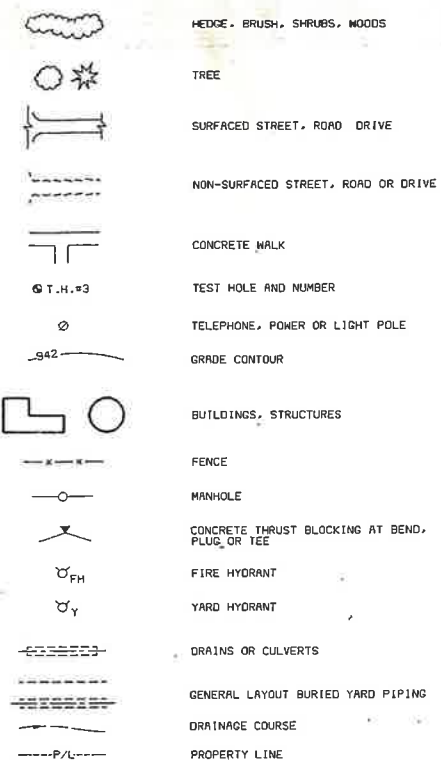
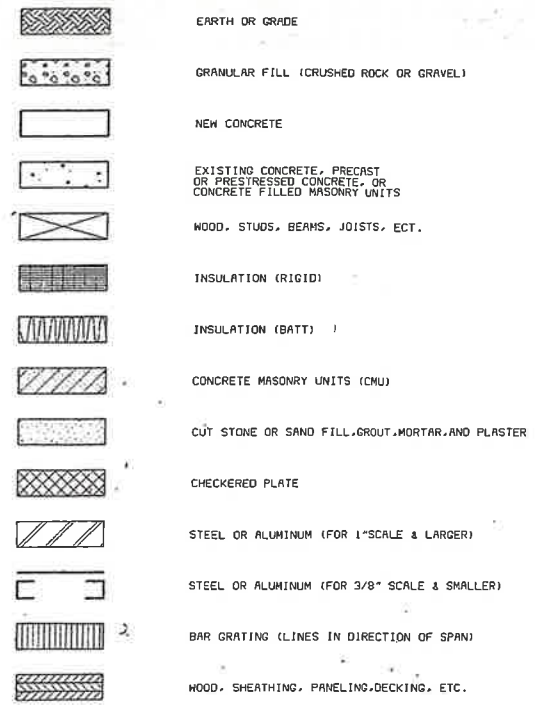


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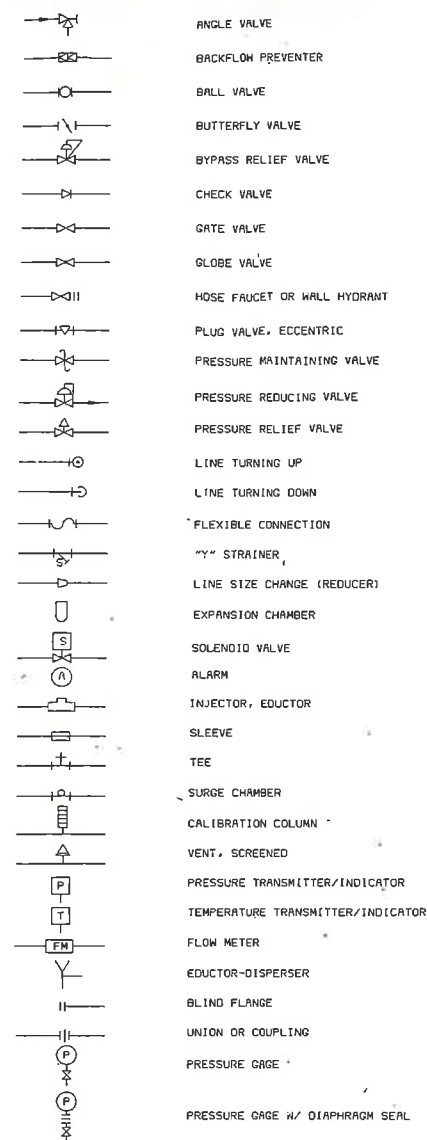
GENERAL LEGEND SYMBOLS



MATERIAL LEGEND



PIPING LEGEND AND SYMBOLS



ABBREVIATIONS

AT	ANCHOR BOLT	HP	HIGH PRESSURE
ACP	ASBESTOS CEMENT PIPE	HV	HOSE VALVE
AL	ACTIVE LEAF	ID	INSIDE DIAMETER
ALUM	ALUMINUM	INSUL	INSULATION
BF	BLIND FLANGE	INV	INVERT
BFV	BUTTERFLY VALVE	JT	JOINT
BLDC	BUILDING	LAV	LAVATORY
BU	BELL-UP	MACH	MACHINED
BV	BALL VALVE	MAX	MAXIMUM
BN	BOTH WAYS	MC	MECHANICAL COUPLING
CAB	CABINET	MCC	MOTOR CONTROL CENTER
CB	CATCH BASIN	MFR	MANUFACTURER
CFM	CUBIC FEET PER MINUTE	MH	MANHOLE
CHKD	CHECKERED	MIN	MINIMUM
CJSP	CAST IRON SOIL PIPE	MISC	MISCELLANEOUS
CFM	CUBIC FEET PER MINUTE	MJ	MECHANICAL JOINT
CJ	CONSTRUCTION JOINT	N	NORTH
CL	CENTERLINE	NC	NORMALLY CLOSED
CLG	CEILING	NCI	NOT IN CONTRACT
CLR	CLEAR	NO	NORMALLY OPEN
CMP	CORRUGATED METAL PIPE	NO. OR	NUMBER
CMU	CONCRETE MASONRY UNITS	NPT	NATIONAL PIPE THREAD
CO	CLEANDOUT	OC	ON CENTER
CONC	CONCRETE	OD	OUTSIDE DIAMETER
CONST	CONSTRUCTION	OF	OVERFLOW
CONT	CONTINUOUS	OPNG	OPENING
COR	CORNER	OPP	OPPOSITE
CR	COLD ROLLED	PE	PLAIN END
CRB	CONCRETE REACTION BLOCK	PL	PLATE
CRS	COURSES	PLCS	PLACES
CT	COOLING TOWER	PRV	POWER ROOF VENTILATOR
CTRS	CENTERS	PSI	POUNDS PER SQUARE INCH
CV	CHECK VALVE	PS	PIPE SUPPORT
D	DRAIN	PV	PLUG VALVE
DET	DETAIL	PVC	POLYVINYL CHLORIDE
DF	DRINKING FOUNTAIN	PW	POTABLE WATER
DIA	DIAMETER	R	RADIUS
DIM	DIMENSION	RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE PIPE	RD	ROOF DRAIN
DN	DOWN	RDL	ROOF DRAIN LEADER
DO	DOOR OPENING	RED	REDUCER
DW	DOMESTIC WATER	REINF	REINFORCING
DWG	DRAWING	REQD	REQUIRED
DWLS	DOWELS	RH	ROOF HOOD
E	EAST	RPPA	REDUCED PRESSURE PRINCIPLE ASSEMBLY
EA	EACH	RW	RAW WATER
EC	EVAPORATIVE COOLER	S	SOUTH
EF	EACH FACE	SAN	SANITARY
ELECT	ELECTRICITY	SEC	SECTION
EL	ELEVATION	SH(SHT)	SHEET
EXP	EXPANSION	SIM	SIMILAR
EMBED	EMBEDDED	SPEC	SPECIFICATION
EQUIP	EQUIPMENT	SQ	SQUARE
EQ	EQUAL	SS	STAINLESS STEEL
EW	EACH WAY	ST	STEEL
EXIST	EXISTING	STD	STANDARD
EXP	EXPANSION	SUSP	SUSPENDED
FCO	FLOOR CLEAN OUT	T & B	TOP AND BOTTOM
FD	FLOOR DRAIN	TEMP	TEMPERATURE, TEMPERED
FE	FIRE EXTINGUISHER	TH	TEST HOLE
FH	FIRE HYDRANT	TO	TOP OF
FIN	FINISHED	TOC	TOP OF CONCRETE
FL	FLOOR	TOF	TOP OF FOOTING
FLG	FLANGE	TOP	TOP OF PIPE
FM	FLOWMETER	TOS	TOP OF STEEL
FRP	FIBERGLASS REINFORCED PLASTIC	TP	TEST PIT
FT	FEET	TYP	TYPICAL
FTG	FOOTING	UGE	UNDERGROUND ELECTRICAL
GALV	GALVANIZED	UR	URINAL
GR	GRADE	VC	VITRIFIED CLAY
GRG	GRATING	VERT	VERTICAL
GV	GATE VALVE	VTR	VENT THRU ROOF
HB	HOSE BIBB	W	WEST
HF	HOSE FAUCET	WC	WATER CLOSET
HK	HOOK	W/	WITH
HM	HOLLOW METAL	WH	WALL HYDRANT
HORIZ	HORIZONTAL	WO	WINDOW OPENING
		NWF	WELDED WIRE FABRIC
		YH	YARD HYDRANT

GENERAL NOTES

- ALL NOTES HERE APPLY TO ALL SHEETS.
- LEGEND AND SYMBOLS ON THIS SHEET APPLY TO CIVIL, ELECTRICAL, MECHANICAL, STRUCTURAL, AND MECHANICAL SHEETS. PLUMBING, HVAC, ELECTRICAL, AND INSTRUMENTATION SHEETS INCLUDE LEGENDS AND SYMBOLS ON SEPARATE SHEETS.
- WHERE NEW WORK AND EXISTING FEATURES ARE DEPICTED ON THE SAME SHEET, EXISTING FEATURES ARE SHOWN WITH LIGHTER LINES, UTILITIES AND SURVEY PROCESS, SCREENED LINES ARE ALSO USED FOR NEW WORK. THIS IS DETAILED ELSEWHERE IN THE SET FOR OTHER BID PACKAGES AND REPEATED INDIVIDUAL SHEETS FOR REFERENCE. FOR INSTANCE, ARCHITECTURAL AND SURVEY PLANS ARE SCREENED AS BACKGROUNDS FOR MECHANICAL AND ELECTRICAL SHEETS.
- EXISTING UTILITIES SHOWN ON PLANS ARE LOCATED AS SHOWN ON PLANS AND MAY NOT HAVE BEEN FIELD VERIFIED. EXISTING UTILITIES ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE LOCATION OF ALL PRESERVING ALL UTILITIES, INCLUDING THOSE NOT SHOWN OR INCORRECTLY SHOWN ON THE PLANS.
- HORIZONTAL AND VERTICAL CONTROL POINTS HAVE BEEN ESTABLISHED ON-SITE AS DEPICTED ON SHEET Y-1. ELEVATIONS ARE BASED ON ADJUSTMENT OF THE IMPERIAL VALLEY, CALIFORNIA, LEVELING (1983-85 EPOCH) HOLDING MARK CA-362 AT -64.337 FT. MSL. SUBTRACT 1,000.00 FT. FROM ELEVATIONS GIVEN TO OBTAIN MSL. HORIZONTAL CONTROL, BASED ON STATE OF CALIFORNIA GRID, ADD 1,890,000.00 TO NORTH COORDINATES AND 6,770,000.00 TO EAST COORDINATES TO OBTAIN TRUE GRID VALUES. SURVEYING MONUMENTS WERE ESTABLISHED BY TESCO ENG. IN 1993. CONTRACTOR SHALL PRESERVE MONUMENT OR PAY FOR REESTABLISHMENT OF MONUMENTS DISTURBED BY HIS ACTIVITIES ON-SITE.
- TEST HOLES HAVE BEEN DRILLED ON-SITE AS DEPICTED ON SHEET Y-1. LOSS OF THESE HOLES ARE INCLUDED IN A GEOTECHNICAL REPORT PREPARED BY SOUTHLAND GEOTECHNICAL IN OCTOBER 1993. COPIES OF THIS REPORT ARE AVAILABLE AS SPECIFIED.
- CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE AGENCY BEFORE START OF CONSTRUCTION AND PRIOR TO EXCAVATION AT NEW LOCATIONS ON-SITE BY CALLING (800)422-4193.
- THE DOCUMENTS AS A WHOLE DESCRIBE THE WORK. FOR THE SAKE OF CLARITY, NOT ALL INFORMATION IS SHOWN ON ONE DRAWING OR WITHIN ONE GROUP OF DRAWINGS. AS AN EXAMPLE, CONCRETE EMBEDMENTS, BOX OUTS AND ANCHORS ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
- THE WORK WILL BE BID USING SEPARATE BID PACKAGES FOR DIFFERENT PORTIONS OF THE WORK AS DESCRIBED IN THE SPECIFICATIONS.

EQUIPMENT DESIGNATIONS

IP	INFLUENT PUMP
RAS PUMP	RETURN ACTIVATED SLUDGE PUMP
WAS PUMP	WASTE ACTIVATED SLUDGE PUMP
MLP	MIXED LIQUOR PUMP
SG	SLIDE GATE

UTILITY & PROCESS PIPE DESIGNATION

---E---	BURIED ENCASED ELECTRICAL DUCT BANK
---EE---	DIRECT BURIED ELECTRICAL CABLE OR CONDUIT
---OHE---	OVERHEAD ELECTRICAL POWER
---S---	SANITARY SEWER
---D---	DRAIN
---SL---	SLUDGE
---W---	POTABLE WATER
---RW---	RAW WATER
---SI---	SENSING LINE
---RAS---	RETURN ACTIVATED SLUDGE
---WAS---	WASTE ACTIVATED SLUDGE
---PW---	PROCESS WATER
---INFL---	INFLUENT
---ML---	MIXED LIQUOR
---RS---	RAW SEWAGE
---SW---	SEAL WATER
---EFFL---	EFFLUENT

06/01/94 LVP
F0025056-XXX-ATL-VPL

5/20/95	CONFORM TO CONSTRUCTION RECORD	MSJ	MSJ
6/24/94	BID ISSUE FOR PACKAGES 2, 3 & 4	MSJ	MSJ
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY

DESIGNED	DSB
DETAILED	MSJ
CHECKED	RHM
APPROVED	
DATE	

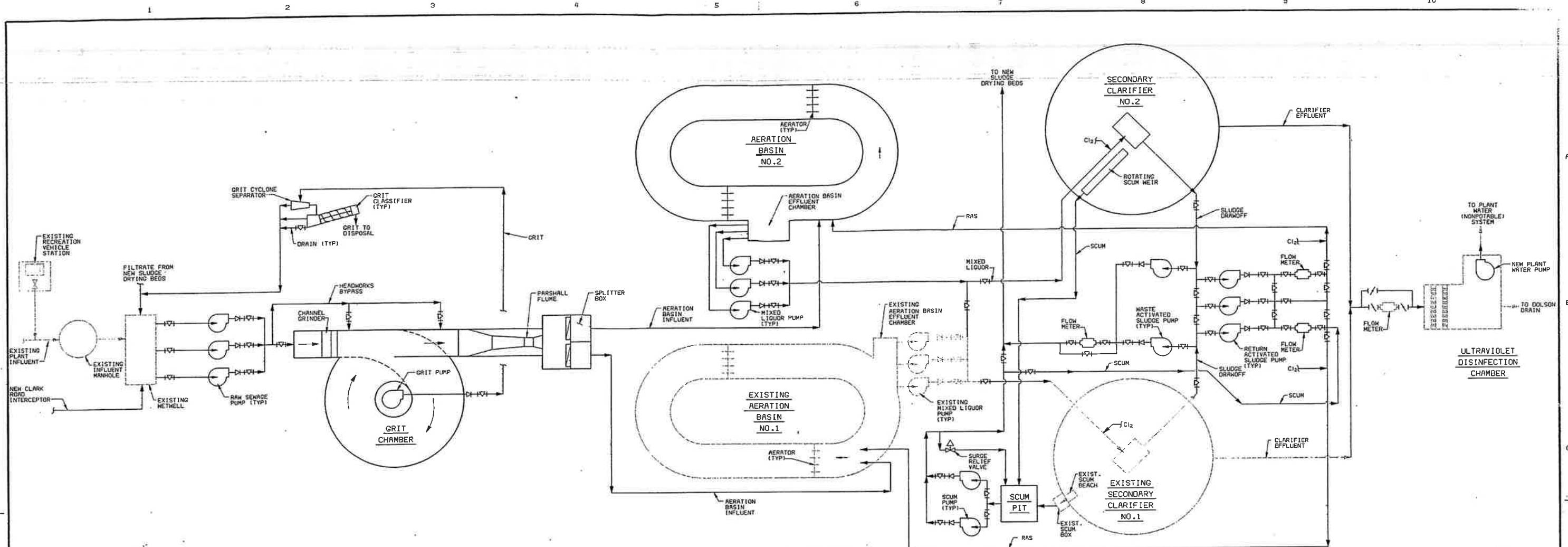


PROJECT NO.	25056
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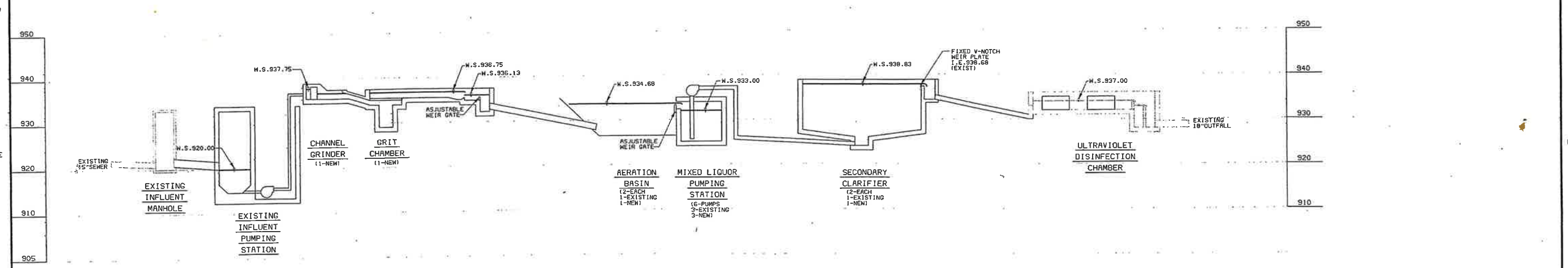
CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION
ALL BID PACKAGES
LEGEND, ABBREVIATIONS & GENERAL NOTES



G-1
SHEET
1 OF 47



PLANT FLOW SCHEMATIC
NO SCALE



HYDRAULIC PROFILE
HORIZ. NO SCALE
VERT. 1"=10'
(AT 2.0 MGD ONE AERATION BASIN
ONE SECONDARY CLARIFIER OUT OF SERVICE)

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD		MSJ		
5/24/94	BID ISSUE PACKAGES 2,3 & 4		MSJ		

DESIGNED: RMN
 DETAILED: MGM
 CHECKED: RMN
 APPROVED: _____
 DATE: _____



PROJECT NO.
25056

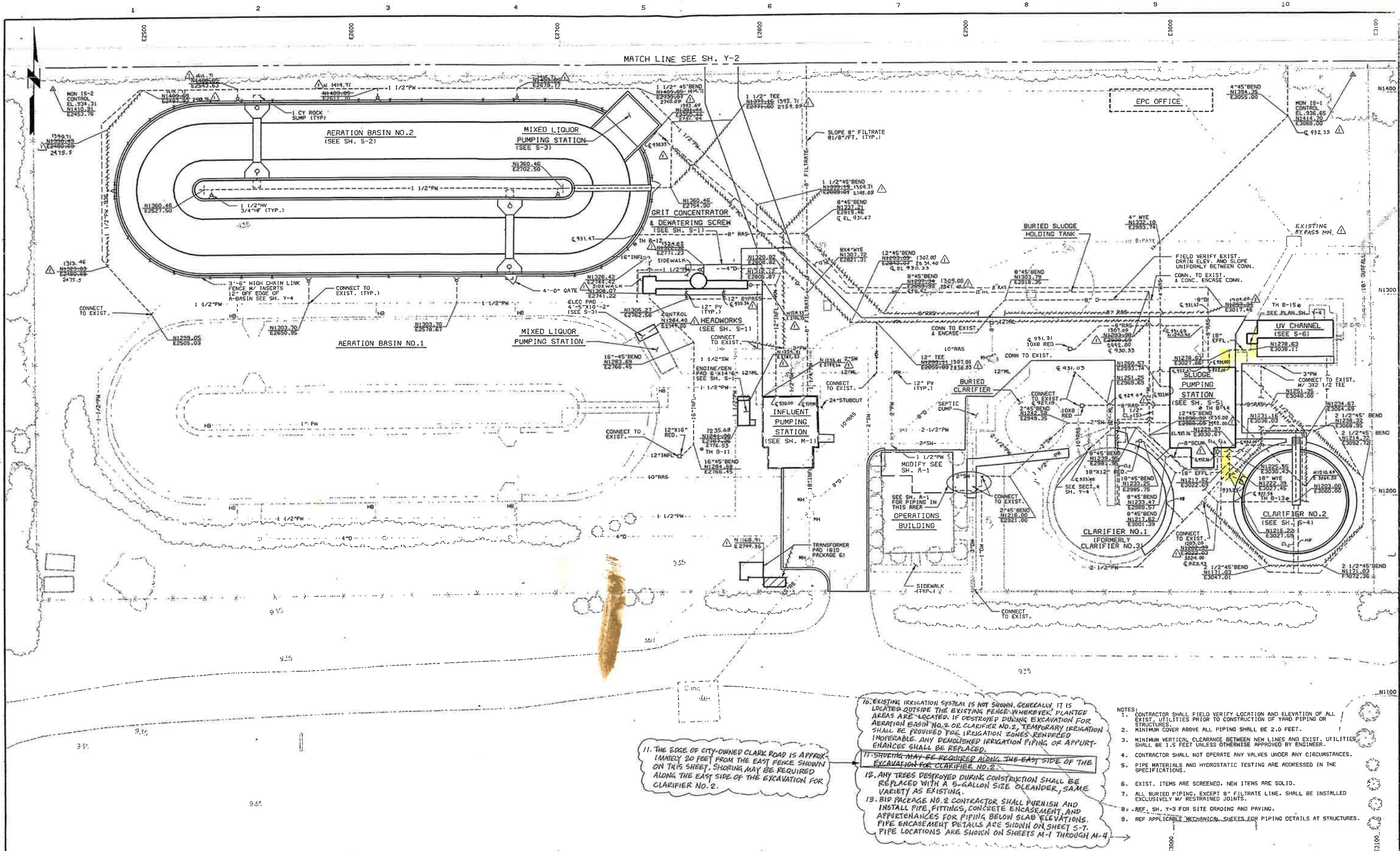
CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION

ALL BID PACKAGES
PLANT FLOW SCHEMATIC AND
HYDRAULIC PROFILE



G-2
SHEET
2 OF 47

02/07/95 16:16:58 VPL
05/26/94 11:43:24 RTS:



SITE PLAN NO.1
1"=20'

11. THE EDGE OF CITY-OWNED CLARK ROAD IS APPROXIMATELY 20 FEET FROM THE EAST FENCE SHOWN ON THIS SHEET. SHORING MAY BE REQUIRED ALONG THE EAST SIDE OF THE EXCAVATION FOR CLARIFIER NO. 2.

10. EXISTING IRRIGATION SYSTEM IS NOT SHOWN. GENERALLY IT IS LOCATED OUTSIDE THE EXISTING FENCE WHEREVER PLANTED AREAS ARE LOCATED. IF DESTROYED DURING EXCAVATION FOR AERATION BASIN NO. 2 OR CLARIFIER NO. 2, TEMPORARY IRRIGATION SHALL BE PROVIDED FOR IRRIGATION ZONES RENDERED INOPERABLE. ANY DEMOLISHED IRRIGATION PIPING OR APPURTENANCES SHALL BE REPLACED.

11. SHORING MAY BE REQUIRED ALONG THE EAST SIDE OF THE EXCAVATION FOR CLARIFIER NO. 2.

12. ANY TREES DESTROYED DURING CONSTRUCTION SHALL BE REPLACED WITH A 5-GALLON SIZE OLEANDER, SAME VARIETY AS EXISTING.

13. BID PACKAGE NO. 2 CONTRACTOR SHALL FURNISH AND INSTALL PIPE, FITTINGS, CONCRETE ENCASUREMENT, AND APPURTENANCES FOR PIPING BELOW SLAB ELEVATIONS. PIPE ENCASUREMENT DETAILS ARE SHOWN ON SHEETS M-1 THROUGH M-4.

- NOTES:
- CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF ALL EXIST. UTILITIES PRIOR TO CONSTRUCTION OF YARD PIPING OR STRUCTURES.
 - MINIMUM COVER ABOVE ALL PIPING SHALL BE 2.0 FEET.
 - MINIMUM VERTICAL CLEARANCE BETWEEN NEW LINES AND EXIST. UTILITIES SHALL BE 1.5 FEET UNLESS OTHERWISE APPROVED BY ENGINEER.
 - CONTRACTOR SHALL NOT OPERATE ANY VALVES UNDER ANY CIRCUMSTANCES.
 - PIPE MATERIALS AND HYDROSTATIC TESTING ARE ADDRESSED IN THE SPECIFICATIONS.
 - EXIST. ITEMS ARE SCREENED, NEW ITEMS ARE SOLID.
 - ALL BURIED PIPING, EXCEPT 8" FILTRATE LINE, SHALL BE INSTALLED EXCLUSIVELY W/ RESTRAINED JOINTS.
 - REF. SH. Y-3 FOR SITE GRADING AND PAVING.
 - REF APPLICABLE MECHANICAL SHEETS FOR PIPING DETAILS AT STRUCTURES.

CBC1034-VPL
FC0292505-XXX-RTB-VPL

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD		MSJ		
6/24/94	BID ISSUE FOR PACKAGES 2,3 & 4		MSJ		

DESIGNED: DSB, RMN
 DETAILED: MCH
 CHECKED: RMN
 APPROVED: _____
 DATE: _____



PROJECT NO.
25056

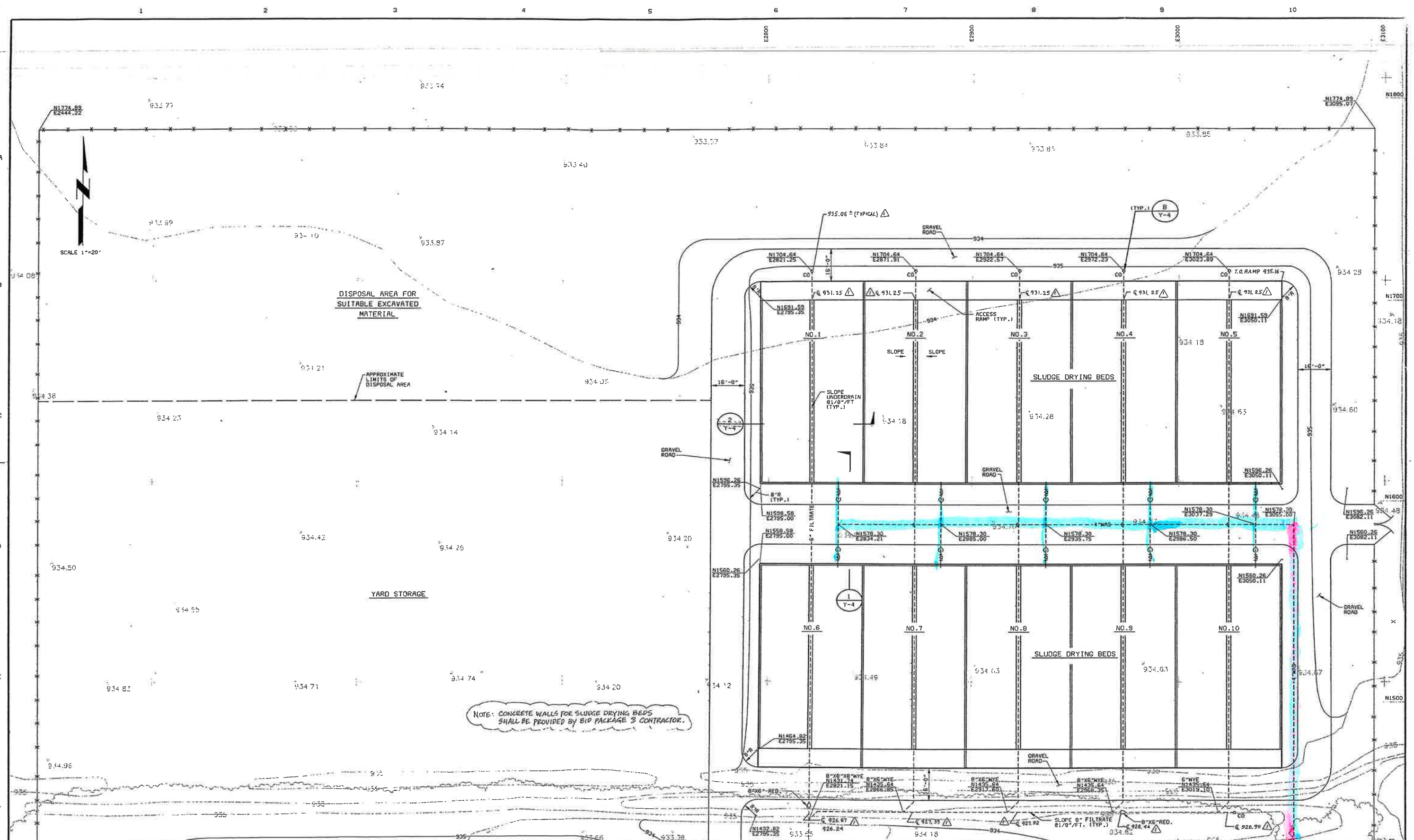
CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 2
 SITE PLAN NO. 1 - PLANT SITE



Y-1
SHEET
3 OF 47

02/07/95 16:21:11 VPL
06/23/94 14:05:17 ATS

CGI 1034.VPL
FORCES.XXX.ATB.VPL



NOTE: CONCRETE WALLS FOR SLUDGE DRYING BEDS SHALL BE PROVIDED BY BID PACKAGE 3 CONTRACTOR.

MATCH LINE SEE SH. Y-1

SITE PLAN NO. 2
1"=20'

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD				
6/24/94	BID ISSUE FOR PACKAGES 2, 3 & 4				

DESIGNED DSB, RMN
 DETAILED MGH
 CHECKED RMN
 APPROVED
 DATE



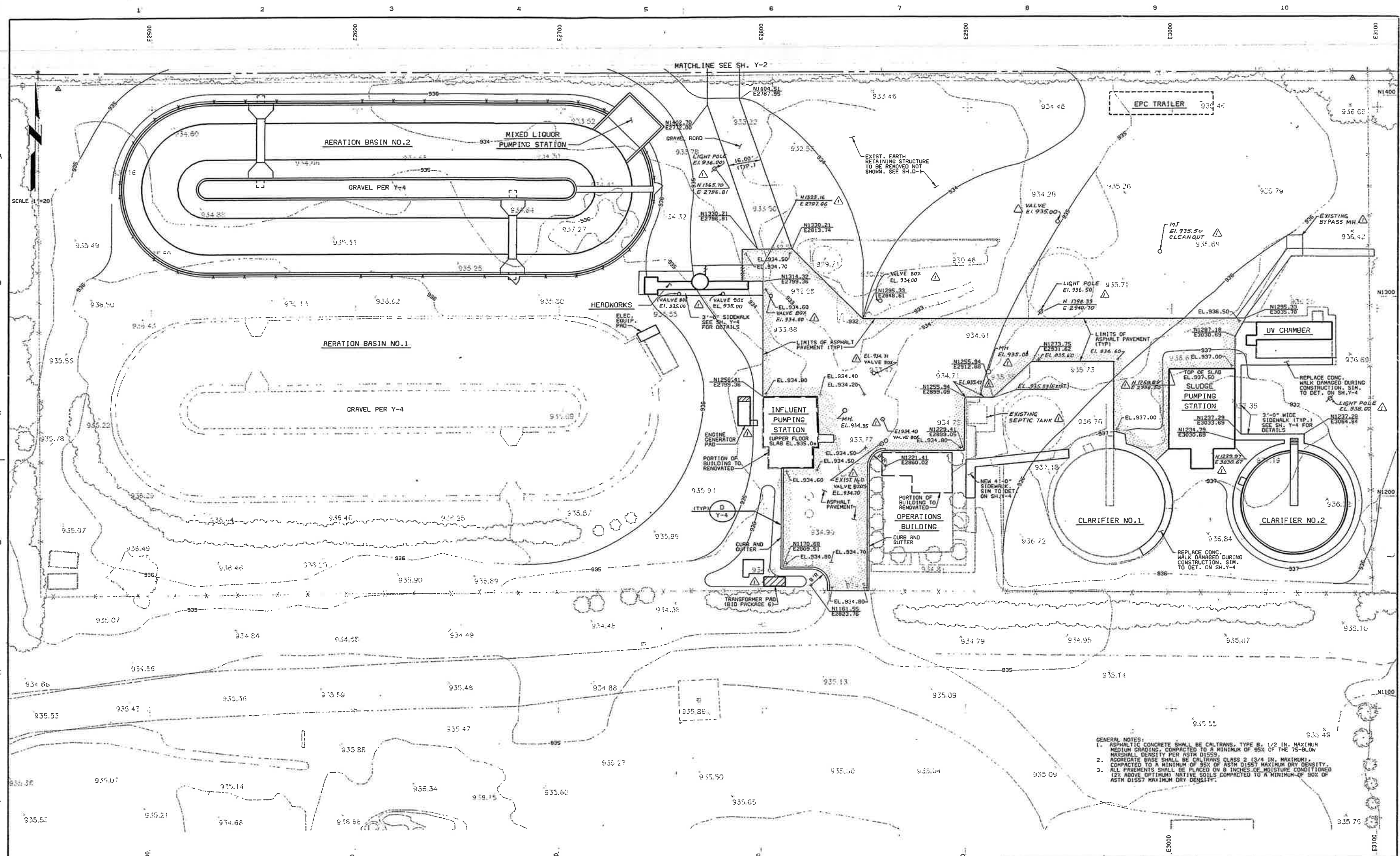
PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 2
 SITE PLAN NO. 2 - SLUDGE DRYING BEDS



Y-2
 SHEET
 4 OF 47

02/07/95 16:29:05 VPL
06/23/94 13:58:23 ATSS



GENERAL NOTES:
 1. ASPHALTIC CONCRETE SHALL BE CALTRANS, TYPE B, 1/2 IN. MAXIMUM MEDIUM GRADING, COMPACTED TO A MINIMUM OF 95% OF THE 75-BLOW MARSHALL DENSITY PER ASTM D1557.
 2. AGGREGATE BASE SHALL BE CALTRANS CLASS 2 (3/4 IN. MAXIMUM), COMPACTED TO A MINIMUM OF 95% OF ASTM D1557 MAXIMUM DRY DENSITY.
 3. ALL PAVEMENTS SHALL BE PLACED ON 8 INCHES OF MOISTURE CONDITIONED (2% ABOVE OPTIMUM) NATIVE SOILS COMPACTED TO A MINIMUM OF 90% OF ASTM D1557 MAXIMUM DRY DENSITY.

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD		MSJ		
6/24/94	BID ISSUE FOR PACKAGES 2-3 & 4		MSJ		

DESIGNED BY: DSR, RMH
 CHECKED BY: RMH
 APPROVED BY: [Signature]
 DATE: [Blank]



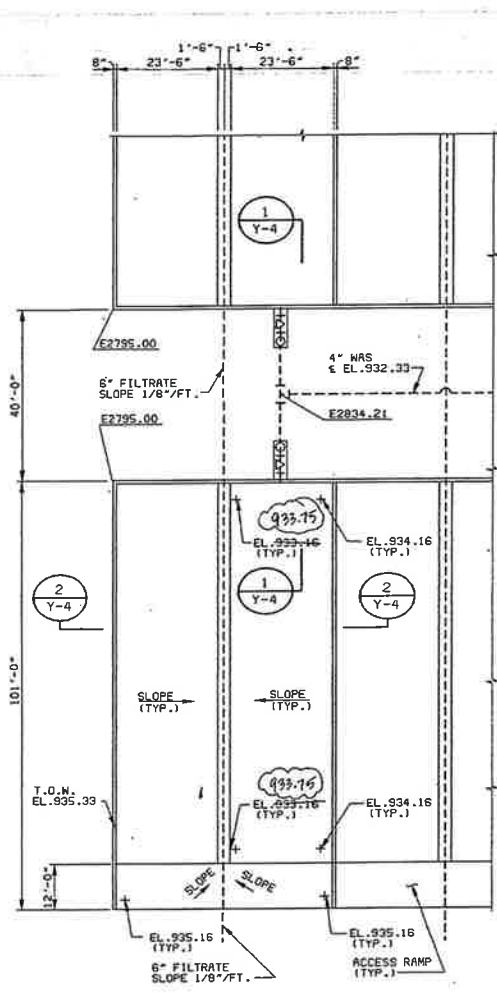
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CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION

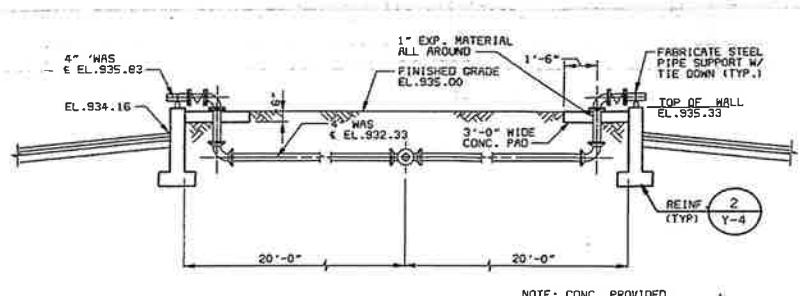
BID PACKAGE NO. 2
 GRADING AND PAVING PLAN



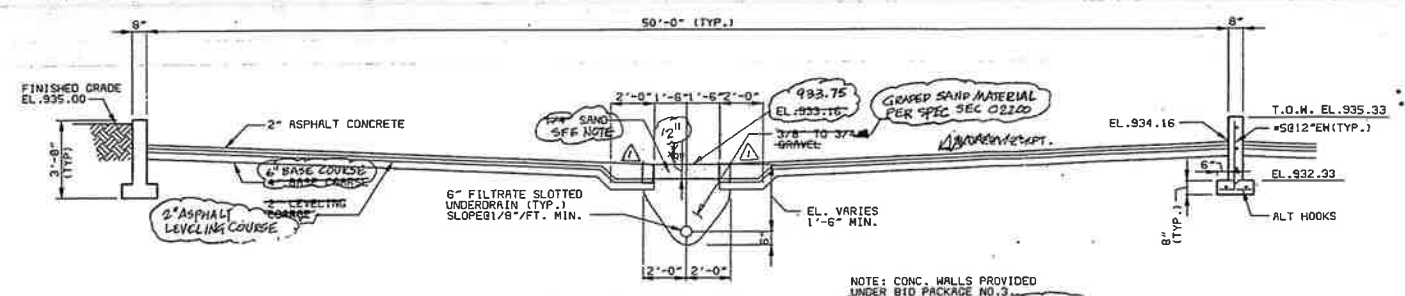
Y-3
 SHEET
 5 OF 47



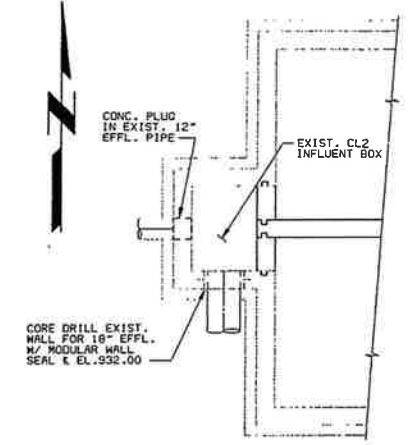
SLUDGE DRYING BEDS PLAN
1" = 20'



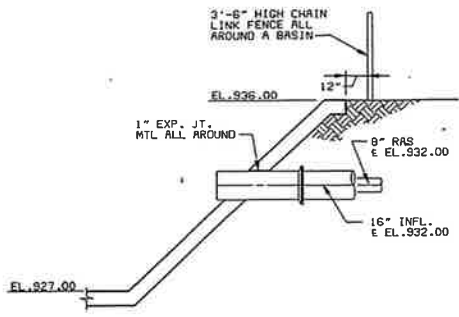
SECTION 1
1/4" = 1'-0"
Y-2, Y-4



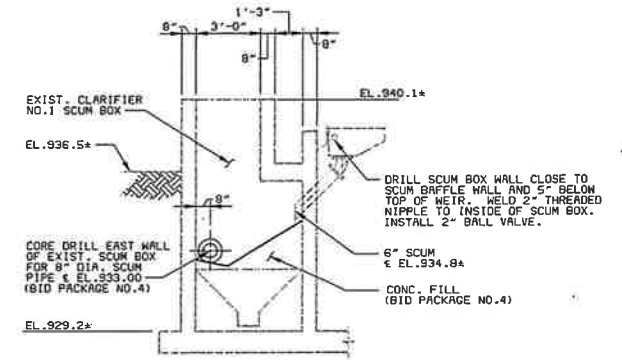
SECTION 2
1/4" = 1'-0"
Y-2, Y-4



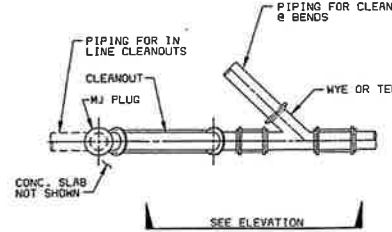
CHLORINE CONTACT BASIN PLAN
1/4" = 1'-0"



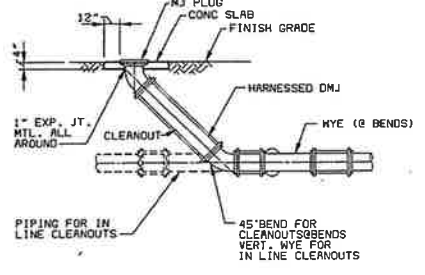
SECTION 3
1/4" = 1'-0"
M-2



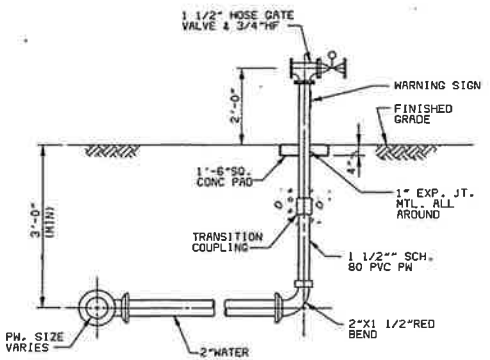
SECTION 4
1/4" = 1'-0"
Y-1



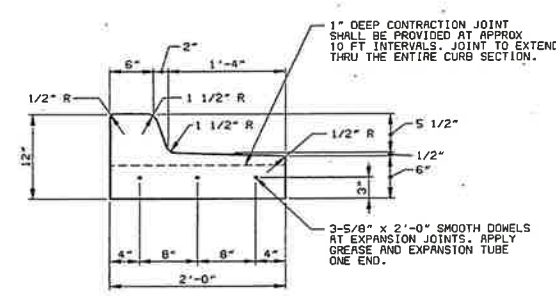
CLEANOUT DETAIL B
NO SCALE
Y-2



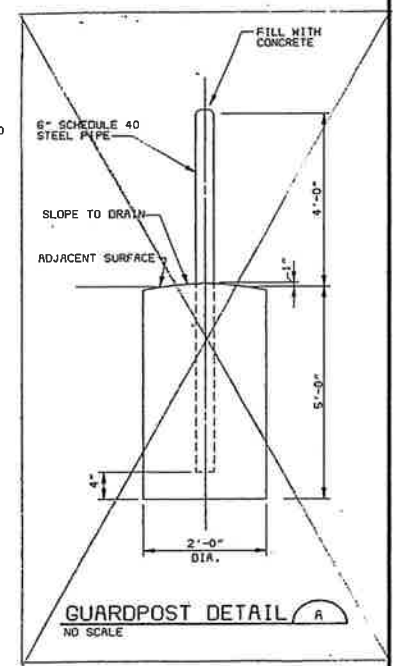
ELEVATION



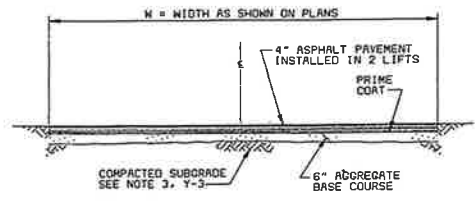
DETAIL C
NO SCALE
Y-2



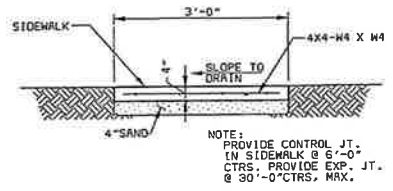
CURB AND GUTTER DETAIL D
NO SCALE



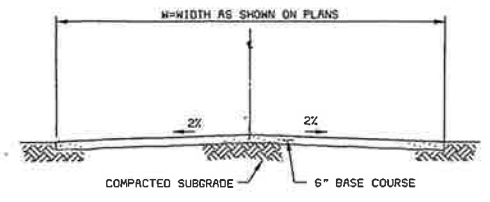
GUARDPOST DETAIL A
NO SCALE



ASPHALT PAVEMENT CROSS SECTION
NO SCALE



SIDEWALK DETAIL
NO SCALE



GRAVEL DRIVE CROSS SECTION
NO SCALE

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD		MB	MSJ	
6/24/94	BID ISSUE FOR PACKAGES 2,3 & 4		MSJ		

DESIGNED	DSB/RMN
DETAILED	MGM
CHECKED	RMV
APPROVED	
DATE	



PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION
BID PACKAGE NO.2
SITE DETAILS

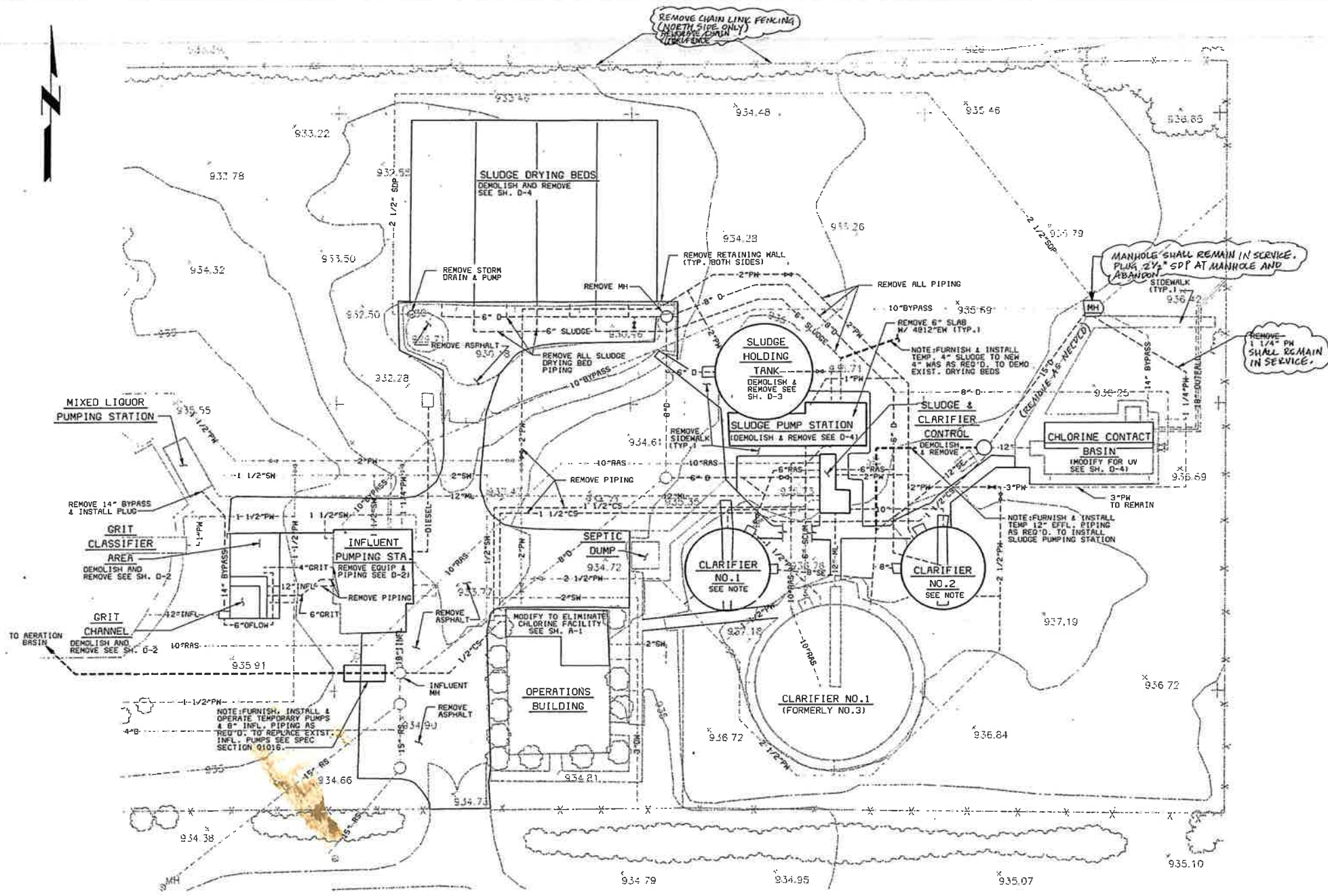


Y-4
SHEET
6 OF 47

02/07/95 16:16:05 VPL
06/24/94 07:39:59 ATSI

1 2 3 4 5 6 7 8 9 10

A
B
C
D
E



SITE PLAN - DEMOLITION
1"=20'

- NOTES:
1. ALL ITEMS SHOWN, EXCEPT TEMP. FACILITIES, ARE EXISTING.
 2. ALL EXIST. ITEMS SHOWN ON THIS SHEET WITH BOLD LINES SHALL BE DEMOLISHED AND REMOVED COMPLETELY FROM THE SITE. ALL ITEMS SHOWN WITH SCREENED LINES SHALL REMAIN.
 3. STRUCTURES SHOWN WITH BOLD LINES WHICH ARE TO BE DEMOLISHED AND REMOVED FROM THE SITE ARE DETAILED FURTHER ON THE DEMOLITION SHEETS THAT FOLLOW.
 4. EXIST. CLARIFIER NO. 2, AT APPROX. 28 FT. IN DIAMETER AND 12 FT. DEEP, SHALL BE COMPLETELY DEMOLISHED, INCLUDING ALL PIPING, EQUIPMENT AND APPURTENANCES AND COMPLETELY REMOVED FROM THE SITE. THE REMAINING EXCAVATION SHALL BE BACKFILLED TO FINISHED GRADE WITH SUITABLE CLEAN JOB EXCAVATED MATERIAL.
 5. ALL REMAINING BURIED PIPING SHALL BE CAPPED WATER TIGHT. **PLUG WITH CONC. FILL, MIN. 12" THICK.**
 6. EXIST. CLARIFIER NO. 1 SHALL BE DEMOLISHED DOWN TO AN ELEVATION 4 FT. BELOW FINISHED GRADE. **BACKFILL CLARIFIER TO GRADE WITH NATIVE SOIL.**
 7. CONTRACTOR SHALL NOT OPERATE ANY VALVES UNDER ANY CIRCUMSTANCES.
 8. SCHEDULING OF DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER AND CONTRACTORS OF OTHER BID PACKAGES.

CE01034.VPL
FC025056.XXX.ATB.VPL

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD		MS	MSJ	
6/24/94	BID ISSUE FOR PACKAGES 2, 3 & 4		MSJ		

DESIGNED: OSB
 DETAILED: MGM
 CHECKED: BMM
 APPROVED: _____
 DATE: _____

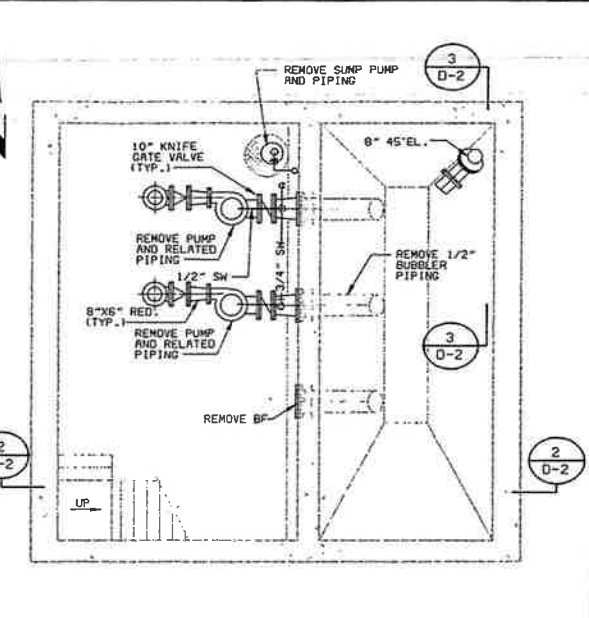
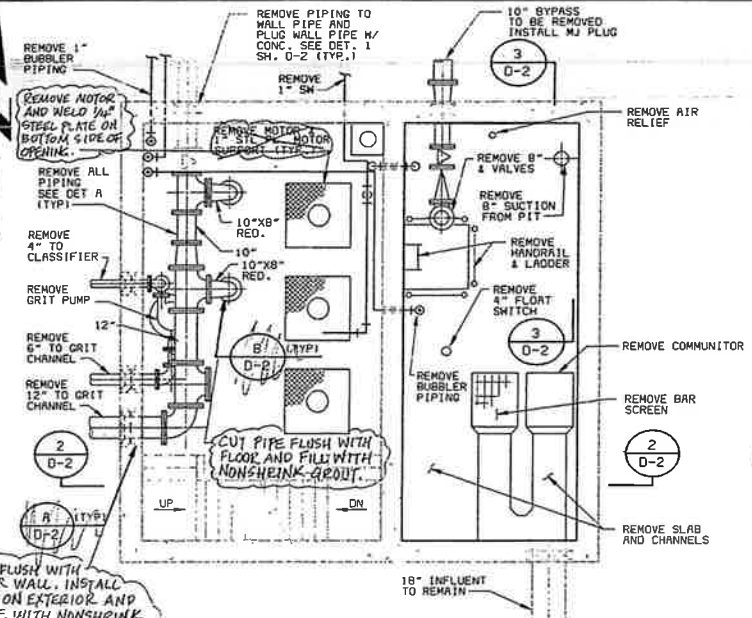
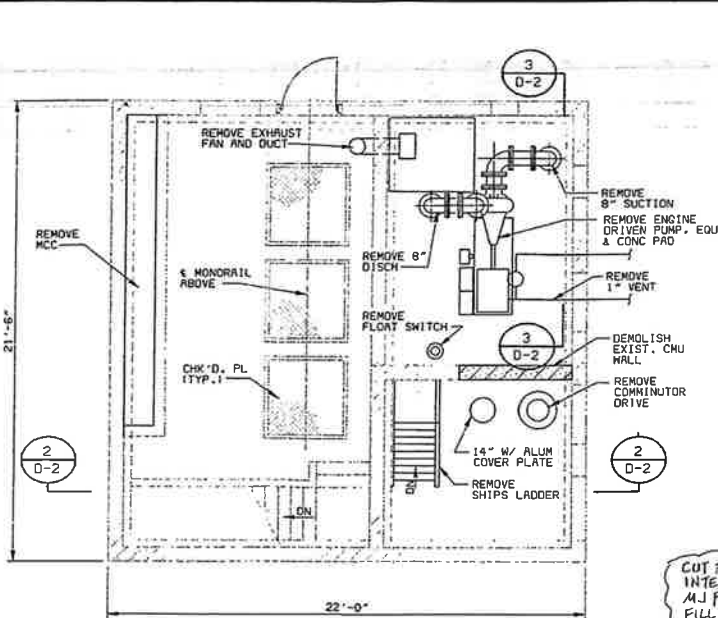
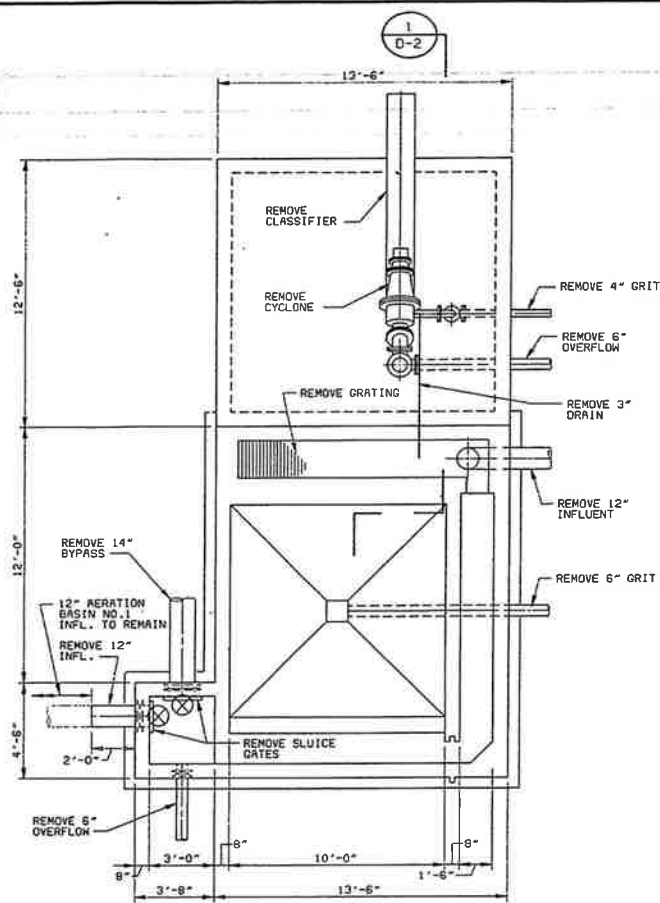


PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 2
 DEMOLITION
 SITE PLAN



D-1
 SHEET
 7 OF 47



NOTE:
PUMP STATION STRUCTURE SHALL REMAIN UNDAMAGED. ALL EXIST. EQUIP., PIPING & APPURTENANCES SHALL BE DEMOLISHED AND REMOVED FROM THE SITE.

