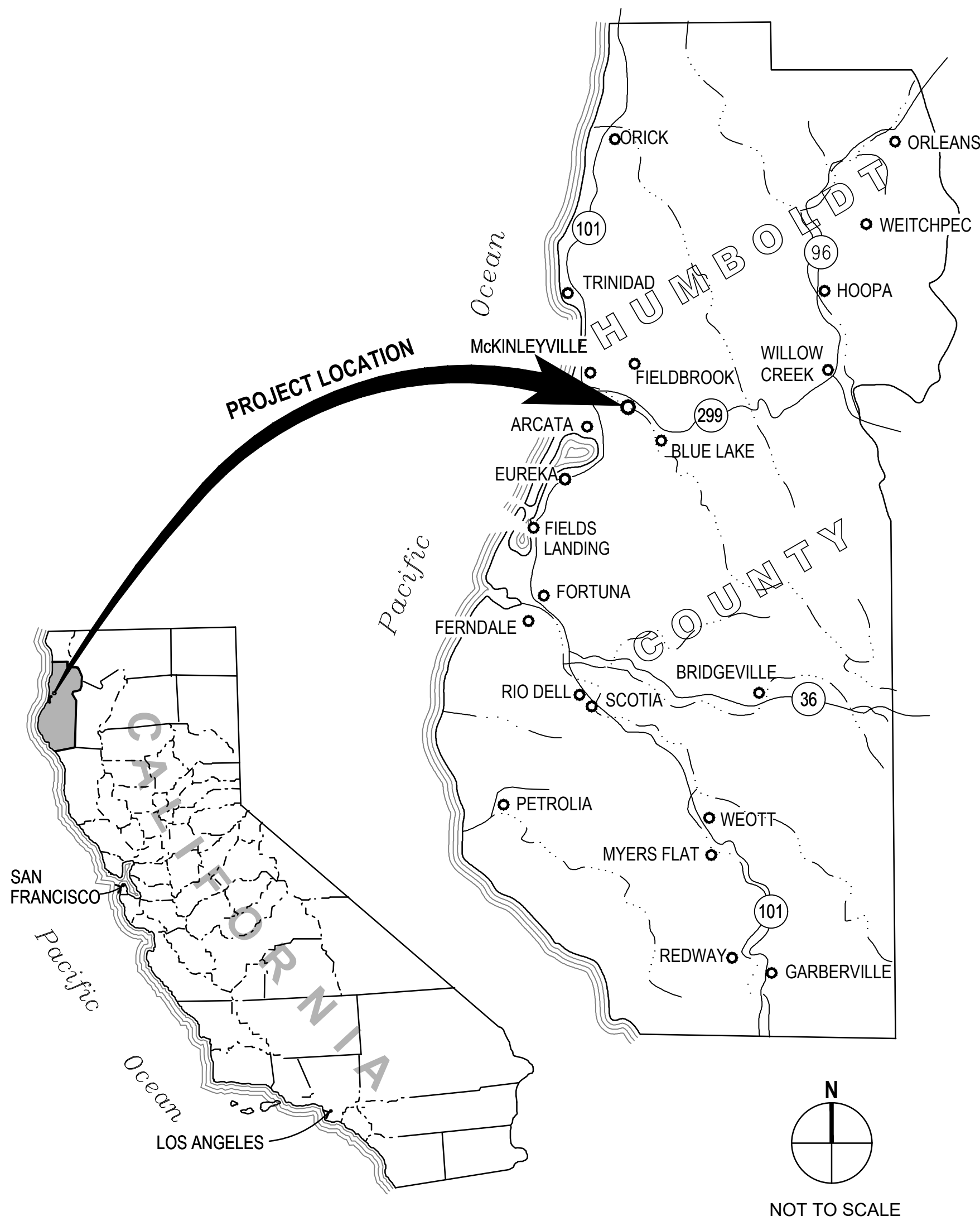


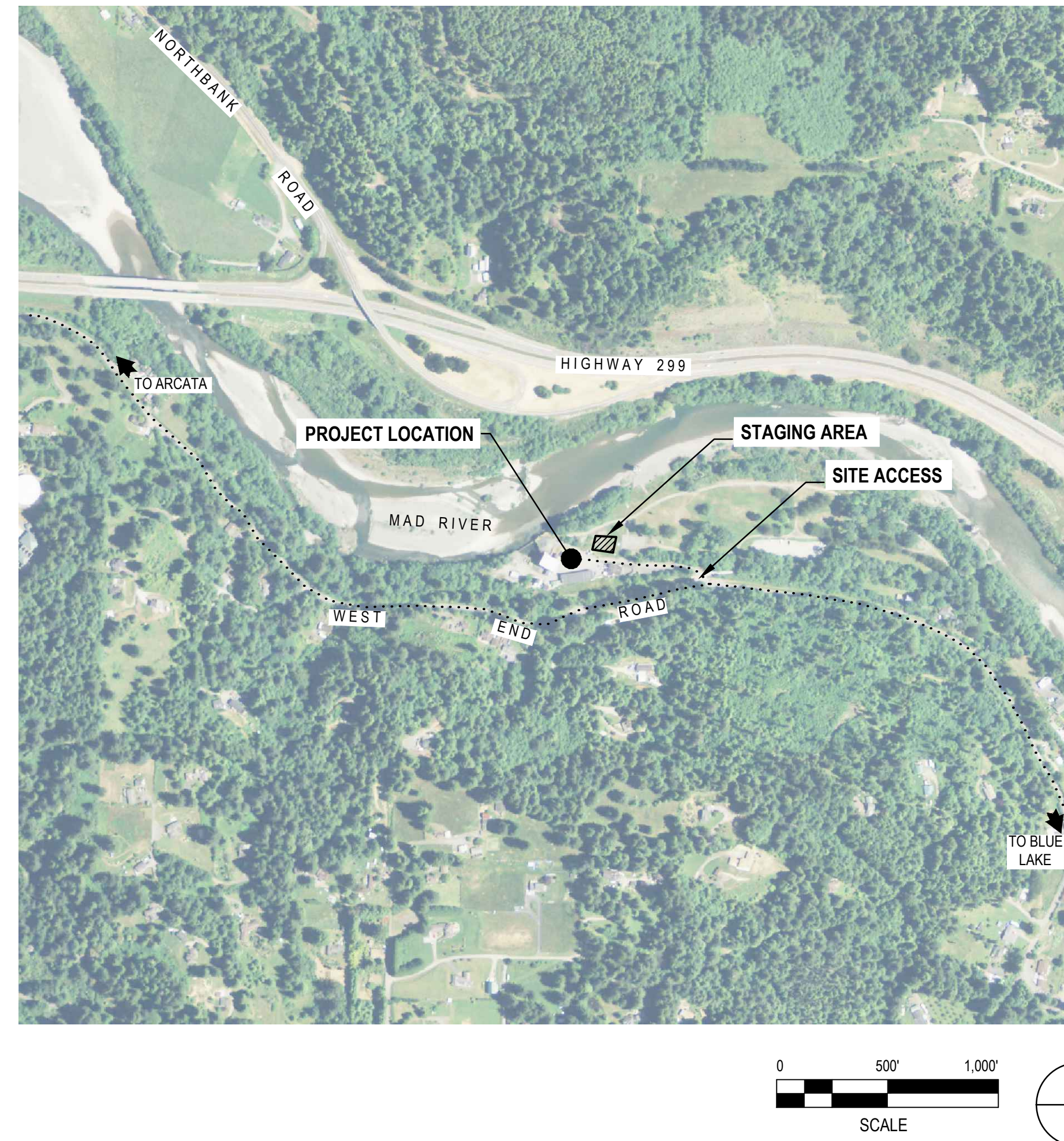
HUMBOLDT BAY MUNICIPAL WATER DISTRICT OSHG INSTALLATION AND INTEGRATION

SEPTEMBER 2024

AREA MAP



LOCATION MAP



APPROVALS

GENERAL MANAGER

JOHN FRIEDENBACH

SIGNED

9/30/2024
DATE

BOARD OF DIRECTORS

MICHELLE FULLER
DAVID LINDBERG
J. BRUCE RUPP
SHERI WOO
TOM WHEELER

PRESIDENT
VICE PRESIDENT
SECRETARY-TREASURER
DIRECTOR
DIRECTOR

ENGINEER: GHD Inc.

NATHAN STEVENS, PE

SIGNED

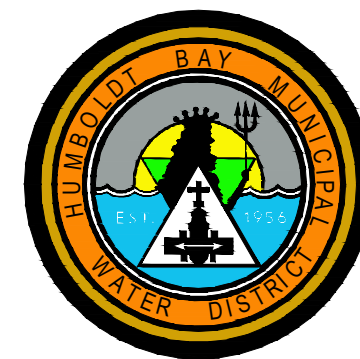
9/30/2024
DATE

SHEET INDEX

SHEET NUMBER	SHEET TITLE	SHEET NO
GENERAL		
1	COVER SHEET	G-001
2	GENERAL NOTES	G-002
CIVIL		
3	PROCESS ROOM, EXTERIOR, & SITE PLAN EXISTING CONDITIONS AND DEMO	CD101
4	ELECTRICAL & CONTROL ROOMS EXISTING CONDITIONS AND DEMOLITION	CD102
5	CIVIL SITE IMPROVEMENT PLAN	C-101
6	CIVIL TANK AND PIPING ELEVATION	C-201
7	CIVIL DETAILS	C-501
STRUCTURAL		
8	STRUCTURAL NOTES 1	S-001
9	STRUCTURAL NOTES 2	S-002
10	TANK FOUNDATION PLAN	S-101
11	STRUCTURAL SECTIONS	S-301
12	STRUCTURAL DETAILS	S-501
ELECTRICAL		
13	ELECTRICAL ANNOTATION	E-001
14	ELECTRICAL DEMO	ED101
15	ELECTRICAL LAYOUT	E-101
16	PANEL AND CONDUIT SCHEDULES 1	E-601
17	PANEL AND CONDUIT SCHEDULES 2	E-602

ISSUE FOR BID

No.	Issue	Author	Checked	Approved	Date
0	ISSUE FOR BID	N. BLACK	N. STEVENS	N. STEVENS	9/30/2024
		Designer	Drafting Check	Project Manager	
		N. BLACK	N. STEVENS	N. STEVENS	
		Designer	Design Check	Project Director	
		N. BLACK	N. STEVENS	K. TOBIN	



Bar is one inch on original size sheet
0 1"



GHD GHD Inc.
718 Third Street
Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330



Client	HUMBOLDT BAY MUNICIPAL WATER DISTRICT	Title	COVER SHEET
Project	OSHG INSTALLATION AND INTEGRATION	Project No.	12616149
		Date	10/1/2024
		Scale	AS SHOWN





