

# LAS GALLINAS VALLEY SANITARY DISTRICT



## SECONDARY EFFLUENT LINE MODIFICATIONS

**BID SET**  
**AUGUST 2023**

**VOLUME 4**  
**DESIGN DRAWINGS**

DISTRICT BOARD:

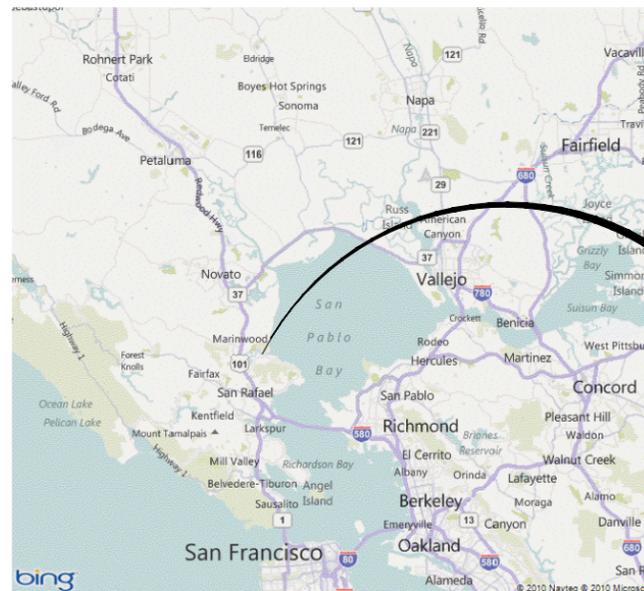
**MEGAN CLARK - PRESIDENT**  
**CRAIG K. MURRAY - VICE PRESIDENT**  
**CRYSTAL J. YEZMAN**  
**RONALD FORD**  
**GARY E. ROBARDS**

**CURTIS PAXTON, PE - GENERAL MANAGER**  
**MICHAEL P. CORTEZ, PE - DISTRICT ENGINEER**  
**MEL LIEBMANN - PLANT MANAGER**  
**DALE McDONALD, CPA - ADMINISTRATIVE SERVICES MANAGER**  
**GREG PEASE - COLLECTION SYSTEM/SAFETY MANAGER**

**PROJECT LOCATION**



**SITE VICINITY MAP**



**AREA VICINITY MAP**

**PROJECT LOCATION**

JOB NO. -

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

**GENERAL COVER**

CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez	

NO.	DATE	DESCRIPTION	BY	APPR'D	SHEET 1 of 16	PLAN NO.	DRAWING NO. G001	REVISION NO. B
<b>REVISIONS</b>								



533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES



C:\USERS\KENNETH.BAETZ\AQUA\ENGINEERING\LGVSD - DOCUMENTS\LASG\190119-SECONDARY TREATMENT UPGRADES\PHASE 18\DRAWING\000 GENERAL\G001 - COVER.DWG

8/17/2023

PLOT: EXTEND  
SCALE: 1:1  
BORDER: 22,34  
COLOR: No.  
RED 0.70MM  
YELLOW 0.20MM  
GREEN 0.25MM  
CYAN 0.40MM  
BLUE 0.50MM  
MAGENTA 0.20MM  
WHITE 0.35MM  
GRAY 0.15MM  
9 0.15MM  
10 1.00MM  
100 0.70MM  
210 0.60MM

LGVSD 1 FILE:  
FD144793

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LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

## GENERAL INDEX

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NO.	DATE	DESCRIPTION	BY	APPR'D	SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
					2 of 16		G002	B



533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153



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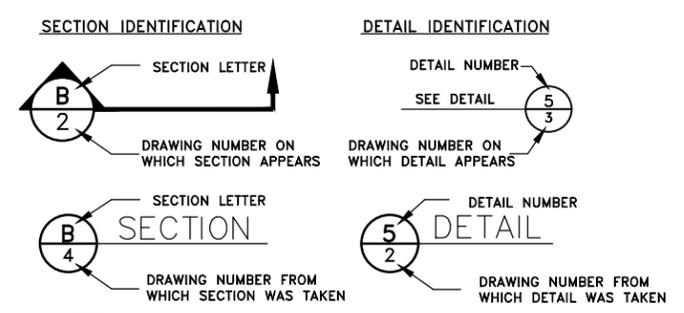
### LEGEND

	EXISTING	PROPOSED
<b>PLAN VIEW</b>		
PROPERTY OR R/W LINE	-----	-----
EASEMENT LINE	-----	-----
FENCE	--- X --- X ---	--- X --- X ---
CONTOUR LINE	----- 4250 -----	----- 4250 -----
SPOT ELEVATION	+ 4250.00	o 50.00 TOA
BANK SLOPES	--- Y --- Y --- Y ---	--- Y --- Y --- Y ---
STORM DRAIN LINE	--- SD ---	--- SD ---
WATER LINE	--- W ---	--- W ---
GAS LINE	--- G ---	--- G ---
TELEPHONE CABLE	--- T ---	--- T ---
ELECTRIC CABLE	--- E ---	--- E ---
SANITARY SEWER LINE	--- SS ---	--- SS ---
ASPHALT PAVING	-----	-----
FIRE HYDRANT	--- (Symbol) ---	--- (Symbol) ---
WATER VALVE	--- (Symbol) ---	--- (Symbol) ---
WATER METER	--- (Symbol) ---	--- (Symbol) ---
MANHOLE	--- (Symbol) ---	--- (Symbol) ---
CATCH BASIN	--- (Symbol) ---	--- (Symbol) ---
CLEAN OUT BOX	--- (Symbol) ---	--- (Symbol) ---
OVERHEAD POWER LINE	--- P ---	--- P ---
POLE & ANCHOR	--- (Symbol) ---	--- (Symbol) ---
STREET LIGHT	--- (Symbol) ---	--- (Symbol) ---
STRUCTURE	--- (Symbol) ---	--- (Symbol) ---
FLOW DIRECTION	--->---	--->---
ROADWAY	-----	-----
NON-POTABLE WATER	--- NPW ---	--- NPW ---
NON-POTABLE WATER (UNDER GROUND)	--- NPW (UG) ---	--- NPW (UG) ---
PRESSURIZED WATER	--- PW ---	--- PW ---
PRESSURIZED WATER (UNDER GROUND)	--- PW (UG) ---	--- PW (UG) ---
HYPOCHLORITE LINE	--- HC ---	--- HC ---
OVERHEAD POWER	--- OP ---	--- OP ---
AIR LINE	--- ALP ---	--- ALP ---
FLOC LINE	--- F ---	--- F ---
DECHLOR CHEM LINE	--- DC ---	--- DC ---
SAMPLE LINE	--- S ---	--- S ---

### ABBREVIATIONS

⊙	AT	FD	FLOOR DRAIN	N	NORTH	T	TOWNSHIP
°	CENTER LINE	FND	FOUNDATION	NO	NUMBER	TAN	TANGENT
°	DEGREE	FE	FIRE EXTINGUISHER	NPW	NON-POTABLE WATER	TBC	TOP BACK CURB
∅	DIAMETER	FEN COR	FENCE CORNER	NTS	NOT TO SCALE	TEMP	TEMPORARY
#	NUMBER	FF	FINISHED FLOOR	NTU	NEPHELOMETRIC TURBIDITY UNITS	TEL	TELEPHONE
ℓ	PROPERTY LINE	FG	FINISHED GRADE			TKN	TOTAL KJELDAHL NITROGEN
ABUT	ABUTMENT	FIN	FINISH	OC	ON CENTER	TOA	TOP OF ASPHALT
AL	AIR LINE	FLG	FLANGE	OD	OUTSIDE DIAMETER	TOC	TOP OF CONCRETE
ASPH	ASPHALT	FLR	FLOOR	O-O	OUTSIDE TO OUTSIDE	TOF	TOP OF FOOTING
ADT	AVERAGE DAILY TRAFFIC	FL	FLOW LINE	OP	OVERHEAD POWER LINES	TOM	TOP OF MANHOLE
APPROX	APPROXIMATELY	FP	FLOOR PENETRATION	ORIG	ORIGINAL	TOP	TOP OF PAVEMENT
AZ	AZIMUTH	FPS	FEET PER SECOND			TOS	TOP OF SLAB
		FT	FEET			TOW	TOP OF WALL
		FTG	FOOTING			TP	TELEPHONE POLE
		FW	FLAT WASHER			TSS	TOTAL SUSPENDED SOLIDS
						TYP	TYPICAL
BAL	BALANCE			PC	POINT OF CURVATURE	UG	UNDERGROUND
BEG	BEGINNING / BEGIN	G	GAS	PCC	POINT OF COMPOUND CURVATURE	UNO	UNLESS NOTED OTHERWISE
BDRY	BOUNDARY	GAL	GAGE OR GAUGE	PE	PLAIN END	UV	ULTRA VIOLET
BK	BACK	GALL	GALLONS	PERF	PERFORATED	UW	UTILITY WATER
BKFL	BACKFILL	GALV	GALVANIZED	PI	POINT OF INTERSECTION	uWs	MICRO WATT SECONDS
BLD FLG	BLIND FLANGE	GEN	GENERAL	PL	PROPERTY LINE	V	VOLTS
BLDG	BUILDING	GM	GAS METER	POB	POINT OF BEGINNING	VC	VERTICAL CURVE
BLM	BUREAU OF LAND MANAGEMENT	GPH	GALLONS PER HOUR	POC	POINT ON CURVE	VERT	VERTICAL
BM	BENCH MARK	GPM	GALLONS PER MINUTE	PP	POWER POLE	VIC	VICTAULIC
BLK	BLOCK	GSP	GALVANIZED STEEL PIPE	PRC	POINT OF REVERSE CURVE	VOL	VOLUME
BOD	BIOLOGICAL OXYGEN DEMAND	GV	GATE VALVE	PROJ	PROJECT	VPI	VERTICAL POINT OF INTERSECTION
BOT	BOTTOM	GYP	GYP SUM	PROP	PROPERTY	VPC	VERTICAL POINT OF CURVE
BOW	BOTTOM OF WALL			PVMT	PAVEMENT	VPT	VERTICAL POINT OF TANGENCY
BRG	BEARING	H&T	HUB & TACK	PW	POTABLE WATER		
BSMT	BASEMENT	HB	HOSE BIBB			W	WEST / WATER
BTWN	BETWEEN	HC	HYPOCHLORITE	Q	FLOW RATE	WAS	WASTE ACTIVATED SLUDGE
		HDG	HOT DIPPED GALVANIZE	QTY	QUANTITY	WM	WATER METER
CALC	CALCULATED	HDPE	HIGH DENSITY POLYETHYLENE PIPE			WP	WALL PENETRATION
CB	CATCH BASIN	HDWL	HEADWALL	R	RANGE / RADIUS	WS	WATER SURFACE
CCW	COUNTER CLOCKWISE	HORIZ	HORIZONTAL	RAS	RETURN ACTIVATED SLUDGE	W/	WITH
C-C	CENTER TO CENTER	HP	HORSE POWER	RCCP	REINFORCED CONCRETE PIPE	W/O	WITHOUT
C&G	CURB AND GUTTER	HW	HOT WATER	RD	ROAD	XING	CROSSING
CEM	CEMETERY	HWL	HIGH WATER LEVEL	REF	REFERENCE	X-SEC	CROSS SECTION
CFS	CUBIC FEET PER SECOND	HYD	HYDRANT	REINF	REINFORCED		
CJ	CONSTRUCTION JOINT			REQ'D	REQUIRED		
CL	CENTERLINE	ID	INSIDE DIAMETER	REV	REVISION		
CIP	CLEAN IN PLACE	IJ	ISOLATION JOINT	RJ	RING TYPE JOINT		
CMP	CORRUGATED METAL PIPE	IN	INCH	RP	REFERENCE POINT		
CMP-A	CORRUGATED METAL PIPE-ARCH	INFO	INFORMATION	RR	RAILROAD		
CMU	CONCRETE MASONRY UNIT	IRR	IRRIGATION	RT	RIGHT / ROUTE		
CO	CLEAN OUT	INV	INVERT	R/W	RIGHT OF WAY		
COL	COLUMN			S	SOUTH / SLOPE		
CONC	CONCRETE	JCT	JUNCTION	SAN	SANITARY		
CONST	CONSTRUCT	KW	KILOWATT	SCH	SCHEDULE		
COR	CORNER	L	LENGTH	SCFM	STANDARD CUBIC FEET PER MINUTE		
CPVC	CHLORINATED PVC	LB	POUND	SD	STORM DRAIN		
CTR	CENTER	LG	LONG OR LENGTH	SEC COR	SECTION CORNER		
CU FT	CUBIC FEET	LGVSD	LAS GALLINAS VALLEY SANITARY DISTRICT	SHT	SHEET		
CU YD	CUBIC YARD	LIC	LICENSE	SIM	SIMILAR		
CUL	CULINARY	LIN	LINEAR / LINEAL	SJ	SAWED JOINT		
CULV	CULVERT	LP	LIGHT POST	SL	SOLIDS LINE		
CW	COLD WATER	LS	LAND SURVEYOR	SP	SPACING OR SPACE		
		LT	LEFT	SQ	SQUARE		
		LWL	LOW WATER LEVEL	SQ FT	SQUARE FEET		
				SQ YD	SQUARE YARD		
D	DRAIN	MAINT	MAINTENANCE	SS	STAINLESS STEEL		
DEG	DEGREE	MATL	MATERIAL	SSL	SECONDARY SEWAGE LINE		
DET	DETAIL	MAX	MAXIMUM	ST	STREET		
DIA	DIAMETER	MG	MILIGRAMS	STL	STEEL		
DIP	DUCTILE IRON PIPE	MGD	MILLION GALLONS PER DAY	STN STL	STAINLESS STEEL		
DIST	DISTANCE	MH	MANHOLE	STA	STATION		
DL	DRAIN LINE	MI	MILE	STD	STANDARD		
DN	DOWN	MISC	MISCELLANEOUS	STRUCT	STRUCTURE		
DWG	DRAWINGS	MJ	MECHANICAL JOINT / MILI-JOULE				
DWV	DRAIN WASTE VENT	MKR	MARKER				
		ML	MILILITERS				
		MON	MONUMENT				
		MPH	MILES PER HOUR				
E	EAST						
EA	EACH						
EB	ELECTRICAL BOX						
EF	EACH FACE						
EL	ELBOW / ELECTRIC						
ELEV	ELEVATION						
ELEC	ELECTRIC						
EMB	EMBANKMENT						
ENGR	ENGINEER						
ENT	ENTRANCE						
EOA	EDGE OF ASPHALT						
EQ	EQUAL						
EQUIP	EQUIPMENT						
ES	EXIT SIGN						
EST	ESTIMATE						
EW	EACH WAY						
EXC	EXCAVATION						
EXIST/EX	EXISTING						

### SECTION AND DETAIL IDENTIFICATION



- NOTES:
- 1- IF PLAN AND SECTION (OR DETAIL REFERENCE AND DETAIL) ARE SHOWN ON THE SAME DRAWING, THE DRAWING NUMBER IS REPLACED WITH A LINE.
  - 2- STANDARD DETAILS MAY BE SHOWN AS: 116/CD-3 FOR DETAIL # AND SHEET #.