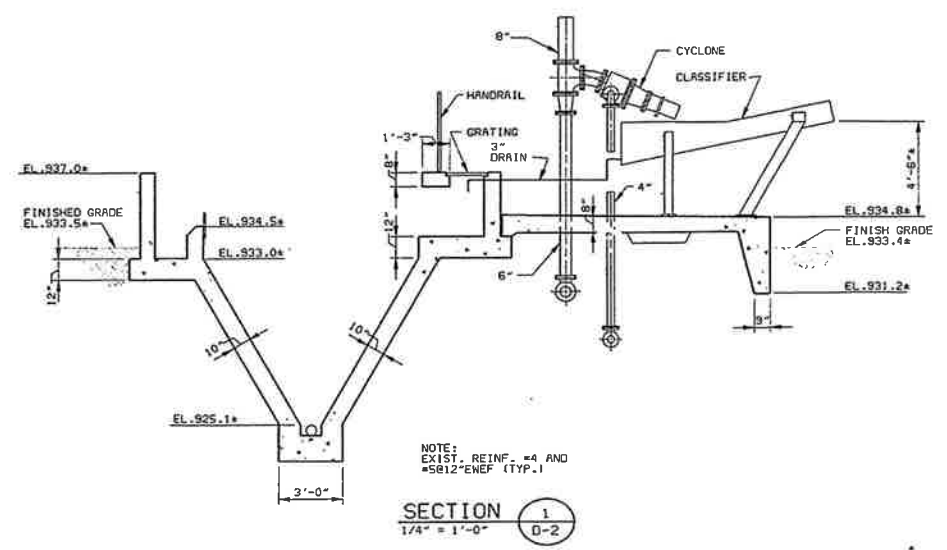
PUMP STATION
GROUND LEVEL EL.935.0± PLAN
1/4" = 1'-0"

PUMP STATION
INTERMEDIATE LEVEL EL.924.5± PLAN
1/4" = 1'-0"

PUMP STATION
PUMP ROOM LEVEL EL.914.0± PLAN
1/4" = 1'-0"

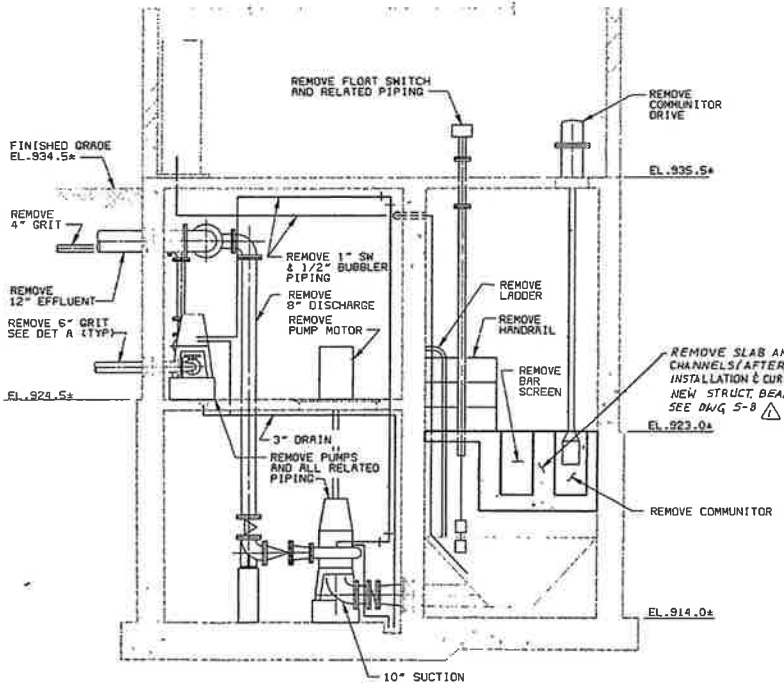
NOTE:
1. ENTIRE GRIT CHANNEL STRUCTURE, EQUIPMENT, PIPING AND APPURTENANCES SHALL BE DEMOLISHED AND COMPLETELY REMOVED FROM THE SITE. REMAINING EXCAVATION SHALL BE BACKFILLED W/ JOB EXCAVATED MATERIAL TO FINISHED GRADE.

GRIT CHANNEL PLAN
1/4" = 1'-0"

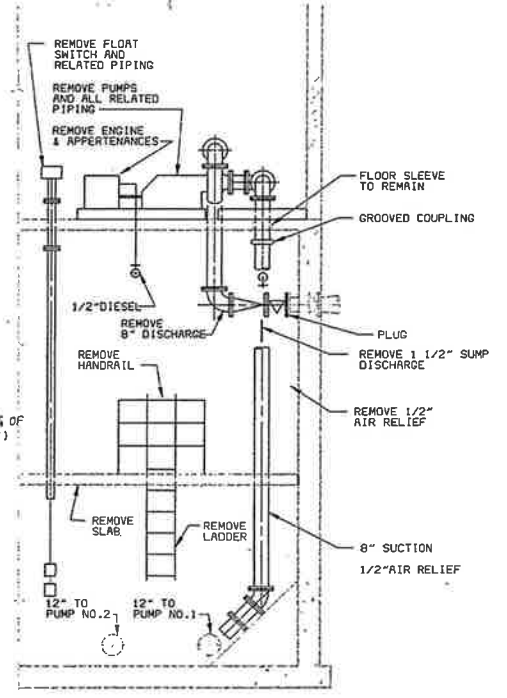


NOTE:
EXIST. REINF. #4 AND #5E12=NEF (TYP.)

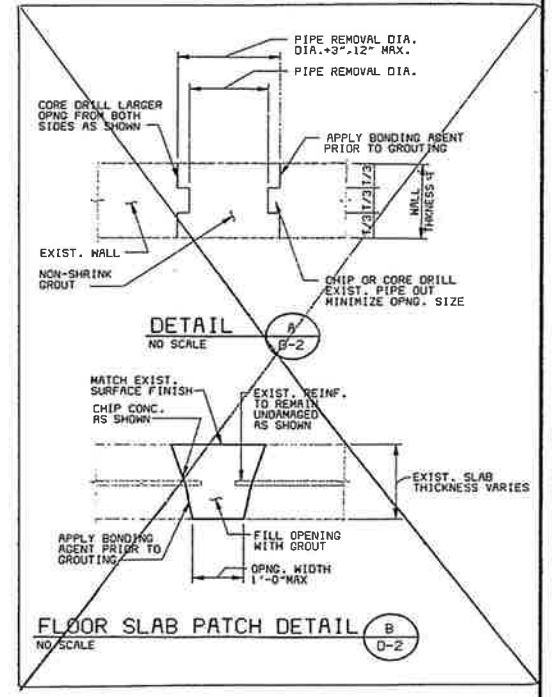
SECTION 1
1/4" = 1'-0"



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



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



FLOOR SLAB PATCH DETAIL
NO SCALE

- NOTES:
1. ALL ITEMS THIS SHEET ARE EXISTING.
 2. ALL CAST-IN-PLACE WALL PIPES SHALL REMAIN IN PLACE AND BE PLUGGED W/ TIGHT W/ WJ PLUGS OR BLIND FLANGES.
 3. ALL ITEMS SHOWN ON THIS SHEET WITH BOLD LINES SHALL BE DEMOLISHED AND COMPLETELY REMOVED FROM THE SITE. ALL ITEMS SHOWN SCREENED SHALL REMAIN IN PLACE UNDAMAGED.
 4. SCHEDULING OF DEMOLITION WORK SHALL BE COORDINATED WITH OWNER AND CONTRACTORS OF OTHER BID PACKAGES. DEMOLITION CONTRACTOR SHALL FURNISH TEMPORARY BYPASS OF INFLUENT PUMPING STATION FROM INFLUENT MANHOLE TO AERATION BASIN AT AN APPROXIMATE FLOW OF 2400 GPM.

DESIGNED	DSB/RMN		
DETAILED	MSH		
CHECKED	RMN		
APPROVED			
DATE			

5/20/95	CONFORM TO CONSTRUCTION RECORD	MSJ	
6/24/94	BID ISSUE FOR PACKAGES 2,3 & 4	MSJ	
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY

DESIGNED DSB/RMN
DETAILED MSH
CHECKED RMN
APPROVED
DATE



PROJECT NO.
25056

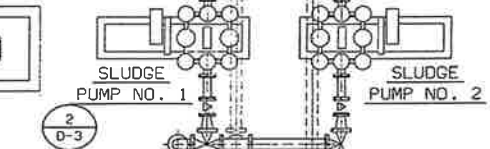
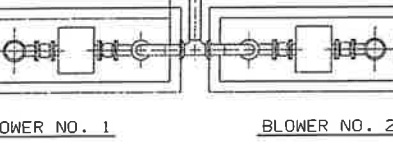
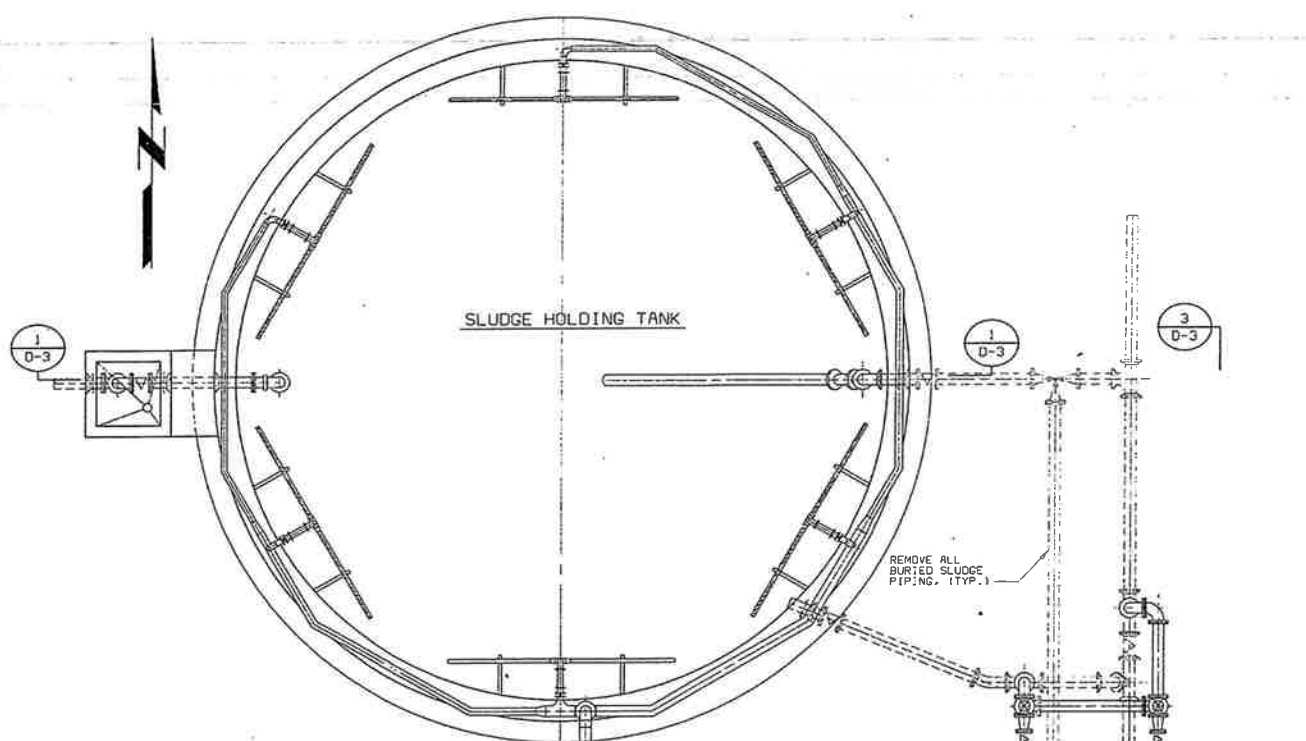
CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION

BID PACKAGE NO.2
GRIT CHANNEL & INFL. PS-DEMOLITION
PLANS AND SECTIONS



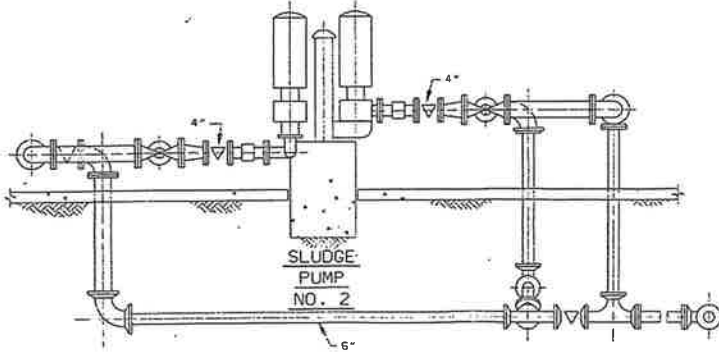
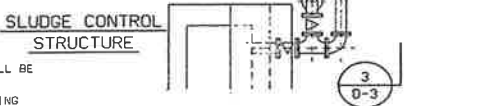
D-2
SHEET
8 OF 47

02/06/95, 14, 33, 27, MOD-R11
 2505603
 01/03/96
 02/05/96



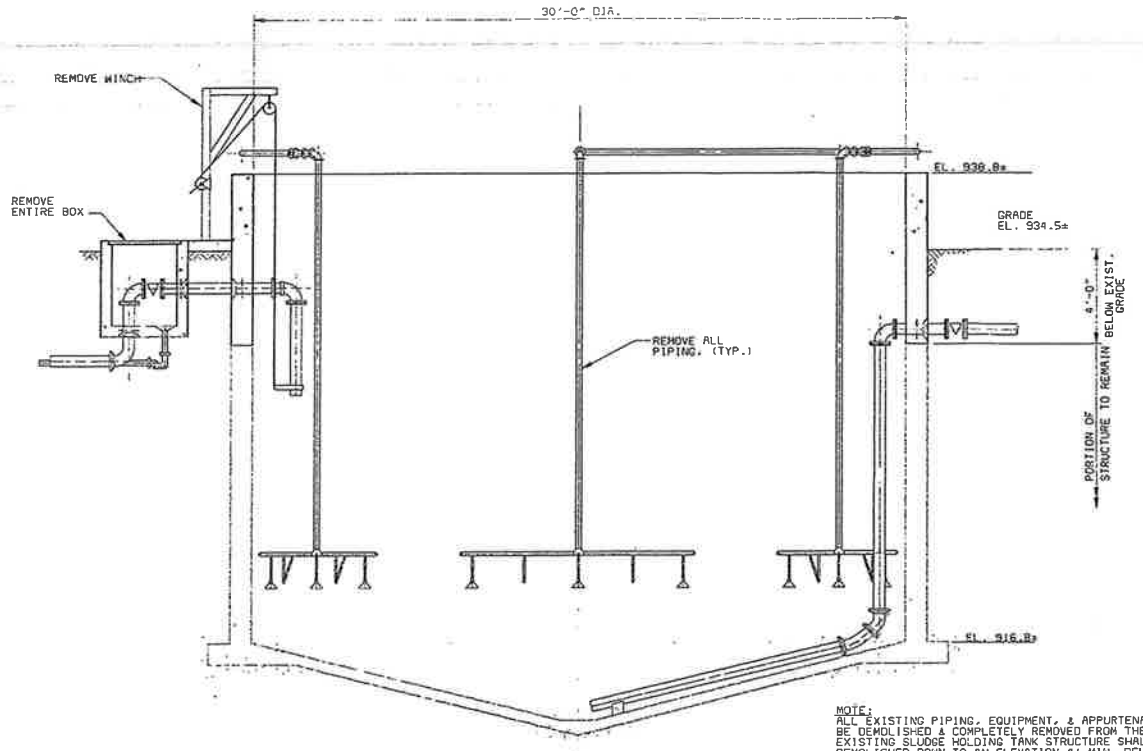
SLUDGE HOLDING TANK - PLAN
 1/4" = 1'-0"

BLOWER NO. 1
BLOWER NO. 2
 NOTE: REMOVE BLOWERS, SLUDGE PUMPS, CONCRETE PADS, PIPING, AND APPURTENANCES.



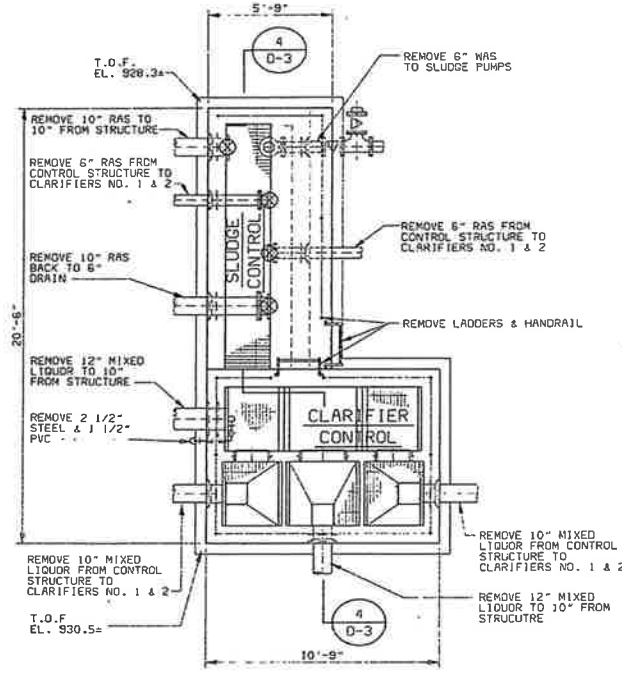
SECTION 3
 3/8" = 1'-0"

NOTE: REMOVE BLOWERS, SLUDGE PUMPS, CONCRETE PADS, PIPING, AND APPURTENANCES.

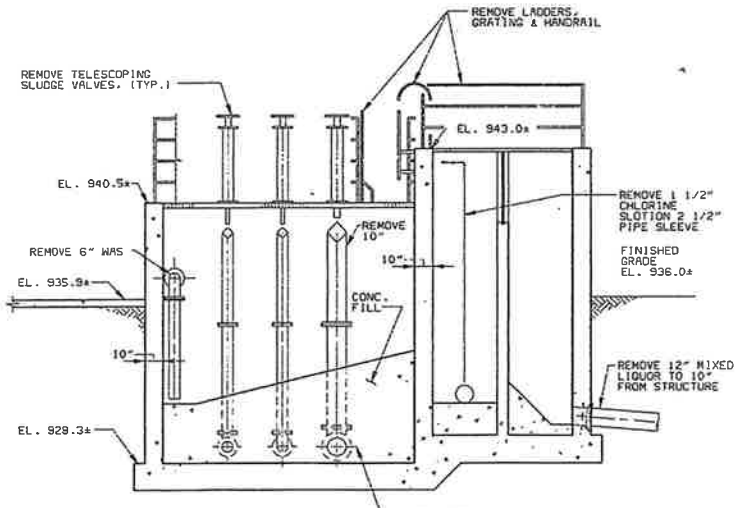


SECTION 1
 1/4" = 1'-0"

NOTE: ALL EXISTING PIPING, EQUIPMENT, & APPURTENANCES SHALL BE DEMOLISHED & COMPLETELY REMOVED FROM THE SITE. THE EXISTING SLUDGE HOLDING TANK STRUCTURE SHALL BE DEMOLISHED DOWN TO AN ELEVATION 4' MIN. BELOW FINISHED GRADE & BACKFILLED IN PLACE WITH CLEAN JOB EXCAVATED MATERIAL TO FINISHED GRADE. DEMOLISHED REINF. CONC. SHALL BE COMPLETELY REMOVED FROM THE SITE.



CONTROL STRUCTURE PLAN



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

NOTE: REMOVE REINF. #4 & #5 (TYP.)
 1. ENTIRE CONTROL STRUCTURE, EQUIPMENT, PIPING, AND APPURTENANCES SHALL BE DEMOLISHED AND COMPLETELY REMOVED FROM THE SITE. THE REMAINING EXCAVATION SHALL BE BACKFILLED WITH CLEAN JOB EXCAVATED MATERIAL TO FINISHED GRADE.
 2. EXISTING BURIED PIPING SHALL BE REMOVED AS SHOWN ON SH. D-1.

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION

BID PACKAGE NO. 2
 SLUDGE HOLD TANK & CONTROL STRUC-DEMO
 PLANS & SECTIONS



D-3

SHEET
 9 OF 47

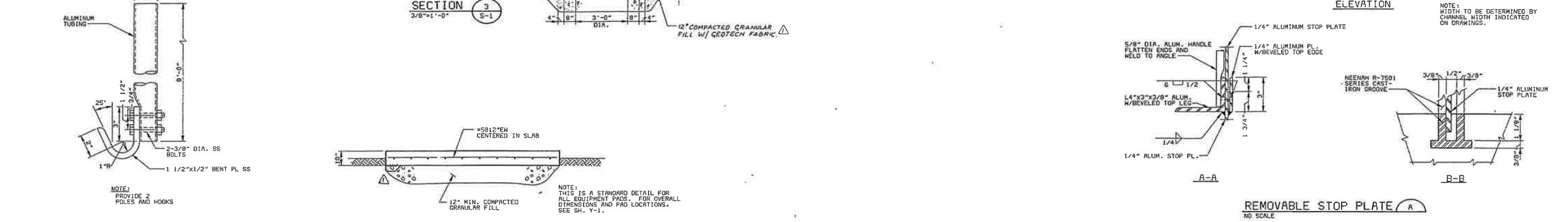
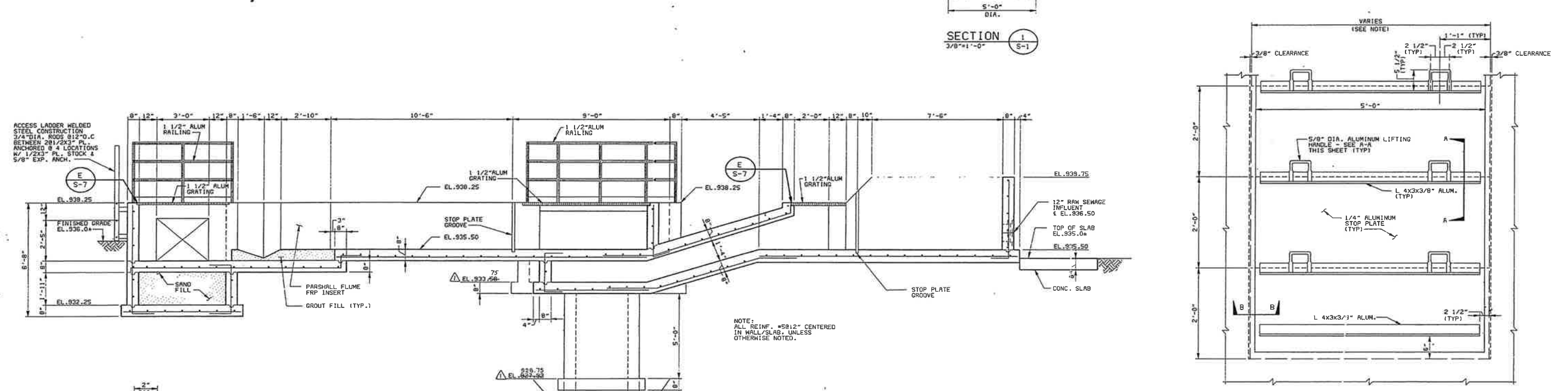
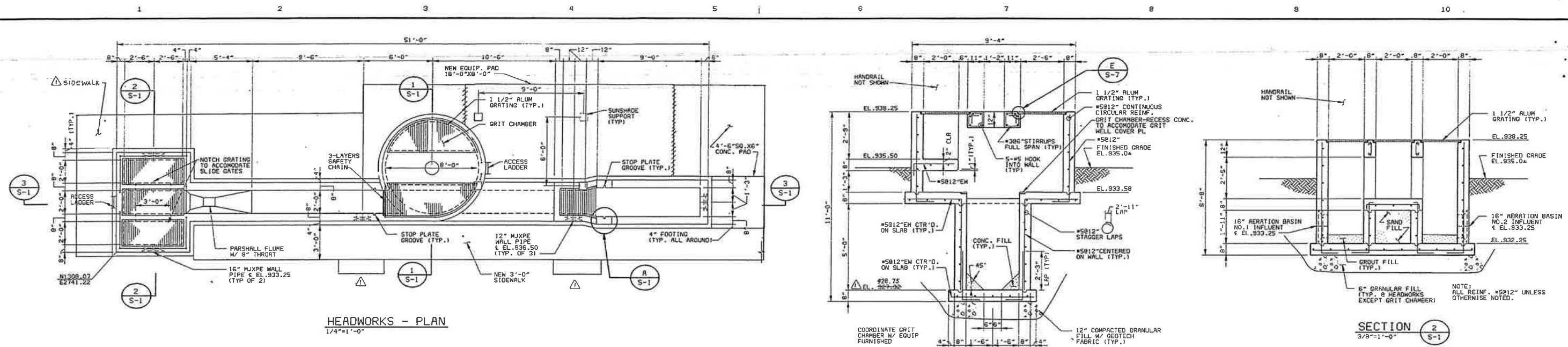
DESIGNED DSB-RMN
 DETAILED CWC
 CHECKED RMN
 APPROVED _____
 DATE _____



PROJECT NO.
 25056

CONFORM TO CONSTRUCTION RECORD		MS
BID ISSUE FOR PACKAGES 2, 3 & 4		MS
DATE	REVISIONS AND RECORD OF ISSUE	MS, CC, RMN

02/07/95 16:21:29 VP:
06/24/94 08:01:13 AT:



REMOVABLE STOP PLATE
NO SCALE

STOP PLATE LIFTING HOOK
3/8"=1'-0"

EQUIPMENT PAD DETAIL
3/8"=1'-0"

NOTE: THIS IS A STANDARD DETAIL FOR ALL EQUIPMENT PADS. FOR OVERALL DIMENSIONS AND PAD LOCATIONS, SEE SH. Y-1.

NOTE: ALL REINF. #5012" CENTERED IN WALL/SLAB, UNLESS OTHERWISE NOTED.

NOTE: ALL REINF. #5012" UNLESS OTHERWISE NOTED.

NOTE: WIDTH TO BE DETERMINED BY CHANNEL WIDTH INDICATED ON DRAWINGS.

NOTE: REFERENCE SPECIFICATIONS AND MECHANICAL SHEETS TO COORDINATE EQUIPMENT DIMENSIONS & LOCATIONS.

DESIGNED	DBR/RMV.015
DETAILED	NGM
CHECKED	TRZ
APPROVED	
DATE	

Black & Veatch
San Diego, California

PROJECT NO. 25056

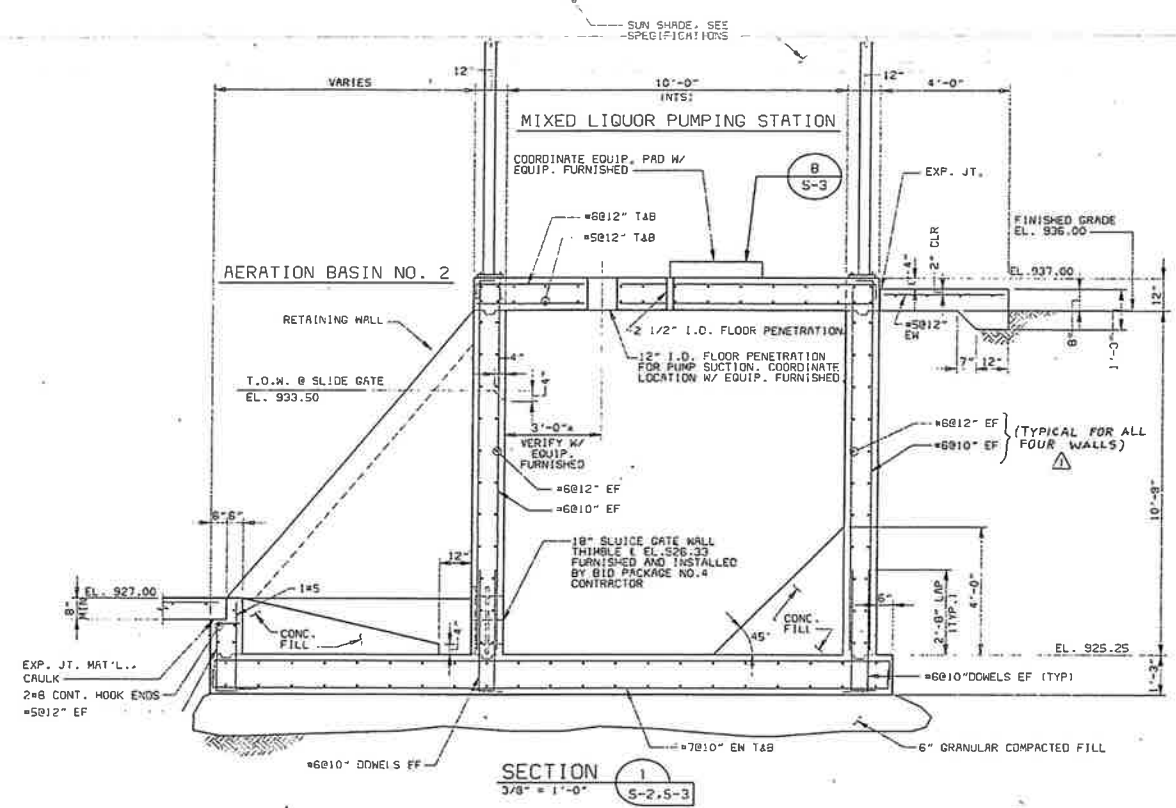
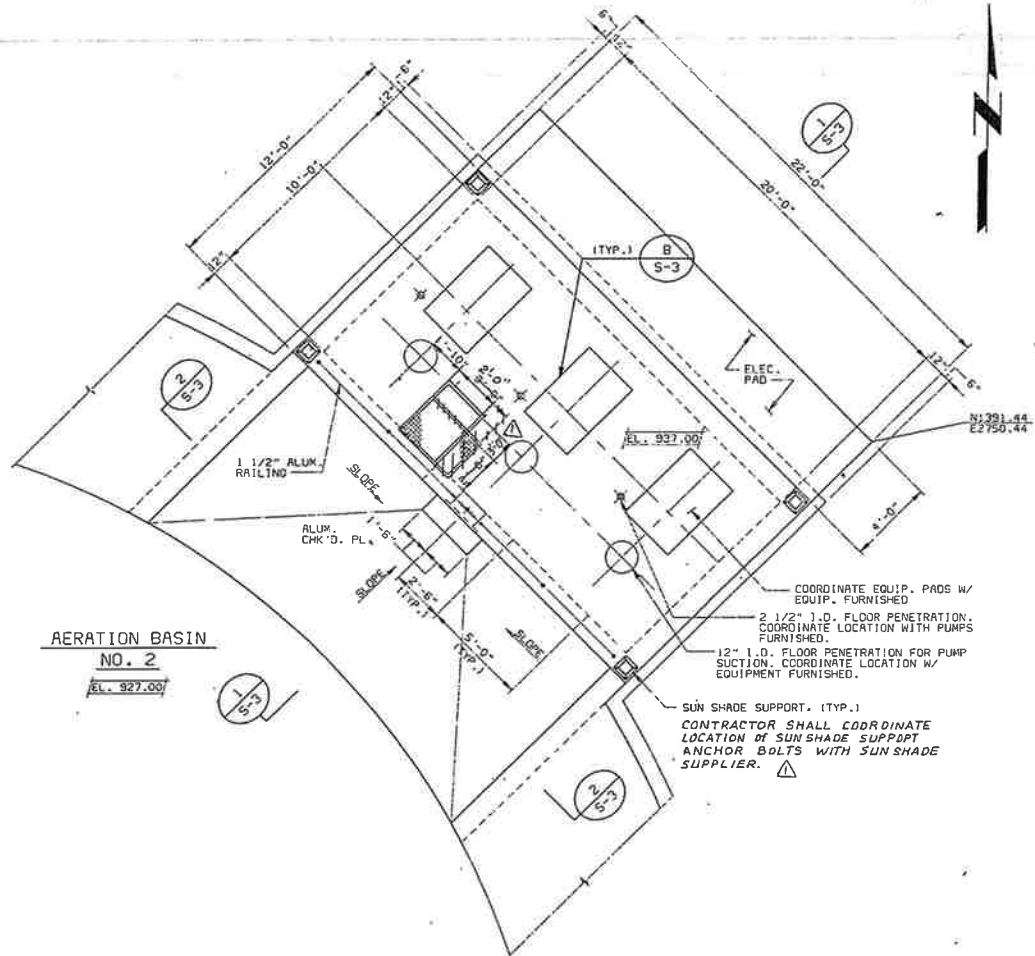
CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION

BID PACKAGE NO.3
HEADWORKS - STRUCTURAL
PLAN AND SECTIONS

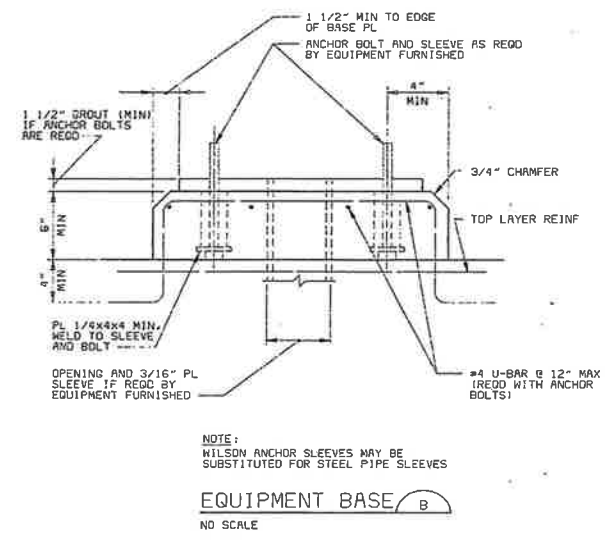
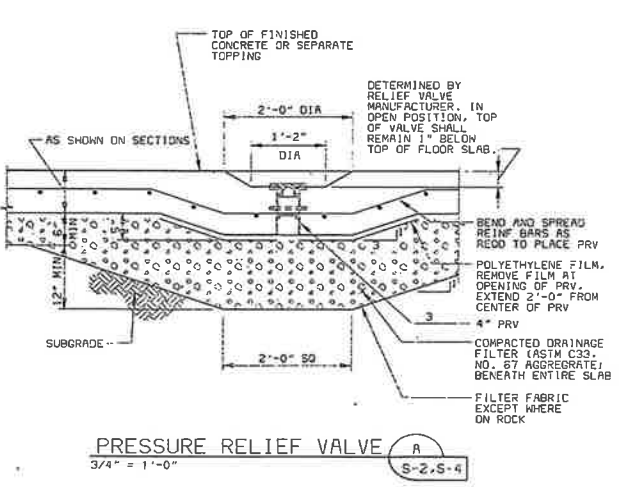
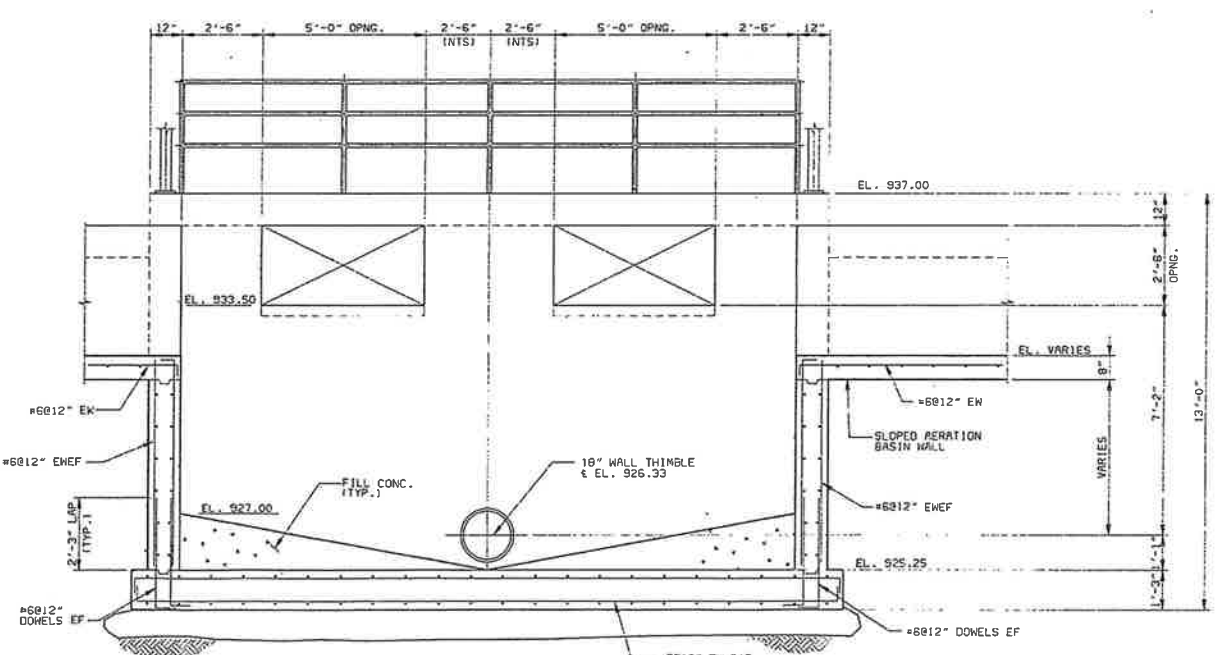
S-1

SHEET 11 OF 47

CCG. DNG. NO: 25056-330-323-5001



MIXED LIQUOR PUMPING STATION
 1/4" = 1'-0"



REFERENCE MECH. SH. TO COORDINATE EQUIP. LOCATION

250563
 01034
 FG25056

CONFORM TO CONSTRUCTION RECORD
 24-94 BID ISSUE FOR PACKAGES 2, 3 & 4
 DATE REVISIONS AND RECORD NO. ISSUE

DESIGNED DSB,RMN,OIS
 DETAILED CHC
 CHECKED TRZ
 APPROVED
 DATE



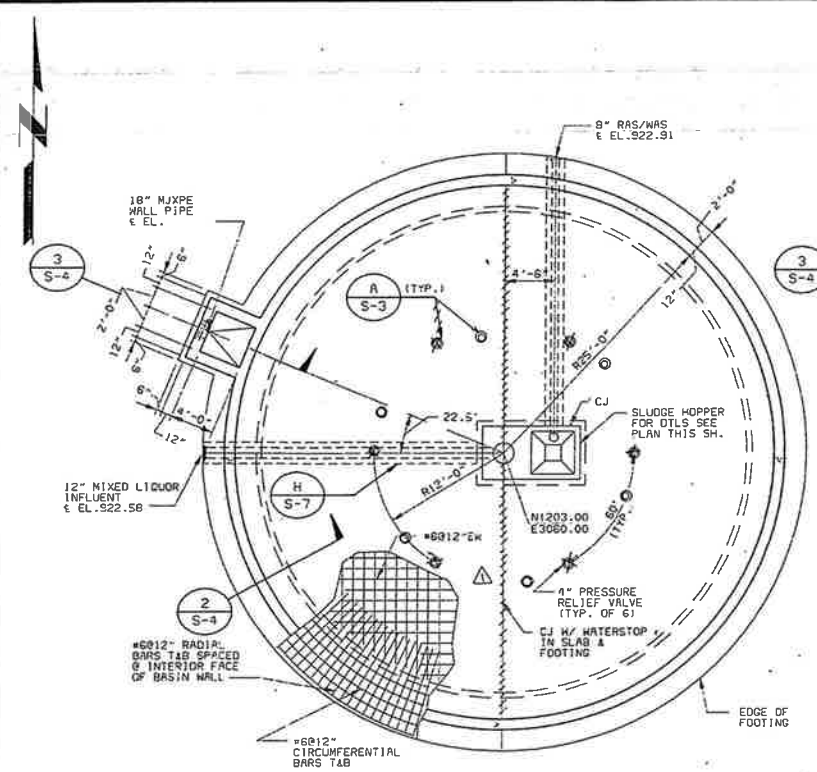
PROJECT NO.
 25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 3
 MIXED LIQUOR PUMP STATION - STRUCTURAL
 PLAN, SECTIONS AND DETAILS

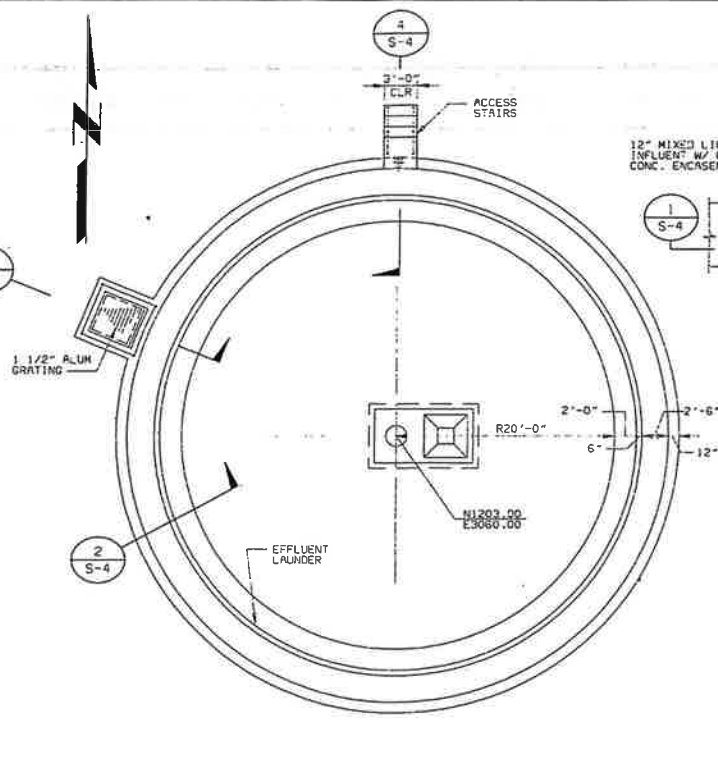


S-3
 SHEET
 13 OF 47

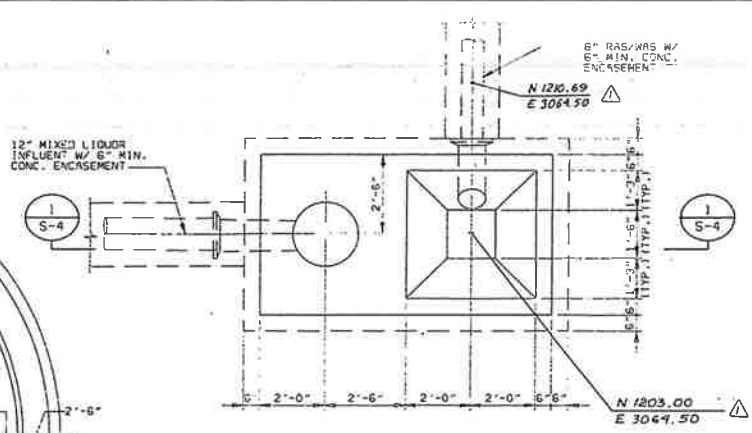
25056RBA
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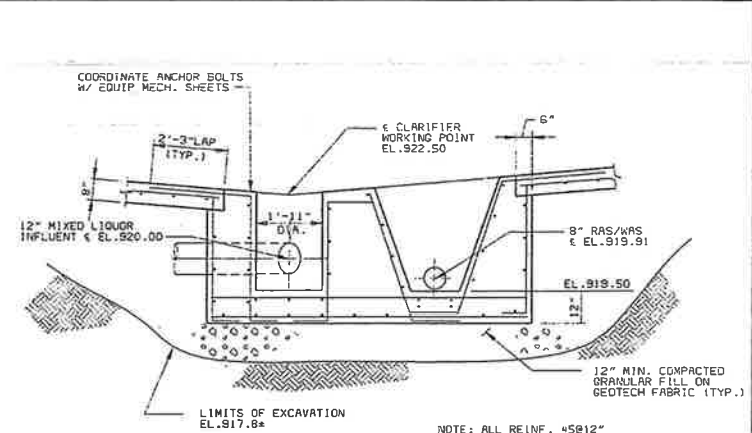
FOUNDATION PLAN
1/8" = 1'-0"



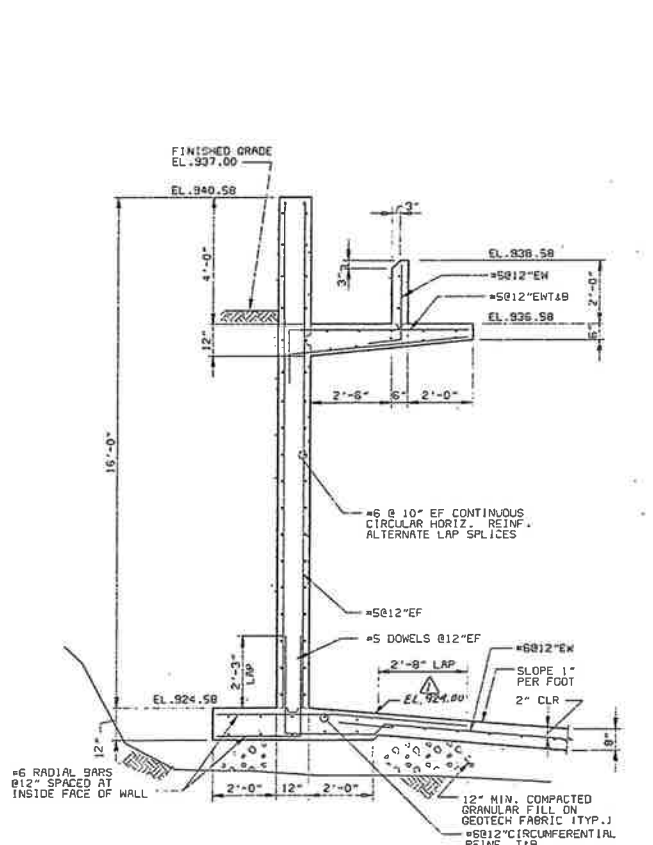
UPPER PLAN
1/8" = 1'-0"



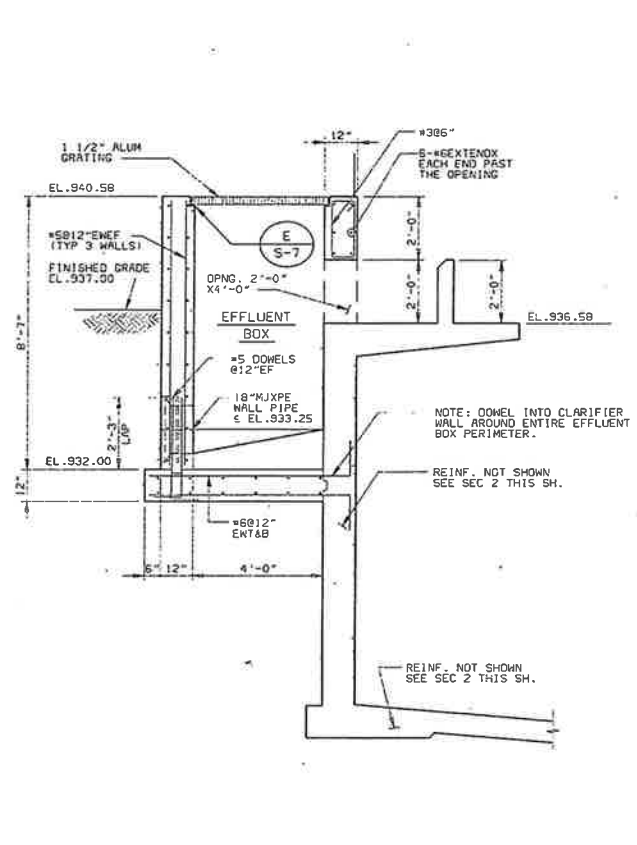
SLUDGE HOPPER-PLAN
3/8" = 1'-0"



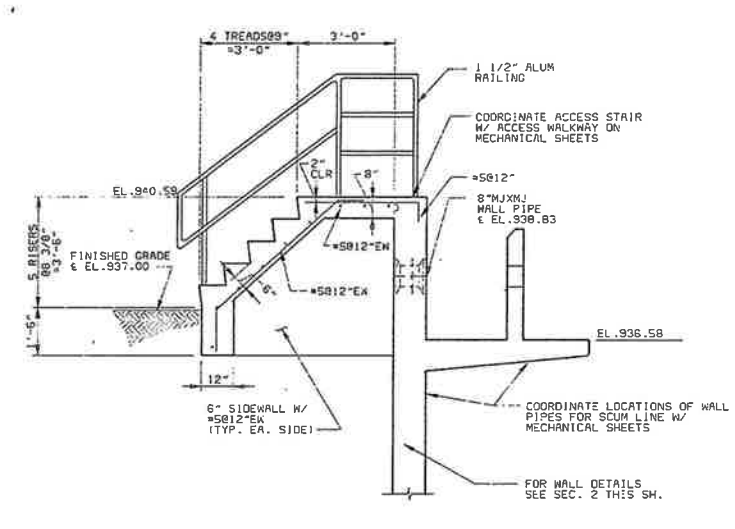
SECTION 1
3/8" = 1'-0"



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



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



SECTION 4
3/8" = 1'-0"

NOTES:
 1. REFERENCE SH. M-4 FOR EQUIPMENT LOCATIONS.
 2. SEE SEC. 4 SH. Y-4 FOR CONC. FILL IN CLARIFIER NO. SCUM BOX.

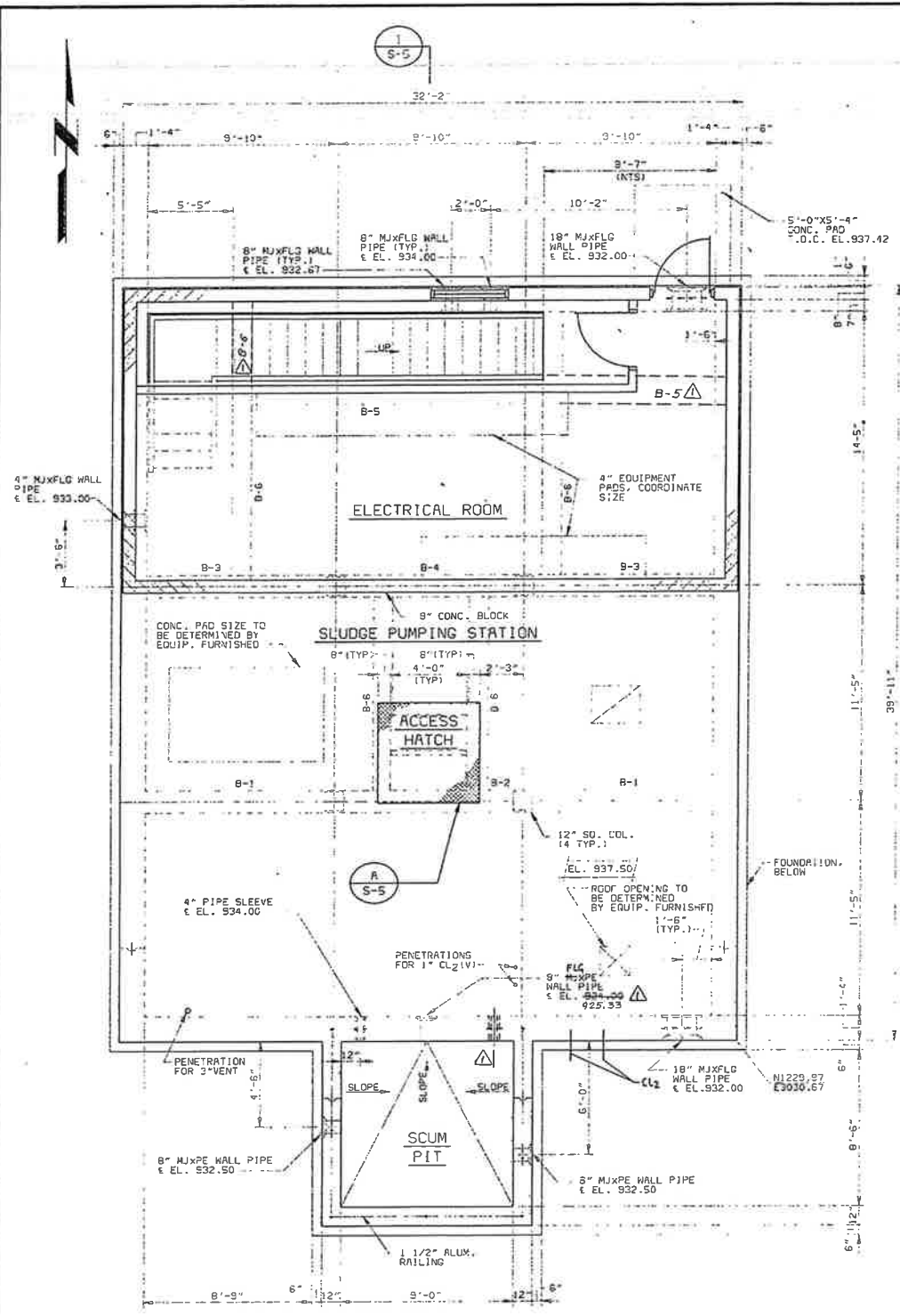
CITY OF IMPERIAL, CALIFORNIA WASTEWATER TREATMENT PLANT EXPANSION		
BID PACKAGE NO. 3 STRUCTURAL-CLARIFIER NO. 2 PLANS AND SECTIONS		
PROJECT NO. 25056	DESIGNED: DSR, RMV, OIS DETAILED: MGM CHECKED: TRZ APPROVED: _____ DATE: _____	S-4 SHEET 14 OF 47

CONFORM TO CONSTRUCTION RECORD 24-94 51D ISSUE FOR PACKAGES 2, 3 & 4 DATE: _____	REVISIONS AND RECORD NO. BY DATE _____
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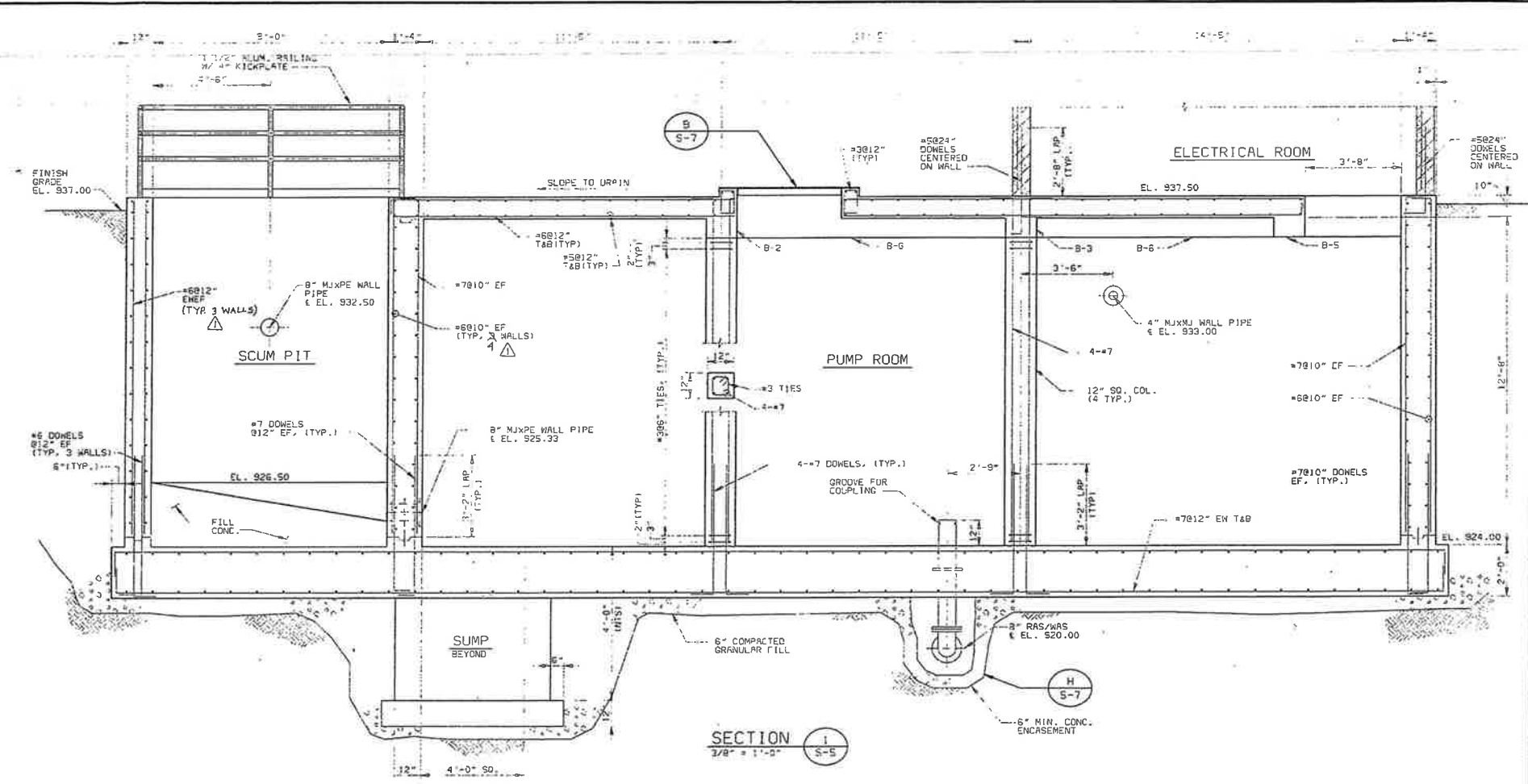
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B
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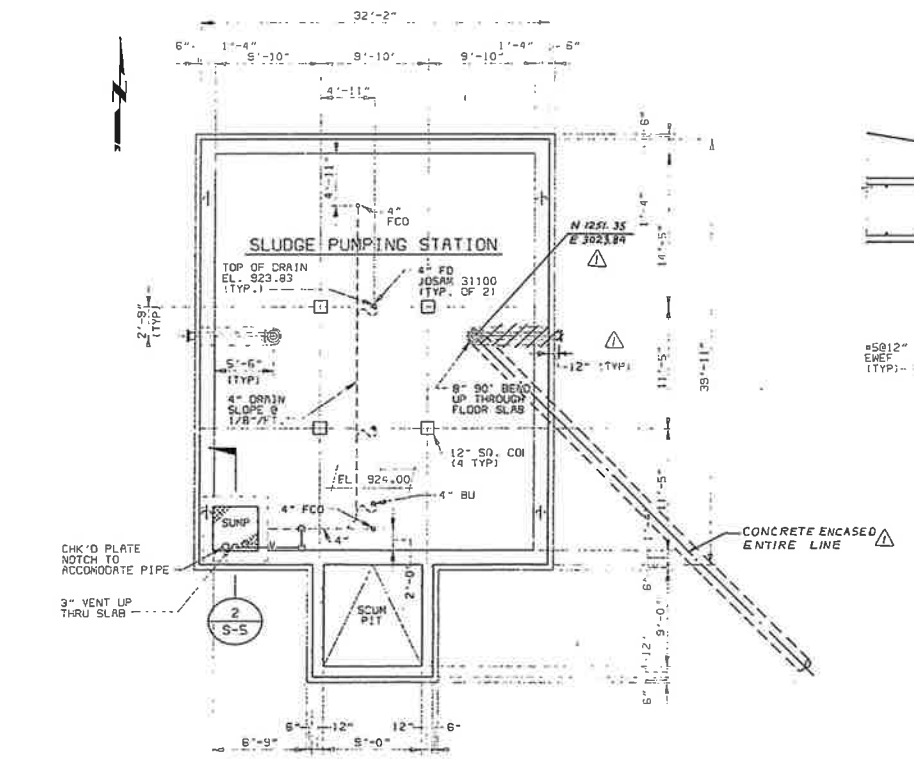
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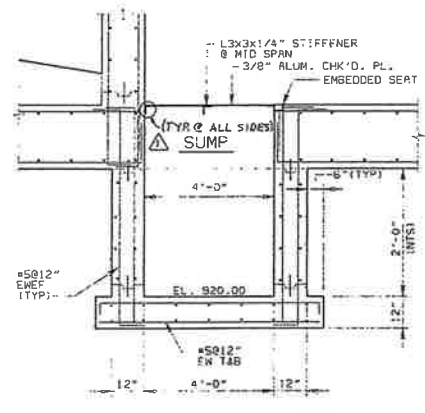
UPPER PLAN
1/4" = 1'-0"



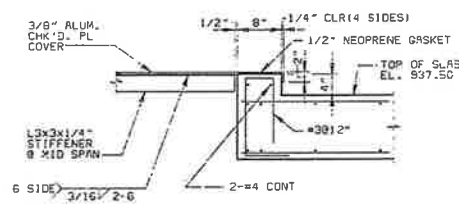
SECTION 1
3/8" = 1'-0"



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



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



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

- NOTES:
1. REFERENCE SHEET E-9 FOR ELECTRICAL EQUIPMENT FLOOR LOCATIONS & FLOOR PENETRATIONS.
 2. REFERENCE SHEET A-2 FOR STAIR AND CONCRETE BLOCK DETAILS.
 3. REFERENCE SPECIFICATIONS AND MECHANICAL SHEETS TO COORDINATE EQUIPMENT DIMENSIONS AND LOCATIONS.