Size
ANSI D

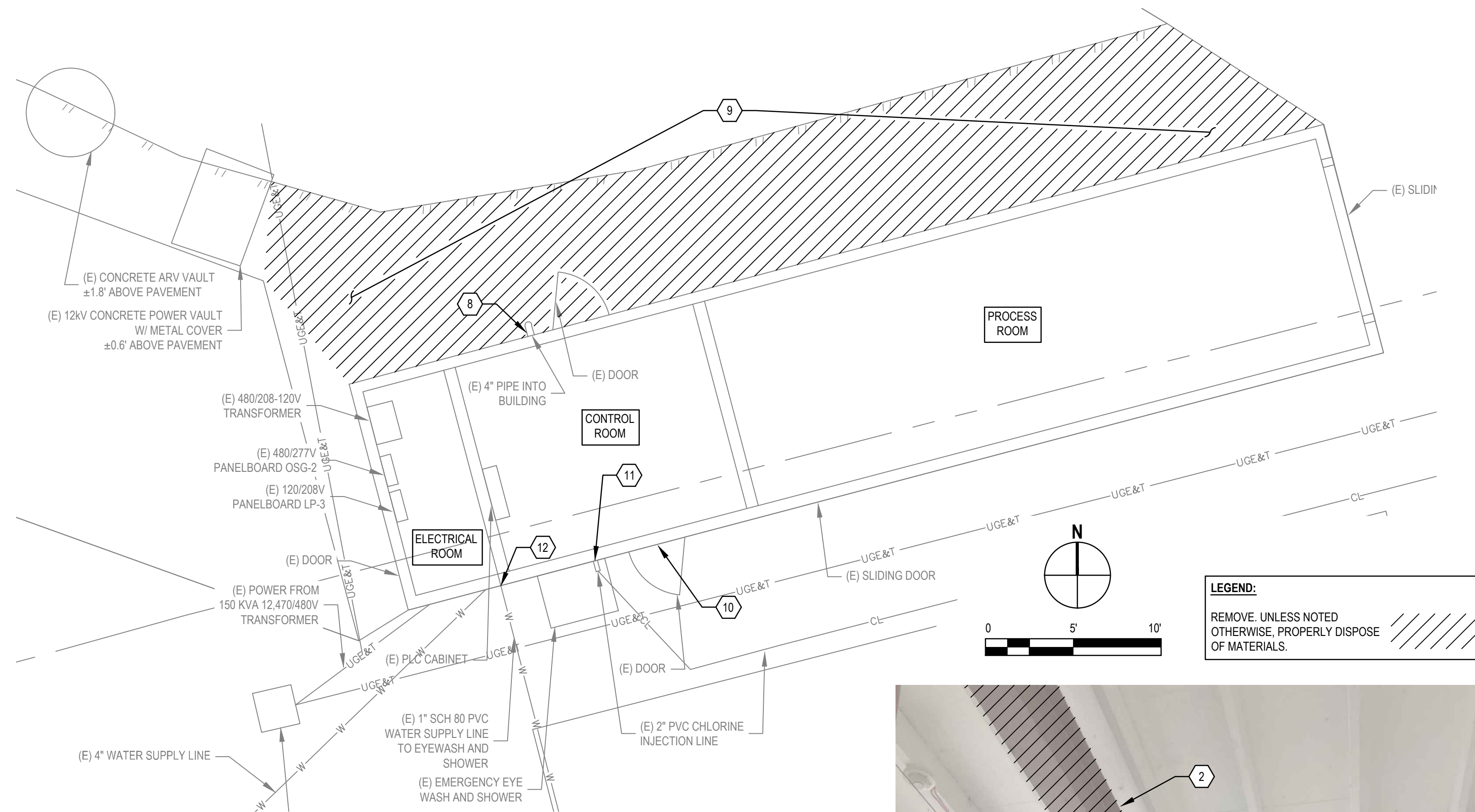
Sheet No.
G-001
Sheet
1 of 17

SYMBOLS			ABBREVIATIONS										GENERAL SITE NOTES			
SITE/TOPOGRAPHIC			UTILITY													
NEW	EXISTING	DESCRIPTION	NEW	EXISTING	DESCRIPTION	AB	ANCHOR BOLT, AGGREGATE BASE	DI	DROP INLET, DUCTILE IRON	IPT	IRON PIPE THREAD	RDCR	REDUCER	<ol style="list-style-type: none"> CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND BECOMING FAMILIAR WITH THE SITE CONDITIONS PRIOR TO BIDDING. IT IS EXPECTED THAT THE ACTUAL LOCATION OF EXISTING UTILITIES MAY VARY FROM THAT SHOWN ON THE PLANS. VARIATIONS IN LOCATION AND DEPTH SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY SO THAT THE LOCATION OF UTILITIES MAY BE CHECKED WITH THE PROPOSED DESIGN. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT PRIOR TO WORK COMMENCING FOR ANY EXCAVATION OR POTHOLING. UPON COMPLETION OF THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL LEAVE THE PROJECT AREA FREE OF DEBRIS AND UNUSED MATERIAL. ALL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE RESTORED TO AN "AS GOOD OR BETTER" CONDITION. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL PROJECT PERMITS AND ALL APPLICABLE STATE AND FEDERAL REGULATIONS. ANY PUMPS, FUEL-DRIVEN MOTORS (GENERATOR, ETC.) USED ON SITE SHALL BE PLACED ON ABSORBENT PADS. THE CONTRACTOR SHALL HAVE CONTAINMENT MATERIALS LOCATED AT THE SITE, WITH OPERATORS TRAINED IN SPILL CONTROL PROCEDURES. CONTRACTOR SHALL DEVELOP A SPILL PREVENTION AND CONTROL PLAN COVERING THE USE AND FUELING OF ANY PETROLEUM FUELED EQUIPMENT. SEE SPECIFICATIONS FOR SPILL PREVENTION REQUIREMENTS. CONTRACTOR TO PROVIDE NECESSARY WATER AND ELECTRICAL FACILITIES REQUIRED FOR PERFORMANCE OF WORK. 		
						AC	ASPHALTIC CONCRETE, AGGREGATE CONCRETE	DIP	DUCTILE IRON PIPE	JP	JOINT UTILITY POLE	REF	REFER, REFERENCE			
						ACI	AMERICAN CONCRETE INSTITUTE	DIA	DIAMETER	JT	JOINT	REINF	REINFORCED, REINFORCING, REINFORCE			
						ADP	ASBESTOS CEMENT PIPE	DW	DRIVEWAY			REQD	REQUIRED			
						ADD	ADDITIONAL	DWG	DRAWING			R/W	RIGHT OF WAY			
						AFF	ABOVE FINISH FLOOR			L	LEFT, LENGTH	RST	REINFORCING STEEL			
						AFG	ABOVE FINISH GRADE	(E)	EXISTING	LB	POUNDS	RT	RIGHT			
						AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	E	EAST	LF	LINEAR FEET					
						ALUM	ALUMINUM	EB	ELECTRIC BOX	LONG	LONGITUDINAL	SCH	SCHEDULE			
						ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	EP	EDGE OF PAVEMENT	LR	LONG RADIUS	SD	STORM DRAIN			
						APN	ASSESSOR'S PARCEL NUMBER	EA	EACH			SECT	SECTION			
						APPROX	APPROXIMATE	EC	END CURVE	MAX	MAXIMUM	SHT	SHEET			
						ARV	AIR RELEASE VALVE	EG	EXISTING GROUND	MB	MAIL BOX	SIM	SIMILAR			
						AWG	AMERICAN WIRE GAGE	EL	ELEVATION	MECH	MECHANICAL	SL	SLOPE			
						AWWA	AMERICAN WATER WORKS ASSOCIATION	ELEC	ELECTRIC, ELECTRICAL	MFR	MANUFACTURER	SPEC	SPECIFICATIONS			
						BF	BLIND FLANGE	EMBED	EMBEDMENT	MH	MANHOLE	SQ	SQUARE			
						BFF	BELOW FINISH FLOOR	ENGR	ENGINEER	MIN	MINIMUM, MINUTE	SQ FT	SQUARE FOOT			
						BFP	BACK FLOW PREVENTER	EQ	EQUAL	MISC	MISCELLANEOUS	SQ IN	SQUARE INCH			
						BFG	BELOW FINISH GRADE	EQPT	EQUIPMENT	MJ	MECHANICAL JOINT	SS	SANITARY SEWER			
						BLDG	BUILDING	ES	ELECTRIC SWITCHBOX	MON	MONUMENT	SST	STAINLESS STEEL			
						BM	BENCH MARK, BEAM	EV	ELECTRICAL VAULT	N	NORTH	SSCO	SANITARY SEWER CLEANOUT			
						BO	BLOW OFF (VALVE)	EVC	END OF VERTICAL CURVE	(N)	NEW	SSMH	SANITARY SEWER MANHOLE			
						BOL	BOLLARD	EW	EACH WAY	(N)	NEW	STA	STATION			
						BOT	BOTTOM	FC	FLEXIBLE COUPLING	NO	NUMBER, NUMBERING	STD	STANDARD			
						BSW	BACK OF SIDEWALK	FCA	FLANGED COUPLING ADAPTER	NOM	NOMINAL	STL	STEEL, STEEL PIPE			
						BV	BUTTERFLY VALVE	FCO	FLOOR CLEAN OUT	NPT	NATIONAL PIPE THREAD	SST, ST STL	STAINLESS STEEL			
						BVC	BEGINNING OF VERTICAL CURVE	FD	FLOOR DRAIN	NTS	NOT TO SCALE	STR	STRAIGHT STRUCTURE			
						CB	CATCH BASIN	FF	FINISH FLOOR	OD O.C.	ON CENTER	TBM	TEMPORARY BENCH MARK			
						CFM	CUBIC FEET PER MINUTE	FG	FINISH GRADE	OD	OUTSIDE DIAMETER	TP	TELEPHONE POLE			
						CFS	CUBIC FEET PER SECOND	FH	FIRE HYDRANT	OHE	OVER HEAD ELECTRIC	T&B	TOP AND BOTTOM			
						CI	CAST IRON	FIG	FIGURE	OHT&C	OVERHEAD TELEPHONE & CABLES	THD	THREAD			
						CIP	CAST IRON PIPE	FL	FLOW LINE	OSHG	ONSITE SODIUM HYPOCHLORITE GENERATOR	TYP	TYPICAL			
						CIRJ	CAST IRON RESTRAINED JOINT	FLG	FLANGED	OZ	OUNCE	UB	UTILITY BOX			
						CL	CHLORINE	FT	FOOT OR FEET	P	PROPOSED	UBC	UNIFORM BUILDING CODE			
						CLR	CLEAR	FTG	FOOTING	PE	PERMANENT EASEMENT	UE	UNDERGROUND ELECTRIC			
						CMLCS	CEMENT MORTAR LINED & COATED STEEL PIPE	FWD	FORWARD	PI	POINT OF INTERSECTION	UG	UNDERGROUND			
						CMU	CONCRETE MASONRY UNIT	G	GAS	PL	PLATE, PROPERTY LINE	UGT	UNDERGROUND TELEPHONE			
						CO	CLEANOUT	GAL	GALLON	POC	POINT OF CONNECTION	UNK	UNKNOWN			
						COMB	COMBINATION	GALV	GALVANIZED	PP	POWER POLE	UNO	UNLESS NOTED OTHERWISE			
						CONC	CONCRETE	GPM	GALLONS PER MINUTE	PPM	PARTS PER MILLION	V	VENT, VOLT, VALVE			
						CONT	CONTINUOUS, CONTINUATION	GR	GRATE	PRCST	PRECAST	VAC	VACUUM			
						COORD	COORDINATE	GSM	GALVANIZED SHEET METAL	PREFAB	PREFABRICATED	VC	VERTICAL CURVE			
						COP	COPPER	GSP	GALVANIZED STEEL PIPE	PROP	PROPERTY	VERT	VERTICAL			
						CPLG	COUPLING	GUY	GUY WIRE	PSF	POUNDS PER SQUARE FOOT	W	WATER			
						CPP	CORRUGATED PLASTIC PIPE	GV	GATE VALVE	PSI	POUNDS PER SQUARE INCH	W/	WITH			
						CTD	CENTERED	GVL	GRAVEL	PSIG	POUNDS PER SQUARE INCH, GAUGE	WM	WATER METER			
						CTR	CENTER	HB	HOSE BIB	PVC	POLYVINYL CHLORIDE PLASTIC	WP	WATERPROOF			
						CL	CENTER LINE	HOR, HORIZ	HORIZONTAL	PVMT	PAVEMENT	WSP	WELDED STEEL PIPE			
						CU FT	CUBIC FOOT	HP	HORSEPOWER, HIGH POINT	R, RAD	RADIUS	WLP	WATER LINE PADDLE			
						CU IN	CUBIC INCH	ID	INSIDE DIAMETER	RC	REINFORCED CONCRETE	WV	WATER VALVE			
						CU YD	CUBIC YARD	IN	INCH	RC	RELATIVE COMPACTION	XING	CROSSING			
						CV	CHECK VALVE	IP	INVERT	RCP	REINFORCED CONCRETE PIPE	YD	YARD			
						DR	DRAIN	IPA	INTEGRATED POWER ASSEMBLY							
						DBL	DOUBLE									