CALL BEFORE

**Underground Service Alert**

Call: TOLL FREE 811

YOU DIG

**TWO WORKING DAYS BEFORE DIGGING**



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LAS GALLINAS VALLEY SANITARY DISTRICT  
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SECONDARY EFFLUENT LINE MODIFICATIONS

### GENERAL LEGEND, ABBREVIATIONS, SYMBOL

CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez	

NO.	DATE	DESCRIPTION	BY	APPROV
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3				

SHEET 3 of 16	PLAN NO.	DRAWING NO. <b>G003</b>	REVISION NO. <b>B</b>
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## GENERAL CIVIL NOTES:

- EXCAVATIONS SHALL BE ADEQUATELY SHORED, BRACED AND SHEETED SO THAT THE EARTH WILL NOT SLIDE OR SETTLE AND SO THAT ALL EXISTING IMPROVEMENTS OF ANY KIND WILL BE FULLY PROTECTED FROM DAMAGE. ANY DAMAGE RESULTING FROM A LACK OF ADEQUATE SHORING, BRACING AND SHEETING, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL EFFECT NECESSARY REPAIRS OR RECONSTRUCTION AT THE EXPENSE OF THE CONTRACTOR. WHERE THE EXCAVATION FOR A CONDUIT TRENCH, AND/OR STRUCTURE IS FIVE FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING, SHORING AND BRACING OR EQUIVALENT METHOD, FOR THE PROTECTION OF LIFE, OR LIMB, WHICH SHALL CONFORM TO THE APPLICABLE CONSTRUCTION SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY OF THE STATE OF CALIFORNIA, THE CONTRACTOR SHALL ALWAYS COMPLY WITH OSHA REQUIREMENTS. SEE SECTIONS 312000 & 315000 FOR ADDITIONAL DETAILS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN PERMITS NECESSARY TO PERFORM THE WORK SHOWN IN THESE PLANS FROM THE APPROPRIATE AGENCIES, SEE SECTION 014120.
- THE CONTRACTOR SHALL PROVIDE FOR INGRESS AND EGRESS FOR PRIVATE PROPERTY ADJACENT TO WORK THROUGHOUT THE PERIOD OF CONSTRUCTION. SEE SECTION 015000.
- THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGGERS OR OTHER DEVICES NECESSARY FOR SAFETY. SEE SECTION 015000.
- THE CONTRACTOR SHALL POST EMERGENCY TELEPHONE NUMBERS FOR POLICE, FIRE, AMBULANCE, AND THOSE AGENCIES RESPONSIBLE FOR MAINTENANCE OF UTILITIES IN THE VICINITY OF JOB SITE.
- A COPY OF THE NPDES PERMIT IS PROVIDED IN SECTION 014120. CONTRACTOR SHALL MEET AND FOLLOW ALL REQUIREMENTS IN EFFECT AT THE TIME OF CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR REVIEW AND APPROVAL BY THE DISTRICT PRIOR TO START OF WORK. THE SWPPP SHALL BE IMPLEMENTED BY THE CONTRACTOR AND ALL SUBCONTRACTORS AND SUPPLIERS OF MATERIAL AND EQUIPMENT. CONSTRUCTION SITE CLEANUP AND CONTROL OF CONSTRUCTION DEBRIS SHALL ALSO BE ADDRESSED IN THE SWPPP. FAILURE TO COMPLY WITH THE APPROVED SWPPP WILL RESULT IN THE ISSUANCE OF CORRECTION NOTICES, CITATIONS, OR A PROJECT STOP WORK ORDER. SEE SECTION 015600 AND SHEETS CD-11 & CD-12 FOR ADDITIONAL DETAILS.
- THE CONTRACTOR SHALL PROVIDE DUST CONTROL FOR THE ENTIRE PROJECT AT ALL TIMES. THE SITE SHALL BE SPRINKLED WITH WATER AS NECESSARY TO PREVENT DUST NUISANCE (SEE SECTION 015600). IN THE EVENT THE CONTRACTOR NEGLECTS TO USE ADEQUATE MEASURES TO CONTROL DUST, THE DISTRICT RESERVES THE RIGHT TO TAKE WHATEVER MEASURES ARE NECESSARY TO CONTROL DUST AND CHARGE THE COST TO THE CONTRACTOR.
- DURING THE CONSTRUCTION, ADJACENT PUBLIC STREETS SHALL BE CLEANED DAILY TO REMOVE ANY ACCUMULATION OF MUD AND DEBRIS RESULTING FROM THIS CONSTRUCTION. SEE SECTIONS 015000 & 015600.
- TRENCHES SHALL NOT BE LEFT OPEN OVERNIGHT. CONTRACTOR SHALL BACKFILL TRENCHES, OR PLACE STEEL PLATING AND / OR HOT-MIX ASPHALT AS REQUIRED TO PROTECT OPEN TRENCHES AT THE END OF EVERY WORK DAY. FENCING & BARRICADES MAY BE USED IN AREAS WITH NO PUBLIC OR OPERATOR ACCESS. CONFIRM WITH OWNER.
- THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING, AND SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARD, LAWS AND REGULATIONS. SEE SECTION 315000.
- CONTRACTOR SHALL PROVIDE TO THE DISTRICT REPRESENTATIVE A REDLINED COPY OF "AS-BUILT" PLANS FOR PREPARATION OF RECORD DRAWINGS IN ACCORDANCE WITH THE SPECIFICATIONS. SEE SECTION 017839 FOR ADDITIONAL AS-BUILT REQUIREMENTS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IMMEDIATELY NOTIFY THE DISTRICT REPRESENTATIVE UPON DISCOVERY OF ANY FIELD CONFLICTS. SEE SECTION 015300.
- ANY DEVIATIONS OR CHANGES IN THESE PLANS WITHOUT OFFICIAL APPROVAL OF THE DISTRICT REPRESENTATIVE SHALL ABSOLVE THE DISTRICT OF ANY AND ALL RESPONSIBILITY OF SAID DEVIATION OR CHANGE.
- SHOULD IT APPEAR THAT THE WORK TO BE DONE OR ANY MATTER RELATIVE THERETO IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL NOT CONTACT DISTRICT DIRECTLY BUT THROUGH THE DISTRICT REPRESENTATIVE RESPONSIBLE FOR THIS CONTRACT IN THE FIELD.
- DIMENSIONS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. NOTES AND DETAILS ON SPECIFIC DETAIL DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
- WHERE THERE IS A DISCREPANCY BETWEEN THE WRITTEN DIMENSION AND SCALED DIMENSION, WRITTEN DIMENSIONS SHALL GOVERN.
- ALL DISCREPANCIES BETWEEN THE INFORMATION SHOWN ON THE DRAWINGS AND THE ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE DISTRICT REPRESENTATIVE.
- PROVIDE A SITE SAFETY PLAN FOR REVIEW BY THE DISTRICT. THIS SAFETY PLAN MUST BE USED FOR THE ENTIRE DURATION OF THIS WORK BY THE CONTRACTOR AND ALL HIS SUBCONTRACTORS.
- WHILE WORKING ON THE PROJECT, THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL LOCAL, STATE, AND FEDERAL CONFINED SPACE ENTRY PROCEDURES AND REQUIREMENTS FOR ALL PERMIT SPACE ENTRIES. THE FOLLOWING SPACES ARE HEREBY DESIGNATED PERMIT SPACES: MANHOLES, PUMP PITS, VALVE PITS, UNDERGROUND PITS.
- CONTRACTOR SHALL SUBMIT A SERVICE OUTAGE REQUEST (SOR) PRIOR TO ANY CONSTRUCTION THAT WOULD REQUIRE MODIFICATIONS TO OR SHUTDOWN OF EXISTING SYSTEMS THAT MUST REMAIN IN-PLACE FOR PLANT OPERATIONS.

**FAILURE TO SUBMIT PROJECT SCHEDULE:** IF THE CONTRACTOR FAILS TO SUBMIT A PROJECT SCHEDULE WITHIN THE TIME PERIOD SPECIFIED IN SECTION 3.8 OF THE GENERAL CONDITIONS, OR THE UPDATED SCHEDULE TO WHICH THE DISTRICT HAS TAKEN UNCORRECTED EXCEPTIONS, THE DISTRICT SHALL BE ENTITLED TO WITHHOLD PAYMENT FOR THE NEXT APPLICATION FOR PAYMENT SUBMITTED AFTER THE SCHEDULE OR UPDATED SCHEDULE BECOMES LATE. SEE CONTRACT DOCUMENTS FOR DETAILED REQUIREMENTS.

**FAILURE TO SUBMIT AS-BUILT PLANS:** CONTRACTOR SHALL PROVIDE TO THE DISTRICT REPRESENTATIVE A REDLINED COPY OF "AS-BUILT" PLANS FOR REVIEW AND PREPARATION OF RECORD DRAWINGS A MINIMUM OF THREE DAYS AFTER APPLICATION FOR FINAL PAYMENT IS SUBMITTED. IF THE CONTRACTOR FAILS TO SUBMIT THE REDLINED COPY WITHIN THE TIME PERIOD SPECIFIED, THE DISTRICT SHALL BE ENTITLED TO WITHHOLD THE FINAL PAYMENT UNTIL CONTRACTOR SUBMITS A REDLINED COPY ACCEPTABLE TO THE DISTRICT REPRESENTATIVE. SEE CONTRACT DOCUMENTS FOR DETAILED REQUIREMENTS.

## EXISTING UTILITIES:

- EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS MAY OR MAY NOT HAVE BEEN SHOWN BASED UPON RECORD INFORMATION AVAILABLE TO THE DISTRICT AT THE TIME OF PREPARATION OF THESE PLANS. WHERE SHOWN, LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. CALL UNDERGROUND SERVICE ALERT (U.S.A.), AT 800-227-2600. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND LOCATION OF THOSE UTILITIES SHOWN OR NOT SHOWN ON THESE PLANS OR INDICATED IN THE FIELD BY LOCATING SERVICES.
- UNDER NO CIRCUMSTANCES SHALL CONTRACTOR START WORK IN ANY JOBSITE WITHOUT CONTACTING PG&E TO IDENTIFY AND MARK LOCATIONS OF EXISTING GAS MAINS, HIGH PRESSURE OR NOT. CONTRACTOR SHALL EXERCISE EXTREME CAUTION AND PROTECT AND SUPPORT IN PLACE ALL EXISTING GAS UTILITIES DURING CONSTRUCTION, AND SHALL BE RESPONSIBLE FOR ALL COSTS AND LIABILITY IN CONNECTION THEREWITH.
- ADDITIONAL COSTS INCURRED AS A RESULT OF CONTRACTOR'S FAILURE TO VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION IN THEIR VICINITY SHALL BE BORNE BY THE CONTRACTOR AND ASSUMED INCLUDED AND MERGED IN THE CONTRACT UNIT PRICE.
- ALL EXISTING UTILITIES AND IMPROVEMENTS THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED TO THE SATISFACTION OF THE DISTRICT, AT THE CONTRACTOR'S SOLE EXPENSE.
- ANY RELOCATION OF EXISTING UTILITIES NOT SHOWN IN THE PLANS SHALL BE CONDUCTED IN ACCORDANCE WITH ANY AND ALL REQUIREMENTS OF THE UTILITY COMPANY INCLUDING FEES, BONDS, PERMITS AND WORKING CONDITIONS, ETC. THIS WORK SHALL BE DONE ON A TIME AND MATERIALS BASIS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY TO DISCUSS THE COST OF RELOCATION OF SUCH UTILITIES. FAILURE TO NOTIFY THE UTILITY COMPANY PRIOR TO START OF WORK SHALL CAUSE THE CONTRACTOR TO PAY FOR THE COST OF ALL SUCH RELOCATION WORK INCLUDING FEES, BONDS, PERMITS, ETC.
- THE CONTRACTOR SHALL PROTECT IN PLACE OVERHEAD INTERFERENCE SUCH AS UTILITIES OR TREES. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD OR UNDERGROUND POWER, GAS, AND/OR OTHER UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COSTS AND LIABILITY IN CONNECTION THEREWITH.
- ALL CONTRACTOR WORK AROUND EXISTING UTILITIES SHALL BE IN CONFORMANCE WITH CALIFORNIA GOVERNMENT CODE 4216.
- CONTRACTOR TO IDENTIFY UTILITY LOCATION PRIOR TO TRENCHING BY POT HOLING NATIVE GROUND. SUBSURFACE UTILITY LOCATORS ARE NOT DEEMED SUFFICIENT FOR IDENTIFYING UNDERGROUND UTILITIES.
- THE LOCATION AND GENERAL ARRANGEMENT OF UNDERGROUND UTILITIES, UNDERGROUND STRUCTURES, PIPES WITH FITTINGS, VALVES, AND APPURTENANCES OWNED BY OTHER AGENCIES ARE NOT SHOWN IN THE DRAWINGS AND SUBJECT TO FIELD VERIFICATION BY THE CONTRACTOR.
- CONTRACTOR SHALL CONTACT UTILITY POLE OWNER PRIOR TO WORKING IN AREA AND UTILITY POLE OWNER WILL DO ALL WORK ON UTILITY POLES. CONTRACTOR SHALL PAY ALL COSTS ASSOCIATED WITH UTILITY POLE MODIFICATIONS, AND THE CONTRACTOR SHALL INCLUDE THE TIME NEEDED BY THE UTILITY POLE OWNER AS PART OF THE OVERALL WORK.

## PROJECT CONTACTS:

- OWNER: LAS GALLINAS VALLEY SANITARY DISTRICT (DISTRICT)
- CITY & COUNTY: SAN RAFAEL, MARIN COUNTY
- SANITARY SEWER: LAS GALLINAS VALLEY SANITARY DISTRICT
- STORM DRAIN: COUNTY OF MARIN
- WATER: MARIN MUNICIPAL WATER DISTRICT  
ENGINEERING: (415) 945-1560  
CONSTRUCTION PROJECTS: (415) 945-1540  
EMERGENCY: (415) 945-1500
- GAS & ELECTRICAL: PG&E GAS  
ENGINEERING: (415) 257-3404, (415) 257-3405  
EMERGENCY: (800) 743-5000  
  
PG&E ELECTRIC  
SERVICE: (415) 257-3431  
ENGINEERING: (415) 257-3174  
EMERGENCY: (800) 743-5000
- TELEPHONE: SBC/AT&T  
SERVICE: (707) 575-2077, (707) 321-6207  
ENGINEERING: (415) 499-4828  
EMERGENCY: (800) 310-2355
- CABLE & TELEVISION: COMCAST  
SERVICE: (707) 477-0564  
EMERGENCY: (800) 310-2355
- THE CONTACT INFORMATION SHOWN ABOVE REPRESENTS A PARTIAL LIST OF THE UTILITY OWNERS CURRENTLY AVAILABLE TO THE DISTRICT DURING PREPARATION OF THESE PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES AND CONFIRM EACH CONTACT INFORMATION BEFORE THE START OF WORK.

## PROJECT NOTES:

- ALL APPLICABLE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THE CURRENT DISTRICT ORDINANCE CODES, CALTRANS STANDARD SPECIFICATIONS, AND DISTRICT STANDARD PLANS. ALL IMPROVEMENTS ARE SUBJECT TO INSPECTION AND APPROVAL BY THE DISTRICT. CONTRACTOR SHALL CONTACT THE DISTRICT AT LEAST TWO (2) WORKING DAYS PRIOR TO THE START OF ANY WORK TO ARRANGE FOR INSPECTION.
- A CALIFORNIA DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (CALOSHA) PERMIT SHALL BE OBTAINED FOR TRENCHES FIVE FEET OR GREATER IN DEPTH. A COPY OF THIS PERMIT SHALL BE SUPPLIED TO THE DISTRICT. AN ADDITIONAL COPY SHALL BE KEPT AT THE JOB SITE AT ALL TIMES.
- THE CONTRACTOR WILL PROVIDE CONSTRUCTION STAKES. THE NUMBER AND LOCATION OF WHICH SHALL BE DETERMINED BEFORE CONSTRUCTION BEGINS. THE ENGINEER HAS THE AUTHORITY TO REQUIRE THE CONTRACTOR (OR HIS AUTHORIZED AGENT) TO PLACE ADDITIONAL STAKES OR RE-STAKE AS HE DEEMS NECESSARY FOR PROPER CONSTRUCTION OR TO AVOID CONFLICTS.
- THE CONTRACTOR SHALL NOT DESTROY ANY PERMANENT SURVEY POINTS WITHOUT THE CONSENT OF THE DISTRICT. ANY PERMANENT MONUMENTS OR POINTS DESTROYED SHALL BE REPLACED BY A LICENSED LAND SURVEYOR IN THE STATE OF CALIFORNIA AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT WRITTEN AUTHORIZATION FROM THE DISTRICT. ALL REVISIONS TO THESE PLANS MUST BE REVIEWED BY THE DISTRICT PRIOR TO CONSTRUCTION AND SHALL BE ACCURATELY SHOWN ON REVISED PLANS SIGNED BY THE DISTRICT.
- PRIOR TO MOVING ANY MATERIAL TO OR FROM THE SITE, THE CONTRACTOR SHALL OBTAIN APPROVAL FOR HAUL ROUTE FROM THE DISTRICT.
- WHERE ABANDONED UNDERGROUND STRUCTURES ARE ENCOUNTERED, THE CONTRACTOR SHALL REMOVE THE ABANDONED STRUCTURES TO SUFFICIENT DEPTH TO ALLOW NEW UNDERGROUND LINES TO CROSS. THE DISTRICT MAY REQUIRE FURTHER WORK TO BE DONE AFTER A VISUAL INSPECTION.
- ALL VALVE BOXES SHALL BE ADJUSTED TO NEW FINISHED GRADE AFTER FINAL PAVING, WHERE APPLICABLE.
- CONSTRUCTION EQUIPMENT, INCLUDING COMPRESSORS, GENERATORS, AND MOBILE EQUIPMENT, SHALL BE FITTED WITH PROPERLY WORKING MUFFLERS.
- CERTAIN AREAS AND STRUCTURES REQUIRE PRE-LOADING AND SURCHARGING. REFER TO THE DESIGN DRAWINGS AND SECTION 315000 FOR ADDITIONAL DETAILS.
- ALL CONSTRUCTION ACTIVITIES ON THE PROJECT SITE SHALL BE LIMITED TO 6:30 A.M. TO 5:00 P.M., MONDAY THROUGH FRIDAY, UNLESS ALTERNATIVE HOURS ARE APPROVED BY THE DISTRICT. THE CONTRACTOR WILL REIMBURSE THE DISTRICT ALL COSTS ASSOCIATED WITH NON-APPROVED AFTER HOUR WORK.

JOB NO. -

## DISCLAIMER:

- EXISTING CONSTRUCTION ACTIVITIES MAY BE OCCURRING ON-SITE DURING THE TIME OF PROPOSED CONSTRUCTION. CONTRACTORS TO COORDINATE AS NEEDED TO AVOID SCHEDULE DELAYS OR UNNECESSARY REWORK.

