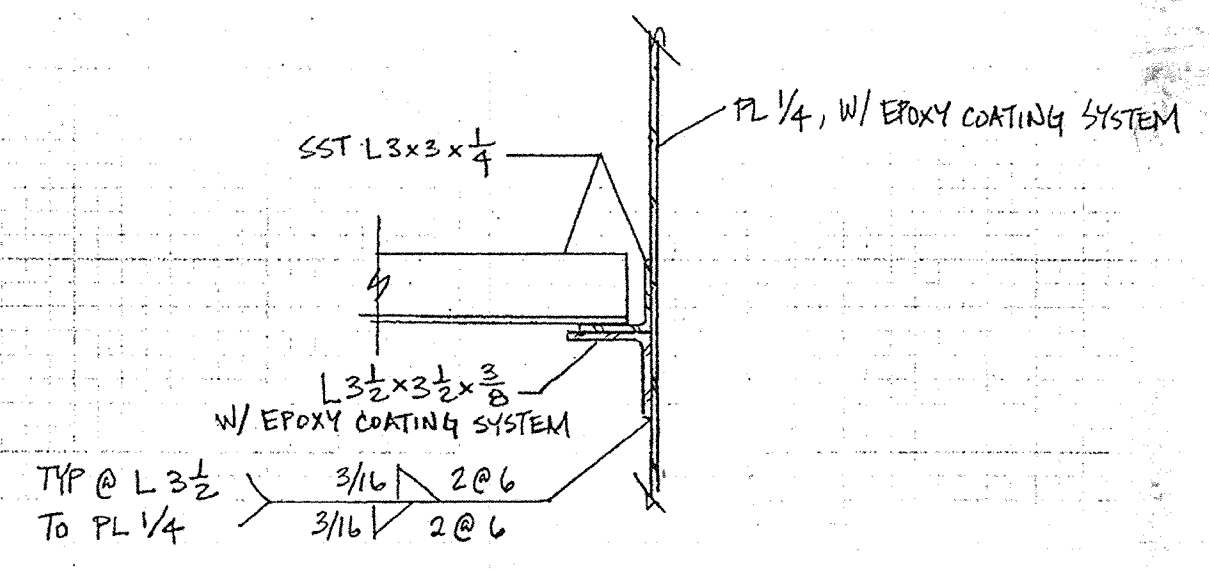


SECTION 1  
3/8" = 1'-0"

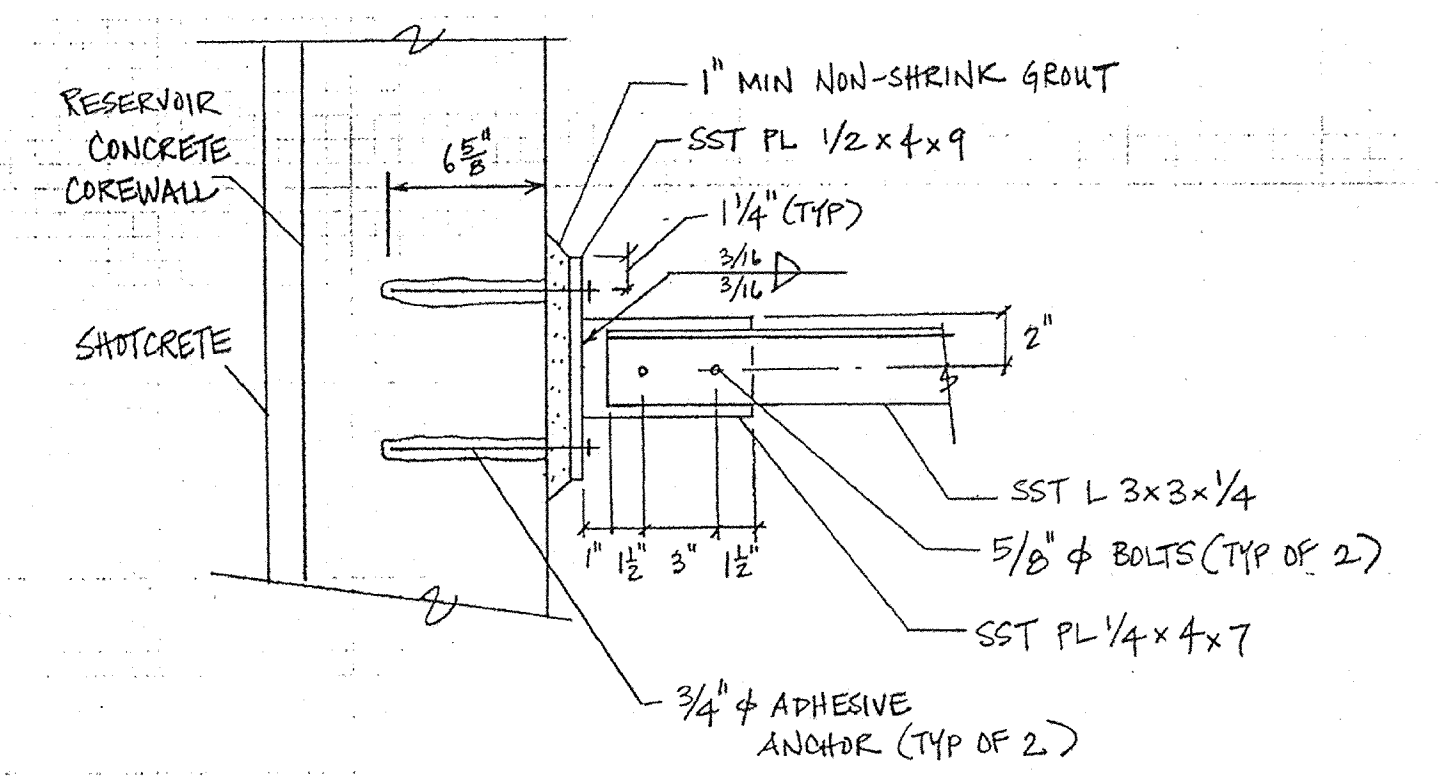
NOTE: SUPPORT BRACKETS SHALL BE TYPE 304 STAINLESS STEEL, UNLESS NOTED OTHERWISE.



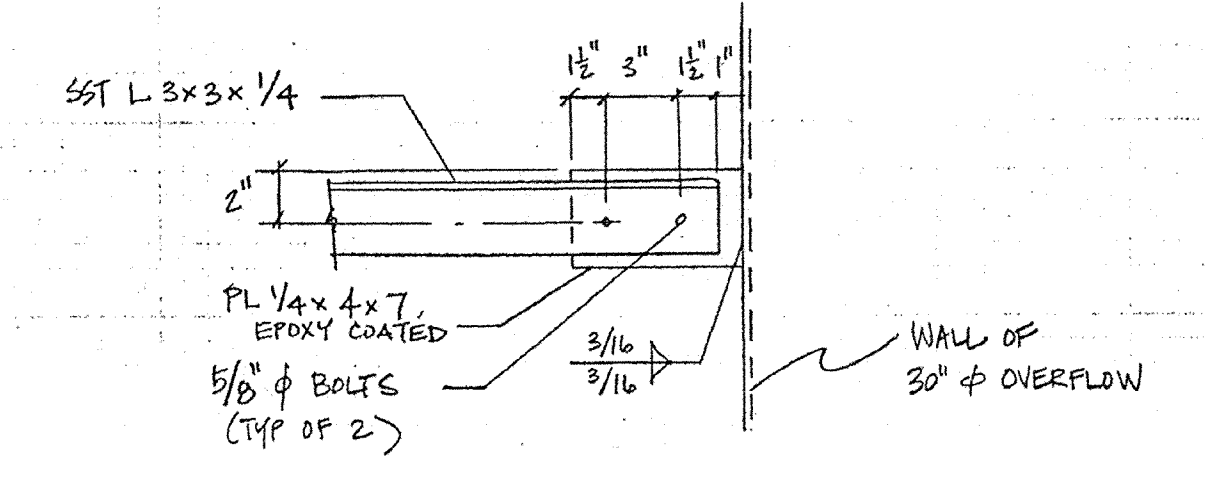
SECTION 2  
3/8" = 1'-0"



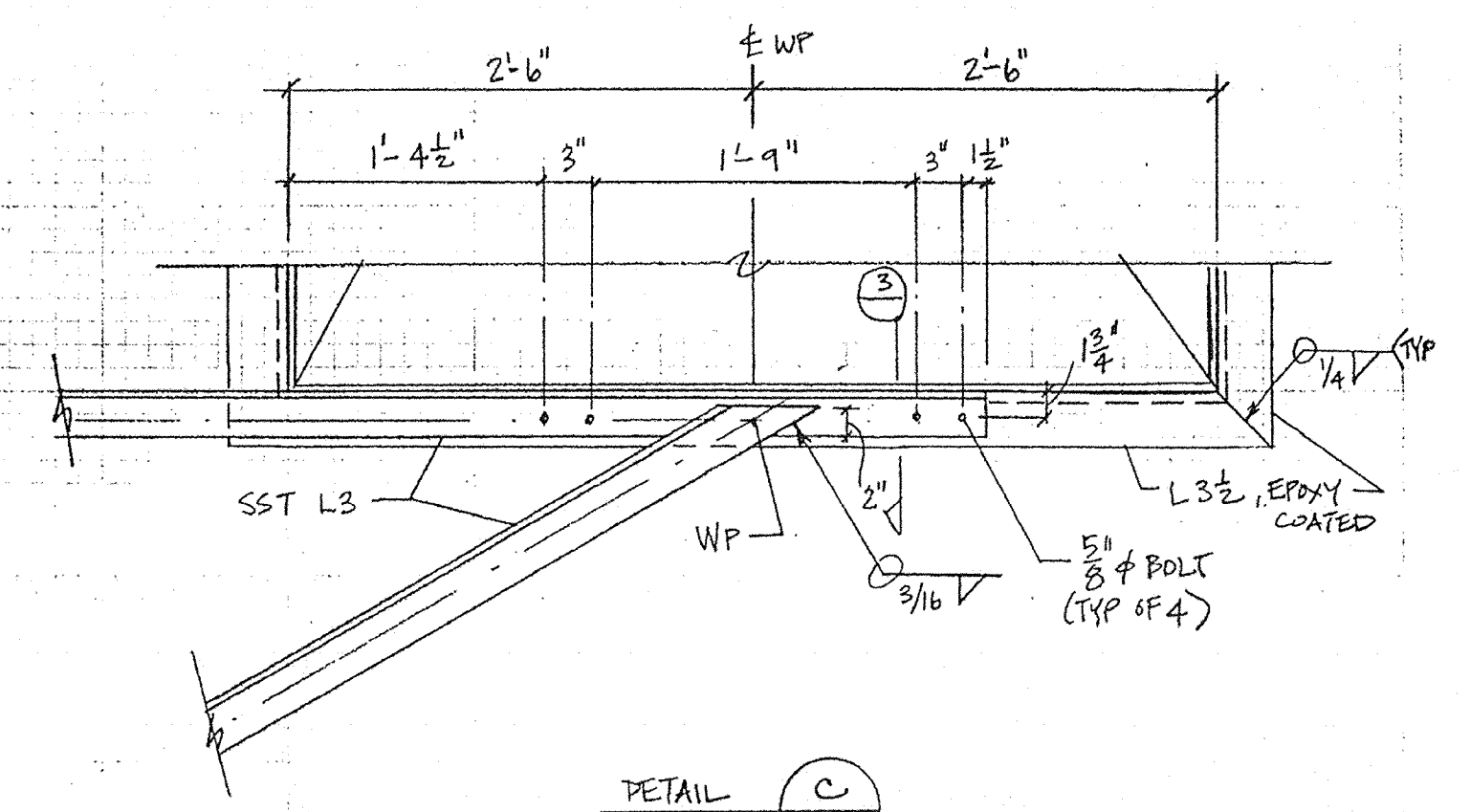
SECTION 3  
1/2" = 1'-0"