SURVEY NOTES		GRADING NOTES		UTILITY NOTES		EROSION PREVENTION & SEDIMENT CONTROL NOTES															
1.	THIS SURVEY IS ON AN ASSUMED BASIS OF BEARINGS AND ELEVATION. IT HAS NOT BEEN CONFIRMED THAT THE HORIZONTAL OR VERTICAL DATA PRESENTED HEREIN ARE TIED TO REAL WORLD COORDINATES OR VERTICAL POSITIONING, RESPECTIVELY. HOWEVER, DATA PRESENTED HEREIN IS ACCURATE RELATIVE TO ALL OTHER DATA PRESENTED HEREIN WITHIN STANDARD SURVEY TOLERANCES.	1.	CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL CONSTRUCTION. ADEQUATE SCAFFOLDING, SHORING, BRACING, TIES, AND SUPPORTS SHALL BE USED TO PROVIDE PROPER TEMPORARY INTEGRITY DURING ALL PHASES OF CONSTRUCTION.	1.	LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE PLOTTED FROM RECORD DRAWINGS OR INTERPOLATION OF PHYSICAL EVIDENCE ON THE SITE AND ARE SUBJECT TO FIELD VERIFICATION BY THE CONTRACTOR. SEE GENERAL SITE NOTES 1 AND 2.	1.	PROJECT IMPLEMENTATION SHALL CONFORM WITH THE EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES CONTAINED IN THE LATEST EDITIONS OF THE FOLLOWING PUBLICATIONS OR AN EQUIVALENT BEST MANAGEMENT PRACTICE: <u>CONSTRUCTION SITE BEST MANAGEMENT PRACTICES MANUAL</u> BY CALTRANS. <u>STORMWATER BEST MANAGEMENT PRACTICE HANDBOOK</u> BY THE CALIFORNIA STORMWATER QUALITY ASSOCIATION.														
2.	ALL UTILITIES SHOWN HEREON WERE TAKEN FROM ABOVE GROUND VISUAL STRUCTURES. NO UTILITY RESEARCH WAS CONDUCTED FOR THIS SURVEY. LOCATION OF ALL UNDERGROUND UTILITIES SHOWN HEREON IS APPROXIMATE.	2.	ALL EXISTING LANDSCAPED AND UNPAVED AREAS WHICH ARE DISTURBED BY CONSTRUCTION OR EARTHWORK OPERATIONS SHALL BE RAKED SMOOTH, RE-SEED, MULCHED, AND RETURNED TO ORIGINAL EXISTING CONDITIONS.	2.	ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION.	2.	IF DISCREPANCIES OCCUR BETWEEN THESE NOTES, MATERIAL REFERENCED HEREIN OR MANUFACTURER'S RECOMMENDATIONS, THEN THE MOST PROTECTIVE SHALL APPLY.														
		3.	ALL DITCHES, SWALES, GUTTERS, ETC. SHOULD BE RESPONSIBLE FOR ADDRESSING STORM WATER DRAINAGE AND DEWATERING OF WORK AREAS DURING CONSTRUCTION.	3.	THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, OR FITTING REQUIRED TO COMPLETE THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND WORKING SYSTEM.	3.	PRESERVATION OF EXISTING VEGETATION SHALL OCCUR TO THE MAXIMUM EXTENT PRACTICABLE.														
		4.	DURING WET WEATHER PERIODS, CONTRACTOR IS RESPONSIBLE FOR SEQUENCING CONSTRUCTION IN A MANNER TO MINIMIZE IMPACT ON OPEN EARTHWORK AND COMPACTION OPERATIONS.	4.	CONTRACTOR SHALL COORDINATE A UTILITY LOCATE 48 HOURS PRIOR TO BEGINNING ANY UTILITY CONSTRUCTION FOR LOCATION MARK-UP OF ALL EXISTING UTILITIES. CONTRACTOR SHALL COORDINATE THE UTILITY LOCATE WITH THE OWNER FOR ALL UTILITY WORK. INFORM OWNER IMMEDIATELY IF LOCATE INDICATES THAT EXISTING UTILITIES ARE DIFFERENT THAN SHOWN ON DRAWINGS.	4.	CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE RULES AND REGULATIONS.														
		5.	COMPLETELY COVER ANY SOIL STOCKPILES WITH 6 MIL BLACK PLASTIC AND PROVIDE RESTRAINTS TO HOLD PLASTIC IN PLACE. MONITOR PLASTIC COVER AS PART OF CONTINUOUS EROSION CONTROL PLAN. PLACE SILT FENCE COMPLETELY AROUND STOCKPILE.	5.	CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES, FEATURES, AND STRUCTURES LOCATED ON THE SITE. LOCATE, PROTECT, AND AVOID DISRUPTION OF ALL ABOVE AND BELOW GRADE UTILITIES DURING CONSTRUCTION.	5.	EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED BY THE CONTRACTOR BEFORE FORECASTED STORM EVENTS AND AFTER ACTUAL STORM EVENTS TO ENSURE MEASURES ARE FUNCTIONING PROPERLY. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES THAT HAVE FAILED OR ARE NO LONGER EFFECTIVE SHALL BE PROMPTLY REPLACED. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED.														
						6.	DISCHARGES OF POTENTIAL POLLUTANTS FROM CONSTRUCTION SITES SHALL BE PREVENTED USING SOURCE CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SEDIMENT, TRASH, NUTRIENTS, PATHOGENS, PETROLEUM HYDROCARBONS, METALS, CONCRETE, CEMENT, ASPHALT, LIME, PAINT, STAINS, GLUES, WOOD PRODUCTS, PESTICIDES.														
						7.	ENTRANCE(S) TO THE CONSTRUCTION SITE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF POTENTIAL POLLUTANTS OFFSITE. POTENTIAL POLLUTANTS DEPOSITED ON PAVED AREAS SUCH AS ROADWAYS AND SIDEWALKS, SHALL BE PROPERLY DISPOSED OF AT THE END OF EACH WORKING DAY OR MORE FREQUENTLY AS NECESSARY.														
						8.	SEED APPLICATION SHALL BE BROADCAST MECHANICALLY OR MANUALLY AT THE RATES SPECIFIED IN THE TABLE BELOW. SEED MIX AND FERTILIZER SHALL BE WORKED INTO THE SOIL BY ROLLING OR TAMPING. IF STRAW IS USED AS MULCH, STRAW SHALL BE DERIVED FROM WHEAT, RICE OR BARLEY AND BE APPROXIMATELY 6 TO 8 INCHES IN LENGTH. STABILIZATION OF MULCH SHALL BE DONE HYDRAULICALLY BY APPLYING AN EMULSION OR MECHANICALLY BY CRIMPING OR PUNCHING THE MULCH INTO THE SOIL. EQUIVALENT METHODS AND MATERIALS MAY BE USED ONLY IF THEY ADEQUATELY PROMOTE VEGETATION GROWTH AND PROTECT EXPOSED SLOPES.														
							<table border="1"> <thead> <tr> <th>MATERIALS</th> <th>APPLICATION RATE (POUNDS PER ACRE)</th> </tr> </thead> <tbody> <tr> <td>SEED MIX</td> <td>60</td> </tr> <tr> <td>POA PRATENSIS (KENTUCKY BLUE GRASS) - 30%</td> <td></td> </tr> <tr> <td>BROMUS HORDEACEUS (BLANDO BROME) - 20%</td> <td></td> </tr> <tr> <td>FESTUCA ARUNDINACEA (REED FESCUE) - 20%</td> <td></td> </tr> <tr> <td>LOLIUM PERENNE (PERENNIAL RYEGRASS) - 20%</td> <td></td> </tr> <tr> <td>TRIFOLIUM REPENS (WHITE CLOVER) - 10%</td> <td></td> </tr> </tbody> </table>	MATERIALS	APPLICATION RATE (POUNDS PER ACRE)	SEED MIX	60	POA PRATENSIS (KENTUCKY BLUE GRASS) - 30%		BROMUS HORDEACEUS (BLANDO BROME) - 20%		FESTUCA ARUNDINACEA (REED FESCUE) - 20%		LOLIUM PERENNE (PERENNIAL RYEGRASS) - 20%		TRIFOLIUM REPENS (WHITE CLOVER) - 10%	
MATERIALS	APPLICATION RATE (POUNDS PER ACRE)																				
SEED MIX	60																				
POA PRATENSIS (KENTUCKY BLUE GRASS) - 30%																					
BROMUS HORDEACEUS (BLANDO BROME) - 20%																					
FESTUCA ARUNDINACEA (REED FESCUE) - 20%																					
LOLIUM PERENNE (PERENNIAL RYEGRASS) - 20%																					
TRIFOLIUM REPENS (WHITE CLOVER) - 10%																					
						9.	SOIL AND MATERIAL STOCKPILES SHALL BE PROPERLY PROTECTED TO MINIMIZE SEDIMENT AND POLLUTANT TRANSPORT FROM THE CONSTRUCTION SITE.														
						10.	SOLID WASTE, SUCH AS TRASH AND DEBRIS, SHALL BE PLACED IN DESIGNATED COLLECTION AREAS OR CONTAINERS. THE														

ISSUE FOR BID

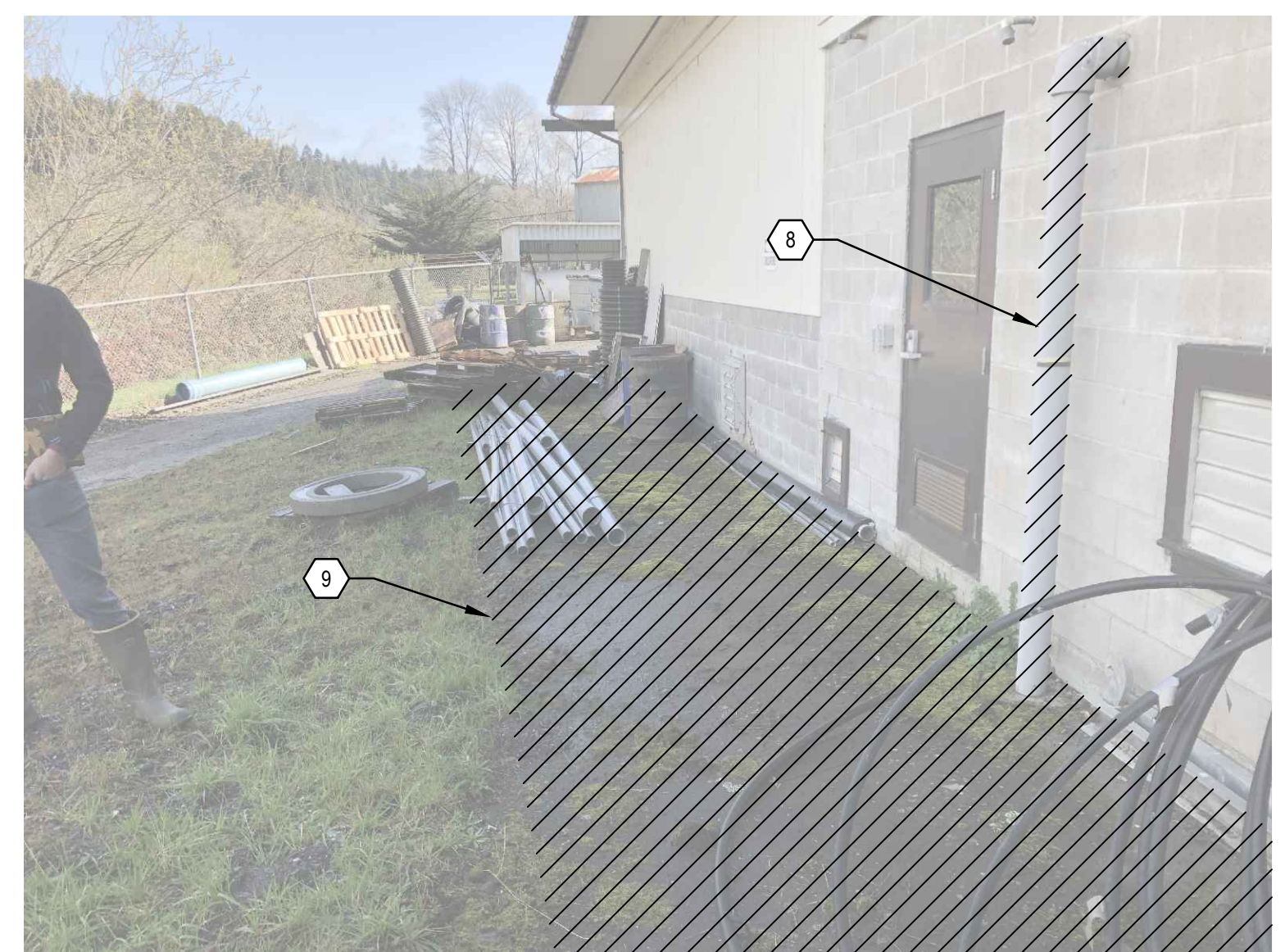
								Client HUMBOLDT BAY MUNICIPAL WATER DISTRICT Project OSHG INSTALLATION AND INTEGRATION		Title GENERAL NOTES		Size ANSI D	
0 ISSUE FOR BID		NS NS		9/30/2024		Conditions of Use This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.		Project No. 12616149		Date 10/1/2024		Scale AS SHOWN	
Author N. BLACK Designer N. BLACK		Drafting Check N. STEVENS Design Check N. STEVENS		Project Manager N. STEVENS Project Director K. TOBIN		Project No. 12616149		Date 10/1/2024		Scale AS SHOWN		Sheet No. G-002 Sheet 2 of 17	



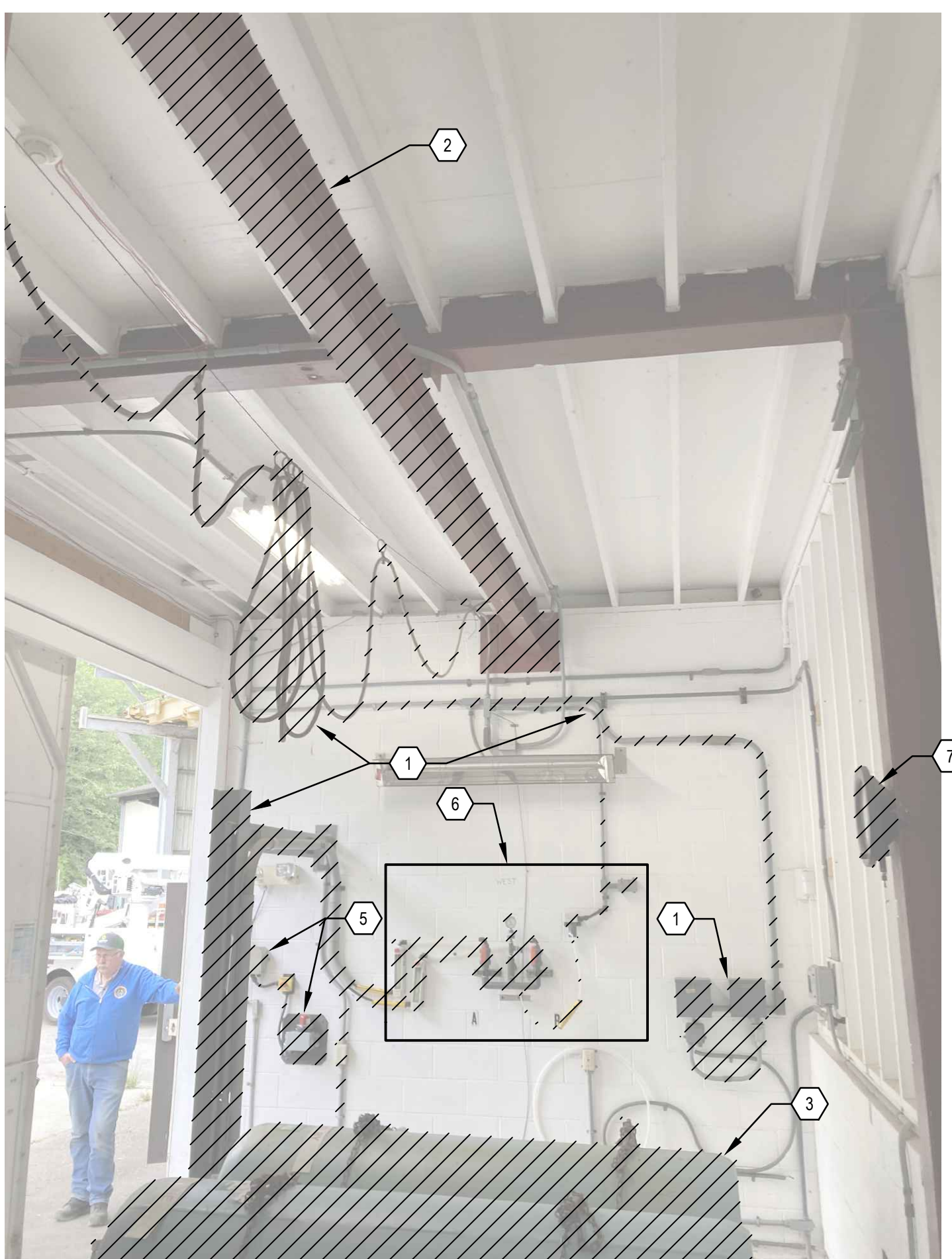
1 EXISTING CONDITIONS AND DEMO - SITE PLAN