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

### GENERAL GENERAL CONSTRUCTION NOTES

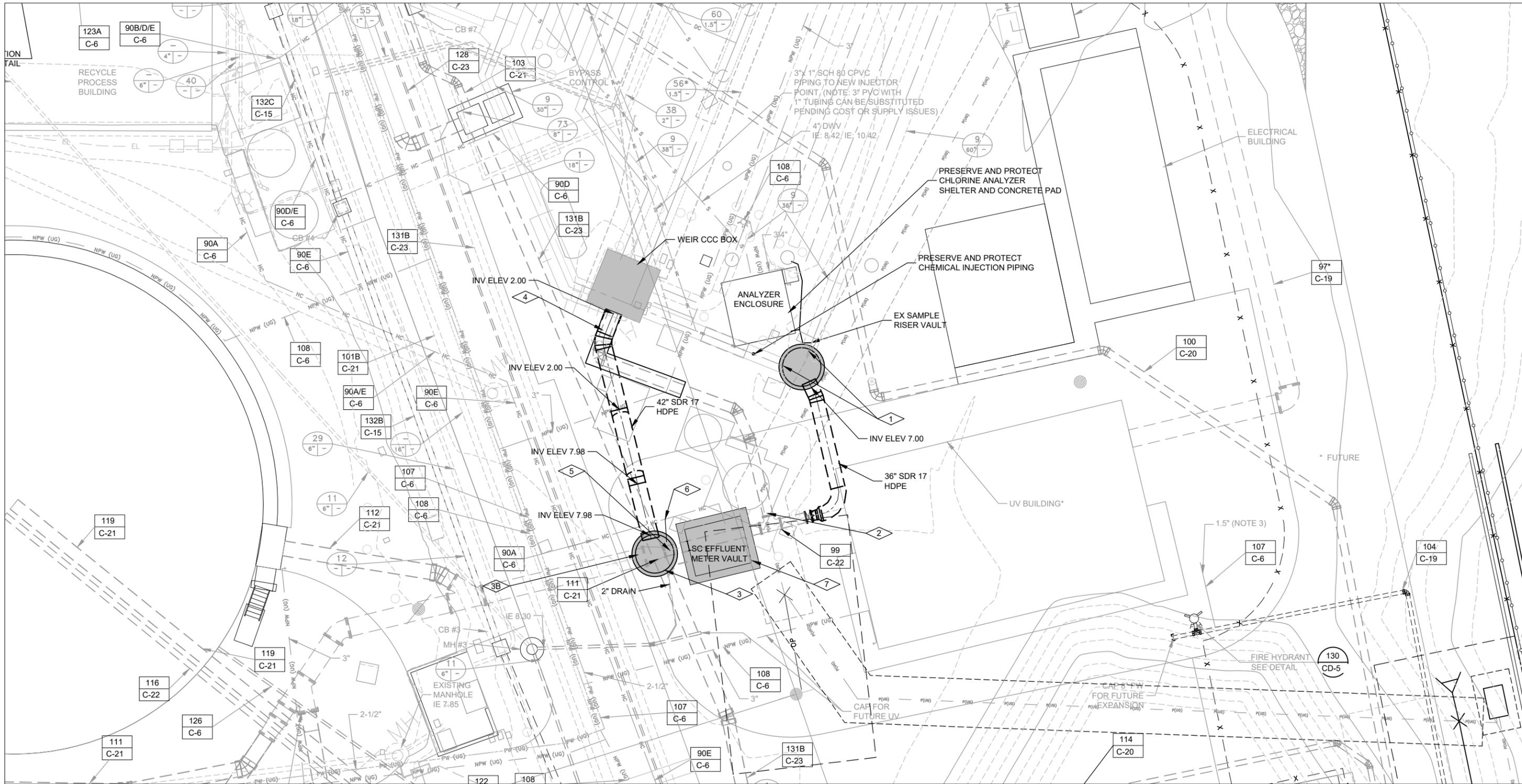
CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON		DISTRICT ENGINEER Michael P Cortez

RCE # 54039	
SHEET 4 of 16	REVISION NO. B

NO.	DATE	DESCRIPTION	BY	APPR'D
<b>REVISIONS</b>				



533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153



KEY NOTES:

- 1 - PLACE 8" Ø DOGHOUSE STYLE MANHOLE AND CUT EXISTING (2) 36" Ø HDPE PIPE, SEE DETAIL #1 & #2 ON SHEET C401.
- 2 - DISCONNECT 24" Ø HDPE PIPE #99 FROM TEE FITTING AND INSTALL HDPE BLIND FLANGE ON ABANDONED TEE SEGMENT SEE DETAIL #3 ON SHEET C401. COMPLETE AFTER INSTALLATION OF MANHOLE #1 AND NEW 36" Ø HDPE PIPE.
- 3 - REMOVE PIPE SLEEVE, CONCRETE ENCASE PIPE #131B. INSTALL 8" Ø MANHOLE #2 OVER 42"/24" HDPE PIPE #111, SEE DETAIL #4 ON SHEET C402, NOTE PIPE #131B AND PIPE #111 TO REMAIN IN SERVICE.
- 3B - REMOVE PIPE SLEEVE, CONCRETE ENCASE PIPE #131B. INSTALL 8" Ø MANHOLE #2 OVER 42"/24" PIPE #111, SEE DETAIL #5 ON SHEET C402.
- 4 - REMOVE PORTION OF ENCASED 24" Ø HDPE PIPE #99, INSTALL 42" Ø HDPE PIPE #111, SEE DETAIL #6 ON SHEET C403 AND DETAIL #7 ON SHEET C404.
- 5 - CUT 24" Ø HDPE TO REMOVE PIPING TO METER VAULT AND REDUCERS, LEAVING ONLY 42" HDPE PIPING STUB IN MANHOLE #2, SEE DETAIL #5 ON SHEET C402.
- 6 - REROUTE DOUBLE CONTAINMENT PVC NEW CHLORINE INJECTION POINT IN MANHOLE PIPE #90A, SEE DETAIL #9 ON SHEET C404.
- 7 - REMOVE AND SALVAGE EXISTING MAG METER SEE DETAIL #10 ON SHEET C405.

**YARD PIPING PLAN**

SCALE: 1"=10'-0"  
0 10 20  
Scale in Feet



533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153

JOB NO. -

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

**CIVIL  
SITE PLAN**

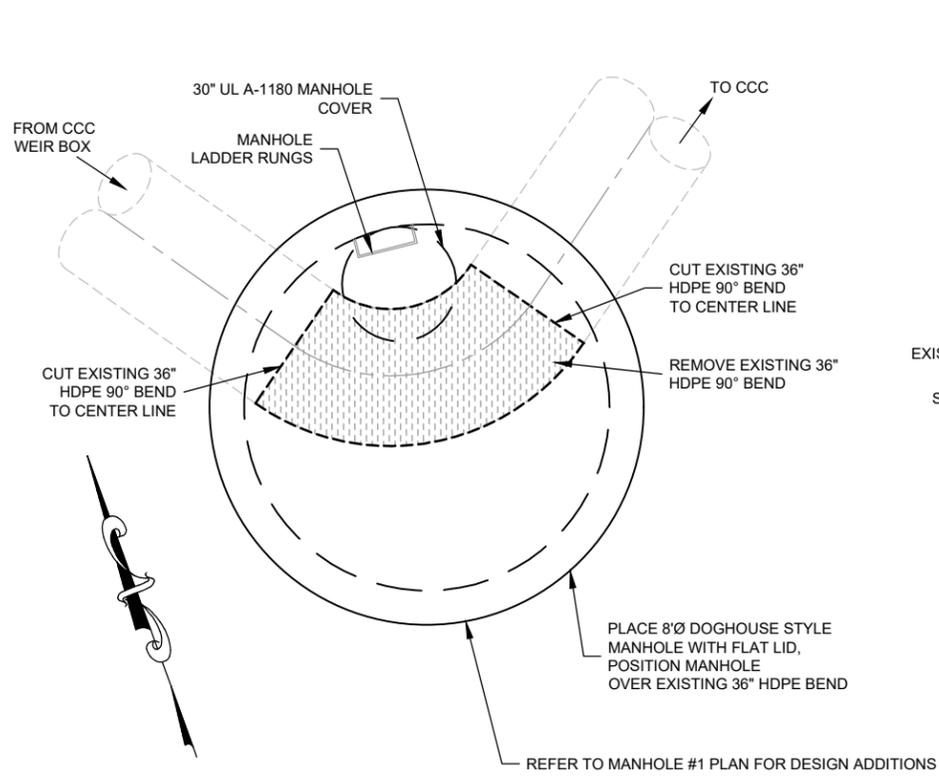
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APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez	

SHEET 5 of 16	PLAN NO.	DRAWING NO. C201	REVISION NO. B
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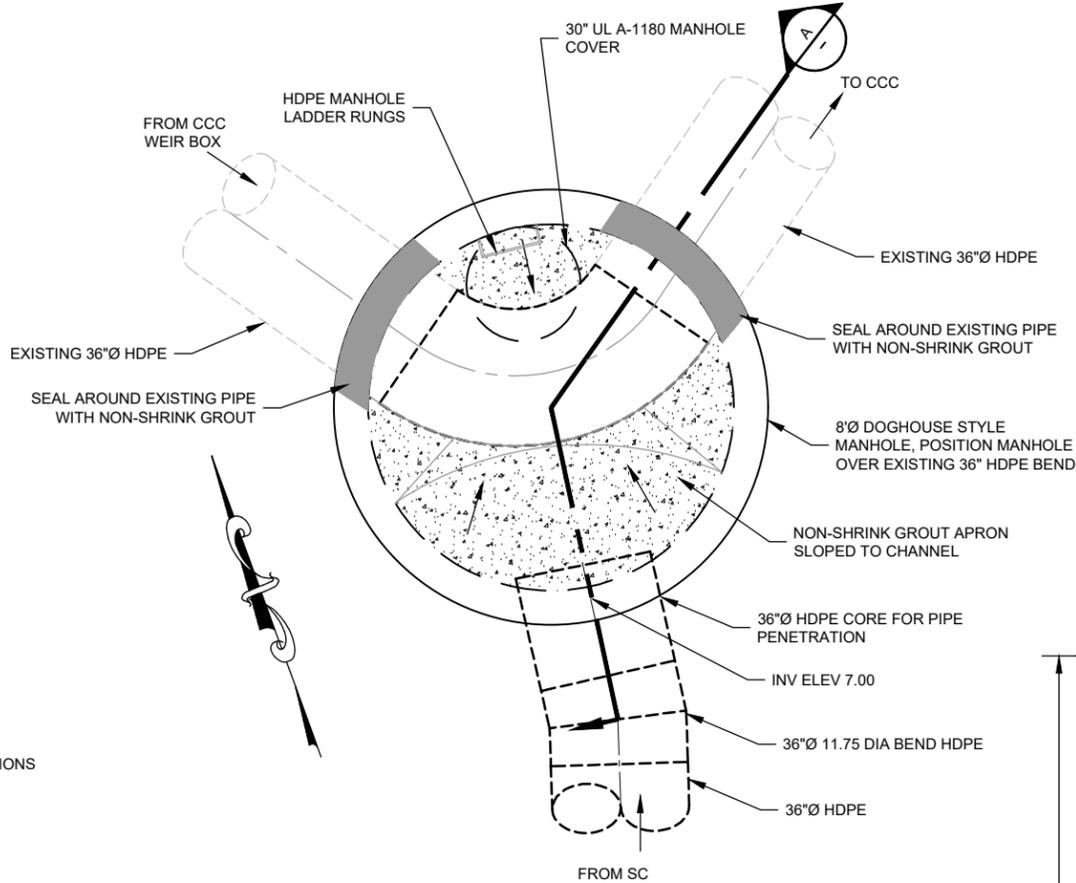
NO.	DATE	DESCRIPTION	BY	APPRD
REVISIONS				

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SCALE: 1:1  
BORDER: 22,34

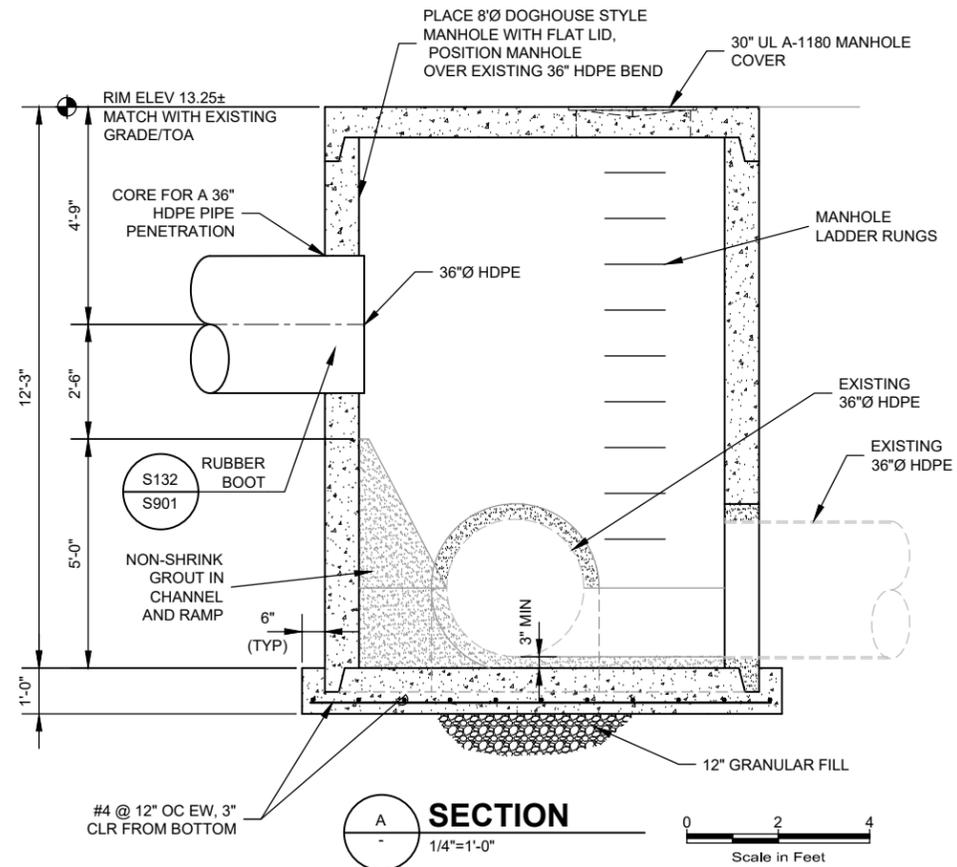
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GREEN 0.25MM  
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WHITE 0.35MM  
GRAY 0.15MM  
9 0.15MM  
10 1.00MM  
100 0.70MM  
210 0.60MM



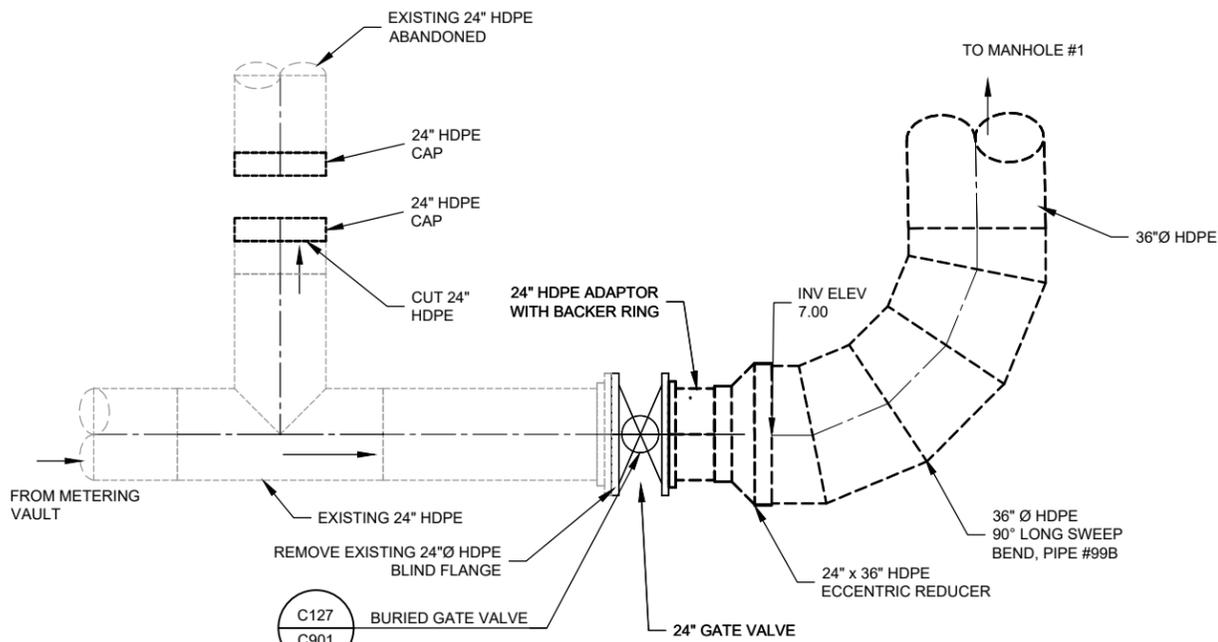
**1 MANHOLE #1 - DEMOLITION**  
C201 1/2"=1'-0"  
Scale in Feet



**2 MANHOLE #1**  
1/2"=1'-0"  
Scale in Feet



**A SECTION**  
1/4"=1'-0"  
Scale in Feet



**3 PIPE CONNECTION**  
C201 1/4"=1'-0"  
Scale in Feet

NOTES:  
1- ALL DIMENSIONS, PIPE SIZES, AND LOCATIONS ARE FROM RECORD DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED.