DETAIL A  
1/2" = 1'-0"



DETAIL B  
1/2" = 1'-0"



DETAIL C  
1" = 1'-0"

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DATE: 11/09/2000 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY: DMY	CAMP DRESSER & MCKEE INC.
DRAWN BY: DMY	One Walnut Creek Center 100 Pringle Avenue, Suite 300 Walnut Creek, California 94596 (510) 933-2900
SHEET CHK'D BY: DMY	
CROSS CHK'D BY: JRT	
APPROVED BY: JRT	
DATE: MAY 1998	

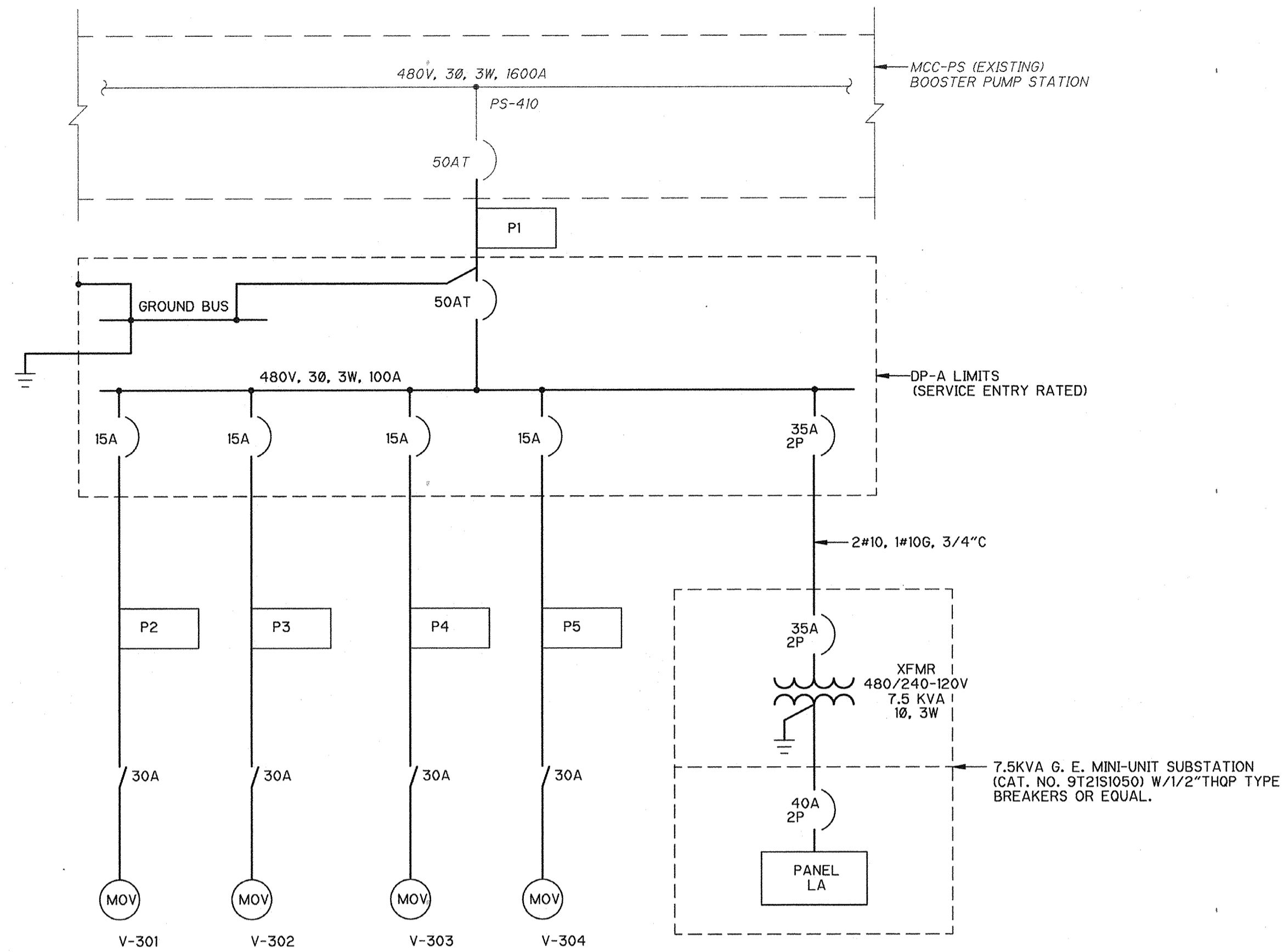
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

environmental engineers, scientists,  
planners, & management consultants **CDM**

TYPICAL RESERVOIR OVERFLOW  
STRUCTURAL DETAILS  
(ADDITIONAL DETAILS)

PROJECT NO. 1358-22097	FILE NAME: S0000011
SHEET NO. S-11	

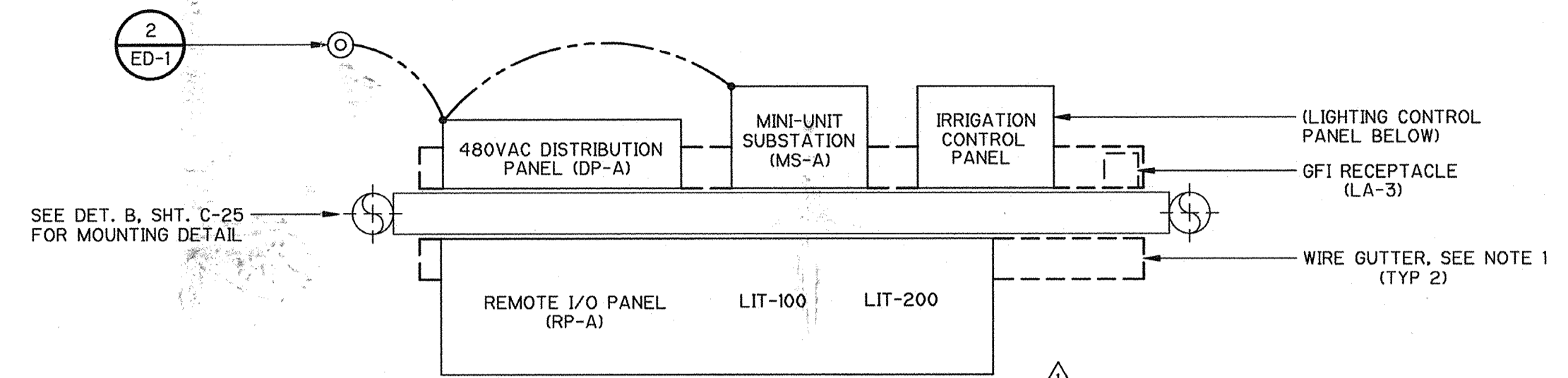




SINGLE LINE DIAGRAM

CONDUIT SCHEDULE

CONDUIT NUMBER	SIZE	CONDUCTORS	FROM	TO
P1	1"	3#4, 1#8G	MCC (EXISTING)	MAIN CIRCUIT BREAKER, DISTRIBUTION PANEL (DP-A)
P2	1"	3#12, 1#12G	DISTR. PNL. DP-A	1 MG RESERVOIR MOV (V-301)
P3	1"	3#12, 1#12G	DISTR. PNL. DP-A	1 MG RESERVOIR MOV (V-302)
P4	1"	3#12, 1#12G	DISTR. PNL. DP-A	DRAIN VALVE MOV (V-303)
P5	1"	3#12, 1#12G	DISTR. PNL. DP-A	DRAIN VALVE MOV (V-304)
J1	1"	4#14	REMOTE I/O PANEL	1 MG RESERVOIR INTRUSION (ZSH-101A, ZSH-101B)
J2	1"	4#14	REMOTE I/O PANEL	5 MG RESERVOIR INTRUSION (ZSH-201A, ZSH-201B)
J3	1"	10#14	REMOTE I/O PANEL	1 MG RESERVOIR MOV (V-301)
J4	1"	10#14	REMOTE I/O PANEL	1 MG RESERVOIR MOV (V-302)
J5	1"	10#14	REMOTE I/O PANEL	DRAIN VALVE MOV (V-303)
J6	1"	10#14	REMOTE I/O PANEL	DRAIN VALVE MOV (V-304)
I1	1"	COAXIAL CABLE	LE-100	LIT-100 (1 MG RESEVOIR) AT REMOTE I/O PNL.
I2	1"	COAXIAL CABLE	LE-200	LIT-200 (5 MG RESERVOIR) AT REMOTE I/O PNL.
I3	1"	1-STP #16	REMOTE I/O PANEL	FIT-170 (FLOW METER)
I4	1"	1-STP #16	REMOTE I/O PANEL	FIT-180 (FLOW METER)
I5	1-1/2"	REMOTE I/O CABLE	REMOTE I/O PANEL	IMH-3 (EXISTING)
I6	2"	REMOTE I/O CABLE	IMH-3	PULLBOX ON SOUTH PROPERTY LINE (REPLACE BROKEN TELEMETRY CABLE FROM STONEMAN RES.)
I7	2"	EMPTY	IMH-3	PULLBOX ON SOUTH PROPERTY LINE
L1	1"	2#12, 1#12G	LIGHTING PNL. (LA-6)	FIT-170 (FLOW METER)
L2	1"	2#12, 1#12G	LIGHTING PNL. (LA-6)	FIT-180 (FLOW METER)
L3	1"	2#12, 1#12G	LIGHTING PNL. (LA-7)	EMERGENCY SIREN (EXISTING, SEE NOTE 2)



RESERVOIR CONTROL STATION

PLAN D E-3

PANELBOARD SCHEDULE											
CKT NO	USAGE	VA		BRKR A/PLS	CKT NO	USAGE	VA		BRKR A/PLS	CKT NO	USAGE
		PHASE A	PHASE B				PHASE A	PHASE B			
1	Ctrl. Pwr. (Remote I/O Pnl.)	750		20/1	2	Lights 1 Mg Reservoir	300		20/1		
3	Receptacles		900	20/1	4	Lights 5 Mg Reservoir			20/1		
5	Irrigation Control Panel	100		20/1	6	FIT-170/180 (Flow Meters)	40	200	20/1		
7	Emergency Siren		200	20/1	8	LIT-100/200 (Level)		60	20/1		
9	Ballard Lights (5 Mg Reservoir)	700		20/1	10	Spare			20/1		
11	Ballard Lights (5 Mg Reservoir)		700	20/1	12	Spare			20/1		
PHASE VA SUBTOTALS		1550	1800		PHASE VA SUBTOTALS		340	260			
PHASE VA TOTALS		1890	2060		PHASE VA TOTALS		1890	2060			
PANELBOARD VA TOTAL					PANELBOARD VA TOTAL		3950				
				PANEL NO.: LA		LOCATION: 1 MG RESERVOIR					
				VOLTAGE: 240/120V, 1Ø, 3W		MAIN BREAKER: 40A					

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- NOTES:
- PROVIDE 4" x 4" x 5'-0" NEMA 4 WIRE GUTTER WITH BARRIER TO SEPARATE POWER CIRCUITS FROM SIGNAL CIRCUITS.
  - POWER ONLY, ACTIVATED BY EXISTING REMOTE RADIO SIGNAL.

