

# LAS GALLINAS VALLEY SANITARY DISTRICT



## SECONDARY EFFLUENT LINE MODIFICATIONS

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

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

**DISTRICT BOARD:**

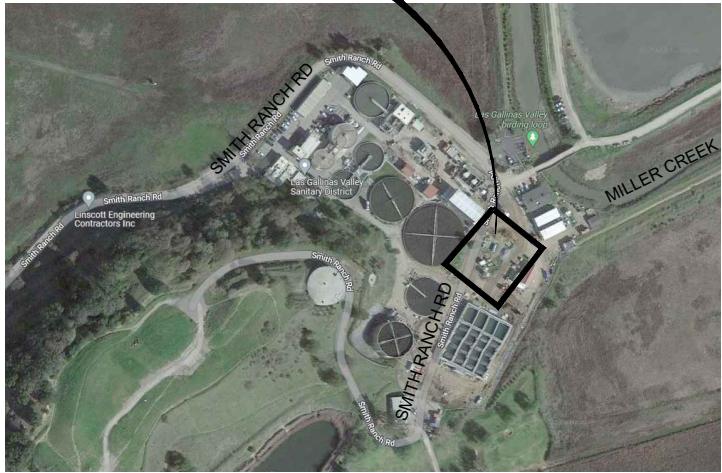
**MEGAN CLARK - PRESIDENT**  
**CRAIG K. MURRAY - VICE PRESIDENT**  
**CRYSTAL J. YEZMAN**  
**RONALD FORD**  
**GARY E. ROBARDS**

**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**

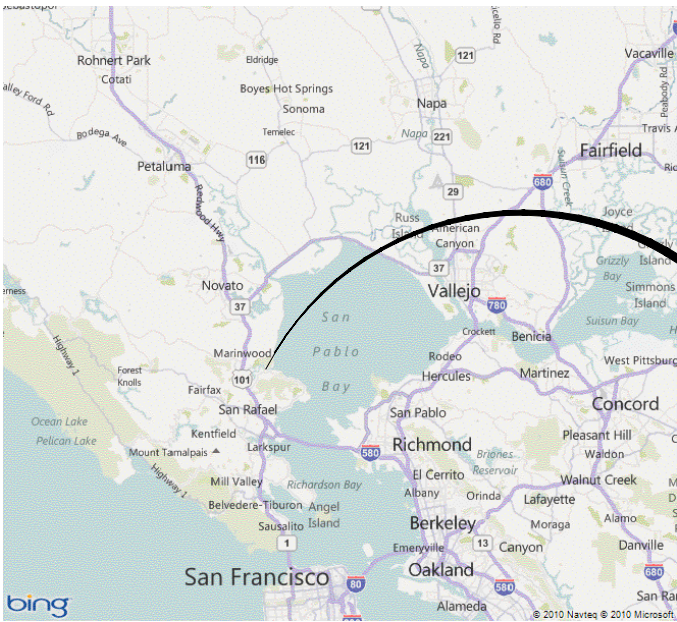


533 W. 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153

**PROJECT  
LOCATION**



**SITE VICINITY MAP**



**AREA VICINITY MAP**

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
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RCE # 54039
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NO.	DATE	DESCRIPTION	BY	APPRO'D
REVISIONS				
1				

SHEET 1 of 16	PLAN NO.	DRAWING NO. G001	REVISION NO. B
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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

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES



C:\USERS\KENNETH.BAETZ\AQUA ENGINEERING\LG\GVSD - DOCUMENTS\LASG150119-SECONDARY TREATMENT UPGRADES\PHASE 1\8DRAFTING\G000 GENERAL\G002 - GENERAL INDEX.DWG

8/18/2023

PLOTTED:  
SAVED:

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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JOB NO. -

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

### GENERAL INDEX

CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23

GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez
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NO.	DATE	DESCRIPTION	BY	APPR'D
REVISIONS				

SHEET 2 of 16	PLAN NO.	DRAWING NO. G002	REVISION NO. B
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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



## LEGEND

PLAN VIEW	EXISTING	PROPOSED
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	---	---
WATER VALVE	---	---
WATER METER	---	---
MANHOLE	---	---
CATCH BASIN	---	---
CLEAN OUT BOX	---	---
OVERHEAD POWER LINE	---	---
POLE & ANCHOR	---	---
STREET LIGHT	---	---
STRUCTURE	---	---
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 ---

⊙	AT
°	CENTER LINE
°	DEGREE
∅	DIAMETER
#	NUMBER
ℙ	PROPERTY LINE
ABUT	ABUTMENT
AL	AIR LINE
ASPH	ASPHALT
ADT	AVERAGE DAILY TRAFFIC
APPROX	APPROXIMATELY
AZ	AZIMUTH
BAL	BALANCE
BEG	BEGINNING / BEGIN
BDRY	BOUNDARY
BK	BACK
BKFL	BACKFILL
BLD FLG	BLIND FLANGE
BLDG	BUILDING
BLM	BUREAU OF LAND MANAGEMENT
BM	BENCH MARK
BLK	BLOCK
BOD	BIOLOGICAL OXYGEN DEMAND
BOT	BOTTOM
BOW	BOTTOM OF WALL
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
CALC	CALCULATED
CB	CATCH BASIN
CCW	COUNTER CLOCKWISE
C-C	CENTER TO CENTER
C&G	CURB AND GUTTER
CEM	CEMETERY
CFS	CUBIC FEET PER SECOND
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CIP	CLEAN IN PLACE
CMP	CORRUGATED METAL PIPE
CMP-A	CORRUGATED METAL PIPE-ARCH
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCT
COR	CORNER
CPVC	CHLORINATED PVC
CTR	CENTER
CU FT	CUBIC FEET
CU YD	CUBIC YARD
CUL	CULINARY
CULV	CULVERT
CW	COLD WATER
D	DRAIN
DEG	DEGREE
DET	DETAIL
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DIST	DISTANCE
DL	DRAIN LINE
DN	DOWN
DWG	DRAWINGS
DWV	DRAIN WASTE VENT
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

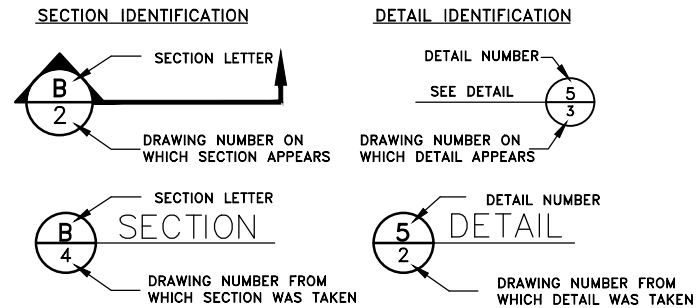
## ABBREVIATIONS

FD	FLOOR DRAIN
FND	FOUNDATION
FE	FIRE EXTINGUISHER
FEN COR	FENCE CORNER
FF	FINISHED FLOOR
FG	FINISHED GRADE
FIN	FINISH
FLG	FLANGE
FLR	FLOOR
FL	FLOW LINE
FP	FLOOR PENETRATION
FPS	FEET PER SECOND
FT	FEET
FTG	FOOTING
FW	FLAT WASHER
G	GAS
GA	GAGE OR GAUGE
GAL	GALLONS
GALV	GALVANIZED
GEN	GENERAL
GM	GAS METER
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GYP	GYPSON
H&T	HUB & TACK
HB	HOSE BIBB
HC	HYPOCHLORITE
HDG	HOT DIPPED GALVANIZE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HDWL	HEADWALL
HORIZ	HORIZONTAL
HP	HORSE POWER
HW	HOT WATER
HWL	HIGH WATER LEVEL
HWY	HIGHWAY
HYD	HYDRANT
ID	INSIDE DIAMETER
IJ	ISOLATION JOINT
IN	INCH
INFO	INFORMATION
IRR	IRRIGATION
INV	INVERT
JCT	JUNCTION
KW	KILOWATT
L	LENGTH
LB	POUND
LG	LONG OR LENGTH
LGVSD	LAS GALLINAS VALLEY SANITRY DISTRICT
LIC	LICENSE
LIN	LINEAR / LINEAL
LP	LIGHT POST
LS	LAND SURVEYOR
LT	LEFT
LWL	LOW WATER LEVEL
MAINT	MAINTENANCE
MATL	MATERIAL
MAX	MAXIMUM
MG	MILIGRAMS
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MI	MILE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT / MILI-JOULE
MKR	MARKER
ML	MILILITERS
MON	MONUMENT
MPH	MILES PER HOUR