533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153

JOB NO. -  
LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

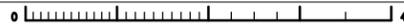
SECONDARY EFFLUENT LINE MODIFICATIONS

**CIVIL MANHOLE #1**

CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez	

NO.	DATE	DESCRIPTION	BY	APPROV
REVISIONS				

SHEET 6 of 16	PLAN NO.	DRAWING NO. <b>C401</b>	REVISION NO. <b>B</b>
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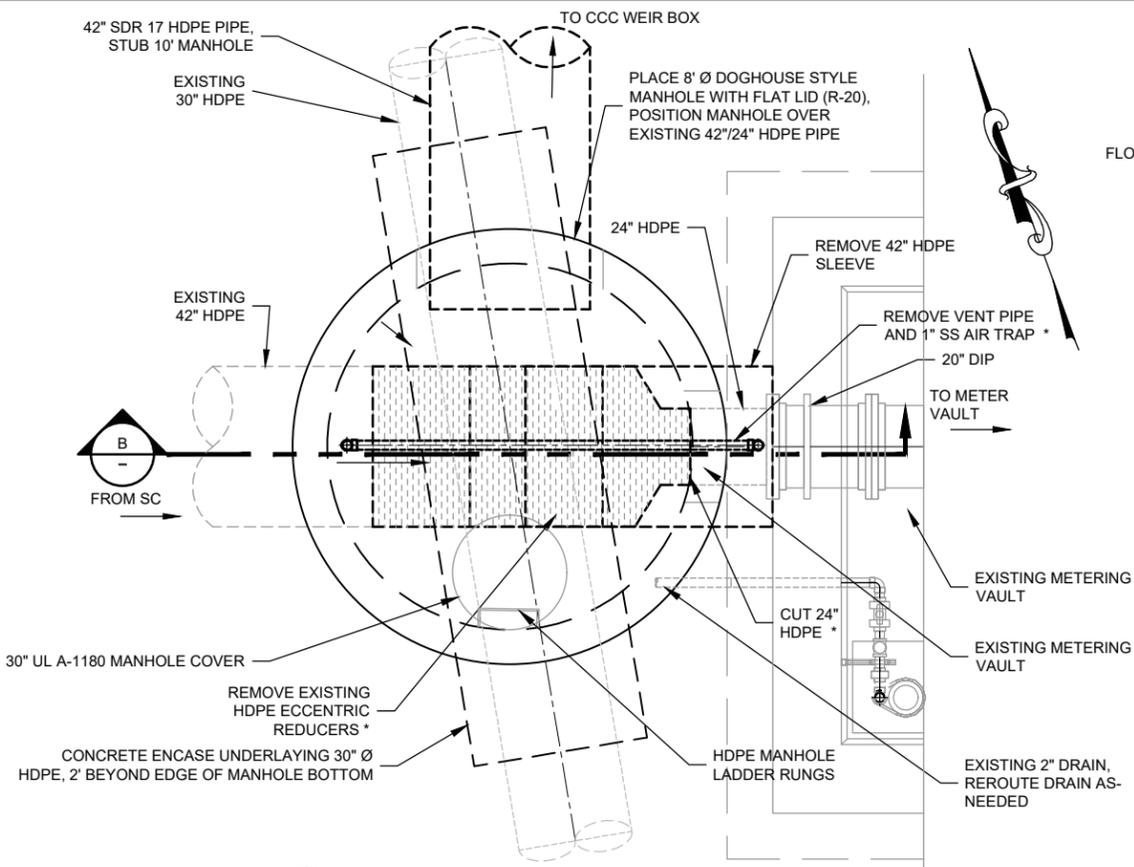


C:\USERS\KENNETH.BAETZAQUA\ENGINEERING\LGVS.D - DOCUMENTS\LASG1501118-SECONDARY TREATMENT UPGRADES\PHASE 18\DRAWING\001 SITE CIVIL\C401-405.DWG

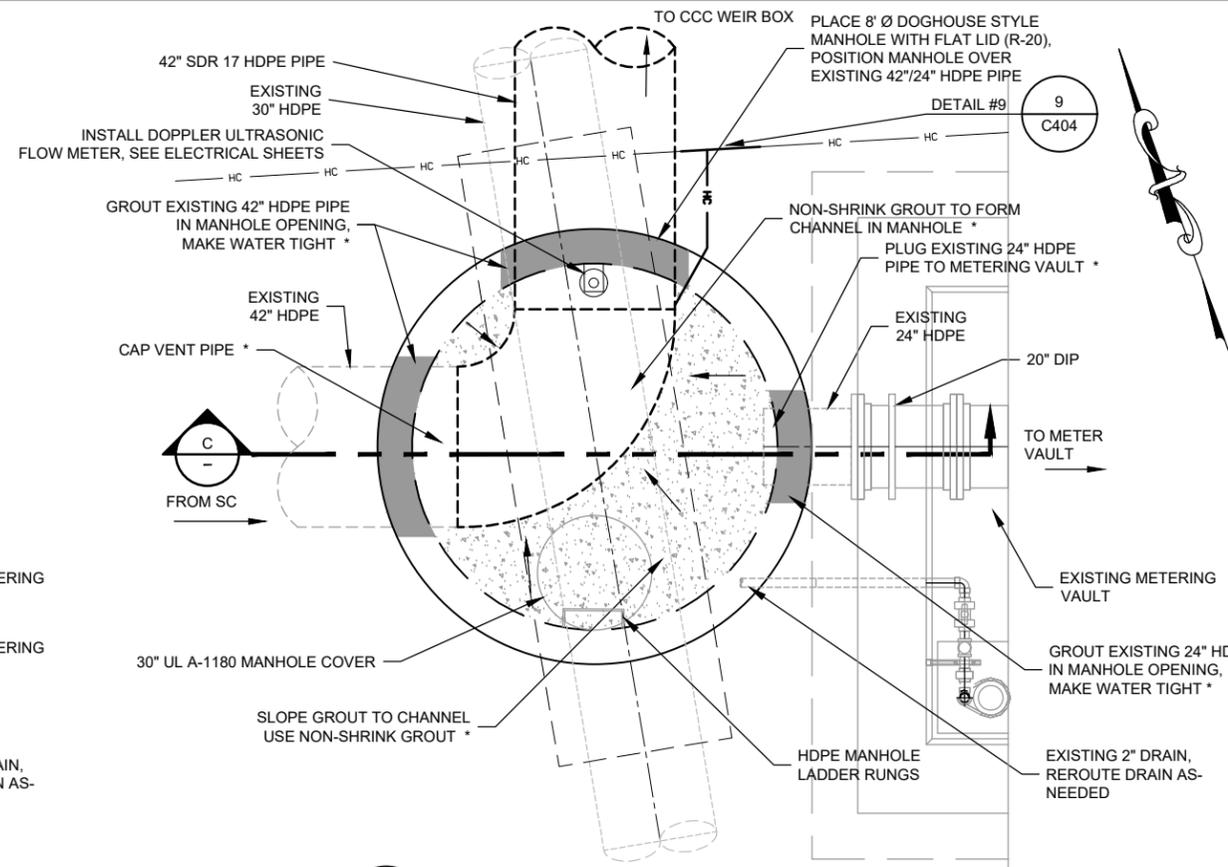
8/18/2023

PLOTTED: 8/18/2023  
SAVED:

PLOT: EXTEND  
SCALE: 1:1  
BORDER: 22,34  
  
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YELLOW 0.25MM  
GREEN 0.40MM  
CYAN 0.40MM  
BLUE 0.50MM  
MAGENTA 0.20MM  
WHITE 0.35MM  
GRAY 0.15MM  
9 0.15MM  
10 1.00MM  
100 0.70MM  
210 0.60MM

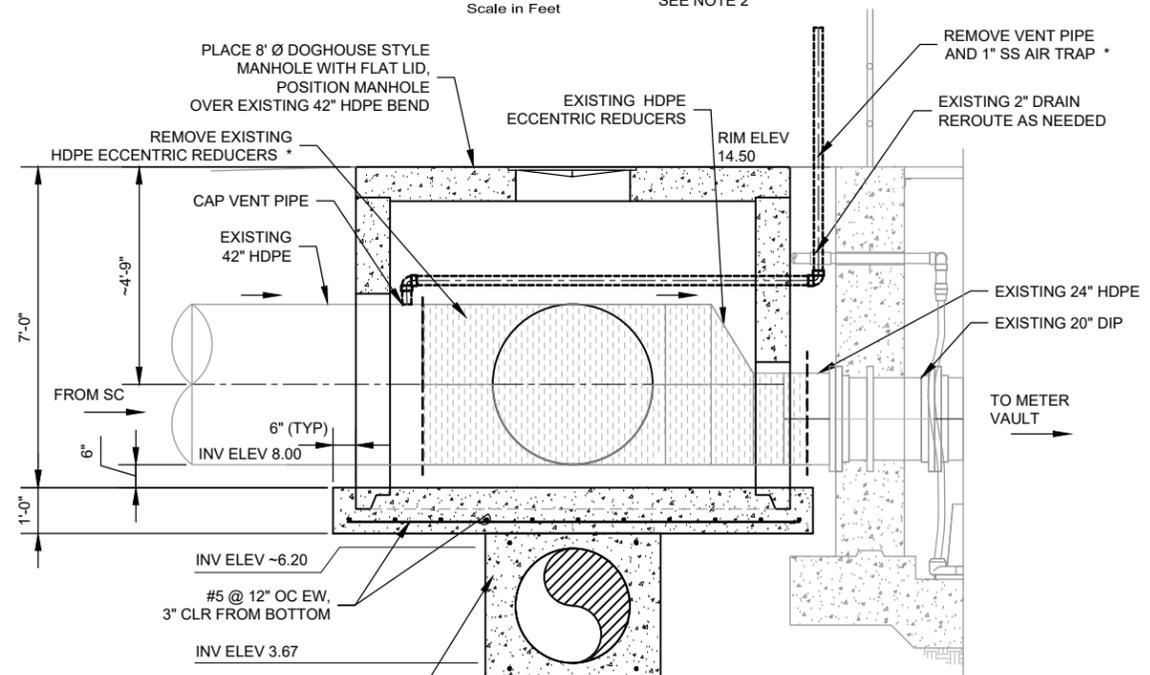


**4 MANHOLE #2 - DEMOLITION**  
C201 1/4"=1'-0"  
Scale in Feet \* SEE NOTE 2

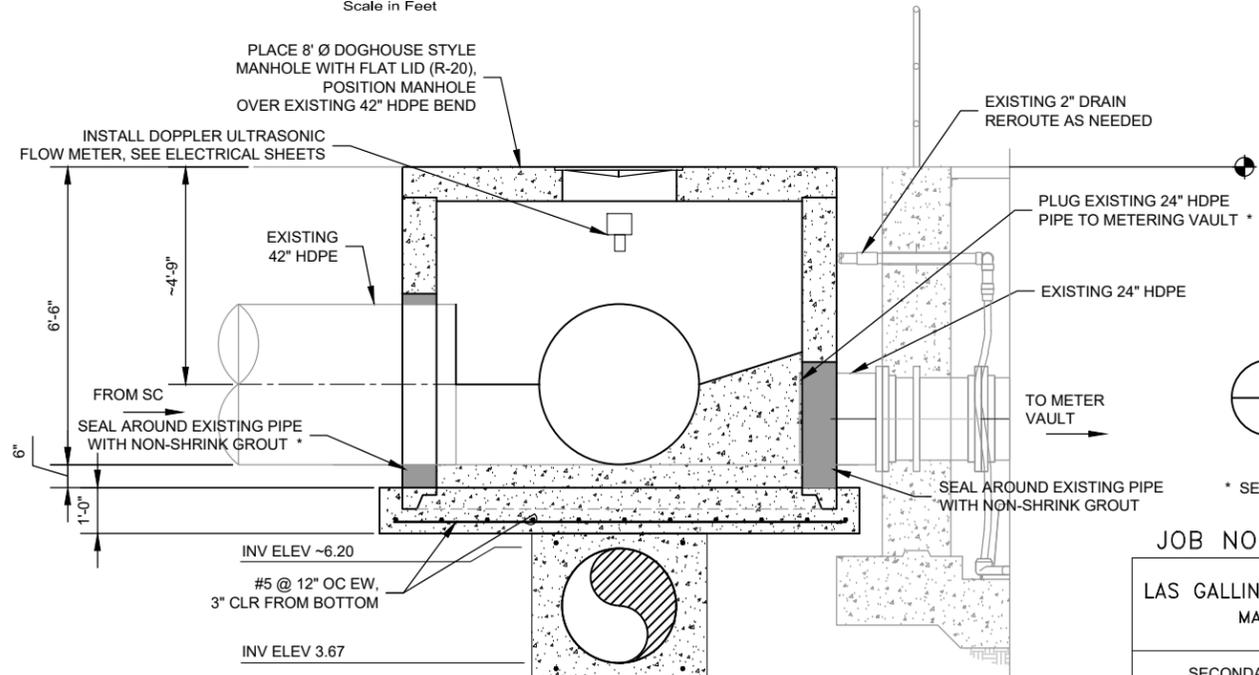


**5 MANHOLE #2**  
C201 1/4"=1'-0"  
Scale in Feet \* SEE NOTE 2

- NOTES:
- ALL DIMENSIONS, PIPE SIZES, AND LOCATIONS ARE FROM RECORD DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED.
  - CUT 24" PIPE AND REMOVE REDUCERS ONCE NEW 42" PIPE TO CCC WEIR BOX IS INSTALLED. 24" PIPE AND FLOW METER TO REMAIN IN SERVICE UNTIL NEW 42" CONNECTION IS READY.



**B SECTION**  
1/4"=1'-0"  
Scale in Feet \* SEE NOTE 2



**C SECTION**  
1/4"=1'-0"  
Scale in Feet \* SEE NOTE 2

JOB NO. -

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

**CIVIL MANHOLE #2**

CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez	

RCE # 54039

NO.	DATE	DESCRIPTION	BY	APPROD
REVISIONS				

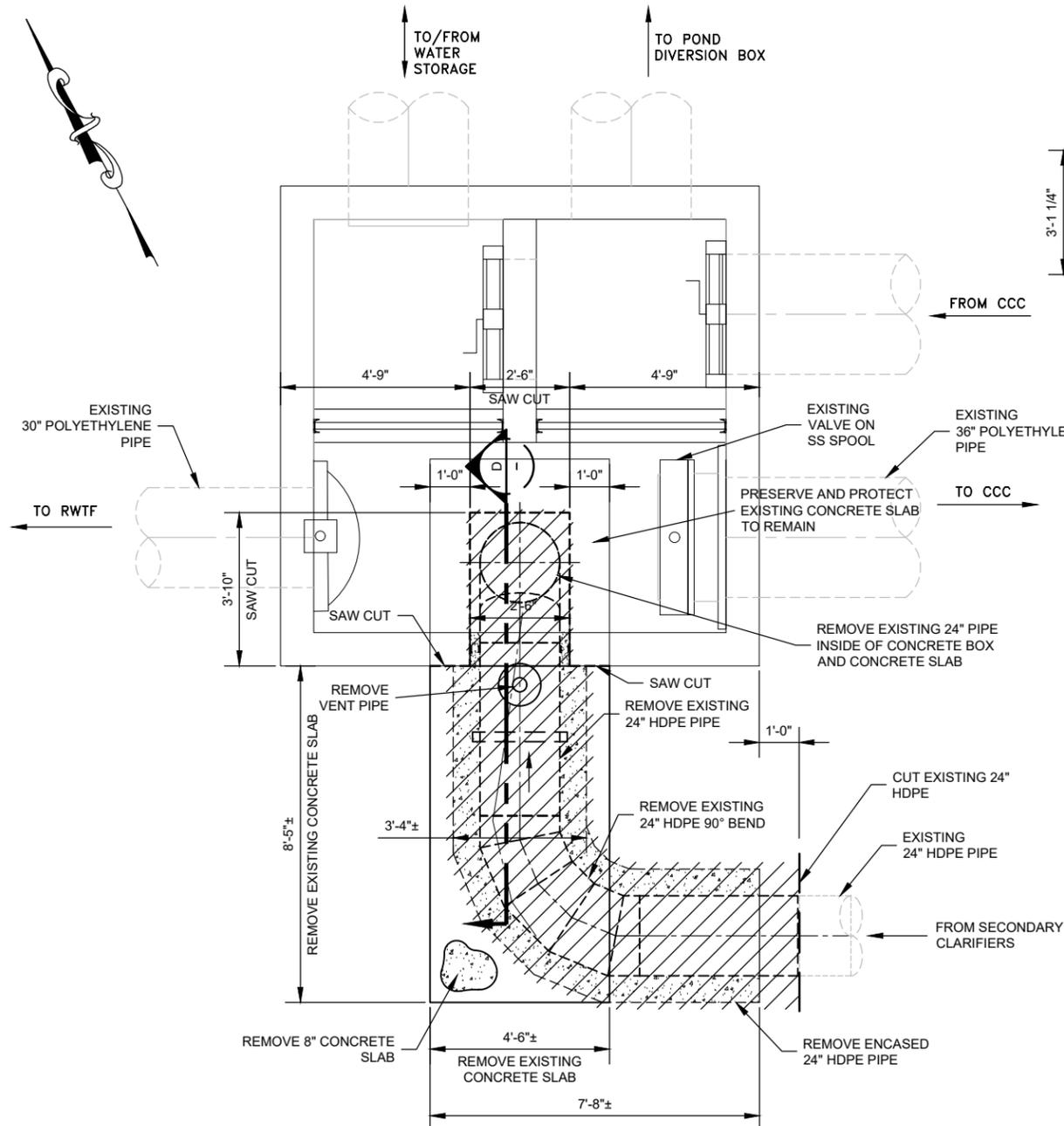
SHEET 7 of 16 PLAN NO. C402 DRAWING NO. C402 REVISION NO. B