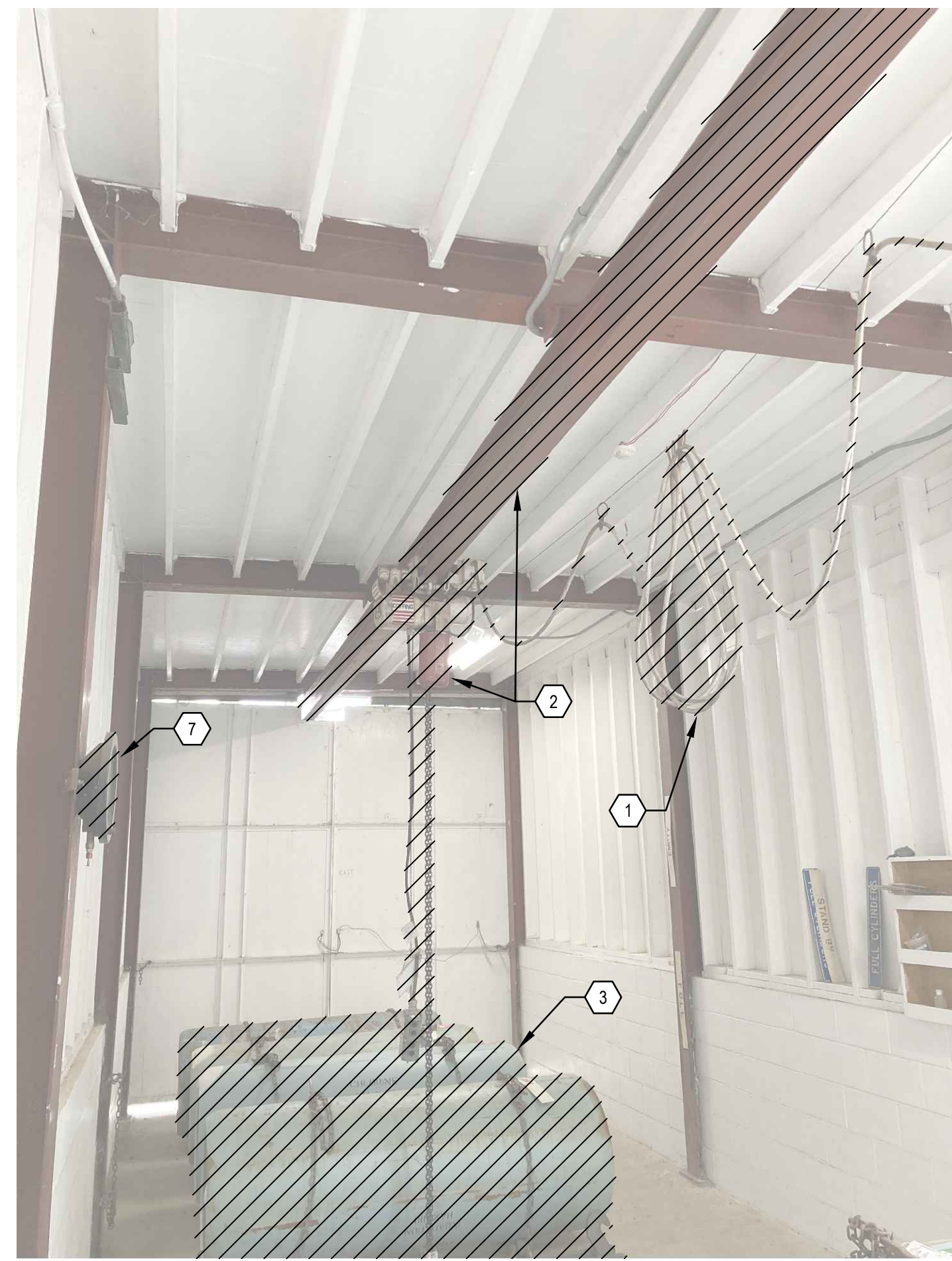
2 SOUTHERN EXTERIOR



3 NORTHERN EXTERIOR



4 PROCESS ROOM - FACING WEST



5 PROCESS ROOM - FACING EAST

SHEET GENERAL NOTES

1. NOT ALL EQUIPMENT IS SHOWN ON INDIVIDUAL DEMOLITION PHOTOS. NOT ALL EQUIPMENT TO BE DEMOLISHED IS NECESSARILY SHOWN ON DEMOLITION SHEETS. ALL COMPONENTS OF (E) CHLORINATION SYSTEM TO BE DEMOLISHED AND REMOVED UNLESS OTHERWISE NOTED. CONTRACTOR IS RESPONSIBLE FOR ARRANGING SITE VISIT WITH OWNER DURING BID PHASE TO INSPECT (E) CHLORINATION SYSTEM TO DETERMINE EXTENTS OF DEMOLITION REQUIRED.
2. THE FOLLOWING ITEMS AND ASSOCIATED CONDUITS ARE TO REMAIN: ALL LIGHTING, ALL ELECTRICAL OUTLETS AND PROCESS ROOM HEATER. THIS IS NOT AN EXHAUSTIVE LIST, AND OTHER ITEMS ARE TO REMAIN AS SHOWN ON THE DEMOLITION DRAWINGS.
3. ALL BOLTS, PIPES, CONDUITS, CONCRETE, AND OTHER ITEMS TO BE DEMOLISHED SHALL BE CUT FLUSH AT WALLS AND FLOORS. RESTORE SURFACES AND PATCH ALL HOLES IN MASONRY AND CONCRETE WITH NON-SHRINK GROUT.
4. WHEN EQUIPMENT IS INDICATED TO BE REMOVED AND PROVIDED TO OWNER, REMOVAL SHALL BE ACCOMPLISHED IN A MANNER SO THAT THE EQUIPMENT REMAINS INTACT TO THE EXTENT FEASIBLE AND DAMAGE TO EQUIPMENT IS MINIMIZED.

HAZARDOUS MATERIALS NOTES

1. THOUGH SAMPLES HAVE TESTED NEGATIVE, EXISTING PIPING, PUMPS, AND OTHER SURFACES MAY BE COATED WITH LEAD-BASED OR LEAD-CONTAINING PAINT. CONTRACTOR TO PROPERLY HANDLE AND DISPOSE OF HAZARDOUS MATERIALS PER APPLICABLE REGULATIONS.

DEMOLITION KEYNOTES

1. DEMOLISH, REMOVE, AND PROPERLY DISPOSE OF PANELS, CONDUIT, CABLES, PIPING, BRACKETS, AND OTHER ASSOCIATED EQUIPMENT. REMOVE EQUIPMENT AND PROVIDE TO OWNER IF INDICATED.
2. REMOVE (E) CRANE AND I-BEAM AND PROVIDE TO OWNER.
3. (E) CHLORINE GAS TANKS TO BE SHUT DOWN AND REMOVED BY OWNER.
4. NOT USED.
5. REMOVE (E) SEISMIC SWITCH AND ASSOCIATED EQUIPMENT AND PROVIDE TO OWNER.
6. REMOVE (E) ROTOMETERS, VACUUM GAUGE, VACUUM SWITCH, AND ASSOCIATED EQUIPMENT AND PROVIDE TO OWNER.
7. REMOVE (E) SCALE DIAL AND PROVIDE TO OWNER.
8. DEMOLISH, REMOVE, AND DISPOSE OF (E) 4" PIPE. CUT FLUSH AT CMU WALL AND BELOW GRADE AND INSTALL PERMANENT CAP/COVER AT EACH LOCATION.
9. DEMOLISH, REMOVE, AND DISPOSE OF (E) AC.
10. REMOVE (E) CHLORINE LEAK HORN AND LIGHTS AND PROVIDE TO OWNER.
11. DEMOLISH, REMOVE, AND DISPOSE OF ABOVE-GROUND SECTION OF (E) CHLORINE INJECTION LINE AND PROTECTIVE COVER. CUT FLUSH AT CMU WALL AND BELOW GRADE AND INSTALL PERMANENT CAP/COVER AT EACH LOCATION.
12. DEMOLISH, REMOVE, AND DISPOSE OF UPPER PORTION OF (E) WATER INFLUENT LINE. CUT FLUSH AT CMU WALL, AND INSTALL PERMANENT CAP/COVER. VERTICAL PORTION OF PIPE TO REMAIN AND BE PROTECTED, SEE C-101 FOR ADDITIONS.

ISSUE FOR BID

0 ISSUE FOR BID		NS	NS	9/30/2024
No.	Issue	Checked	Approved	Date
Author	N. BLACK	Drafting Check	N. STEVENS	Project Manager
Designer	N. BLACK	Design Check	N. STEVENS	Project Director
			K. TOBIN	



Bar is one inch on original size sheet
0 1"

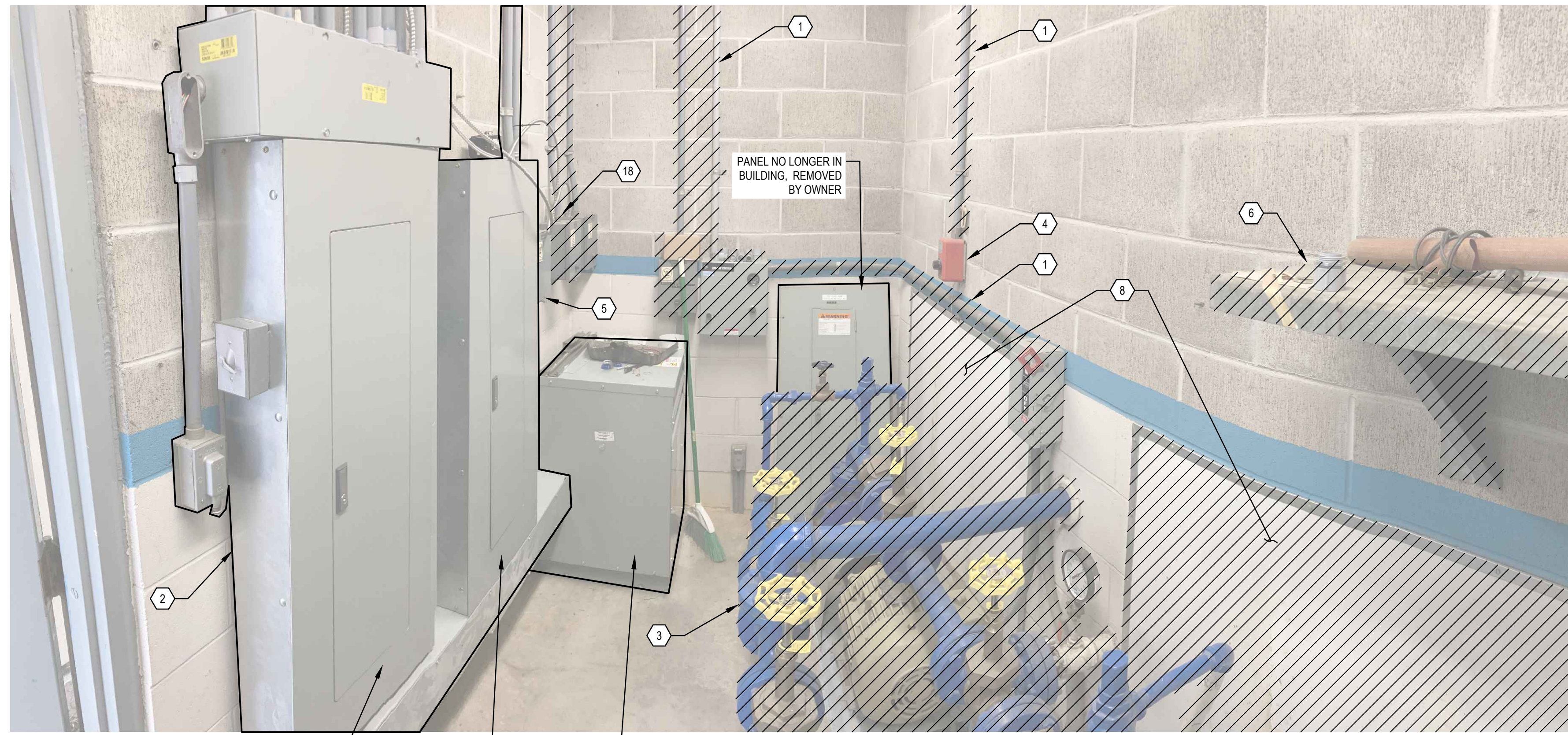


Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**
Project **OSHG INSTALLATION AND INTEGRATION**