N	NORTH
NO	NUMBER
NPW	NON-POTABLE WATER
NTS	NOT TO SCALE
NTU	NEPHELOMETRIC TURBIDITY UNITS
OC	ON CENTER
OD	OUTSIDE DIAMETER
O-O	OUTSIDE TO OUTSIDE
OP	OVERHEAD POWER LINES
ORIG	ORIGINAL
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PE	PLAIN END
PERF	PERFORATED
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
POB	POINT OF BEGINNING
POC	POINT ON CURVE
PP	POWER POLE
PRC	POINT OF REVERSE CURVE
PROJ	PROJECT
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PW	POTABLE WATER
Q	FLOW RATE
QTY	QUANTITY
R	RANGE / RADIUS
RAS	RETURN ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RCCP	REINFORCED CONCRETE CYLINDER PIPE
RD	ROAD
REF	REFERENCE
REINF	REINFORCED
REQ'D	REQUIRED
REV	REVISION
RJ	RING TYPE JOINT
RP	REFERENCE POINT
RR	RAILROAD
RT	RIGHT / ROUTE
R/W	RIGHT OF WAY
S	SOUTH / SLOPE
SAN	SANITARY
SCH	SCHEDULE
SCFM	STANDARD CUBIC FEET PER MINUTE
SD	STORM DRAIN
SEC COR	SECTION CORNER
SHT	SHEET
SIM	SIMILAR
SJ	SAWED JOINT
SL	SOLIDS LINE
SP	SPACING OR SPACE
SPECS	SPECIFICATIONS
SQ	SQUARE
SQ FT	SQUARE FEET
SQ YD	SQUARE YARD
SS	STAINLESS STEEL
SSL	SECONDARY SEWAGE LINE
ST	STREET
STL	STEEL
STN STL	STAINLESS STEEL
STA	STATION
STD	STANDARD
STRUCT	STRUCTURE

T	TOWNSHIP
TAN	TANGENT
TBC	TOP BACK CURB
TEMP	TEMPORARY
TEL	TELEPHONE
TKN	TOTAL KJELDAHL NITROGEN
TOA	TOP OF ASPHALT
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOM	TOP OF MANHOLE
TOP	TOP OF PAVEMENT
TOS	TOP OF SLAB
TOW	TOP OF WALL
TP	TELEPHONE POLE
TSS	TOTAL SUSPENDED SOLIDS
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UV	ULTRA VIOLET
UW	UTILITY WATER
uWs	MICRO WATT SECONDS
V	VOLTS
VC	VERTICAL CURVE
VERT	VERTICAL
VIC	VICTAULIC
VOL	VOLUME
VPI	VERTICAL POINT OF INTERSECTION
VPC	VERTICAL POINT OF CURVE
VPT	VERTICAL POINT OF TANGENCY
W	WEST / WATER
WAS	WASTE ACTIVATED SLUDGE
WM	WATER METER
WP	WALL PENETRATION
WS	WATER SURFACE
W/	WITH
W/O	WITHOUT
XING	CROSSING
X-SEC	CROSS SECTION

## SECTION AND DETAIL IDENTIFICATION



NOTES:

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

JOB NO. -

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

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
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RCE # 54039	
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NO.	DATE	DESCRIPTION	BY	APPRO'D
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#### REVISIONS

SHEET 3 of 16	PLAN NO.	DRAWING NO. G003	REVISION NO. B
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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



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 GRAY 0.15MM
   
 9 0.15MM
   
 10 1.00MM
   
 100 0.70MM
   
 210 0.60MM

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:

- |  |  |
|--|--|
| 1. OWNER:  | LAS GALLINAS VALLEY SANITARY DISTRICT (DISTRICT)   |
| 2. CITY & COUNTY:  | SAN RAFAEL, MARIN COUNTY   |
| 3. SANITARY SEWER:   | LAS GALLINAS VALLEY SANITARY DISTRICT  |
| 4. STORM DRAIN:  | COUNTY OF MARIN  |
| 5. WATER:  | MARIN MUNICIPAL WATER DISTRICT<br>ENGINEERING: (415) 945-1560<br>CONSTRUCTION PROJECTS: (415) 945-1540<br>EMERGENCY: (415) 945-1500  |
| 6. GAS & ELECTRICAL:   | PG&E GAS<br>ENGINEERING: (415) 257-3404, (415) 257-3405<br>EMERGENCY: (800) 743-5000<br><br>PG&E ELECTRIC<br>SERVICE: (415) 257-3431<br>ENGINEERING: (415) 257-3174<br>EMERGENCY: (800) 743-5000 |
| 7. TELEPHONE:  | SBC/AT&T<br>SERVICE: (707) 575-2077, (707) 321-6207<br>ENGINEERING: (415) 499-4828<br>EMERGENCY: (800) 310-2355  |
| 8. CABLE & TELEVISION:   | COMCAST<br>SERVICE: (707) 477-0564<br>EMERGENCY: (800) 310-2355  |
| 9. 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 PAYING, 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.

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.

JOB NO. -

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	PLAN NO.	DRAWING NO. <b>G004</b>
		REVISION NO. <b>B</b>

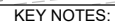
NO.	DATE	DESCRIPTION	BY	APPRO'D	
REVISIONS					



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

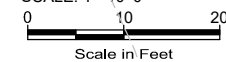


LGVSD 1 FILE:  
FD144793



- 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 ONSHEET 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.

SCALE: 1"=10'-0"



NO.	DATE	DESCRIPTION	BY	APPR
REVISIONS				

JOB NO. -

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

## SECONDARY EFFLUENT LINE MODIFICATIONS

CIVIL  
SITE PLAN

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 5 of 16		PLAN NO.		DRAWING NO. C201	
				REVISION NO. B	

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

C:\USERS\KENNETH.BAETZ\AQUA ENGINEERING\LGVSD - DOCUMENTS\LASG150119\SECONDARY TREATMENT UPGRADES\PHASE 18\DRAWING\001 SITE CIVIL\C401-405.DWG

8/18/2023

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SAVED:

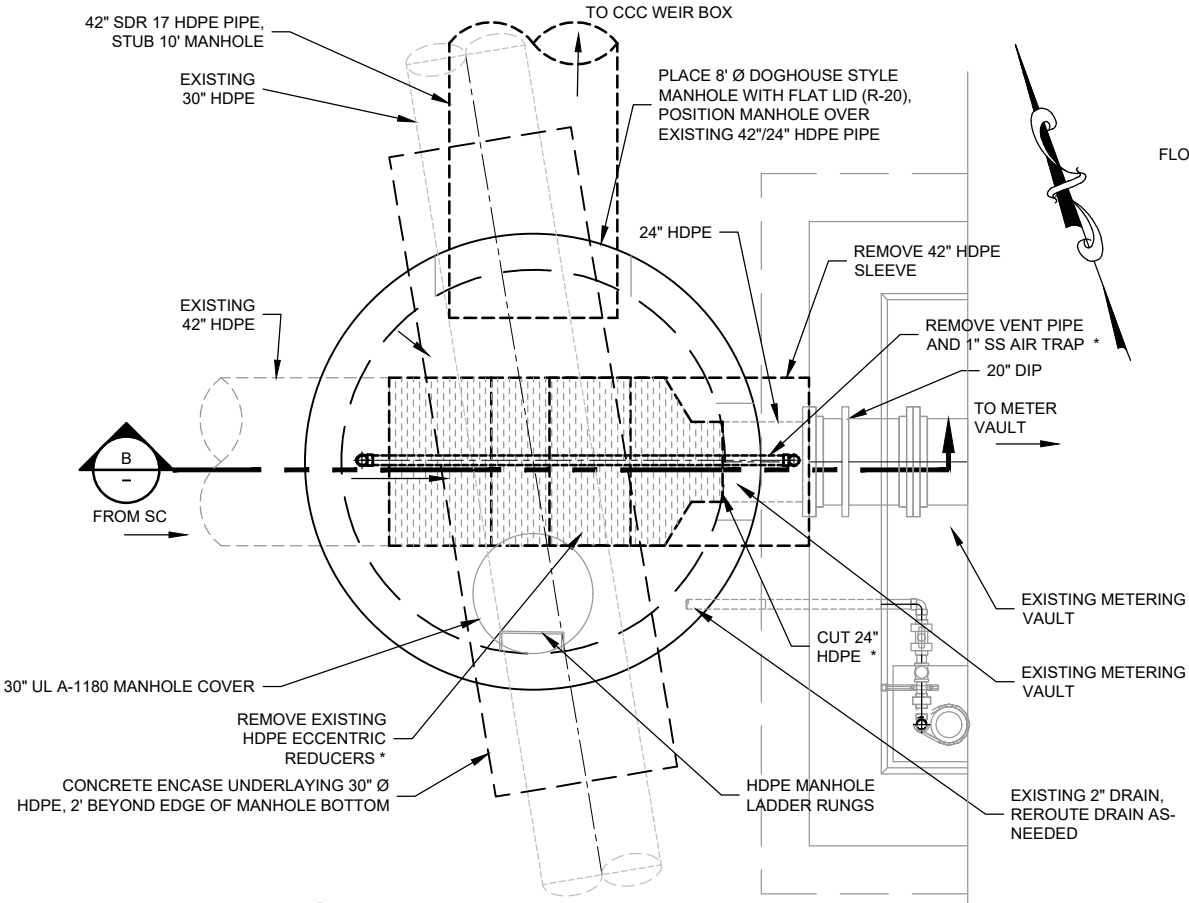
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YELLOW 0.20MM  
GREEN 0.25MM  
CYAN 0.40MM  
BLUE 0.50MM  
MAGENTA 0.20MM  
WHITE 0.35MM  
GRAY 0.15MM  
9 0.15MM  
10 1.00MM  
100 0.70MM  
210 0.60MM