**AQUA ENGINEERING**

533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153

PLOT: EXTEND  
 SCALE: 1:1  
 BORDER: 22,34

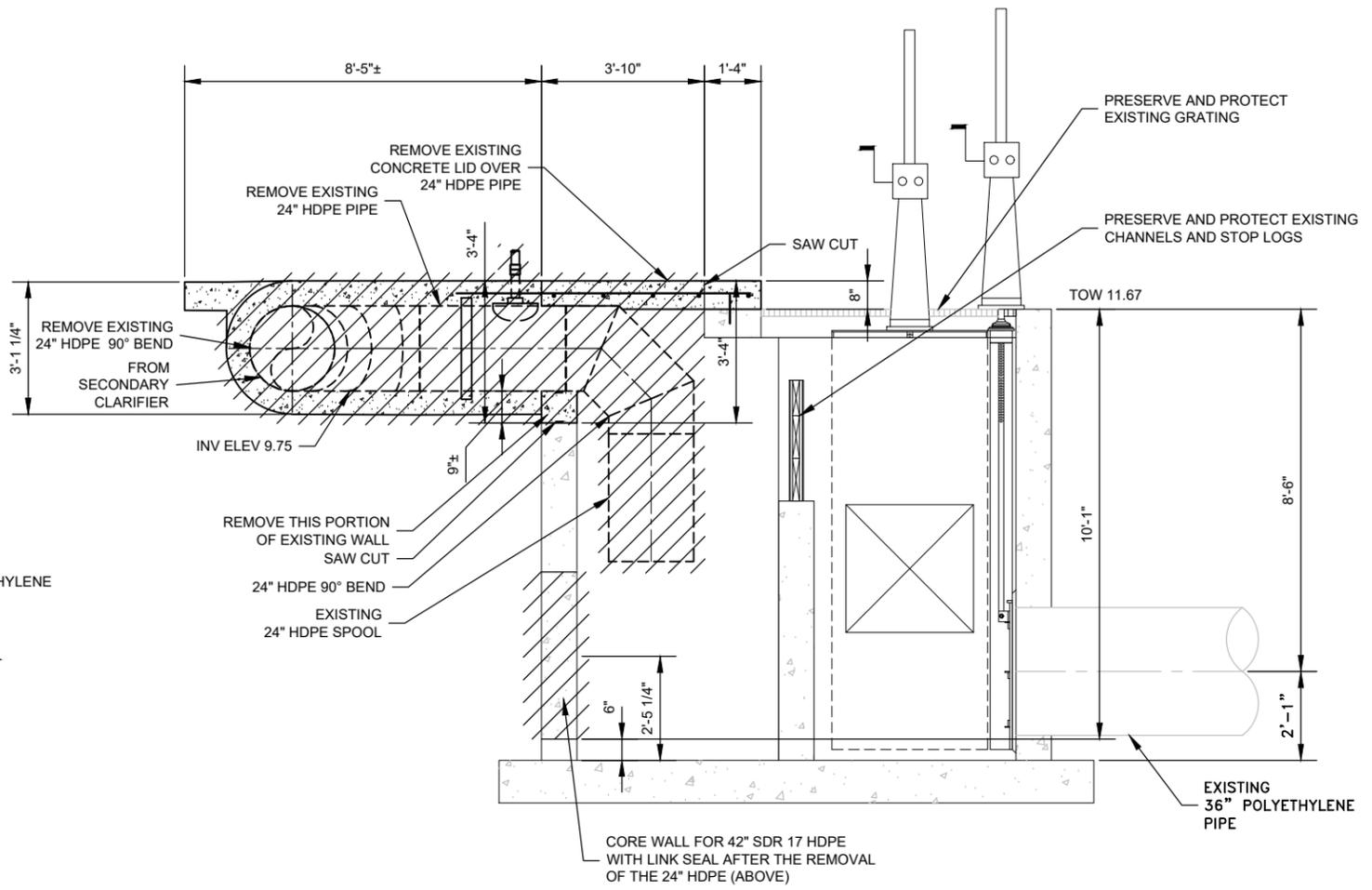
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 BLUE 0.50MM  
 MAGENTA 0.20MM  
 WHITE 0.35MM  
 GRAY 0.15MM  
 9 0.15MM  
 10 1.00MM  
 100 0.70MM  
 210 0.60MM



6  
 C201

**CONTACT CHAMBER WEIR BOX PLAN - DEMOLITION**

SCALE: 1/2"=1'-0"  
 0 2 4  
 Scale in Feet



**SECTION - DEMOLITION**

SCALE: 1/2"=1'-0"  
 0 2 4  
 Scale in Feet

**NOTES:**

1- ALL DIMENSIONS, PIPE SIZES, AND LOCATIONS ARE FROM RECORD DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED.



533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
 PHONE (801) 299-1327 FAX (801) 299-0153

JOB NO. -  
 LAS GALLINAS VALLEY SANITARY DISTRICT  
 MARIN COUNTY, CALIFORNIA

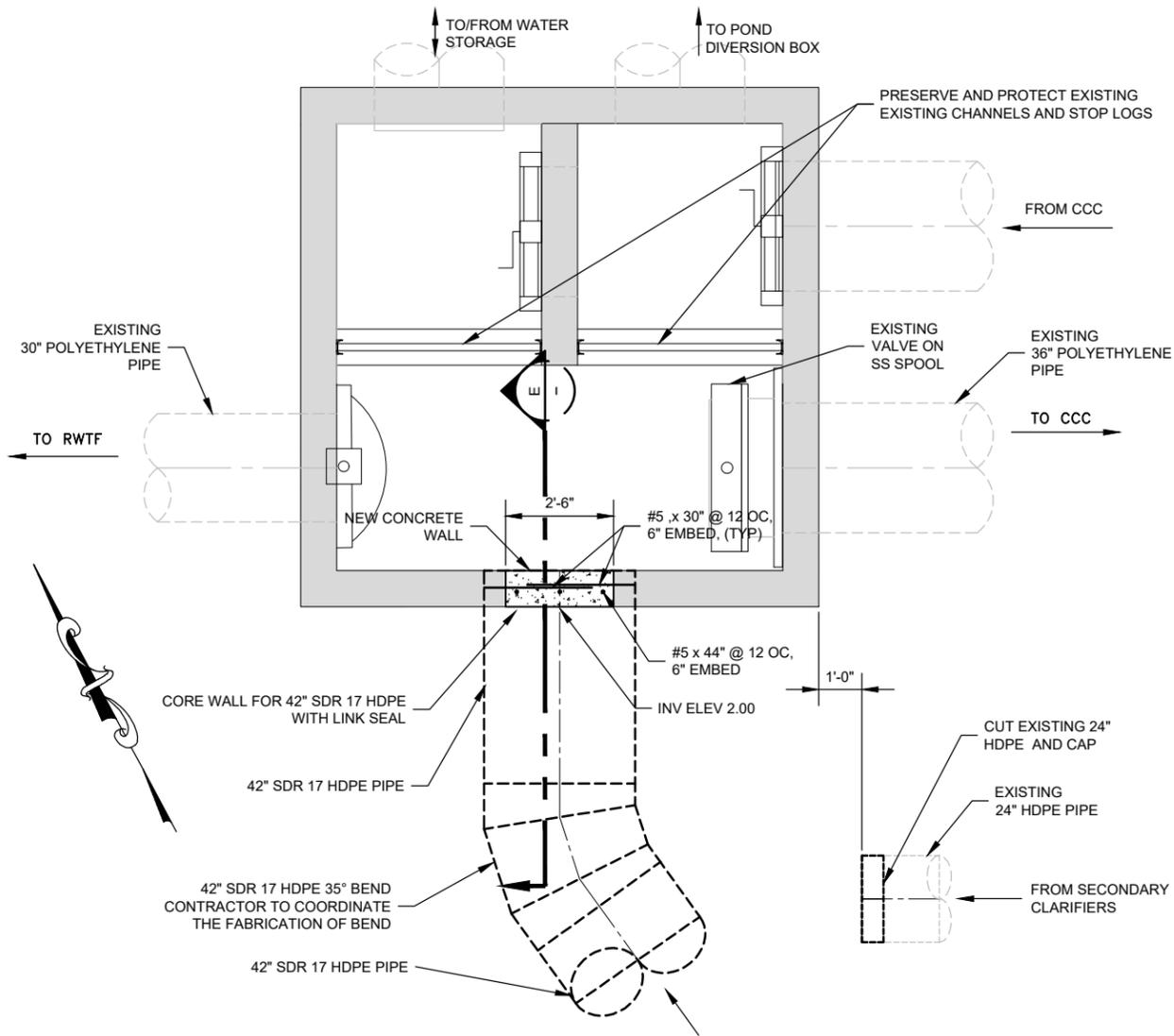
SECONDARY EFFLUENT LINE MODIFICATIONS

**CIVIL  
 CCC WEIR BOX PLAN/SECTION - DEMOLITION**

CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez	RCE # 54039

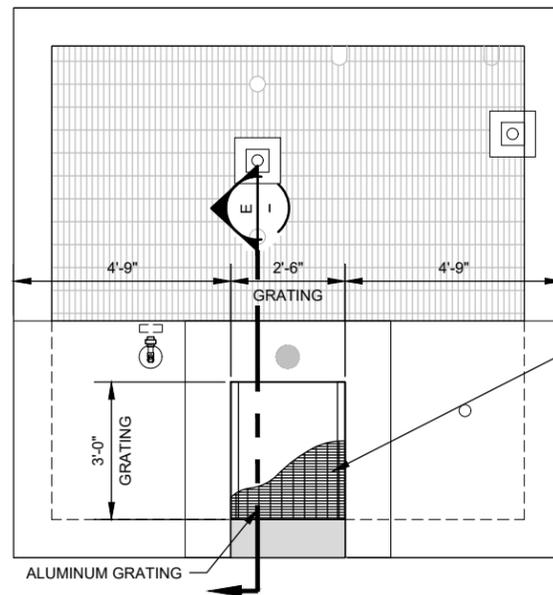
NO.	DATE	DESCRIPTION	BY	APPR'D
<b>REVISIONS</b>				

SHEET 8 of 16	PLAN NO.	DRAWING NO. <b>C403</b>	REVISION NO. <b>B</b>
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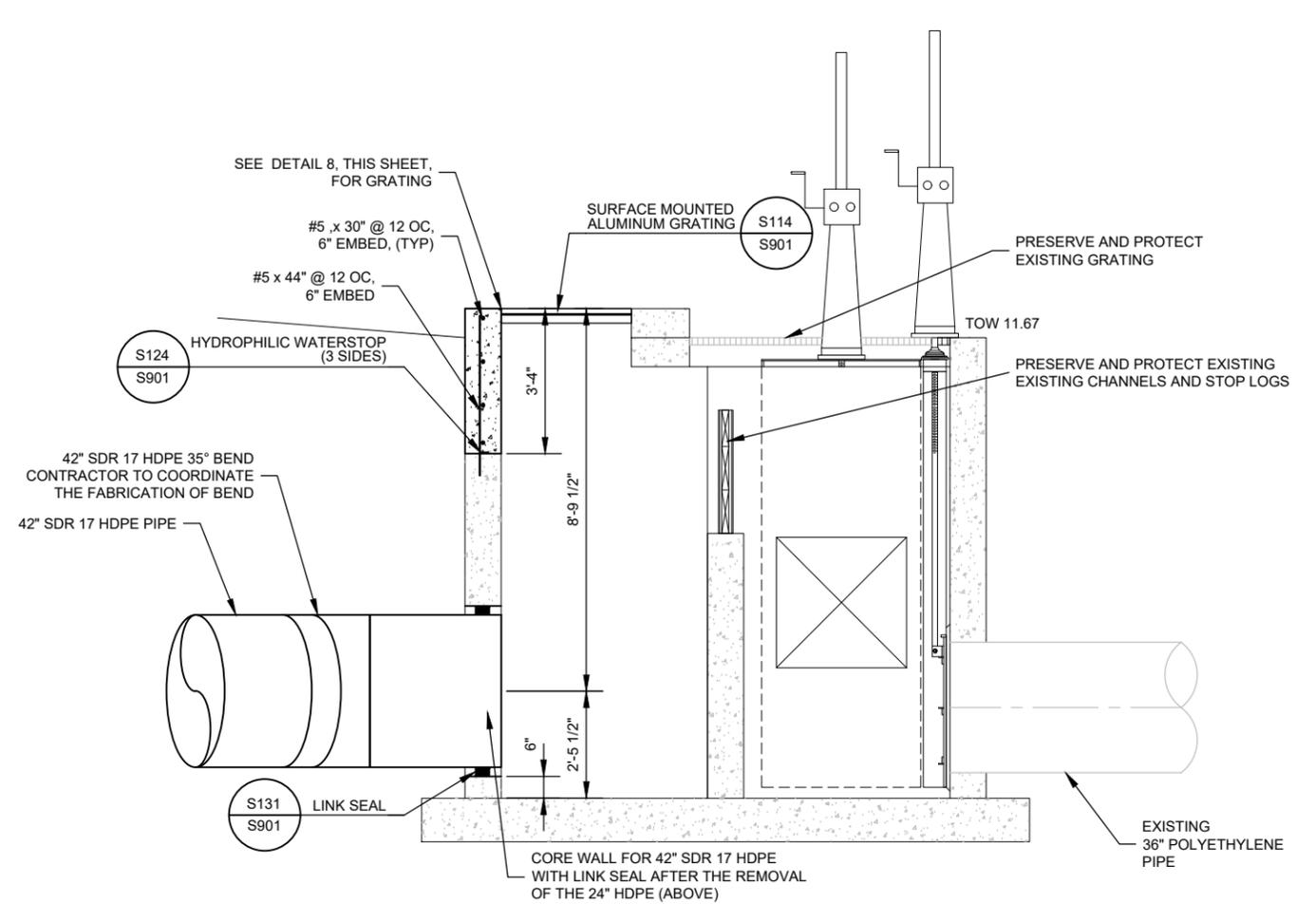
**CONTACT CHAMBER WEIR BOX PLAN**

SCALE: 1/2"=1'-0"



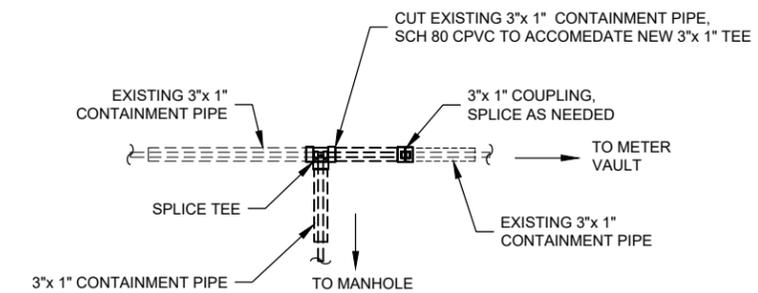
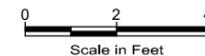
**CCW BOX GRATING PLAN**

SCALE: 1/2"=1'-0"



**SECTION E**

SCALE: 1/2"=1'-0"



**DETAIL 9**

SCALE: NTS

**NOTES:**

- 1- ALL DIMENSIONS, PIPE SIZES, AND LOCATIONS ARE FROM RECORD DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED.