CITY OF IMPERIAL, CALIFORNIA WASTEWATER TREATMENT PLANT EXPANSION		S-5
BID PACKAGE NO. 3 SLUDGE PUMPING STATION-STRUCTURAL PLAN & SECTION		9-30-97 SHEET 15 OF 47

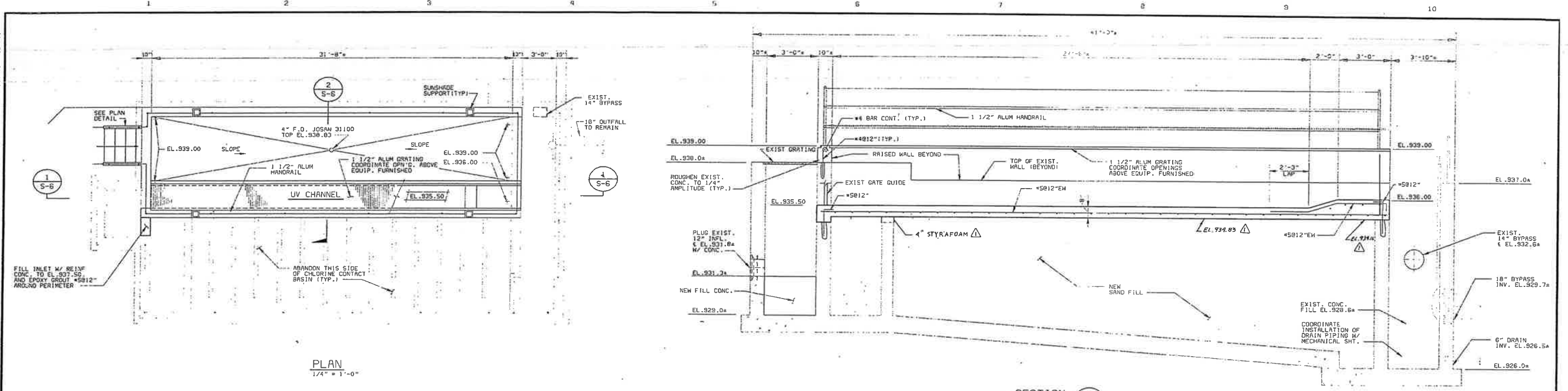
DESIGNED: DSE, RNM, OIS
 DETAILED: CMC
 CHECKED: TRZ
 APPROVED: [Signature]
 DATE:



PROJECT NO.
25056

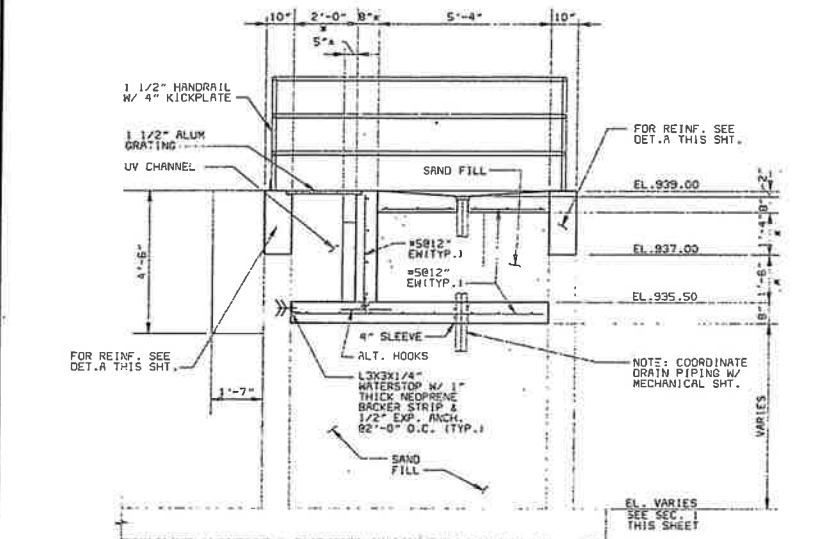
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 24 94 010 ISSUE FOR PACKAGES 2, 3 & 4
 REVISIONS AND RECORD OF WORK

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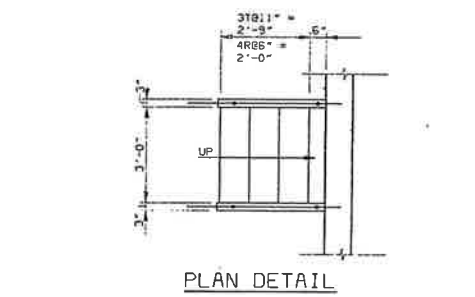


PLAN
1/4" = 1'-0"

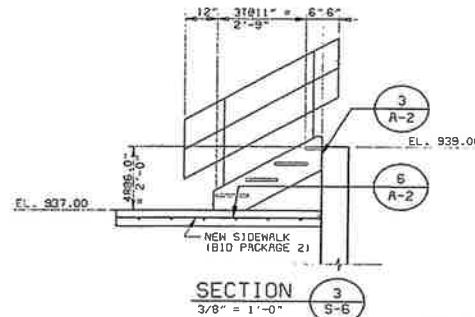
SECTION 1
3/8" = 1'-0"



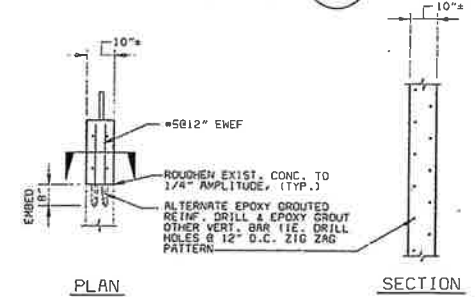
SECTION 2
3/8" = 1'-0"



PLAN DETAIL



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



PLAN

SECTION

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

3/20/95 CONFORM TO CONSTRUCTION RECORD		MSJ
24-95 BID ISSUE FOR PACKAGES 2, 3 & 4		MSJ
DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CA APP

DESIGNED	DSB-RMM-OIS
DETAILED	HGM
CHECKED	TRZ
APPROVED	
DATE	



PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION

BID PACKAGE NO.3
UV CHAMBER - STRUCTURAL
PLAN AND SECTIONS

S-6
SHEET
16 OF 47

2-30-97

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STRUCTURAL NOTES

CONCRETE

- ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI, UNLESS OTHERWISE SPECIFIED. CEMENT SHALL BE ASTM C150, TYPE V.
- ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE UNIFORM BUILDING CODE (UBC) AND THE ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," INCLUDING BAR BENDS AND HOOKS, UNLESS DETAILED OTHERWISE.
- THE LOCATION OF ALL CONSTRUCTION JOINTS AND OTHER TYPES OF JOINTS, OTHER THAN SPECIFIED OR SHOWN ON THE PLANS, SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACING CONCRETE.
- ALL OPENINGS, PIPE SLEEVES, CONDUITS, INSERTS, AND OTHER EMBEDDED ITEMS SHALL BE IN PLACE BEFORE CONCRETE IS PLACED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE CIVIL, ELECTRICAL, P.S., PLUMBING, AND MECHANICAL PLANS FOR ITEMS REQUIRING SLEEVES AND EMBEDMENTS IN CONCRETE WHICH ARE NOT INDICATED IN SECTIONS OR FLOOR PLANS. NO PIPES OR SLEEVES SHALL PASS THROUGH STRUCTURAL MEMBERS, UNLESS SHOWN ON STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER.
- ALL EXPOSED EDGES AND CORNERS SHALL BE CHAMFERED 3/4" EXCEPT THE TOP EDGES OF WALLS AND SLABS WHICH ARE TO BE TOOLED.
- ALL CONSTRUCTION JOINTS IN WATER-CONTAINING WALLS AND FOUNDATION SLABS SHALL BE PROVIDED WITH A WATERSTOP WHERE SPECIFIED OR INDICATED ON THE DRAWINGS.
- ALL CONSTRUCTION JOINTS SHALL BE CLEAN, HARD AND ROUGHENED TO 1/4" AMPLITUDE MINIMUM.

REINFORCING STEEL

- ALL REINFORCING BAR SHALL BE GRADE 60.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 OR A497.
- DIMENSIONS TO REINFORCING BARS ARE TO BAR CENTERLINES, UNLESS NOTED OTHERWISE. BAR COVER IS CLEAR DISTANCE BETWEEN BAR AND THE CONCRETE SURFACE AS SHOWN ON THE "STANDARD CONCRETE DETAILS" SHEET SHALL BE PROVIDED, UNLESS NOTED OTHERWISE. THE SPECIFIED CLEARANCE FOR REINFORCING IN A SLOPING STRUCTURAL SLAB IS MEASURED FROM LOW POINTS IN TOP SURFACE OF STRUCTURAL SLABS.
- SPLICING OF REINFORCEMENT SHALL BE AS SHOWN ON THE "STANDARD CONCRETE DETAILS" SHEET, UNLESS NOTED OTHERWISE. WHEN BARS OF DIFFERENT SIZE LAP TO EACH OTHER, SPLICE LENGTH FOR THE SMALLER BAR CAN BE USED.
- ALL DOWELS SHALL HAVE THE SAME SIZE AND SPACING AS THAT OF THE REINFORCING STEEL TO WHICH THEY ARE SPLICED AND SHALL HAVE A MINIMUM LAP PER NOTE NO. 4 ABOVE, UNLESS NOTED OTHERWISE.
- NO WELDING OF REINFORCING BARS SHALL BE PERMITTED, UNLESS APPROVAL IS OBTAINED FROM THE ENGINEER PRIOR TO CONSTRUCTION.

STRUCTURAL STEEL

- UNLESS NOTED OTHERWISE, STRUCTURAL STEEL SHALL CONFORM TO ASTM A36; STRUCTURAL PIPES TO ASTM A53, TYPE E OR S, GRADE B; STRUCTURAL TUBING TO ASTM A500, GRADE B OR C. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED BY AN AISC CERTIFIED FABRICATOR IN CONFORMANCE WITH THE LATEST AISC SPECIFICATIONS PARTS 1 THROUGH 4 AND THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS."
- ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS. ALL WELDING SHALL USE ONLY APPROVED ELECTRODES. WELDING SHALL CONFORM TO THE PROVISIONS OF THE LATEST STRUCTURAL WELDING CODE (AWS D1.1).
- UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL COMPONENTS AND CONNECTIONS SHALL BE PAINTED OR PROTECTIVE COATED IN ACCORDANCE WITH THE SPECIFICATIONS.

STAINLESS STEEL

- STAINLESS STEEL BOLTS SHALL CONFORM TO ASTM F593, ALLOY GROUP 2, UNLESS NOTED OTHERWISE.
- STAINLESS STEEL PLATES, BARS, AND RODS SHALL CONFORM TO ASTM A666, TYPE 316L.
- STAINLESS STEEL STRUCTURAL SHAPES AND STUDS SHALL CONFORM TO ASTM A276, TYPE 316L.

ALUMINUM

- UNLESS NOTED OTHERWISE, ALUMINUM ALLOY IN ALL ALUMINUM STRUCTURAL MATERIALS SHALL BE 6061-T6.
- ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED OR COVERED WITH A HEAVY COAT OF COAL TAR PAINT TO PREVENT ALUMINUM-CONCRETE REACTION OR ELECTROLYTIC ACTION.
- ALL ALUMINUM WELDING SHALL CONFORM TO THE PROVISIONS OF THE LATEST STRUCTURAL WELDING CODE (AWS D1.2) AND CHAPTER 28 OF THE UBC.
- A CERTIFIED FABRICATOR IS REQUIRED FOR ALL ALUMINUM PANELS AND FRAMES.

SOIL AND FOUNDATIONS

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS PRESENTED IN SPECIFICATIONS OR CONTAINED HEREIN. THESE REQUIREMENTS SHALL BE FOLLOWED AND SHALL BE CONSIDERED MINIMUM.
- THE PRIME CONTRACTOR SHALL PROVIDE THE SERVICES OF A GEOTECHNICAL ENGINEER FOR INSPECTION AND TESTING OF SUBGRADES AND FILLS, TO FACILITATE SCHEDULING, AT LEAST 48 HOURS' ADVANCE NOTICE SHOULD BE GIVEN PRIOR TO THE REQUIRED INSPECTION AND/OR TESTING.
- THE SUBGRADE SHALL BE PREPARED AS INDICATED IN THE SPECIFICATIONS AND APPROVED BY THE GEOTECHNICAL ENGINEER BEFORE COMMENCING FOUNDATION CONSTRUCTION.
- ALL FOUNDATION SHALL BE POURED AGAINST COMPACTED NATIVE SOILS OR COMPACTED FILL. FILL SHALL BE MOISTURE CONDITIONED AND COMPACTED AS SPECIFIED IN THE SPECIFICATIONS. COMPACTED FILL SHALL EXTEND BEYOND THE FOUNDATION AS SPECIFIED BY THE SPECIFICATIONS.
- A GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR, LICENSED IN THE STATE OF CALIFORNIA SHALL INSPECT AND APPROVE ALL PIPELINE EXCAVATIONS AND SHORING INSTALLATIONS.
- INSTALLATION OF SHORING, UNDERPINNING AND/OR SLOT CUTTING EXCAVATIONS SHALL BE PERFORMED UNDER THE CONTINUOUS INSPECTION AND APPROVAL OF A GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR, LICENSED IN THE STATE OF CALIFORNIA.
- UNLESS NOTED OTHERWISE, BACKFILL SHALL NOT BE PLACED AGAINST WALLS UNTIL THE TOP SLAB HAS BEEN PLACED IN ITS ENTIRETY AND ALL CONCRETE HAS REACHED ITS DESIGN STRENGTH.

MASONRY

- ALL MASONRY CONSTRUCTION SHALL CONFORM TO THE UBC CHAPTER 24.
- CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N-1 THE TOTAL MASONRY ASSEMBLY SHALL HAVE A COMPRESSIVE STRENGTH EQUAL TO 1500 PSI AT 28 DAYS.
- MASONRY MORTAR SHALL CONFORM TO ASTM C270, TYPES S.
- GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS. ALL OTHER REQUIREMENTS OF THE UBC SECTION 2403 SHALL BE MET.

PERMITS AND INSPECTIONS

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED BY CITY OF IMPERIAL BUILDING DEPARTMENT AND AS DESCRIBED IN THE SPECIFICATIONS.
- THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE ISSUANCE OF A BUILDING GRADING PERMIT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING TEMPORARY SHORING DETAILS AND DESIGN COMPUTATIONS SIGNED AND SEALED BY A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA TO THE ENGINEER FOR REVIEW AND FOR OBTAINING THE ASSOCIATED BUILDING AND GRADING PERMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING THE PROPOSED METHOD OF DEMOLITION TO THE CITY OF IMPERIAL BUILDING DEPARTMENT FOR REVIEW AND APPROVAL AND FOR OBTAINING THE ASSOCIATED DEMOLITION PERMITS.
- FOR TRENCHES OR EXCAVATIONS 5 FEET OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESCEND, CONTRACTOR SHALL OBTAIN NECESSARY PERMIT FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE ISSUANCE OF A BUILDING OR GRADING PERMIT. (HSC 17922.5, EFF. 3-6-76).

SPECIAL INSPECTIONS

- CONTINUOUS SPECIAL INSPECTION IS REQUIRED DURING THE TAKING OF TEST SPECIMENS AND PLACING OF REINFORCED CONCRETE.
- SPECIAL INSPECTION IS REQUIRED FOR THE REINFORCING STEEL PRIOR TO THE CLOSING OF FORMS OR THE DELIVERY OF CONCRETE TO THE JOBSITE TO DETERMINE CONFORMANCE WITH THE APPROVED PLANS.
- CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR ALL STRUCTURAL WELDING, INCLUDING FIELD WELDING AND WELDING OF REINFORCING STEEL.
- PERIODIC SPECIAL INSPECTION IS REQUIRED FOR WELDED STUDS.
- SPECIAL INSPECTION IS REQUIRED FOR ALL BOLTED, HIGH-STRENGTH, SLIP-CRITICAL CONNECTIONS.
- WHERE REQUIRED BY THE RESPECTIVE ICBO EVALUATION REPORT, SPECIAL INSPECTION IS REQUIRED FOR MECHANICAL COUPLERS, EXPANSION ANCHORS, AND ADHESIVE ANCHORS.
- CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR ALL MASONRY CONSTRUCTION.
- SPECIAL INSPECTIONS SHALL BE SCHEDULED AND PAID FOR BY THE PRIME CONTRACTOR. INDIVIDUALS AND FIRMS HIRED FOR SPECIAL INSPECTION SHALL BE LICENSED IN THE STATE OF CALIFORNIA IN THE REQUIRED SPECIALTY AND SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

LOADING CRITERIA

- LOADING MINIMUM REQUIREMENTS PER CHAPTER 23 OF THE UNIFORM BUILDING CODE.
- DEAD LOAD CALCULATED
- LIVE LOADS:
 - FLOOR 150 PSF
 - EQUIPMENT ACTUAL
 - STAIRS/SERVICE PLATFORMS 100 PSF
 - GRATING AREAS 100 PSF
- LATERAL EARTH PRESSURE SHALL BE PER SOILS REPORT.
- OF EARTH PRESSURE EQUIVALENT OF 2 FT LATERAL SURCHARGE
- COMPACTIVE SURCHARGE LOAD 400 PSF AT FINISH GRADE ELEVATION DECREASES LINEARLY BY SAME RATE OF BACKFILL LOAD
- HYDROSTATIC FLUID PRESSURE 63 PSF/FT

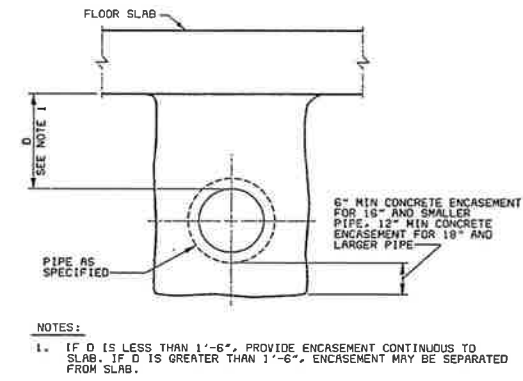
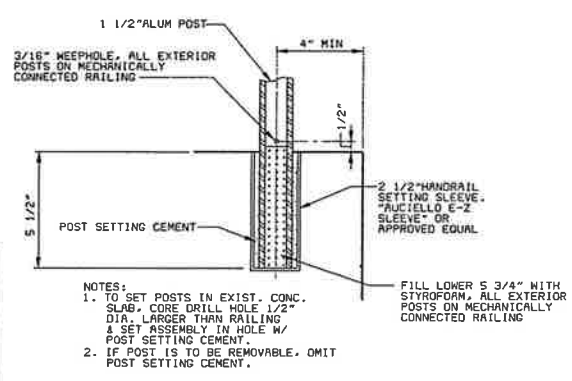
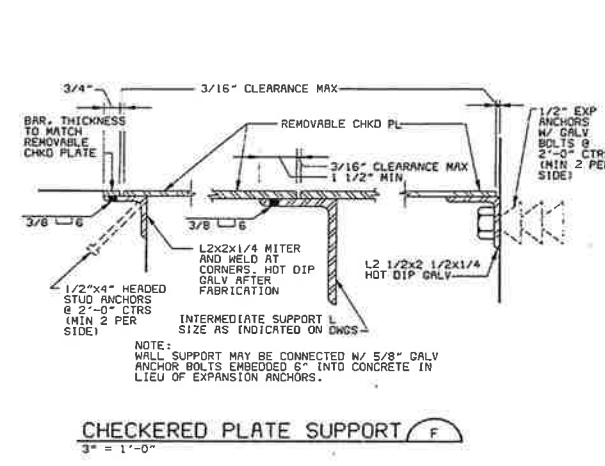
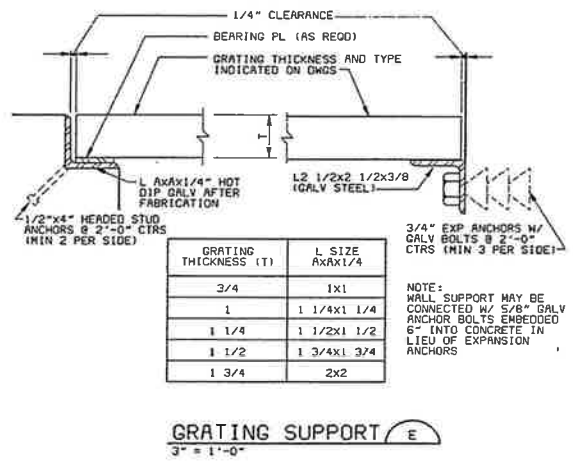
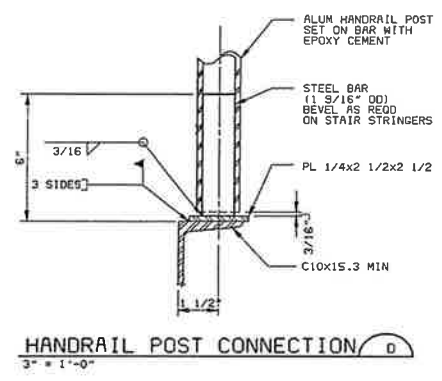
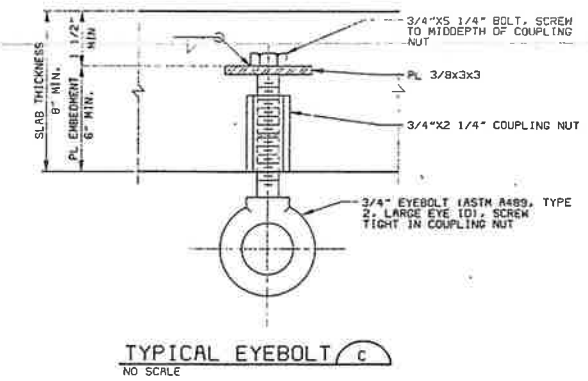
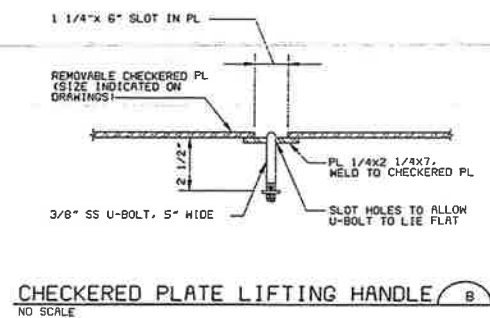
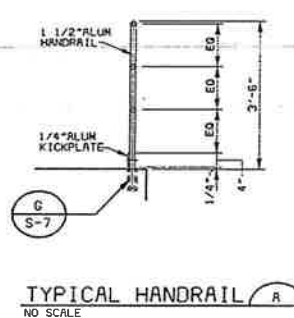
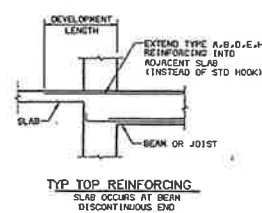
BEAM SCHEDULE

TYPE	DESCRIPTION	CLEAR SPAN-LB	CLEAR SPAN-LA	CLEAR SPAN-LB	CLEAR SPAN-LB
A	TOP BAR CONTINUOUS END SPAN	CL SPAN	CL SPAN	CL SPAN	CL SPAN
B	TOP BAR CONTINUOUS END SPAN	FOR HOOK SEE NOTE 2 (TYPE)	LAP	LAP	LAP
C	SIDE BAR CONTINUOUS	EXTEND 4 HOOK AT END SPAN	LAP	LAP	LAP
D	TOP BAR SINGLE SPAN				
E	TOP BAR END SPAN				NOTE 1
F	TOP BAR CONT. INTERIOR SPAN (WEST OR EAST END)		LAP	LAP	LAP
G	TOP BAR INTERIOR SPAN	NOTE 1			NOTE 1
H	TOP END BAR		0.30LA		
J	TOP OVER SUPPORT BAR (WEST OR EAST END)			NOTE 1	NOTE 1
K	LONG BOTTOM BAR				
L	BOTTOM BAR CONTINUOUS	HOOK AT END SPAN ONLY			
M	BOTTOM OVER SUPPORT BAR (WEST OR EAST END)			NOTE 1	NOTE 1
N	SHORT BOTTOM BAR	EXTEND 4 HOOK AT END SPAN	0.125L	0.125L	

- NOTES:
- 0.30LA OR 0.30LB WHICHEVER IS GREATER
 - STANDARD HOOK SIZE HOOK OR 180° HOOK AS REQUIRED
 - SEE BEAM REINFORCING DEVELOPMENT AND SPLICE LENGTH SCHEDULE
 - ALL HOOKS SHALL HAVE A CLEARANCE OF 3" (MIN) AT END OF BEAM AND 4" (MIN) AT BOTTOM OF BEAM

MARK NO.	SIZE	REINFORCING	REMARKS	SIZE	TYPE	STIRRUPS OR HOOPS	SPACING EACH END
B-1	14X18	2 7 L	NOTE 5	3	SZ	6"	
B-2	14X18	2 7 L	FROM B-1 NOTE 5	3	SZ	6"	
B-3	14X18	3 8 B		4	SZ	6"	3" BETWEEN BEAM AND COLUMN
B-4	14X18	3 8 L	FROM B-3	4	SZ	6"	
B-5	14X18	3 8 U		3	SZ	6"	
B-6	14X18	3 8 S		3	SZ	6"	

- NOTES:
- STIRRUP OR HOOP TYPES: S1, S2, S3, S4, S5
 - SCHEDULED STIRRUPS OR HOOPS SHALL BE PLACED STARTING 2" FROM THE FACE OF SUPPORTS
 - ALL REINFORCING TO BE HOOKED AT DISCONTINUOUS AND CANTILEVERED ENDS
 - PROVIDE 2-4S CONTINUOUS IN TOP OF BEAM WHERE NO REINFORCING IS SCHEDULED TO SUPPORT HOOPS OR STIRRUPS
 - LAP FOR CONTINUOUS BAR AT INTERIOR SUPPORT IS OPTIONAL.



02/07/95 16:27:52 VPL 06/23/94 17:20:38 RTS

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD		MSJ		
6/24/94	BID ISSUE FOR PACKAGES 2,3 & 4		MSJ		

DESIGNED: DSB/OIS
 DETAILED: MGH
 CHECKED: TRZ
 APPROVED: [Signature]
 DATE: [Blank]

Black & Veatch
 San Diego, California

PROJECT NO. 25056

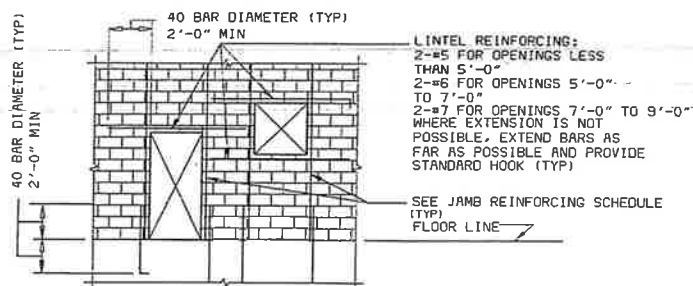
CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION

BID PACKAGE NO.3
 STANDARD STRUCTURAL DETAILS

S-7
 SHEET 17 OF 47

3-30-97

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06/24/94 08:18:31 ATS

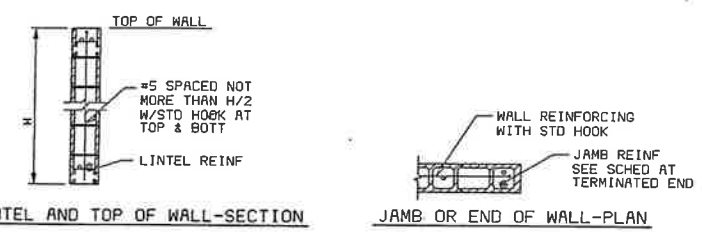


LINTEL REINFORCING:
 2-#5 FOR OPENINGS LESS THAN 5'-0"
 2-#6 FOR OPENINGS 5'-0" TO 7'-0"
 2-#7 FOR OPENINGS 7'-0" TO 9'-0"
 WHERE EXTENSION IS NOT POSSIBLE, EXTEND BARS AS FAR AS POSSIBLE AND PROVIDE STANDARD HOOK (TYP)

NOTE: 1. FOR WALL REINFORCING SEE RELATED SECTIONS AND DETAILS
 2. EXTEND JAMB BARS FLOOR TO FLOOR, OR FLOOR TO ROOF WHERE OPENING EXCEEDS 4'-0" IN WIDTH OTHERWISE EXTEND 40 BAR DIAMETERS OR 2'-0" MIN.

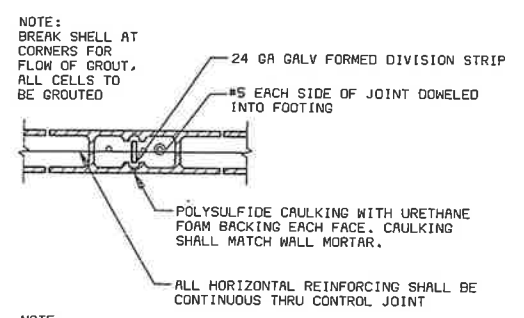
OPNG WIDTH	REINF
LESS THAN 5'-0"	2#6 FOR 8" CMU
5'-0" TO 7'-0"	2#7
MORE THAN 7'-0"	2#8

JAMB REINF SCHED



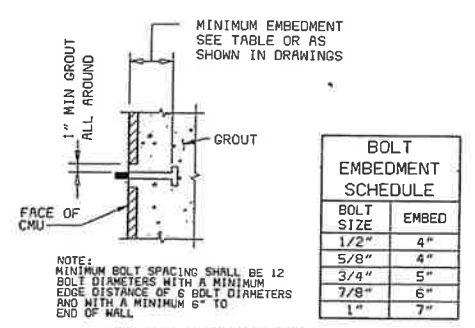
LINTEL AND TOP OF WALL-SECTION **JAMB OR END OF WALL-PLAN**

MINIMUM REINFORCING AT MASONRY WALL OPENINGS
 NO SCALE



NOTE:
 1. STACK CONTROL JOINT FROM TOP OF FOOTING TO TOP OF WALL
 2. FOR CONTROL JOINTS IN HEAD SECTION OVER OPENINGS INSTALL DIVISION STRIPS IN 8" SECTIONS WITH ALTERNATING KEY EACH SIDE OF JOINT

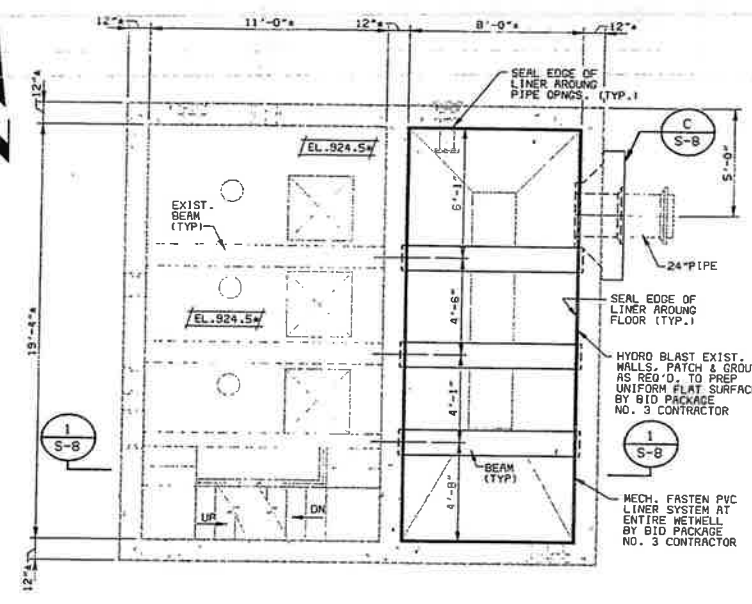
MASONRY CONTROL JOINT
 NO SCALE



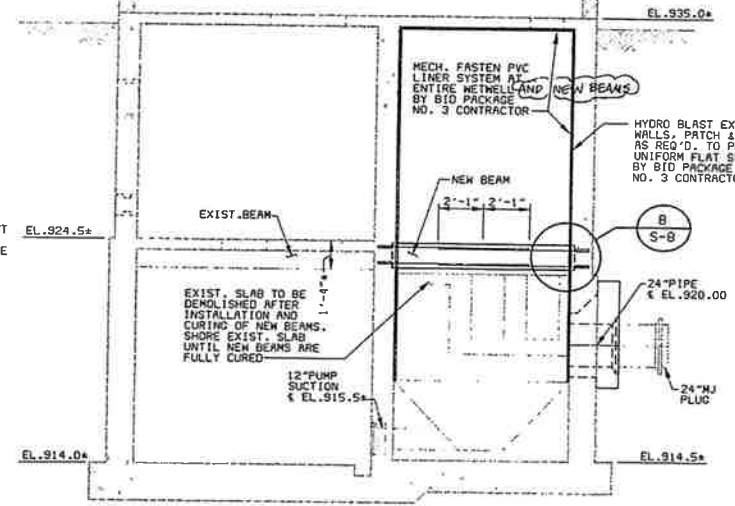
BOLT EMBEDMENT SCHEDULE	
BOLT SIZE	EMBED
1/2"	4"
5/8"	4"
3/4"	5"
7/8"	6"
1"	7"

BOLT EMBEDMENT
 NO SCALE

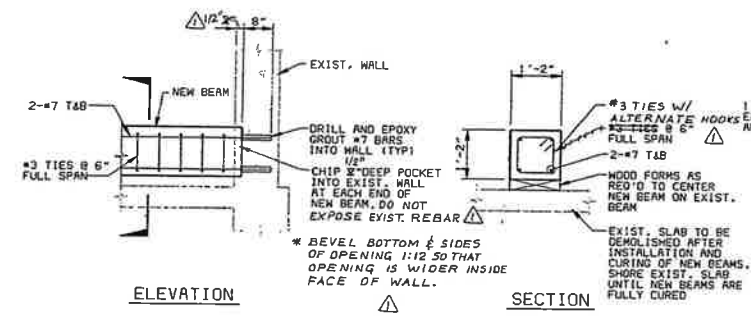
TYPICAL MASONRY DETAILS (A)



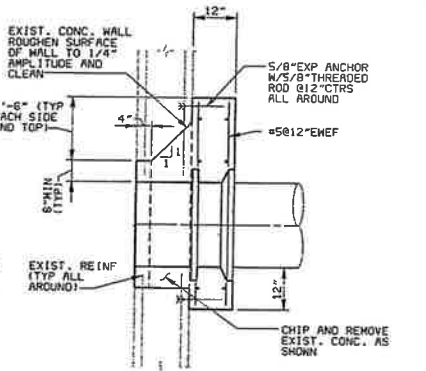
PUMP STATION INTERMEDIATE LEVEL PLAN
 1/4" = 1'-0"



SECTION 1
 1/4" = 1'-0" S-B



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



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

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FCB25055-XXX-ATB-VPL

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD		MB	MSJ	
6/24/94	BID ISSUE FOR PACKAGES 2, 3 & 4		NSJ		

DESIGNED: OIS
 DETAILED: BLR
 CHECKED: TRZ
 APPROVED: _____
 DATE: _____



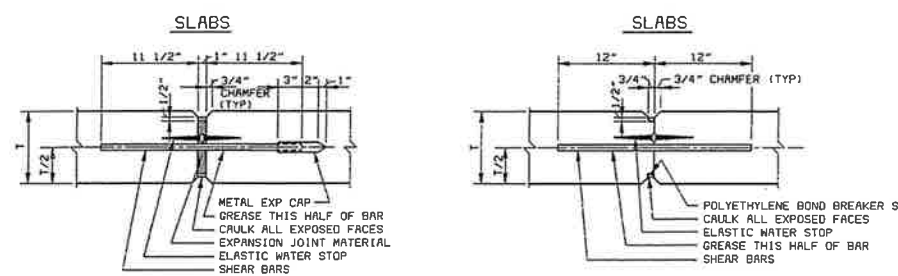
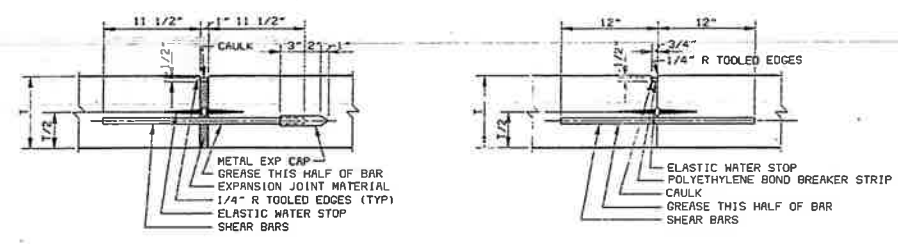
PROJECT NO.
 25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 3
 INFLUENT PUMPING STATION-STRUCTURAL
 STANDARD STRUCTURAL DETAILS



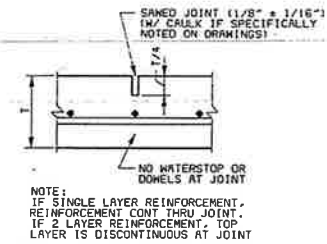
S-8
 SHEET
 18 OF 47

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06/01/94 - VPL
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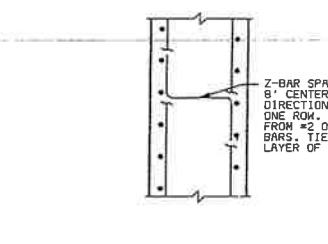


EXPANSION JOINTS
NOTE:
TYPE A - WITH ELASTIC WATER STOP
TYPE B - WITHOUT ELASTIC WATER STOP

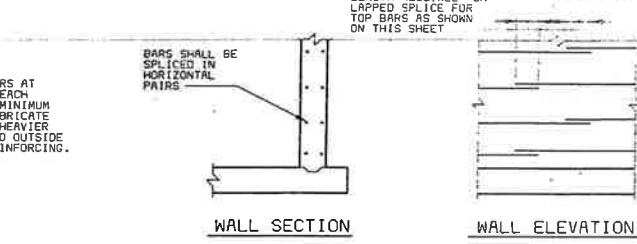
CONTRACTION JOINTS
NOTE:
TYPE C - WITH ELASTIC WATER STOP
TYPE D - WITHOUT ELASTIC WATER STOP



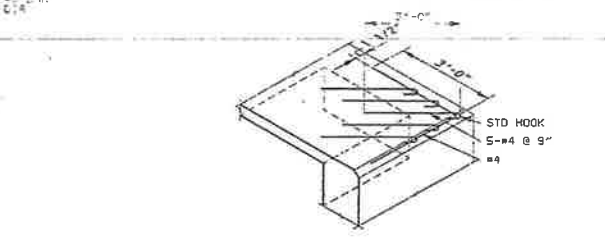
INTERIOR SLAB ON GRADE
TYPE E
(TYPICAL CONTROL JOINT NOTES 1 THRU 3 NOT APPLICABLE)



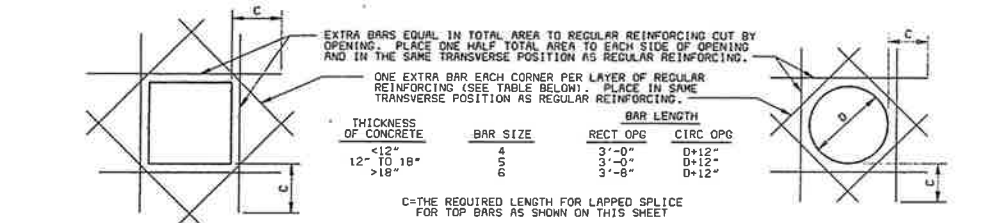
SPACERS FOR WALL REINFORCEMENT



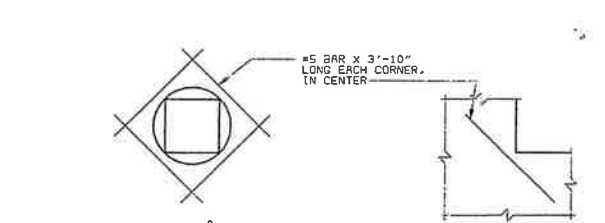
TYPICAL RING WALL REINFORCING SPLICE DETAIL



EXTRA CORNER REINFORCING AT TOP OF WALLS WITH SLABS WHICH ARE TO SUPPORT MASONRY

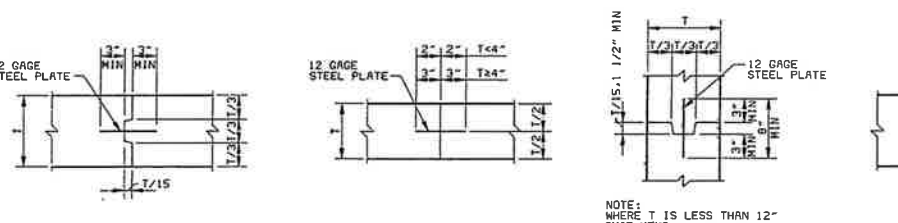


FOR RECTANGULAR OPENINGS LARGER THAN 21\"/>

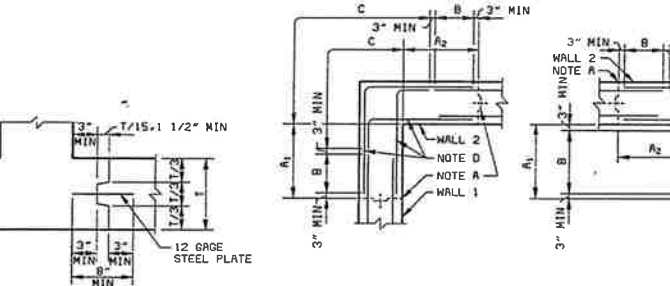


ISOLATED RE-ENTRANT CORNERS

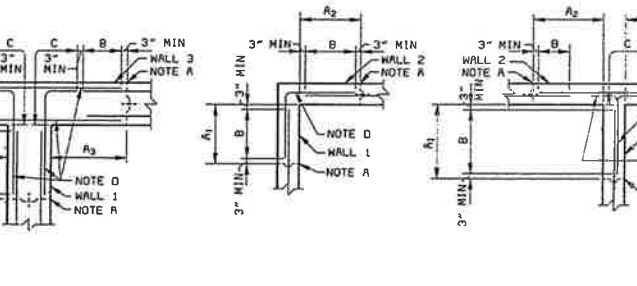
TYPICAL CONTROL JOINTS
NOTES:
1. PROVIDE 3/4\"/>



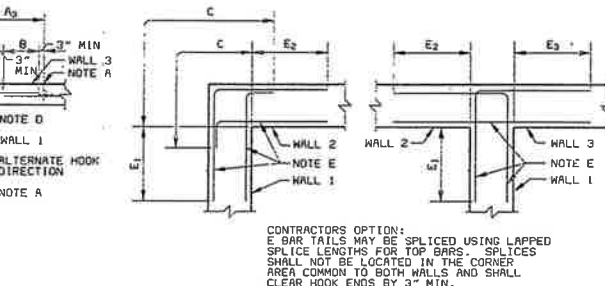
SECTION T > 12\"/>



MAIN REINFORCEMENT FOR ALL STRUCTURES



TYPICAL HORIZONTAL CORNER REINFORCING DETAILS
NOTES:
1. VERTICAL REINFORCING NOT SHOWN
2. THESE DETAILS SHALL BE APPLICABLE TO ALL WALL CORNERS UNLESS NOTED OTHERWISE ON THE DRAWINGS.



ADDITIONAL REINFORCING FOR LIQUID CONTAINMENT STRUCTURES AND DRY PIT WALLS EXPOSED TO GROUND WATER

A = VERTICAL CONSTRUCTION JOINT NEAREST TO WALL CORNER.
A_x = DISTANCE FROM INSIDE CORNER FACE TO NEAREST VERTICAL CONSTRUCTION JOINT IN SIMILARLY NUMBERED WALL. A_x SHALL NOT BE LESS THAN DIMENSIONS INDICATED BY THESE DETAILS, NOR GREATER THAN INDICATED ON PLAN DRAWINGS; BUT IN ANY CASE SHALL NOT EXCEED 30 FEET IN LIQUID CONTAINMENT STRUCTURES AND DRY PIT WALLS EXPOSED TO GROUND WATER OR 40 FEET IN OTHER STRUCTURES.
B = OPTIONAL SPLICE LOCATION UNLESS SPECIFICALLY NOTED ON PLAN DRAWINGS. SPLICE LENGTH SHALL NOT BE LESS THAN THAT REQUIRED FOR TOP BARS AS SHOWN IN TABLE ON THIS SHEET.
C = LENGTH REQUIRED FOR DEVELOPMENT OF TOP BARS AS SHOWN IN TABLE ON THIS SHEET; TERMINATING WITH NO LESS THAN A STANDARD HOOK.
D = TYPICAL CORNER REINFORCEMENT. SIZE SHALL MATCH LARGEST ADJACENT WALL HORIZONTAL REINFORCEMENT; SPACING SHALL MATCH MINIMUM ADJACENT WALL HORIZONTAL REINFORCEMENT SPACING.
E = ADDITIONAL CORNER REINFORCEMENT REQUIRED IN BOTH FACES OF LIQUID CONTAINMENT STRUCTURES AND ON BACKFILL FACE ONLY OF DRY PIT WALLS EXPOSED TO GROUND WATER. ADDITIONAL CORNER REINFORCEMENT SHALL BE OF THE SAME SIZE AND SPACING AS THE MAIN CORNER REINFORCEMENT. PLACE ADDITIONAL REINFORCEMENT ALTERNATELY WITH, AND EQUAL DISTANCE BETWEEN, MAIN CORNER REINFORCEMENT.
F_x = DISTANCE FROM INSIDE CORNER FACE TO TERMINATION OF ADDITIONAL CORNER REINFORCEMENT IN SIMILARLY NUMBERED WALL. F_x SHALL NOT BE LESS THAN 0.20 THE CLEAR SPAN DISTANCE MEASURED HORIZONTALLY BETWEEN THIS CORNER AND THE NEXT OR 0.40 THE CLEAR SPAN DISTANCE OR CANTILEVERED DISTANCE MEASURED VERTICALLY, WHICHEVER IS SMALLER, BUT NOT LESS THAN 3'-0\"/>

SPLICE & DEVELOPMENT LENGTHS

BAR SIZE	BEAMS AND COLUMNS					WALLS AND SLABS				
	LENGTH OF LAPPED SPLICES FOR REINF (INCHES)		LENGTH OF END ANCHORAGE FOR DEVELOPMENT OF REINFORCEMENT (INCHES)			LENGTH OF LAPPED SPLICES FOR REINF (INCHES)		LENGTH OF END ANCHORAGE FOR DEVELOPMENT OF REINFORCEMENT (INCHES)		
	*TOP BARS	OTHERS	*TOP BARS	OTHERS	HOOKEED BARS	*TOP BARS	OTHERS	*TOP BARS	OTHERS	HOOKEED BARS
3	21	16	16	13	6	21	16	16	13	6
4	28	22	22	17	8	28	22	22	17	8
5	35	27	27	21	10	35	27	27	21	10
6	46	36	36	25	12	46	36	36	25	12
7	63	48	48	29	14	63	48	48	29	14
8	82	63	63	35	16	117	90	63	49	16
9	104	80	80	44	18	148	114	80	62	18
10	132	102	102	56	20	189	145	102	78	20
11	162	125	125	69	22	232	178	125	97	22
14	---	---	122	94	38	---	---	243	187	38
18	---	---	178	137	50	---	---	358	274	50

* TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12\"/>

STRAIGHT BARS SIZE 7 THROUGH 11 PLACED WITH NOT LESS THAN 5 BAR DIAMETER CLEAR SPACING MAY HAVE A DEVELOPMENT LENGTH AND LAPPED SPLICE LENGTH OF 0.9 TIMES THE LENGTH SHOWN.
LAPPED SPLICE SHALL NOT BE MADE AT POINTS OF MAXIMUM STRESS AS DETERMINED BY THE ENGINEER.

CONCRETE COVER FOR REINFORCEMENT

LOCATION	MINIMUM COVER
UNFORMED SURFACES ADJACENT TO EXCAVATION	3"
FORMED OR TOP SURFACES EXPOSED TO WEATHER OR SATURATED AIR, SUBMERGED OR IN CONTACT WITH EARTH, INCLUDING STIRRUPS, TIES OR SPIRALS	2"
OTHER LOCATIONS	
BARS IN BEAMS OR COLUMNS, INCLUDING STIRRUPS AND COLUMN SPIRALS OR TIES	1 1/2"
SLABS, WALLS AND JOISTS	1 1/2"
#5 AND LARGER	3/4"
#5 AND SMALLER	3/4"

TOLERANCES FOR CONCRETE COVER AND THE FABRICATION AND PLACING OF REINFORCEMENT SHALL CONFORM TO SECTION 6.0 OF ACI 117.

GENERAL NOTE:
DETAILS ON THIS SHEET APPLY TO ALL DRAWINGS UNLESS OTHERWISE NOTED



TYPICAL CONSTRUCTION JOINTS
NOTE: REINFORCING STEEL IS CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD		MSJ		
6/24/94	BID ISSUE FOR PACKAGES 2,3 & 4		MSJ		

DESIGNED	DSB
DETAILED	MDM
CHECKED	TRZ
APPROVED	
DATE	



PROJECT NO.
25056

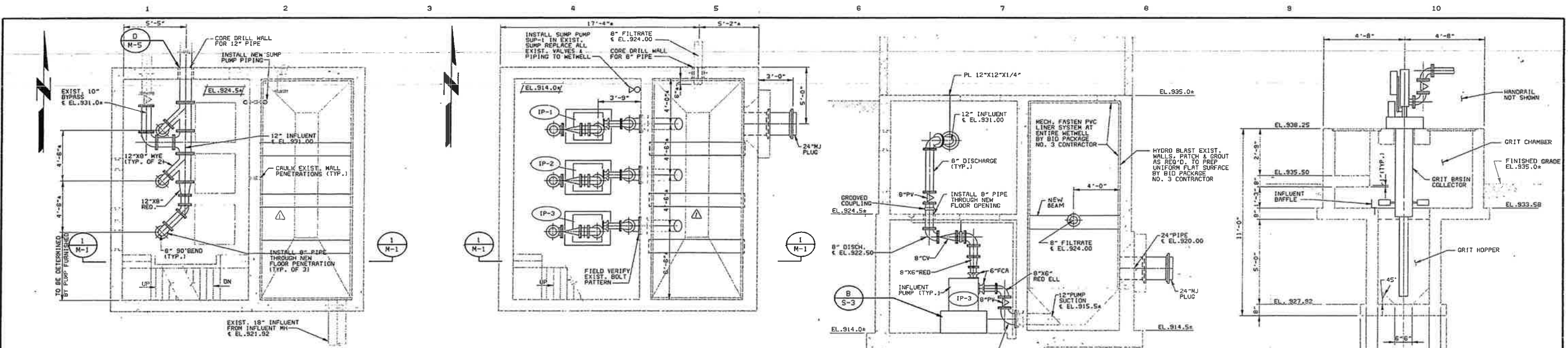
CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION

BID PACKAGE NO.3
STANDARD CONCRETE DETAILS

S-9
SHEET
19 OF 47

9-30-97

02/01/95 16:33:53 VPL
06/24/94 08:12:17 ATIS

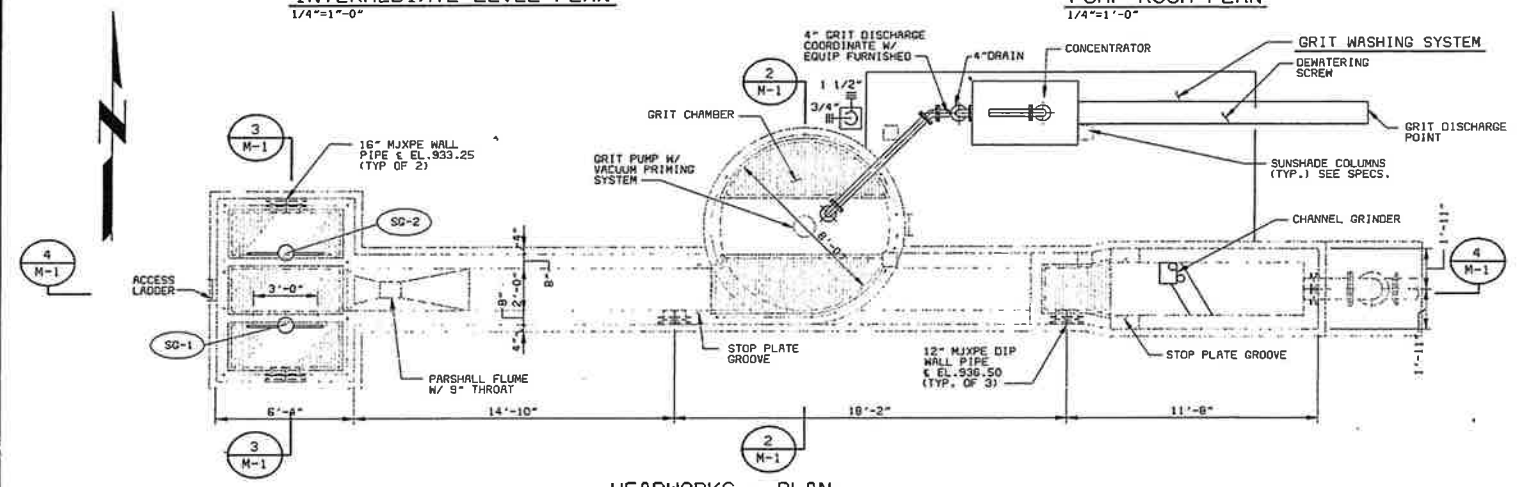


**PUMP STATION
INTERMEDIATE LEVEL PLAN**
1/4"=1'-0"

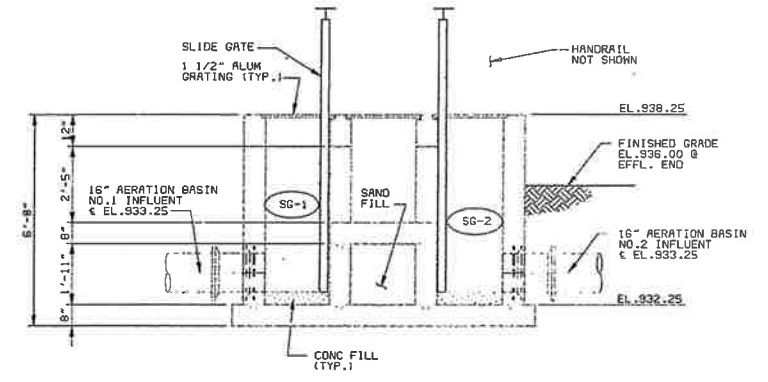
**PUMP STATION
PUMP ROOM PLAN**
1/4"=1'-0"

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

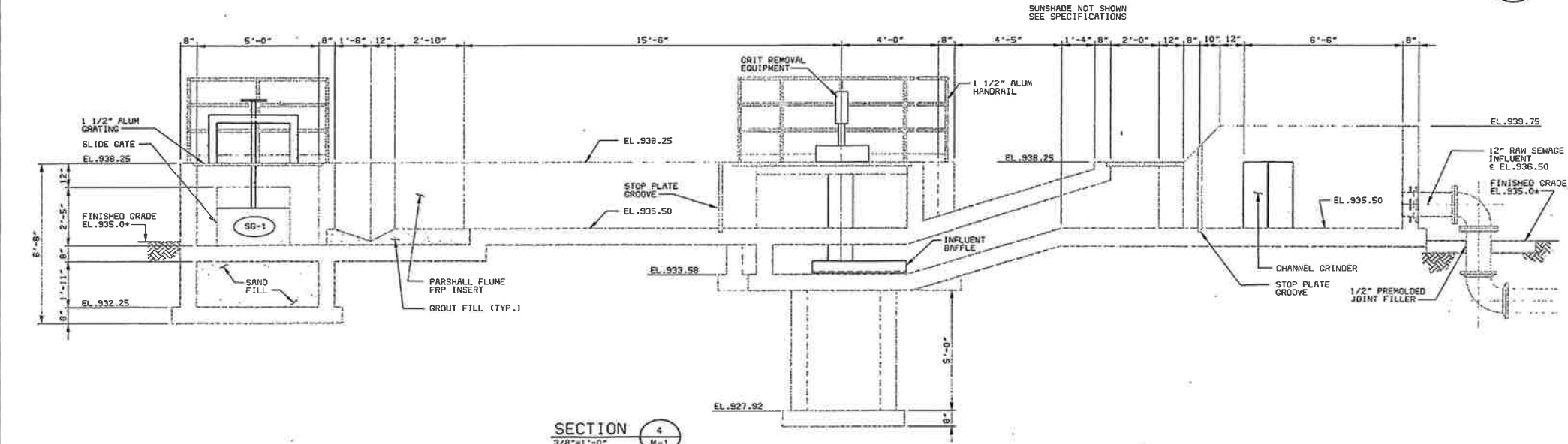
SECTION 2
3/8"=1'-0" M-1



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



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



SECTION 4
3/8"=1'-0" M-1

- NOTES:
1. ITEMS SHOWN SCREENED ARE EITHER EXIST. OR INSTALLED UNDER OTHER BID PACKAGE.
2. ALL EQUIPMENT, BUT NO ANCHOR BOLTS, WILL BE FURNISHED UNDER BID PACKAGE NO. 1. SEE SPEC. SECTION 01800.