RECORD DRAWING  
DATE: 5/21/98  
NASSER SHIRAZI

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

DESIGNED BY: LAJ  
DRAWN BY: LAJ  
SHEET CHK'D BY: DAL  
CROSS CHK'D BY: PJG  
APPROVED BY: JRT  
DATE: MAY 1998

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One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

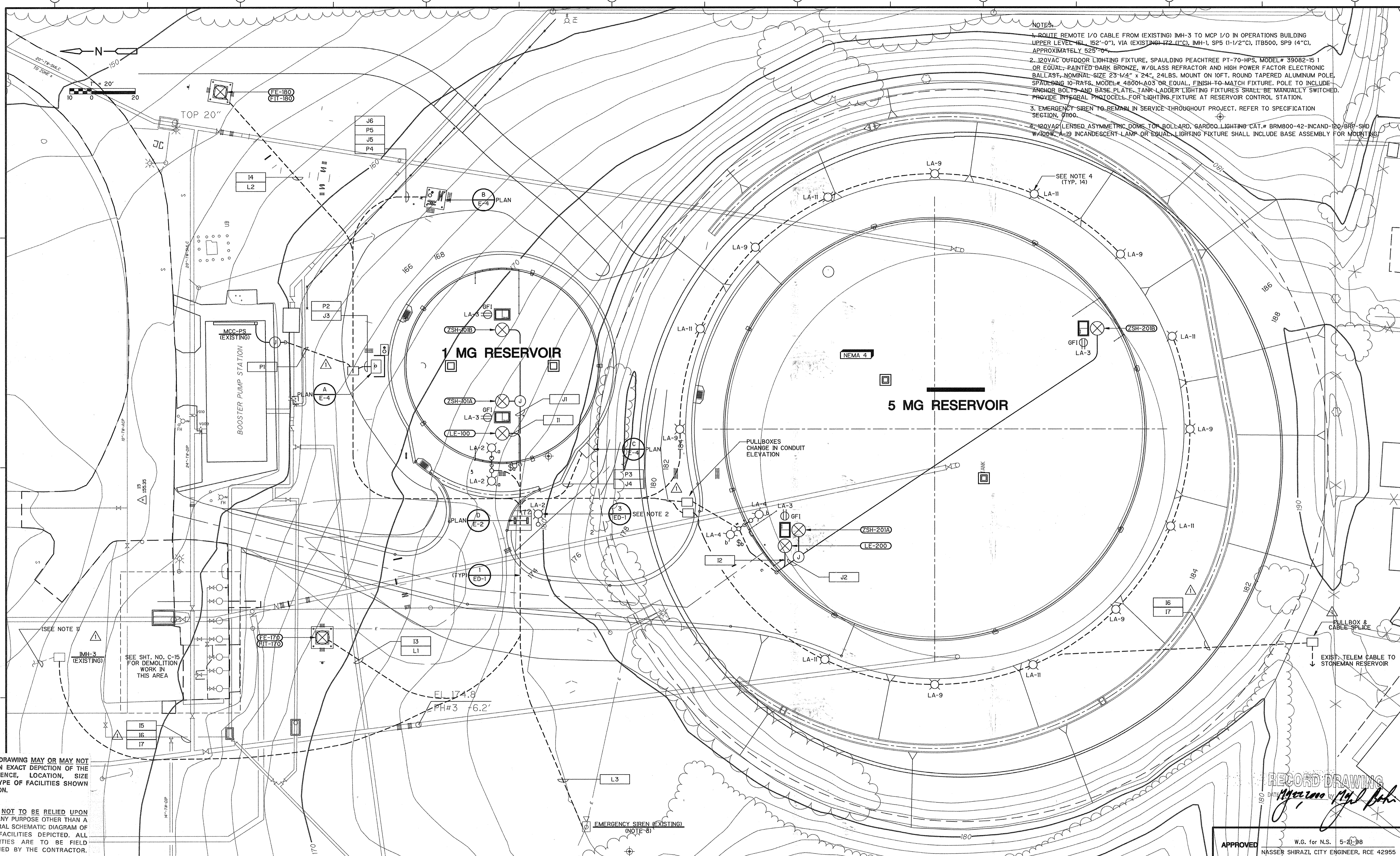
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CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

ELECTRICAL SINGLE LINE DIAGRAM,  
CONTROL SCHEMATICS AND  
PANELBOARD SCHEDULE

PROJECT NO. 1358-22097  
FILE NAME: E000002  
SHEET NO. E-2

- NOTES:
1. ROUTE REMOTE I/O CABLE FROM (EXISTING) IMH-3 TO MCP I/O IN OPERATIONS BUILDING UPPER LEVEL (EL. 152'-0") VIA (EXISTING) 172 (1" C), IMH-1, SP5 (1-1/2" C), ITB500, SP9 (4" C), APPROXIMATELY 525'-0".
  2. 120VAC OUTDOOR LIGHTING FIXTURE, SPAULDING PEACHTREE PT-70-HPS, MODEL# 39082-15 1 OR EQUAL, PAINTED DARK BRONZE, W/GLASS REFRACTOR AND HIGH POWER FACTOR ELECTRONIC BALLAST, NOMINAL SIZE 23-1/4" x 24", 24LBS. MOUNT ON 10FT. ROUND TAPERED ALUMINUM POLE, SPAULDING 10-RATS, MODEL# 48001-A03 OR EQUAL, FINISH TO MATCH FIXTURE. POLE TO INCLUDE ANCHOR BOLTS AND BASE PLATE. TANK LADDER LIGHTING FIXTURES SHALL BE MANUALLY SWITCHED. PROVIDE INTEGRAL PHOTOCELL FOR LIGHTING FIXTURE AT RESERVOIR CONTROL STATION.
  3. EMERGENCY SIREN TO REMAIN IN SERVICE THROUGHOUT PROJECT. REFER TO SPECIFICATION SECTION 0100.
  4. 120VAC LENSED ASYMMETRIC DOME TOP BOLLARD, GARDCO LIGHTING CAT.# BRM800-42-INCAND-120/BRF-SHD W/100W A-19 INCANDESCENT LAMP OR EQUAL. LIGHTING FIXTURE SHALL INCLUDE BASE ASSEMBLY FOR MOUNTING.



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RECORD DRAWING  
DATE: 5/2/98  
Nasser Shirazi

APPROVED W.G. for N.S. 5-2-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

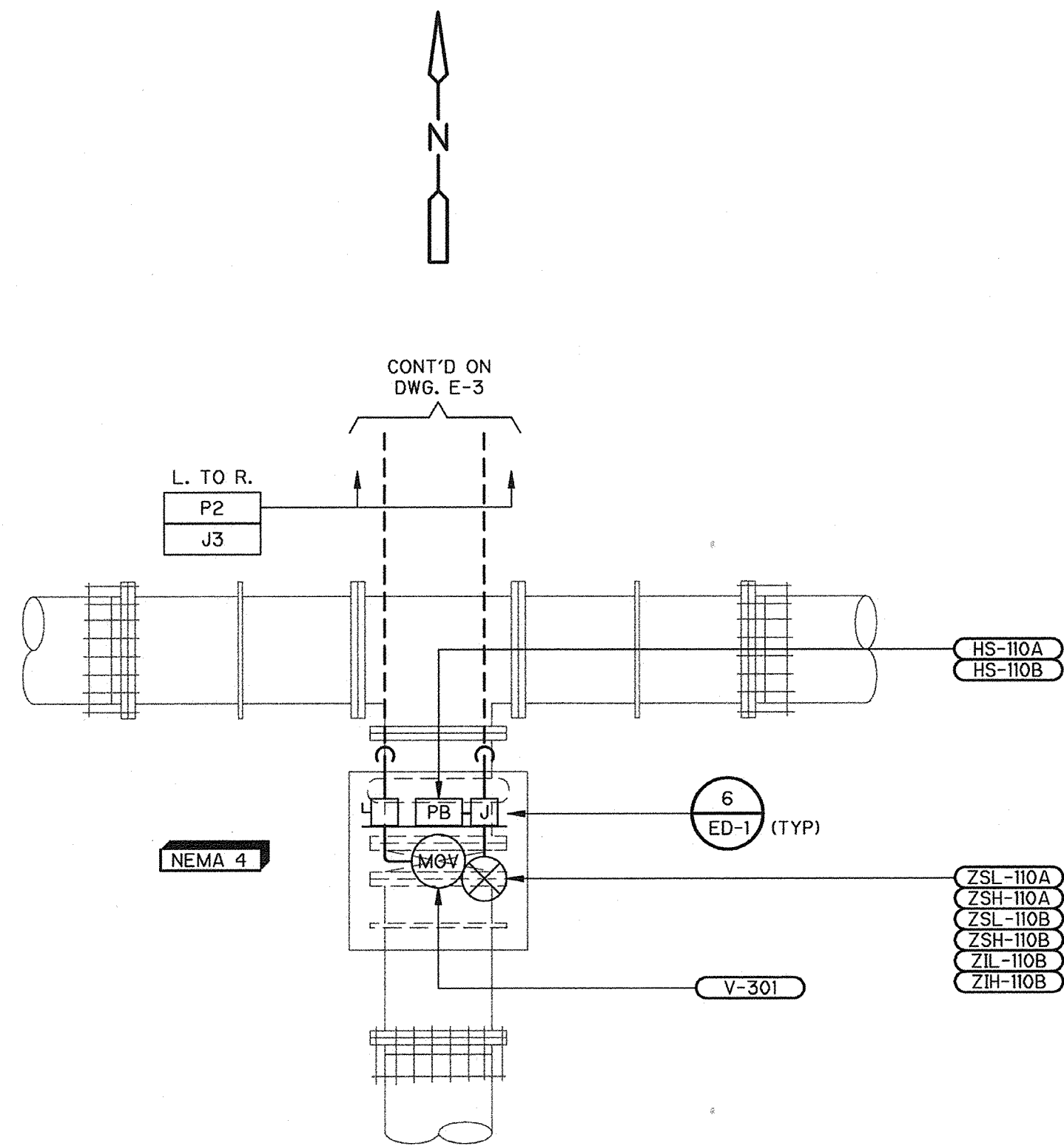
DESIGNED BY: DAL  
DRAWN BY: LAJ  
SHEET CHK'D BY: DAL  
CROSS CHK'D BY: PJG  
APPROVED BY: JRT  
DATE: MAY 1998