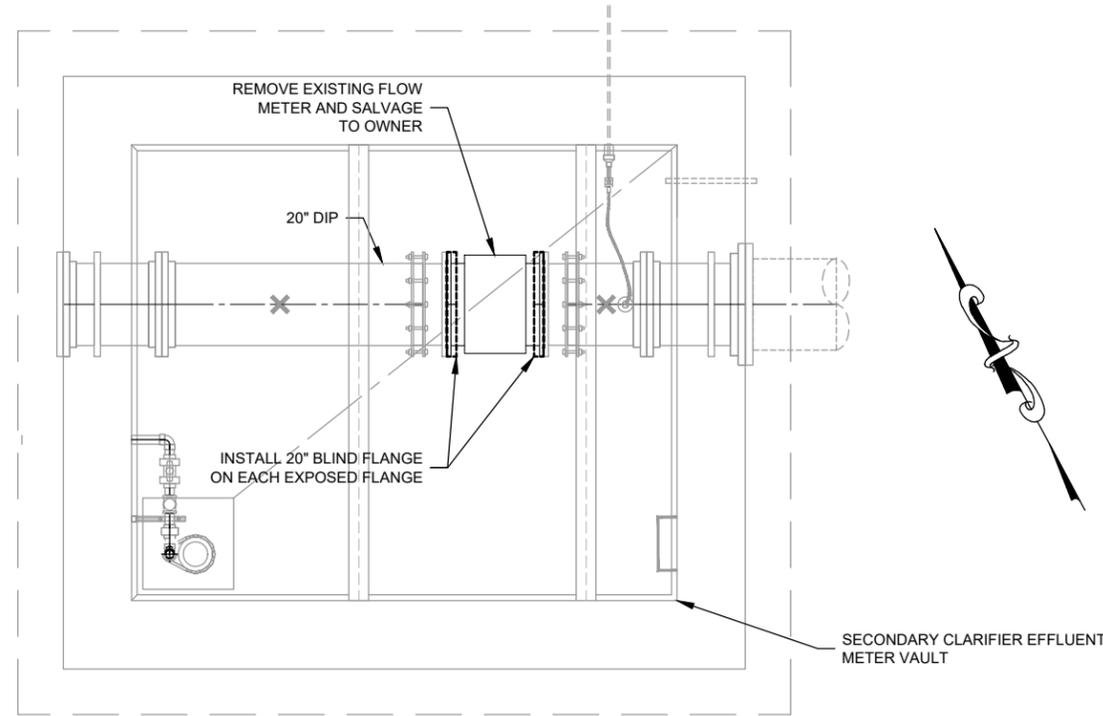
533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153

NO.	DATE	DESCRIPTION	BY	APPROD
<b>REVISIONS</b>				

JOB NO. -		
LAS GALLINAS VALLEY SANITARY DISTRICT MARIN COUNTY, CALIFORNIA		
SECONDARY EFFLUENT LINE MODIFICATIONS		
<b>CIVIL CCC WEIR BOX PLAN AND SECTION</b>		
CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez	
RCE # 54039		
SHEET 9 of 16	PLAN NO.	DRAWING NO. <b>C404</b>
		REVISION NO. <b>B</b>

PLOT: EXTEND  
SCALE: 1:1  
BORDER: 22,34

COLOR: No.  
RED 0.70MM  
YELLOW 0.20MM  
GREEN 0.25MM  
CYAN 0.40MM  
BLUE 0.50MM  
MAGENTA 0.20MM  
WHITE 0.35MM  
GRAY 0.15MM  
9 0.15MM  
10 1.00MM  
100 0.70MM  
210 0.60MM



**10 DEMOLITION PLAN**  
C201 1/2"=1'-0"  
0 2 4  
Scale in Feet

NOTES:  
1- ALL DIMENSIONS, PIPE SIZES, AND LOCATIONS ARE FROM RECORD DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED.



JOB NO. -  
LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

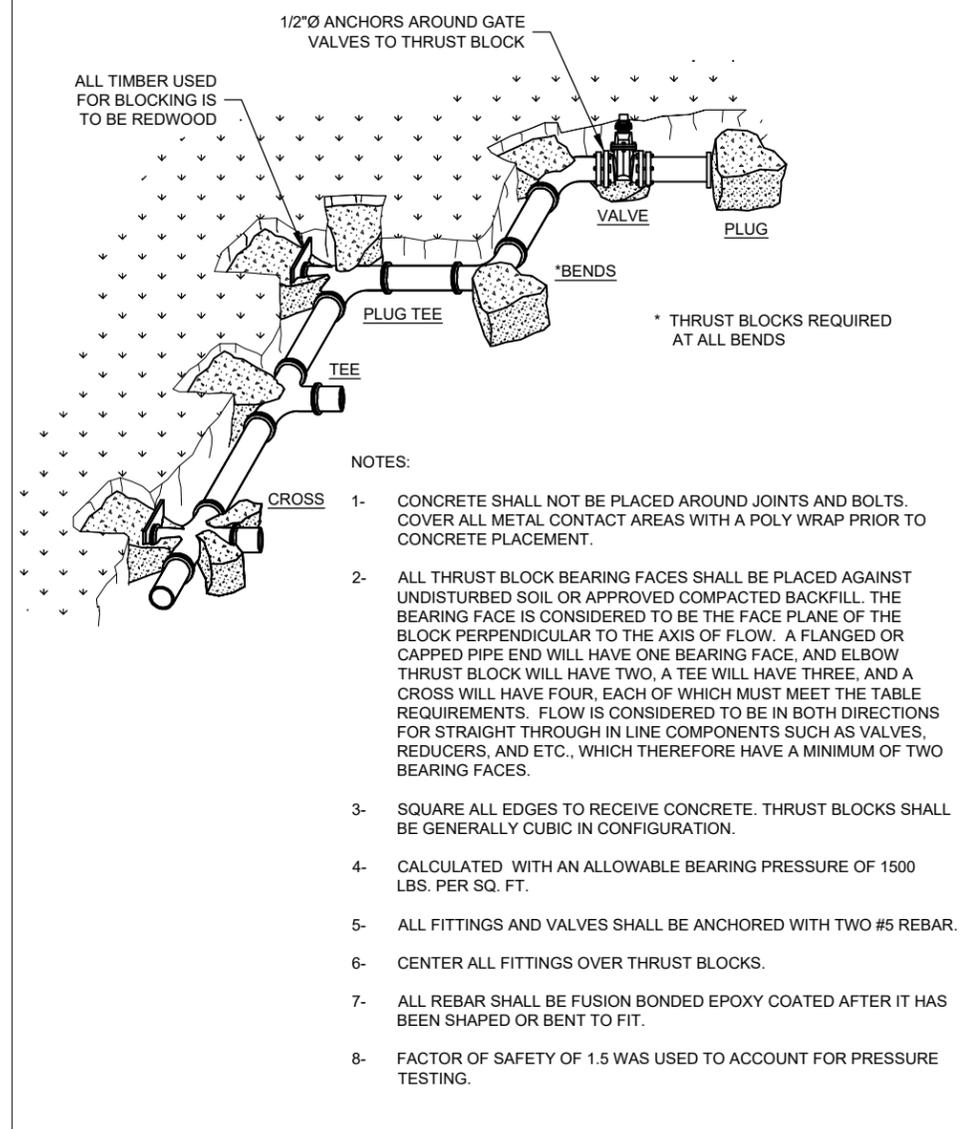
SECONDARY EFFLUENT LINE MODIFICATIONS

**CIVIL  
METER VAULT DEMOLITION**

CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez	

NO.	DATE	DESCRIPTION	BY	APPR'D
<b>REVISIONS</b>				

SHEET 10 of 16	PLAN NO.	DRAWING NO. <b>C405</b>	REVISION NO. <b>B</b>
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C101 THRUST BLOCK  
NTS

THRUST BLOCK BEARING AREA IN SQ. FT. @150 PSI WORKING PRESSURE

PIPE SIZE	CROSS	TEE	WYE	DEAD END	VALVE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4	2.7	1.9	1.9	1.9	1.9	2.7	1.5	1.0	1.0
6	6.0	4.3	4.3	4.3	4.3	6.0	3.3	1.7	1.0
8	10.7	7.6	7.6	7.6	7.6	10.7	5.8	3.0	1.5
10	16.7	11.8	11.8	11.8	11.8	16.7	9.1	4.6	2.4
12	24.0	17.0	17.0	17.0	17.0	24.0	13.0	6.7	3.4
14	32.7	23.1	23.1	23.1	23.1	32.7	17.7	9.1	4.6
16	42.7	30.2	30.2	30.2	30.2	42.7	23.1	11.8	6.0
18	54.0	38.2	38.2	38.2	38.2	54.0	29.3	14.9	7.5
20	66.7	47.2	47.2	47.2	47.2	66.7	36.1	18.4	9.3
24	96.0	67.9	67.9	67.9	67.9	96.0	52.0	26.5	13.4

THRUST BLOCK BEARING AREA IN SQ. FT. @200 PSI WORKING PRESSURE

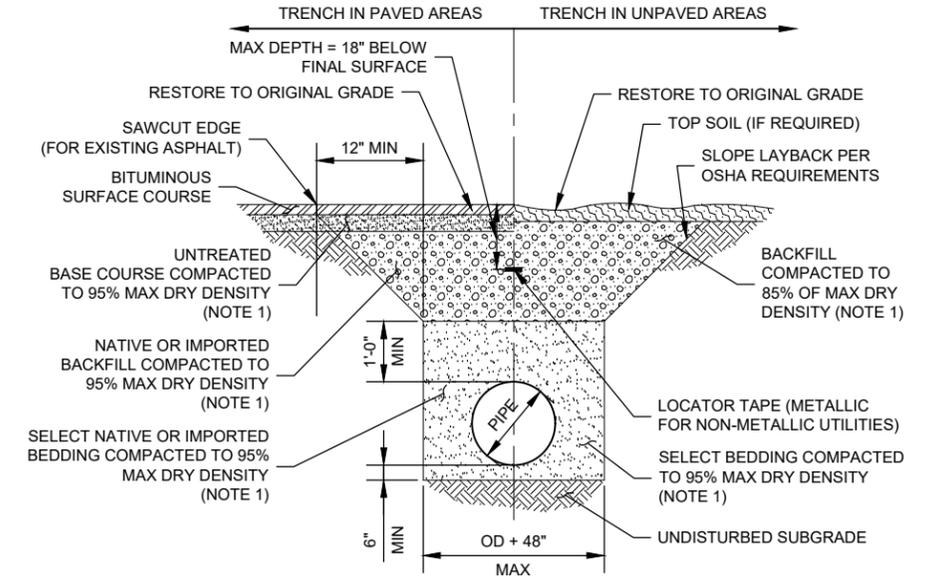
PIPE SIZE	CROSS	TEE	WYE	DEAD END	VALVE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4	3.6	2.6	2.6	2.6	2.6	3.6	2.0	1.0	1.0
6	8.0	5.7	5.7	5.7	5.7	8.0	4.4	2.3	1.2
8	14.3	10.1	10.1	10.1	10.1	14.3	7.7	4.0	2.0
10	22.3	15.8	15.8	15.8	15.8	22.3	12.1	6.2	3.1
12	32.0	22.7	22.7	22.7	22.7	32.0	17.4	8.9	4.5
14	43.6	30.8	30.8	30.8	30.8	43.6	23.6	12.1	6.1
16	56.9	40.3	40.3	40.3	40.3	56.9	30.8	15.7	7.9
18	72.0	50.9	50.9	50.9	50.9	72.0	39.0	19.9	10.0
20	88.9	62.9	62.9	62.9	62.9	88.9	48.1	24.6	12.4
24	128.0	90.5	90.5	90.5	90.5	128.0	69.3	35.4	17.8

THRUST BLOCK BEARING AREA IN SQ. FT. @250 PSI WORKING PRESSURE

PIPE SIZE	CROSS	TEE	WYE	DEAD END	VALVE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4	4.5	3.2	3.2	3.2	3.2	4.5	2.5	1.3	1.0
6	10.0	7.1	7.1	7.1	7.1	10.0	5.5	2.8	1.4
8	17.8	12.6	12.6	12.6	12.6	17.8	9.7	5.0	2.5
10	27.8	19.7	19.7	19.7	19.7	27.8	15.1	7.7	3.9
12	40.0	28.3	28.3	28.3	28.3	40.0	21.7	11.1	5.6
14	54.5	38.5	38.5	38.5	38.5	54.5	29.5	15.1	7.6
16	71.1	50.3	50.3	50.3	50.3	71.1	38.5	19.7	9.9
18	90.0	63.7	63.7	63.7	63.7	90.0	48.7	24.9	12.5
20	111.1	78.6	78.6	78.6	78.6	111.1	60.2	30.7	15.4
24	160.0	113.1	113.1	113.1	113.1	160.0	86.6	44.2	22.2

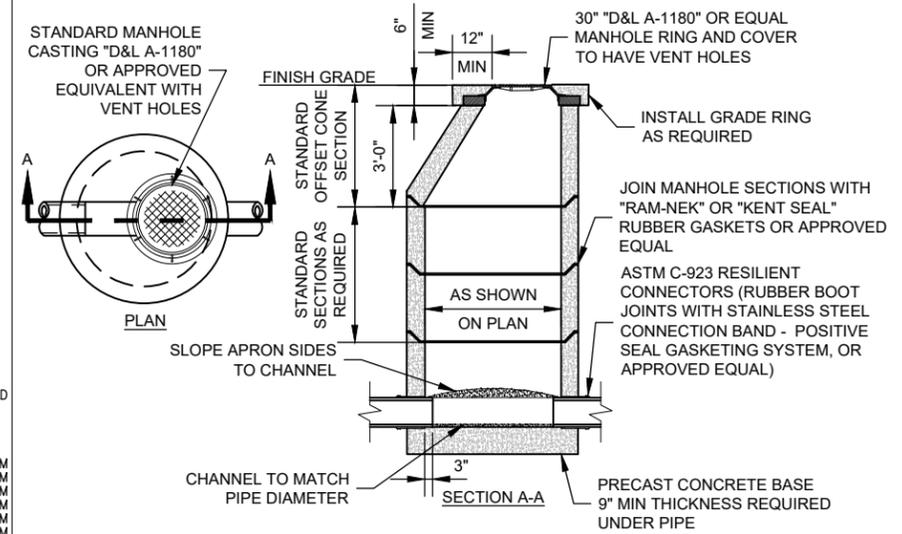
THRUST BLOCK BEARING AREA IN SQ. FT. @500 PSI WORKING PRESSURE

PIPE SIZE	CROSS	TEE	WYE	DEAD END	VALVE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4	8.9	6.3	6.3	6.3	6.3	8.9	4.9	2.5	1.3
6	20.0	14.2	14.2	14.2	14.2	20.0	10.9	5.6	2.8
8	35.6	25.2	25.2	25.2	25.2	35.6	19.3	9.9	5.0
10	55.6	39.3	39.3	39.3	39.3	55.6	30.1	15.4	7.7
12	80.0	56.6	56.6	56.6	56.6	80.0	43.3	22.1	11.1
14	108.9	77.0	77.0	77.0	77.0	108.9	59.0	30.1	15.1
16	142.2	100.6	100.6	100.6	100.6	142.2	77.0	39.3	19.8
18	180.0	127.3	127.3	127.3	127.3	180.0	97.4	49.7	25.0
20	222.2	157.1	157.1	157.1	157.1	222.2	120.3	61.3	30.8
24	319.9	226.2	226.2	226.2	226.2	319.9	173.2	88.3	44.4

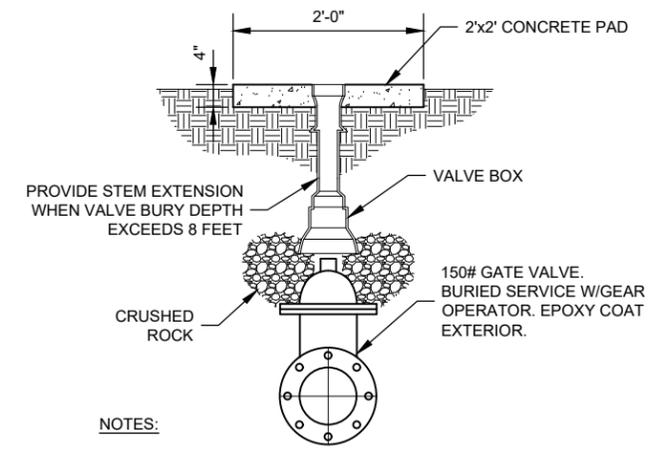


NOTES:  
1 - UNO IN GEOTECHNICAL REPORT OR TECHNICAL SPECIFICATION 312000

C102 PIPE TRENCH  
NTS



C103 PRECAST MANHOLE  
NTS



NOTES:  
1- PROVIDE PROTECTIVE COATING TO EXTERIOR SURFACE OF VALVE BODY AND PROVIDE STAINLESS STEEL NUTS AND BOLTS.  
2- VALVE BOX LID SHALL BE LABELED ACCORDING TO SERVICE.