LGVSD 1  
FD144793

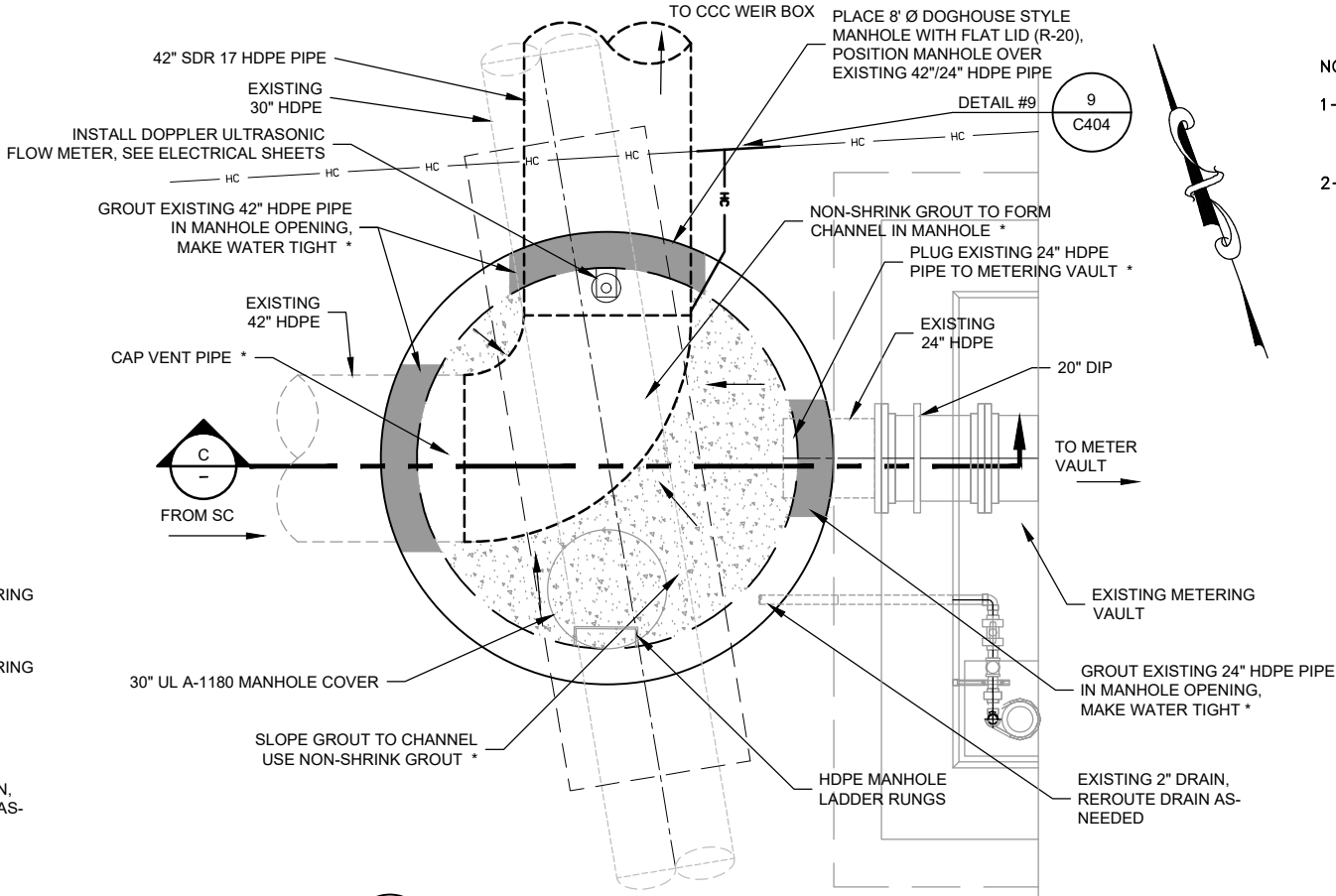
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FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES

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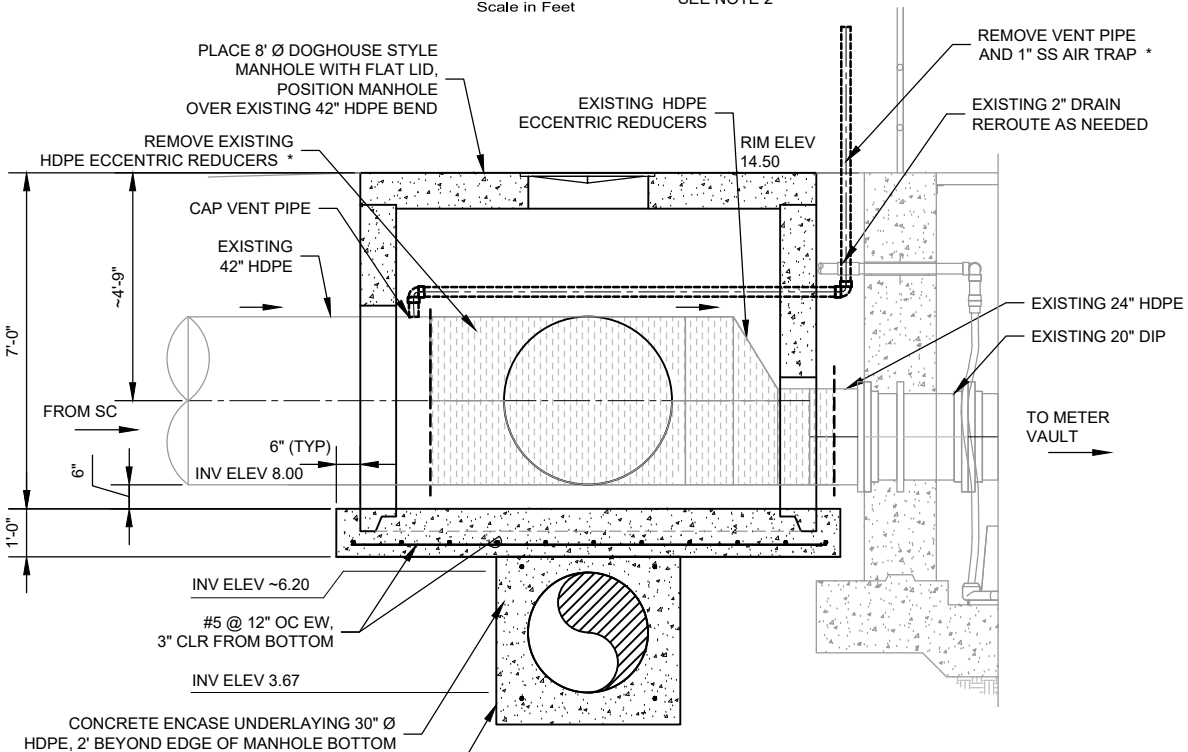
4  
C201  
1/4"=1'-0"  
0 2 4  
Scale in Feet  
\* SEE NOTE 2



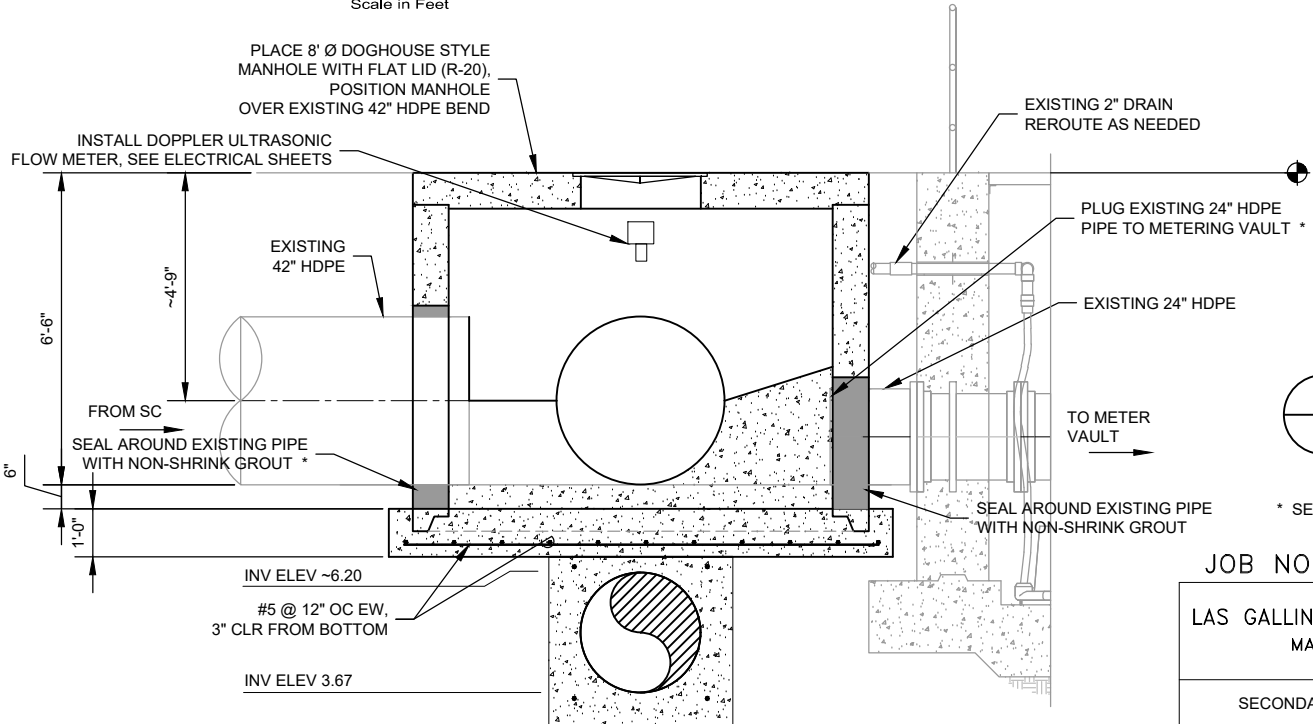
5  
C201  
1/4"=1'-0"  
0 2 4  
Scale in Feet  
\* SEE NOTE 2

NOTES:

- 1- ALL DIMENSIONS, PIPE SIZES, AND LOCATIONS ARE FROM RECORD DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED.
- 2- 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.