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100 Pringle Avenue, Suite 300  
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environmental engineers, scientists,  
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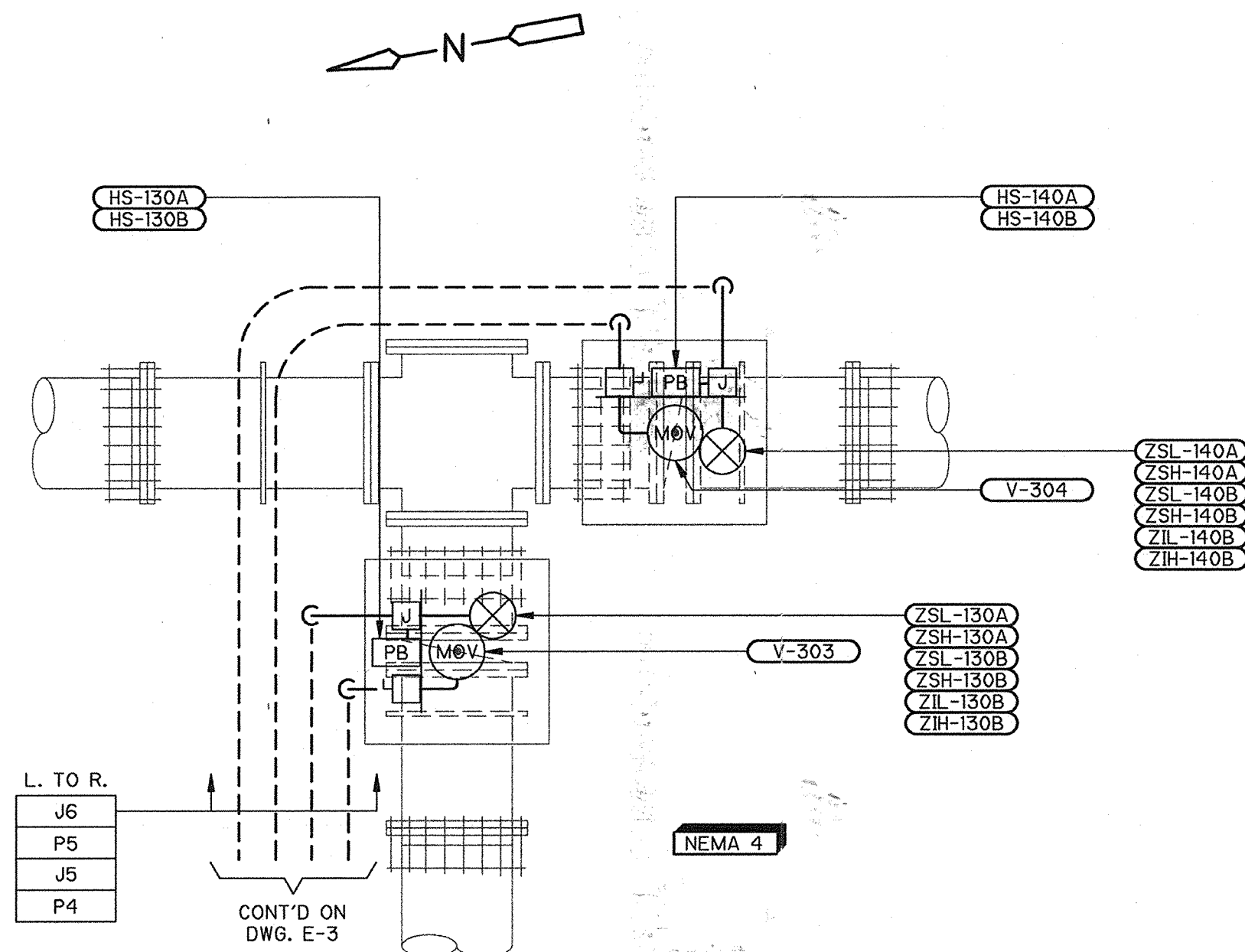
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

ELECTRICAL PLAN  
POWER, LIGHTING & INSTRUMENTATION

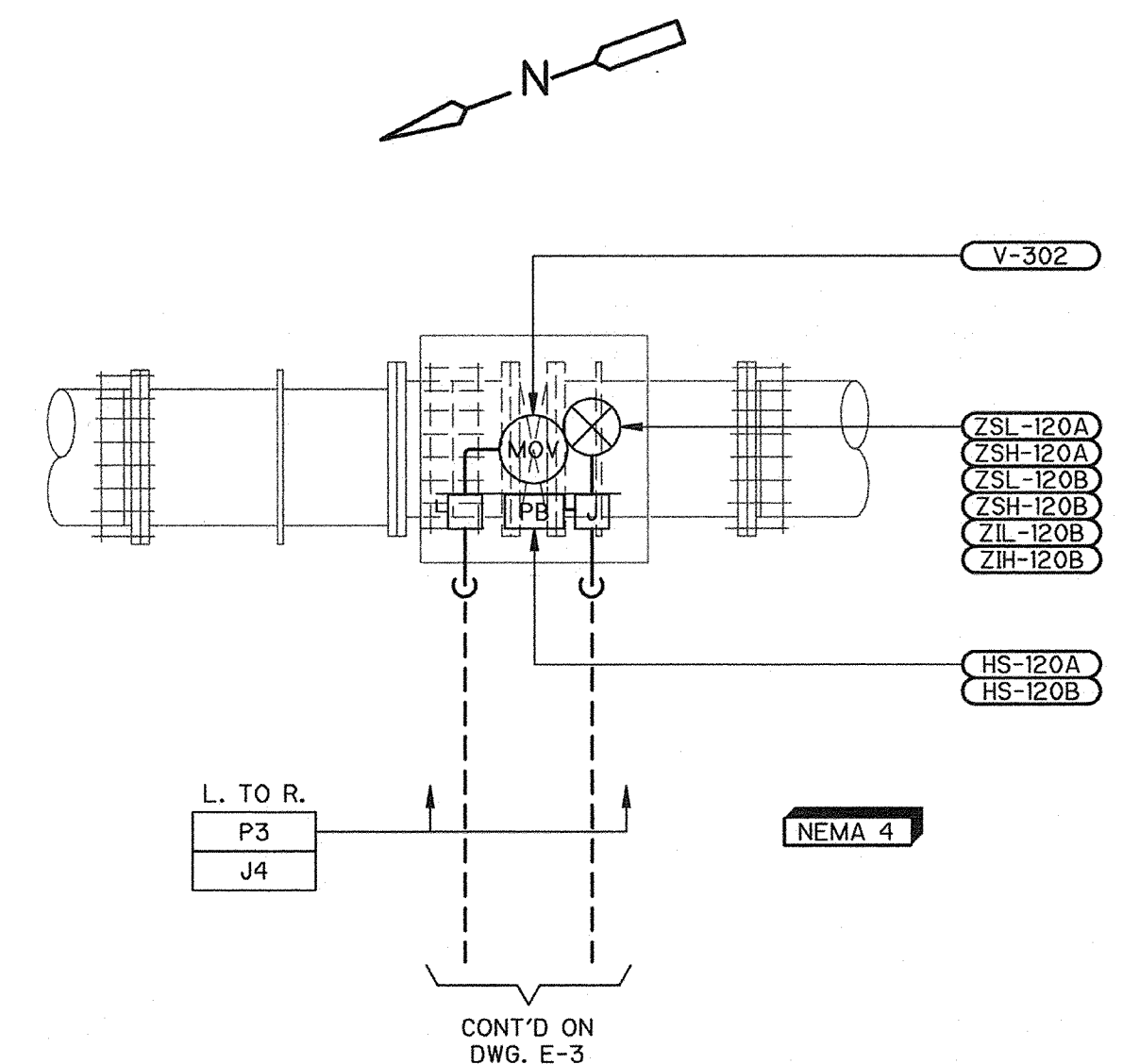
PROJECT NO. 1358-22097  
FILE NAME: E000003  
SHEET NO. E-3



PLAN A  
1/4" = 1'-0"



PLAN B  
1/4" = 1'-0"



PLAN C  
1/4" = 1'-0"

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RECORD DRAWING  
DATE: *Myer, can Myer, Bal.*

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

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DRAWN BY: LAJ	One Walnut Creek Center
SHEET CHK'D BY: DAL	100 Pringle Avenue, Suite 300
CROSS CHK'D BY: PJG	Walnut Creek, California 94596
APPROVED BY: JRT	(510) 933-2900
DATE: MAY 1998	

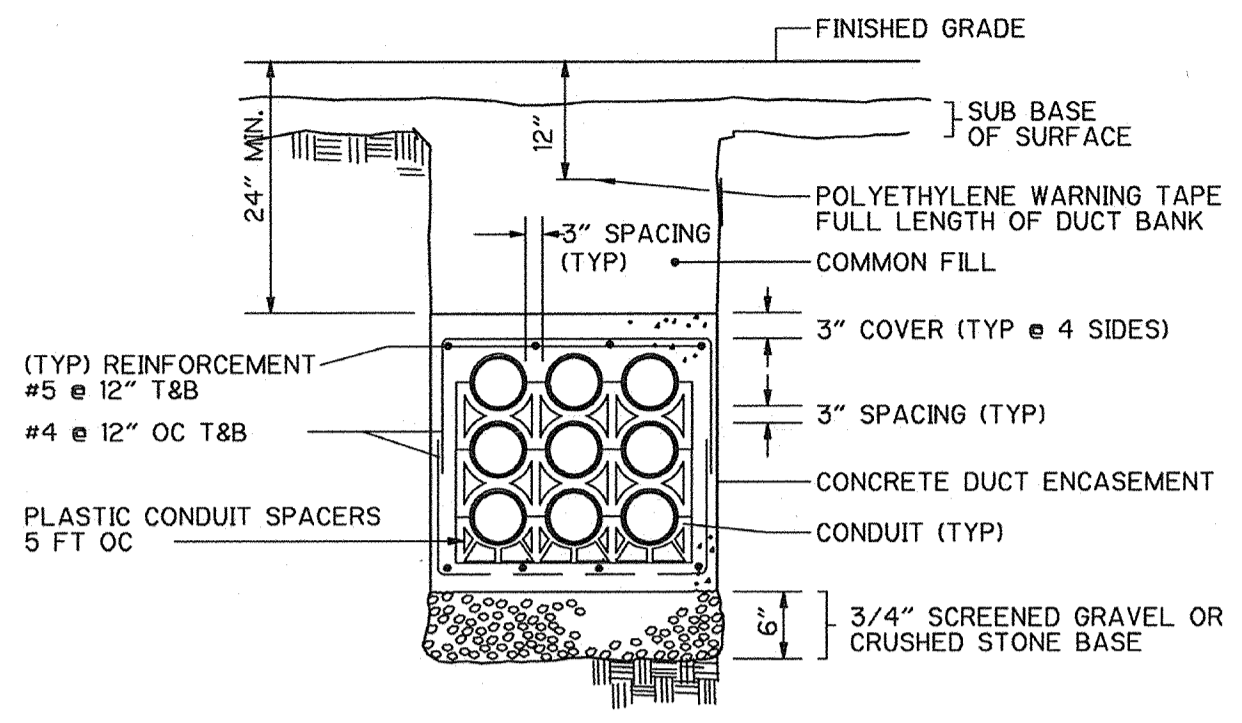
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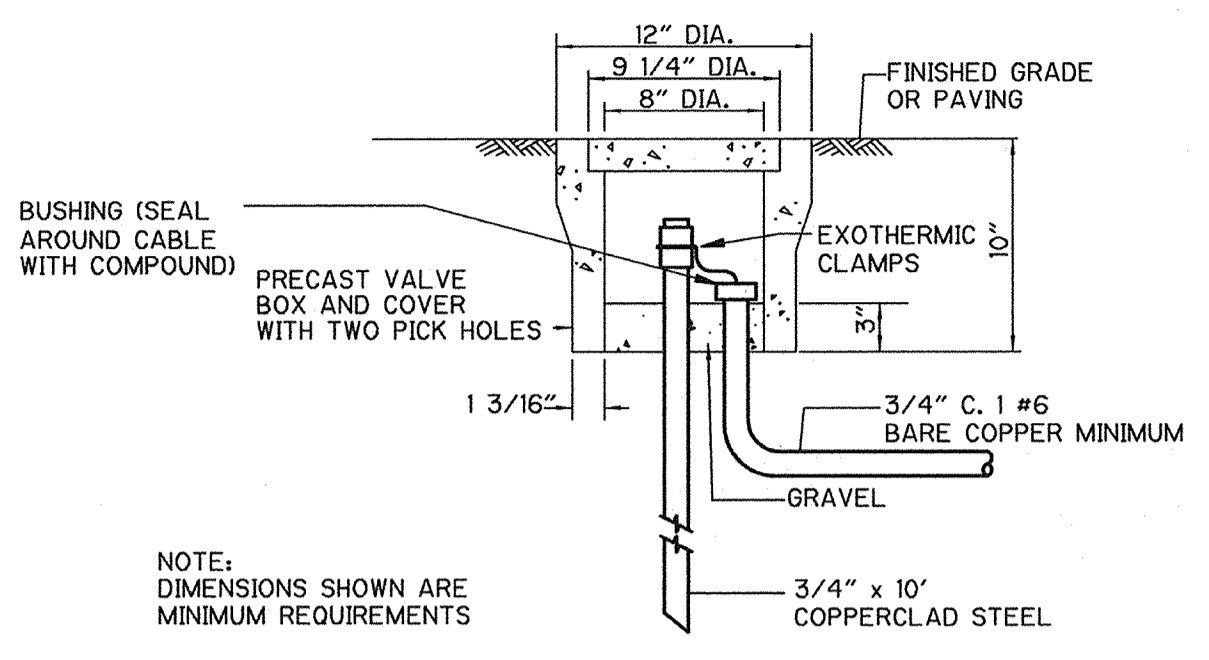
CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