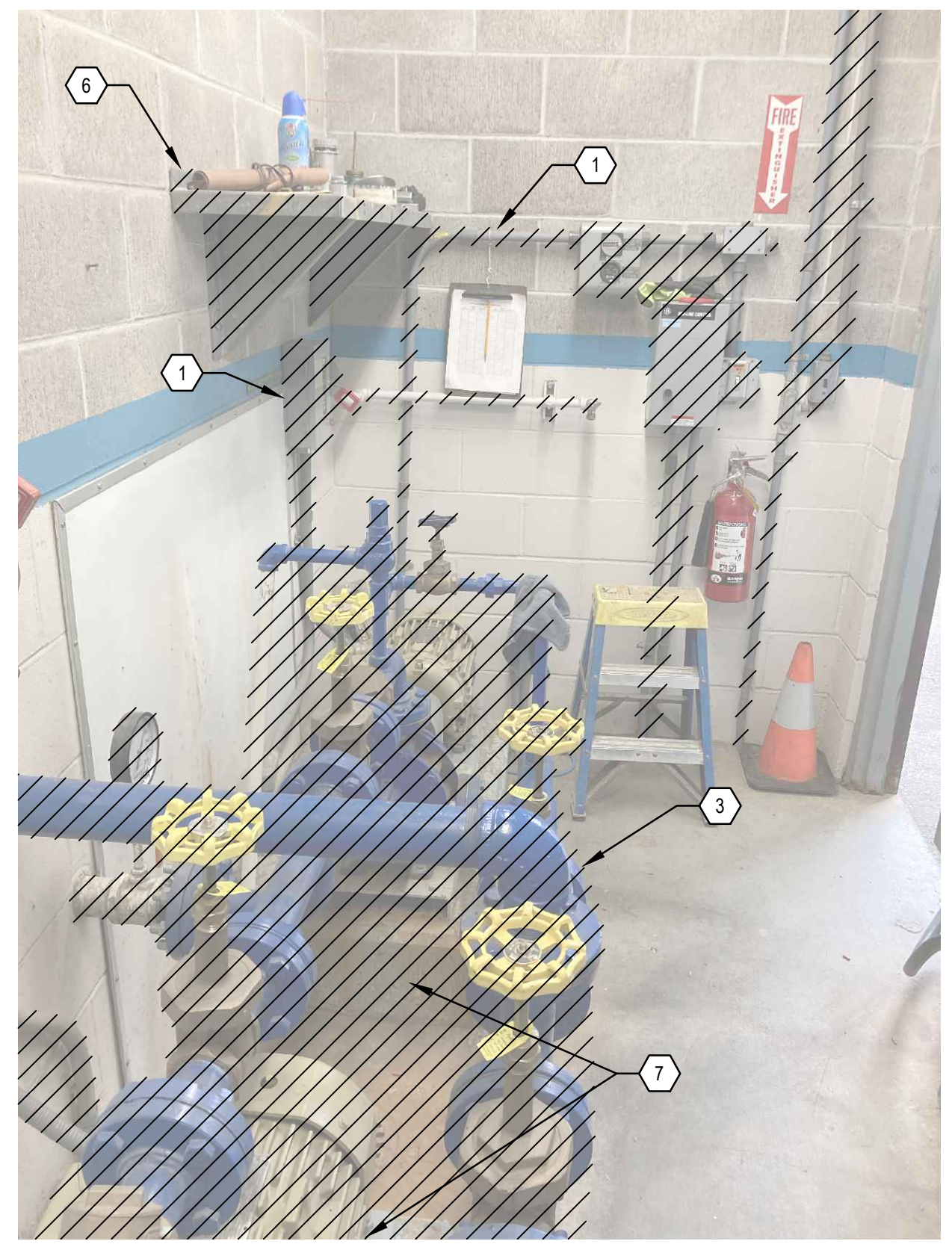
Title **PROCESS ROOM, EXTERIOR, & SITE PLAN EXISTING CONDITIONS AND DEMO**

Project No. **12616149** Date **10/1/2024** Scale **AS SHOWN**

Sheet No. **CD101** Sheet **3 of 17**



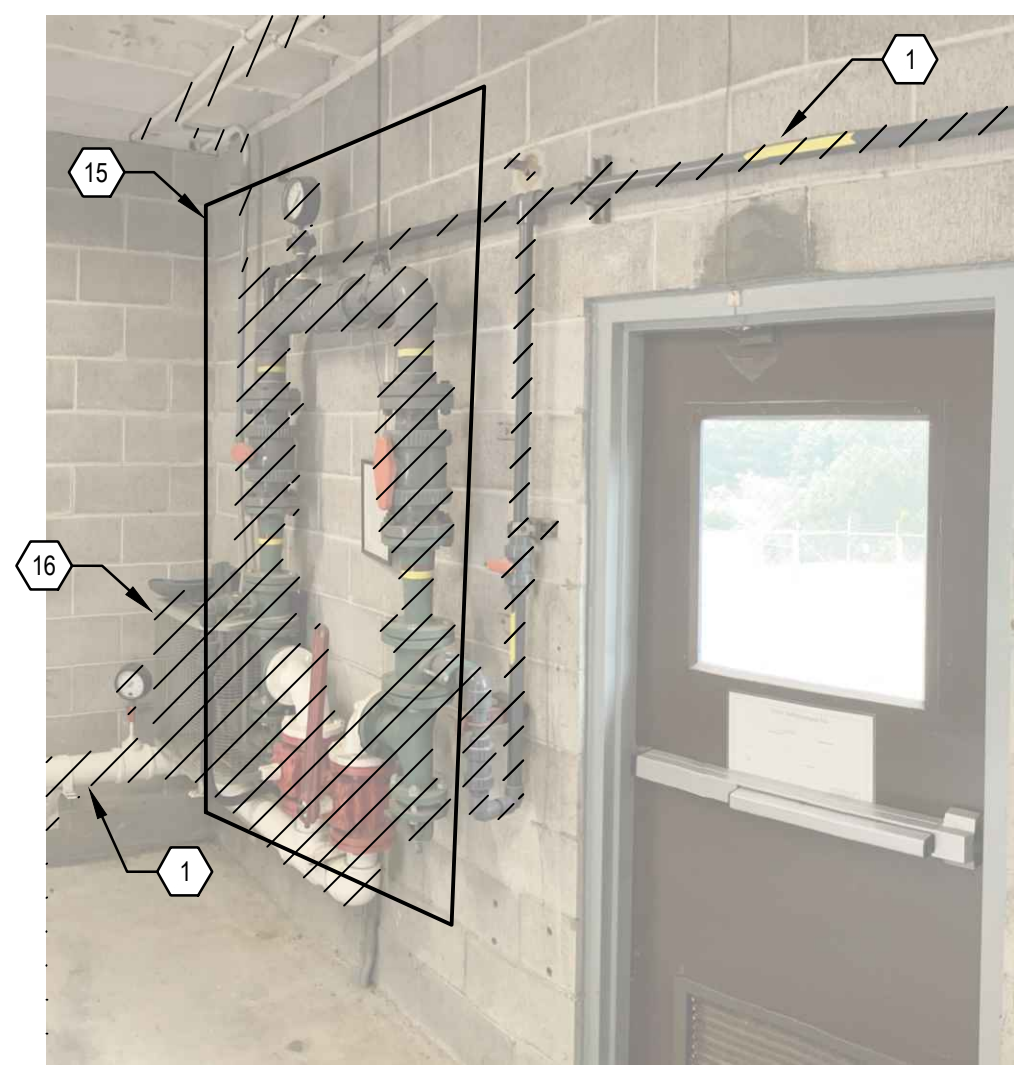
1 ELECTRICAL ROOM - FACING NORTH



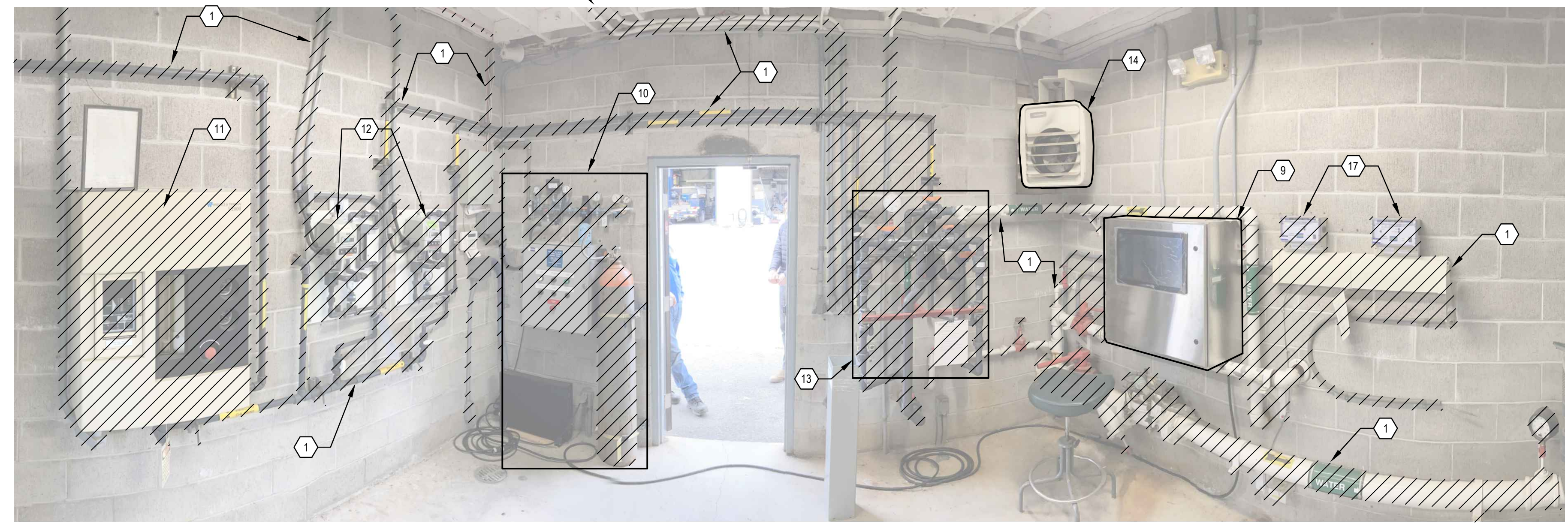
2 ELECTRICAL ROOM - FACING SOUTH

LEGEND:
 REMOVE, UNLESS NOTED OTHERWISE, PROPERLY DISPOSE OF MATERIALS.

DEMOLISH, REMOVE, AND DISPOSE OF EXTENSIONS OF CONDUITS NOT SHOWN, TYP.



3 CONTROL ROOM - NORTH WALL



4 CONTROL ROOM - FACING SOUTH

SHEET GENERAL NOTES

- NOT ALL EQUIPMENT IS SHOWN ON INDIVIDUAL DEMOLITION PHOTOS. NOT ALL EQUIPMENT TO BE DEMOLISHED IS NECESSARILY SHOWN ON DEMOLITION SHEETS. ALL COMPONENTS OF (E) CHLORINATION SYSTEM TO BE DEMOLISHED AND REMOVED UNLESS OTHERWISE NOTED. CONTRACTOR IS RESPONSIBLE FOR ARRANGING SITE VISIT WITH OWNER DURING BID PHASE TO INSPECT (E) CHLORINATION SYSTEM TO DETERMINE EXTENTS OF DEMOLITION REQUIRED.
- THE FOLLOWING ITEMS AND ASSOCIATED CONDUITS ARE TO REMAIN: ALL LIGHTING, ALL ELECTRICAL OUTLETS AND PROCESS ROOM HEATER. THIS IS NOT AN EXHAUSTIVE LIST, AND OTHER ITEMS ARE TO REMAIN AS SHOWN ON THE DEMOLITION DRAWINGS.
- ALL BOLTS, PIPES, CONDUITS, CONCRETE, AND OTHER ITEMS TO BE DEMOLISHED SHALL BE CUT FLUSH AT WALLS AND FLOORS. RESTORE SURFACES AND PATCH ALL HOLES IN MASONRY AND CONCRETE WITH NON-SHRINK GROUT.
- WHEN EQUIPMENT IS INDICATED TO BE REMOVED AND PROVIDED TO OWNER, REMOVAL SHALL BE ACCOMPLISHED IN A MANNER SO THAT THE EQUIPMENT REMAINS INTACT TO THE EXTENT FEASIBLE AND DAMAGE TO EQUIPMENT IS MINIMIZED.