02/01/95 VPL
06/24/94 ATIS

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD		MSJ		
6/24/94	BID ISSUE FOR PACKAGES 2,3 & 4		MSJ		

DESIGNED: DSR, RWN
 DETAILED: MSM
 CHECKED: RWN
 APPROVED: _____
 DATE: _____



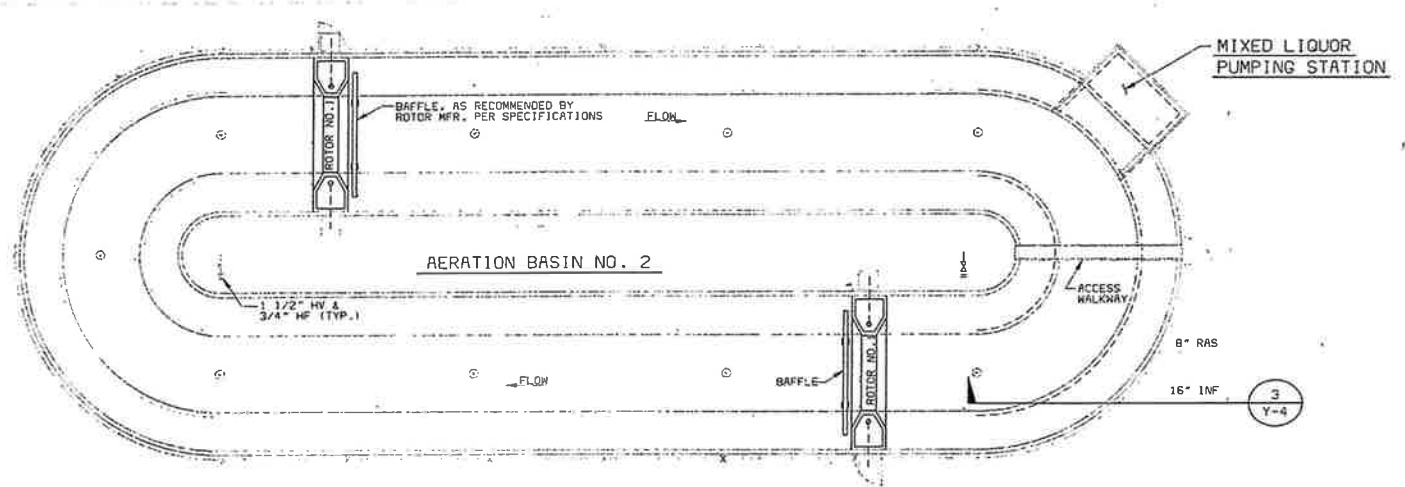
PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 4
 INFL. P.S. & HEADWORKS-MECHANICAL
 PLANS AND SECTIONS

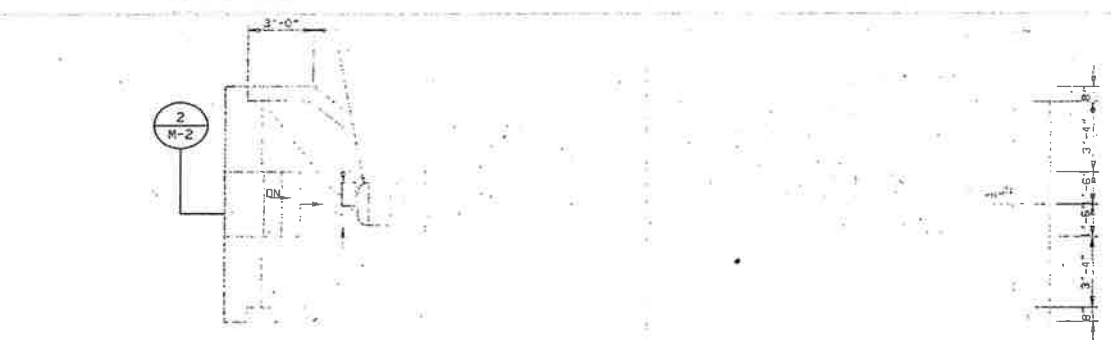


M-1
 SHEET
 20 OF 47

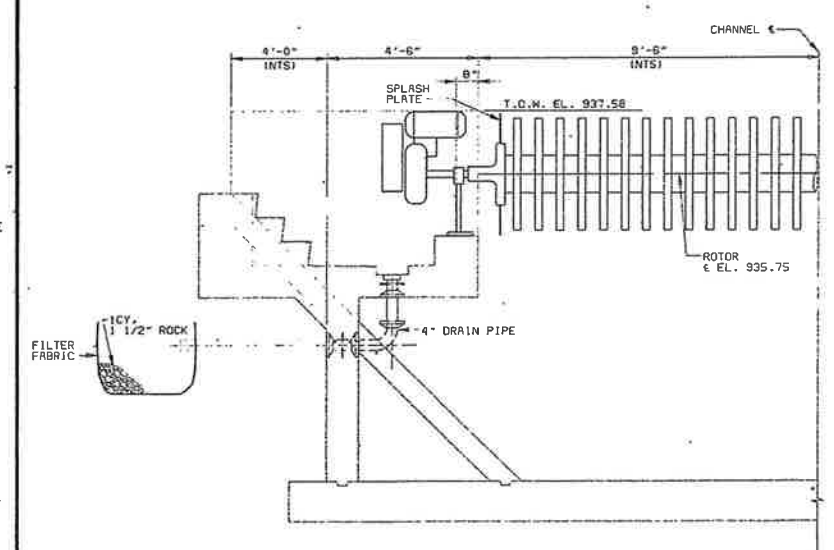
02/06/95 14150.54 MCF-R11
 25055RZ
 G1034
 F023056



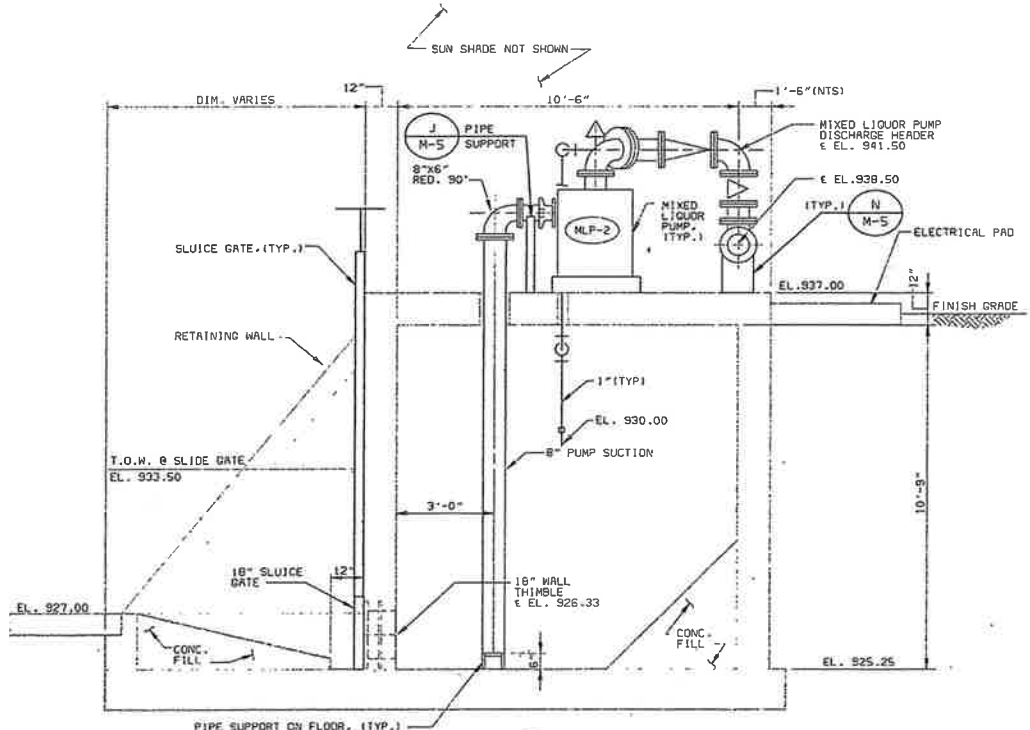
PLAN
 1" = 20'



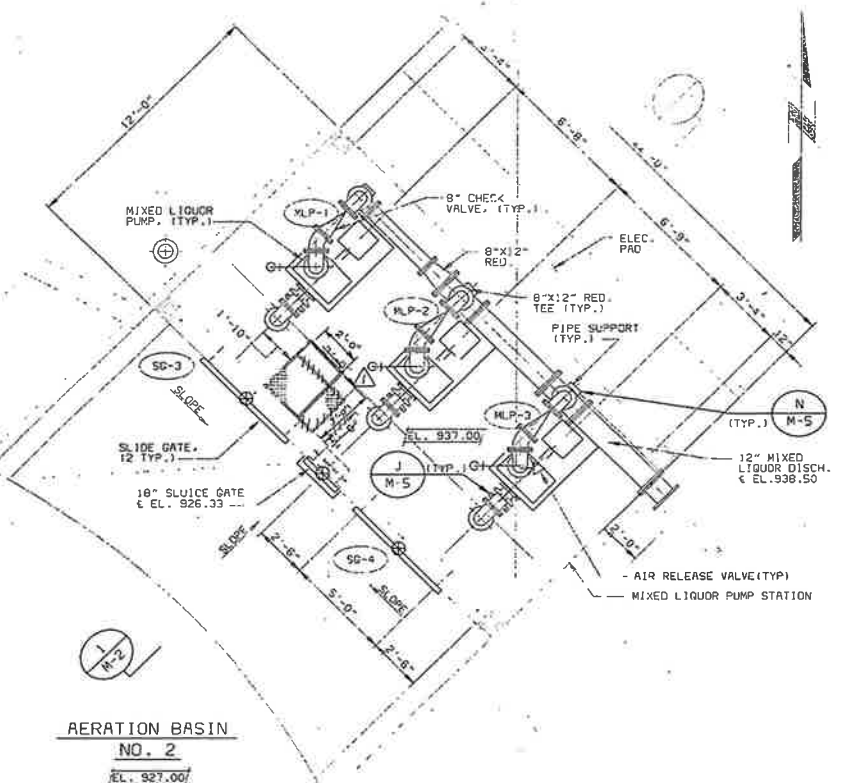
ON NORTH END.
 ON SOUTH END.



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



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



AERATION BASIN NO. 2
 EL. 927.00'

MIXED LIQUOR PUMPING STATION
 1/4" = 1'-0"

- NOTES:
1. SCREENED ITEMS WILL BE INSTALLED UNDER OTHER BID PACKAGES.
 2. COORDINATE EQUIPMENT INSTALLATION DETAILS WITH STRUCTURAL SHEETS.
 3. COORDINATE EQUIPMENT, POWER & CONTROL DETAILS WITH ELECTRICAL SHEETS.

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK.	APP.
5/20/95	CONFORM TO CONSTRUCTION RECORD		MB	MSJ	
4-24-94	BID ISSUE FOR PACKAGES 2, 3 & 4		MSJ		

DESIGNED	DSB-RMN
DETAILED	CNC
CHECKED	RMV
APPROVED	
DATE	



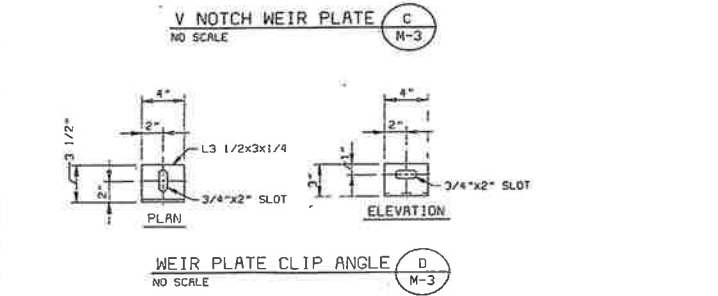
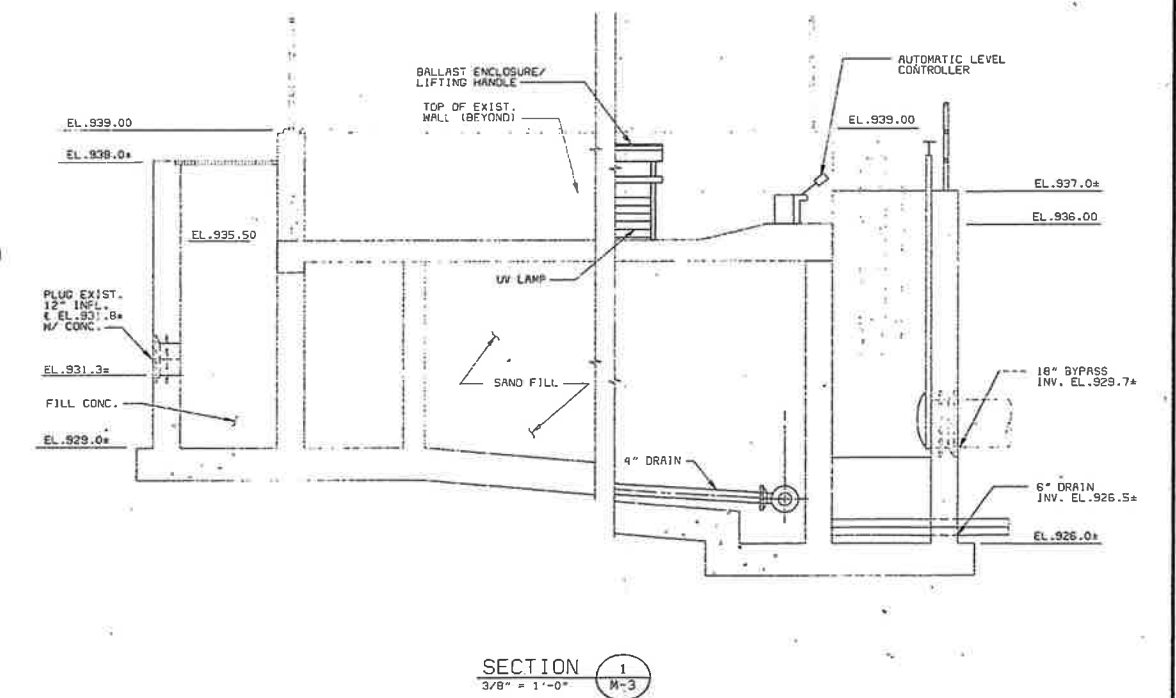
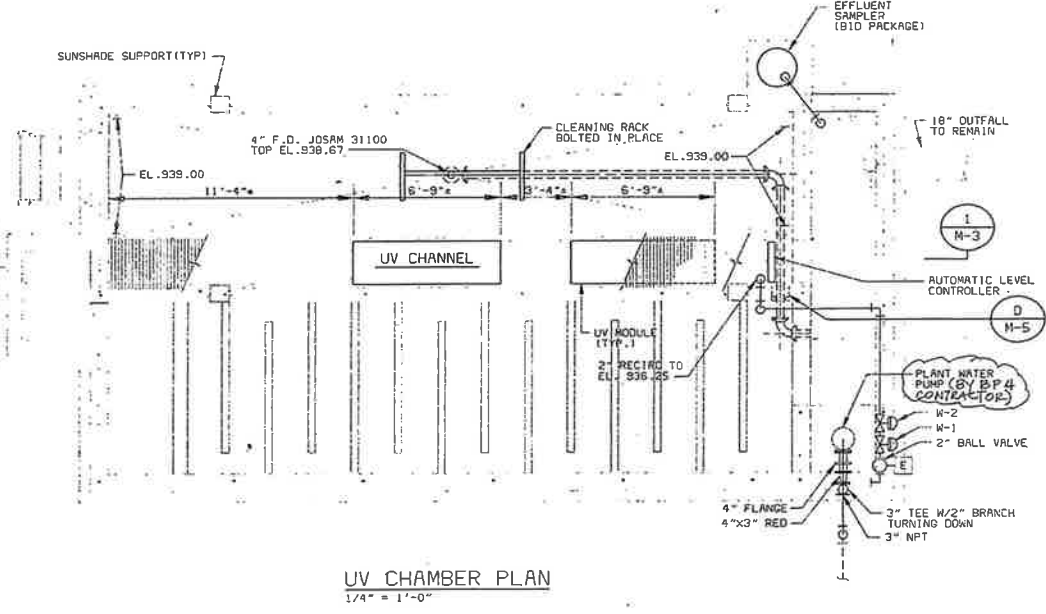
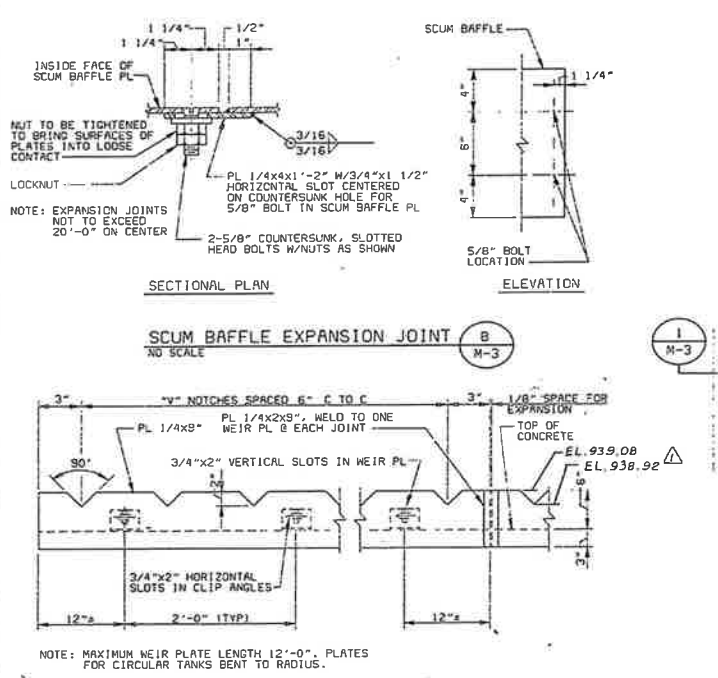
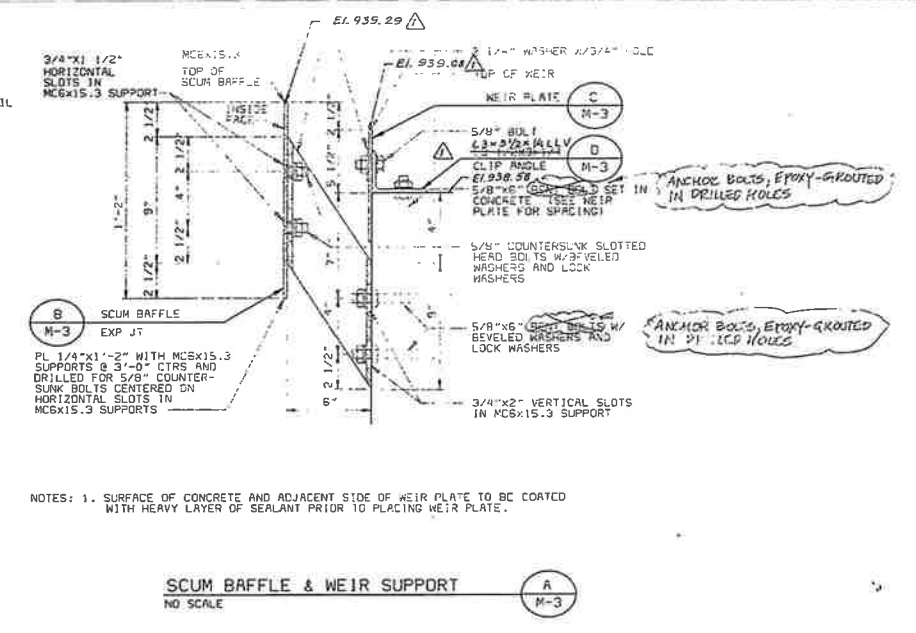
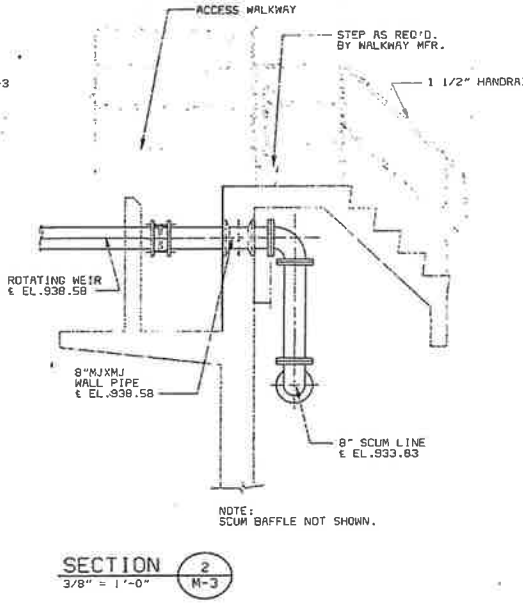
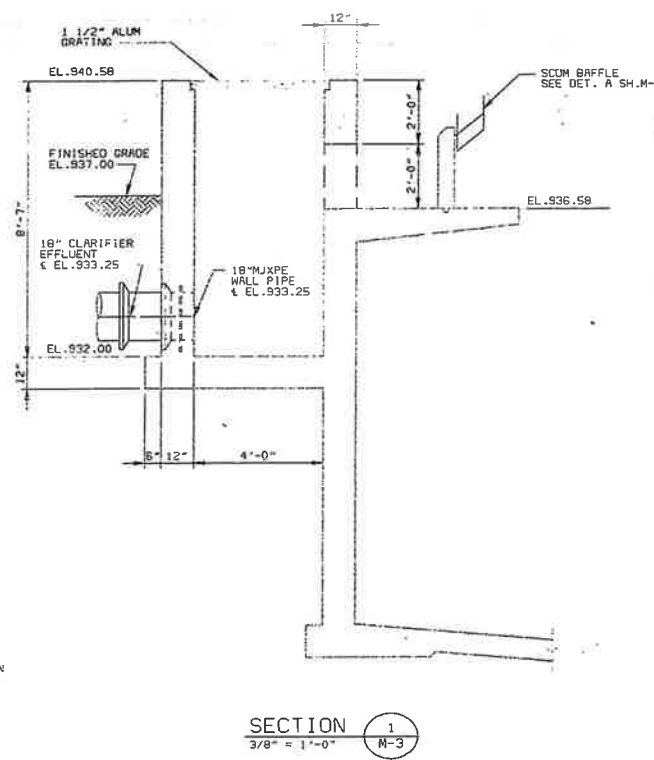
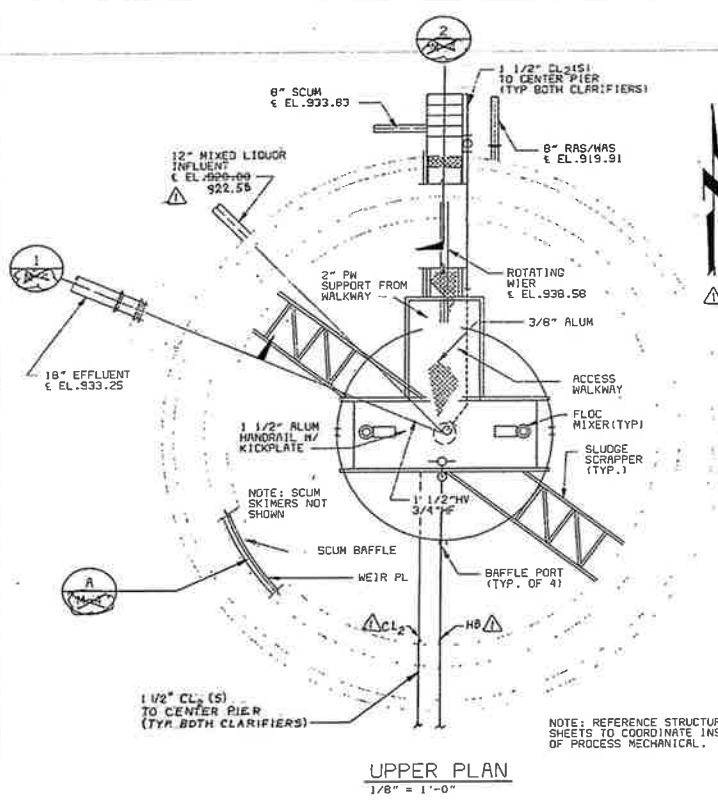
PROJECT NO.
 25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 4
 A BASIN & MIXED LIQUOR PS-MECHANICAL
 PLANS AND SECTIONS



M-2
 SHEET
 21 of 47

02/06/95 16:17:13 MOD-R11



DESIGNED	DSB, RWN	DATE	
DETAILED	NGM	DATE	
CHECKED	RMM	DATE	
APPROVED		DATE	

CONFORM TO CONSTRUCTION RECORD	MSJ
24-94 BID ISSUE FOR PACKAGES 2, 3 & 4	MSJ
REVISIONS AND RECORD OF ISSUE	MSJ

Black & Veatch
San Diego, California

PROJECT NO.
25056

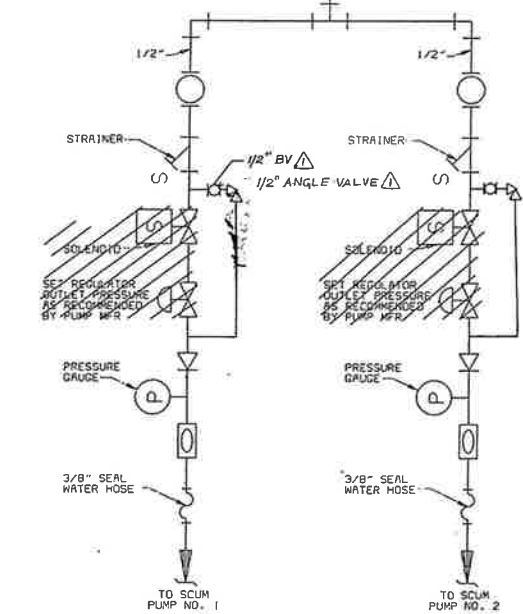
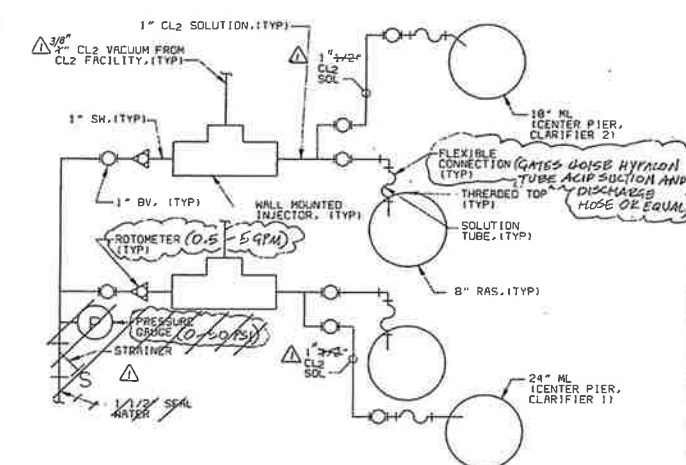
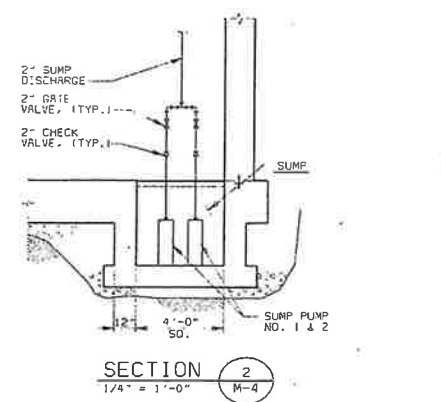
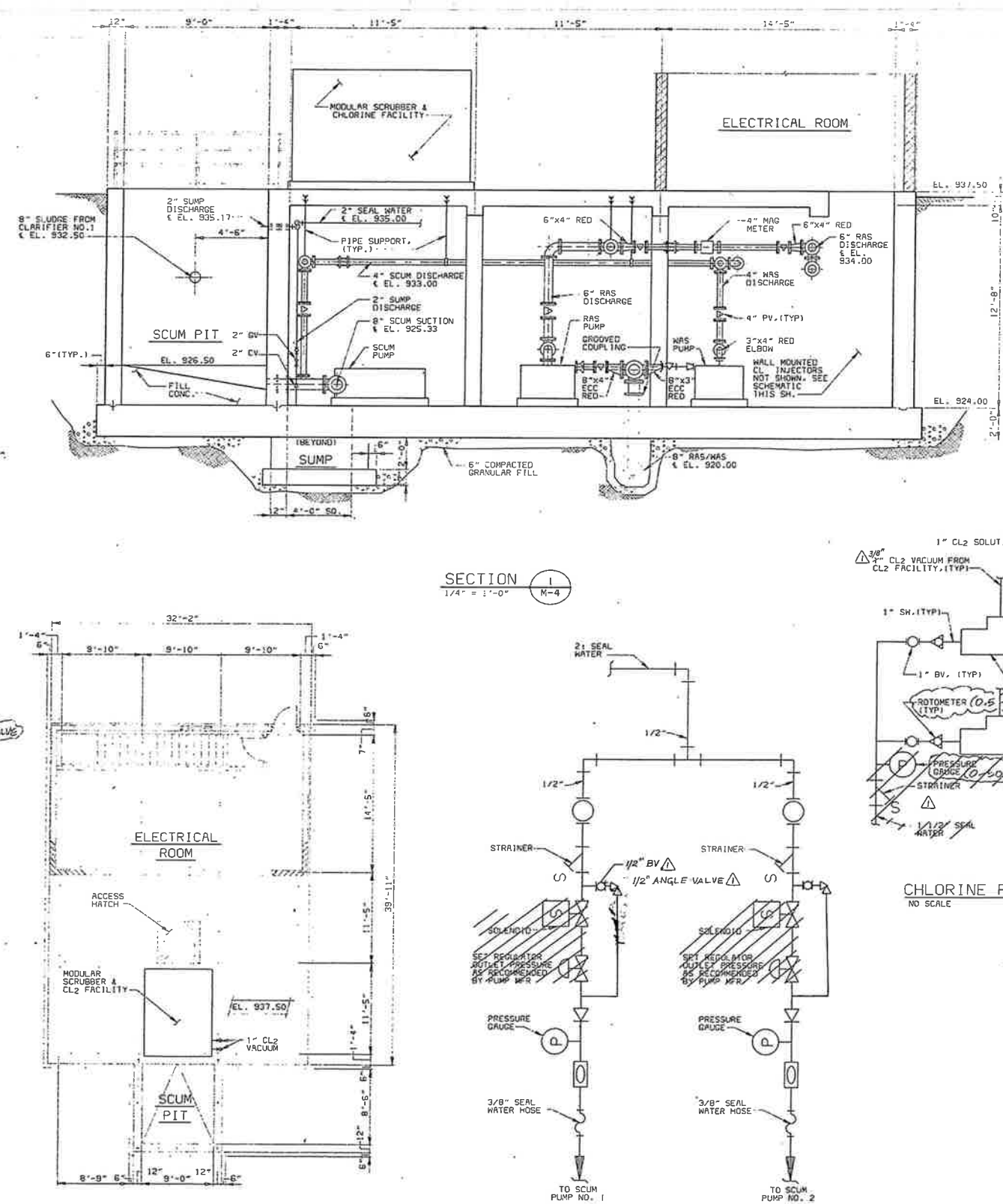
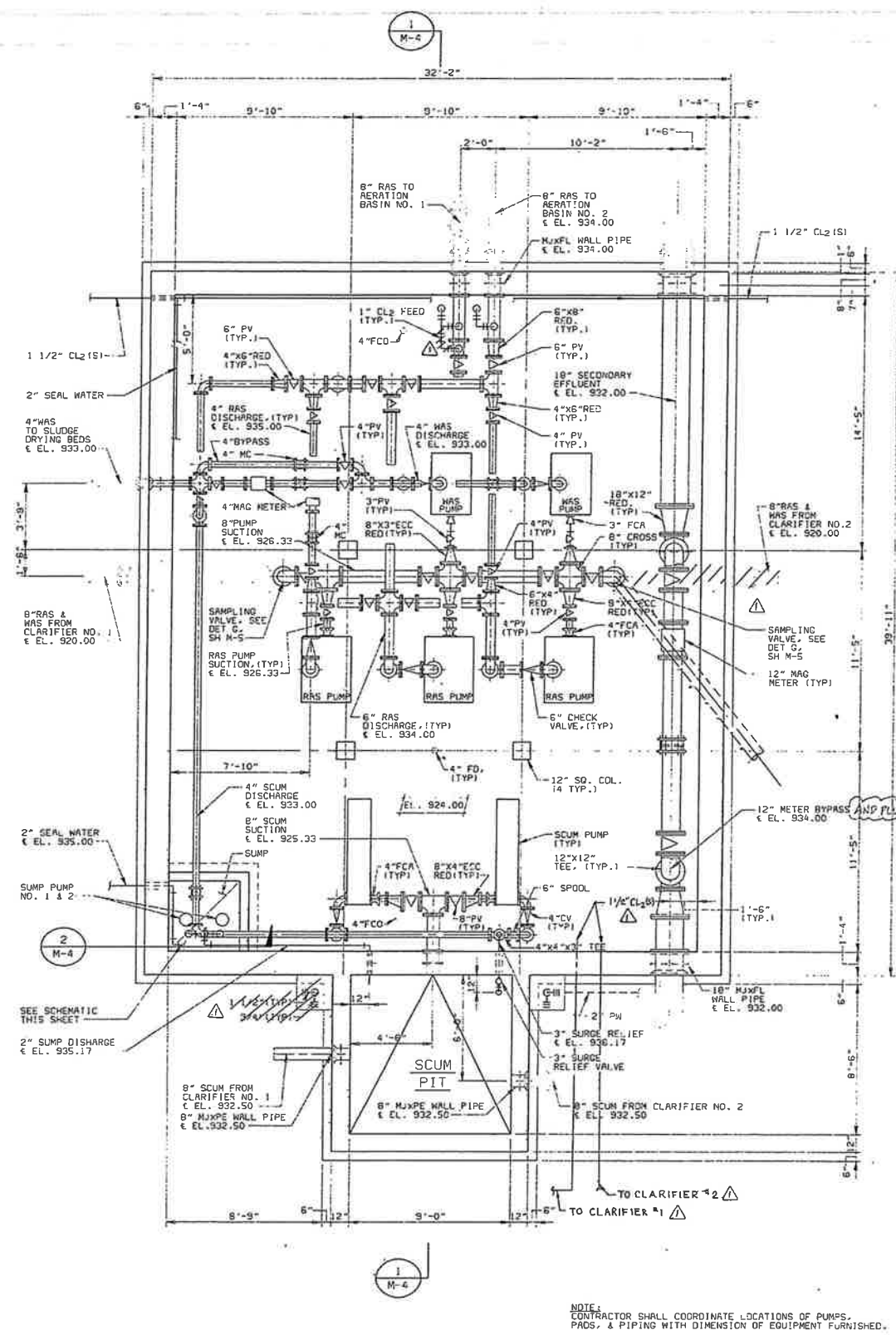
CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION
BID PACKAGE NO. 4
CLARIFIER NO. 2 & UV CHAMBER-MECHANICAL
PLANS, SECTIONS AND DETAILS



M-3
SHEET
22 OF 47

25056B3
01034
02/25/95

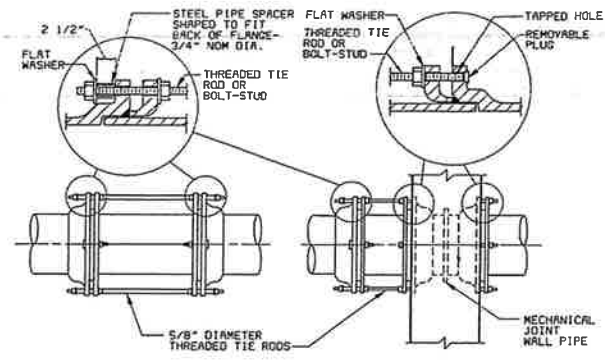
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 25056M
 G1034
 F025056



CITY OF IMPERIAL, CALIFORNIA WASTEWATER TREATMENT PLANT EXPANSION			M-4 SHEET 23 OF 47
PROJECT NO. 25056			
DESIGNED: DSB:RHW DETAILED: CHC CHECKED: RMN APPROVED: _____ DATE: _____		BID PACKAGE NO. 4 SLUDGE PUMPING STATION-MECHANICAL PLANS & SECTIONS	

5/20/95 CONFORM TO CONSTRUCTION RECORD		
DATE: _____		REVISIONS AND RECORD OF ISSUE

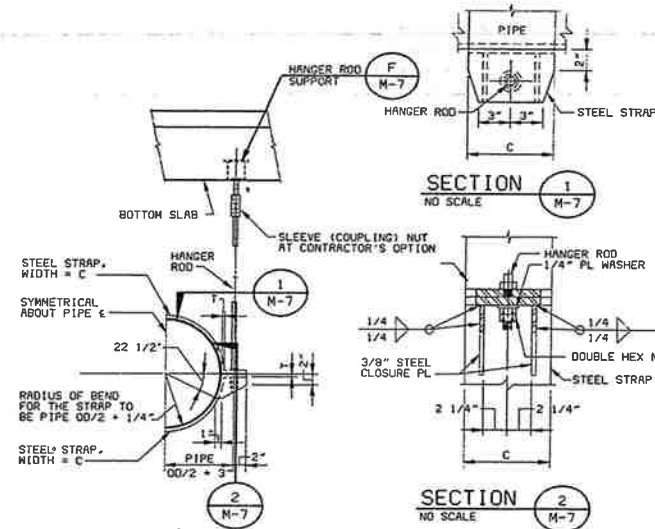
A



PIPE SIZE IN.	DESIGN PRESSURE, PSI (NOTE 3)	
	50	100
3.4 & 6	2	2
8	2	2
10	2	2
12	2	4
14	2	4
18	4	6

NOTES:
1. EXCEPT WHERE TIE RODS ARE REQUIRED, BOLTS FOR FOLLOWER RINGS SHALL BE BOLT-STUDS ON WALL PIPES AND TIE HEAD BOLTS IN OTHER LOCATIONS.
2. ALL BOLT HOLES IN WALL PIPES SHALL BE TAPPED AND SIZED FOR 5/8" RODS. WALL PIPES SHALL BE ORIENTED SUCH THAT THE BOLT HOLES STRADDLE THE TOP (SIDE IN VERTICAL PIPING) CENTERLINE.
3. DESIGN PRESSURE SHALL BE THE PRESSURE AT WHICH THE PIPE IS HYDROSTATICALLY TESTED AS SPECIFIED IN THE PIPELINE.
4. ALL TIE RODS FOR 4 TO 12" PIPE SHALL BE 5/8" DIAMETER.

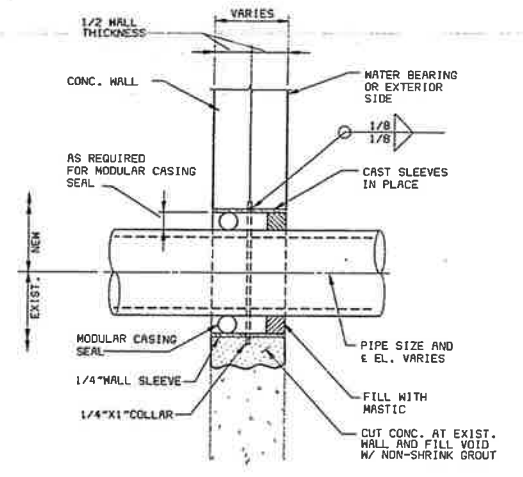
DIP MECHANICAL JOINTS WITH TIE RODS (A)
NO SCALE



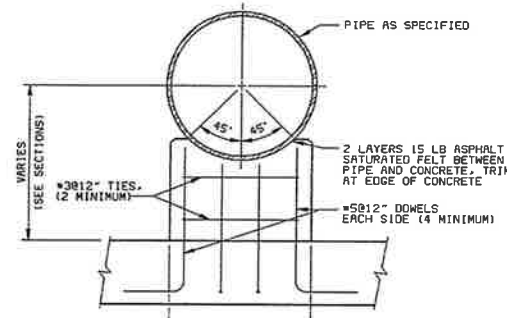
NOTES:
1. ALTERNATIVELY, A TYPE 1 PS MAY BE USED FOR A 12" PIPE.

PIPE SIZE	HANGER RODS	STRAP SIZE
18"	3/4"	5/8"x6"

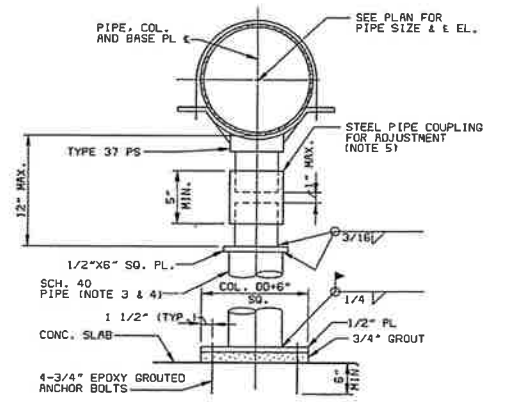
SADDLE HANGER PIPE SUPPORT (B)
NO SCALE



CONCRETE WALL OR BEAM SLEEVE (D)
NO SCALE

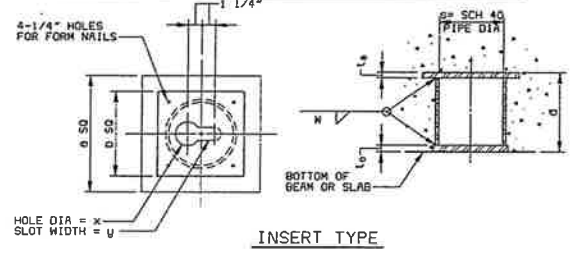


CONCRETE PIPE SUPPORT (H)
NO SCALE

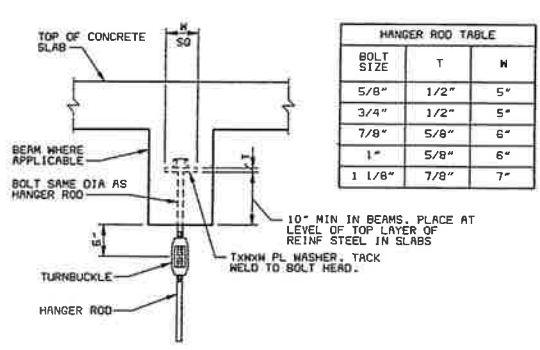


PIPE SUPPORT (J)
NO SCALE

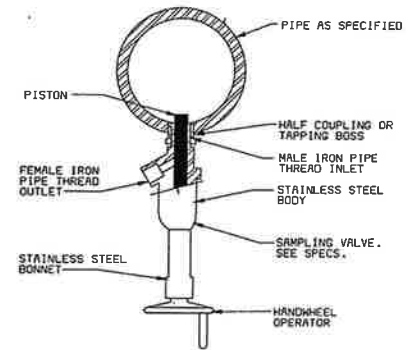
HANGER ROD SIZE	DIMENSIONS IN INCHES									
	B	L ₁	D	L ₂	Q	S	W	X	Y	Z
3/4"	7	3/8	5 1/2	1/2	5 1/2	4	1/4	1 7/16	7/8	
7/8"	9	1/2	7	5/8	7 1/2	5	3/8	1 13/16	1	
1"	9	1/2	7	5/8	7 1/2	5	3/8	1 13/16	1 1/8	
1 1/8"	11	5/8	8	3/4	9	6	3/8	2 1/4	1 1/4	



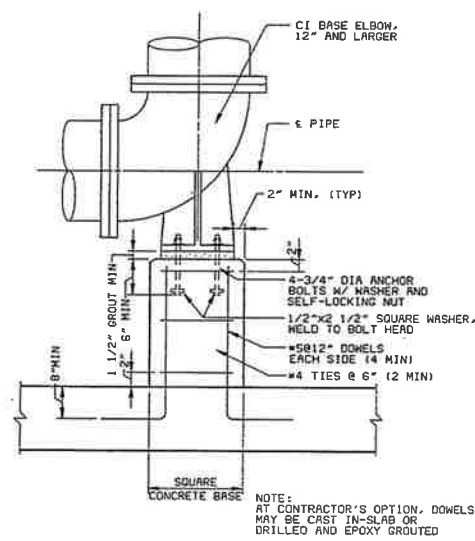
HANGER ROD SUPPORT (E)
NO SCALE



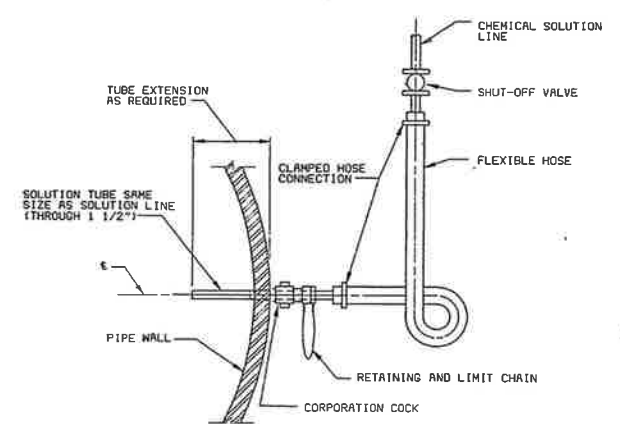
HANGER ROD SUPPORT (F)
NO SCALE



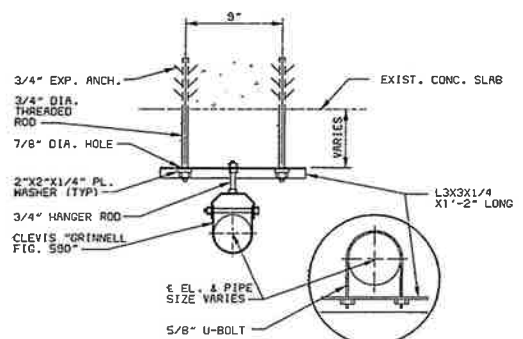
SAMPLING VALVE (G)
NO SCALE



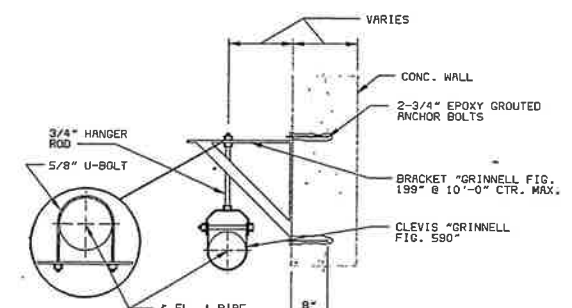
CONCRETE SUPPORT FOR BASE ELBOW OR TEE (N)
NO SCALE



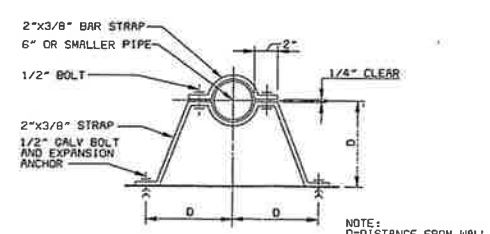
TYPICAL DIFFUSER FOR PIPES (P)
NO SCALE



DETAIL (K)
NO SCALE



DETAIL (L)
NO SCALE



VERTICAL PIPE SUPPORT (M)
NO SCALE

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
5/20/95	CONFORM TO CONSTRUCTION RECORD		MSJ		
6/24/94	BID ISSUE FOR PACKAGES 2,3 & 4		MSJ		

DESIGNED: DSB
 DETAILED: MSH
 CHECKED: BNN
 APPROVED: _____
 DATE: _____



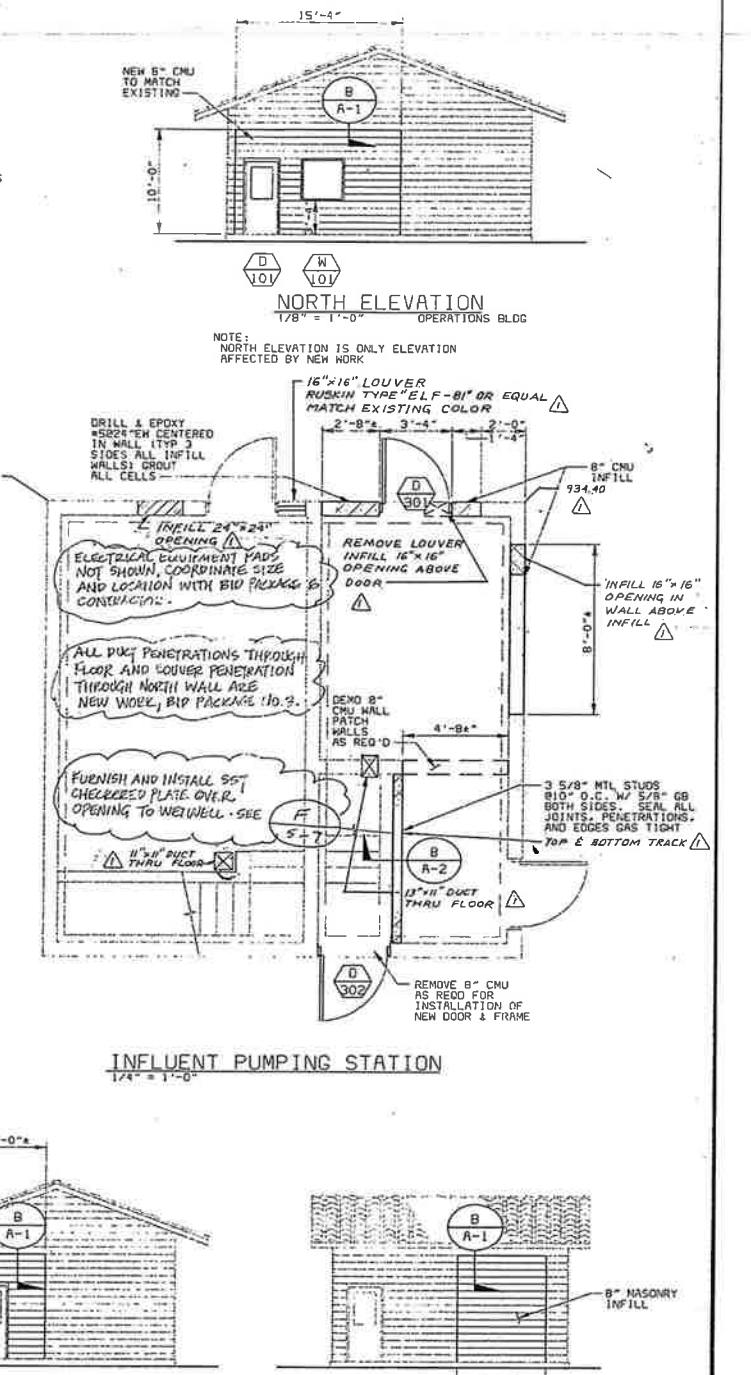
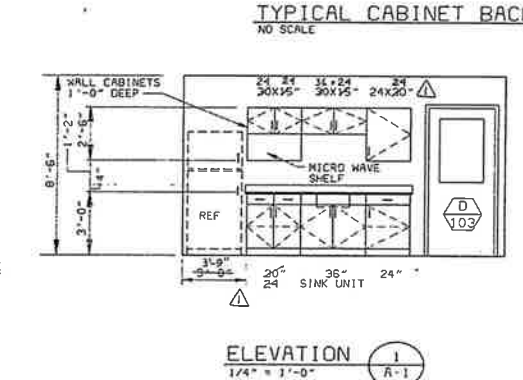
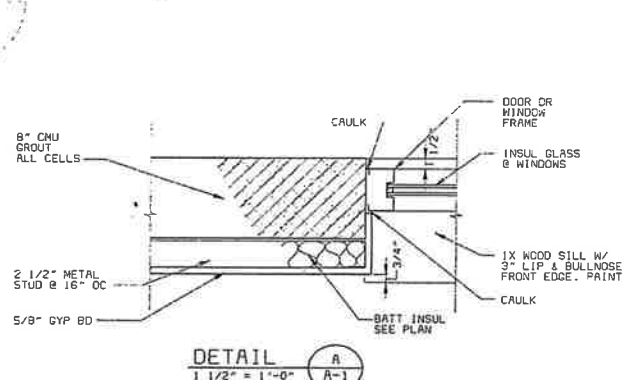
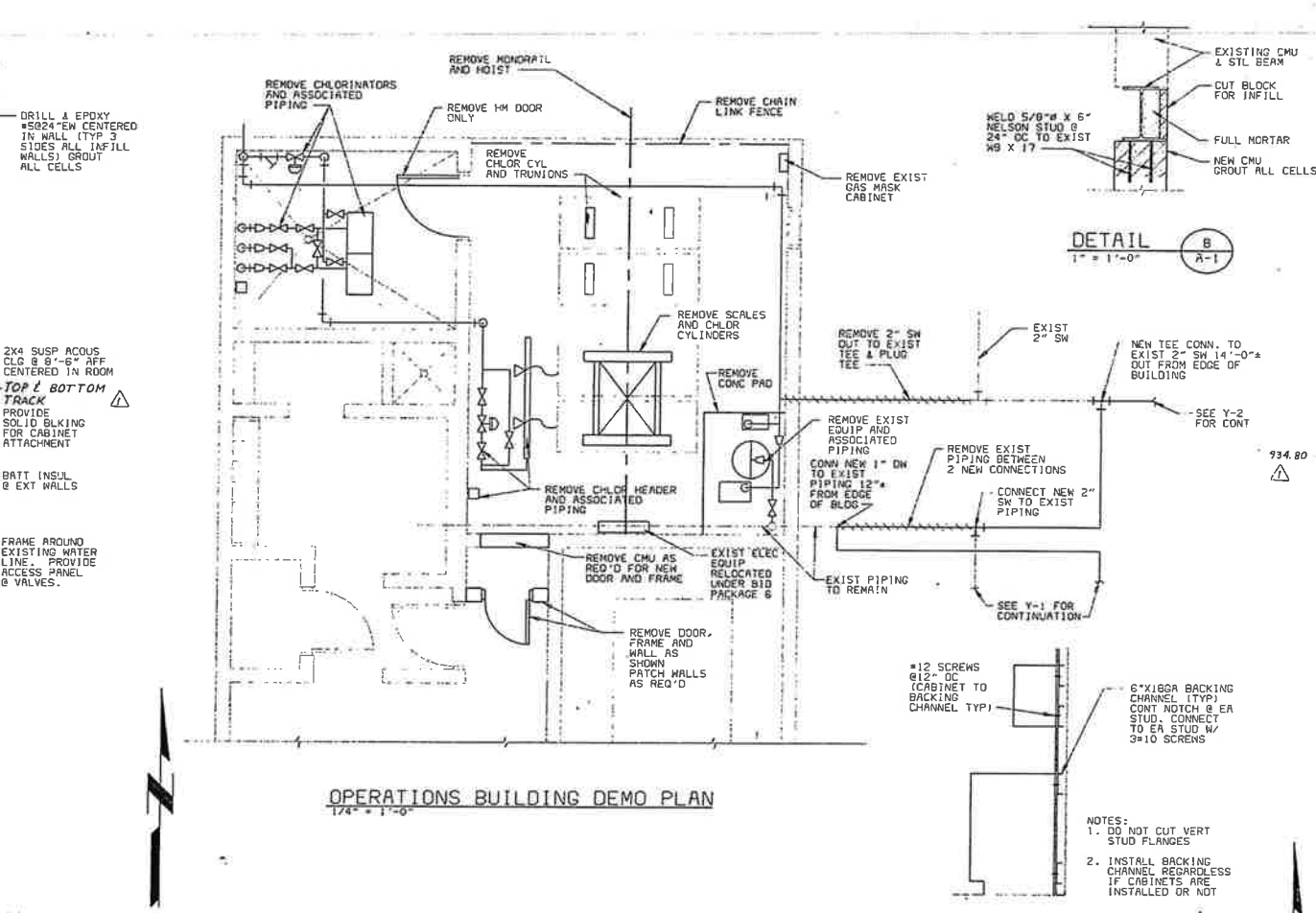
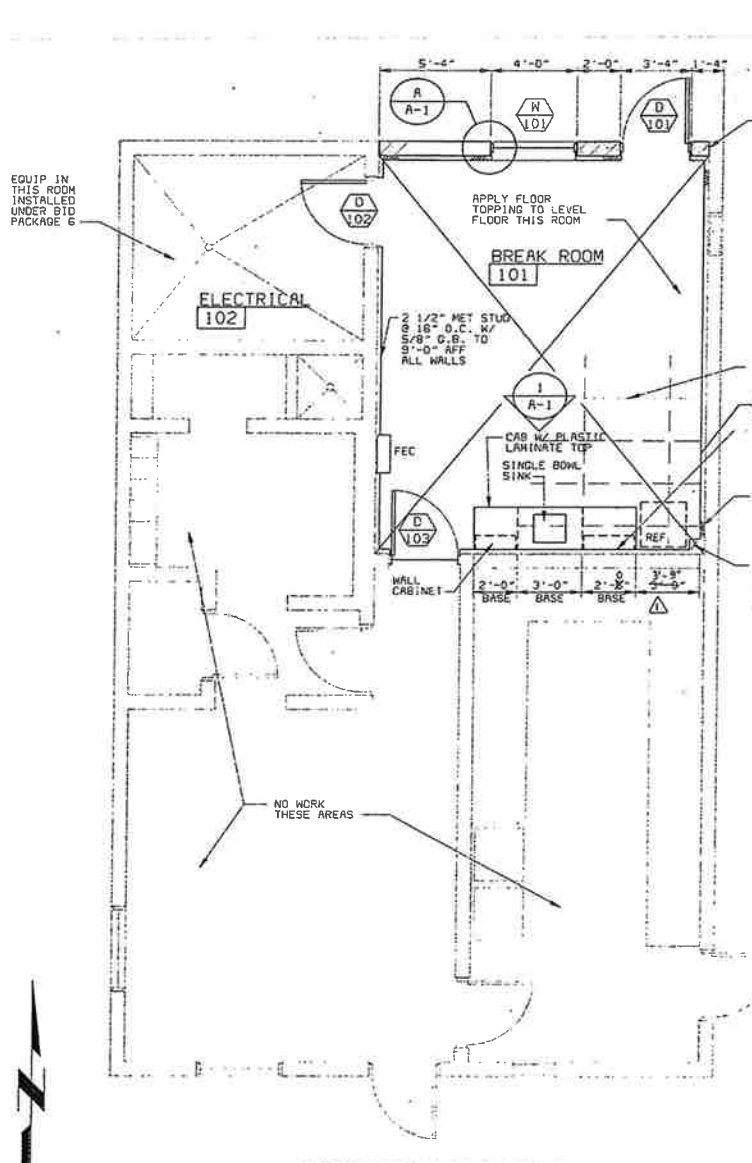
PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO.4
 STANDARD PIPING DETAILS



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 SHEET
 24 OF 47

6/21/94 2:45D WMS
 25056-A1
 01034
 F025056



ROOM FINISH SCHEDULE									
NO	ROOM NAME	FLOORS		WALLS		CEILING		HEIGHT	REMARKS
		MAT	FINISH	MAT	FINISH	MAT	FINISH		
OPERATIONS BUILDING									
101	BREAK ROOM	VCT	SEE SPEC	4" COVE	GB	PAINT	SAT	---	8'-6"
102	ELECTRICAL	---	---	---	---	PAINT	---	---	---
SLUDGE PUMPING STATION									
201	ELECTRICAL	CONC	SEALED	4" COVE	GB/CHU	PAINT	GB	PAINT	10'-0" INSTALL BASE ON GB ONLY
202	STAIRS	---	---	4" COVE	GB/CHU	PAINT	GB	PAINT	10'-0" INSTALL BASE ON GB ONLY
203	PUMP ROOM	CONC	SEALED	---	CONC	PAINT	CONC	PAINT	---
INFLUENT PUMPING STATION (SEE SH D-1)									
ALL WALLS AND CEILINGS IN EXISTING INFLUENT PUMPING STATION SHALL BE PAINTED (EXCEPT INTERMEDIATE AND LOWER GRADE LEVEL IS CONCRETE BLOCK WALLS W/ GYP BO CEILING, THE INTERMEDIATE AND LOWER LEVELS ARE CONCRETE WALLS AND CEILING. DO NOT PAINT WET WELL).									