C127 BURIED GATE VALVE  
NTS



JOB NO. -

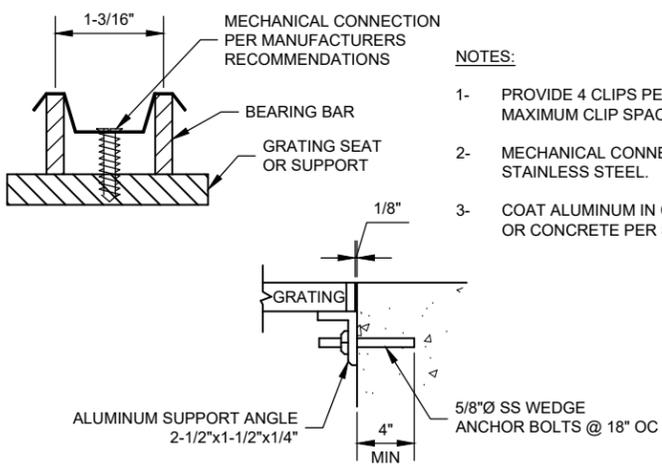
LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

**CIVIL DETAILS**

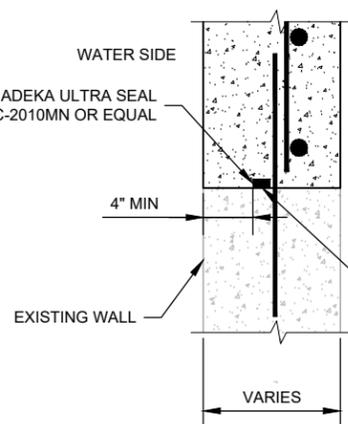
CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez	
	RCE # 54039	

NO.	DATE	DESCRIPTION	BY	APPR'D	SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
<b>REVISIONS</b>					11 of 16		<b>C901</b>	<b>B</b>



**NOTES:**

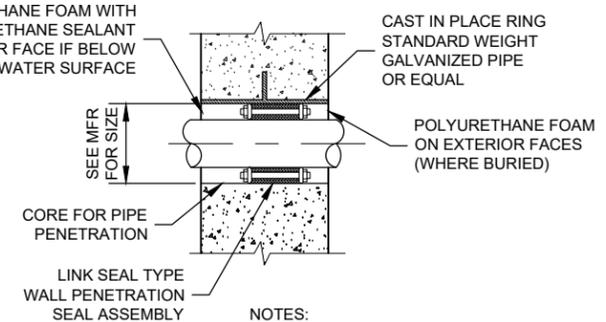
- 1- PROVIDE 4 CLIPS PER GRATING PANEL. MAXIMUM CLIP SPACING @ 36" OC.
- 2- MECHANICAL CONNECTION AND CLIP TO BE STAINLESS STEEL.
- 3- COAT ALUMINUM IN CONTACT WITH GROUT OR CONCRETE PER SPECIFICATIONS.



**NOTE:**

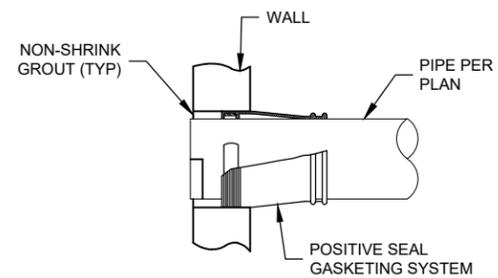
- 1- WATERSTOP SHALL HAVE BAR ON BOTH SIDES OR A 4" MINIMUM OF CONCRETE

FOR WATERSTOP SEE SPECIFICATIONS FOR RECOMMENDED PRODUCTS. INSTALLATION SHALL FOLLOW MANUFACTURERS RECOMMENDATIONS.

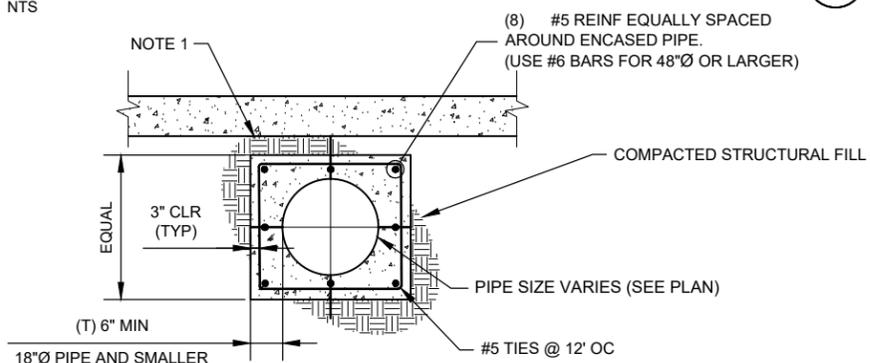


**NOTES:**

- 1- PIPE SLEEVE FOR WALL PENETRATION SEAL ASSEMBLY SIZED BY MANUFACTURER.
- 2- BOLTS SHALL BE STAINLESS STEEL.



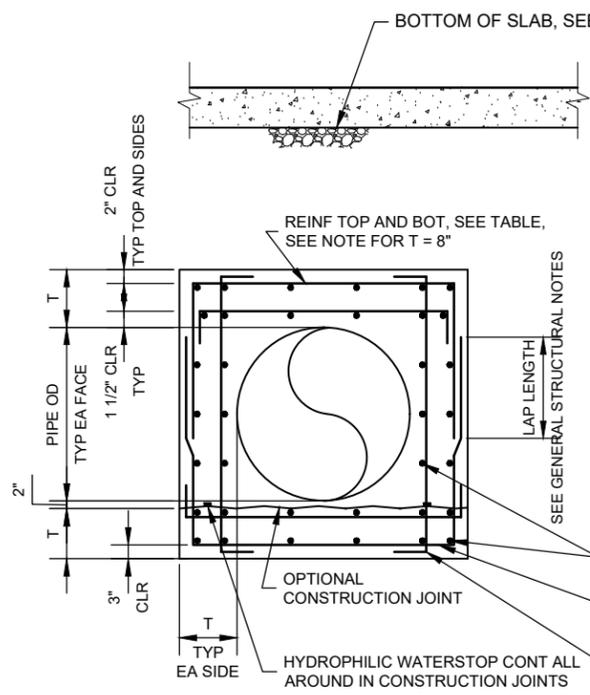
**S114 SURFACE MOUNT ALUMINUM GRATING**  
NTS



**NOTE:**

- 1- WHEN PIPE ENCASEMENT IS CLOSER THAN 4" TO SLAB ABOVE THICKEN SLAB OVER ENCASEMENT TO BEAR DIRECTLY ON ENCASEMENT.

**S124 HYDROPHILIC WATERSTOP**  
NTS

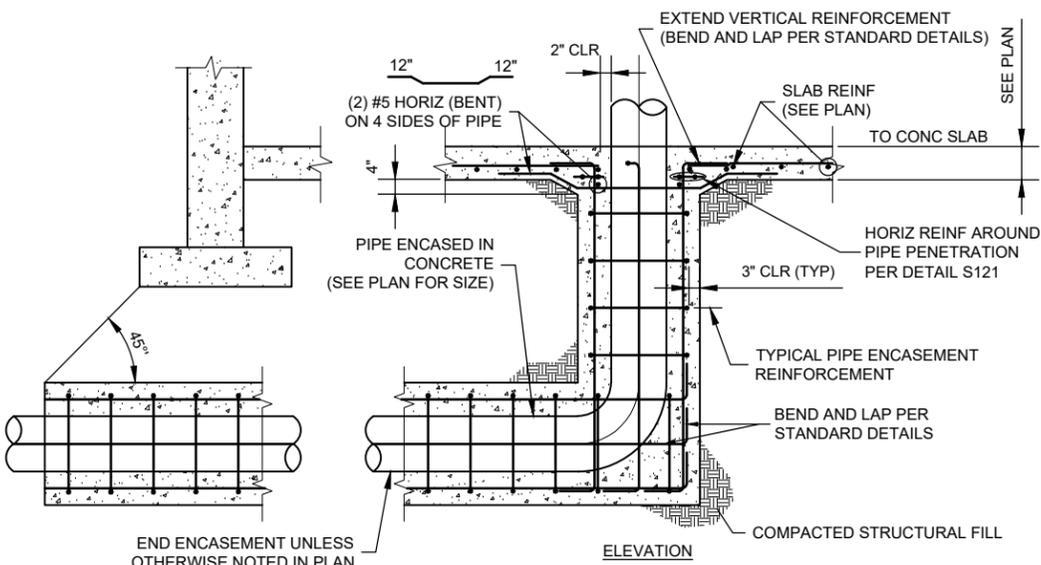


**NOTES:**

1. THIS DETAIL APPLIES TO PIPE DIAMETER OF 20" AND LARGER. FOR SMALLER THAN 20" SEE DETAIL S150.
2. FOR T = 8" REINFORCING SHALL BE ONE LAYER AND CENTERED IN SLABS OR WALLS.
3. FOR ENCASEMENT AT PIPE RISER SEE S150, SIMILAR.
4. "H" IS FILL HEIGHT OR WATER DEPTH OR COMBINATION ABOVE PIPE.
5. WHEN PIPE ENCASEMENT IS CLOSER THAN 4" TO SLAB ABOVE, TIE SLAB AND ENCASEMENT TOGETHER.

**S131 LINK SEAL**  
NTS

**S132 RUBBER BOOT**  
NTS



**S150 CONCRETE ENCASEMENT OF PIPE**  
NTS

PIPE DIA (in)	H = 10 FEET		H = 20 FEET		H = 30 FEET		H = 40 FEET	
	T (in)	REINF						
20 THRU 30	8	#5 AT 12"	10	#5 AT 12"	10	#5 AT 12"	10	#6 AT 12"
36 THRU 42	10	#5 AT 12"	10	#6 AT 12"	10	#7 AT 12"	10	#6 AT 6"
48 THRU 54	10	#6 AT 12"	10	#7 AT 12"	10	#7 AT 6"	12	#7 AT 6"
60	10	#6 AT 12"	10	#7 AT 8"	14	#7 AT 6"	14	#7 AT 6"
UP TO 90	12	#7 AT 12"	14	#8 AT 12"	18	#8 AT 12"	24	#8 AT 12"

**20" Ø PIPE AND LARGER**



533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
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JOB NO. -  
LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

**DETAILS STRUCTURAL**

CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23
GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez	
	RCE # 54039	

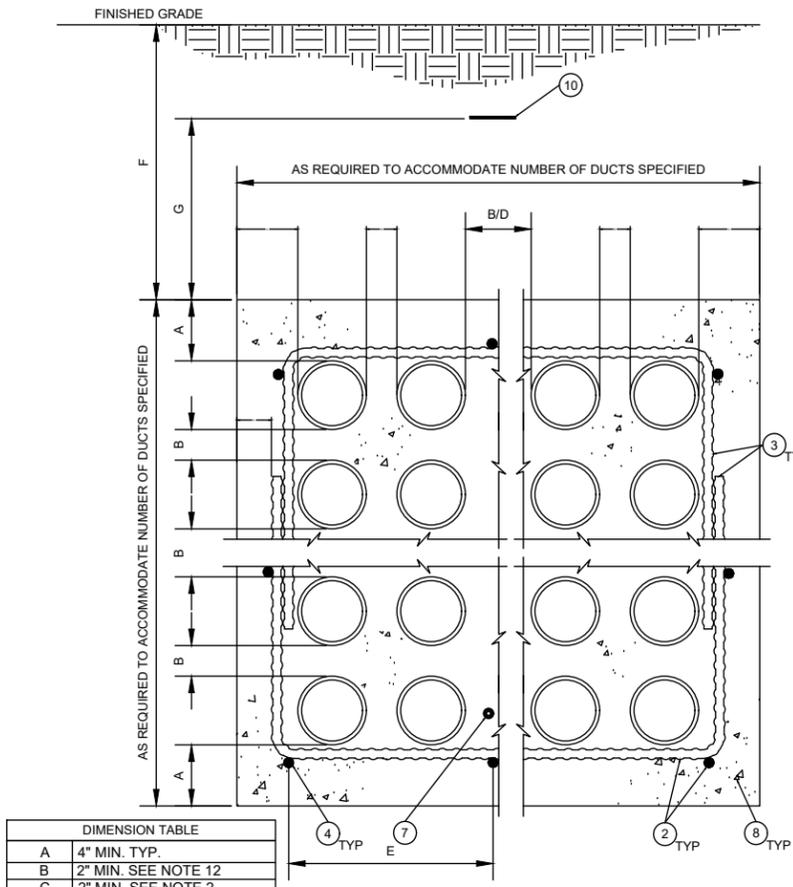
NO.	DATE	DESCRIPTION	BY	APPR'D
<b>REVISIONS</b>				

SHEET 12 of 16  
DRAWING NO. S901  
REVISION NO. B



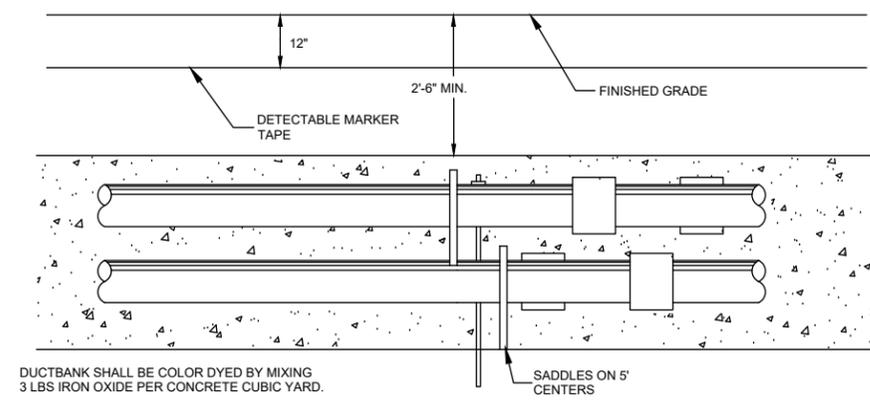
PLOT: EXTEND  
SCALE: 1:1  
BORDER: 22,34

COLOR: No.  
RED 0.70MM  
YELLOW 0.20MM  
GREEN 0.25MM  
CYAN 0.40MM  
BLUE 0.50MM  
MAGENTA 0.20MM  
WHITE 0.35MM  
GRAY 0.15MM  
9 0.15MM  
10 1.00MM  
100 0.70MM  
210 0.60MM

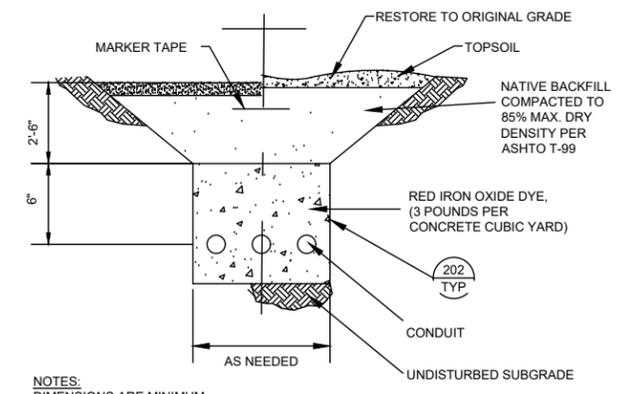


**MULTIPLE DUCT DUCTBANK DETAIL**  
202 TYP SCALE: N.T.S.

- NOTES:
- ALL DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS. UNLESS NOTED OTHERWISE ON THE DRAWINGS.
  - ALL REBAR SHALL BE #4 BAR AND HAVE A MINIMUM CONCRETE EMBEDMENT OF 2" (EDGE OF REBAR TO OUTSIDE SURFACE OF CONCRETE).
  - REBAR HOOPS SHALL OVERLAP 9" MINIMUM AND SHALL BE PROVIDED EVERY 4 FEET HORIZONTALLY. HOOPS SHALL NOT BE REQUIRED ON SINGLE ROW DUCTBANKS.
  - HORIZONTAL REBAR SHALL BE PLACED @ A MAXIMUM OF 18" ON CENTER ALL AROUND THE DUCTBANK ENVELOPE AND SHALL BE SUPPORTED EVERY 4 FEET LONGITUDINALLY. SINGLE ROW DUCTBANKS LESS THAN 24" WIDE SHALL HAVE A MIN. OF 2 HORIZONTAL BARS.
  - DUCT SPACERS (SADDLES) SHALL BE PROVIDED FOR PROPER SUPPORT OF CONDUIT DUCTS. SPACERS SHALL BE PROVIDED HORIZONTALLY AS RECOMMENDED BY THE MANUFACTURER AND TO PREVENT ANY SAGGING OF THE DUCTS (LOW SPOTS WILL NOT BE ALLOWED).
  - DUCTS SHALL BE SECURED TO PREVENT FLOATING DURING THE CONCRETE ENCASEMENT.
  - PROVIDE A 4/0 BARE CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION SECTION 16170.
  - DUCTBANK CONCRETE SHALL BE COLOR DYED RED BY MIXING 3 LBS. IRON OXIDE PER CUBIC YARD OF CONCRETE.
  - ALL DUCTBANKS SHALL BE SLOPED @ 1/4" PER 10 FEET TO ALLOW DRAINAGE.
  - A 3" WIDE DETECTABLE PLASTIC MARKER TAPE WITH INSCRIPTION "CAUTION ELECTRICAL LINES BURIED BELOW" (BLACK LETTERS ON RED BACKGROUND) SHALL BE INSTALLED 12" ABOVE THE TOP OF ALL CONCRETE ENCASED DUCTBANKS.
  - REFER TO CONDUIT SCHEDULE FOR WIRE FILL OF ALL DUCTS.
  - ALL DUCTS OF THE SAME DUTY (480V POWER, 120V POWER, 120V CONTROLS, AND SIGNAL) SHALL BE SEPARATED BY A MINIMUM OF 2".
  - SIGNAL DUCTS SHALL BE SEPARATED FROM 480V POWER BY A MIN. OF 12". SIGNAL DUCTS SHALL BE SEPARATED FROM 120V POWER DUCTS BY 6" MIN. AND FROM 120V CONTROL BY MIN. OF 4" UNLESS NOTED OTHERWISE ON THE DRAWINGS.