HAZARDOUS MATERIALS NOTES

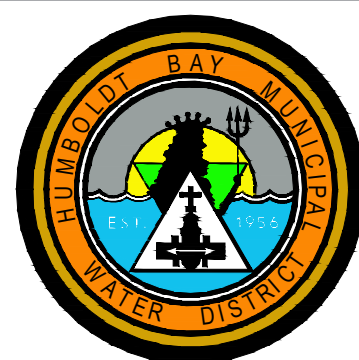
- THOUGH SAMPLES HAVE TESTED NEGATIVE, EXISTING PIPING, PUMPS, AND OTHER SURFACES MAY BE COATED WITH LEAD-BASED OR LEAD-CONTAINING PAINT. CONTRACTOR TO PROPERLY HANDLE AND DISPOSE OF HAZARDOUS MATERIALS PER APPLICABLE REGULATIONS.

DEMOLITION KEYNOTES

- DEMOLISH, REMOVE, AND PROPERLY DISPOSE OF PANELS, CONDUIT, CABLES, PIPING, BRACKETS, AND OTHER ASSOCIATED EQUIPMENT. REMOVE EQUIPMENT AND PROVIDE TO OWNER IF INDICATED.
- (E) PANEL BOARDS AND TRANSFORMER TO REMAIN AND BE PROTECTED FOR INTEGRATION WITH (N) SYSTEM. CONDUITS FROM PANEL LP-3 THAT ARE SERVING EQUIPMENT THAT IS TO BE DEMOLISHED SHALL BE DEMOLISHED, REMOVED, AND DISPOSED OF. CONDUITS FROM PANEL LP-3 THAT ARE SERVING EQUIPMENT THAT IS TO REMAIN SHALL REMAIN.
- REMOVE (E) PUMPS, MOTORS, VALVES, AND ASSOCIATED PIPING AND PROVIDE TO OWNER.
- RELOCATE (E) CONTROL ROOM THERMOSTAT TO WEST WALL OF CONTROL ROOM. INSTALL CONDUIT AND WIRING AS REQUIRED.
- (E) ROOM HEATER CONTACTOR TO REMAIN AND BE PROTECTED.
- REMOVE (E) SHELF AND PROVIDE TO OWNER.
- DEMOLISH, REMOVE, AND DISPOSE OF (E) CONCRETE PEDESTALS FOR ALL PUMPS.
- DEMOLISH, REMOVE, AND DISPOSE OF (E) SPLASH SHEETS.
- (E) PLC CABINET TO REMAIN AND BE PROTECTED FOR INTEGRATION WITH (N) SYSTEM.
- REMOVE (E) CHLORINE SAFETY SHUTOFF EQUIPMENT AND PROVIDE TO OWNER.
- REMOVE (E) INDUSTRIAL CHLORINATOR AND PROVIDE TO OWNER.
- REMOVE (E) DOMESTIC CHLORINATORS AND ASSOCIATED EQUIPMENT AND PROVIDE TO OWNER.
- REMOVE (E) CHLORINE INJECTOR EQUIPMENT AND PROVIDE TO OWNER.
- (E) HEATER AND ASSOCIATED CONDUIT TO REMAIN AND BE PROTECTED.
- REMOVE (E) INDUSTRIAL CHLORINE INJECTOR EQUIPMENT AND PROVIDE TO OWNER. DISPOSE OF WHITE-COATED PIPE.
- REMOVE AND DISPOSE OF (E) FAN AND ASSOCIATED CONDUIT AND WIRE. THERE IS AN ADDITIONAL SIMILAR FAN IN THE NORTHEAST CORNER OF THE CONTROL ROOM, NOT PICTURED, THAT IS ALSO TO BE REMOVED WITH ASSOCIATED CONDUIT AND WIRE.
- REMOVE (E) CHLORINE LEAK DETECTORS AND PROVIDE TO OWNER.
- CONTACTORS FOR VENT FAN AND EMERGENCY VENT FAN AND ASSOCIATED CONDUIT AND WIRE TO BE REMOVED.

ISSUE FOR BID

0 ISSUE FOR BID		NS	NS	9/30/2024
No.	Issue	Checked	Approved	Date
Author	N. BLACK	Drafting Check	N. STEVENS	Project Manager
Designer	N. BLACK	Design Check	N. STEVENS	Project Director
			K. TOBIN	



Bar is one inch on original size sheet
 0 ————— 1"



GHD Inc.
 718 Third Street
 Eureka California 95501 USA
 T 1 707 443 8326 F 1 707 444 8330

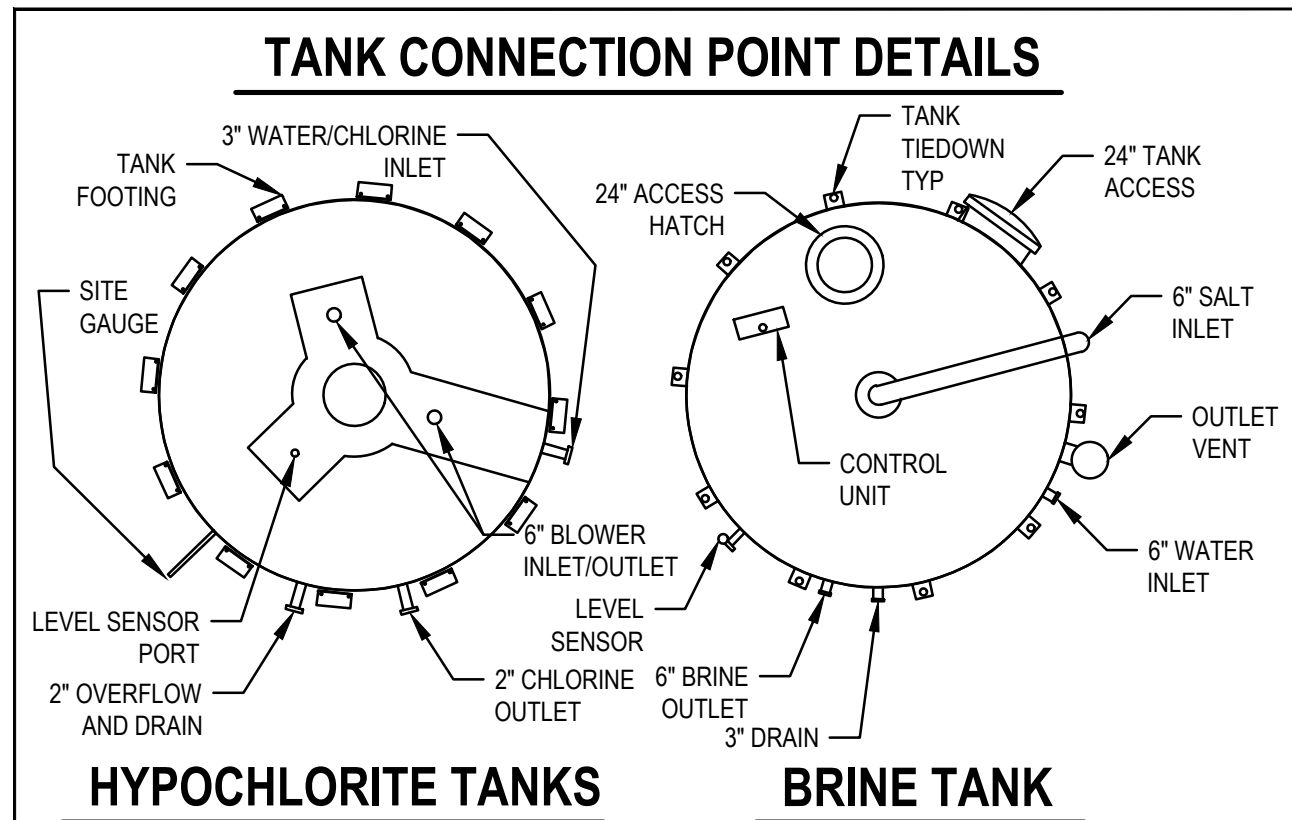


Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**
 Project **OSHG INSTALLATION AND INTEGRATION**

Title **ELECTRICAL & CONTROL ROOMS EXISTING CONDITIONS AND DEMOLITION**

Project No. **12616149** Date **10/1/2024** Scale **AS SHOWN**

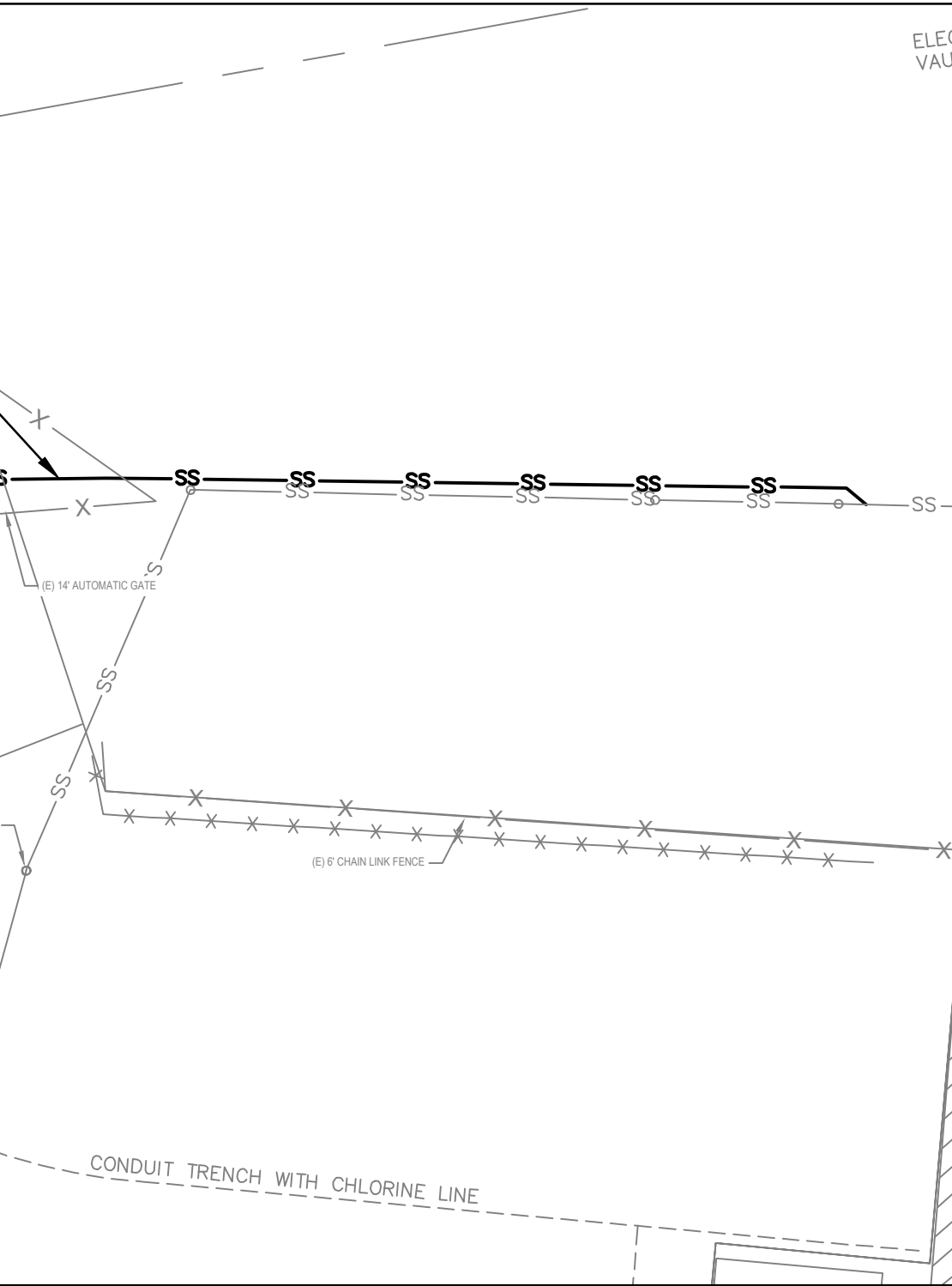
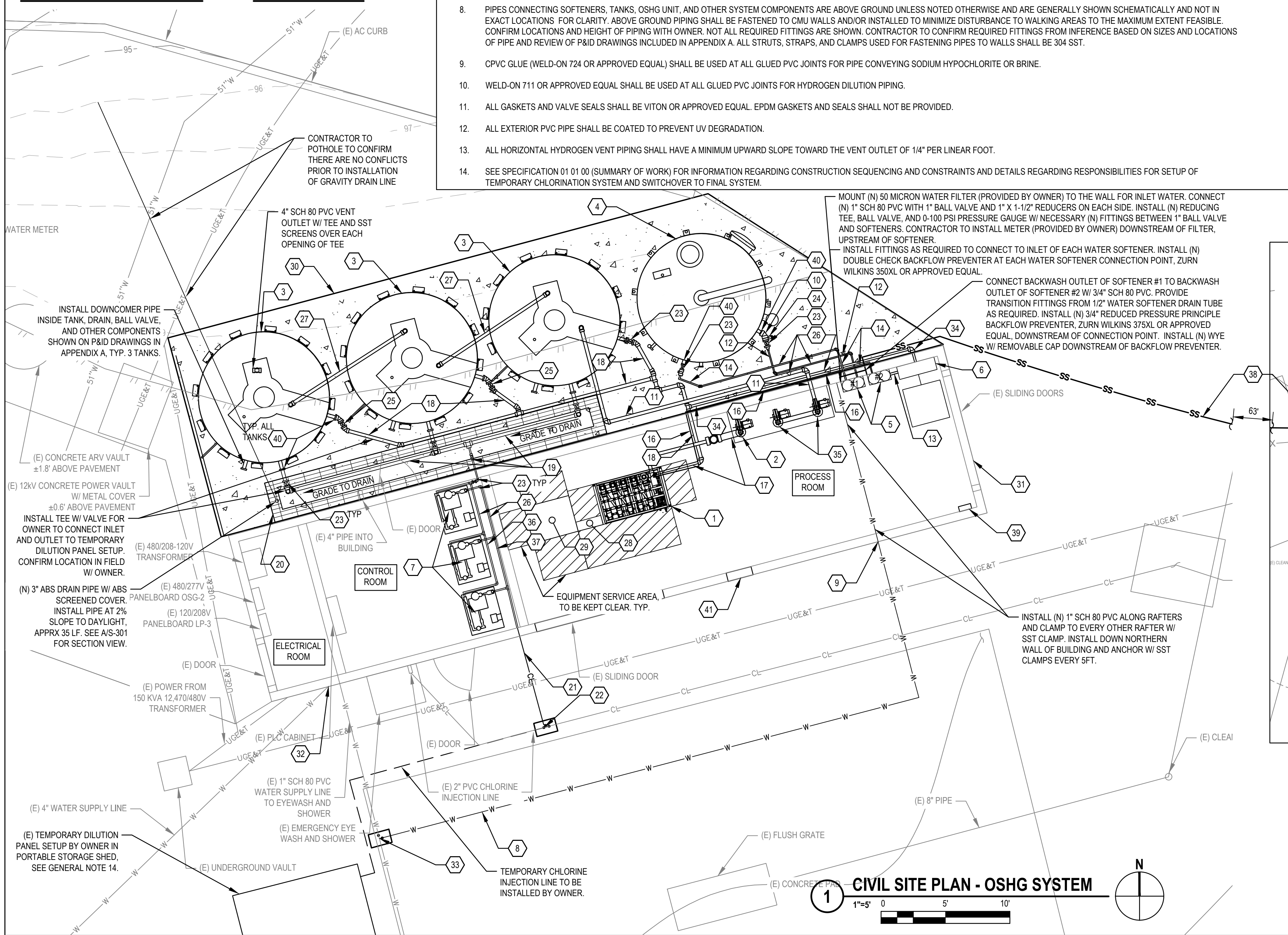
Sheet No. **CD102** Sheet **4 of 17**