S150  
S901  
CONCRETE ENCASE  
B  
1/4"=1'-0"  
0 2 4  
Scale in Feet  
\* SEE NOTE 2



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

JOB NO. -

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

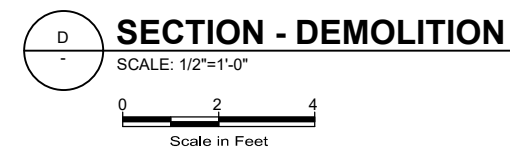
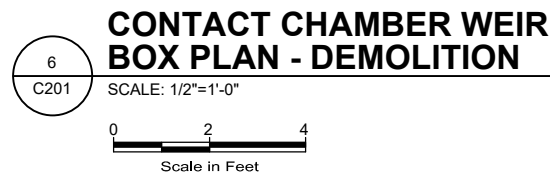
CIVIL  
MANHOLE #2

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
		APPRO'D
		REVISIONS
SHEET	PLAN NO.	DRAWING NO.
7 of 16		C402
		REVISION NO.
		B



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

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



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



					GENERAL MANAGER		DISTRICT ENGINEER	
					CUSTIS PAXTON		Michael P Cortez	
							RCE # 54039	
NO.	DATE	DESCRIPTION	BY	APPR'D	SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
<b>REVISIONS</b>					8 of 16		<b>C403</b>	<b>B</b>

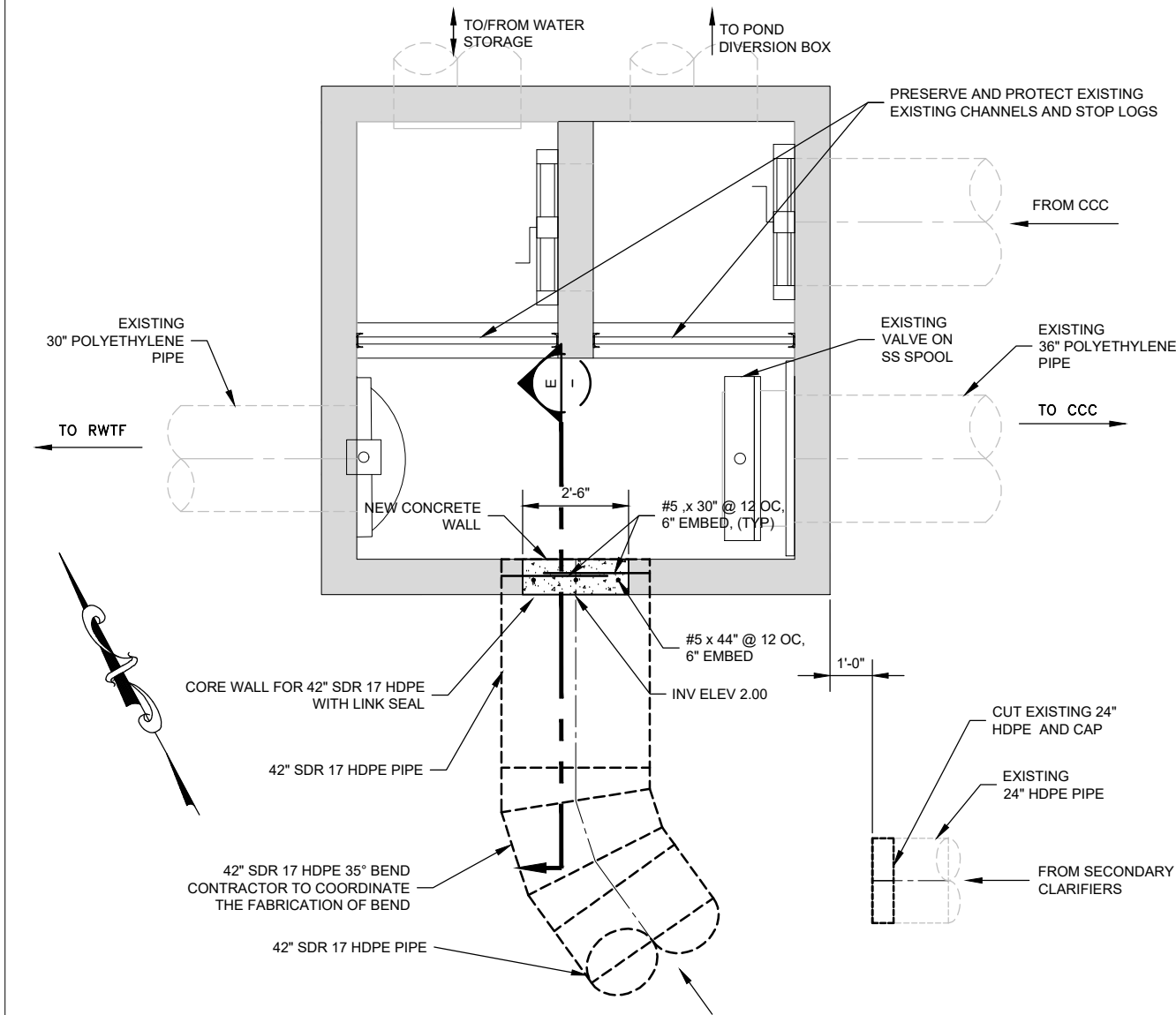


C:\USERS\KENNETH.BAETZ\AQUA ENGINEERING\LGVSD - DOCUMENTS\LASG150119-SECONDARY TREATMENT UPGRADES\PHASE 18\DRAWING\001 SITE CIVIL\0401-405.DWG

8/18/2023

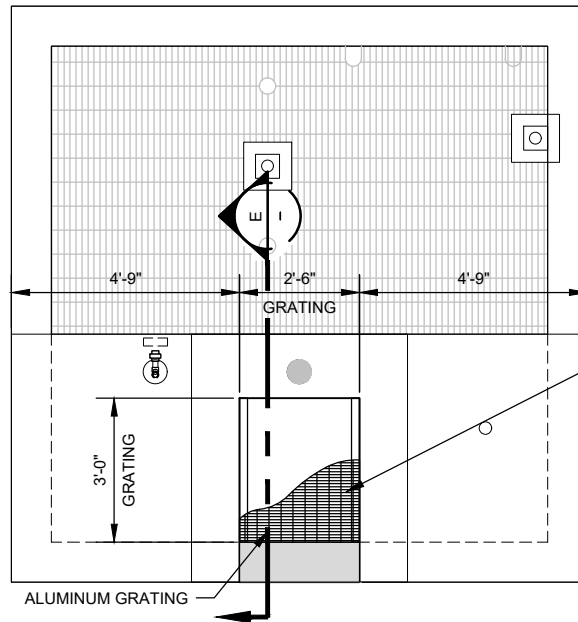
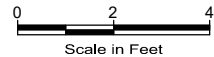
PLOTTED: EXTEND  
SAVED: 1:1  
BORDER: 22,34

PLOT: EXTEND  
SCALE: 1:1  
BORDER: 22,34  
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GREEN 0.25MM  
CYAN 0.40MM  
BLUE 0.50MM  
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10 1.00MM  
100 0.70MM  
210 0.60MM