DOOR SCHEDULE				
NO	SIZE	DOOR TYPE	ELEV	REMARKS
OPERATIONS BUILDING				
101	3'-0" x 7'-0"	HM	A	HM
102	3'-0" x 7'-0"	HM	A	EXTG HM
103	3'-0" x 7'-0"	HM	A	HM
SLUDGE PUMPING STATION				
201	3'-0" x 7'-0"	HM	A	HM
202	3'-0" x 7'-0"	HM	A	HM
EXISTING INFLUENT PUMPING STATION				
301	3'-0" x 7'-0"	HM	A	HM
302	3'-0" x 7'-0"	HM	A	HM

WINDOW SCHEDULE				
NO	SIZE	FRAME TYPE	ELEV	REMARKS
OPERATIONS BUILDING				
101	4'-0" x 4'-0"	HM	A	
DOOR & WINDOW TYPES				

LEGEND
 GB = GYPSUM BOARD
 SAT = SUSPENDED ACOUSTICAL TILE
 VCT = VINYL COMPOSITION TILE
 CHU = CONCRETE MASONRY UNIT

CONFORM TO CONSTRUCTION RECORD

DATE: _____ REVISIONS AND RECORD OF ISSUE

DESIGNED: RVS
 DETAILED: DGR
 CHECKED: RVS
 APPROVED: _____
 DATE: _____

Black & Veatch
 San Diego, California

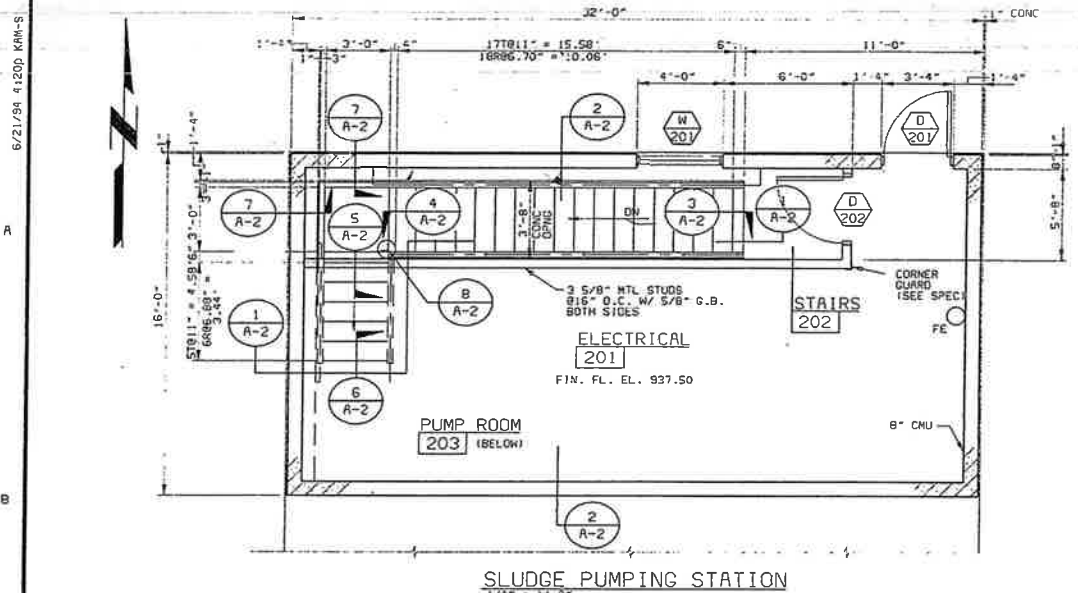
PROJECT NO. 25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION

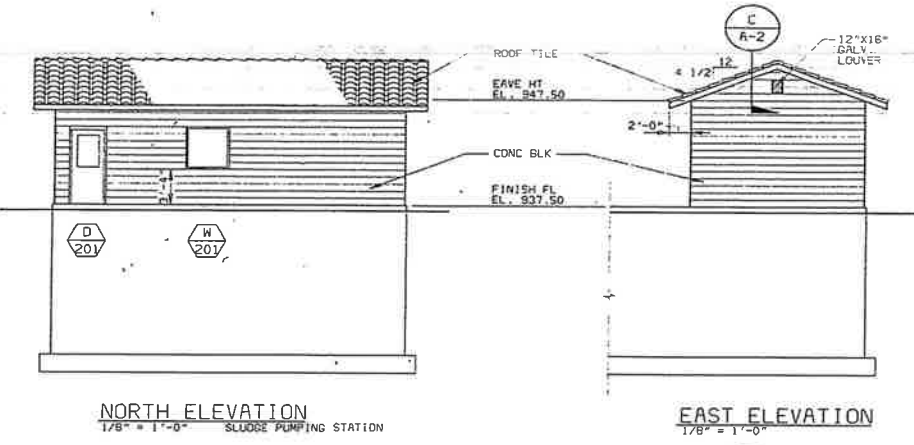
BID PACKAGE NO. 3
 OPER BUILD & INFLUENT PUMP STAT ARCH
 ELEVATIONS, PLANS AND DETAILS

PROFESSIONAL ENGINEER
 R. NELSON
 No. C 30714
 Exp. 09/31/94

A-1
 SHEET 25 OF 47

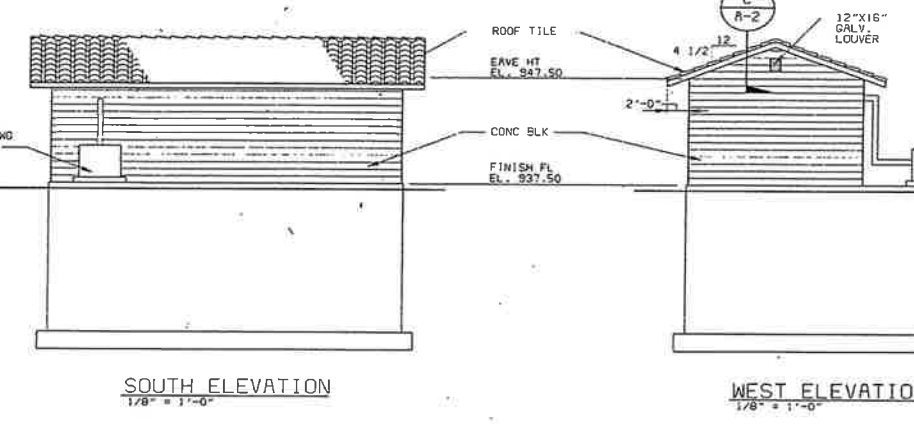


SLUDGE PUMPING STATION
1/4" = 1'-0"



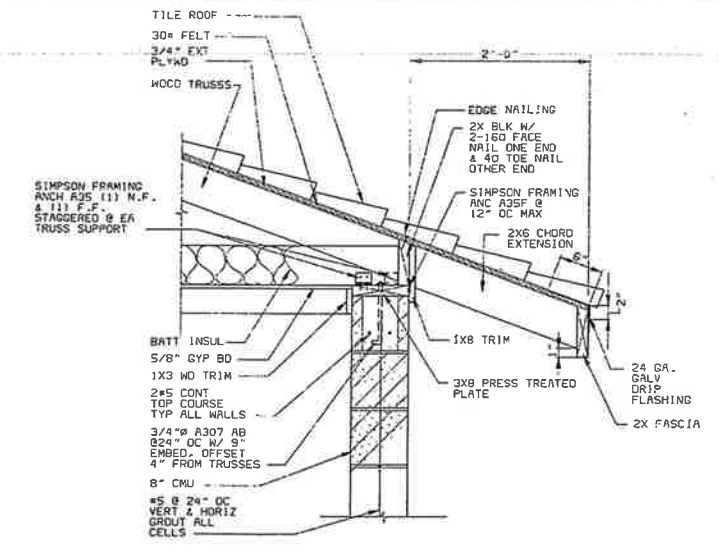
NORTH ELEVATION
1/8" = 1'-0" SLUDGE PUMPING STATION

EAST ELEVATION
1/8" = 1'-0"

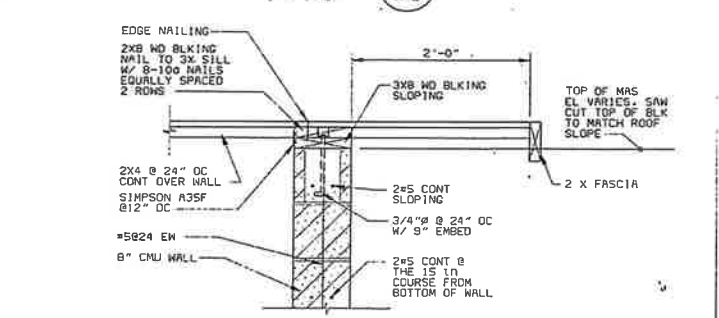


SOUTH ELEVATION
1/8" = 1'-0"

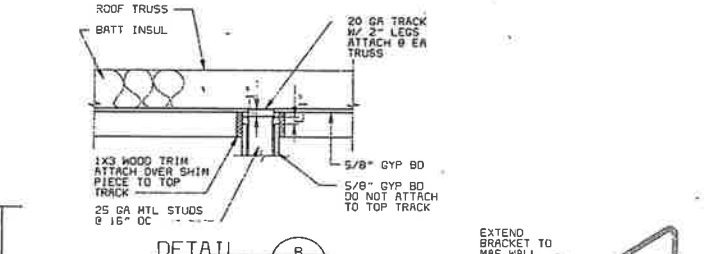
WEST ELEVATION
1/8" = 1'-0"



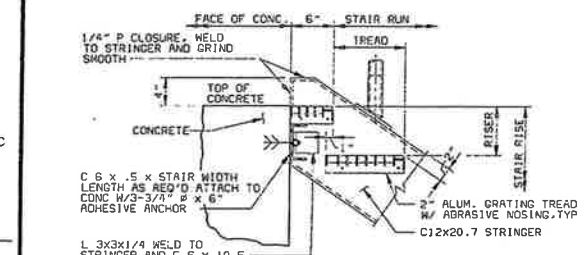
DETAIL A
1" = 1'-0"



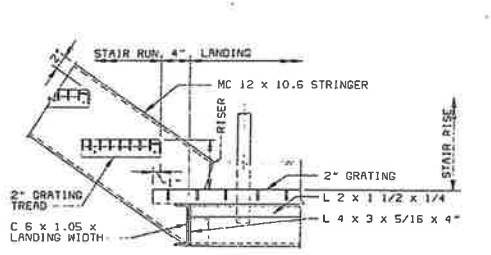
DETAIL B
1" = 1'-0"



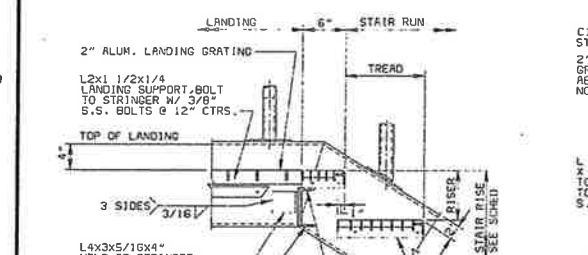
DETAIL C
1" = 1'-0"



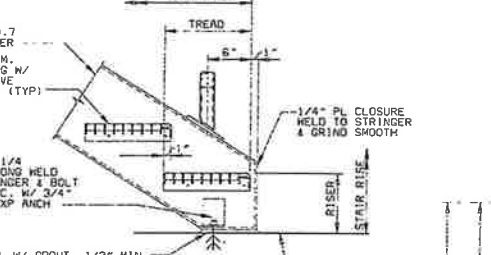
DETAIL 1
1" = 1'-0"



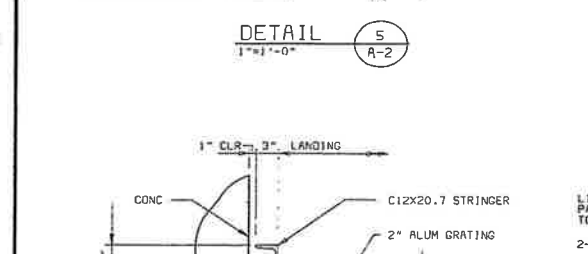
DETAIL 2
1" = 1'-0"



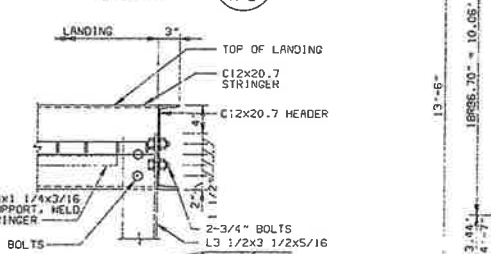
DETAIL 3
1" = 1'-0"



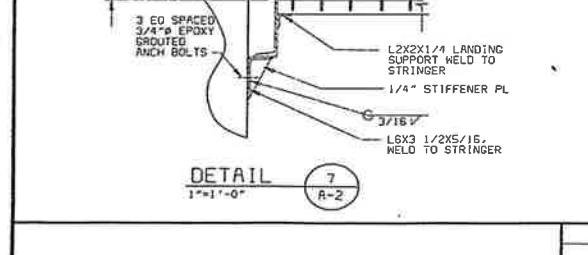
DETAIL 4
1" = 1'-0"



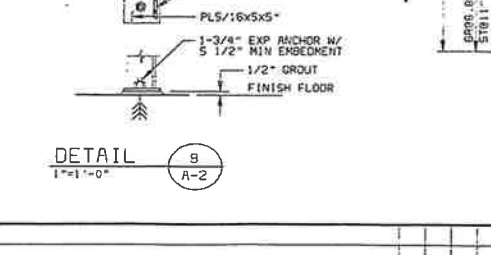
DETAIL 5
1" = 1'-0"



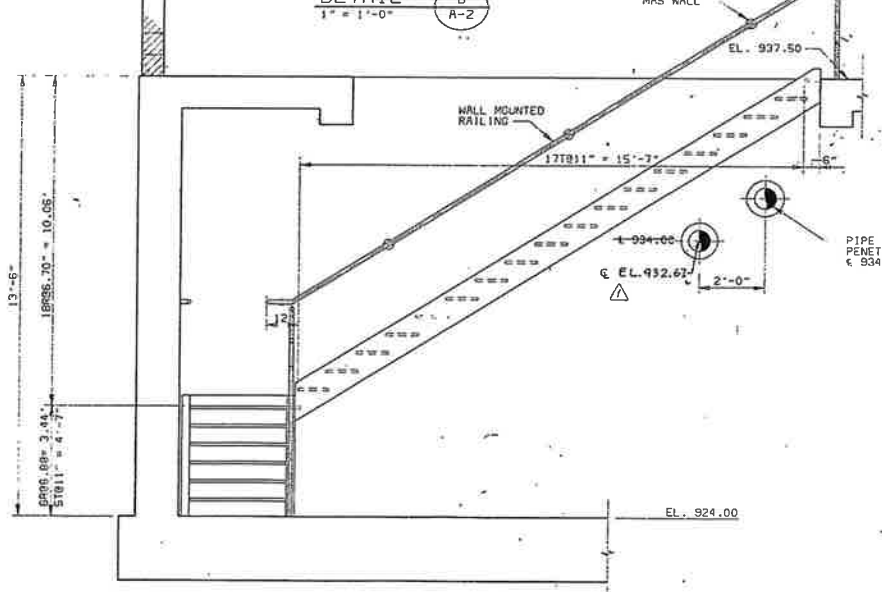
DETAIL 6
1" = 1'-0"



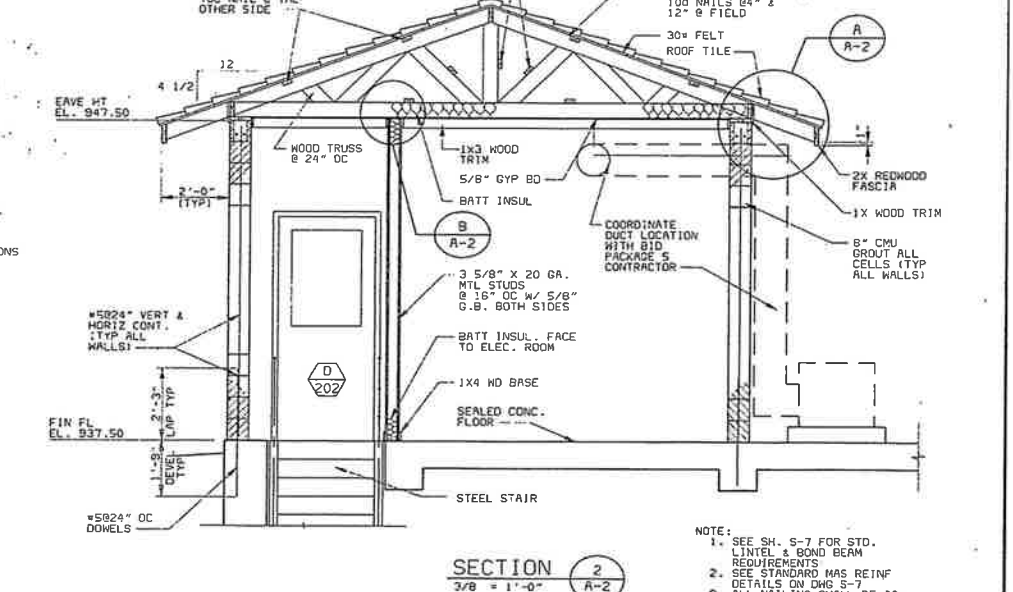
DETAIL 7
1" = 1'-0"



DETAIL 8
1" = 1'-0"



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



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

- NOTE:
- SEE SH. S-7 FOR STD. LINTEL & BOND BEAM REQUIREMENTS
 - SEE STANDARD MAS REINF DETAILS ON DWG S-7
 - ALL NAILING SHALL BE AS SHOWN, BUT NOT LESS THAN TABLE NO. 25-D ABC 1991

25055-A2
61034
6/25/05

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP.

DESIGNED: RVS
 DETAILED: DKB
 CHECKED: RVS
 APPROVED: _____
 DATE: _____



PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 3
 SLUDGE PUMPING STATION-ARCHITECTURAL
 ELEVATIONS, PLANS AND DETAILS



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 SHEET
 26 OF 47

LEGEND

GENERAL NOTES

ABBREVIATIONS

	MANUAL AIR VENT		DUCTWORK DIMENSIONS, THE FIRST DIMENSION IS THE SIDE SEEN, (L) INDICATES INTERNALLY LINED DUCTWORK, (W) INDICATES EXTERNALLY WRAPPED DUCTWORK.
	BALL VALVE		INCLINED RISE IN RESPECT TO DIRECTION OF AIRFLOW
	GATE VALVE		INCLINED DROP IN RESPECT TO DIRECTION OF AIRFLOW
	GLOBE VALVE		HUMIDIFIER
	BUTTERFLY VALVE		REGISTER, GRILLE OR DIFFUSER
	CHECK VALVE		DUCTWORK DIMENSIONS, THE FIRST DIMENSION IS THE SIDE THE LEADER LINE TOUCHES
	FLOW CONTROL VALVE		NEGATIVE PRESSURE DUCT
	FLOW SENSOR METER		POSITIVE PRESSURE DUCT
	THREE WAY VALVE		FLEXIBLE CONNECTION
	FOUR WAY VALVE		DIRECTION OF AIR FLOW
	PRESSURE REGULATING VALVE		CONTROL DAMPER
	PRESSURE REDUCING VALVE		TURNING VANES
	PRESSURE RELIEF VALVE		VOLUME CONTROL DAMPER
	PLUG VALVE		FIRE DAMPER
	REDUCER		SQUARE TO ROUND TRANSITION
	UNION		FLEXIBLE DUCTWORK
	EXPANSION COMPENSATOR		AIR FILTER
	STRAINER W/ DRAIN VALVE		SMACNA PRESSURE CLASSIFICATION (DENOTES POSITIVE PRESSURE IN INCHES WATER GAUGE)
	THERMOMETER		SMACNA PRESSURE CLASSIFICATION (DENOTES NEGATIVE PRESSURE IN INCHES WATER GAUGE)
	PRESSURE GAUGE W/SHUTOFF VALVE		THERMOSTAT WITH NUMBER
	VACUUM GAUGE W/SHUTOFF VALVE		REMOTE BULB THERMOSTAT WITH NUMBER
	SUCTION DIFFUSER		TRAP
	FLEXIBLE CONNECTION		TEMPERATURE GAUGE
	DRAIN OR BELL-UP		TEMPERATURE ELEMENT
	CAP OR PLUG		TEMPERATURE SWITCH
	CAP		PRESSURE SWITCH
	SLEEVE		LEVEL SWITCH
	QUICK COUPLING		ELECTRIC OPERATOR
	BACKWATER VALVE		SOLENOID OPERATOR
	P-TRAP		MOTOR OPERATOR
	BLENDED VALVE		FLOW SWITCH WITH NUMBER
	AUTOMATIC DRAIN TRAP		HUMIDISTAT WITH NUMBER
	ANGLE VALVE		HUMIDIFIER
	WATER HAMMER ARRESTOR W/ PLUMBING AND DRAINAGE INSTITUTE DESIGNATION		SMOKE DETECTOR WITH NUMBER
	DIELECTRIC NIPPLE		
	AUTOMATIC VALVE STATION		
	WATER METER		
	AIR FLOW MONITOR		
	LEVEL GAUGE		
	PNEUMATIC OPERATOR		
	AIR/OIL CYLINDER OPERATOR		
	FILTER		
	FILTER/SEPARATOR		
	REFRIGERANT PIPING		
	POTABLE COLD WATER PIPING		
	POTABLE HOT WATER PIPING		
	SOIL OR WASTE PIPING ABOVE FLOOR		
	SOIL OR WASTE PIPING BELOW FLOOR		
	VENT PIPING		

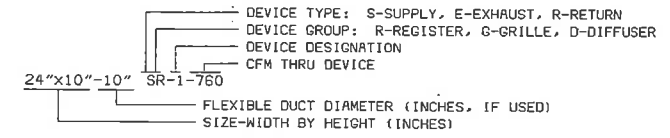
- THIS IS A GENERAL LEGEND SHEET. SOME LEGEND ABBREVIATIONS MAY NOT BE USED ON THIS SPECIFIC PROJECT.
- SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL EQUIPMENT BASE DETAILS.
- INSTALL ALL HEATING VENTILATING AND AIR CONDITIONING EQUIPMENT AND DUCTWORK TO AVOID INTERFERENCES WITH STRUCTURE, PIPING, EQUIPMENT, CONDUIT, ETC. UNLESS OTHERWISE INDICATED WITH A BOTTOM OF DUCT ELEVATION, ALL DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE. MINIMUM HEIGHT SHALL BE 8'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- DUCTWORK SHALL BE FABRICATED, REINFORCED, SUPPORTED, AND SEALED FOR OPERATING PRESSURES INDICATED IN THE SCHEDULES FOR THE EQUIPMENT IT SERVES. ALL DUCTWORK SHALL HAVE A MINIMUM SMACNA PRESSURE CLASSIFICATION OF ONE INCH.
- DUCT SIZES INDICATED ARE CLEAR DIMENSIONS INSIDE THE DUCT OR DUCT LINING. SHEET METAL SIZES ARE LARGER FOR INTERNALLY LINED DUCTWORK.
- AIRTIGHT ACCESS DOORS SHALL BE PROVIDED TO ALLOW INSPECTION OF ALL FIRE DAMPERS, CONTROL DAMPERS, FILTERS, AND DUCT MOUNTED HEATING COILS. THE ACCESS DOORS SHALL BE OF A SIZE SUITABLE FOR THE DUCTWORK DIMENSIONS.
- FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-0" IN LENGTH.
- THE LOCATION OF PIPING AND VALVES TO THE AIR HANDLING EQUIPMENT SHALL NOT INTERFERE WITH FILTER REMOVAL OR AIR HANDLING EQUIPMENT SERVICING.
- DUCT CONNECTIONS TO EQUIPMENT, PIPING SIZES TO EQUIPMENT, AND EQUIPMENT SUPPORTS SHALL BE VERIFIED AND ADJUSTED TO MATCH ACTUAL EQUIPMENT FURNISHED.
- BLANK OFF UNUSED LOUVER AREA WITH INSULATED ALUMINUM PANEL.
- ALL HANDERS, BRACKETS OR BRACES FOR DUCTWORK AND PIPING ARE NOT INDICATED ON THE DRAWINGS. REFER TO THE SPECIFICATIONS FOR SUPPORT REQUIREMENTS NOT SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING EQUIPMENT, DUCTWORK, AND PIPING SUPPORTS AND VERIFYING THAT THE SUPPORTS MEET ALL REQUIREMENTS OF LOCAL CODES AND SEISMIC CONDITIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE SIZE AND LOCATION OF EXISTING DUCTWORK TO ENSURE COMPATIBILITY WITH NEW DUCTWORK.
- THE CONTRACTOR SHALL DETERMINE REFRIGERANT PIPE SIZES FOR COMPATIBILITY WITH AIR CONDITIONING EQUIPMENT FURNISHED.
- DIFFUSERS WITHOUT BALANCE DAMPERS INSTALLED IN THE DUCT TAKE-OFFS SHALL HAVE AN OPPOSED BLADE DAMPER MOUNTED IN THE THROAT OF THE DIFFUSER.

A	ALARM, COMPRESSED AIR OUTLET, COMPRESSED AIR PIPING
AC	AIR COMPRESSOR, ACETYLENE PIPING
AD	AIR DRYER, ACCESS DOOR
AE	AVERAGING ELEMENT
AF	AIR FLOW, AIRFOIL
AFC	AFTERCOOLER
AFD	ADJUSTABLE FREQUENCY DRIVE
AFI	ABOVE FINISH FLOOR
AFM	AIR FLOW MONITOR
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
AP	ACCESS PANEL
APPROX	APPROXIMATE
AR	AIR RECEIVER, ARGON PIPING
AS	AIR SEPARATOR
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
ATU	AIR TERMINAL UNIT
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AVERTIC RESISTANT VENT
AVG	AVERAGE
AW	CHEMICAL RESISTANT WASTE
B	BELT DRIVE, BLOW THROUGH
BDD	BACKDRAFT DAMPER
BF	BLIND FLANGE
BFF	BELOW FINISH FLOOR
BFP	BASEBOARD HEATER
BH	3/4" BLENDING HOSE VALVE
BHV	BUILT-IN THERMOSTAT, BACKWARD INCLINED
BL	BELOW LEVEL
BLDG	BUILDING
BDD	BOTTOM OF DUCT ELEVATION
BOT	BOTTOM
BTUH	BRITISH THERMAL UNITS PER HOUR
BU	BELL-UP
C	CONVECTOR, COOLING (MAKE ON RISE), COOLING, CHANNEL
CA	COMPRESSED AIR
CAU	CARBON ADSORPTION UNIT
CB	CENTRIFUGAL BLOWER
CB	COUNTERBALANCE BACKDRAFT DAMPER
CC	CARBON CANISTER UNIT
CCU	CONTROL DAMPER
CD	CONDENSER WATER PUMP
CDMP	CONDENSER WATER RETURN
CDWR	CONDENSER WATER SUPPLY
CDS	CENTRALINE
E	CENTRIFUGAL
CF	CABINET FAN
CFM	CUBIC FEET PER MINUTE
CFF	CHEMICAL FEED PUMP, CAUSTIC FEED PUMP
CH	CABINET HEATER, CONVECTION HEATER
CH	CHEROUT
COM	COMPRESSOR
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUATION
CRV	CHEMICAL RESISTANT VENT
CRW	CHEMICAL RESISTANT WASTE
CSW	CHEMICAL SOLUTION WATER
CT	COILING TONGUE
CU	CONDENSING UNIT
CV	CHECK VALVE, CONTROL VALVE
CWD	POTABLE COLD WATER
CWD	COILING WATER DISCHARGE
CWET	CHILLED WATER EXPANSION TANK
CWP	CHILLED WATER PUMP
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY, COOLING WATER SUPPLY
D	DEHUMIDIFIER, DIRECT DRIVE, DRAW-THRU, SUMP PUMP DISCHARGE
DDC	DIRECT DIGITAL CONTROL
DF	DUCT FAN, DRINKING FOUNTAIN
DH	DEHUMIDIFIER
DIA	DIAMETER
D	DIAMETER
DM	DUCT MOUNTED
DN	DOWN
DPG	DIFFERENTIAL PRESSURE GAUGE
DPS	DIFFERENTIAL PRESSURE SWITCH
DW	DISTILLED WATER
DWG	DRAWING
DX	DIRECT EXPANSION
E	ELECTRIC, ELECTRIC OPERATOR, EXHAUST
EA	EXHAUST AIR, EACH
EAT	ENTERING AIR TEMPERATURE
EC	EVAPORATIVE COOLER
ECH	ELECTRIC CABINET HEATER
ED	EXHAUST DIFFUSER
EDH	ELECTRIC DUCT HEATER
EM	EMERGENCY EYE WASH
EM	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
EHC	ELECTRIC HEATING COIL
EIH	ELECTRIC INFRARED HEATER
EL	ELEVATION
EQUIP	EQUIPMENT
ER	EXHAUST REGISTER
ES	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE (INCHES WATER GAUGE)
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWT	ENTERING WATER TEMPERATURE

F	DEGREES FAHRENHEIT
FA	OFF AUTO SWITCH
FBD	FACE AND BYPASS DAMPER
FC	FORWARD CURVED
FCO	FLOOR CLEANOUT
FD	FIRE DAMPER, FLOOR DRAIN
FDB	DEGREES FAHRENHEIT DRY BULB
FLEX	FLEXIBLE
FFW	FEET PER MINUTE
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FLOW SWITCH
FT	FIN TUBE HEATER, FEET, FLOW TUBE
FWB	DEGREES FAHRENHEIT WET BULB
G	NATURAL GAS, GAS OUTLET
GA	GAUGE
GALV	GALVANIZED
GD	GUTTER DRAIN
GDF	GAS DUCT FURNACE
GEN	GENERATOR
GIH	GAS INFRARED HEATER
GPM	GALLONS PER MINUTE
GUH	GAS UNIT HEATER
GV	GATE VALVE
H	HEATING, HEATING (MAKE ON FALL), HORIZONTAL, HUMIDISTAT, HEIGHT, HAND OPERATOR, HYDROGEN
HC	HEATING COIL, HAND CRANK
HE	HEAT EXCHANGER, HELIUM
HF	3/4" HOSE FLUCEL
HFP	HYPOCHLORITE FEED PUMP
HHP	HEAT PUMP, HORSEPOWER
HR	HEAT RECOVERY UNIT, HOUR
HUH	HEATING UNIT HEATER
HUM	HUMIDIFIER
HV	1 1/2" HOSE VALVE
HMB	POTABLE HOT WATER
HMB	HEATING WATER BOILER
HMC	POTABLE HOT WATER CIRCULATING
HNP	HEATING WATER PUMP
HNR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
HZ	HERTZ
I	INTAKE
IBR	INTAKE OF BOILER AND RADIATOR MANUFACTURERS
ID	INSIDE DIAMETER
IH	INTAKE HOOD
IN	INCHES
INV	INVERT
KW	KILOWATT
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LB	POUNDS
LD	COMBINATION LOUVER/DAMPER
LI	LEVEL INDICATOR
LPG	LIQUIFIED PETROLEUM GAS VAPOR
LPL	LIQUIFIED PETROLEUM GAS LIQUID
LS	LEVEL SWITCH
LT	LAB TABLE
LWT	LEAVING WATER TEMPERATURE
M	MODULATING
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
ME	METHANE
MIN	MINIMUM
N	NITROGEN
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NG	NATURAL GAS
NO	NORMALLY OPEN, NUMBER, NITROUS OXIDE
NPHW	NONPOTABLE HOT WATER
NPSHR	NET POSITIVE SUCTION HEAD REQUIRED
NPW	NONPOTABLE COLD WATER
O	OXYGEN
OA	OUTSIDE AIR
OC	ODOR CONTROL
OCO	ODOR CONTROL DAMPER
OCF	ODOR CONTROL FAN
OCFS	ODOR CONTROL FLOW SWITCH
OCF	ODOR CONTROL PANEL
OCS	ODOR CONTROL SCRUBBER
OCV	ODOR CONTROL VALVE
OD	OUTSIDE DIAMETER
OF	ON-OFF SWITCH, OIL FILTER
OFA	ON-OFF-AUTO SWITCH
OPP	OPPOSITE
ORD	OVERFLOW ROOF DRAIN
ORL	OVERFLOW ROOF DRAIN LEADER
ORP	OXIDATION REDUCTION PROBE

P	PNEUMATIC, PRESSURE GAUGE
PCD	PROCESS CONTROL DAMPER
PD	PRESSURE DROP (INCHES OF WATER FOR AIR, FEET OF WATER FOR FLUIDS)
PE	PLAIN END
PEW	PLANT EFFLUENT WATER
PF	PROPELLER FAN
PI	PRESSURE INDICATOR
PL	PLATE
PM	PIPE MOUNTED
POS	POSITION
PPM	PARTS PER MILLION
PROP	PROPELLER
PRV	PRESSURE REDUCING STATION
PRV	POWER ROOF VENTILATOR
PS	PRESSURE REDUCING VALVE
PSI	PRESSURE SWITCH, PUMP STATION
PSIG	POUNDS PER SQUARE INCH
PW	POTABLE WATER
PWC	PLANT WATER CHLORINATED
PWR	POTABLE WATER RETURN
PWS	POTABLE WATER SUPPLY
R	REFRIGERANT
RA	REACTIVATION AIR, RETURN AIR
RAU	ROOFTOP AIR CONDITIONING UNIT
RD	RETURN DIFFUSER, ROOF DRAIN
RDL	ROOF DRAIN LEADER
REC	RECEIVER
REQD	REQUIRED
RG	RETURN GRILLE
RH	ROOF HOOD, RELATIVE HUMIDITY
RP	RECIRCULATION PUMP
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
RTU	ROOFTOP AIR CONDITIONING UNIT
SA	SUPPLY AIR
SCD	SMOKE AIR
SCP	SCRUBBER CONTROL PANEL
SD	SUPPLY DIFFUSER
SF	SUPPLY FAN
SG	STEELY GRILLE, SLUDGE GAS
SH	SHEET
SIL	DUCT SILENCER
SIM	SIMILAR
SMO	SMOKE DETECTOR
SPEC	SPECIFICATION
SR	SUPPLY REGISTER
SRP	SCRUBBER CHEMICAL RECIRCULATION PUMP
SS	STAINLESS STEEL
STD	STANDARD
SV	SHUTOFF VALVE
SW	SEAL WATER
T	THERMOSTAT, TEMPERED OR BLENDED WATER
TCP	TEMPERATURE CONTROL PANEL
TCV	TEMPERATURE CONTROL VALVE
TE	TEMPERATURE ELEMENT
TEMP	TEMPERATURE
TI	TEMPERATURE INDICATOR
TL	TOP LEVEL
TS	TIP SPEED
Typ	TYPICAL
V	VERTICAL, VENT
VAC	VACUUM, VACUUM OUTLET
VANE	VARIABLE AIR VOLUME
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VCD	VOLUME CONTROL DAMPER
VF	VANEAXIAL FAN
VTR	VENT THROUGH ROOF
W	WIDTH, WIDE FLANGE, POTABLE WATER FOR YARD USE
W/	WITH
WC	WATER CHILLER, WATER COLUMN, WATER CLOSET
WF	WATER FLOW, WALL FAN
WG	WATER GAUGE
WH	WALL HEATER, 3/4" WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
WM	WALL MOUNTED
W/O	WITHOUT

AIR DEVICE IDENTIFICATION



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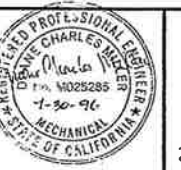
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CONFORM TO CONSTRUCTION RECORD	NO.	BY	CHK	APP
DATE				



PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 5
 HVAC
 LEGEND & ABBREVIATIONS

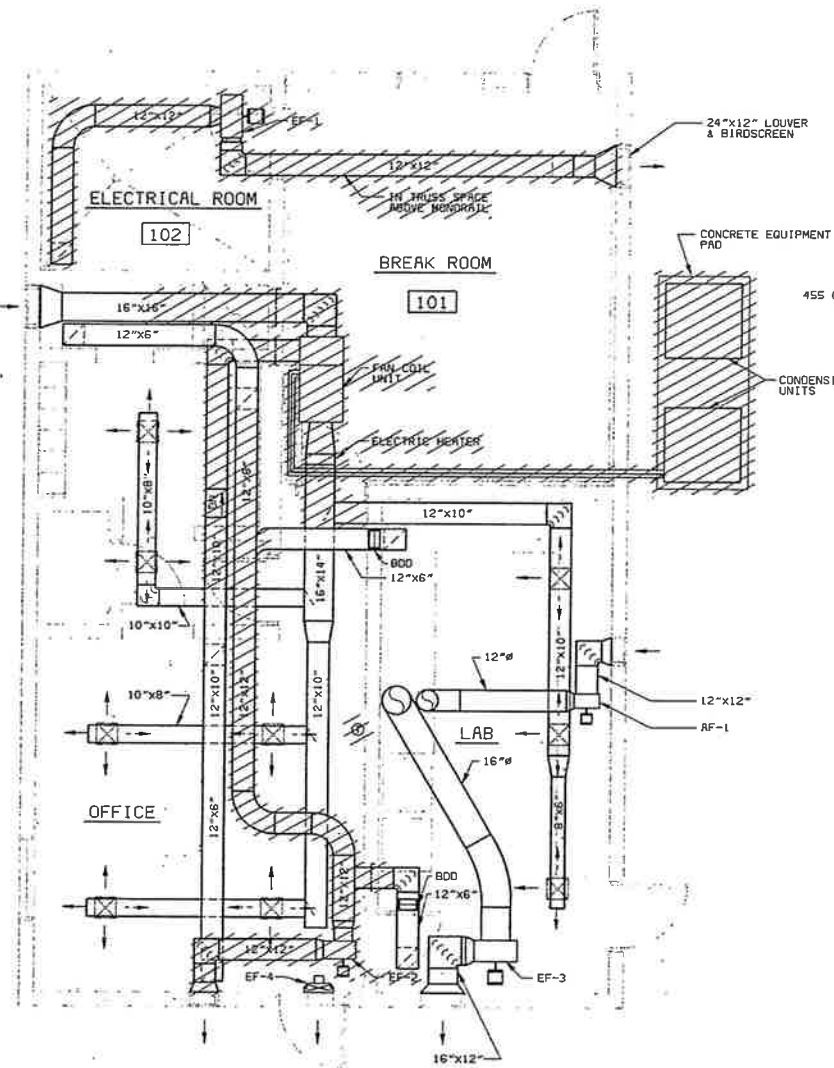


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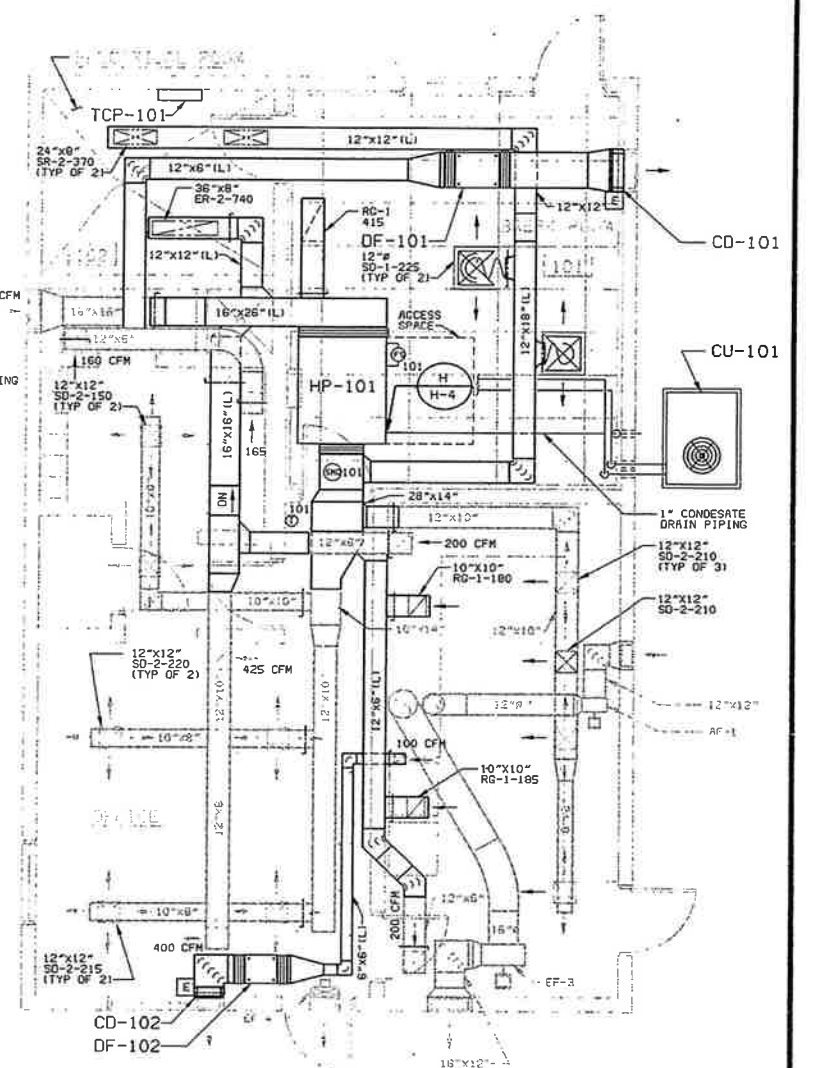
SEQUENCE OF OPERATIONS

- A. OPERATIONS BUILDING**
- HP-101. HP-101 SHALL BE CONTROLLED BY THERMOSTAT T-101.
 - INTERLOCKS. SMOKE DETECTOR SMD-101 SHALL BE LOCATED IN THE SUPPLY DUCTWORK OF HP-101. IN THE EVENT SMOKE IS DETECTED, AN ALARM LIGHT ON THE FACE OF TCP-101 SHALL BE ILLUMINATED AND HP-101 SHALL BE DE-ENERGIZED. IN THE EVENT A SMOKE DETECTOR SHOULD MALFUNCTION, A DETECTOR MALFUNCTION ALARM LIGHT ON THE FACE OF TCP-101 SHALL BE ILLUMINATED.
 - RESTART. A RESTART SWITCH WITH A BUILT-IN TIMER SHALL BE PROVIDED ON THE FACE OF TCP-101 FOR HP-101. THE TIMER SHALL BE ADJUSTABLE FROM 0 TO 30 MINUTES.
 - IN THE RESTART MODE, SMOKE DETECTOR INTERLOCKS SHALL BE BYPASSED TO RESTART HP-101. IN THIS MODE, ALL OTHER COMPONENTS SHALL OPERATE IN THEIR NORMAL CONTROL MODE. AFTER THE PRESELECTED TIME PERIOD HAS ELAPSED ALL COMPONENTS SHALL AUTOMATICALLY RETURN TO NORMAL OPERATION.
 - DF-101. DUCT FAN DF-101 SHALL BE CONTROLLED BY AN "ON-OFF-AUTO" SWITCH LOCATED ON THE FACE OF TCP-101 WHEN THE SWITCH IS IN THE "AUTO" POSITION, THE FAN SHALL OPERATE WHEN HP-101 IS ENERGIZED. CD-101 SHALL BE PROVEN OPEN BEFORE DF-101 CAN OPERATE.
 - DF-102. DUCT FAN DF-102 SHALL BE CONTROLLED BY A LOCAL "ON-OFF" SWITCH IN THE LABORATORY. CD-102 SHALL BE PROVEN OPEN BEFORE DF-102 CAN OPERATE.
- 4. TEMPERATURE CONTROL PANEL.**
- HP-301. HEAT PUMP HP-301 SHALL BE CONTROLLED BY THERMOSTAT T-301.
 - INTERLOCKS. SMOKE DETECTOR SMD-301 SHALL BE LOCATED IN THE SUPPLY DUCTWORK OF HP-301. IN THE EVENT SMOKE IS DETECTED, AN ALARM LIGHT ON THE FACE OF TCP-301 SHALL BE ILLUMINATED AND HP-301 SHALL BE DE-ENERGIZED. IN THE EVENT A SMOKE DETECTOR SHOULD MALFUNCTION, A DETECTOR MALFUNCTION ALARM LIGHT ON THE FACE OF TCP-301 SHALL BE ILLUMINATED.
 - RESTART. A RESTART SWITCH WITH A BUILT-IN TIMER SHALL BE PROVIDED ON THE FACE OF TCP-301 FOR HP-301. THE TIMER SHALL BE ADJUSTABLE FROM 0 TO 30 MINUTES.
 - IN THE RESTART MODE, SMOKE DETECTOR INTERLOCKS SHALL BE BYPASSED TO RESTART HP-301. IN THIS MODE, ALL OTHER COMPONENTS SHALL OPERATE IN THEIR NORMAL CONTROL MODE. AFTER THE PRESELECTED TIME PERIOD HAS ELAPSED ALL COMPONENTS SHALL AUTOMATICALLY RETURN TO NORMAL OPERATION.
 - DUCT FANS. DF-301 SHALL BE CONTROLLED BY AN "ON-OFF" SELECTOR SWITCH LOCATED ON THE FACE OF TCP-301. DF-301 SHALL OPERATE CONTINUOUSLY.
 - A DIFFERENTIAL PRESSURE SWITCH FS-301, LOCATED ACROSS THE AIR FILTER, SHALL ILLUMINATE A HIGH PRESSURE LOSS ALARM LIGHT ON THE FACE OF TCP-301 WHEN THE PRESSURE LOSS EXCEEDS A PRESELECTED VALUE.
 - AN AIRFLOW SWITCH FS-302, LOCATED IN THE SUPPLY AIR DUCTWORK, SHALL ILLUMINATE A NO AIRFLOW ALARM LIGHT ON THE FACE OF TCP-301 IN THE EVENT OF A NO AIRFLOW SITUATION.
- 3. TEMPERATURE CONTROL PANEL.**
- TCP-301 CONTACTS. AN ELECTRICALLY ISOLATED CONTACT SHALL BE SUPPLIED IN TCP-301 TO PROVIDE A REMOTE INDICATION OF TROUBLE TO THE PLC CABINET. THE CONTACT SHALL CLOSE IN THE EVENT ANY OF THE FOLLOWING ALARM LIGHTS ARE ILLUMINATED: SMOKE DETECTED, HIGH FILTER PRESSURE DROP, AND NO AIRFLOW.
- D. LIGHTS AND SWITCHES.** TCP-301 SHALL HAVE LIGHTS AND SELECTOR SWITCHES AS FOLLOWS:
- INDICATING LIGHTS**
CONTROL POWER ON
ALARM LIGHTS
HIGH FILTER PRESSURE DROP HP-301
SMOKE DETECTED SMD-301
SMOKE DETECTOR MALFUNCTION SMD-301
RUNNING LIGHTS DF-301
DUCT FAN DF-301
SELECTOR SWITCHES DF-301 ON-OFF-AUTO
DF-302 ON-OFF-AUTO
DF-303 ON-OFF-AUTO

- B. SLUDGE PUMPING STATION**
- MAU-201. MAKEUP AIR UNIT MAU-201 SHALL BE CONTROLLED BY AN "ON-OFF" AND A "HIGH-LOW-AUTO" SWITCH LOCATED ON THE FACE OF TCP-201. WHEN THE "ON-OFF" SWITCH IS IN THE "ON" POSITION, NC DAMPER CD-201 SHALL OPEN AND MAU-201 SHALL BE ENERGIZED. THE FAN SPEED FOR MAU-201 SHALL BE CONTROLLED BY THE "HIGH-LOW-AUTO" SWITCH. WHEN THE "HIGH-LOW-AUTO" SWITCH IS IN THE "AUTO" POSITION, THE FAN SHALL OPERATE AT LOW SPEED WHEN T-201 IS SATISFIED OR CALLS FOR HEATING, AND AT HIGH SPEED WHEN T-201 CALLS FOR COOLING.
 - PRV-201. PRV-201 SHALL BE CONTROLLED BY AN "ON-OFF-AUTO" SWITCH LOCATED ON THE FACE OF TCP-201 WHEN THE SWITCH IS IN THE "AUTO" POSITION, PRV-201 SHALL BE ENERGIZED WHEN MAU-201 IS ENERGIZED AND SHALL OPERATE AT THE SAME SPEED AS MAU-201.
 - HP-201. HEAT PUMP HP-201 SHALL BE CONTROLLED BY THERMOSTAT T-202.
 - INTERLOCKS. SMOKE DETECTOR SMD-202 SHALL BE LOCATED IN THE SUPPLY DUCTWORK OF HP-201. IN THE EVENT SMOKE IS DETECTED, AN ALARM LIGHT ON THE FACE OF TCP-201 SHALL BE ILLUMINATED AND HP-201 SHALL BE DE-ENERGIZED. IN THE EVENT A SMOKE DETECTOR SHOULD MALFUNCTION, A DETECTOR MALFUNCTION ALARM LIGHT ON THE FACE OF TCP-201 SHALL BE ILLUMINATED.
 - RESTART. A RESTART SWITCH WITH A BUILT-IN TIMER SHALL BE PROVIDED ON THE FACE OF TCP-201 FOR HP-201. THE TIMER SHALL BE ADJUSTABLE FROM 0 TO 30 MINUTES.
 - IN THE RESTART MODE, SMOKE DETECTOR INTERLOCKS SHALL BE BYPASSED TO RESTART HP-201. IN THIS MODE, ALL OTHER COMPONENTS SHALL OPERATE IN THEIR NORMAL CONTROL MODE. AFTER THE PRESELECTED TIME PERIOD HAS ELAPSED ALL COMPONENTS SHALL AUTOMATICALLY RETURN TO NORMAL OPERATION.
- 4. TEMPERATURE CONTROL PANEL.**
- TCP-201 CONTACTS. AN ELECTRICALLY ISOLATED CONTACT SHALL BE SUPPLIED IN TCP-201 TO PROVIDE A REMOTE INDICATION OF TROUBLE TO THE PLC CABINET. THE CONTACT SHALL CLOSE IN THE EVENT ANY OF THE FOLLOWING ALARM LIGHTS ARE ILLUMINATED: SMOKE DETECTED, HIGH FILTER PRESSURE DROP, AND NO AIRFLOW.
- D. LIGHTS AND SWITCHES.** TCP-201 SHALL HAVE LIGHTS AND SELECTOR SWITCHES AS FOLLOWS:
- INDICATING LIGHTS**
CONTROL POWER ON
ALARM LIGHTS
HIGH FILTER PRESSURE DROP DF-301
NO AIRFLOW DF-301
SMOKE DETECTED SMD-301
SMOKE DETECTOR MALFUNCTION SMD-301
RUNNING LIGHTS DF-301
DUCT FAN DF-302
DUCT FAN DF-303
SELECTOR SWITCHES DF-301 ON-OFF
DUCT FAN DF-302 ON-OFF-AUTO
DUCT FAN DF-303 ON-OFF-AUTO