MOTORIZED VALVES  
POWER & INSTRUMENTATION PLANS

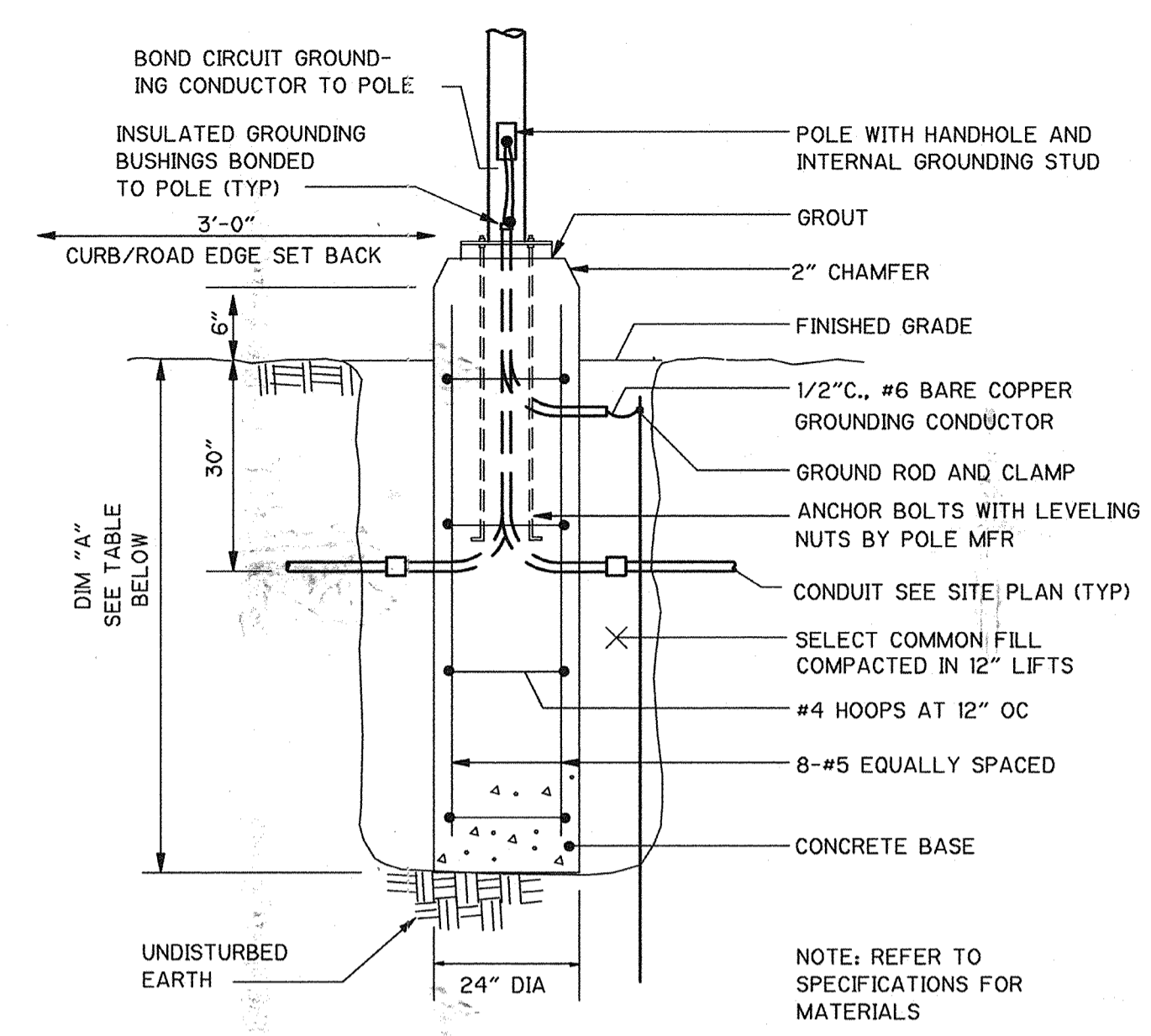
PROJECT NO. 1358-22097  
FILE NAME: E0000004  
SHEET NO. E-4