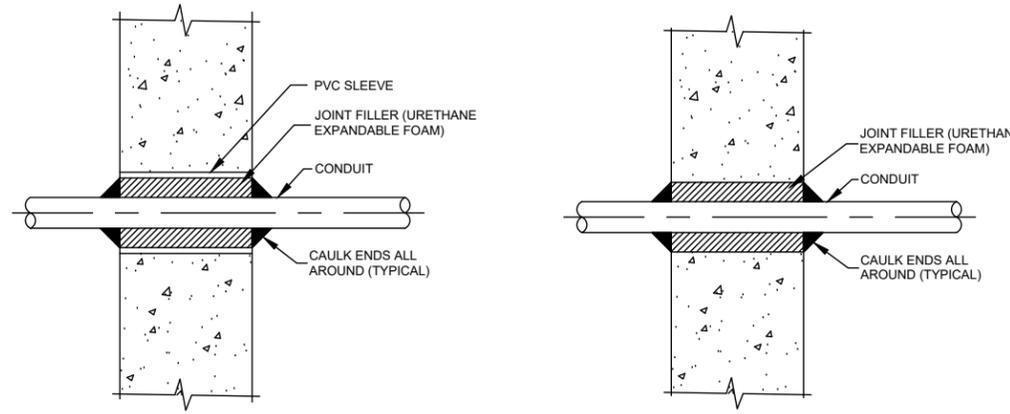


**DUCTBANK DETAIL**  
203 TYP SCALE: NONE



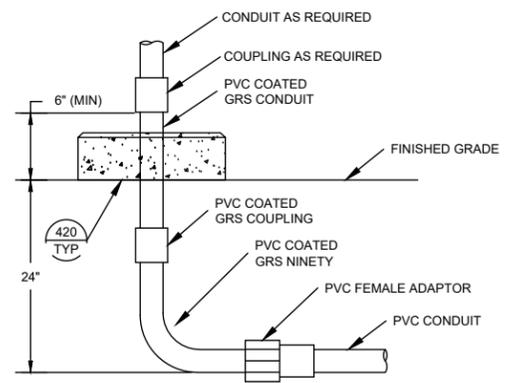
NOTES:  
DIMENSIONS ARE MINIMUM.  
THE GROUND CONDUCTOR SHALL RUN CONTINUOUSLY THROUGH MANHOLES AND PULL BOXES AND SHALL CONTINUE FROM THE DUCTBANK INTO THE ELECTRICAL EQUIPMENT OR BUILDING GROUNDING SYSTEM AND SHALL BE BONDED TO EACH RIDGID METAL CONDUIT.

**TYPICAL TRENCH DETAIL FOR BELOW 600 VOLTS**  
204 TYP SCALE: NONE



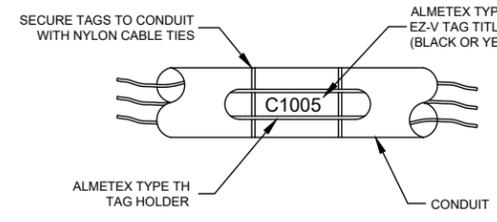
**CONDUIT PENETRATION AT NEW WALL OR SLAB**  
300 TYP SCALE: NONE

**CONDUIT PENETRATION AT EXISTING WALL OR SLAB**  
301 TYP SCALE: NONE

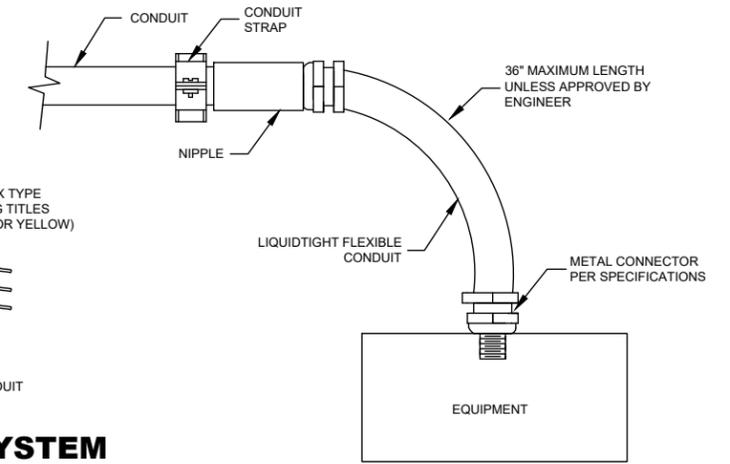


- NOTES:
- WHERE CONDUITS ARE INSTALLED IN OR UNDER A CONCRETE SLAB, THE 24" DIMENSION DOES NOT APPLY. CONDUITS SHALL BE INSTALLED BETWEEN REBAR MATS OR UNDER A SINGLE REBAR MAT.
  - IN CORROSIVE AREAS, PVC COATED GRS SHALL BE USED.
  - SCOTCHWRAP PER SPECIFICATIONS, MAY BE SUBSTITUTED FOR PVC COATING.

**STUB UP DETAIL**  
321 TYP SCALE: NONE



**CONDUIT MARKING SYSTEM**  
360 TYP SCALE: NONE



**FLEXIBLE CONDUIT DETAIL**  
365 TYP SCALE: NONE

**AQUA ENGINEERING**

533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153

NO.	DATE	DESCRIPTION	BY	APPROV	SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
REVISIONS					14 of 16		E001	B

JOB NO. -  
LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

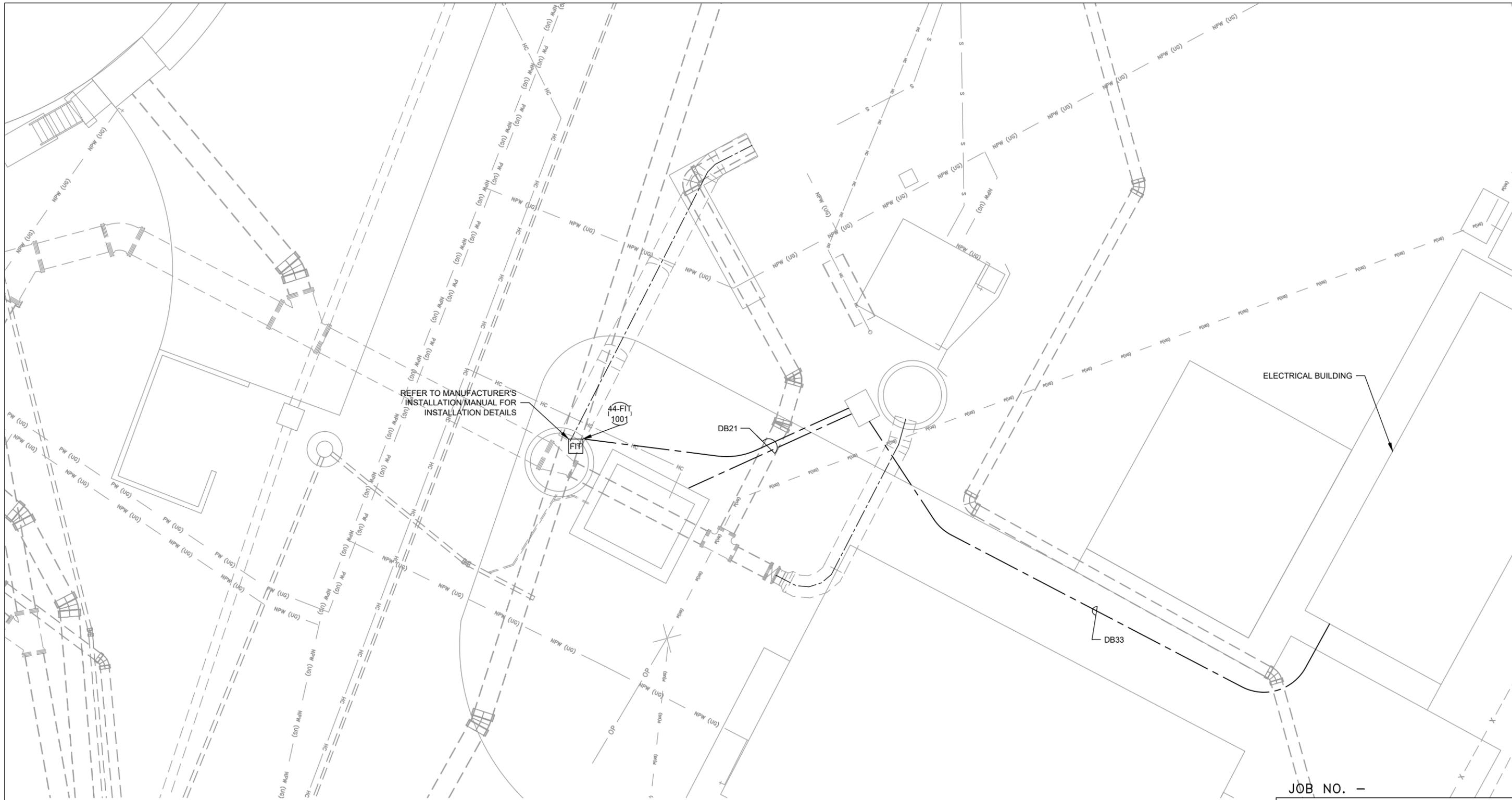
SECONDARY EFFLUENT LINE MODIFICATIONS

**ELECTRICAL DETAILS**

CHECKED	DRAWN	SCALE
APPROVED	DESIGNED	DATE
GENERAL MANAGER		DISTRICT ENGINEER
		RCE # 54039

PLOT: EXTEND  
SCALE: 1:1  
BORDER: 22,34

COLOR:	No.	THICKNESS
RED	1	0.70MM
YELLOW	2	0.20MM
GREEN	3	0.25MM
CYAN	4	0.40MM
BLUE	5	0.50MM
MAGENTA	6	0.20MM
WHITE	7	0.35MM
GRAY	8	0.15MM
9	9	0.15MM
10	10	1.00MM
100	100	0.70MM
210	210	0.60MM



JOB NO. -

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

ELECTRICAL  
SITE LAYOUT PLAN

CHECKED	DRAWN	SCALE						
APPROVED	DESIGNED	DATE						
GENERAL MANAGER		DISTRICT ENGINEER						
RCE # 54039								
NO.	DATE	DESCRIPTION	BY	APPR'D	SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
		REVISIONS			15 of 16		E001	B



533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153

PLOT: EXTEND  
SCALE: 1:1  
BORDER: 22,34  
COLOR: No.  
RED 0.70MM  
YELLOW 0.20MM  
GREEN 0.25MM  
CYAN 0.40MM  
BLUE 0.50MM  
MAGENTA 0.20MM  
WHITE 0.35MM  
GRAY 0.15MM  
9 0.15MM  
10 1.00MM  
100 0.70MM  
210 0.60MM

PANEL: LP-AB		VOLTAGE: 120/240		MAIN CB: 225 AMP		BUS AMPS: 225 AMP	
CB TYPE: BOLT-ON		MOUNTING: SURFACE		BUS BRACING: 22KA		BKR AIC: 22KA	
CIRCUIT DESCRIPTION	BKR	CIRCUIT	LINE 1	LINE 2	CIRCUIT	BKR	CIRCUIT DESCRIPTION
ELECTRICAL BLDG. LIGHTS (8, A)	20/1	1	288		2	20/1	ELECTRICAL BLDG. OUTDOOR LIGHTS (2, B)
ELECTRICAL BLDG. OUTLETS (3, C)	20/1	3	80	540	4	20/1	LIGHTING CONTROL PANEL (LCP-AB)
CTC-AB	20/1	5	1000	100	6	20/1	EQ/ANOXIC BASINS LIGHTS/OUTLETS (4,3)
AEROTOR BASINS LIGHTS/OUTLETS (4,3)	20/1	7	816	816	8	20/1	GENERATOR BATTERY CHARGER
AEROTOR BASINS LIGHTS/OUTLETS (4,3)	20/1	9	816	1200	10	20/1	44-FIT-1001
PLC-AB	20/1	11	100	500	12	20/1	
	20/1	13			14	20/1	23-FIT-1010
	20/1	15	100		16	20/1	POND RETURN SUMP
23-FIT-1020	20/1	17	100	1500	18	20/1	31-AIT-1010
44-FIT-1000	20/1	19	100	100	20	20/1	31-AIT-4010
31-AIT-2010	20/1	21	100	100	22	20/1	31-AIT-2001/2002
31-AIT-1001/1002	20/1	23	100	150	24	20/1	31-AIT-4001/4002
31-AIT-3010	20/1	25	100	100	26	20/1	
31-AIT-3001/3002	20/1	27	100	100	28	20/1	
36-FIT-1000	20/1	29	100	100	30	20/1	42-FIT-1120
SC 1 LIGHTS AND OUTLET	20/1	31	100	318	32	20/1	SC 2 LIGHTS AND OUTLET
SC 3 LIGHTS AND OUTLET (FUTURE)	20/1	33	318	567	34	20/1	31-H-1110
31-H-1210	20/1	35	240	240	36	20/1	EXISTING 21-LIT-1101, 21-LIT-1204B, 21-LIT-1304B, 21-LIT-1305B
EXISTING 21-LIT-1204A, 21-LIT-1205A, 21-LIT-1304A, 21-LIT-1305A	20/1	37	400	400	38	20/1	EXISTING 51-LIT-1101
		39	100	350	40	20/1	
EXISTING SITE LIGHTING L1, L2, L3, L4, L5, L6, L8, L9	20/2	41	350		42	20/1	
		43		100	44	20/1	23-LIT-1002
61-LIT-1000	20/1	45	100	100	46	20/1	MCC-AB3 LOW LEVEL RELAY SECTION (MCC-AB3 SECTION 12)
MCC-AB2 LOW LEVEL RELAY SECTION (MCC-AB2 SECTION 12)	20/1	47	100		48	20/1	LOCAL YARD RECEPTACLES
FUTURE EQ BASIN CHEM PUMP AND ANALYZER	20/1	49	1000	360	50	20/1	RECEPTACLE AT CONSOLES
FUTURE METHANOL PUMP EAST OF ANOXIC BASIN 3	20/1	51	360	200	52	20/1	
CHLORINATION STRUCTURE EXHAUST/LIGHTS	20/1	53	200		54	20/2	
EXISTING EFFLUENT PIT LIGHTING	20/1	55		600	56	20/2	
EXISTING EFFLUENT PIT RECEPTACLE	20/1	57	1500		58	20/1	SAMPLING PUMP (43-P-2300)
SUMP RECEPTACLE (42-P-1120)	20/1	59	1500	1500	60	20/1	SPARE
SAMPLING PUMP (43-P-2100)	20/1	61	1500		62	20/1	SPARE
SAMPLING PUMP (43-P-2200)	20/1	63		1500	64	20/1	SPARE
43-P-1300	20/1	65	500		66	20/1	SPARE
43-AIT-1340	20/1	67	1500	80	68	20/2	SAMPLING PUMP (43-P-2400)
	20/2	69	80	400	70	20/2	SITE LIGHTS (ALONG BASIN)
SITE LIGHT	20/2	71	400		72	20/1	SPARE
	20/2	73			74	20/1	SPARE
SPARE	20/1	75			76	20/1	SPARE
SPARE	20/1	77			78	20/1	SPARE
SPARE	20/1	79			80	20/1	SPARE
SPARE	20/1	81			82	20/1	SPARE
SPARE	20/1	83			84	20/1	SPARE
CONNECTED VA PER PHASE			14148.0	13021.0	NOTES:		
CONNECTED AMPS PER PHASE			117.9	108.5			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			637.5	491.5			
LARGEST MOTOR (25%)			375.0	250.0			
CODE VA PER PHASE			15160.5	13762.5			
CODE AMPS PER PHASE			126.3	114.7			

### PANEL LP-AB CALCULATIONS

SHEET	CONDUIT	SIZE	CONDUCTORS	SERVICE	AG MATERIAL	UG MATERIAL	FROM	TO	DUCTBANKS	NOTES
E-42	SP36-1000	1"	TSP	SIGNAL	PVC GRS	PVC 40	PLC-AB	V#20S	DB-33	SPARE
E-39	SP36-1002	1"	2 #12 AWG W/ #12 GND	120VAC	PVC GRS	PVC 40	LP-AB	V#20P	DB-33	SPARE

### CONDUIT SCHEDULE

SHEET	TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	RANGE	COMMENTS
	44-FIT-1001	CLARIFIER BYPASS FLOW	HACH	FL900AV	120VAC		WITH AV9000 TRANSMITTER

### INSTRUMENT SCHEDULE

JOB NO. -

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

ELECTRICAL  
CALCULATIONS

CHECKED	DRAWN	SCALE
APPROVED	DESIGNED	DATE
GENERAL MANAGER		DISTRICT ENGINEER
RCE # 54039		REVISION NO.

NO.	DATE	DESCRIPTION	BY	APPROV
REVISIONS				

SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
16 of 16		E001	B



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