OPERATIONS BUILDING
DEMOLITION PLAN
1/4" = 1'-0"



OPERATIONS BUILDING
HVAC PLAN
1/4" = 1'-0"

--- REPRESENTS EXISTING DUCTWORK
— REPRESENTS NEW DUCTWORK

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DESIGNER	RLZ
DETAILER	MHR
CHECKED	DHW
APPROVED	
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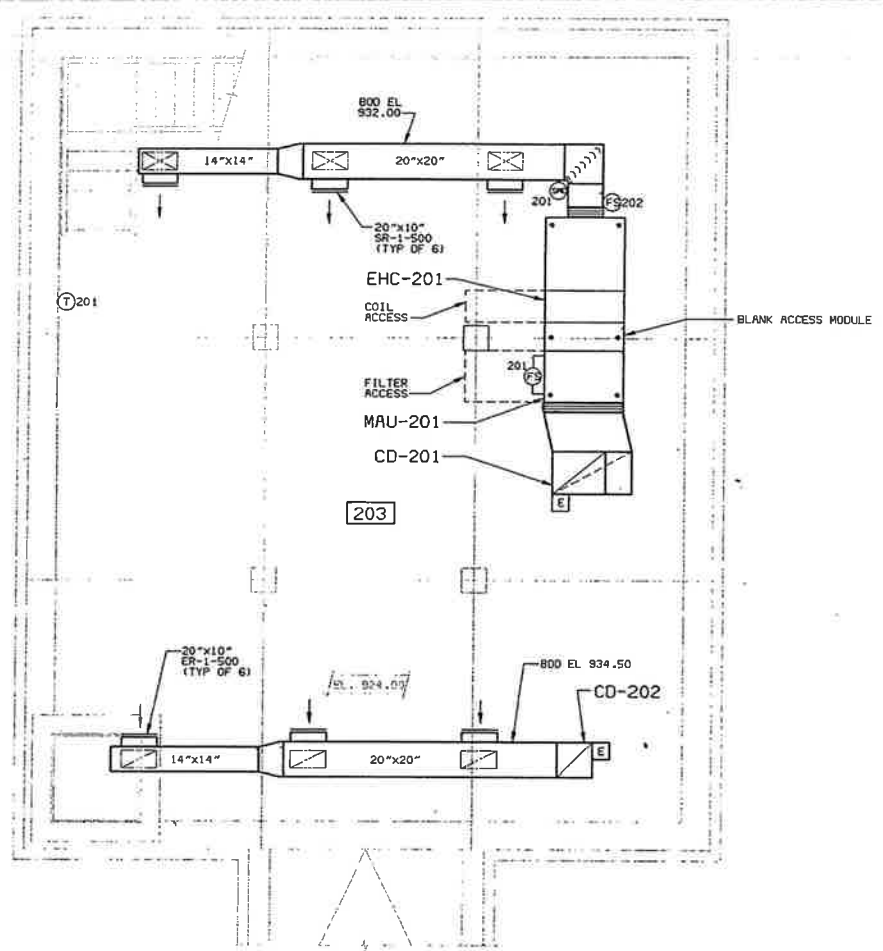
PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION
BID PACKAGE NO. 5
OPERATIONS BUILDING-HVAC
PLANS, AND SEQUENCE OF OPERATIONS

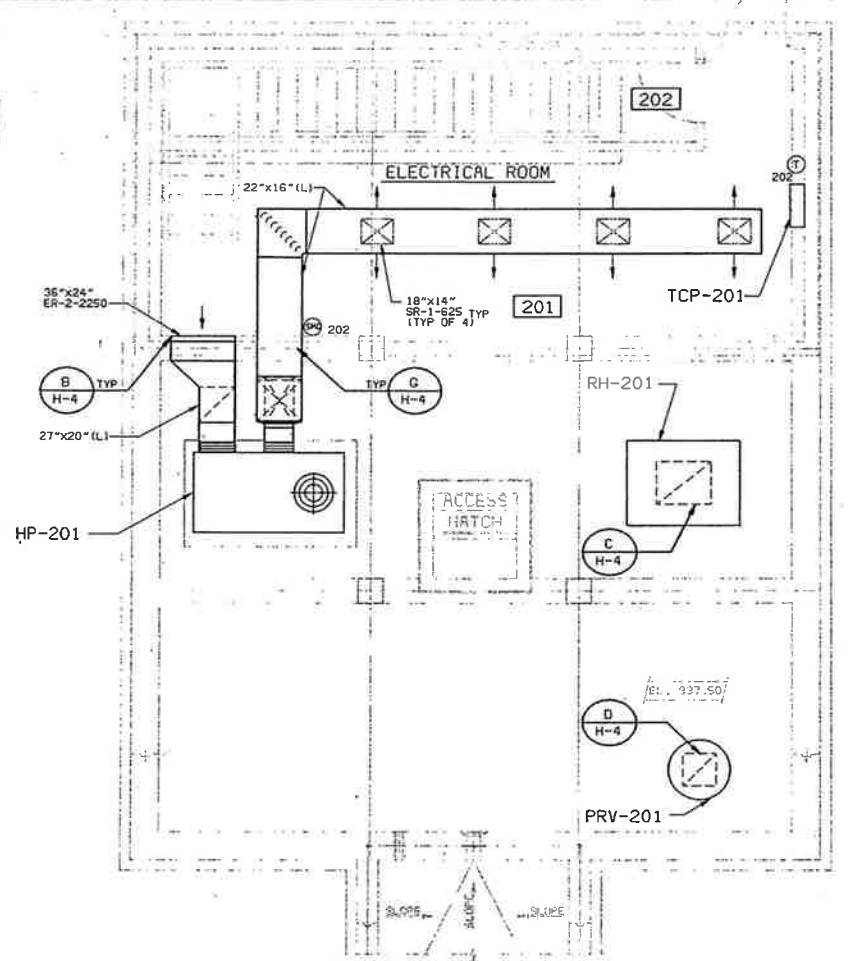


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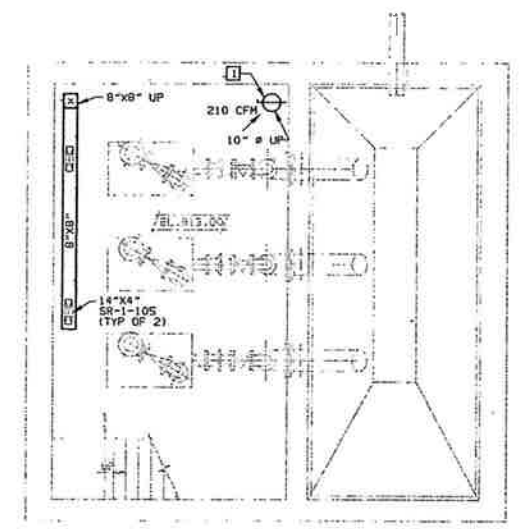
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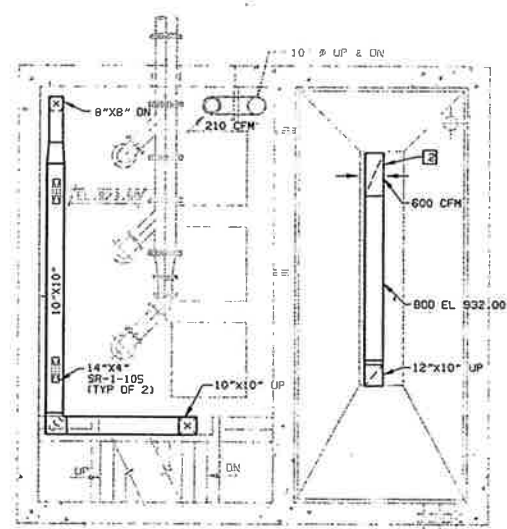
PUMP ROOM PLAN



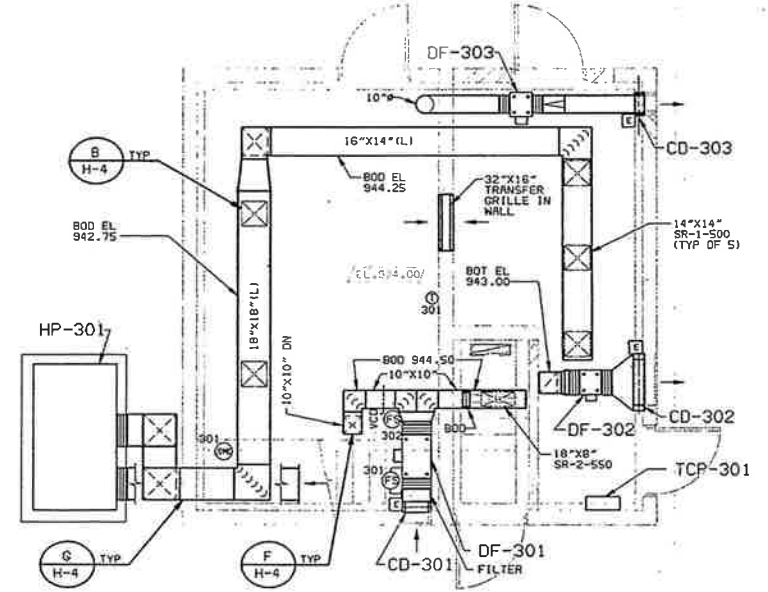
UPPER LEVEL PLAN



PUMP ROOM PLAN



INTERMEDIATE LEVEL PLAN



UPPER LEVEL PLAN

PLAN NOTES:
 1 CONNECT NEW 10" x 4" DUCT TO EXISTING 10" x 9" DUCT AT ELEVATION 923.00 EXTEND NEW DUCT DOWN TO 12" AFF AND COVER INLET WITH 1/2" x 1/2" ALUMINUM BIRDSCREEN
 2 20" x 10" INLET COVERED WITH 1/2" x 1/2" STAINLESS STEEL BIRDSCREEN
 --- REPRESENTS EXISTING DUCTWORK
 --- REPRESENTS NEW DUCTWORK

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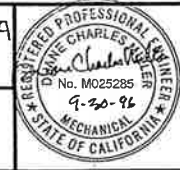
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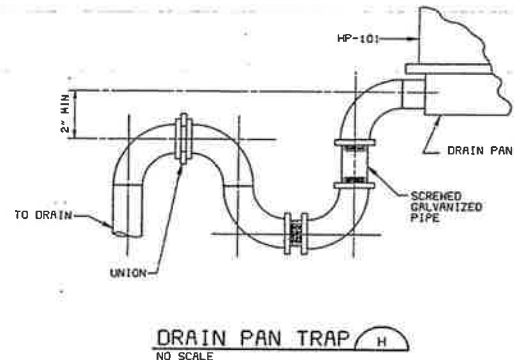


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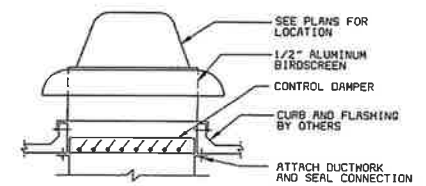
CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 5
 SLUDGE AND INFLUENT PUMP STATIONS
 HVAC - PLANS



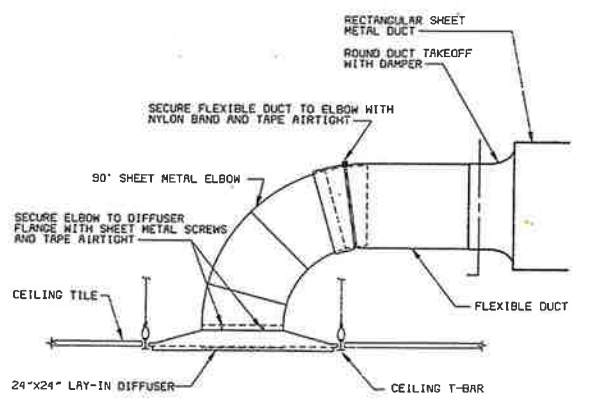
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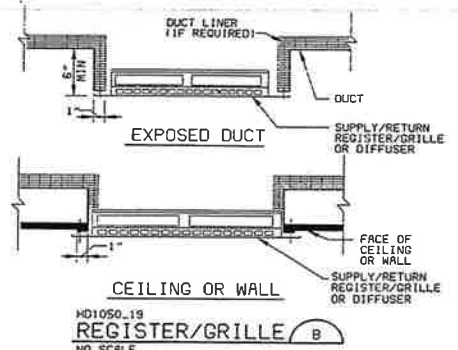
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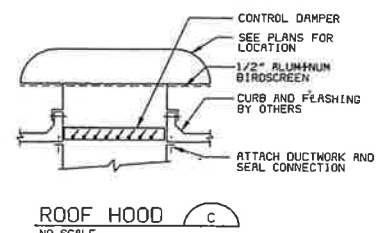
POWER ROOF VENTILATOR CENTRIFUGAL
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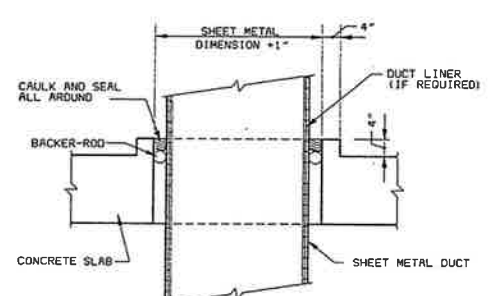
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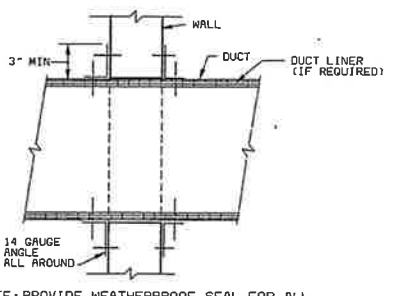
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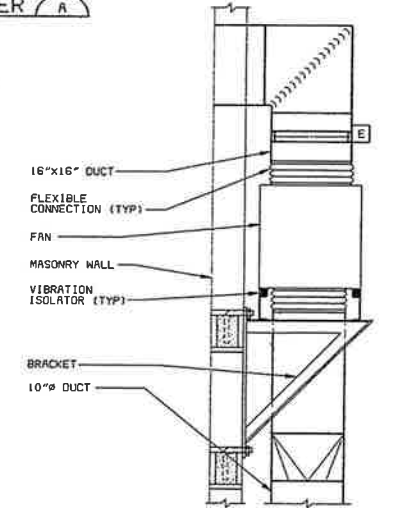
ROOF HOOD
NO SCALE



DUCT FLOOR SLEEVE
NO SCALE



WALL PENETRATION
NO SCALE



VERTICAL INLINE FAN
NO SCALE

HEAT PUMP SCHEDULE

UNIT NO.	OUTDOOR	INDOOR	ENTERING AIR TEMP		CAPACITY (BTU/H)		INDOOR FAN		MIN AUX HEAT KW	MIN OUTSIDE AIR (CFM)
			FDB	FWB	SENS	TOTAL	EAT / CAP	CFM / SP		
CU-101	HP-101	110	83.4	66.4	84,350	100,800	61.6/67400	3200/1.0*	2	---
HP-201	---	110	92.2	73.9	63,900	65,900	50.0/26730	2500/0.7*	1-1/2	250
HP-301	---	110	91.1	72.4	71,500	73,700	50/22,000	2500/1.2*	2	160

AIR INLET AND OUTLET DEVICE SCHEDULE

SYMBOL	MODEL	BORDER FRAME	MATERIAL	FINISH	DAMPER TYPE	ACCESSORIES	REMARKS
SR-1	32DAL	FLANGED	ALUMINUM	ALUMINUM BAKED ENAMEL	ALUMINUM OPPOSED BLADE	---	(1)
SR-2	32DAL	SURFACE MOUNTED	ALUMINUM	ALUMINUM BAKED ENAMEL	ALUMINUM OPPOSED BLADE	---	(1)
ER-1	70DAL	FLANGED	ALUMINUM	ALUMINUM BAKED ENAMEL	ALUMINUM OPPOSED BLADE	---	(1)
ER-2	70DAL	SURFACE MOUNTED	ALUMINUM	ALUMINUM BAKED ENAMEL	ALUMINUM OPPOSED BLADE	---	(1)
SD-1	PDF	LAY-IN	STEEL	ALUMINUM PRIME COAT	---	---	---
SD-2	---	---	---	---	---	---	EXISTING DIFFUSER
RC-1	800	LAY-IN	STEEL	ALUMINUM PRIME COAT	---	---	(2)

REMARKS:
 (1) COUNTER-SUNK SCREWHOLES
 (2) 1/2" x 1/2" GRID

FAN SCHEDULE

UNIT NO	LOCATION	AIRFLOW (CFM)	ESP (IN WG)	MOTOR HP	POWER SUPPLY VOLTS/PHASE	MIN WHEEL (IN)	DRIVE	APPROX WT (LBS)	REMARK
DF-101	OPER. BLDG.	325	0.375	1/6	120/1	---	D	100	(3)
DF-102	OPER. BLDG.	100	0.25	1/6	120/1	---	D	100	(3)
PRV-201	SLUDGE PUMP ST.	3000/1500	0.50/0.125	3/4	480/3	16.5	B	150	(3) (4)
DF-301	INFLUENT PUMP ST.	970	0.75	1/3	120/1	13.25	B	120	(3)
DF-302	INFLUENT PUMP ST.	600	0.25	1/4	120/1	11.0	B	100	(1) (2) (3)
DF-303	INFLUENT PUMP ST.	420	0.25	1/4	120/1	11.0	B	100	(3)

DRIVE NOTES:
 D - DIRECT DRIVE
 B - BELT DRIVE

REMARKS:
 (1) - EXPLOSION-PROOF
 (2) - PROTECTIVE COATING
 (3) - CENTRIFUGAL
 (4) - 2-SPEED MOTOR

ROOF HOOD SCHEDULE

UNIT NO.	LOCATION	CFM	THROAT SIZE	TYPE	AIR PD	REMARKS
RH-201	SLUDGE PUMP STATION	3000	24x30	1	0.05	

THERMOSTAT SCHEDULE

UNIT NO	LOCATION	TYPE	SET POINT (F)	EQUIPMENT CONTROLLED	REMARKS
T-101	OPER. BLDG.	1	78	HP-101	
T-201	SLUDGE PUMP ST.	2	80/60	MAU-201	
T-202	SLUDGE PUMP ST.	1	90	HP-201	
T-301	INFLUENT PUMP ST.	1	90	HP-301	

SMOKE DETECTOR SCHEDULE

UNIT NO.	LOCATION	EQUIPMENT CONTROLLED	REMARKS
SMD-101	OPERATIONS BLDG.	HP-101	
SMD-201	SLUDGE PUMP STATION	MAU-201	
SMD-202	SLUDGE PUMP STATION	HP-201	
SMD-301	INFLUENT PUMP STATION	HP-301	

FLOW SWITCH SCHEDULE

UNIT NO.	LOCATION	EQUIPMENT CONTROLLED	TYPE	REMARKS
FS-101	OPERATIONS BLDG.	HP-101	1	
FS-201	SLUDGE PUMP STA.	MAU-201	1	
FS-202	SLUDGE PUMP STA.	MAU-201	2	
FS-301	INFLUENT PUMP STA.	DF-301	1	
FS-302	INFLUENT PUMP STA.	DF-301	2	

CONTROL DAMPER SCHEDULE

UNIT NO	LOCATION	NOMINAL SIZE (INXIN)	OPERATOR	REMARKS
CD-101	OPERATIONS BLDG	24 x 12	E, 2P	
CD-102	OPERATIONS BLDG	16 x 12	E, 2P	
CD-201	SLUDGE PUMP ST.	24 x 30	E, 2P	
CD-202	SLUDGE PUMP ST.	"	E, 2P	
CD-301	INFLUENT PUMP ST.	16 x 16	E, 2P	
CD-302	INFLUENT PUMP ST.	32 x 16	E, 2P	
CD-303	INFLUENT PUMP ST.	16 x 16	E, 2P	

TYPE NOTES:
 SEE SPECIFICATION FOR CONTROL DAMPER TYPE MODEL.

OPERATOR NOTES:
 2P - TWO POSITION
 E - ELECTRIC
 #SIZE TO FIT EQUIPMENT FURNISHED.

MAKEUP AIR UNIT SCHEDULE

UNIT NO.	LOCATION	CFM	S.P.	HEATING CAPACITY (KW)	MOTOR HP	POWER SUPPLY VOLTS/PHASE	CONTROL BY	REMARKS
MAU-201	SLUDGE PUMP STATION	3000/1500	0.6/0.15	17	1-1/2"	480/3	T-201	(1)

REMARKS:
 (1) 2-SPEED MOTOR

85/082/08C/35C/1524/88/NPL
 02/05/95 15:49:00 ATSK
 01034
 502056

CONFORM TO CONSTRUCTION RECORD

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP

DESIGNED: RLZ
 DETAILED: MHA
 CHECKED: DWN
 APPROVED: _____
 DATE: _____



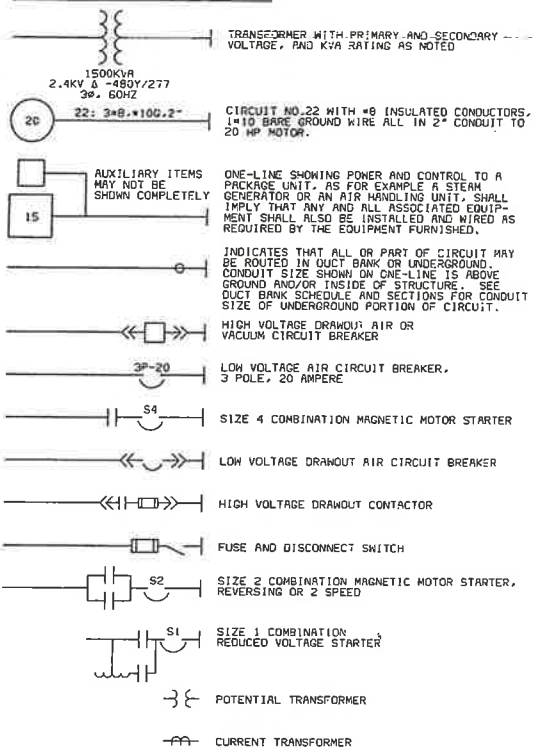
PROJECT NO.
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CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 5
 HVAC
 SCHEDULES & DETAILS

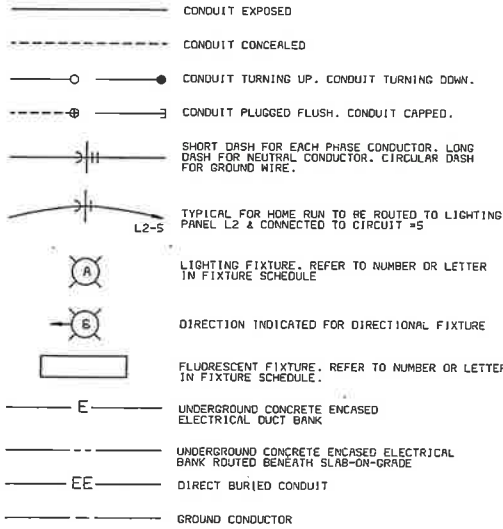


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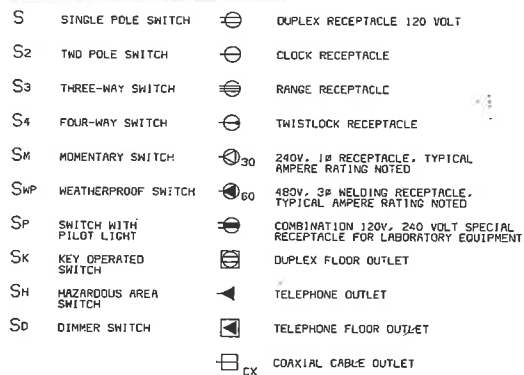
ONE-LINE DIAGRAM LEGEND



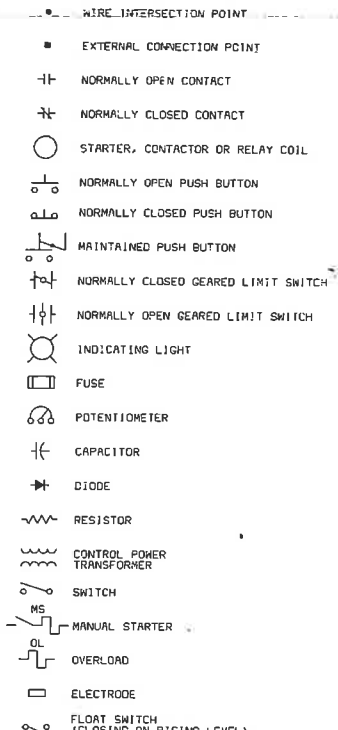
CONDUIT & WIRING INSTALLATION LEGEND



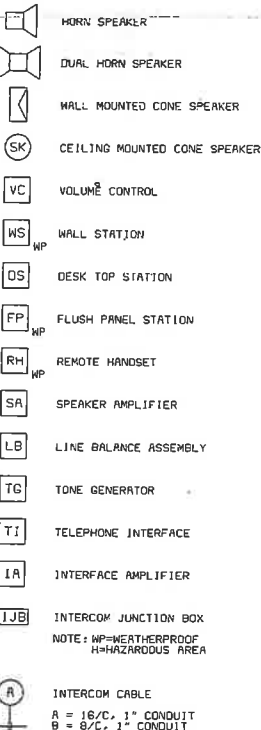
SWITCH & OUTLET SYMBOLS



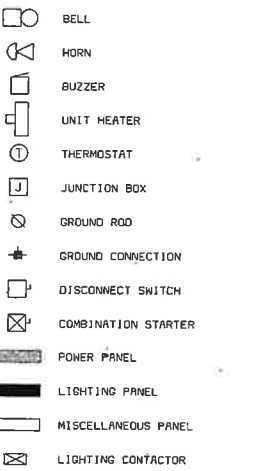
SCHEMATIC SYMBOLS



COMMUNICATION SYMBOLS



MISCELLANEOUS SYMBOLS



ABBREVIATIONS

A	AMPERE, ALARM	M	MAGNETIC MOTOR STARTER
AC	ALTERNATING CURRENT	MA	MILLIAMPERE
ACB	AIR CIRCUIT BREAKER	MCC	MOTOR CONTROL CENTER
AFD	ADJUSTABLE FREQUENCY DRIVE	MCLU	MOTOR CONTROL LINEUP
AM	AMMETER	MCM	THOUSAND CIRCULAR MIL
ANN	ANNUNCIATOR	MD	MOISTURE DETECTOR
AR	ALARM RELAY	MFM	MAGNETIC FLOW METER
AS	AMMETER SWITCH	MFR	MANUFACTURER
AWG	AMERICAN WIRE GAGE	MH	MANHOLE OR MOUNTING HEIGHT
		MHV	MOTOR OPERATED VALVE
		MS	MANUAL MOTOR STARTER
		MV	MOTOR SPACE HEATER
		MV	MILLIVOLT
		MVA	MEGA VOLT AMPERE
BC	BATTERY CHARGER	N	NEUTRAL
BR	BRAKE	NC	NORMALLY CLOSED
BT	BEARING TEMPERATURE	NO	NORMALLY OPEN, NUMBER
C	CLOSE, COUNTER OR CONTACTOR	O	OPEN
CAP	CAPACITOR	OCB	OIL CIRCUIT BREAKER
CB	CIRCUIT BREAKER	OL	OVERLOAD
CB"A"	CIRCUIT BREAKER AUXILIARY CONTACT (OPEN WHEN BREAKER IS OPEN AND CLOSED WHEN BREAKER IS CLOSED OR TRIPPED)	P	PRIMARY
CB"B"	CIRCUIT BREAKER AUXILIARY CONTACT (CLOSED WHEN BREAKER IS OPEN AND OPEN WHEN BREAKER IS CLOSED OR TRIPPED)	PB	PUSH BUTTON OR PULL BOX
C1	CELL INTERLOCK	PC	PROGRAMMABLE CONTROLLER
CKT	CIRCUIT	PF	POWER FACTOR METER
CL2	CHLORINE	PH	PHASE, CHEMICAL TERM
COS	CABLE OPERATED SWITCH	PRS	PROXIMITY SWITCH
CP	CONTROL PANEL	PS	PRESSURE SWITCH
CPT	CONTROL POWER TRANSFORMER	PT	POTENTIAL TRANSFORMER, PROGRAM TIMER
CR	CURRENT OR CONTROL RELAY	2P	2 POLE
CS	CONTROL STATION		
CT	CYCLE TIMER OR CURRENT TRANSFORMER	R	RED, RAISE, RELAY OR REVERSE
CTM	CYCLE TIMER MOTOR	RECP	RECEPTACLE
2/C	2 CONDUCTOR	RES	RESISTOR
4"C	4" CONDUIT	RT	REPEATING TIMER
		RTD	RESISTANCE TYPE TEMP DETECTOR
		RTU	REMOTE TERMINAL UNIT
DC	DIRECT CURRENT	S2	SIZE 2 STARTER
DI	DIODE INTERLOCK	SH	SPACE HEATER
DM	DAMPER MOTOR OR DEMAND METER	SN	SOLID NEUTRAL
DPDT	DOUBLE POLE DOUBLE THROW	SO	SOLENOID OILER
DPST	DOUBLE POLE SINGLE THROW	SP	SINGLE POLE
DPR	DIFFERENTIAL PRESSURE REGULATOR	SPDT	SINGLE POLE DOUBLE THROW
DP5	DIFFERENTIAL PRESSURE SWITCH	SPST	SINGLE POLE SINGLE THROW
DS	DISCONNECT SWITCH	SS	SELECTOR SWITCH
DVLS	DISCHARGE VALVE LIMIT SWITCH	SUPV	SUPERVISORY CONTROL
		SV	SOLENOID VALVE
		SNCR	SOFT STARTER
		SDBC	SOFT DRAWN BARE COPPER
		SMD	SMOKE DETECTOR
EC	EMPTY CONDUIT	T	THERMOSTAT, TIMER, OR TOTALIZER
EL	ELEVATION OR EMERGENCY LIGHT	TACH	TACHOMETER
EMH	ELECTRICAL MANHOLE	TB	TERMINAL BLOCK
ER	ELECTRODE RELAY	TC	TIMER CLUTCH
ES	END SWITCH	TD	TIME DELAY RELAY
ETM	ELAPSED TIME METER	TEMP	TEMPERATURE
		TM	TIMER MOTOR
		TQ	TORQUE
		TTB	TELEPHONE TERMINAL BOX
F	FORWARD	UG	UNDERGROUND
FS	FLOW SWITCH	UV	UNDER VOLTAGE
		UPS	UNINTERRUPTIBLE POWER SUPPLY
G	GREEN OR GROUND	V	VOLTS
GD	GROUND DETECTOR	VA	VOLT AMPERE
GEN	GENERATOR	VAR	VARMETER
GF1	GROUND FAULT INTERRUPTER	VLS	VALVE LIMIT SWITCH
GLS	GEARED LIMIT SWITCH	VM	VOLTMETER
#BG	#B GROUND WIRE	VPI	VALVE POSITION INDICATOR
GF1	GROUND FAULT CIRCUIT INTERRUPTER	VS	VOLTMETER SWITCH
H	HIGH OR HUMIDISTAT	W	WHITE OR WATTS
HC	HOT CIRCUIT	WH	WATTHOUR METER
HM	HANDHOLE	WM	WATT METER
HMT	HIGH MOTOR TEMPERATURE	WP	WEATHERPROOF
HJA	HAND-OFF-AUTO	X	AUXILIARY RELAY
HJR	HAND-OFF-REMOTE	XFMR	TRANSFORMER
HP	HORSEPOWER OR HEAT PUMP	XP	EXPLOSION PROOF
HWD	HIGH WATER CUTOFF	Y	YELLOW
HZ	HERTZ (CYCLE)	Z	AUXILIARY RELAY
		ZS	POSITION SWITCH
I/O	INPUT/OUTPUT		
J	JUNCTION BOX		
JB	JUNCTION BOX		
K	KEY INTERLOCK		
KV	KILOVOLT		
KVA	KILOVOLT AMPERE		
KVAR	KILOVAR		
KW	KILOWATT		
KWH	KILOWATT HOUR		
L	LOW, LEVEL		
LA	LIGHTNING ARRESTER		
LC	LIGHTNING CONTACTOR		
LOR	LOCAL-OFF-REMOTE		
LS	LIMIT OR LEVEL SWITCH		
LWCO	LOW WATER CUTOFF		
1-1PR#16S	ONE, SINGLE PAIR, TWISTED, SHIELDED #16 CABLE		
3-7/C#14	THREE, SINGLE, SEVEN CONDUCTOR #14 MULTICONDUCTOR CONTROL CABLES		

GENERAL REQUIREMENTS

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS NOT SHOWN ON THE PLANS. THIS SHALL INCLUDE ALL CONDUITS SHOWN ON THE ONE-LINES AND HOW THESE ARE SHOWN ON THE PLAN DRAWINGS. CONDUITS SHALL BE ROUTED AS DEFINED IN THE SPECIFICATIONS.
- SPARE WIRES SHALL BE TAPED AND COILED.
- IF EQUIPMENT SUPPLIED BY MANUFACTURER HAS A LARGER LOAD THAN VALUE SHOWN, THE CABLE CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE ENLARGED, AS REQUIRED, TO ACCOMMODATE THE HIGHER VALUE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING PROPERLY SIZED STARTER OVERLOADS FOR EQUIPMENT FURNISHED.
- LIGHTING AND RECEPTACLE CIRCUITS SHOWN ON THE FLOOR PLANS ARE NOT SHOWN ON THE ONE-LINES.
- IN AREAS WHERE THERE ARE OVERHEAD BRIDGE CRANES, HOISTS, ETC., NO CONDUITS SHALL BE RUN OVERHEAD THAT WILL INTERFERE WITH THE OPERATION OF THE EQUIPMENT.

GENERAL NOTES

- SOLID LINES (—) INDICATE NEW WORK OR EQUIPMENT.
- SCREENED LINES (▨) INDICATE EXISTING WORK OR EQUIPMENT.
- DASHED LINES (---) INDICATE FUTURE WORK OR EQUIPMENT.
- REFER TO THE FOLLOWING DRAWING(S) FOR EQUIPMENT DESIGNATION LEGEND:
- REFER TO THE FOLLOWING DRAWING(S) FOR INSTRUMENTATION LEGEND:
- THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.

25056E1
01004
FC3056

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP

DESIGNED BJB
 DETAILED HJP
 CHECKED HJP
 APPROVED James D. Wilson
 DATE 7-13-95



PROJECT NO.
25056

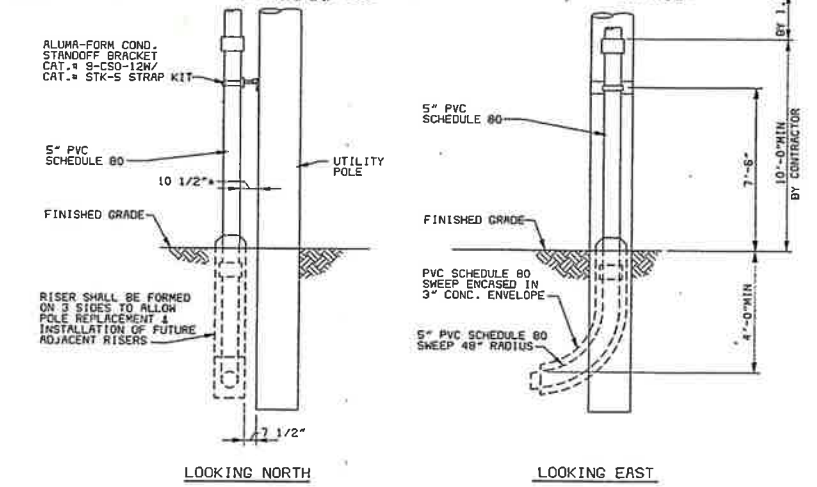
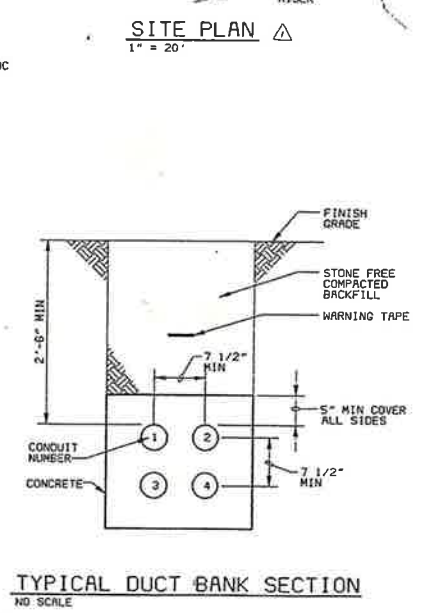
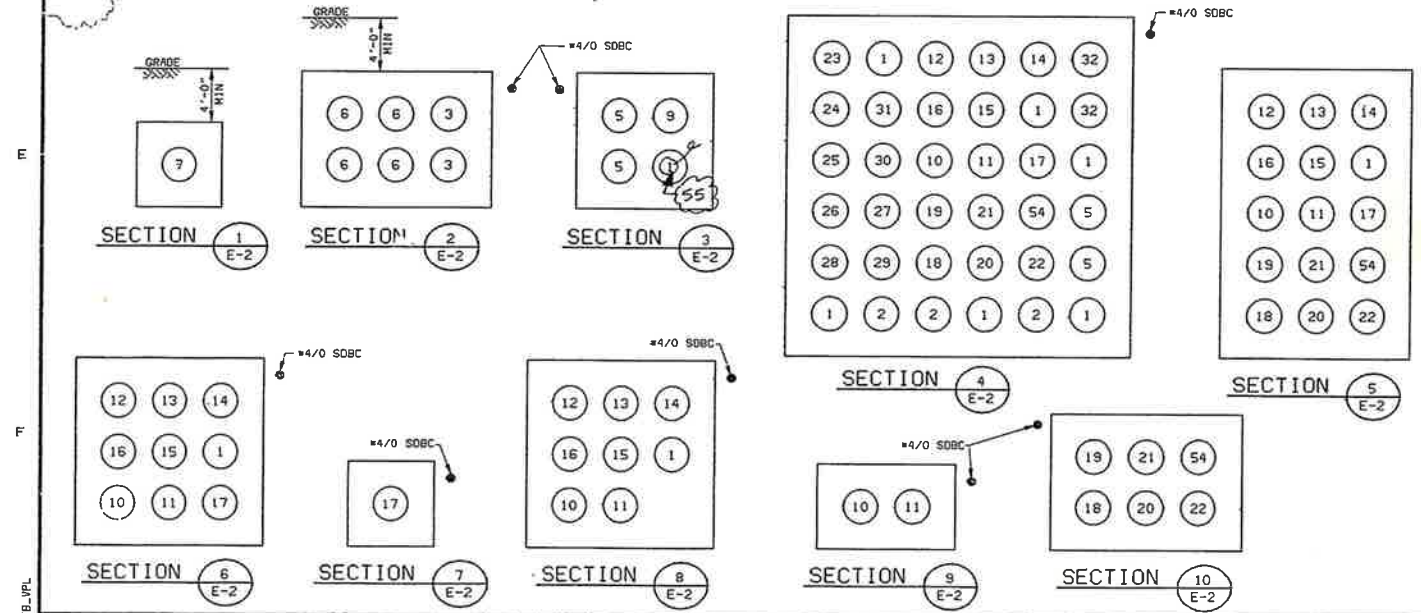
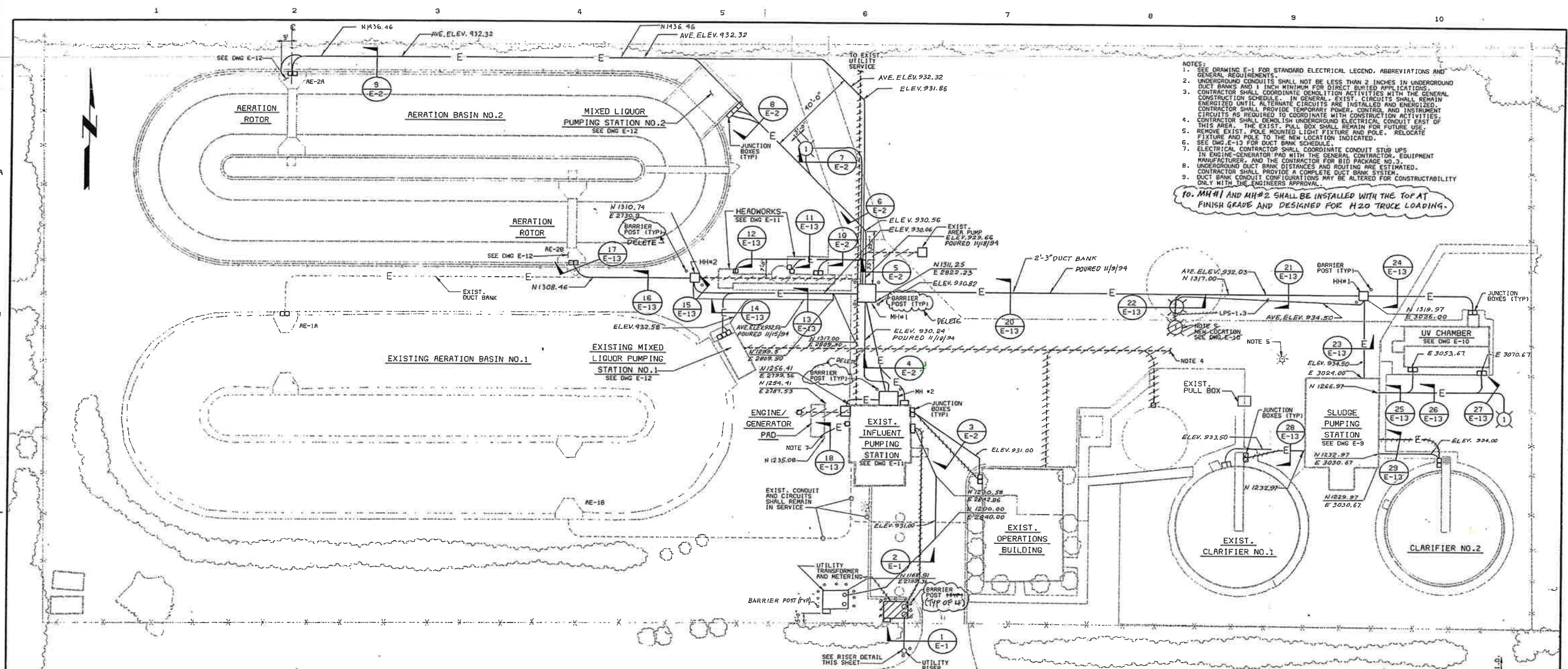
CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION

BID PACKAGE NO. 6
 ELECTRICAL
 LEGEND

REGISTERED PROFESSIONAL ENGINEER
 James A. Wilson
 No. E012935
 Exp. 3-31-97
 ELECTRICAL
 STATE OF CALIFORNIA

E-1
 SHEET
 31 OF 47

02/07/95 16:13:07 VPL
08/03/94 11:48:51 ATS



NO.	DATE	REVISIONS AND RECORD OF ISSUE	BY	CHK	APP
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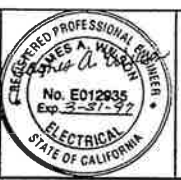
DESIGNED: BJB
 DETAILED: MCM
 CHECKED: MJP
 APPROVED: *James A. Miller*
 DATE: 7-13-92

Black & Veatch
San Diego, California

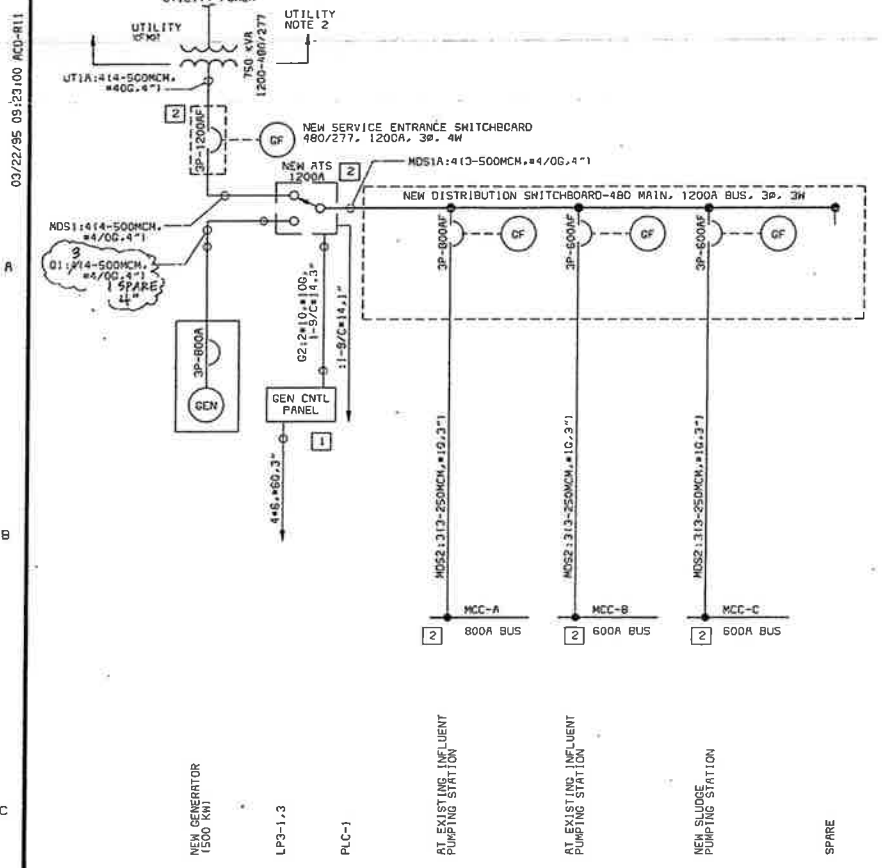
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CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION

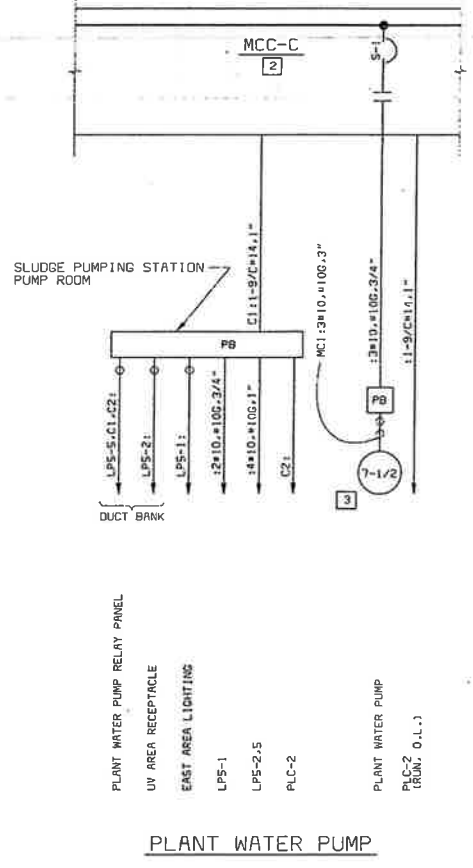
BID PACKAGE NO. 6
 ELECTRICAL
 SITE PLAN AND DUCT BANK DETAILS



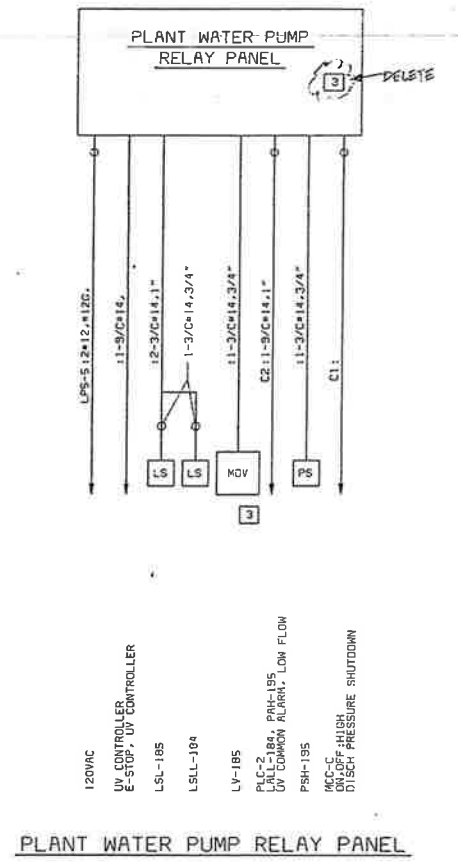
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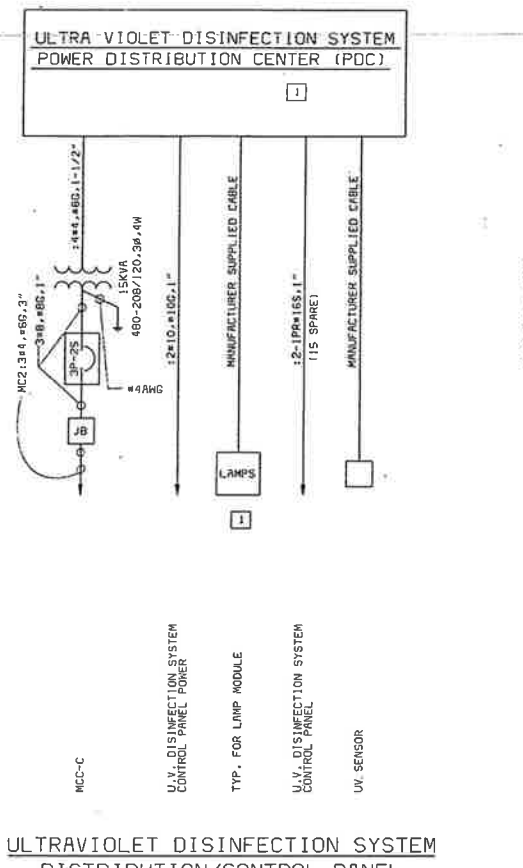
MAIN DISTRIBUTION ONE-LINE



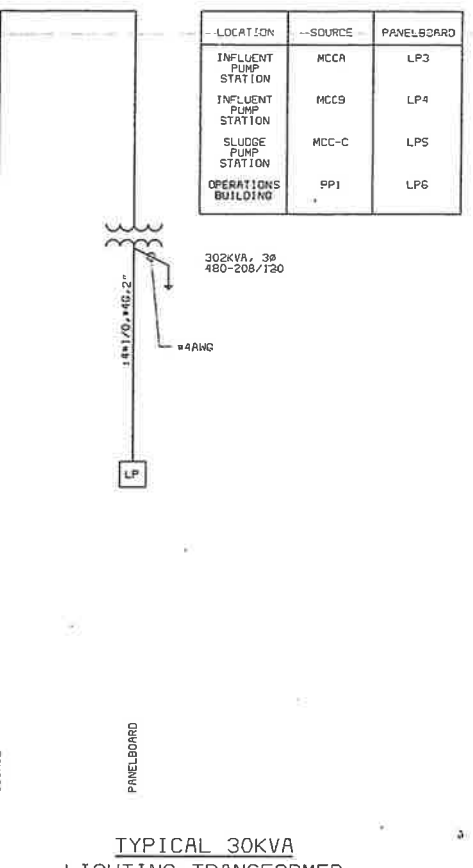
PLANT WATER PUMP



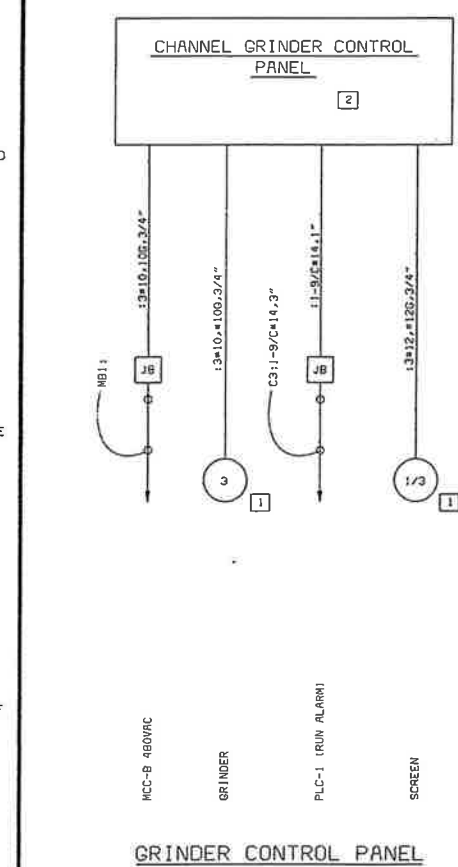
PLANT WATER PUMP RELAY PANEL



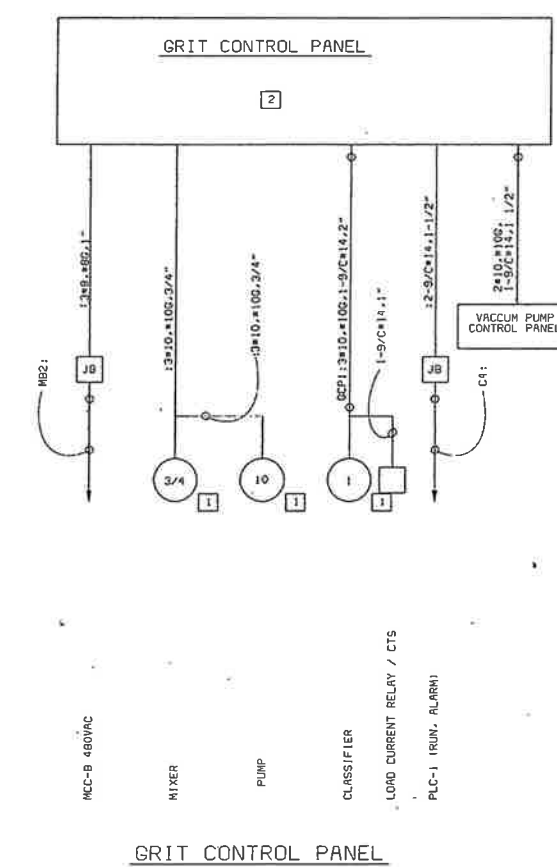
ULTRAVIOLET DISINFECTION SYSTEM DISTRIBUTION/CONTROL PANEL



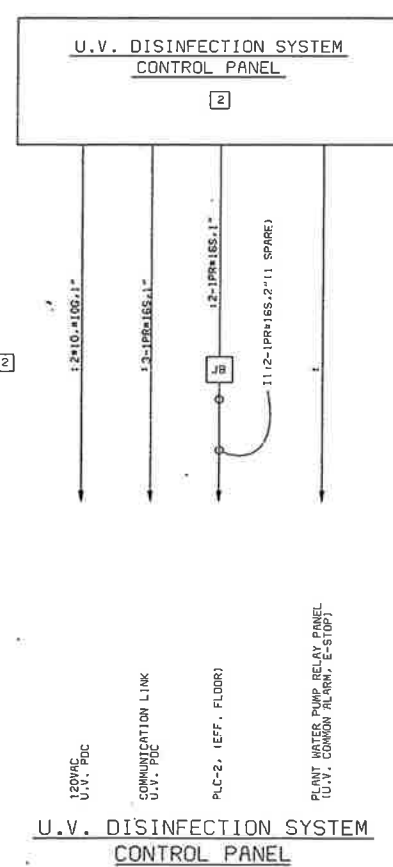
TYPICAL 30KVA LIGHTING TRANSFORMER



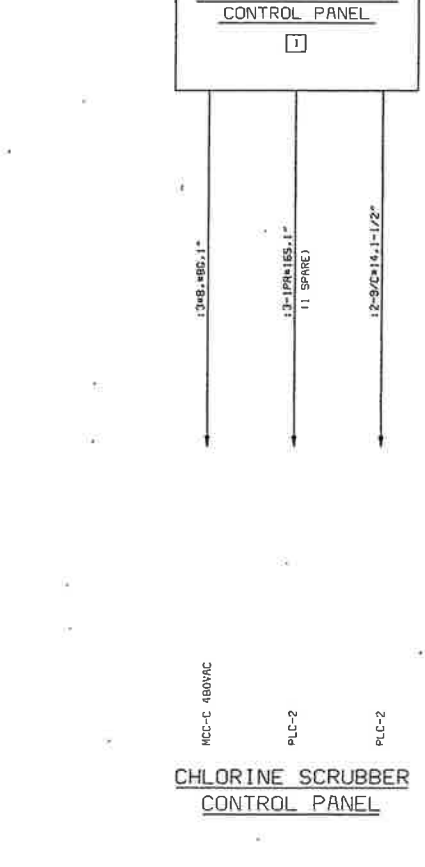
GRINDER CONTROL PANEL



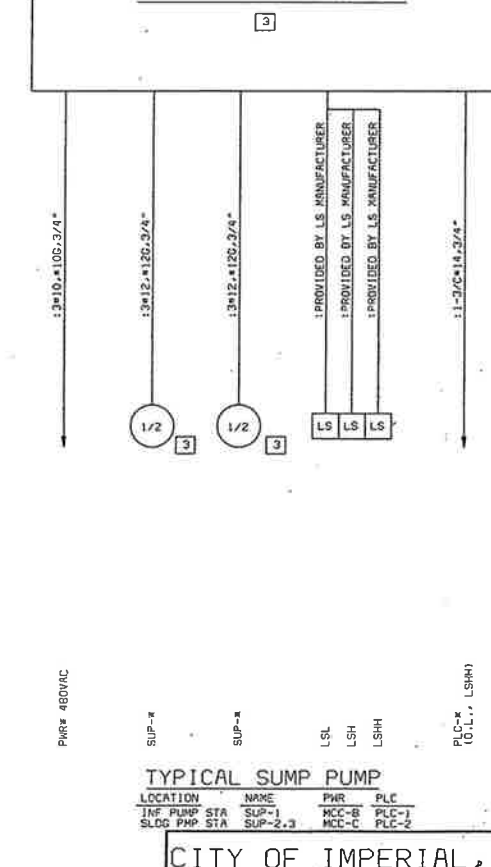
GRIT CONTROL PANEL



U.V. DISINFECTION SYSTEM CONTROL PANEL



CHLORINE SCRUBBER CONTROL PANEL



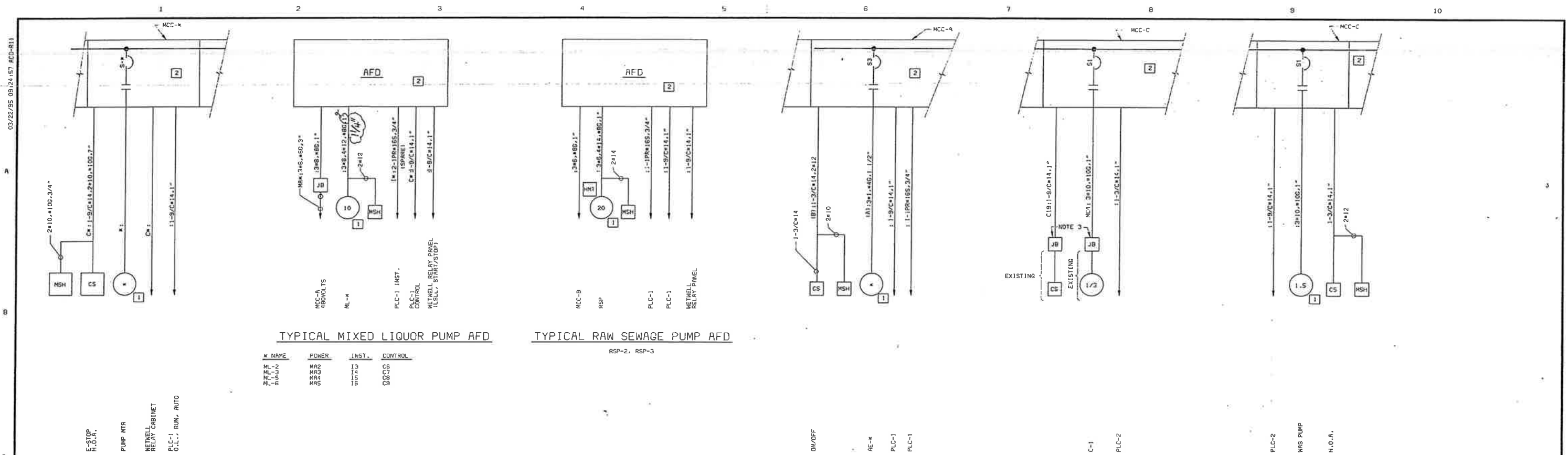
TYPICAL SUMP PUMP

LOCATION	NAME	PWR	PLC
INFLUENT PUMP STA	SUP-1	MCC-B	PLC-1
SLUDGE PUMP STA	SUP-2,3	MCC-C	PLC-2

LEGEND
 THE NUMBER INSIDE THE SQUARE INDICATES THE BID PACKAGE OTHER THAN BP NO. 5 & 6 THAT SUPPLY THE EQUIPMENT. THE CONTRACTOR SHALL COMPLETE THE INSTALLATION OF ALL EQUIPMENT AND SYSTEMS AND PROVIDE ALL APPURTENANCES REQUIRED FOR PROPER OPERATION AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY THE EQUIPMENT MANUFACTURER.