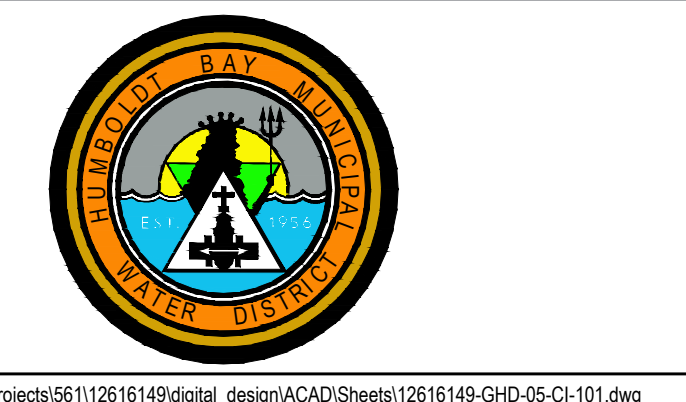
- ### SHEET GENERAL NOTES
- ALL NEW EQUIPMENT THAT IS NOTED AS BEING PROVIDED BY THE OWNER WILL BE AVAILABLE AT THE DISTRICT'S ESSEX FACILITY. CONTRACTOR IS RESPONSIBLE FOR UNPACKAGING, PLACING, INSTALLING, AND ANCHORING (IF NECESSARY, SEE STRUCTURAL SHEETS) ALL SAID EQUIPMENT. ADDITIONALLY, CONTRACTOR SHALL PROVIDE ALL PLUMBING, ELECTRICAL, CONTROLS, AND OTHER CONNECTIONS AS SHOWN ON THESE DRAWINGS FOR SAID EQUIPMENT THAT ARE REQUIRED FOR A FULLY FUNCTIONING SYSTEM.
 - DRAWINGS AND INFORMATION RELATED TO THE OSHG ELECTROLYTIC CELL SKID, HYDROGEN DILUTION BLOWERS, CONTROL PHILOSOPHY, OSHG CONTROL PANEL, OSHG TRANSFORMER RECTIFIER, AND HYPOCHLORITE DILUTION PANEL ARE INCLUDED IN APPENDIX A TO THE SPECIFICATIONS. A SET OF PIPING AND INSTRUMENTATION DIAGRAM (P&ID) DRAWINGS DEVELOPED BY THE OSHG EQUIPMENT MANUFACTURER (PSI) IS ALSO INCLUDED IN APPENDIX A AND SHALL BE INCORPORATED INTO THE PROJECT BID DOCUMENTS BY REFERENCE. THE SYSTEM SHALL BE INSTALLED AND CONNECTED ACCORDING TO THE P&ID DRAWINGS. CONTRACTOR SHALL VERIFY ALL FITTING SIZES. IN INSTANCES WHERE THE GHD DRAWINGS CONFLICT WITH THE PSI P&ID DRAWINGS, CONTRACTOR SHALL CLARIFY WITH OWNER PRIOR TO INSTALLATION.
 - DRAWINGS OF THE SODIUM HYPOCHLORITE BATCH TANKS ARE INCLUDED IN APPENDIX B TO THE SPECIFICATIONS.
 - DRAWINGS OF THE BRINE TANK ARE INCLUDED IN APPENDIX C TO THE SPECIFICATIONS.
 - ALL PIPING TO BE SCH 80 PVC UNLESS OTHERWISE NOTED.
 - LOCATIONS OF EXISTING UTILITIES AND STRUCTURES ARE FROM THE BEST INFORMATION AVAILABLE. EXACT LOCATION AND COMPLETENESS ARE NOT GUARANTEED. CONTRACTOR TO POTHOLE FOR EXACT LOCATIONS. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICES ALERT A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION. NOTE THAT THIS DRAWING DOES NOT SHOW ALL UTILITIES PRESENT OR PROPOSED. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
 - EXISTING UTILITIES AND STRUCTURES LOCATED WITHIN THE PROJECT LIMITS ARE TO REMAIN AND BE PROTECTED.
 - PIPES CONNECTING SOFTENERS, TANKS, OSHG UNIT, AND OTHER SYSTEM COMPONENTS ARE ABOVE GROUND UNLESS NOTED OTHERWISE AND ARE GENERALLY SHOWN SCHEMATICALLY AND NOT IN EXACT LOCATIONS. FOR CLARITY, ABOVE GROUND PIPING SHALL BE FASTENED TO CMU WALLS AND/OR INSTALLED TO MINIMIZE DISTURBANCE TO WALKING AREAS TO THE MAXIMUM EXTENT FEASIBLE. CONFIRM LOCATIONS AND HEIGHT OF PIPING WITH OWNER, NOT ALL REQUIRED FITTINGS ARE SHOWN. CONTRACTOR TO CONFIRM REQUIRED FITTINGS FROM INFERENCE BASED ON SIZES AND LOCATIONS OF PIPE AND REVIEW OF P&ID DRAWINGS INCLUDED IN APPENDIX A. ALL STRUTS, STRAPS, AND CLAMPS USED FOR FASTENING PIPES TO WALLS SHALL BE 304 SST.
 - CPVC GLUE (WELD-ON 724 OR APPROVED EQUAL) SHALL BE USED AT ALL GLUED PVC JOINTS FOR PIPE CONVEYING SODIUM HYPOCHLORITE OR BRINE.
 - WELD-ON 711 OR APPROVED EQUAL SHALL BE USED AT ALL GLUED PVC JOINTS FOR HYDROGEN DILUTION PIPING.
 - ALL GASKETS AND VALVE SEALS SHALL BE VITON OR APPROVED EQUAL. EPDM GASKETS AND SEALS SHALL NOT BE PROVIDED.
 - ALL EXTERIOR PVC PIPE SHALL BE COATED TO PREVENT UV DEGRADATION.
 - ALL HORIZONTAL HYDROGEN VENT PIPING SHALL HAVE A MINIMUM UPWARD SLOPE TOWARD THE VENT OUTLET OF 1/4" PER LINEAR FOOT.
 - SEE SPECIFICATION 01 01 00 (SUMMARY OF WORK) FOR INFORMATION REGARDING CONSTRUCTION SEQUENCING AND CONSTRAINTS AND DETAILS REGARDING RESPONSIBILITIES FOR SETUP OF TEMPORARY CHLORINATION SYSTEM AND SWITCHOVER TO FINAL SYSTEM.

- ### SHEET KEYNOTES
- (N) OSHG ELECTROLYTIC CELL SKID TO BE PROVIDED BY OWNER AND INSTALLED BY THE CONTRACTOR. SEE SHEET GENERAL NOTES 1 AND 2.
 - (N) HYDROGEN DILUTION BLOWERS, TYP. OF 3, TO BE PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR. SEE SHEET GENERAL NOTES 1 AND 2. SEE NOTES ON SHEET 3 OF 7 OF P&ID DRAWINGS IN APPENDIX A.
 - INSTALL AND ANCHOR (N) 3650 GALLON HDXPE HYPOCHLORITE STORAGE TANK, TO BE PROVIDED BY OWNER. SEE STRUCTURAL SHEETS FOR ANCHORING REQUIREMENTS.
 - (N) BRINE TANK TO BE PROVIDED BY OWNER AND INSTALLED, CONNECTED, AND ANCHORED BY CONTRACTOR.
 - (N) WATER SOFTENERS, TYP. OF 2, TO BE PROVIDED BY OWNER AND INSTALLED AND CONNECTED BY CONTRACTOR.
 - (N) 50 GPM DILUTION PANEL TO BE PROVIDED BY OWNER AND INSTALLED AND CONNECTED BY CONTRACTOR.
 - (N) SKID-MOUNTED HYPOCHLORITE METERING PUMPS, TO BE PROVIDED BY OWNER. SEE SHEET GENERAL NOTE 1.
 - (N) 1" SCH 80 PVC WATER LINE UNDERGROUND.
 - INSTALL VERTICAL 90° BEND, TRANSITION (N) 1" SCH 80 PVC TO (N) 1" SST ABOVE GROUND. RUN PIPE UP WALL WITH SS CLAMPS ANCHORING PIPE TO WALL EVERY 5 FT, AND PENETRATE THROUGH WALL AT LEVEL OF RAFTERS. TRANSITION BACK TO SCH 80 PVC AT BUILDING INTERIOR.
 - (N) REDUCING TEE AND BALL VALVE TO (N) 0-100 PSI PRESSURE GAUGE.
 - (N) 4" SCH 80 PVC FROM HYDROGEN DILUTION BLOWERS TO HYPOCHLORITE STORAGE TANK. SEE GENERAL NOTE 13.
 - (N) 1" SCH 80 PVC FROM (N) WATER SOFTENER #1 TO (N) BRINE TANK. SEE SHEET GENERAL NOTE 8. INSTALL A SAMPLE PORT AT WATER SOFTENER OUTLET.
 - (N) SCH 80 PVC FROM (N) WATER SOFTENER #2 TO DILUTION PANEL AND OSHG UNIT. SEE P&ID DRAWINGS IN APPENDIX A FOR SIZING, PRESSURE REGULATING VALVE, PRESSURE GAUGE, WATER FILTER, AND DRAIN INSTALLATION. THESE ITEMS NOT SHOWN ON THIS DRAWING FOR CLARITY. INSTALL A SAMPLE PORT AT WATER SOFTENER OUTLET.