UNDERGROUND DUCT BANK  
DETAIL 1  
NTS E-3

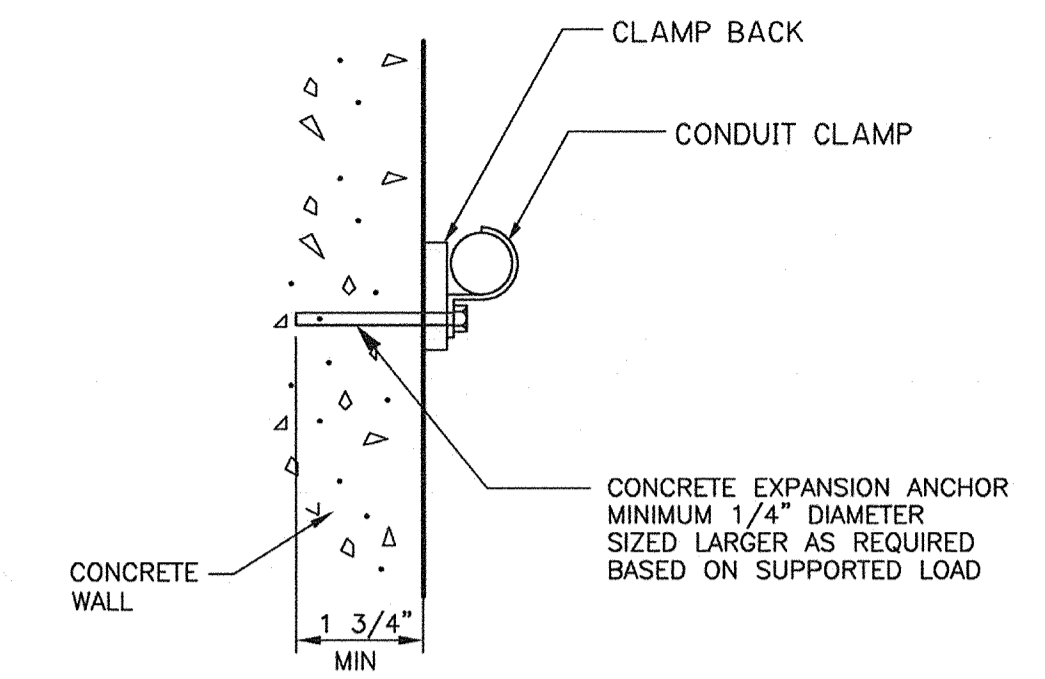


GROUND ROD  
DETAIL 2  
NTS E-3



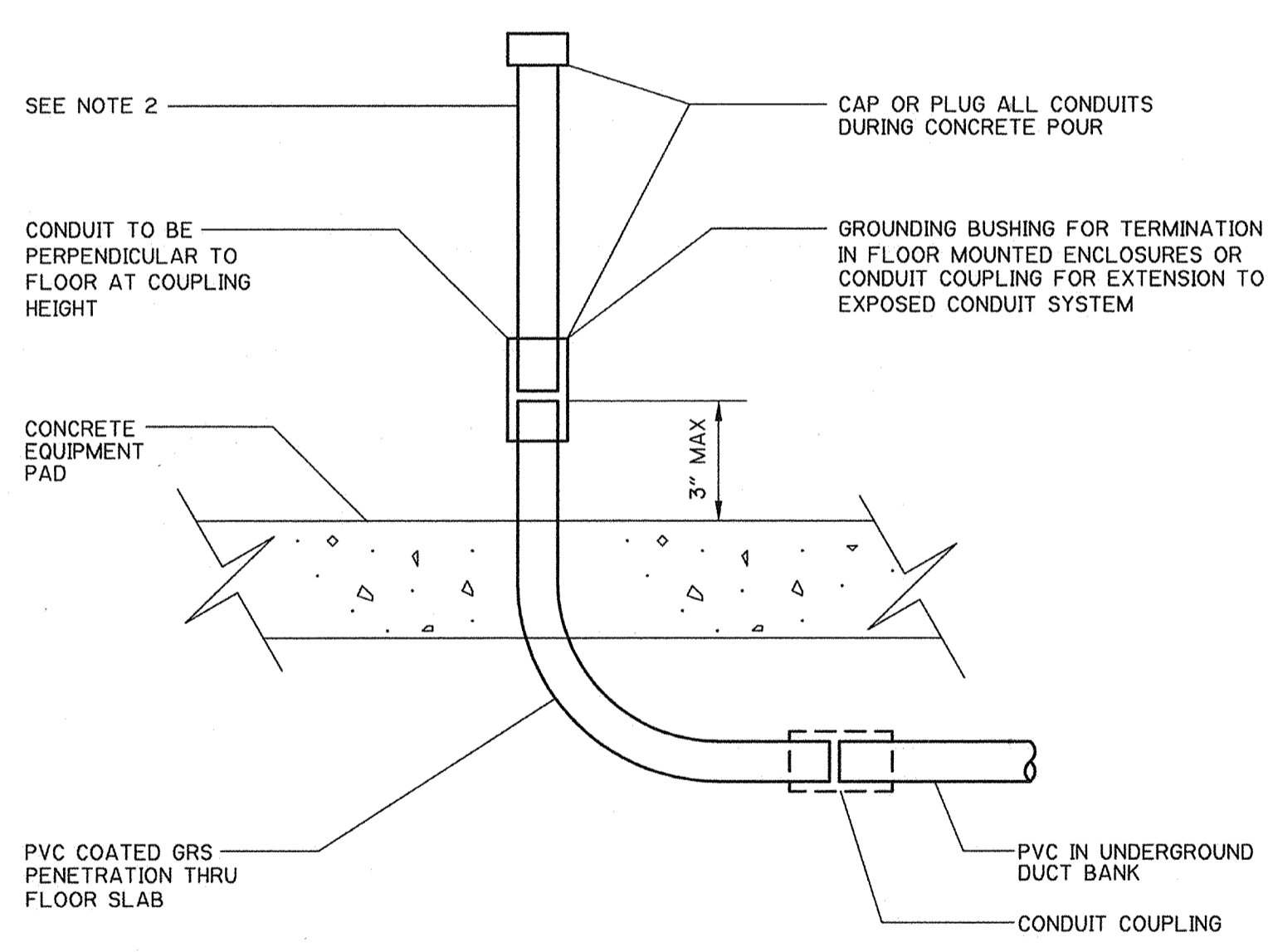
POLE HEIGHT	DIMENSION "A"
10'-0"	4'-6"

LIGHTING STANDARD BASE  
DETAIL 3  
NTS E-3



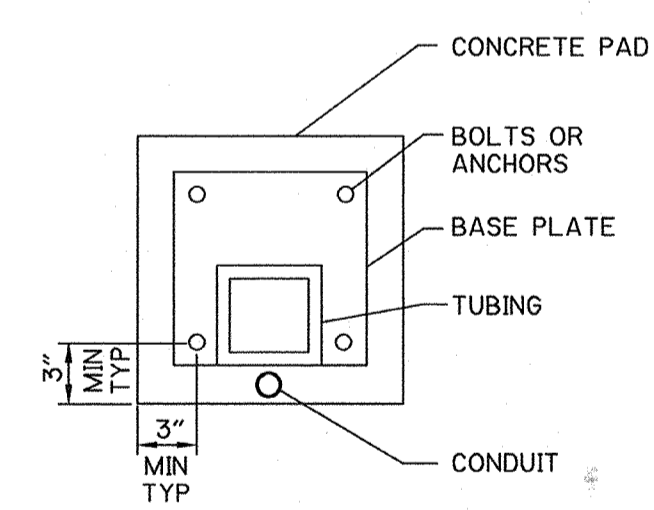
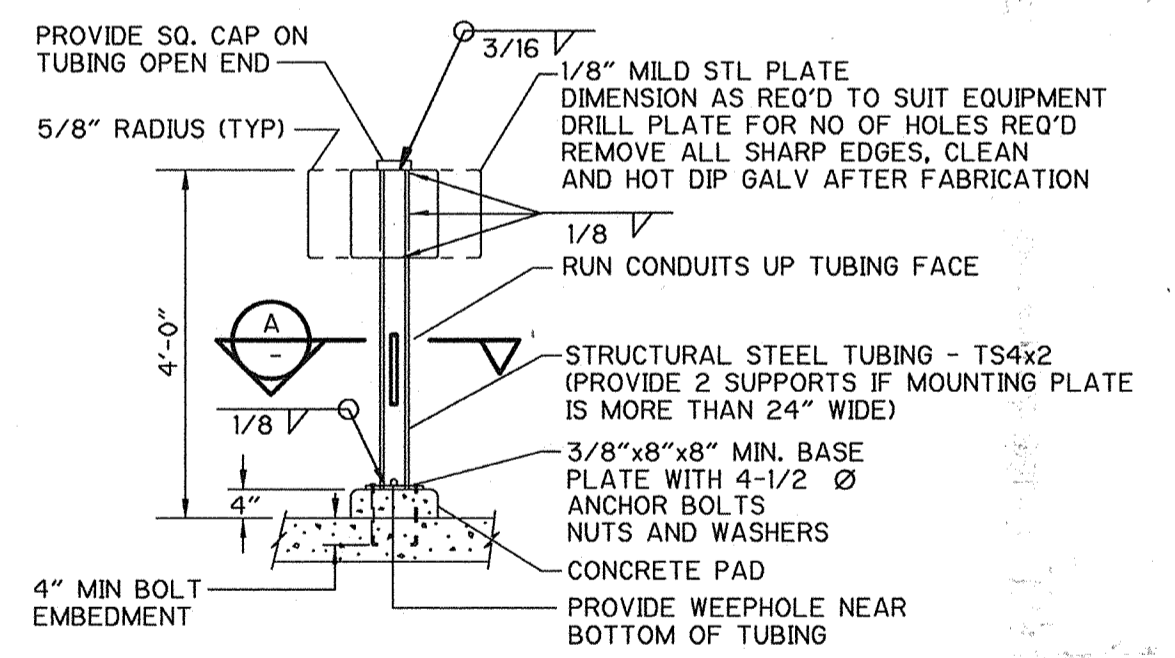
NOTE:  
1. APPLICABLE FOR CONCRETE WALL, FLOOR, CEILING OR EQUIPMENT PAD  
2. APPLICABLE FOR 2" CONDUIT MAXIMUM

SINGLE CONDUIT MOUNTING  
DETAIL 4  
NTS E-3



NOTES:  
1. APPLICABLE IN ALL AREAS UNLESS NOTED OTHERWISE  
2. PROVIDE 24" STUB EXTENSION BEFORE CONCRETE POUR TO ALLOW CHECKING FOR PLUMB FOR ALL CONDUITS EXTENDING TO EXPOSED CONDUIT SYSTEMS

CONDUIT STUB UP  
DETAIL 5  
NTS



CONTROL STATION MOUNTING STAND  
DETAIL 6  
NTS E-4

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RECORD DRAWING  
DATE: 11/22/2000 BY: [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00	EPM	BPD		RECORD DRAWINGS

DESIGNED BY: DAL  
DRAWN BY: LAJ  
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One Walnut Creek Center  
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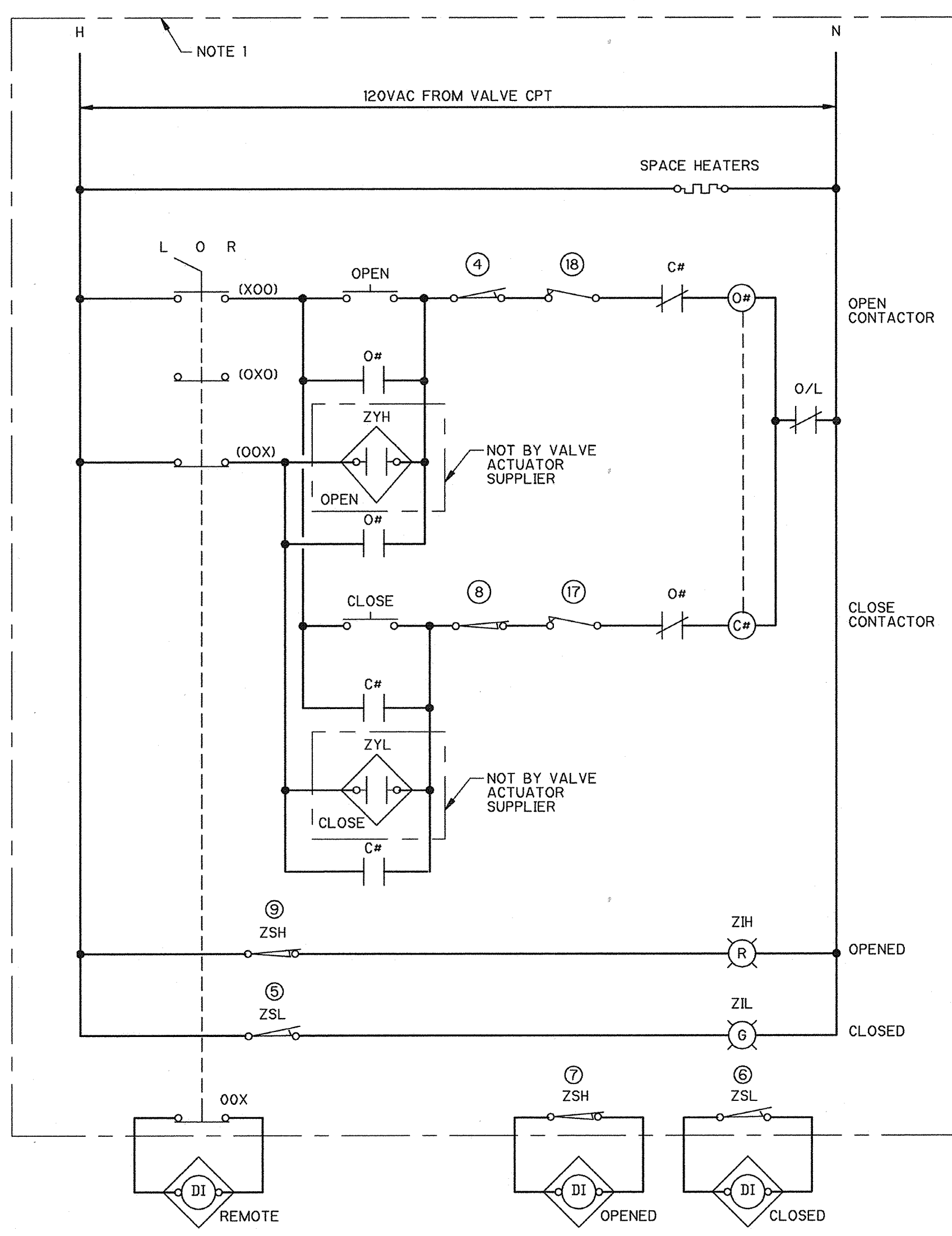
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CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