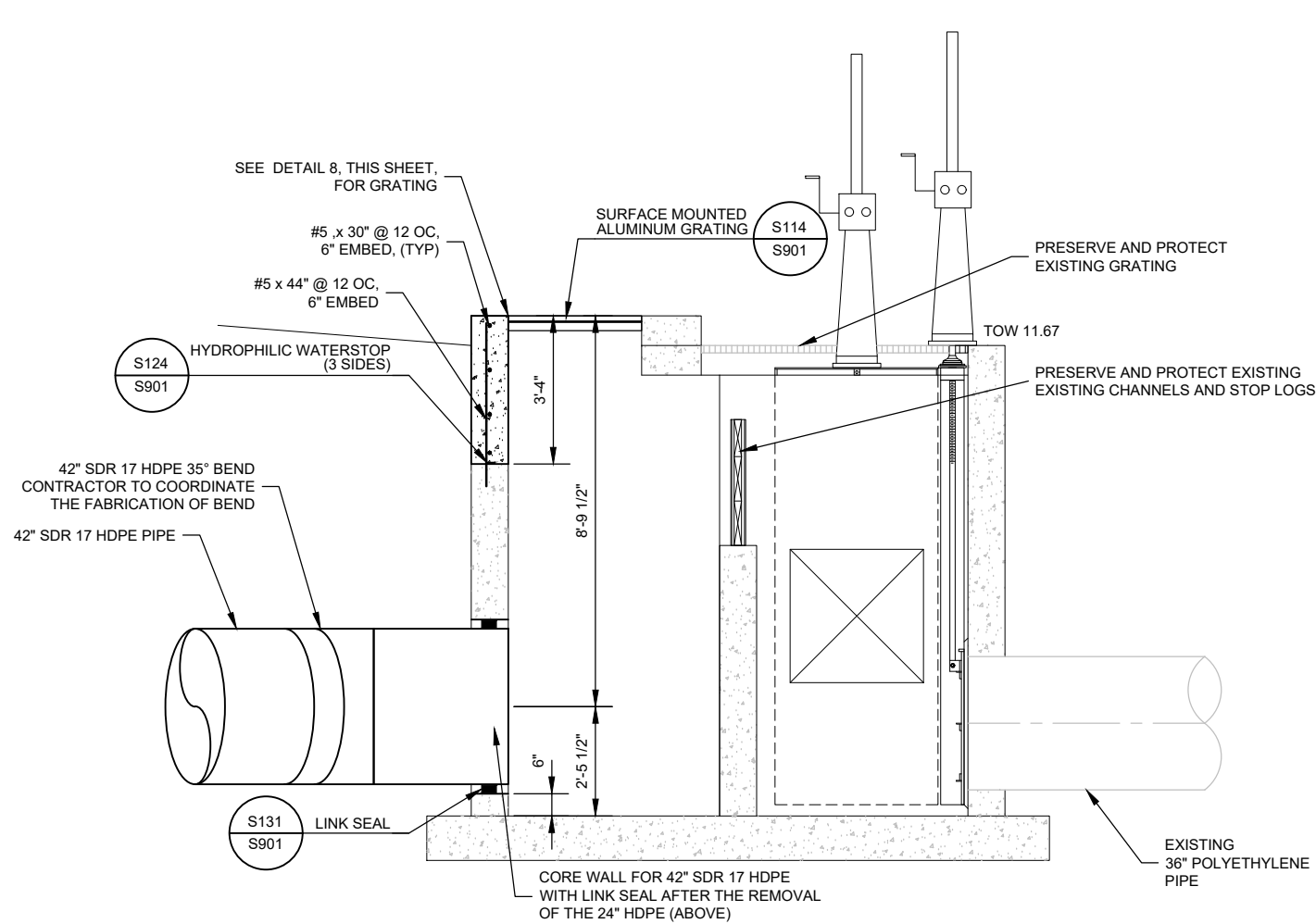
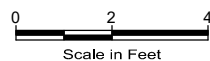
**CONTACT CHAMBER WEIR BOX PLAN**

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



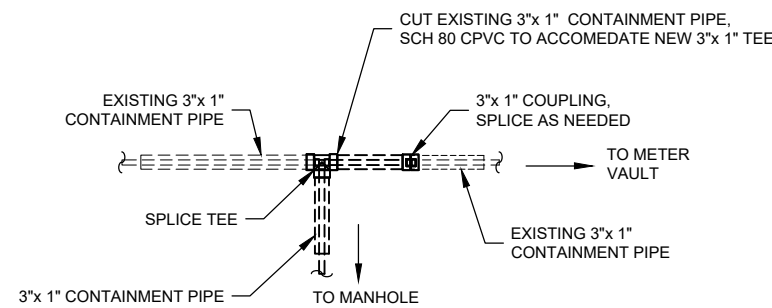
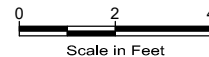
**CCW BOX GRATING PLAN**

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



**SECTION**

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



**DETAIL**

NTS

NOTES:

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



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PHONE (801) 299-1327 FAX (801) 299-0153

NO.	DATE	DESCRIPTION	BY	APPRO'D
REVISIONS				

JOB NO. -

LAS GALLINAS VALLEY SANITARY DISTRICT  
MARIN COUNTY, CALIFORNIA

SECONDARY EFFLUENT LINE MODIFICATIONS

**CIVIL**  
**CCC WEIR BOX PLAN AND SECTION**

CHECKED JRL	DRAWN KRB	SCALE AS SHOWN
APPROVED JRL	DESIGNED EES	DATE 08/10/23

GENERAL MANAGER CUSTIS PAXTON	DISTRICT ENGINEER Michael P Cortez
----------------------------------	---------------------------------------

SHEET 9 of 16	PLAN NO.	DRAWING NO. <b>C404</b>	REVISION NO. <b>B</b>
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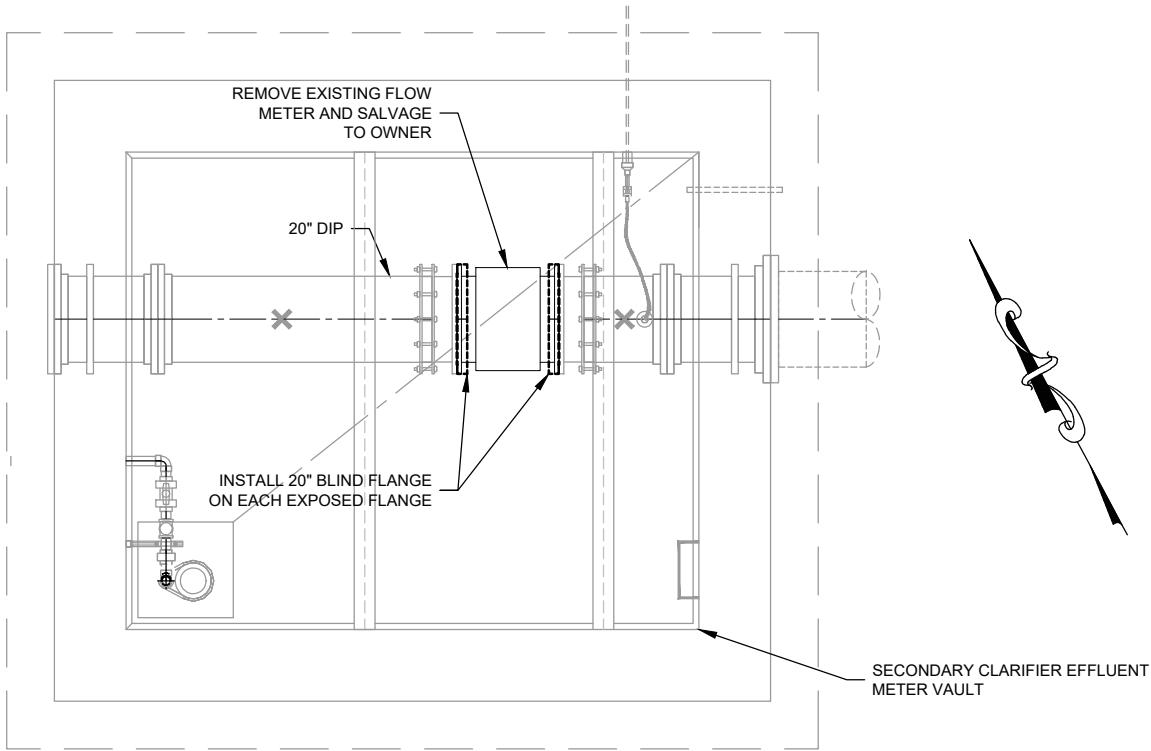
C:\USERS\KENNETH.BAETZ\AQUA ENGINEERING\LGVS.D - DOCUMENTS\LASG150119-SECONDARY TREATMENT UPGRADES\PHASE 18\DRAWING\001 SITE CIVIL\C401-405.DWG

8/11/2023

PLOTTED: EXTEND  
SAVED: 1:1  
BORDER: 22,34

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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

LGVS.D 1 FILE:  
FD144793



10  
C201

**DEMOLITION PLAN**

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.



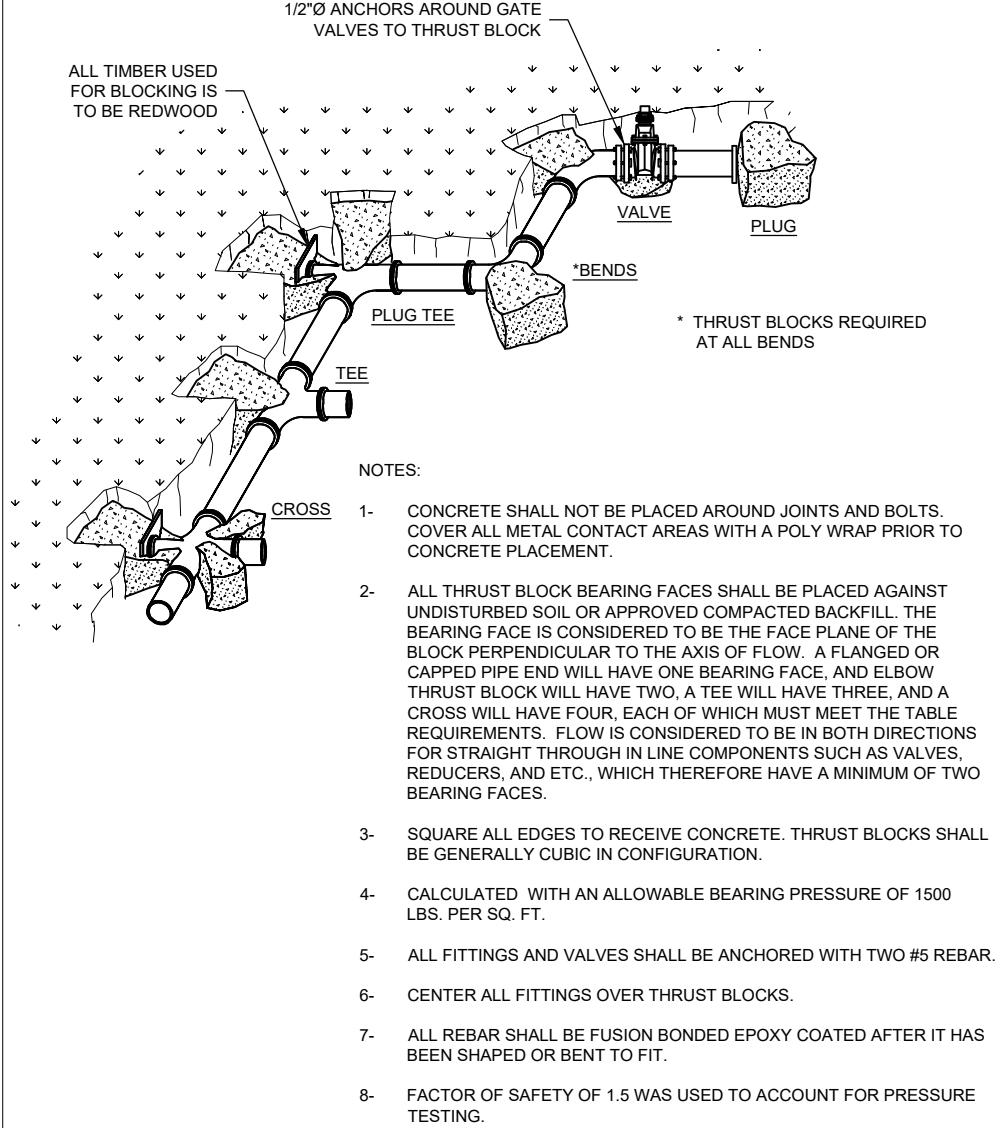
533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
PHONE (801) 299-1327 FAX (801) 299-0153