- 1 SUPPLIED UNDER BID PACKAGE NO. 1. INSTALLED UNDER BID PACKAGE NO. 4. CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6
- 2 SUPPLIED UNDER BID PACKAGE NO. 1. INSTALLATION, CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6
- 3 SUPPLIED UNDER BID PACKAGE NO. 4. INSTALLATION, CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6

GENERAL NOTES:
 1. SEE DRAWING E-1 FOR ELECTRICAL STANDARD LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 2. SEE SPECIFICATIONS SECTION 16050.



TYPICAL MIXED LIQUOR PUMP AFD

TYPICAL RAW SEWAGE PUMP AFD

TYPICAL AERATION ROTOR

CLARIFIER NO. 1

TYPICAL WAS PUMP

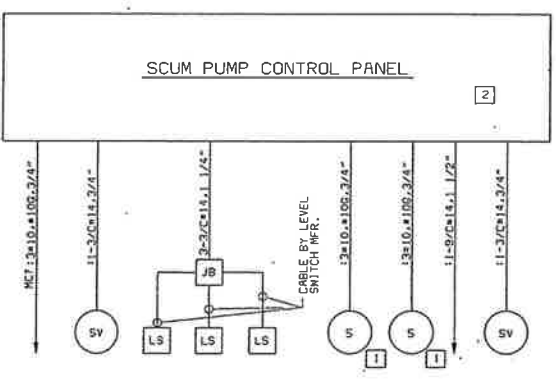
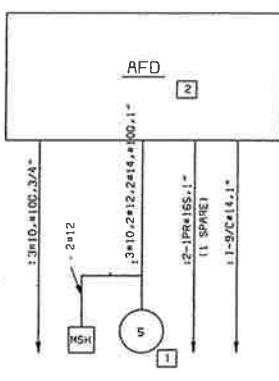
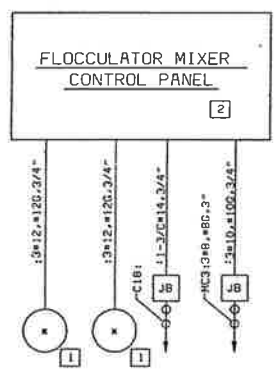
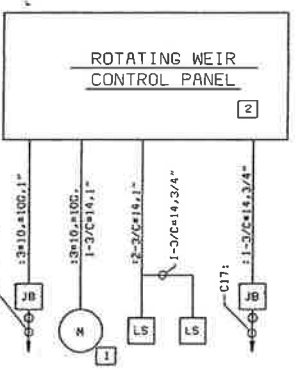
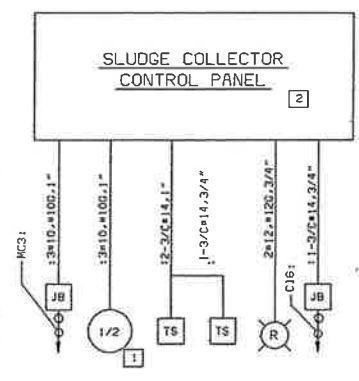
K	NAME	POWER	INST.	CONTROL
1	MTR	MAS	13	C10
2	MTR	MAS	13	C10
3	MTR	MAS	13	C10

RSP-2, RSP-3

NAME	HP	(A)	(B)
RE-1A	25	MAB	C20
RE-1B	25	MAB	C20
RE-2A	40	MAD	C20
RE-2B	40	MAD	C20

RAW SEWAGE PUMP/MIXED LIQUOR PUMP

DESIGNATION	MCC	HP	STARTER SIZE	CKT	METWELL RELAY PANEL	CS/MSH
ML-1	MCC-A	10	2	2	MAS: 3#8, #86, 1"	C10
ML-2	MCC-A	10	2	2	MAS: 3#8, #86, 1"	C10
RAW SEWAGE PUMP 1	MCC-B	20	2	2	MAS: 3#8, #86, 1"	C10



LEGEND
THE NUMBER INSIDE THE SQUARE INDICATES THE BID PACKAGE OTHER THAN BP NO. 5 & 6 THAT SUPPLY THE EQUIPMENT. THE CONTRACTOR SHALL COMPLETE THE INSTALLATION OF ALL EQUIPMENT AND SYSTEMS AND PROVIDE ALL APPEARANCES REQUIRED FOR PROPER OPERATION AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY THE EQUIPMENT MANUFACTURER.

- 1 SUPPLIED UNDER BID PACKAGE NO. 1, INSTALLED UNDER BID PACKAGE NO. 4, CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6
- 2 SUPPLIED UNDER BID PACKAGE NO. 1, INSTALLATION, CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6
- 3 SUPPLIED UNDER BID PACKAGE NO. 4, INSTALLATION, CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6

- GENERAL NOTES:
1. SEE DRAWING E-1 FOR ELECTRICAL STANDARD LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 2. SEE SPECIFICATIONS SECTION 16050.
 3. SPLICE NEW CABLE TO EXISTING CABLE AT NEW JUNCTION BOXES LOCATED NEAR THE CLARIFIER WALKWAY.
 4. REUSE EXISTING DUCT BANK AS INDICATED ON DWG E-2.

CLARIFIER NO. 2
SLUDGE COLLECTOR CONTROL PANEL

CLARIFIER NO. 2
WEIR CONTROL PANEL

CLARIFIER NO. 2
FLOCCULATOR MIXER CONTROL PANEL

TYPICAL RAS PUMP
RAS-1, RAS-2, RAS-3

SCUM PUMP CONTROL PANEL

MOTOR SIZE DETERMINED BY FLOCCULATOR EQUIPMENT MANUFACTURER.

25056E1
0100H
0205056

DESIGNED	BJB
DETAILED	KLM
CHECKED	NJP
APPROVED	<i>[Signature]</i>
DATE	7-13-95

DESIGNED BJB
DETAILED KLM
CHECKED NJP
APPROVED *[Signature]*
DATE 7-13-95

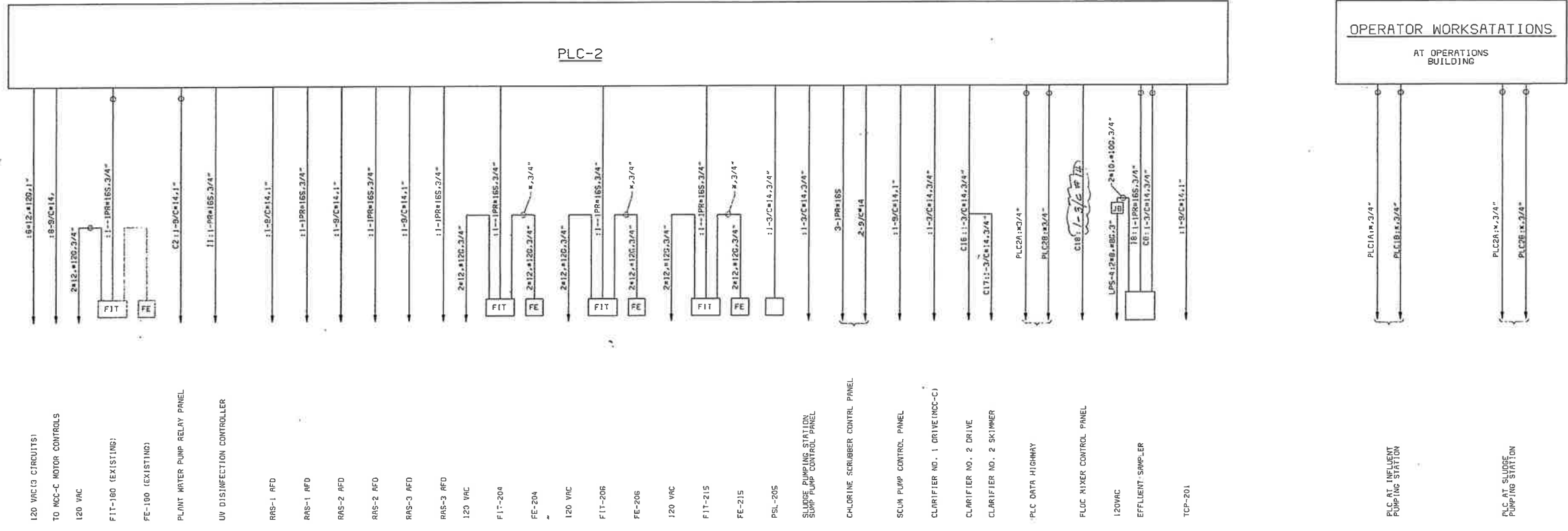
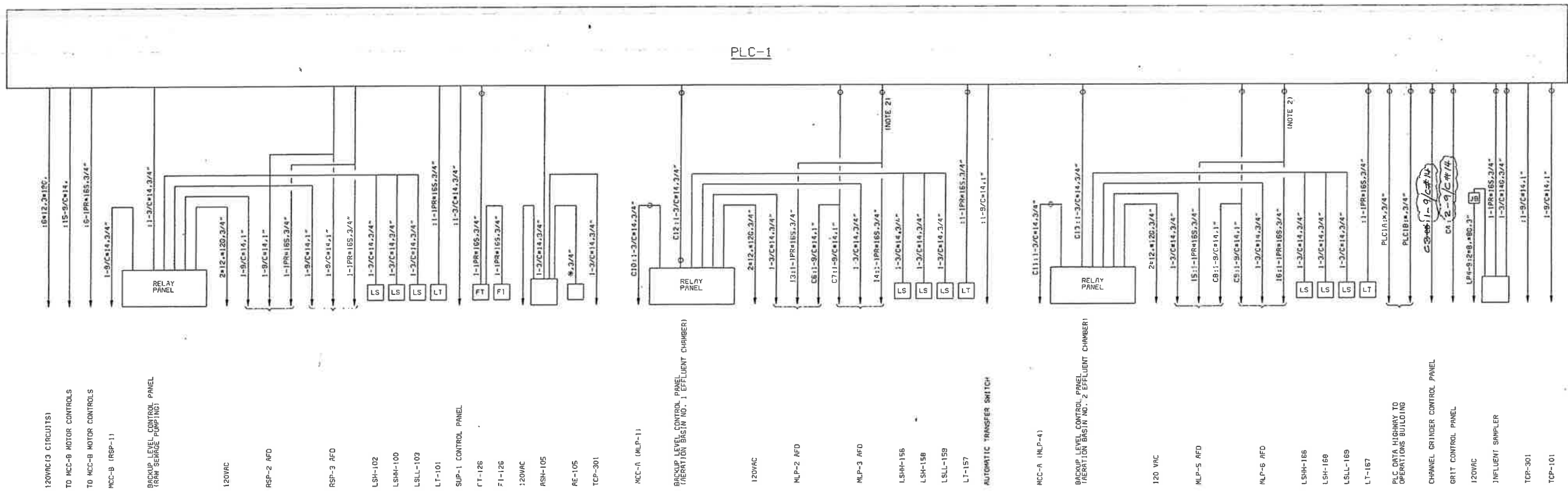


PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION
BID PACKAGE NO. 6
ELECTRICAL
ONE-LINES



E-4
SHEET
34 OF 47



OPERATOR WORKSATATIONS
AT OPERATIONS BUILDING

COMPUTER SYSTEM
ONE LINE DIAGRAM

5/2/95	CONFORM TO CONSTRUCTION RECORD	MB	MSJ
REVISIONS AND RECORD OF ISSUE		NO.	BY

DESIGNED: BJB
 DETAILED: HJP
 CHECKED: HJP
 APPROVED: James A. Wilson
 DATE: 7-13-95



PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 6
 ELECTRICAL
 PLC ONE-LINES



03/21/95 11:30:19 ACD-R11

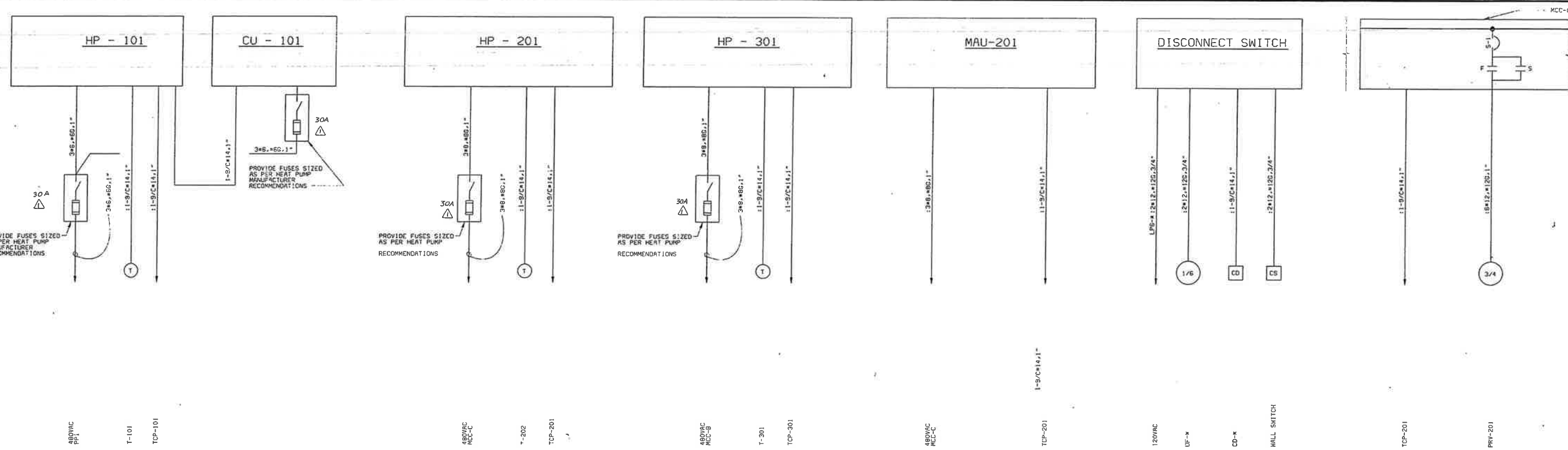
A
B

C

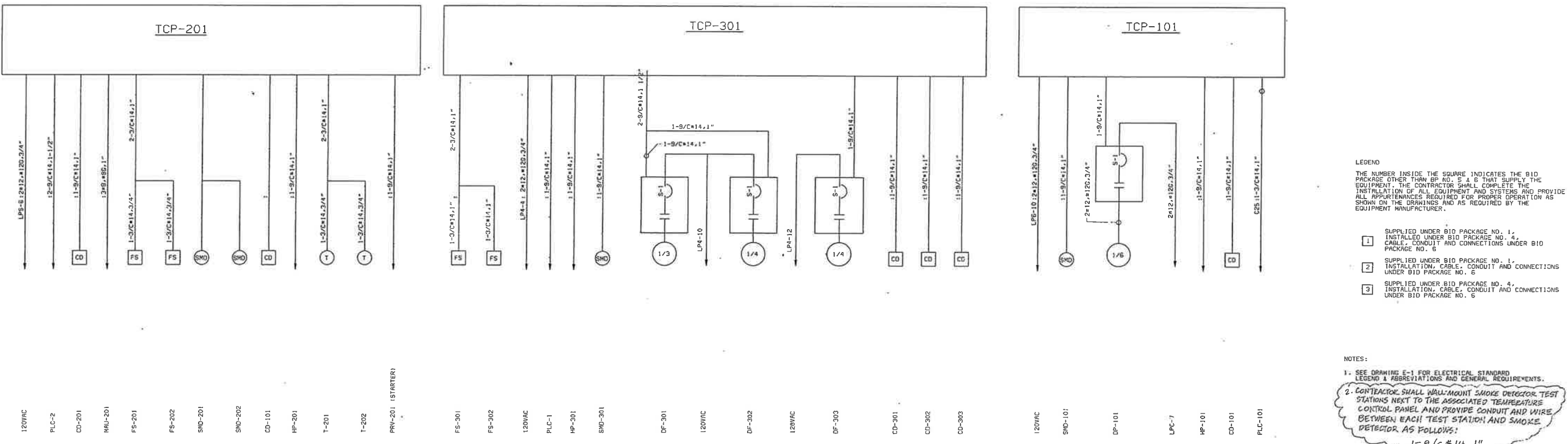
D

E

T



OPERATIONS BUILDING HEAT PUMP SLUDGE PUMPING STATION HEAT PUMP INFLUENT PUMPING STATION HEAT PUMP SLUDGE PUMPING STATION - MAU SINGLE PHASE VENTILATION STARTER PRV - 201



SLUDGE PUMPING STATION TEMPERATURE CONTROL PANEL INFLUENT PUMPING STATION TEMPERATURE CONTROL PANEL

- LEGEND
- THE NUMBER INSIDE THE SQUARE INDICATES THE BID PACKAGE OTHER THAN BP NO. 5 & 6 THAT SUPPLY THE EQUIPMENT. THE CONTRACTOR SHALL COMPLETE THE INSTALLATION OF ALL EQUIPMENT AND SYSTEMS AND PROVIDE ALL APPURTENANCES REQUIRED FOR PROPER OPERATION AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY THE EQUIPMENT MANUFACTURER.
- 1 SUPPLIED UNDER BID PACKAGE NO. 1, INSTALLED UNDER BID PACKAGE NO. 4, CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6
 - 2 SUPPLIED UNDER BID PACKAGE NO. 1, INSTALLED UNDER BID PACKAGE NO. 4, CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6
 - 3 SUPPLIED UNDER BID PACKAGE NO. 4, INSTALLED UNDER BID PACKAGE NO. 6

NOTES:

1. SEE DRAWING E-1 FOR ELECTRICAL STANDARD LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

2. CONTRACTOR SHALL WALL-MOUNT SMOKE DETECTOR TEST STATIONS NEXT TO THE ASSOCIATED TEMPERATURE CONTROL PANEL AND PROVIDE CONDUIT AND WIRE BETWEEN EACH TEST STATION AND SMOKE DETECTOR AS FOLLOWS:
1-9/C#14, 1"

250566
01034
F025056

DATE	5/20/95	CONFORM TO CONSTRUCTION RECORD	NO.	1	BY	MB	CK	MS	APP
REVISIONS AND RECORD OF ISSUE									

DESIGNED: BJB
 DETAILED: MJP
 CHECKED: MJP
 APPROVED: *James A. Wilson*
 DATE: 7-13-95



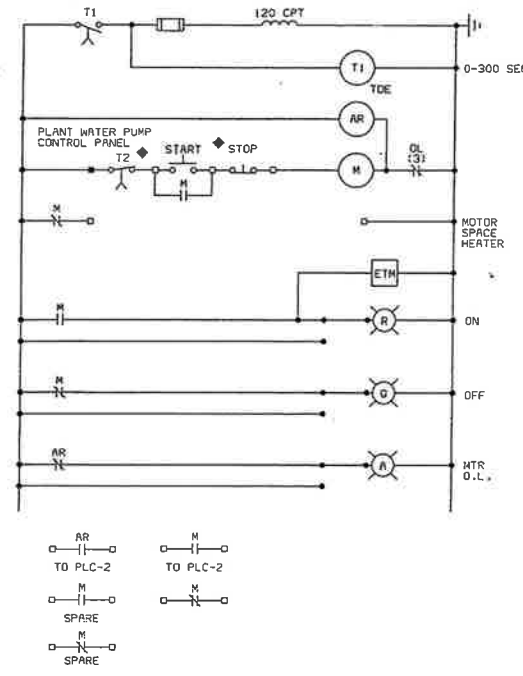
PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION

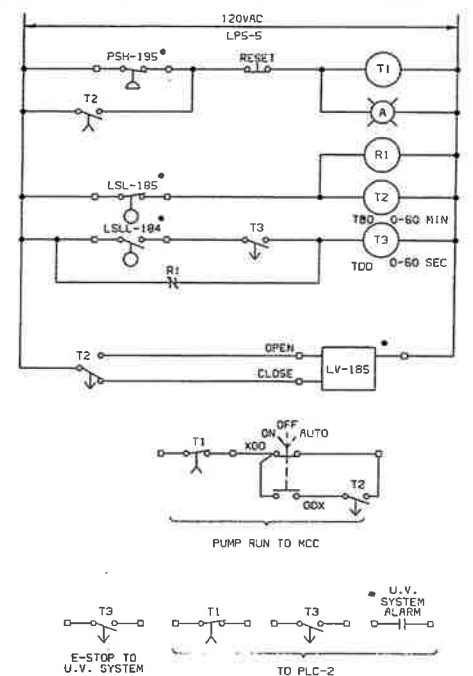
BID PACKAGE NO. 6
 ELECTRICAL
 HVAC, ONE-LINES & SCHEMATICS

E-6
 SHEET 36 OF 47

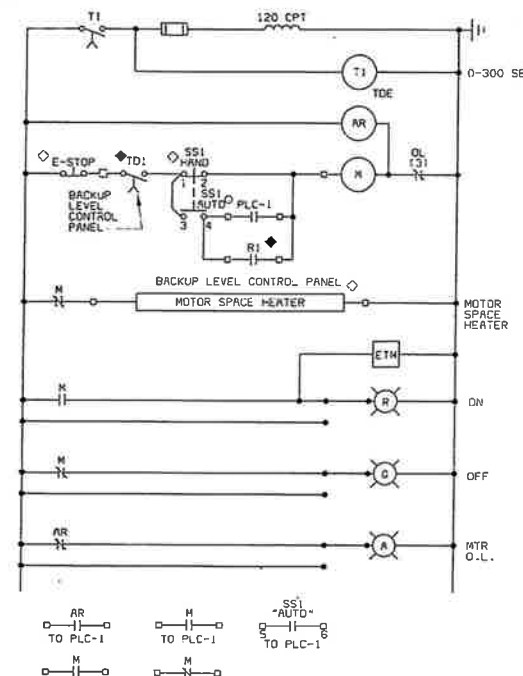
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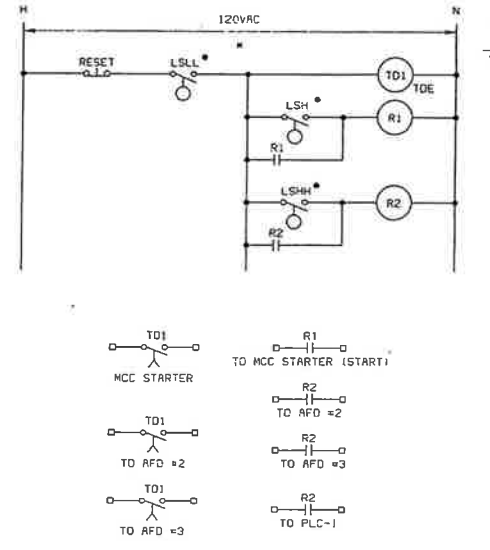
PLANT WATER PUMP



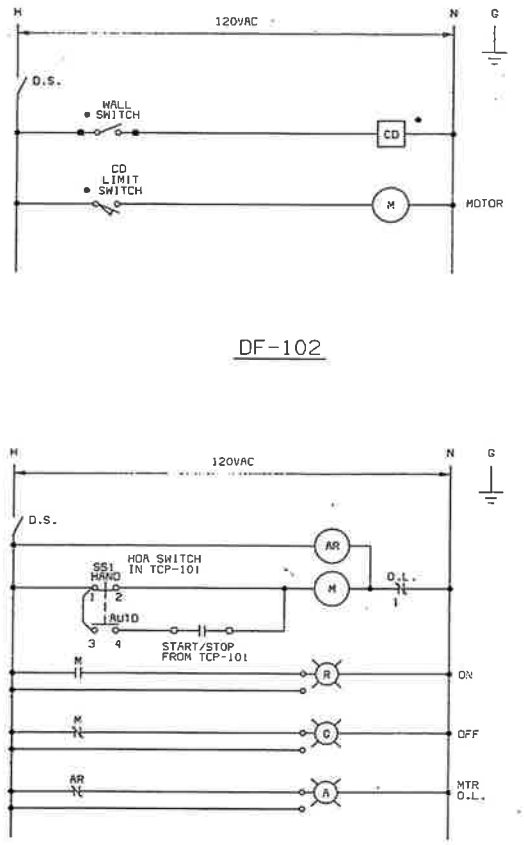
PLANT WATER PUMP CONTROL PANEL



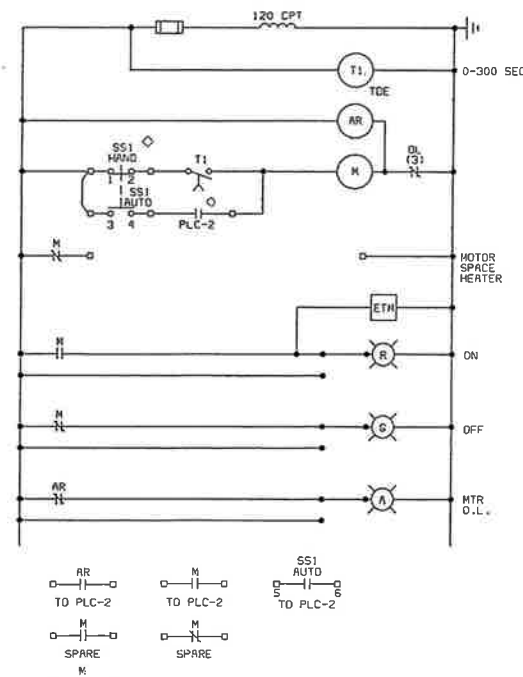
TYPICAL CONSTANT SPEED RAW SEWAGE PUMP MIXED LIQUOR PUMPS



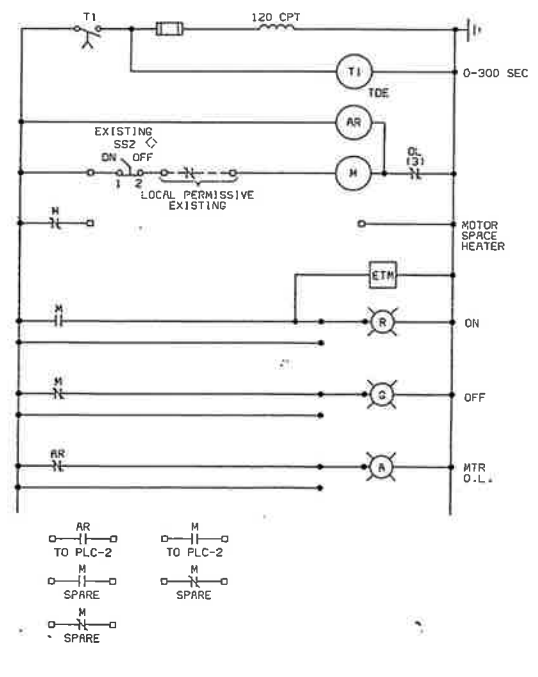
TYPICAL BACKUP LEVEL CONTROL PANEL



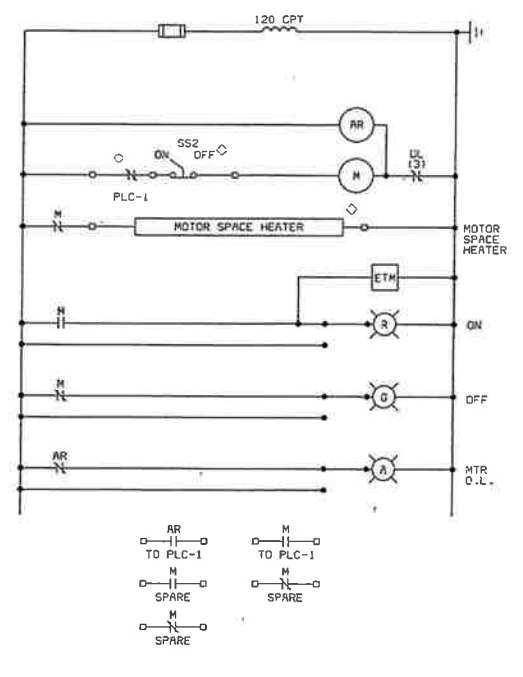
DF-102



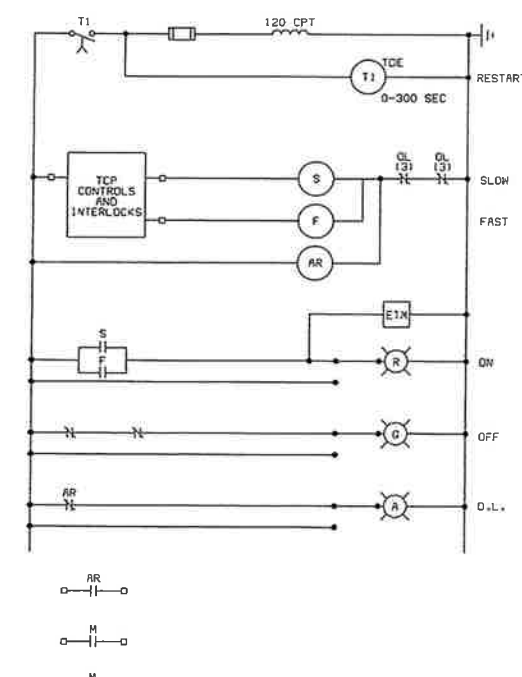
TYPICAL WAS PUMP



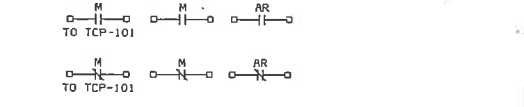
CLARIFIER #1



TYPICAL AERATION ROTOR



PRV-201 STARTER



DF-101

- SCHEMATIC SYMBOL LEGEND**
- ◇ AT DRIVEN EQUIPMENT
 - REMOTE FROM CONTROL / RELAY PANEL OR STARTER
 - ◆ AT LOCAL CONTROL / RELAY PANEL
 - AT PLC CABINET

- GENERAL NOTES:**
1. SEE DRAWING E-1 FOR ELECTRICAL STANDARD LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 2. SPARE CONTACTS SHALL BE PROVIDED FOR EACH STARTER AS DESCRIBED IN THE SPECIFICATIONS AND AS SHOWN ON THE SCHEMATICS.
 3. UNLESS OTHERWISE NOTED, DEVICES SHOWN ON THIS DRAWING SHALL BE SUPPLIED AS AN INTEGRAL PART OF THE STARTER. DEVICES LOCATED OUTSIDE OR REMOTE FROM THE STARTER SHALL BE IDENTIFIED BY THE LOCATION SYMBOL AS DEFINED IN THE SCHEMATIC SYMBOL LEGEND.
 4. RELAY AND TIMER DESIGNATIONS APPLY TO INDIVIDUAL SCHEMATICS ONLY.
 5. CONTROL SETTINGS, ALARM LIMITS, AND SIMILAR ADJUSTABLE LIMITS ARE INTENDED TO BE FOR INITIAL STARTUP. ADJUSTABLE SETTINGS SHALL BE TESTED AND CHANGED BY THE CONTRACTOR, IF REQUIRED FOR PROPER SEQUENCING AND OPERATION.
 6. SCHEMATICS SHOW FUNCTIONAL REQUIREMENTS ONLY. EXACT WIRING SHALL BE DETERMINED BY CONTRACTOR BASED ON EQUIPMENT FURNISHED.

250557
0104
02/05/95

DESIGNED	BJB
DETAILED	KLM, TES
CHECKED	MJP
APPROVED	James A. Wilson
DATE	7-13-95

CONFORM TO CONSTRUCTION RECORD

DATE: _____

REVISIONS AND RECORD OF ISSUE

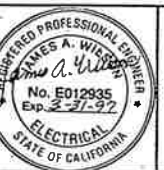
NO. BY CK/APP



PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION

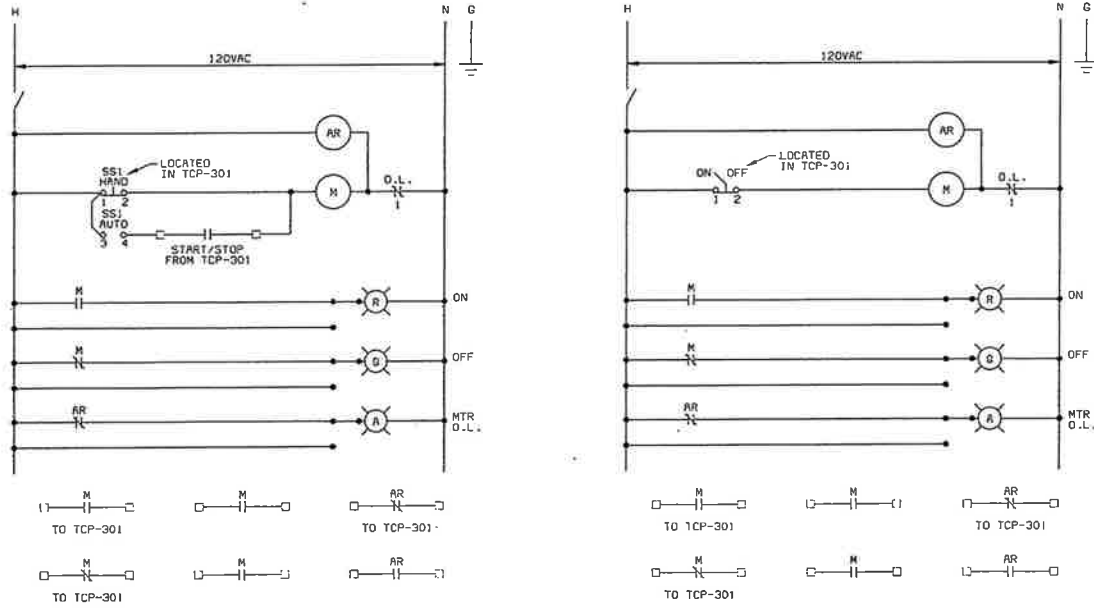
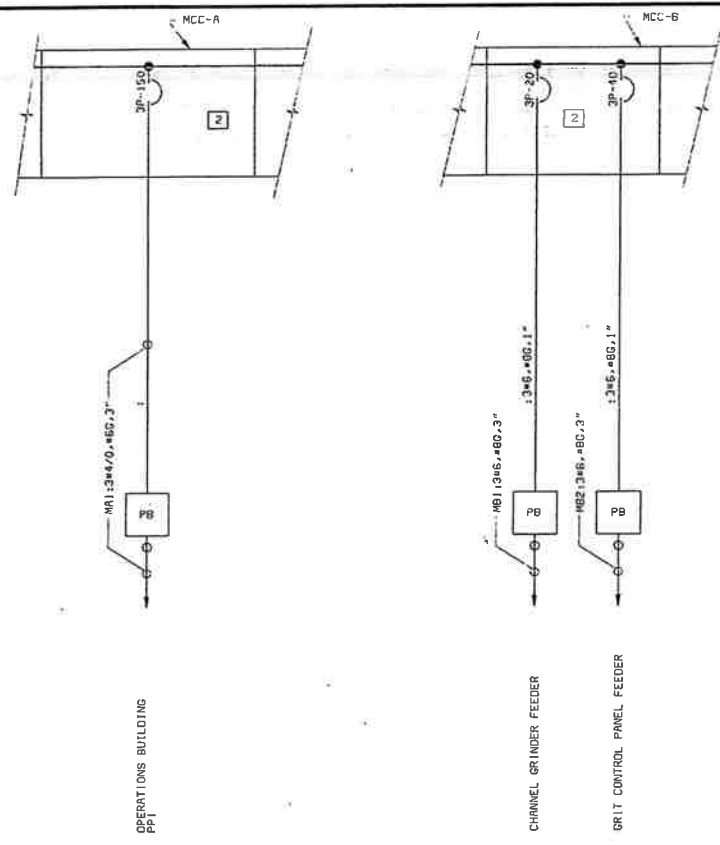
BID PACKAGE NO. 6
ELECTRICAL SCHEMATICS



E-7

SHEET 37 OF 47

02/21/95 17119.21 MCD-111



DF-302, DF-303

DF-301

LEGEND
THE NUMBER INSIDE THE SQUARE INDICATES THE BID PACKAGE OTHER THAN BID NO. 5 & 6 THAT SUPPLY THE EQUIPMENT. THE CONTRACTOR SHALL COMPLETE THE INSTALLATION OF ALL EQUIPMENT AND SYSTEMS AND PROVIDE ALL APPURTENANCES REQUIRED FOR PROPER OPERATION AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY THE EQUIPMENT MANUFACTURER.

- 1 SUPPLIED UNDER BID PACKAGE NO. 1, INSTALLED UNDER BID PACKAGE NO. 4, CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6
- 2 SUPPLIED UNDER BID PACKAGE NO. 1, INSTALLED UNDER BID PACKAGE NO. 4, CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6
- 3 SUPPLIED UNDER BID PACKAGE NO. 4, INSTALLED UNDER BID PACKAGE NO. 4, CABLE, CONDUIT AND CONNECTIONS UNDER BID PACKAGE NO. 6

GENERAL NOTES:
1. SEE DRAWING E-1 FOR ELECTRICAL STANDARD LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

25056_LE4
C1034
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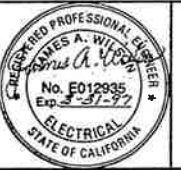
DESIGNED	BJB
DETAILED	TES
CHECKED	
APPROVED	<i>James A. Wilson</i>
DATE	7-13-95

50% CONFORM TO CONSTRUCTION RECORD



PROJECT NO.
25056

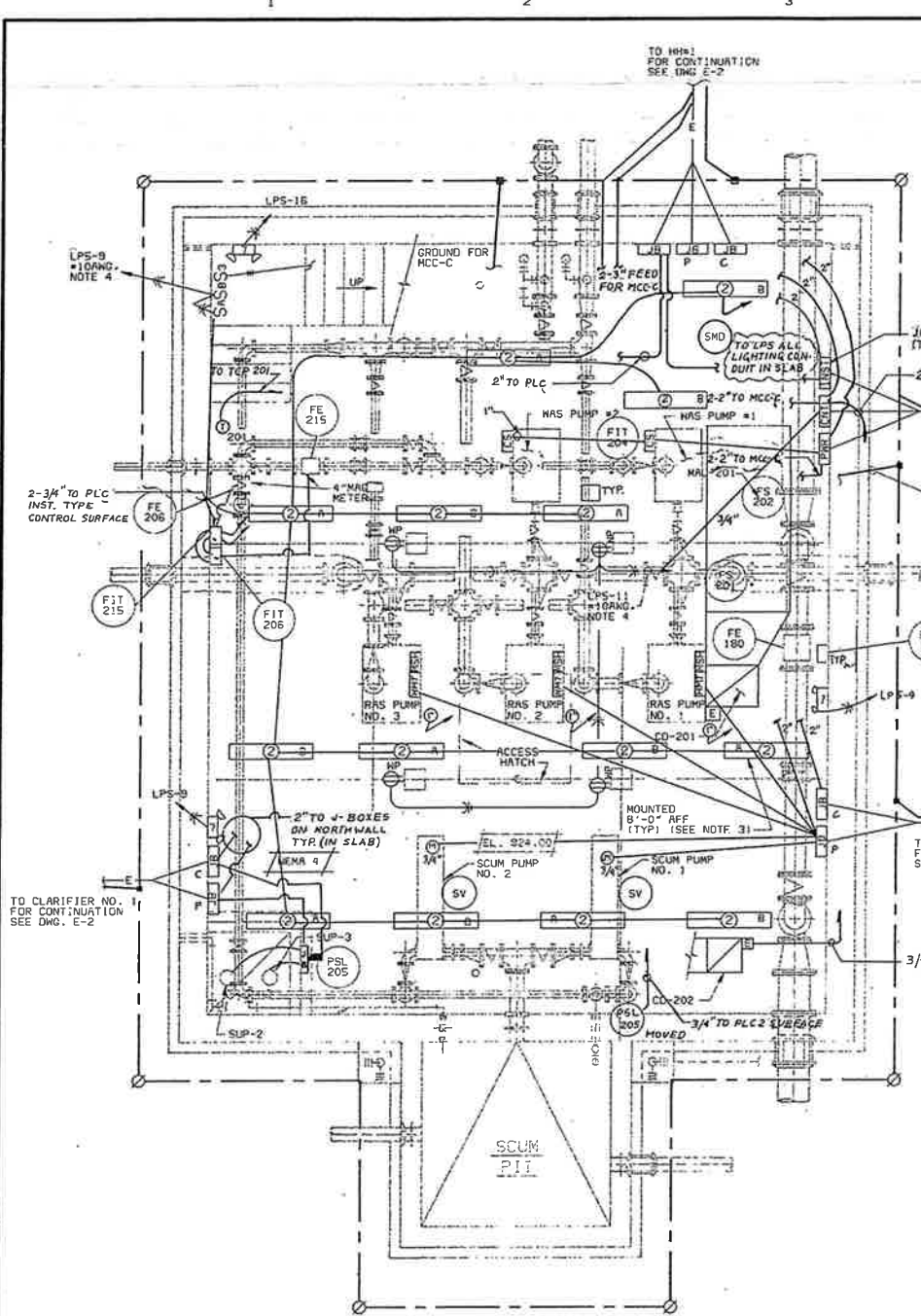
CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION
BID PACKAGE NO. 6
ELECTRICAL
ONE-LINES AND SCHEMATICS



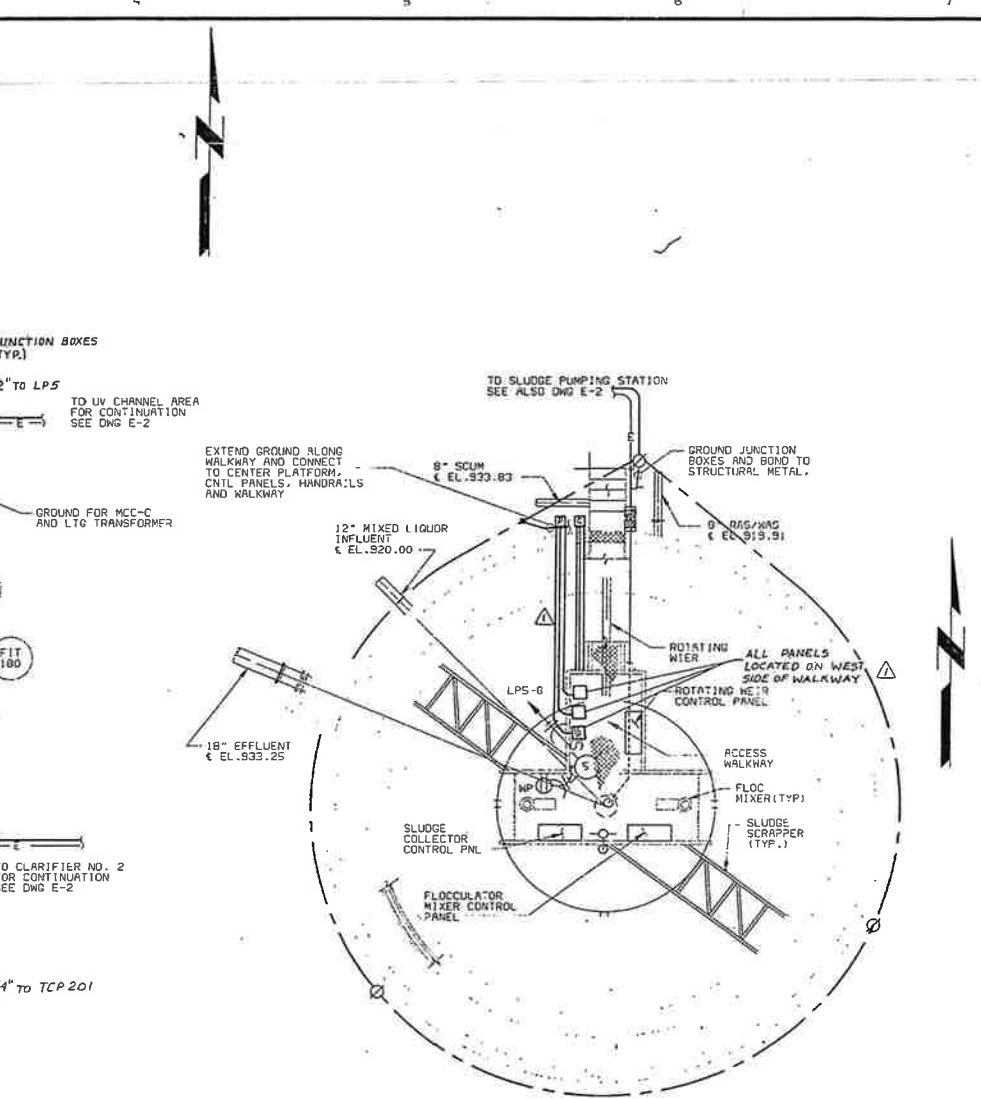
E-8

SHEET
38 OF 47

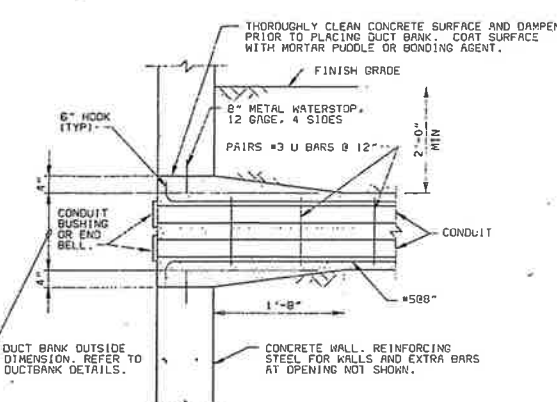
25056.E3
 G1034
 FB25056



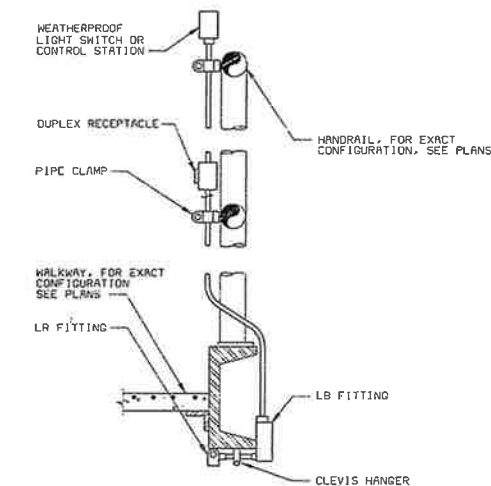
SLUDGE PUMPING STATION
PUMP ROOM PLAN Δ
1/4" = 1'-0"



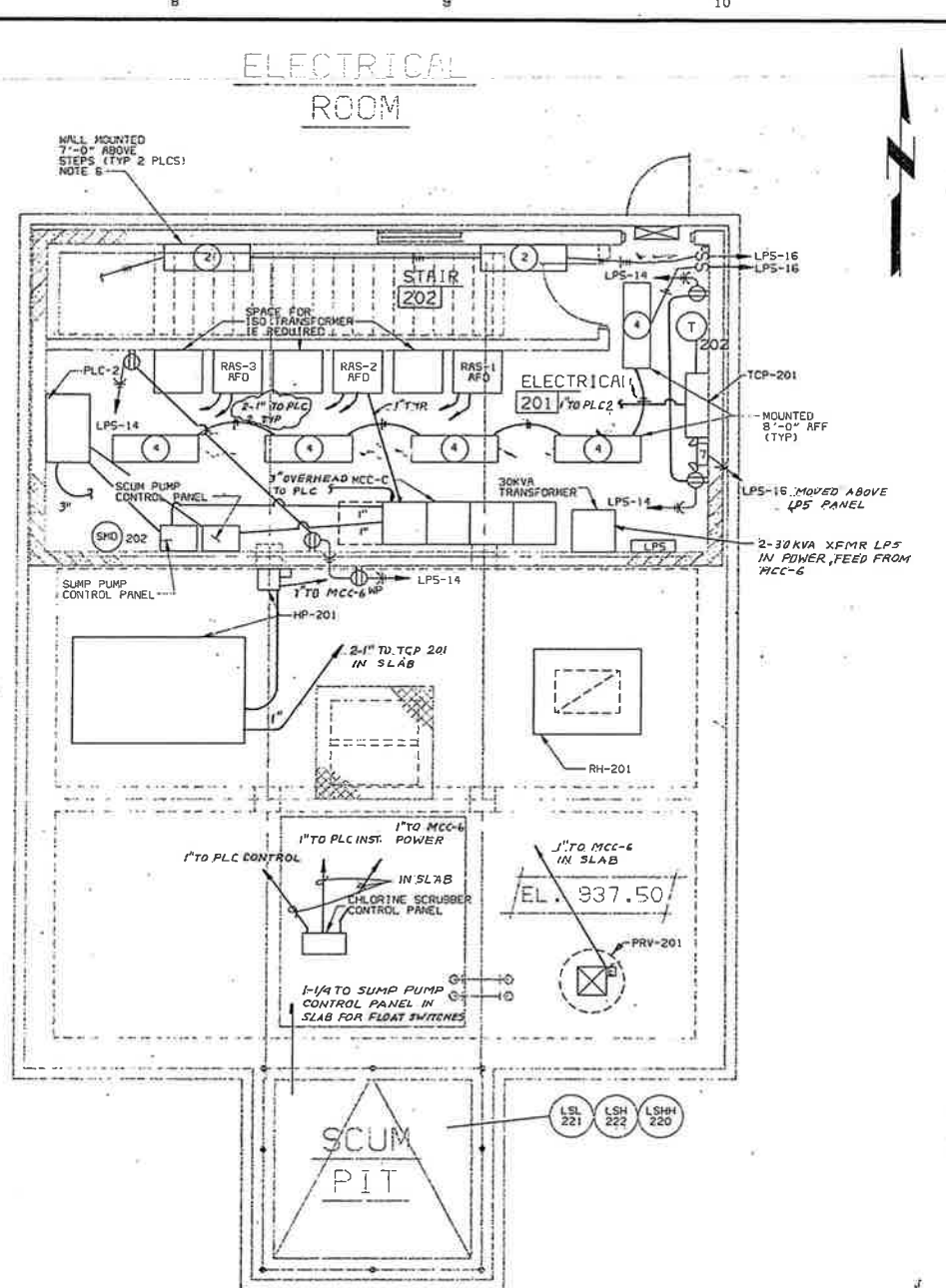
CLARIFIER NO. 2 PLAN
1/4" = 1'-0"



TYPICAL UNDERGROUND
DUCT BANK ENTRANCE DETAIL
NO SCALE



TYPICAL CONTROL STATION
MOUNTING AT METAL WALKWAY DETAIL
NO SCALE



SLUDGE PUMPING STATION
GROUND FLOOR PLAN Δ
1/4" = 1'-0"

- NOTES:
- SEE DRAWING E-1 FOR ELECTRICAL STANDARD LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - SEE SPECIFICATION SECTION 16050 FOR LUMINAIRE SCHEDULE.
 - LIGHTING FIXTURES SHALL BE MOUNTED APPROXIMATELY 8 FEET ABOVE THE FINISHED FLOOR. FIXTURE LOCATIONS ARE APPROXIMATE AND SHALL BE COORDINATED WITH MECHANICAL EQUIPMENT, PIPING AND ELECTRICAL RACEWAY INSTALLATION.
 - ALL LIGHTING AND RECEPTACLES CIRCUITS SHALL USE #10HWG WIRE.
 - RECEPTACLES IN PUMP ROOM AND ELECTRICAL ROOMS TO BE MOUNTED 4'-0" AFF.
 - CONTRACTOR SHALL FABRICATE WALL MOUNTING BRACKETS FOR THE STAIRWELL FIXTURES, SUITABLE FOR SEISMIC ZONE 4.
 - CONTRACTOR SHALL WIRE LIGHT FIXTURES WITH "A" DESIGNATION TO THE SWITCH IDENTIFIED AS SWITCH A, LIKEWISE FOR SWITCH B.