STANDARD ELECTRICAL DETAILS

PROJECT NO. 1358-22097  
FILE NAME: E000ED01  
SHEET NO. ED-1

NOTE:  
1. EQUIPMENT NOTED IS FURNISHED WITH THE VALVE ACTUATOR



VALVE SHOWN IN FULLY OPEN POSITION

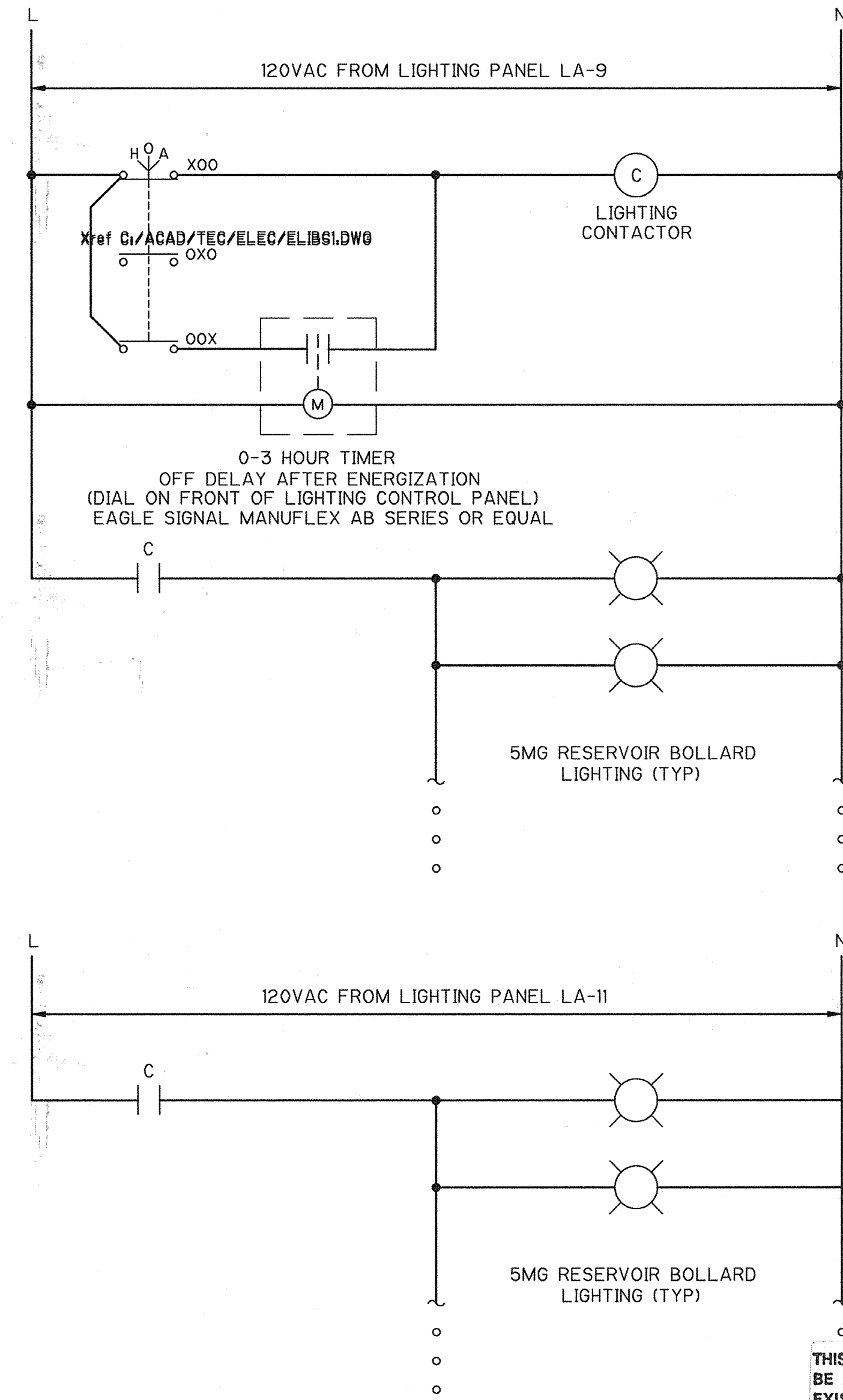
LIMIT SWITCH CONTACT DEVELOPMENT	VALVE POSITION		FUNCTION
	FULLY OPENED	FULLY CLOSED	
2	---	---	SPARE
3	---	---	SPARE
4	---	---	OPEN LIMIT INDICATION
5	---	---	INDICATION
6	---	---	INDICATION
7	---	---	INDICATION
8	---	---	CLOSE LIMIT INDICATION
9	---	---	INDICATION

CONTROL CIRCUIT SYMBOL	MECHANICAL EQUIPMENT NUMBER			
	V-301	V-302	V-303	V-304
# CONTROL CIRCUIT NUMBER	101	102	103	104
LOOP NO.	110	120	130	140

— CLOSED CONTACT (17) TORQUE SWITCHES  
- - - OPEN CONTACT (18)

VALVE #  
TYPICAL 480V OPEN-CLOSE VALVE

TAG	DESCRIPTION	I/O TYPE
LE/LIT-100	1 MG RESERVOIR LEVEL	AI
ZSH-101A/B	1 MG RESERVOIR INTRUSION	DI
HS-110A	V-301 LOCAL/REMOTE	DI
ZSL-110B	V-301 CLOSED POSITION	DI
ZSH-110B	V-301 OPEN POSITION	DI
ZYL-110	V-301 CLOSE COMMAND	DO
ZYH-110	V-301 OPEN COMMAND	DO
HS-120A	V-302 LOCAL/REMOTE	DI
ZSL-120B	V-302 CLOSED POSITION	DI
ZSH-120B	V-302 OPEN POSITION	DI
ZYL-120	V-302 CLOSE COMMAND	DO
ZYH-120	V-302 OPEN COMMAND	DO
HS-130A	V-303 LOCAL/REMOTE	DI
ZSL-130B	V-303 CLOSED POSITION	DI
ZSH-130B	V-303 OPEN POSITION	DI
ZYL-130	V-303 CLOSE COMMAND	DO
ZYH-130	V-303 OPEN COMMAND	DO
HS-140A	V-304 LOCAL/REMOTE	DI
ZSL-140B	V-304 CLOSED POSITION	DI
ZSH-140B	V-304 OPEN POSITION	DI
ZYL-140	V-304 CLOSE COMMAND	DO
ZYH-140	V-304 OPEN COMMAND	DO
FIT-170	FLOW METER	AI
FIT-180	FLOW METER	AI
LE/LIT-200	5 MG RESERVOIR LEVEL	AI
ZSH-201A/B	5 MG RESERVOIR INTRUSION	DI



WIRING DIAGRAM  
LIGHTING CONTROL PANEL

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RECORD DRAWING  
DATE: 11/27/2000 BY: M.J. B...  
*(Signature)*

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

DESIGNED BY: DAL  
DRAWN BY: LAJ  
SHEET CHK'D BY: DAL  
CROSS CHK'D BY: PJG  
APPROVED BY: JRT  
DATE: MAY 1998

CAMP DRESSER & MCKEE INC.  
One Walnut Creek Center  
100 Pringle Avenue, Suite 300  
Walnut Creek, California 94596  
(510) 933-2900

environmental engineers, scientists,  
planners, & management consultants

CITY OF PITTSBURG  
ENGINEERING DIVISION  
6 MG RESERVOIR  
REPLACEMENT PROJECT

ELECTRICAL CONTROL SCHEMATIC  
MOTORIZED VALVES AND  
PLC INPUT/OUTPUT SCHEDULE

PROJECT NO. 1358-22097  
FILE NAME: E000E501  
SHEET NO. ES-1

**INSTRUMENTATION SYMBOLS**

SYMBOL	DESCRIPTION
	INSTRUMENT - FIELD MOUNTED
	INSTRUMENT - PANEL MOUNTED
	INSTRUMENT - REAR OF PANEL MOUNTED
	DOUBLE CROSSHATCHING INDICATES EXISTING DEVICE TO BE REUSED
	SINGLE CROSS HATCH PATTERN INDICATES INSTRUMENT FURNISHED UNDER ANOTHER SECTION OF THE SPECIFICATION
	SHARED DISPLAY OR SHARED CONTROL ACCESSIBLE TO OPERATOR
	SHARED DISPLAY OR SHARED CONTROL NOT ACCESSIBLE TO OPERATOR
	COMPUTER FUNCTION - ACCESSIBLE TO OPERATOR
	COMPUTER FUNCTION - NOT ACCESSIBLE TO OPERATOR
	PROGRAMMABLE LOGIC CONTROLLER FUNCTION - ACCESSIBLE TO OPERATOR
	PROGRAMMABLE LOGIC CONTROLLER FUNCTION - NOT ACCESSIBLE TO OPERATOR
	GENERAL INTERLOCK LOGIC OR SEQUENCE CONTROL
	BUBBLER SYSTEM
	RELAY
	VARIABLE SPEED DRIVE
	UNINTERRUPTIBLE POWER SUPPLY
	MOTOR CONTROL CENTER
	MOTOR - SINGLE SPEED
	MOTOR - VARIABLE SPEED
	CENTRIFUGAL PUMP
	CENTRIFUGAL BLOWER
	PROGRESSIVE CAVITY PUMP
	PROPORTIONING PUMP
	PLUNGER PUMP
	VENTURI TUBE
	MAGNETIC FLOWMETER
	SONIC FLOWMETER
	TURBINE FLOWMETER
	VORTEX SENSOR
	SINGLE-PORT PITOT
	AVERAGING PITOT