NO.	DATE	DESCRIPTION	BY	APPR'D
REVISIONS				

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	
SHEET 10 of 16		PLAN NO.	DRAWING NO. C405
			REVISION NO. B

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES





C101  
NTS

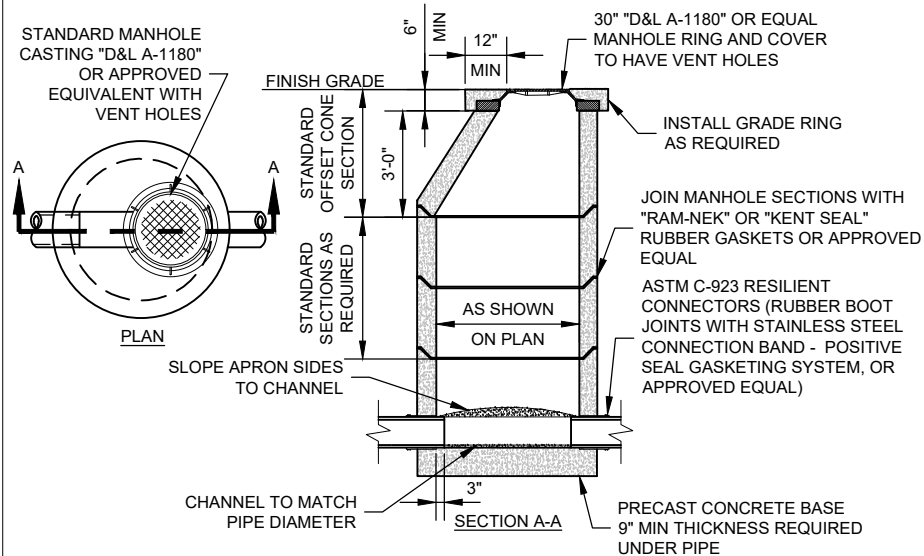
**THRUST BLOCK**

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	

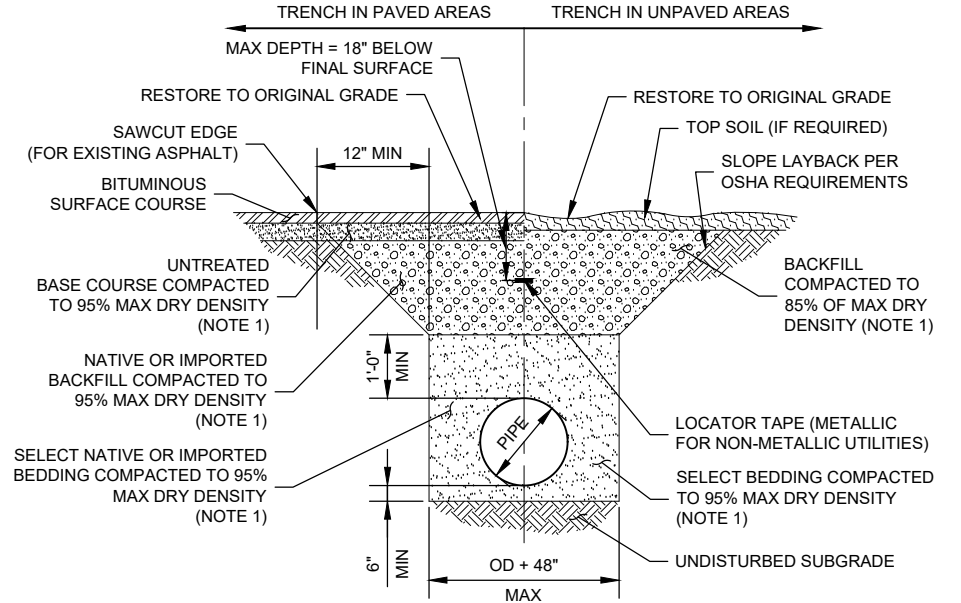
THRUST BLOCK BEARING AREA IN SQ. FT. @250 PSI WORKING PRESSURE										
PIPE SIZE	CROSS	TEE	WYE	DEAD END	VALVE	90° BEND	45° BEND	22.5° BEND	11.25° BEND	
4	4.5	3.2	3.2	3.2	3.2	4.5	2.5	1.3	1.0	
6	10.0	7.1	7.1	7.1	7.1	10.0	5.5	2.8	1.4	
8	17.8	12.6	12.6	12.6	12.6	17.8	9.7	5.0	2.5	
10	27.8	19.7	19.7	19.7	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	



C103  
NTS

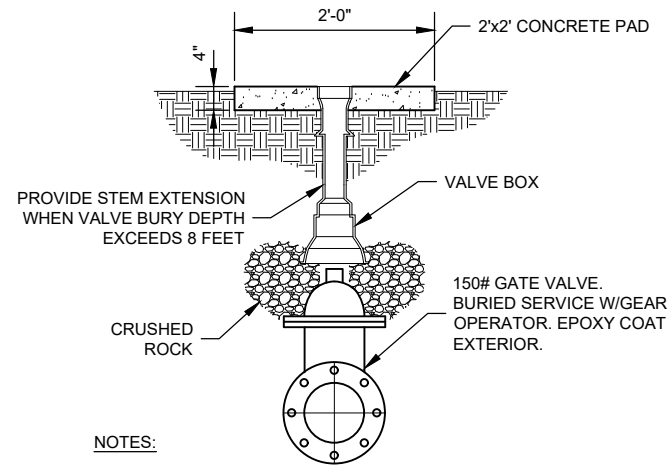
**PRECAST MANHOLE**



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

C102  
NTS

**PIPE TRENCH**



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

C127  
NTS

**BURIED GATE VALVE**

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	APPRO'D
REVISIONS				

SHEET 11 of 16	PLAN NO.	DRAWING NO. C901	REVISION NO. B
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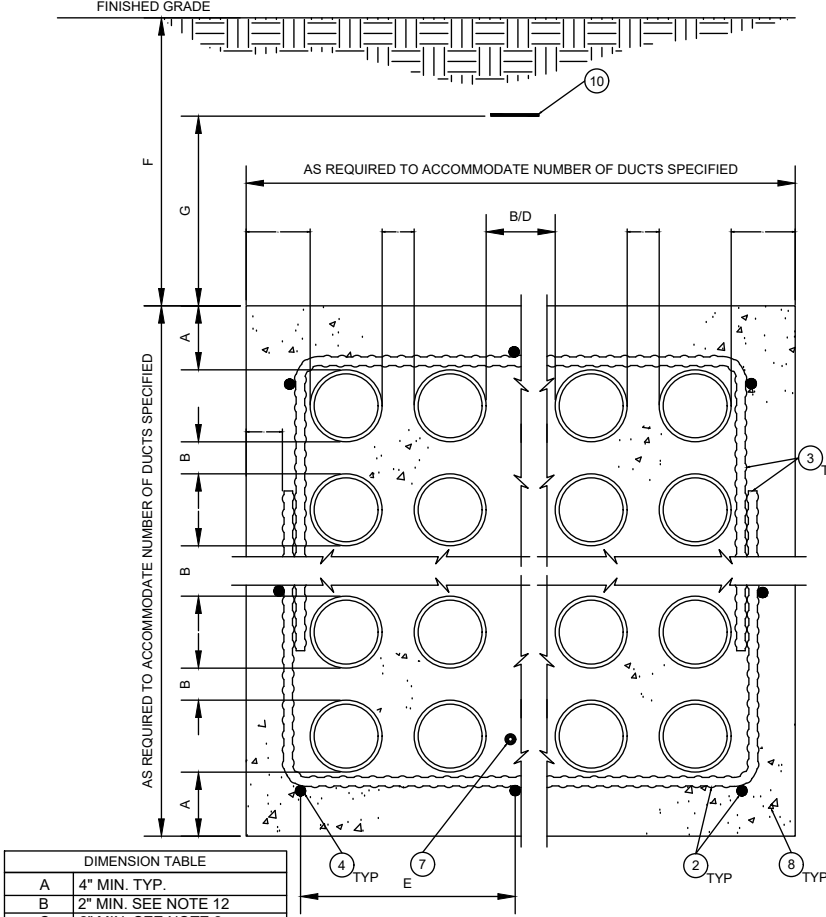