DESIGNED	BJR
DETAILED	HJP, KLM
CHECKED	HJP
APPROVED	<i>James A. Wilson</i>
DATE	7-13-95

CONFORM TO CONSTRUCTION RECORD



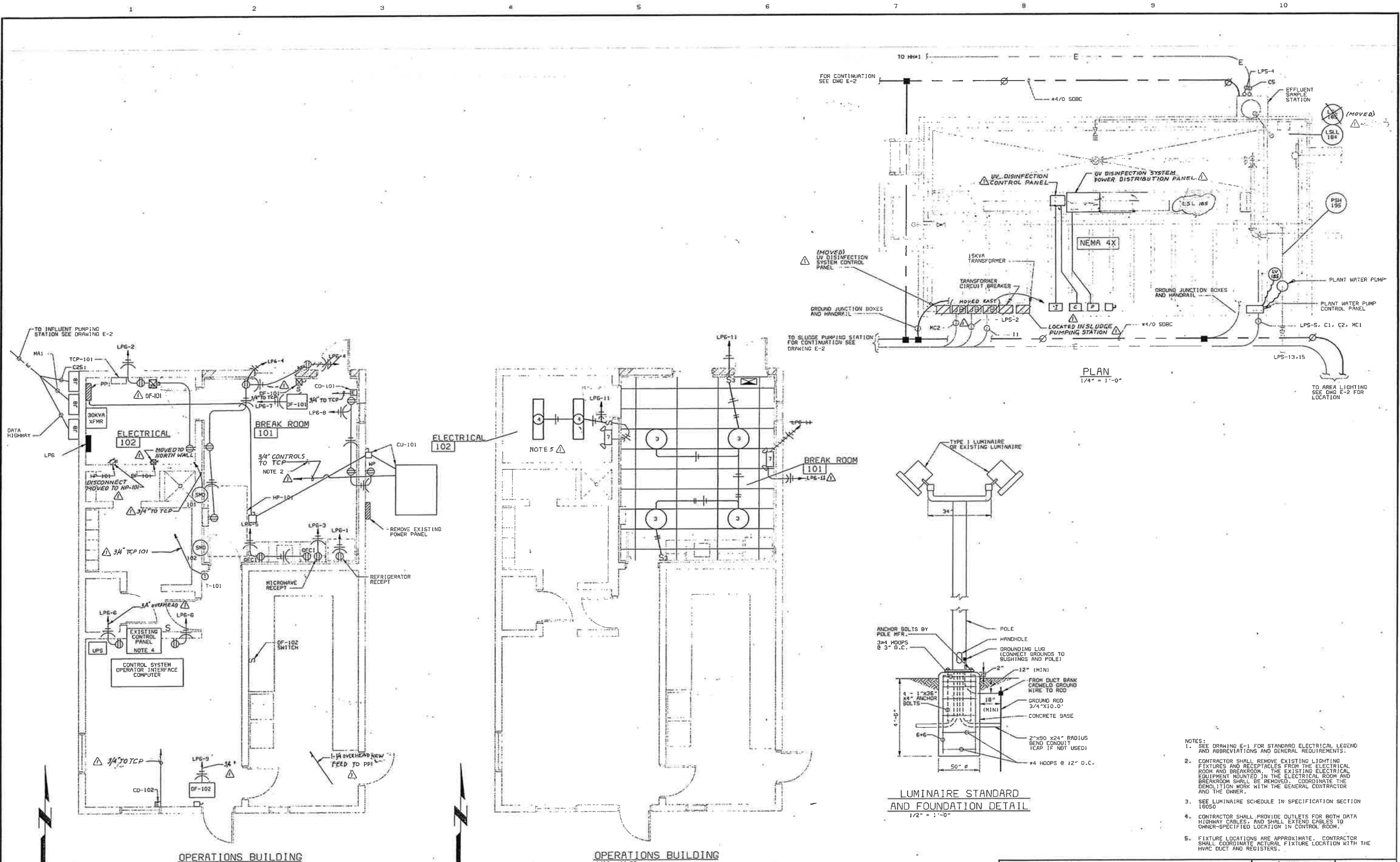
PROJECT NO.
25056

CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION
BID PACKAGE NO. 6
SLUDGE PUMPING STATION-ELECTRICAL
PLANS



E-9
SHEET
39 of 47

03/21/95 15:46:56 ACB-R11



- NOTES:
1. SEE DRAWING E-1 FOR STANDARD ELECTRICAL LEGEND AND ABBREVIATIONS AND GENERAL REQUIREMENTS.
 2. CONTRACTOR SHALL REMOVE EXISTING LIGHTING FIXTURES AND RECEPTILES FROM THE ELECTRICAL ROOM AND BREAKROOM. THE EXISTING ELECTRICAL EQUIPMENT MOUNTED IN THE ELECTRICAL ROOM AND BREAKROOM SHALL BE REMOVED. COORDINATE THE DEMOLITION WORK WITH THE GENERAL CONTRACTOR AND THE OWNER.
 3. SEE LUMINAIRE SCHEDULE IN SPECIFICATION SECTION 16050
 4. CONTRACTOR SHALL PROVIDE OUTLETS FOR BOTH DATA HIGHWAY CABLES, AND SHALL EXTEND CABLES TO OWNER-SPECIFIED LOCATION IN CONTROL ROOM.
 5. FIXTURE LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE ACTUAL FIXTURE LOCATION WITH THE HVAC DUCT AND REGISTERS.

CITY OF IMPERIAL, CALIFORNIA WASTEWATER TREATMENT PLANT EXPANSION			E-10
PROJECT NO. 25056 BID PACKAGE NO. 6 OPERATIONS BUILDING - ELECTRICAL PLANS			
SHEET 40 OF 47			

25056E10
01003
0225096

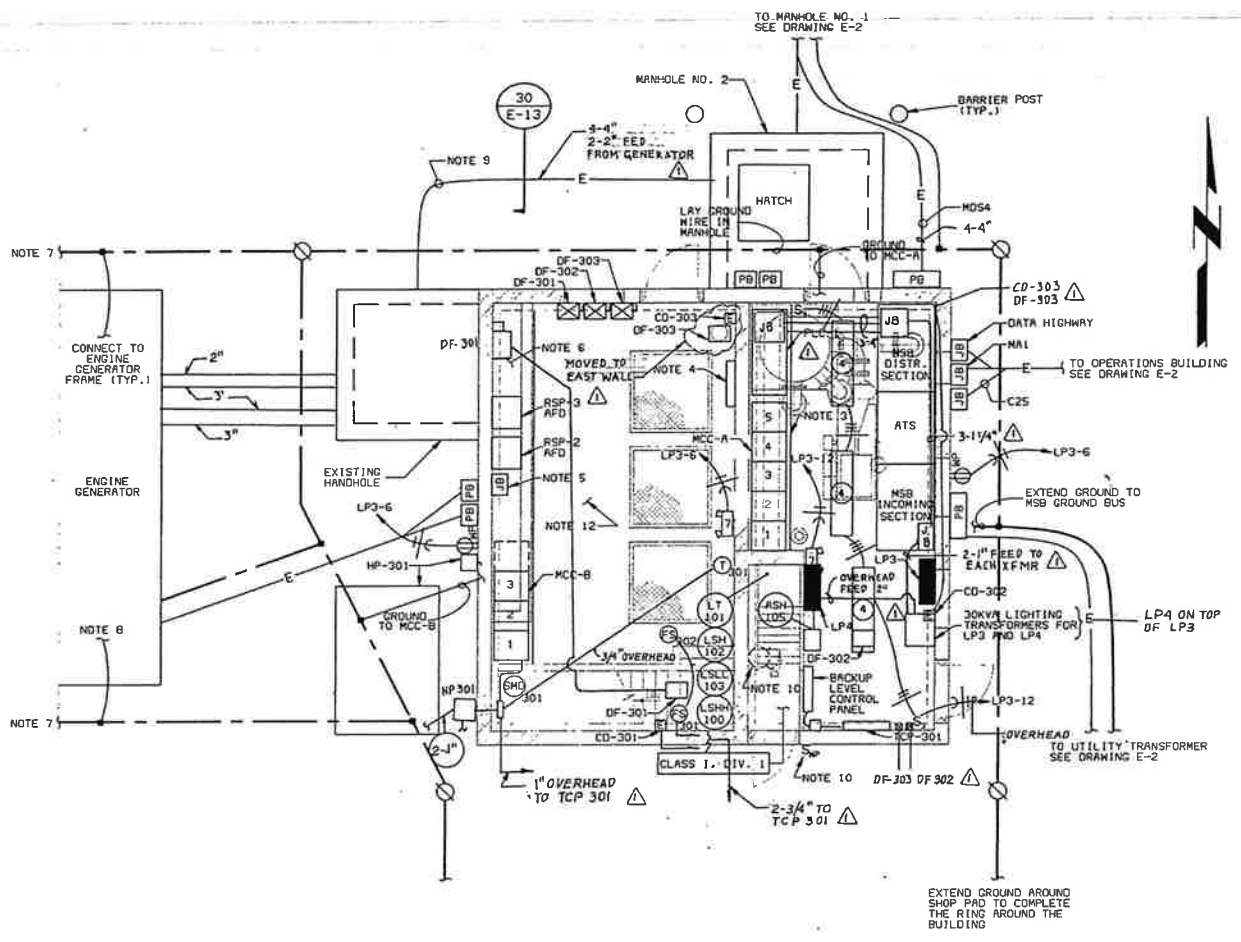
DESIGNED	BJB
DETAILED	NJP
CHECKED	NJP
APPROVED	<i>James A. Wilson</i>
DATE	7-13-95

CONFORM TO CONSTRUCTION RECORD

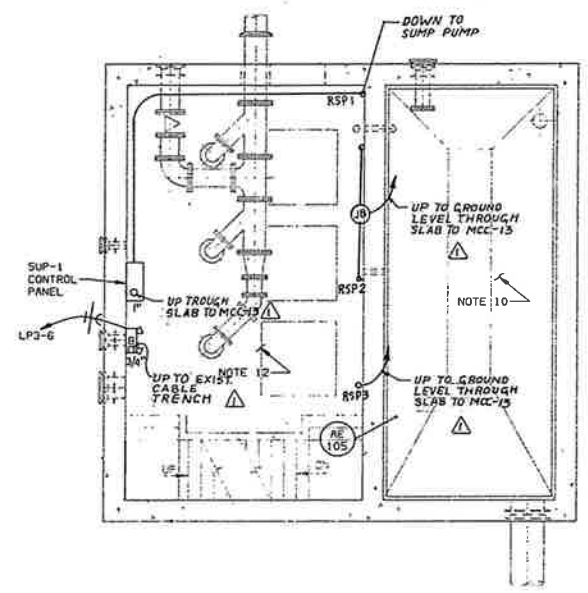
REVISIONS AND RECORD OF ISSUE



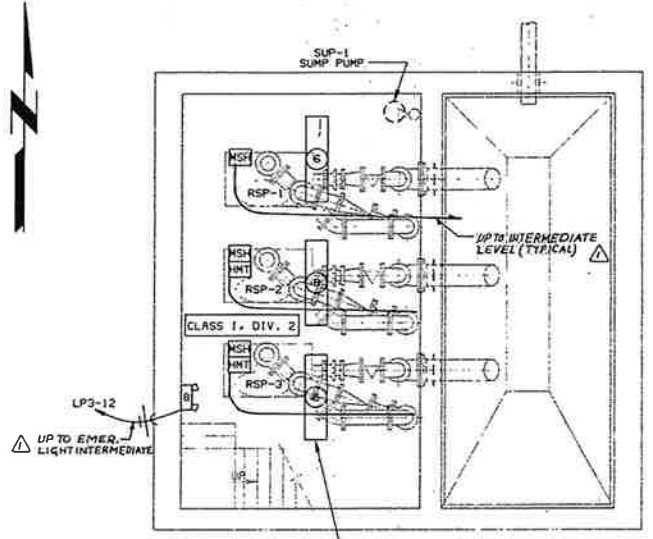
PROJECT NO. 25056



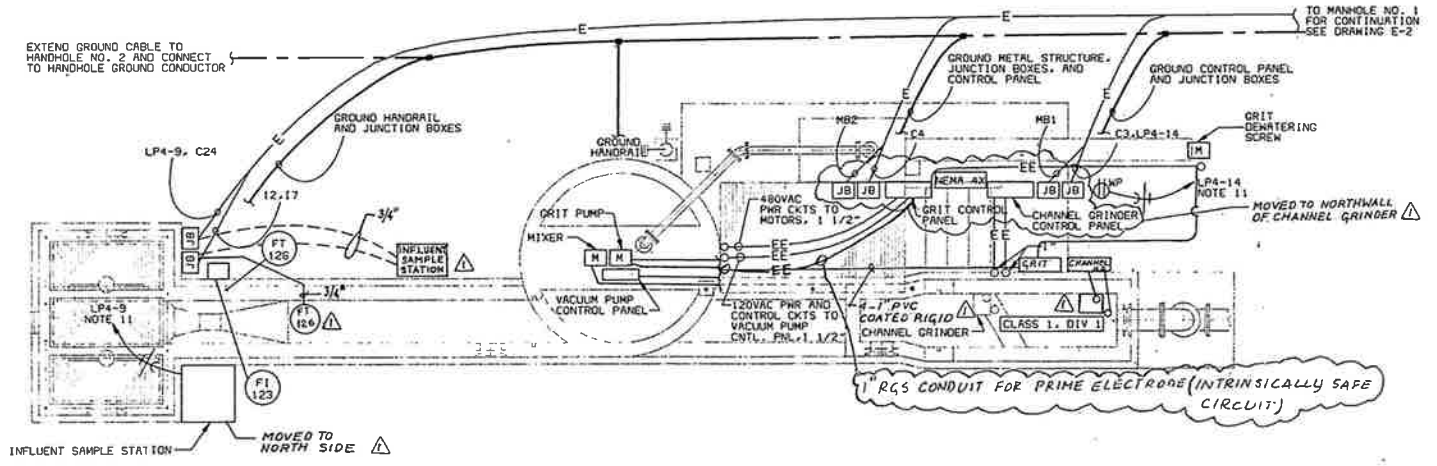
INFLUENT PUMP STATION
GROUND LEVEL EL.935.0± PLAN
1/4" = 1'-0"



INFLUENT PUMP STATION
INTERMEDIATE LEVEL PLAN
1/4" = 1'-0"



INFLUENT PUMP STATION
PUMP ROOM PLAN
1/4" = 1'-0"



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

- NOTES
- SEE DRAWING E-1 FOR ELECTRICAL STANDARD LEGEND AND ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - SEE LUMINAIRE SCHEDULE IN SPECIFICATION SECTION 16050.
 - CONTRACTOR SHALL CONSTRUCT A CABLE TRENCH IN THE 6 INCH EQUIPMENT MAINTENANCE PAD AND PROVIDE ACCESS INTO MANHOLE NO. 2 VIA PULL BOX AND CONDUIT.
 - CONTRACTOR SHALL REMOVE THE EXISTING BATTERY CHARGER AND ASSOCIATED EQUIPMENT.
 - EXISTING LIGHTING AND RECEPTACLE CIRCUITS PREVIOUSLY POWERED FROM EXISTING MCC-A SHALL BE EXTENDED TO NEW LIGHTING PANELS LP3 AND LP4 AS INDICATED ON THE NEW PANELBOARD SCHEDULES. REFER TO SPECIFICATION SECTION 16050 FOR PANELBOARD SCHEDULES.
 - THE EXISTING MOTOR CONTROL CENTER AND CONTROL CABINETS SHALL BE REMOVED AFTER THE NEW MCC-A IS PLACED IN SERVICE AND TEMPORARY FEEDS, AS INDICATED IN SPECIFICATION SECTION 16050, ARE INSTALLED.
 - THE CONTRACTOR SHALL EXTEND THE GROUND GRID AROUND THE EQUIPMENT PAD AND INSTALL GROUND ROD NEAR THE NORTHEAST AND SOUTHEAST CORNERS OF THE EQUIPMENT PAD.
 - THE CONTRACTOR SHALL COORDINATE CONDUIT STUB UP IN THE EQUIPMENT PAD WITH THE CONTRACTOR FOR BID PACKAGE NO. 3, THE GENERAL CONTRACTOR, AND PER THE ENGINE-GENERATOR MANUFACTURER RECOMMENDATIONS.
 - CONDUITS ARE AVAILABLE AS AN ALTERNATIVE TO OVERHEAD RACEWAY.
 - CONTRACTOR SHALL DEMO LIGHT FIXTURES IN THE INTERMEDIATE LEVEL OF THE PUMPING STATION AND WIRE THE EXISTING EXPLOSION PROOF LIGHT FIXTURE IN THE WETWELL ACCESS AREA TO A NEW LIGHT SWITCH AS SHOWN. THE CIRCUIT SHALL USE #10 AWG WIRE IN 3/4" CONDUIT. USE OXT LP3-12.
 - WIRE IN DUCT BANK SHALL BE #8 AWG. LOCAL WIRE SHALL BE #10 AWG.
 - EXISTING LIGHT FIXTURES SHALL UTILIZE EXISTING CONDUIT AND WIRE AS MUCH AS POSSIBLE AND BE POWERED FROM LP3-6.

CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION

BID PACKAGE NO. 6
ELECTRICAL
PLANS

PROJECT NO.
25056

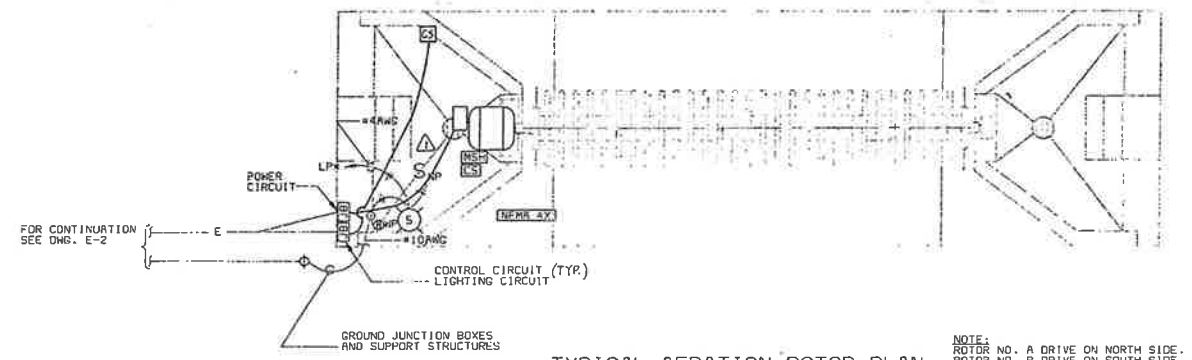


DESIGNED: BJB
DETAILED: WJP, TES
CHECKED: MJP
APPROVED: *James A. Walker*
DATE: 7-13-95

NO.	BY	CK	APP
52095	CONFORM TO CONSTRUCTION RECORD		MB 752
DATE	REVISIONS AND RECORD OF ISSUE		

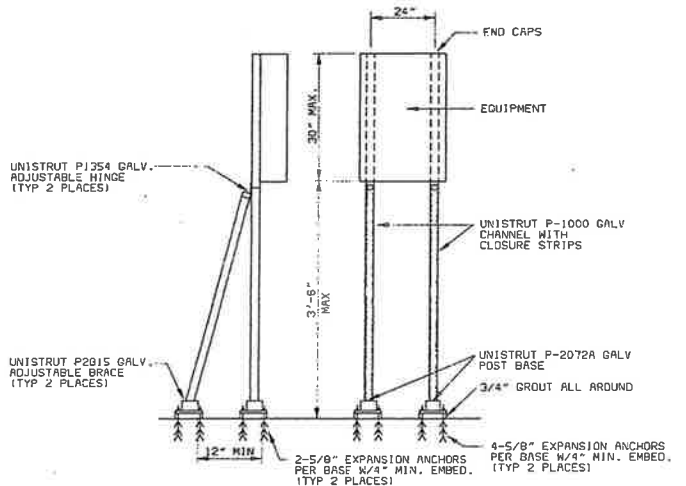


E-11
SHEET
OF



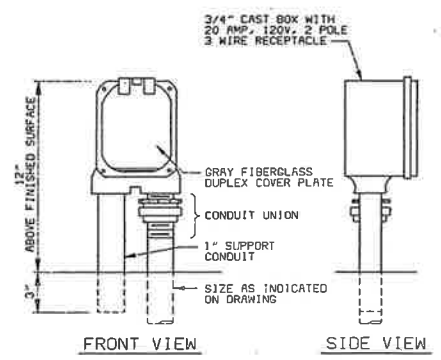
TYPICAL AERATION ROTOR PLAN
 1/4" = 1'-0"
 ROTOR RE-2A RE-2B LP LP4-1 LP4-2

NOTE: ROTOR NO. A DRIVE ON NORTH SIDE. ROTOR NO. B DRIVE ON SOUTH SIDE.



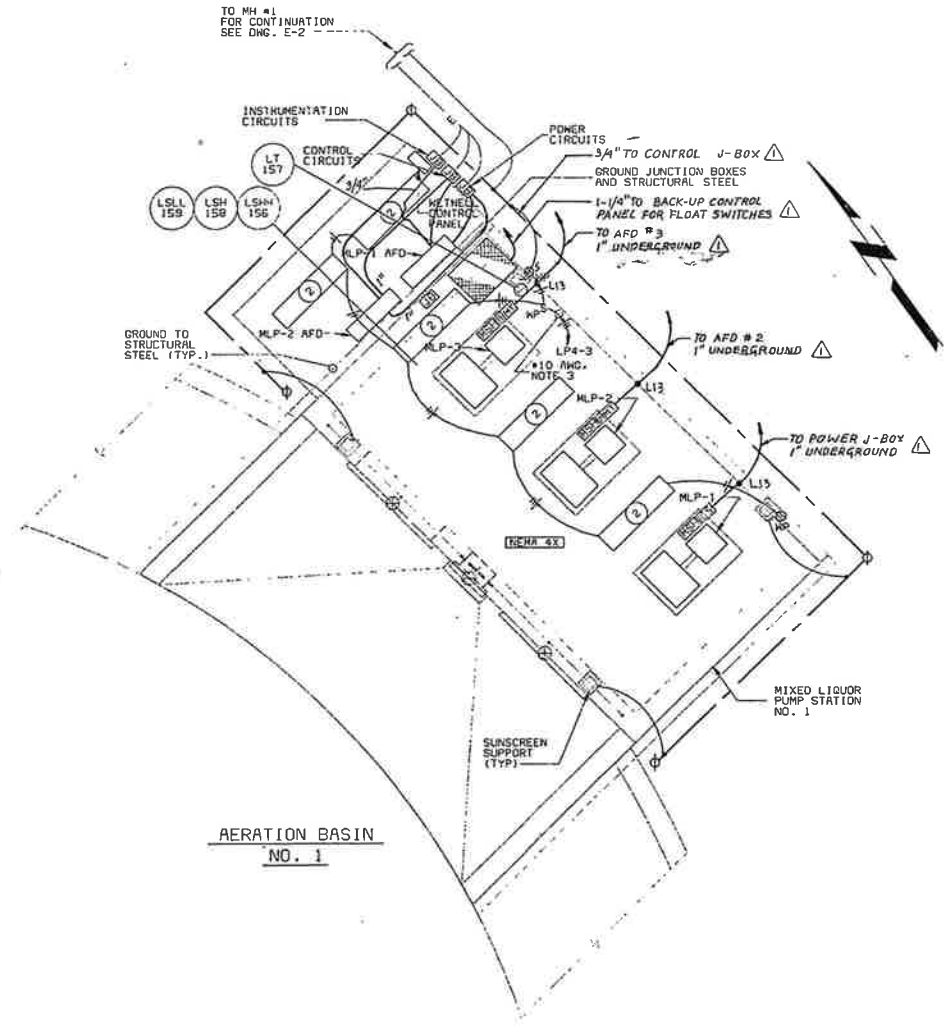
TYPICAL EQUIPMENT MOUNTING DETAIL
 NO SCALE

NOTE: IN OUTDOOR LOCATIONS, USE STAINLESS STEEL BOLTS, NUTS, WASHERS, AND ANCHOR BOLTS.

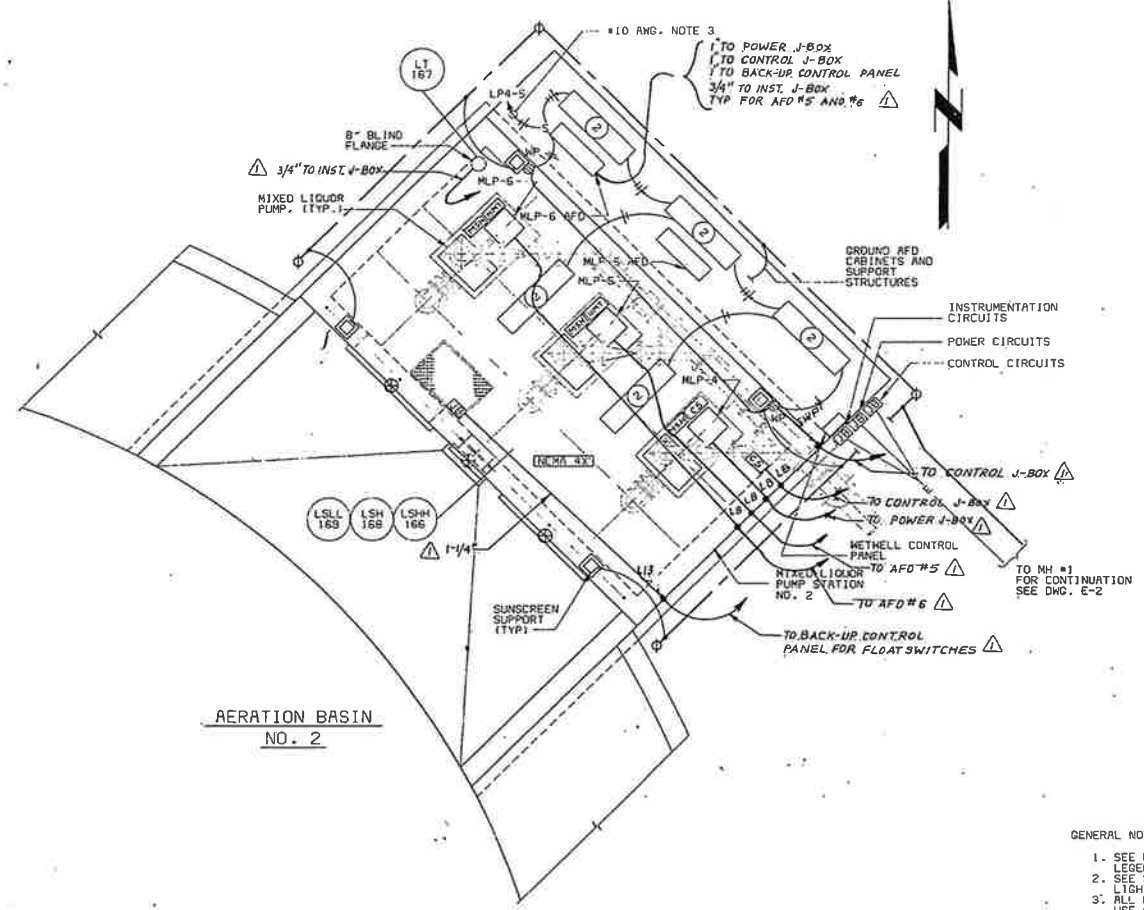


TYPICAL WEATHERPROOF RECEPTACLE MOUNTING DETAIL
 NO SCALE

NOTE: ALL EXPOSED CONDUIT SHALL BE PVC COATED RIGID STEEL.



AERATION BASIN NO. 1
MIXED LIQUOR PUMP STATION NO. 1
 1/4" = 1'-0"



AERATION BASIN NO. 2
MIXED LIQUOR PUMP STATION NO. 2
 1/4" = 1'-0"

- GENERAL NOTES:
- SEE DRAWING E-1 FOR ELECTRICAL STANDARD LEGEND & ABBREVIATIONS, AND GENERAL REQ'S
 - SEE SPECIFICATION SECTION 16050 FOR LIGHTING FIXTURE SCHEDULE
 - ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL USE #10 AWG WIRE

03/22/95 08:38:41 ACD-R11
 25056E12
 G1034
 F025056

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

DESIGNED: BJB
 DETAILED: WJP
 CHECKED: WJP
 APPROVED: James A. Walker
 DATE: 7-13-95



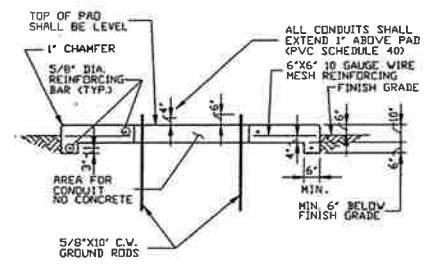
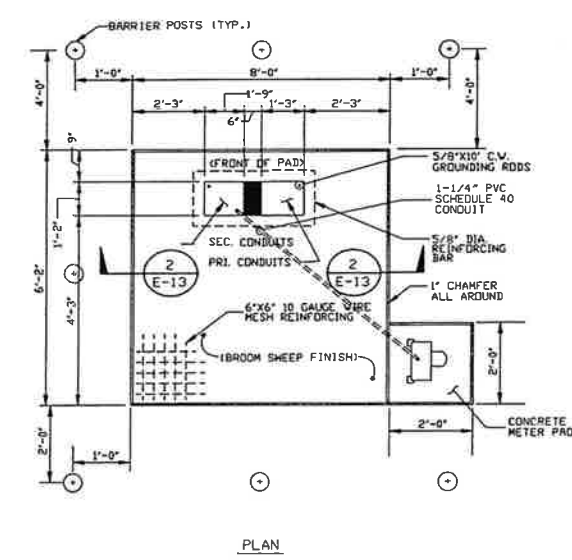
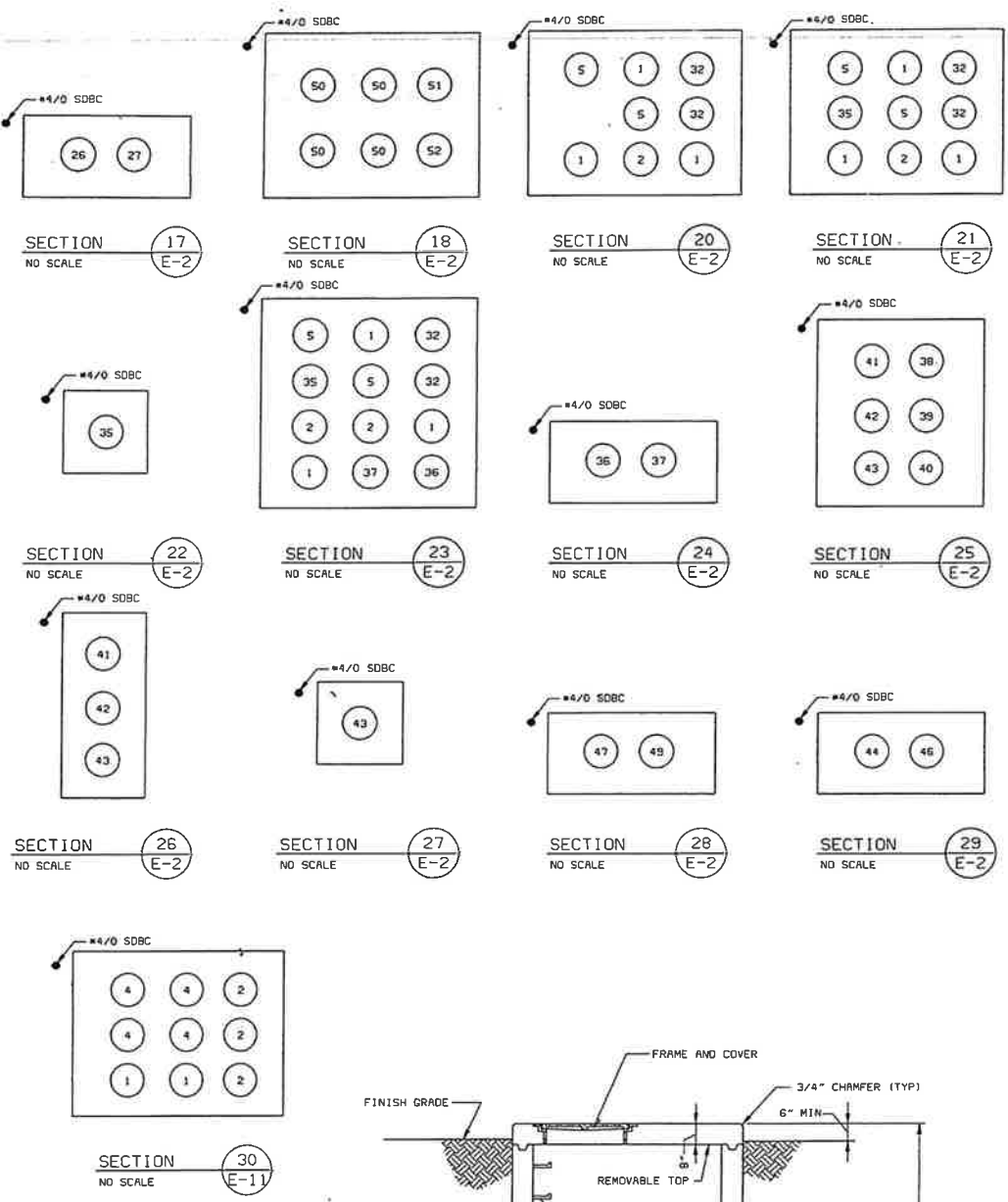
PROJECT NO.
 25056

CITY OF IMPERIAL, CALIFORNIA
 WASTEWATER TREATMENT PLANT EXPANSION
 BID PACKAGE NO. 6
 A BASIN & MIXED LIQUOR PS-ELECTRICAL PLANS



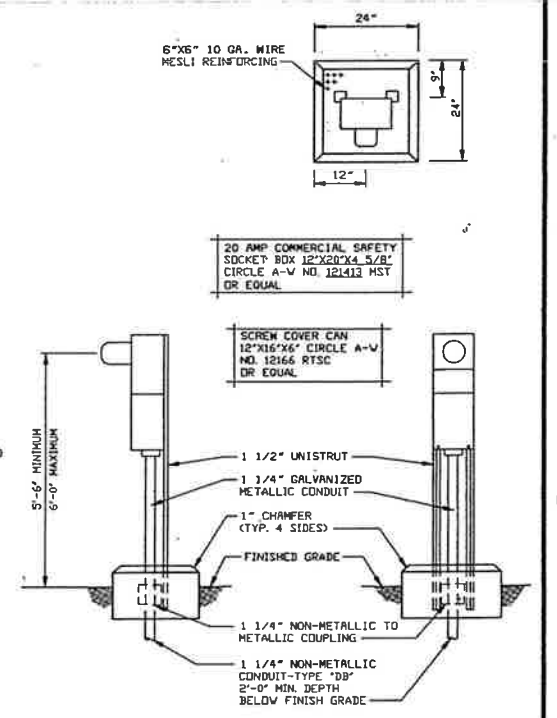
E-12
 SHEET
 42 OF 47

DUCT BANK SCHEDULE		
CONDUIT NO.	SIZE	CIRCUITS
1	3" PVC	SPARE
2	3" PVC	SPARE
3	3" PVC	SPARE
4	3" PVC	SPARE
5	3" PVC	DATA HIGHWAY
6	3" PVC	UT1A
7	3" PVC	UT1
8	3" PVC	NOT USED
9	3" PVC	MA10
10	3" PVC	MA10
11	3" PVC	MA10
12	3" PVC	MA10
13	3" PVC	MA10
14	3" PVC	MA10
15	3" PVC	MA10
16	3" PVC	MA10
17	3" PVC	MA10
18	3" PVC	MA10
19	3" PVC	MA10
20	3" PVC	MA10
21	3" PVC	MA10
22	3" PVC	MA10
23	3" PVC	MA10
24	3" PVC	MA10
25	3" PVC	MA10
26	3" PVC	MA10
27	3" PVC	MA10
28	3" PVC	MA10
29	3" PVC	MA10
30	3" PVC	MA10
31	3" PVC	MA10
32	3" PVC	MA10
33	3" PVC	MA10
34	3" PVC	MA10
35	3" PVC	MA10
36	3" PVC	MA10
37	3" PVC	MA10
38	3" PVC	MA10
39	3" PVC	MA10
40	3" PVC	MA10
41	3" PVC	MA10
42	3" PVC	MA10
43	3" PVC	MA10
44	3" PVC	MA10
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55	3" PVC	MA10

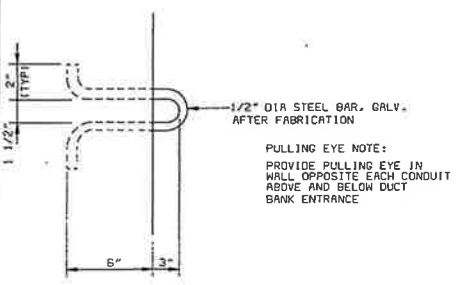
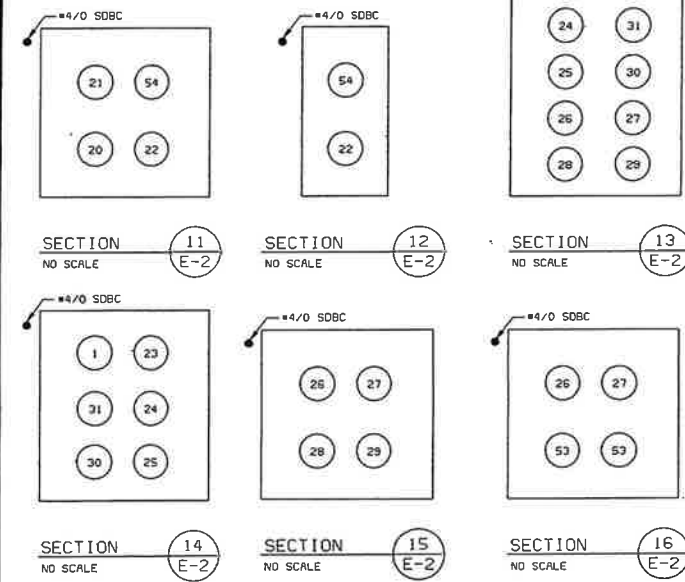


- NOTES:
1. COMPACT ALL BACKFILL FOR EXCAVATION UNDER PAD BEFORE POURING PAD.
 2. ANCHORAGE TO BE SET BY I.I.D. WHEN TRANSFORMER IS INSTALLED.
 3. PRIMARY SWEEPS ARE TO BE PVC SCHEDULE 80 (24" RADIUS). SECONDARY SWEEPS ARE TO BE PVC SCHEDULE 40 (24" RADIUS). CONCRETE IS NOT REQUIRED ON SWEEPS.
 4. CONDUITS SHOULD NOT BE LOCATED WITHIN SHADED AREA.
 5. CONTRACTOR SHALL FORM AND POUR CONCRETE TRANSFORMER PAD AND SHALL MEET ALL MINIMUM REQUIRED DIMENSIONS BY THE I.I.D.
 6. CONCRETE TRANSFORMER PAD SHALL CONSIST OF A FIVE (5) SACK MIX WITH 3/8" AGGREGATE.

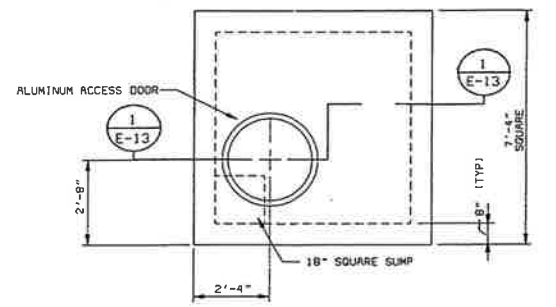
UTILITY TRANSFORMER PAD DETAIL (2)
NO SCALE
(THIS DETAIL IS A STD. DETAIL FROM I.I.D.)



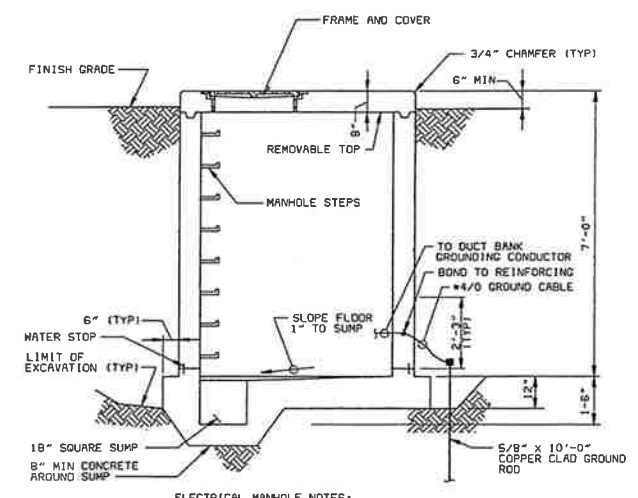
METER DETAIL
NO SCALE
(THIS DETAIL IS A STD. DETAIL FROM I.I.D.)



PULLING EYE
NO SCALE

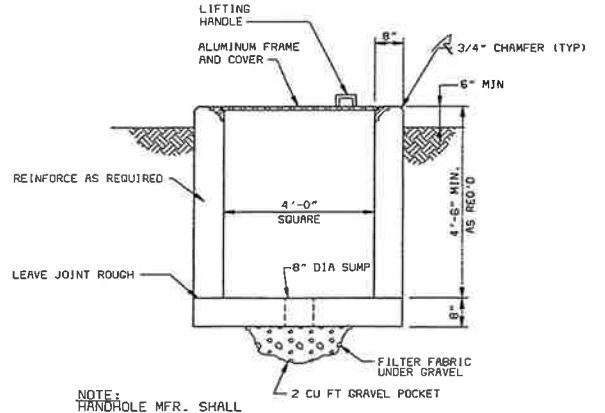


ELECTRICAL MANHOLE (SINGLE CHAMBER)
NO SCALE NOT SUITABLE FOR ROADWAY LOCATIONS

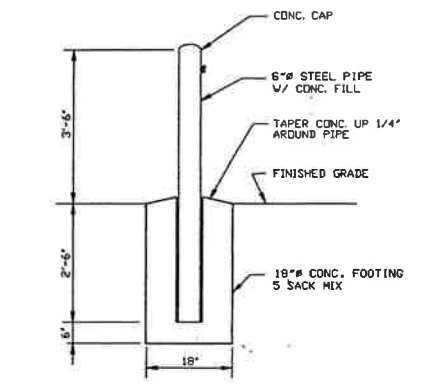


TYPICAL PRECAST ELECTRICAL MANHOLE SECTION (1)
NO SCALE NOT SUITABLE FOR ROADWAY LOCATIONS

- ELECTRICAL MANHOLE NOTES:
1. CABLE AND CONDUIT SUPPORTS SHALL BE SPACED AT 2'-0" HORIZONTAL CENTERS IN WALLS AND SHALL BEGIN 2'-0" FROM FLOOR.
 2. SUPPORTS IN CEILINGS SHALL RUN FROM WALL TO WALL.
 3. OPENING SHALL BE PROVIDED IN MANHOLE WALLS FOR CONDUIT BANK ENTRANCE AS REQUIRED.
 4. MANHOLE SHALL BE SUPPLIED WITH REMOVABLE TOP TO FACILITATE CABLE PULLING OPERATIONS.
 5. CABLE PULLING EYES SHALL BE INSTALLED IN EACH WALL.



TYPICAL PRECAST ELECTRICAL HANDHOLE DETAIL
NO SCALE



TYPICAL BARRIER POST
NO SCALE
(THIS DETAIL IS A STD. DETAIL FROM I.I.D.)

- GENERAL NOTES:
1. SEE DRAWING E-1 FOR ELECTRICAL STANDARD LEGEND AND ABBREVIATIONS AND GENERAL REQUIREMENTS.

CITY OF IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT EXPANSION

BID PACKAGE NO. 6
ELECTRICAL
DETAILS

DESIGNED: BJB
DETAILED: YES
CHECKED: MJP
APPROVED: *James A. Wilcox*
DATE: 7-13-95

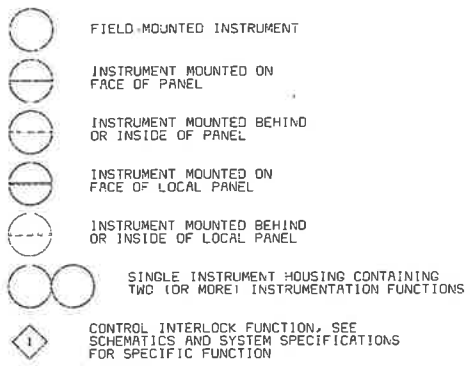
PROJECT NO. 25056

NO. E019936
Exp. 3-27-97

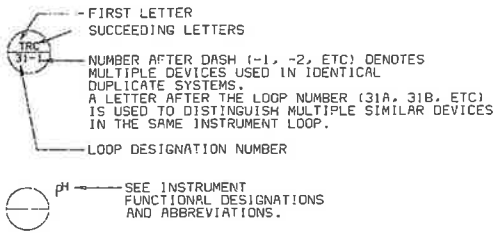
E-13
SHEET OF

02/07/95 10:24:32 ACD-R11

GENERAL INSTRUMENT SYMBOLS



TAG NUMBERS AND ADDITIONAL DESIGNATIONS

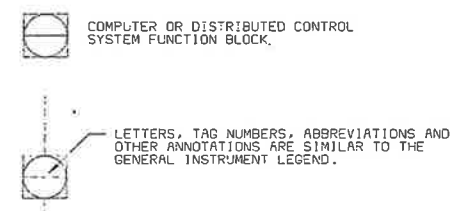


TAG NUMBERS MEANINGS OF IDENTIFICATION LETTERS

LETTER	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	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	USER'S CHOICE		GLASS		
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 INTER-MEDIATE
N	USER'S CHOICE		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	INTEGRATE OR TOTALIZE		
R	RADIATION		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER, OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE			RELAY OR COMPUTE	
Z	POSITION, DIMENSION			DRIVE, ACTUATOR OR UNCLASSIFIED FINAL CONTROL ELEMENT	

DIGITAL SYSTEMS INTERFACE SYMBOLS

NOTE: REFER TO DETAILED SYSTEM SPECIFICATIONS FOR FUNCTIONAL DESCRIPTION. ALSO SEE I/O SCHEDULES FOR COMPLETE INPUT AND OUTPUT LISTINGS.



FUNCTION DESIGNATIONS AND ABBREVIATIONS

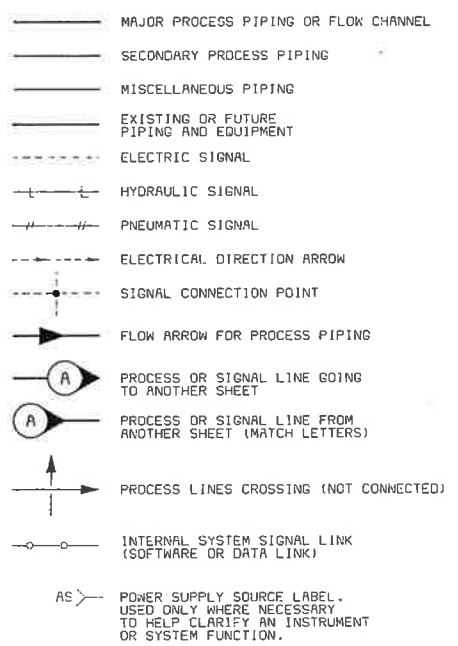
INSTRUMENT DESIGNATIONS		HAND SWITCH DESIGNATIONS	
K	GAIN OR ATTENUATE (INPUT:OUTPUT)	H-O-A	HAND-OFF-AUTO
-K	GAIN AND REVERSE	L-R	LOCAL REMOTE
Σ	ADD OR SUM (ADD AND SUBTRACT)	O-C	OPEN-CLOSE
Δ	SUBTRACT (DIFFERENCE)	O-O	ON-OFF
√	EXTRACT SQUARE ROOT	H-O-R	HAND-OFF-REMOTE
÷	DIVIDE	S/S	START-STOP
F(X)	CHARACTERIZE SIGNAL		
>	HIGH-SELECT		
<	LOW-SELECT		
X	MULTIPLY		
∫	INTEGRATE (TIME INTEGRAL)		
CH ₄	METHANE		
Cl ₂	CHLORINE RESIDUAL		
CO ₂	CARBON DIOXIDE		
DO	DISSOLVED OXYGEN		
LEL	LOWER EXPLOSIVE LIMIT		
MCC	MOTOR CONTROL CENTER		
MLSS	MIXED LIQUOR SUSPENDED SOLIDS		
O ₂	OXYGEN (PURITY)		
pH	pH CELL		
TURB	TURBIDITY		

TRANSDUCER & CONVERTER DESIGNATION	
E	VOLTAGE
FSK	FREQUENCY SHIFT KEYING
H	HYDRAULIC
I	CURRENT
P	PNEUMATIC
PD	PULSE DURATION
PF	PULSE FREQUENCY
R	RESISTANCE (ELECTRICAL)

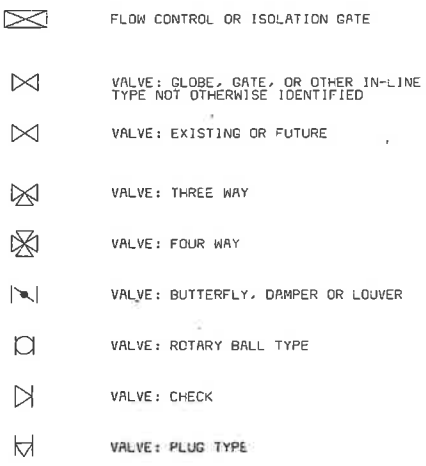
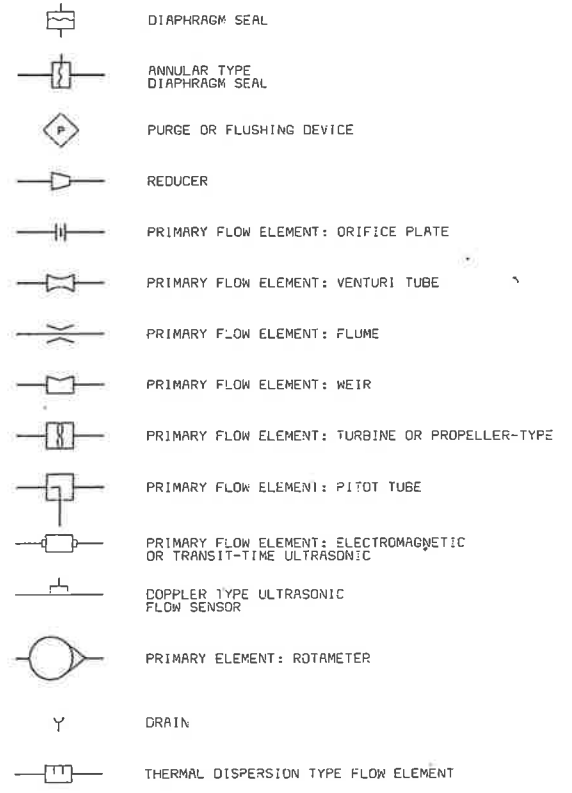
EXAMPLE: I/P = CURRENT TO PNEUMATIC TRANSDUCER

POWER SUPPLY ABBREVIATIONS	
AS	AIR SUPPLY
ES	ELECTRIC SUPPLY
GS	GAS SUPPLY
HS	HYDRAULIC SUPPLY
NS	NITROGEN SUPPLY
SS	STEAM SUPPLY
WS	WATER SUPPLY

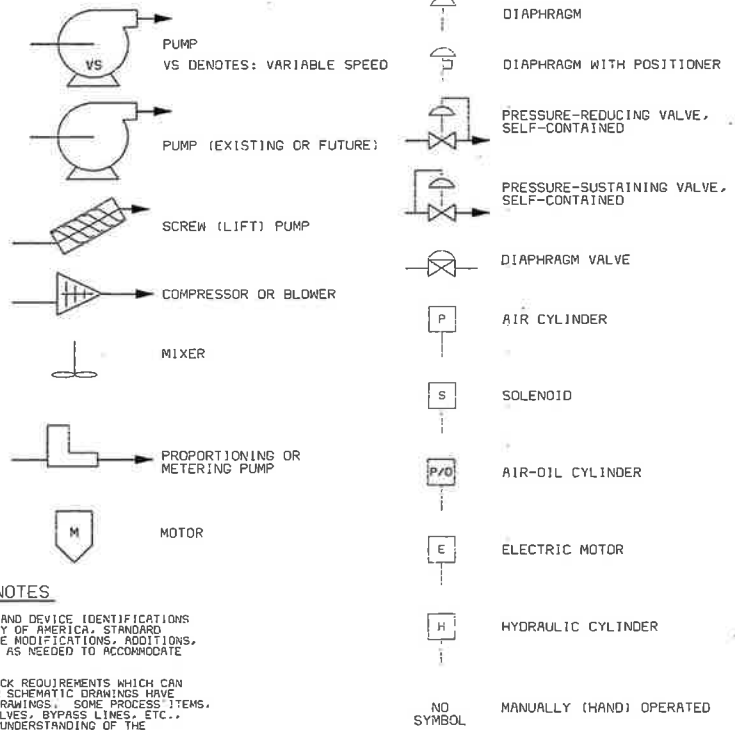
LINE SYMBOLS



PROCESS DEVICE SYMBOLS



VALVE AND GATE ACTUATOR SYMBOLS



THE FOLLOWING ADDITIONAL DESIGNATIONS MAY BE UTILIZED ADJACENT TO SOME VALVE OR GATE SYMBOLS.

- NC NORMALLY CLOSED
- FC FAILS CLOSED
- FO FAILS OPEN
- FIP FAILS IN LAST POSITION

GENERAL NOTES

- IN GENERAL, THE P & ID SYMBOLS AND DEVICE IDENTIFICATIONS ARE BASED ON INSTRUMENT SOCIETY OF AMERICA, STANDARD PRACTICE (ISA-SS-1) (1988). SOME MODIFICATIONS, ADDITIONS, AND ALTERATIONS HAVE BEEN MADE AS NEEDED TO ACCOMMODATE THE PROJECT REQUIREMENTS.
- ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS WHICH CAN BE MORE CLEARLY ILLUSTRATED ON SCHEMATIC DRAWINGS HAVE BEEN OMITTED FROM THE P & ID DRAWINGS. SOME PROCESS ITEMS, SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC., WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS HAVE ALSO BEEN OMITTED.
- THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
- PIPING AND EQUIPMENT LEGEND APPLIES TO P & ID SHEETS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK

DESIGNED	DLI
DETAILED	MJP
CHECKED	MJP
APPROVED	<i>James A. Wilson</i>
DATE	2-13-95

Black & Veatch
Denver, Colorado
Kansas City, Missouri

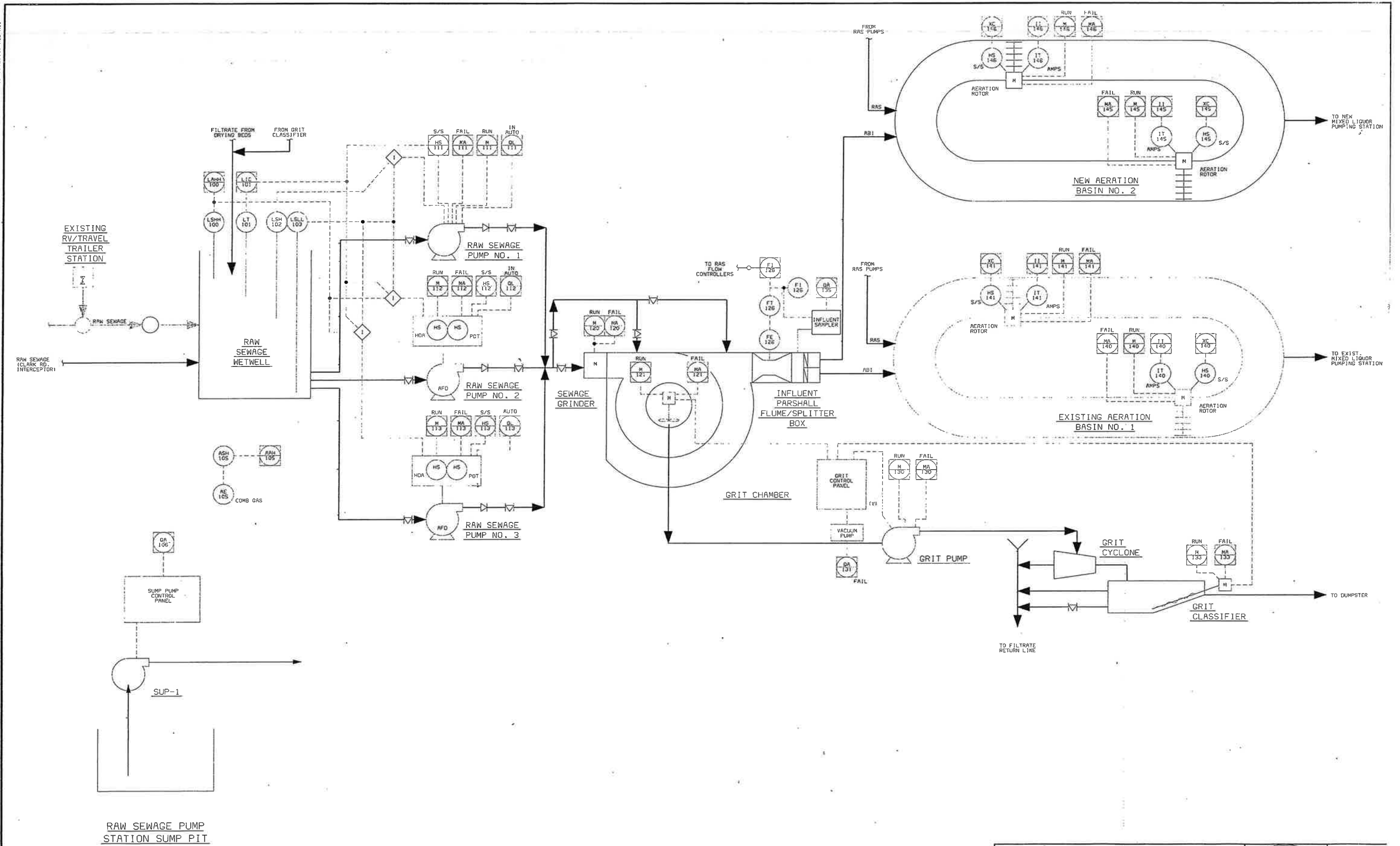
PROJECT NO.
25056

IMPERIAL CALIFORNIA
WASTEWATER TREATMENT PLANT
INSTRUMENTATION
PROCESS & INSTRUMENTATION DIAGRAM

REGISTERED PROFESSIONAL ENGINEER
James A. Wilson
No. E012935
Exp. 3-31-97
ELECTRICAL
STATE OF CALIFORNIA

02/07/95 10:29:06 ACD-RLL

A
B
C
D
E
F



RAW SEWAGE PUMP STATION SUMP PIT

2505612
61003
E000000

CONFORM TO CONSTRUCTION RECORD		DATE	REVISIONS AND RECORD OF ISSUES	NO.	BY	CHK	APP

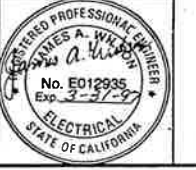
DESIGNED: JLC
 DETAILED: M.J.V./M.J.P.
 CHECKED: M.J.P.
 APPROVED: *Jamie A. Wilson*
 DATE: 7-13-95



PROJECT NO.
25056

IMPERIAL, CALIFORNIA
WASTEWATER TREATMENT PLANT

INSTRUMENTATION
PROCESS & INSTRUMENTATION DIAGRAM



I-2
SHEET
45 OF 47