**INSTRUMENTATION SYMBOLS**

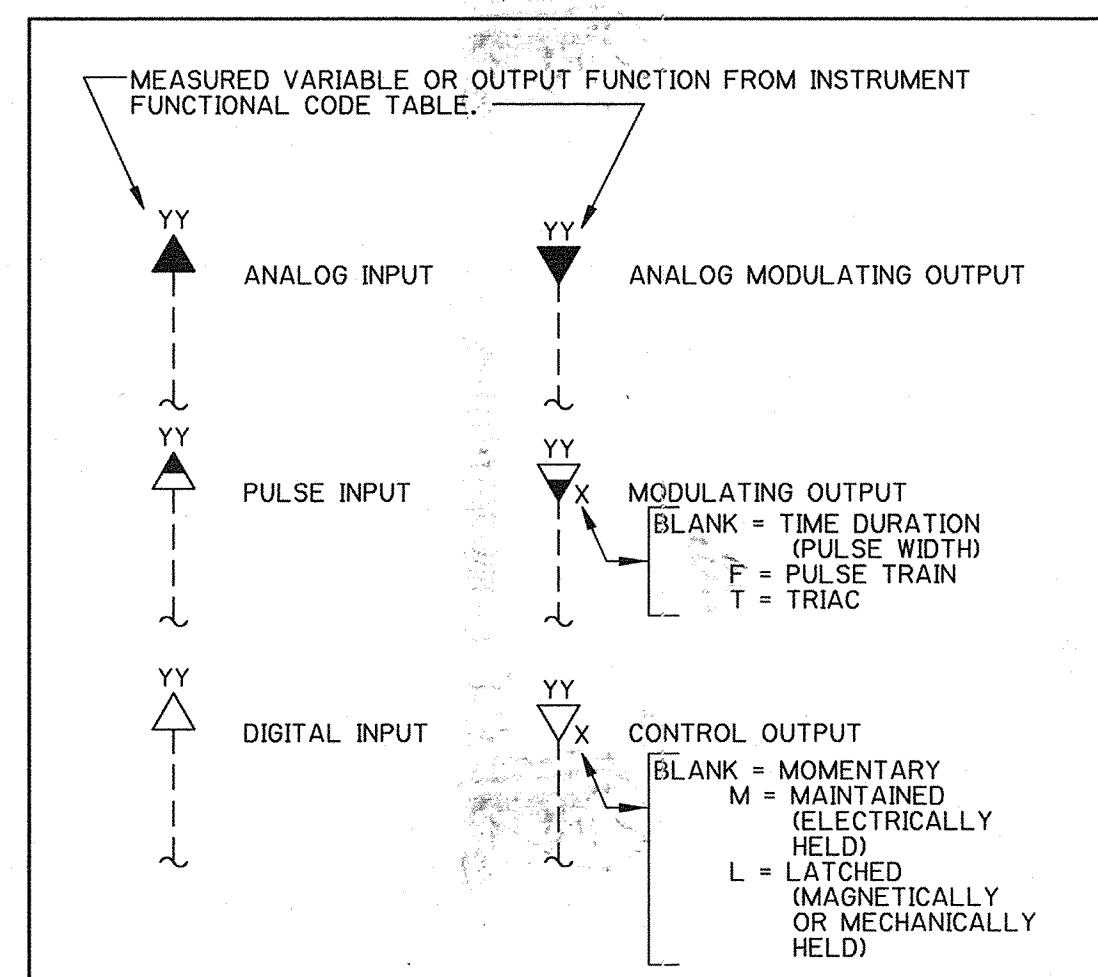
SYMBOL	DESCRIPTION
	PARSHALL FLUME
	WEIR
	ORIFICE PLATE
	GATE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	PLUG VALVE
	PINCH VALVE
	GLOBE VALVE
	RELIEF VALVE
	GATE
	SOLENOID OPERATOR
	CYLINDER OPERATOR
	DIAPHRAGM OPERATOR
	PRESSURE REGULATING DIAPHRAGM OPERATOR
	DIAPHRAGM SEAL
	CHEMICAL ADDITION POINT
	PROCESS LINE (MAJOR) (LINE WEIGHT DISTINCTION IS OPTIONAL)
	PROCESS LINE (MINOR OR AUXILIARY) (LINE WEIGHT DISTINCTION IS OPTIONAL)
	ELECTRIC SIGNAL (DISCRETE OR ANALOG). 4-20MA MAY BE ADDED TO CLARIFY ANALOG SIGNAL IF DESIRED
	DATA HIGHWAY OR SOFTWARE LINK
	PNEUMATIC
	CAPILLARY TUBING
	TELEPHONE LINE
	SONIC SIGNAL
	INSTRUMENT AIR SUPPLY
	PLANT AIR SUPPLY
	ELECTRIC SUPPLY
	PROPORTIONAL
	HIGH SIGNAL SELECT
	LOW SIGNAL SELECT
	PROPORTIONAL INTEGRAL
	RAMP FUNCTION
	ADDER/SUMMER
	SQUARE ROOT EXTRACTOR
	CURRENT TO PNEUMATIC TRANSDUCER

**INSTRUMENTATION IDENTIFICATION LETTERS DEFINITION**

FIRST LETTER	SUCCEEDING LETTERS			
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION
A	ANALYSIS		ALARM	
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)			CONTROL
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL		
E	VOLTAGE (EMF)		PRIMARY ELEMENT	
F	FLOW RATE	RATIO (FRACTION)		
G	GAGING (DIMENSIONAL)		GLASS VIEW DEVICE	
H	HAND (MANUALLY INITIATED)			HIGH
I	CURRENT (ELECTRICAL)		INDICATE	
J	POWER	SCAN		
K	TIME OR TIME-SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION
L	LEVEL		LIGHT (PILOT)	LOW
M	MOISTURE OR HUMIDITY	MOMENTARY		MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)	
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)	
Q	QUANTITY	INTEGRATE OR TOTALIZE		
R	RADIOACTIVITY		RECORD OR PRINT	
S	SPEED OR FREQUENCY	SAFETY		SWITCH
T	TEMPERATURE			TRANSMIT
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER OR LOUVER
W	WEIGHT OR FORCE		WELL	
X	TROUBLE FAIL		TROUBLE FAIL	
Y	EVENT, STATE OR PRESENCE			RELAY OR COMPUTE
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT

ABBREVIATIONS	ABBREVIATIONS
2SIW	TWO SPEED, ONE WINDING
2S2W	TWO SPEED, TWO WINDING
2S2W	TWO SPEED, TWO WINDING
AO	ANALOG OUTPUT
BCP	BLOWER CONTROL PANEL
CCC	CENTRAL CONTROL CONSOLE
CR	CHLORINE RESIDUAL
CTU	CENTRAL TELEMETRY UNIT
DI	DIGITAL OR DISCRETE INPUT
ES	ELECTRIC SUPPLY
FC	FAIL CLOSED
FLP	FAIL LAST POSITION
FO	FAIL OPEN
HOA	HAND-OFF-AUTO
HWA	HIGH WATER ALARM
INSTR	INSTRUMENT (TATION)
NO	NORMALLY OPEN OR NUMBER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PWL	PEAK WATER LEVEL
RT	RUNNING TIME METER
SCR	SILICON CONTROLLED RECTIFIER
VA-H	HYDRAULIC VALVE OPERATOR
VA-M	MOTOR VALVE OPERATOR
VA-P	PNEUMATIC VALVE OPERATOR
VA-S	SOLENOID VALVE OPERATOR

**INPUT & OUTPUT SIGNALS TO PLC SYSTEM**



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**RECORD DRAWING**  
DATE: 4/22/98 BY: [Signature]

APPROVED: [Signature] W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

REV. NO.	DATE	DRWN	CHKD	REMARKS
2/00		EPM	BPD	RECORD DRAWINGS

DESIGNED BY: DAL  
DRAWN BY: EPM  
SHEET CHK'D BY: DAL  
CROSS CHK'D BY: PJG  
APPROVED BY: JRT  
DATE: MAY 1998

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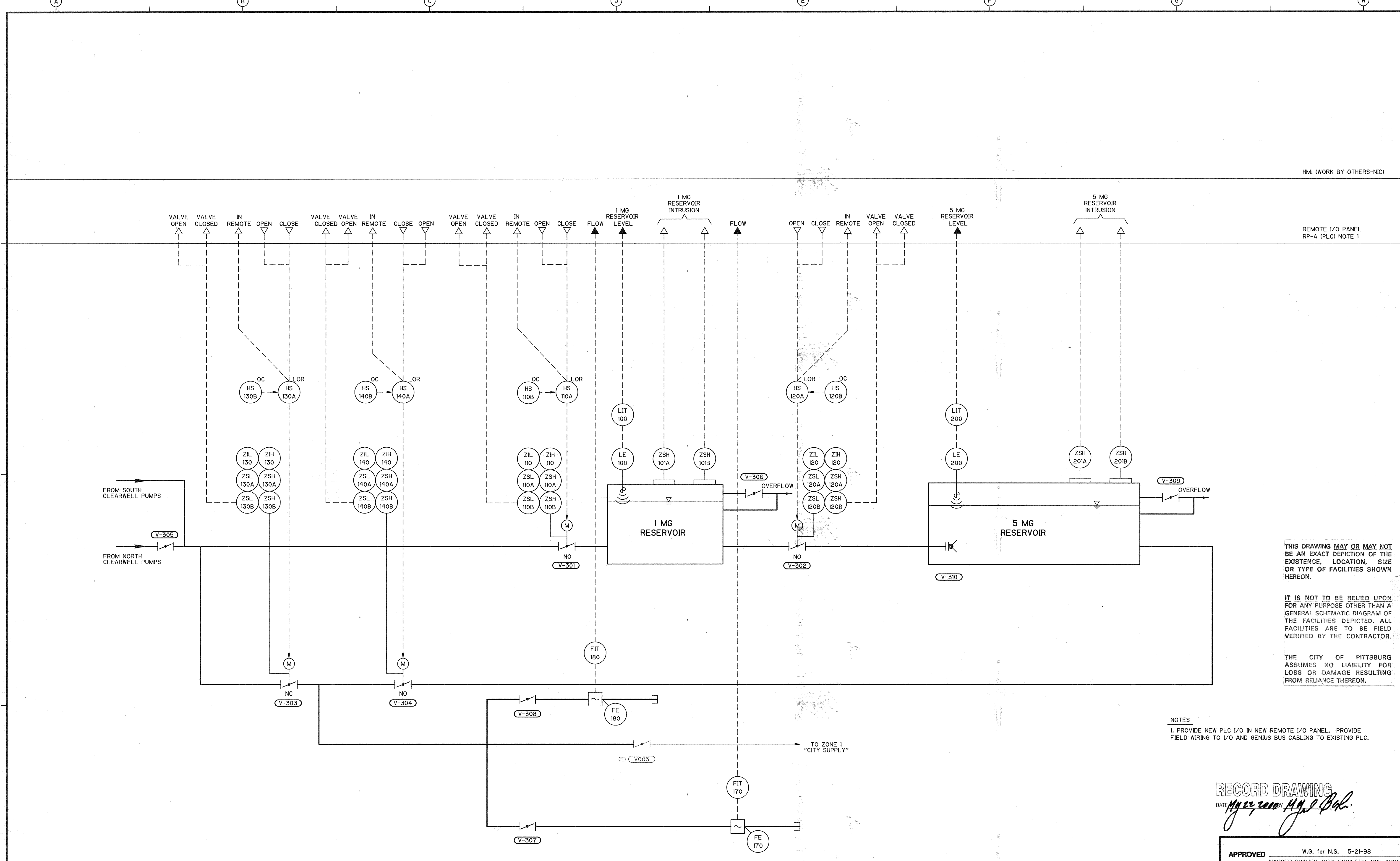
**CDM**  
environmental engineers, scientists,  
planners, & management consultants

**CITY OF PITTSBURG**  
**ENGINEERING DIVISION**  
**6 MG RESERVOIR**  
**REPLACEMENT PROJECT**

**INSTRUMENTATION LEGEND**

PROJECT NO. 1358-22097  
FILE NAME: 10000101  
SHEET NO. I-1





HMI (WORK BY OTHERS-NIC)

REMOTE I/O PANEL  
RP-A (PLC) NOTE 1

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NOTES  
1. PROVIDE NEW PLC I/O IN NEW REMOTE I/O PANEL. PROVIDE FIELD WIRING TO I/O AND GENIUS BUS CABLING TO EXISTING PLC.

RECORD DRAWING  
DATE: 11/22/2010 BY: H.S. [Signature]

APPROVED W.G. for N.S. 5-21-98  
NASSER SHIRAZI, CITY ENGINEER, RCE 42955

DESIGNED BY: DAL	CAMP DRESSER & McKEE INC.
DRAWN BY: EPM	One Walnut Creek Center
SHEET CHK'D BY: DAL	100 Pringle Avenue, Suite 300
CROSS CHK'D BY: PJG	Walnut Creek, California 94596
APPROVED BY: JRT	(510) 933-2900
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ENGINEERING DIVISION  
**6 MG RESERVOIR  
REPLACEMENT PROJECT**

**PIPING AND INSTRUMENTATION DIAGRAM**

PROJECT NO. 1358-22097  
FILE NAME: 1000102  
SHEET NO. 1-2