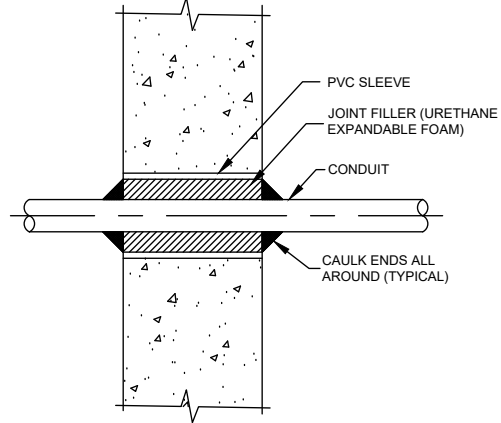
C:\USERS\MICHAEL\_JOHNSON\AQUA\_ENGINEERING\LGVS.D - LASG100119-SECONDARY TREATMENT UPGRADE\PHASE 1\B DRAFTING\G997 ELECTRICAL\GE-002 DETAILS 1.DWG

PLOTTED: EXTEND  
SAVED: SCALE: 1:1  
BORDER: 22,34

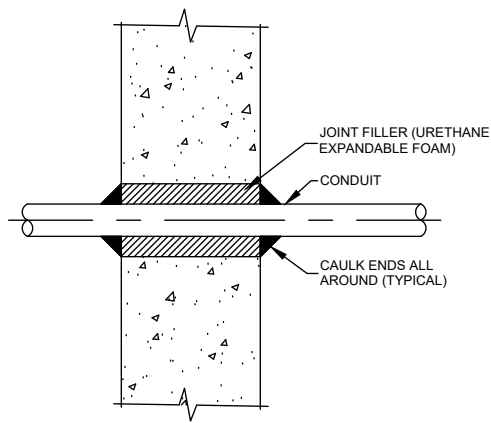
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YELLOW 0.20MM  
GREEN 0.25MM  
CYAN 0.40MM  
BLUE 0.50MM  
MAGENTA 0.20MM  
WHITE 0.35MM  
GRAY 0.15MM  
9 0.15MM  
10 1.00MM  
100 0.70MM  
210 0.60MM



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

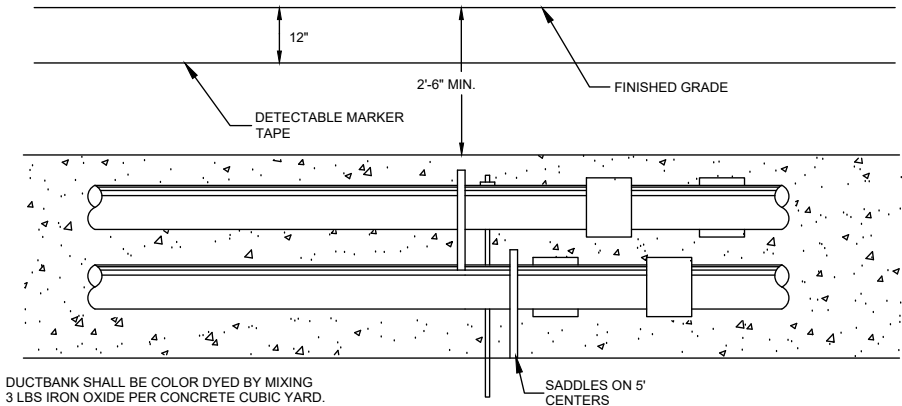


300 TYP SCALE: NONE **CONDUIT PENETRATION AT NEW WALL OR SLAB**

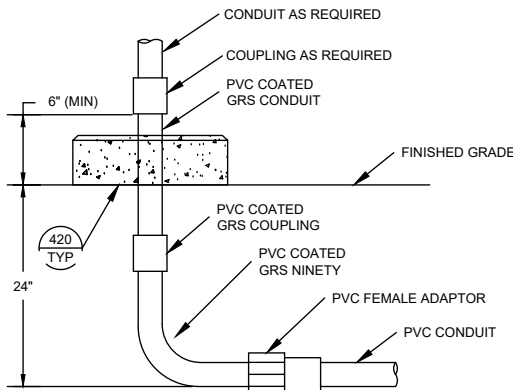


301 TYP SCALE: NONE **CONDUIT PENETRATION AT EXISTING WALL OR SLAB**

- NOTES:
- 1 ALL DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS. UNLESS NOTED OTHERWISE ON THE DRAWINGS.
  - 2 ALL REBAR SHALL BE #4 BAR AND HAVE A MINIMUM CONCRETE EMBEDMENT OF 2" (EDGE OF REBAR TO OUTSIDE SURFACE OF CONCRETE).
  - 3 REBAR HOOPS SHALL OVERLAP 9" MINIMUM AND SHALL BE PROVIDED EVERY 4 FEET HORIZONTALLY. HOOPS SHALL NOT BE REQUIRED ON SINGLE ROW DUCTBANKS.
  - 4 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.
  - 5 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).
  - 6 DUCTS SHALL BE SECURED TO PREVENT FLOATING DURING THE CONCRETE ENCASEMENT.
  - 7 PROVIDE A 4/0 BARE CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION SECTION 16170.
  - 8 DUCTBANK CONCRETE SHALL BE COLOR DYED RED BY MIXING 3 LBS. IRON OXIDE PER CUBIC YARD OF CONCRETE.
  - 9 ALL DUCTBANKS SHALL BE SLOPED @ 1/4" PER 10 FEET TO ALLOW DRAINAGE.
  - 10 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.
  - 11 REFER TO CONDUIT SCHEDULE FOR WIRE FILL OF ALL DUCTS.
  - 12 ALL DUCTS OF THE SAME DUTY (480V POWER, 120V POWER, 120V CONTROLS, AND SIGNAL) SHALL BE SEPARATED BY A MINIMUM OF 2".
  - 13 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.

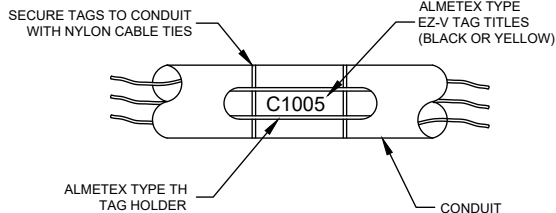


203 TYP SCALE: NONE **DUCTBANK DETAIL**

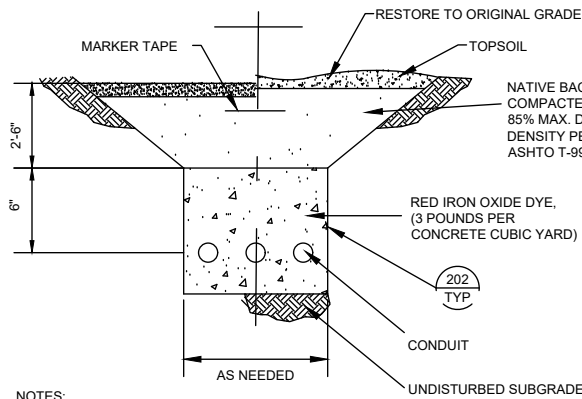


- NOTES:
1. WHERE CONDUITS ARE INSTALLED IN OR UNDER A CONCRETE SLAB, THE 24" DIMENSION DOES NOT APPLY. CONDUITS SHALL BE INSTALLED BETWEEN REBAR MATS OR UNDER A SINGLE REBAR MAT.
  2. IN CORROSIVE AREAS, PVC COATED GRS SHALL BE USED.
  3. SCOTCHWRAP PER SPECIFICATIONS, MAY BE SUBSTITUTED FOR PVC COATING.

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

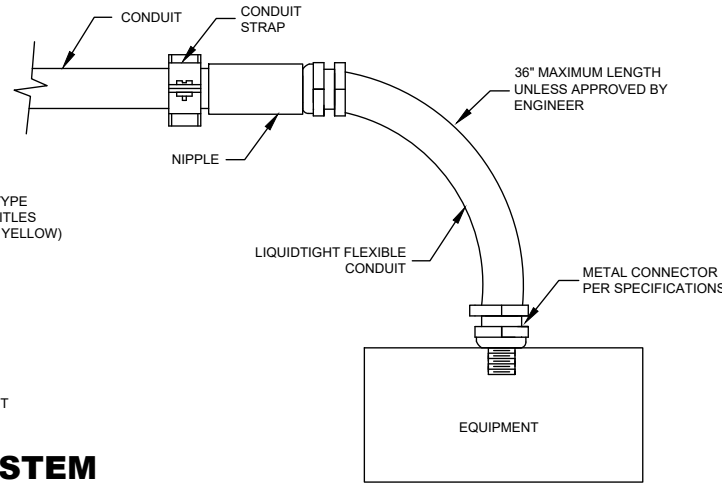


360 TYP SCALE: NONE **CONDUIT MARKING SYSTEM**



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.

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



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

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		
NO.	DATE	DESCRIPTION
14 of 16		REVISIONS
E001		REVISION NO. B

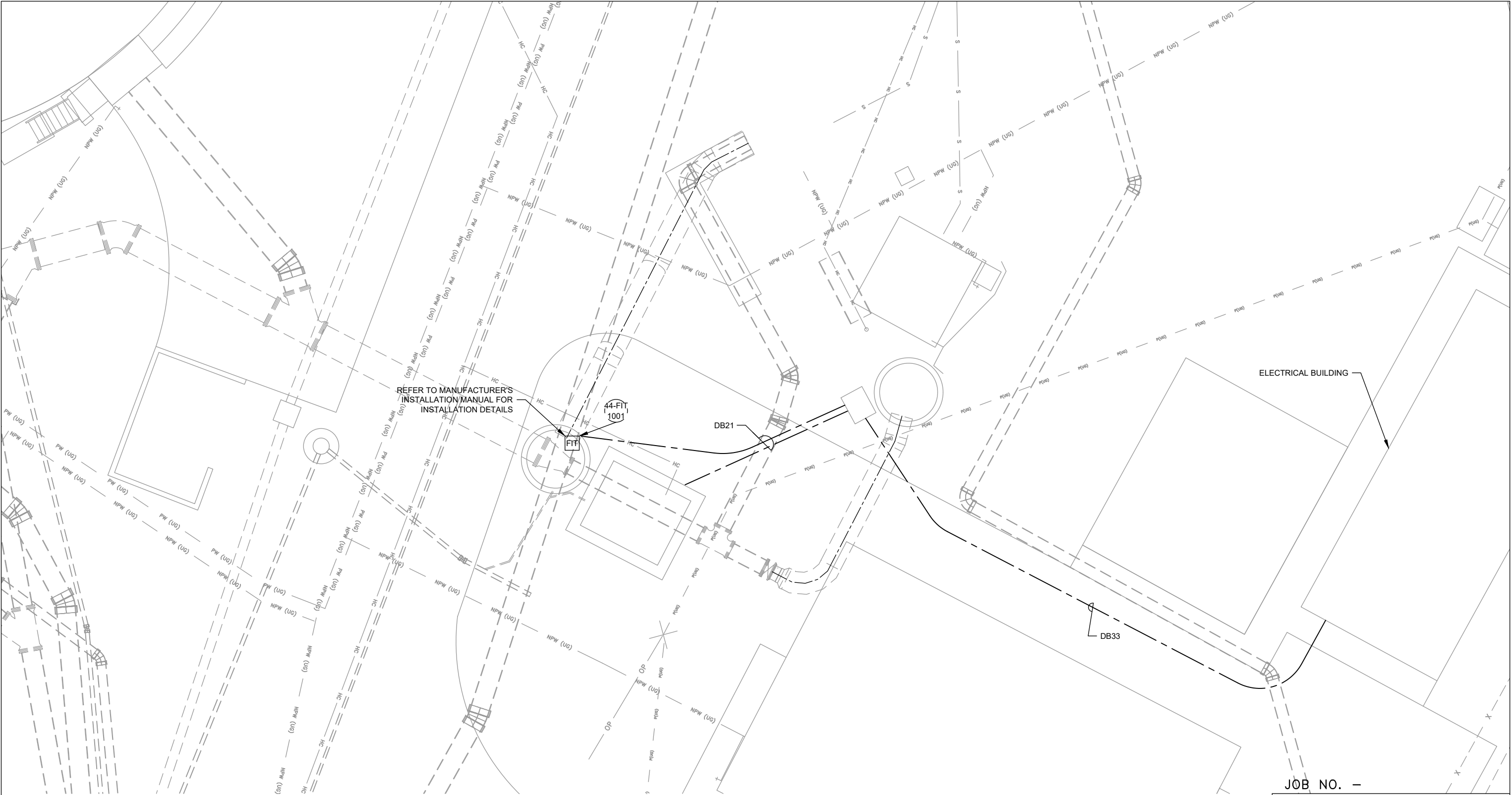


533 W 2600 S, SUITE 275, BOUNTIFUL, UT 84010  
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8/18/2023 C:\USERS\MICHAEL.JOHNSON\AQUA ENGINEERING\LGVSD - LAS GALLINAS VALLEY SECONDARY TREATMENT UPGRADE\PHASE 1\BIDDING\G997 ELECTRICAL\E001 - ELECTRICAL SITE PLAN.DWG

PLOTTED: EXTEND  
SAVED: 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



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



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

NO.	DATE	DESCRIPTION	BY	APPROD
		REVISIONS		

LGVSD 1 FILE:  
FD144793

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES

0 1 2 3 4

C:\USERS\MICHAEL JOHNSON\AQUA ENGINEERING\LGVS.D - LAS G180119-SECONDARY TREATMENT UPGRADES\PHASE 18\DRAWING\G997 ELECTRICAL\E002 - ELECTRICAL CALCULATIONS.DWG

8/21/2023

PLOTTED: 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 80		2	20/1	ELECTRICAL BLDG. OUTDOOR LIGHTS (2, B)
ELECTRICAL BLDG. OUTLETS (3, C)	20/1	3		540 100	4	20/1	LIGHTING CONTROL PANEL (LCP-AB)
CTC-AB	20/1	5	1000 816		6	20/1	EQ/ANOXIC BASINS LIGHTS/OUTLETS (4,3)
AEROTOR BASINS LIGHTS/OUTLETS (4,3)	20/1	7		816 1200	8	20/1	GENERATOR BATTERY CHARGER
AEROTOR BASINS LIGHTS/OUTLETS (4,3)	20/1	9	816 100		10	20/1	44-FIT-1001
PLC-AB	20/1	11		500		20/1	
	20/1	13			12	20/1	
	20/1	15	100		14	20/1	23-FIT-1010
23-FIT-1020	20/1	17	100 100	1500	16	20/1	POND RETURN SUMP
44-FIT-1000	20/1	19		100 100	18	20/1	31-AIT-1010
31-AIT-2010	20/1	21	100 100		20	20/1	31-AIT-4010
31-AIT-1001/1002	20/1	23		150 100	22	20/1	31-AIT-2001/2002
31-AIT-3010	20/1	25	100 100		24	20/1	31-AIT-4001/4002
31-AIT-3001/3002	20/1	27		100 100	26	20/1	
36-FIT-1000	20/1	29	100 100		28	20/1	
SC 1 LIGHTS AND OUTLET	20/1	31		318 567	30	20/1	42-FIT-1120
SC 3 LIGHTS AND OUTLET (FUTURE)	20/1	33	318 240		32	20/1	SC 2 LIGHTS AND OUTLET
31-H-1210	20/1	35		240 400	34	20/1	31-H-1110
EXISTING 21-LIT-1204A, 21-LIT-1205A, 21-LIT-1304A, 21-LIT-1305A	20/1	37	400 100		36	20/1	EXISTING 21-LIT-1101, 21-LIT-1204B, 21-LIT-1304B, 21-LIT-1305B
		39		350	38	20/1	EXISTING 51-LIT-1101
EXISTING SITE LIGHTING L1, L2, L3, L4, L5, L6, L8, L9	20/2	41	350		40	20/1	
		43			42	20/1	
61-LIT-1000	20/1	43		100 100	44	20/1	23-LIT-1002
MCC-AB2 LOW LEVEL RELAY SECTION (MCC-AB2 SECTION 12)	20/1	45	100 100		46	20/1	MCC-AB3 LOW LEVEL RELAY SECTION (MCC-AB3 SECTION 12)
FUTURE EQ BASIN CHEM PUMP AND ANALYZER	20/1	47		1000 360	48	20/1	LOCAL YARD RECEPTACLES
FUTURE METHANOL PUMP EAST OF ANOXIC BASIN 3	20/1	49	1000 360		50	20/1	RECEPTACLE AT CONSOLES
CHLORINATION STRUCTURE EXHAUST/LIGHTS	20/1	51		200	52	20/1	
EXISTING EFFLUENT PIT LIGHTING	20/1	53	200		54	20/2	
EXISTING EFFLUENT PIT RECEPTACLE	20/1	55		600	56	20/2	
SUMP RECEPTCLE (42-P-1120)	20/1	57	1500 1500		58	20/1	SAMPLING PUMP (43-P-2300)
SAMPLING PUMP (43-P-2100)	20/1	59		1500	60	20/1	SPARE
SAMPLING PUMP (43-P-2200)	20/1	61	1500		62	20/1	SPARE
43-P-1300	20/1	63		1500	64	20/1	SPARE
43-AIT-1340	20/1	65	500 1500		66	20/1	SAMPLING PUMP (43-P-2400)
SITE LIGHT	20/2	67		80 400	68	20/2	SITE LIGHTS (ALONG BASIN)
	20/2	69	80 400		70	20/2	
	20/2	71			72	20/1	
	20/2	73			74	20/1	
	20/1	75			76	20/1	
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	

NO.	DATE	DESCRIPTION	BY	APPROD	
REVISIONS					

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



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