- ### SHEET KEYNOTES
- (N) 1 1/2" SCH 80 PVC OUTLET LINE FROM (N) BRINE TANK TO WATER SOFTENER BACKWASH. INSTALL 50 MICRON BRINE FILTER (PROVIDED BY OWNER AND LOCATION TO BE CONFIRMED BY OWNER) ON 1 1/2" LINE UPSTREAM OF CONNECTION TO 1/2" TUBE TO OSHG. CONNECT 1 1/2" LINE TO EACH WATER SOFTENER. SEE SHEET GENERAL NOTE 8.
 - NOT USED.
 - (N) 2" OD PE TUBE FROM (N) BRINE TANK TO (N) OSHG ELECTROLYTIC CELL SKID. TUBING SHALL SLOPE DOWNWARD CONTINUOUSLY FROM BRINE TANK TO BRINE METERING PUMP.
 - (N) 6" SCH 80 PVC VENT PIPE FROM HYDROGEN DILUTION BLOWER TO VENT THROUGH PROCESS ROOM ROOF PER DETAIL 3/C-501. INSTALL CONDENSATE DRAIN AND CONNECT TO HYDROGEN VENT PIPING FROM OSHG UNIT W/ 4" HEADER PER P&ID DRAWINGS IN APPENDIX A. HEADER SHALL BE MINIMUM 60" HIGHER THAN INLET TO HYPOCHLORITE TANK. VERTICAL PIPE FROM EACH UNIT TO HEADER SHALL BE CLEAR FOR VISIBILITY. SEE GENERAL NOTE 13.
 - (N) 3" SCH 80 PVC FROM (N) ELECTROLYTIC CELL SKID TO (N) HYPOCHLORITE STORAGE TANK. PIPE SHALL HAVE A CONSISTENT SLOPE, EITHER POSITIVE OR NEGATIVE, WITH NO HIGH POINTS.
 - (N) 1 1/2" SCH 80 PVC HYPOCHLORITE STORAGE TANKS INTERCONNECTION AND DISCHARGE TO HYPOCHLORITE METERING PUMP SKIDS.
 - INSTALL (N) GRATING FLUSH WITH TOP OF (N) CONCRETE SLAB TO INSTALL (N) HYPOCHLORITE TANK INTERCONNECTION AND OUTLET PIPING UNDER (N) GRATE TO PASS UNDER (E) DOOR. MCNICHOLS MS-S-100 FIBERGLASS GRATING OR APPROVED EQUAL, APPROXIMATELY 3'-3" x 26'-8" (CONTRACTOR TO MEASURE TO CONFIRM).
 - (N) 1" SCH 80 PVC FROM (N) METERING PUMP SKIDS TO CHLORINE INJECTION POINT.
 - CONNECT (N) CHLORINE INJECTION LINE TO (E) CHLORINE INJECTION LINE WITH WYE AND THREE BALL VALVES. ABANDON (E) CHLORINE LINE TO WEST, CUT AND CAP UNDERGROUND. OWNER WILL CONNECT TEMPORARY CHLORINE INJECTION LINE. INSTALL (N) TRAFFIC-RATED ENCLOSURE, CHRISTY B2436 OR APPROVED EQUAL W/ EXTENSIONS AS REQUIRED.
 - (N) BALL VALVE.
 - (N) PRESSURE REGULATING VALVE.
 - (N) BALL VALVE W/CAP.
 - STACKED PVC MOUNTED TO CMU WALL (CONFIRM WITH OWNER WHETHER MOUNTING TO INSIDE OR OUTSIDE OF CMU). SEE SHEET C-201. PIPES SHOWN OFFSET FOR CLARITY.
 - 4" SCH 80 PVC FROM HYPOCHLORITE TANK OUTLET TO NEXT HYPOCHLORITE TANK INLET. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY CRADLE OR STAND TO SUPPORT (N) PIPE, TYP. FOR ALL.
 - (N) PLC CONTROL PANEL, TO BE PROVIDED BY OWNER. SEE ELECTRICAL SHEETS FOR MORE INFORMATION.
 - (N) 48 KW TRANSFORMER - RECTIFIER, SEE ELECTRICAL SHEETS FOR MORE INFORMATION.
 - (N) CONCRETE SLAB, SEE STRUCTURAL SHEETS.
 - DEMOLISH AND REMOVE (E) WOODEN SLIDING DOOR AND REPLACE WITH (N) 8' WIDE BY 10' HIGH ROLL-UP DOOR (FULL 24 GAUGE). CONTRACTOR TO SUBMIT FRAMING DESIGN FOR DOOR TO OWNER FOR APPROVAL.
 - INSTALL (N) ISOLATION VALVE, (N) HOSE BIBS, AND (N) WHARF HYDRANT ON (E) RISER PIPE PER DETAIL 3/C-501. INSTALL A PLACARD THAT READS "NON-POTABLE WATER" ON THE EXTERIOR CMU WALL IMMEDIATELY BEHIND THE WHARF HYDRANT ASSEMBLY. SEE KEYNOTE 12 ON 2/C/D101 FOR LOCATION.
 - CONNECT (N) 1" SCH 80 PVC TO (E) 1" SCH 80 PVC WITH CROSS. INSTALL (N) TRAFFIC-RATED ENCLOSURE, CHRISTY B2436 OR APPROVED EQUAL W/ EXTENSIONS AS REQUIRED. (N) 1" SCH 80 BALL VALVE ON (E) PIPE TO THE NORTH, AND (N) 1" SCH 80 BALL VALVE ON (N) PIPE TO THE EAST. INSTALL CLOSED (N) 1" SCH 80 BALL VALVES ON WEST AND SOUTH OF CROSS FOR FUTURE CONNECTIONS.
 - (N) 2" SCH 80 PVC FROM (N) DILUTION PANEL TO (N) HYPOCHLORITE TANK. INSTALL (N) 2" CHECK VALVE AT DILUTION PANEL CONNECTION.
 - (N) 4" BUTTERFLY VALVE AT DISCHARGE OF EACH BLOWER. CONNECT EACH BLOWER TO COMMON 4" SCH 80 PVC HEADER. INSTALL DRAIN BALL VALVE TO DRAIN PER P&ID DRAWINGS IN APPENDIX A. COORDINATE LOCATION WITH OWNER.
 - (N) 1 1/2" SCH 80 PVC INLET HEADER TO (N) METERING PUMP SKIDS FROM (N) HYPOCHLORITE STORAGE TANKS. CONTRACTOR TO CONNECT SKID INLET FOR EACH METERING PUMP TO INLET HEADER.
 - (N) 1" SCH 80 PVC OUTLET HEADER FROM (N) METERING PUMP SKIDS TO (N) CHLORINE INJECTION POINT. CONTRACTOR TO CONNECT SKID OUTLET FOR EACH METERING PUMP TO OUTLET HEADER.
 - (N) 3/4" GRAVITY SCH 80 PVC UNDERGROUND FROM (N) WATER SOFTENERS TO (E) SEWER, APPROXIMATELY 160 LF. CONTRACTOR TO FIELD VERIFY EXACT CONNECTION POINT WITH OWNER. MAINTAIN CONSISTENT NEGATIVE SLOPE. CONNECT TO (E) SEWER WITH WYE AND PROVIDE TRANSITION FITTINGS AS REQUIRED.
 - HYDROGEN DETECTOR, SUPPLIED BY OWNER, TO BE INSTALLED BY CONTRACTOR WITHIN ONE FOOT OF CEILING AND CONNECTED TO MICROCOLOR PLC.
 - INSTALL FLEXIBLE CONNECTORS AT ALL TANK INLETS AND OUTLETS TO ALLOW FOR TANK EXPANSION / CONTRACTION WHEN FILLING / DRAINING AND FOR FLEXIBILITY DURING SEISMIC EVENTS.
 - INSTALL (N) 24" X 24" LOUVER WITHIN 1 FOOT OF CEILING PER DETAIL 4 ON S-501. RUSKIN ELF375DXH OR APPROVED EQUAL. VERIFY LOCATION WITH OWNER.



0 ISSUE FOR BID		NS	NS	9/30/2024
No.	Issue	Checked	Approved	Date
Author	N. BLACK	Drafting Check	N. STEVENS	Project Manager
Designer	N. BLACK	Design Check	N. STEVENS	Project Director
			K. TOBIN	



Bar is one inch on original size sheet
0 1"



GHD
GHD Inc.
718 Third Street
Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330

Conditions of Use
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.



HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: **OSHG INSTALLATION AND INTEGRATION**

Project No. 12616149 Date 10/1/2024 Scale AS SHOWN

Title: **CIVIL SITE IMPROVEMENT PLAN**

Sheet No. C-101 Sheet 5 of 17

ISSUE FOR BID

SHEET GENERAL NOTES

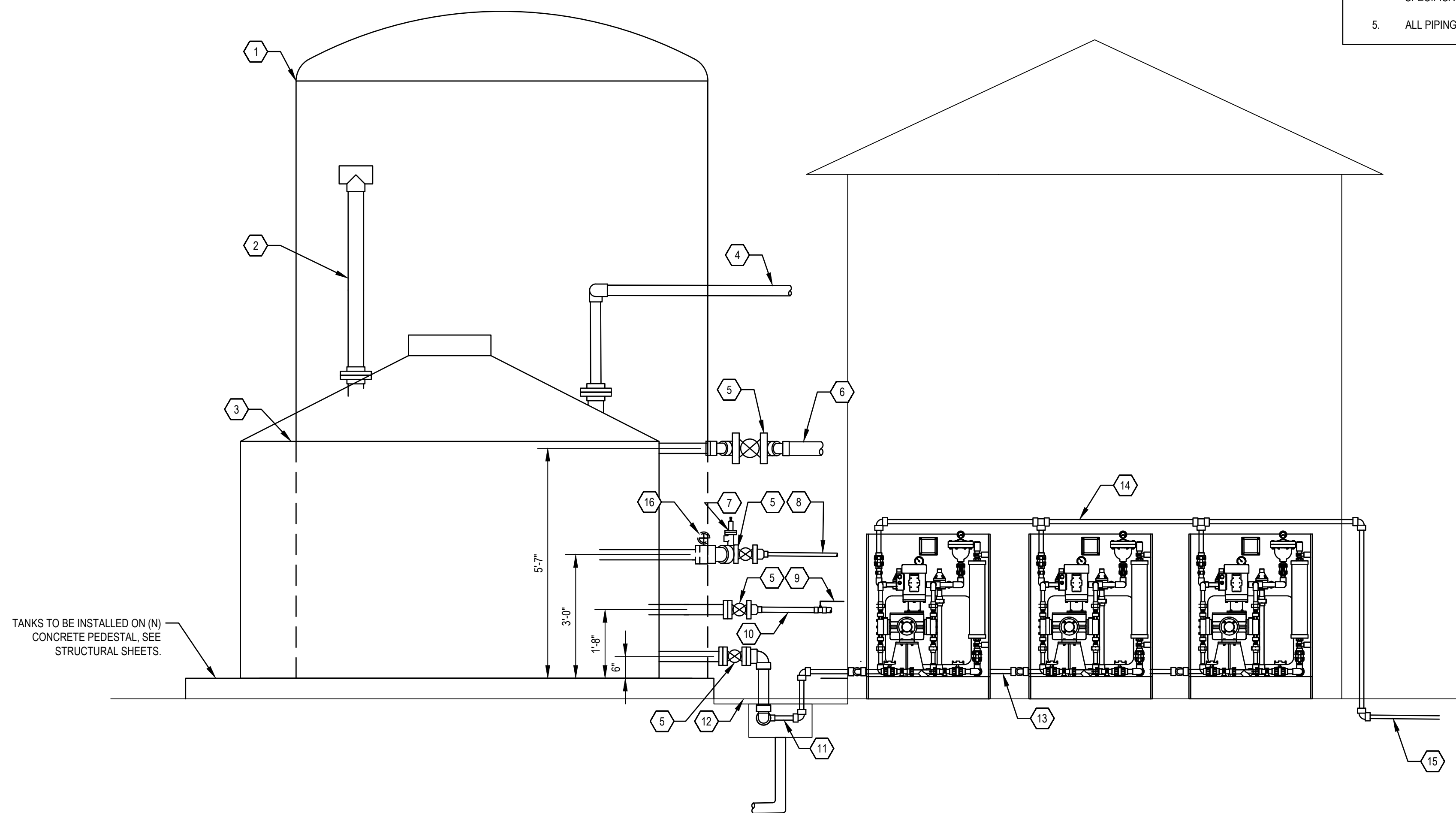
- ALL NEW EQUIPMENT THAT IS NOTED AS BEING PROVIDED BY THE OWNER WILL BE AVAILABLE AT THE DISTRICT'S ESSEX FACILITY. CONTRACTOR IS RESPONSIBLE FOR UNPACKAGING, PLACING, INSTALLING, AND ANCHORING (IF NECESSARY, SEE STRUCTURAL SHEETS) ALL SAID EQUIPMENT. ADDITIONALLY, CONTRACTOR SHALL PROVIDE ALL PLUMBING, ELECTRICAL, CONTROLS, AND OTHER CONNECTIONS AS SHOWN ON THESE DRAWINGS FOR SAID EQUIPMENT THAT ARE REQUIRED FOR A FULLY FUNCTIONING SYSTEM.
- DRAWINGS AND INFORMATION RELATED TO THE OSHG ELECTROLYTIC CELL SKID, HYDROGEN DILUTION BLOWERS, CONTROL PHILOSOPHY, OSHG CONTROL PANEL, OSHG TRANSFORMER RECTIFIER, AND HYPOCHLORITE DILUTION PANEL ARE INCLUDED IN APPENDIX A TO THE SPECIFICATIONS. A SET OF PIPING AND INSTRUMENTATION DIAGRAM (P&ID) DRAWINGS DEVELOPED BY THE OSHG EQUIPMENT MANUFACTURER (PSI) IS ALSO INCLUDED IN APPENDIX A AND SHALL BE INCORPORATED INTO THE PROJECT BID DOCUMENTS BY REFERENCE. THE SYSTEM SHALL BE INSTALLED AND CONNECTED ACCORDING TO THE P&ID DRAWINGS. CONTRACTOR SHALL VERIFY ALL FITTING SIZES. IN INSTANCES WHERE THE GHD DRAWINGS CONFLICT WITH THE PSI P&ID DRAWINGS, CONTRACTOR SHALL CLARIFY WITH OWNER PRIOR TO INSTALLATION.
- DRAWINGS OF THE SODIUM HYPOCHLORITE BATCH TANKS ARE INCLUDED IN APPENDIX B TO THE SPECIFICATIONS.
- DRAWINGS OF THE BRINE TANK ARE INCLUDED IN APPENDIX C TO THE SPECIFICATIONS.
- ALL PIPING TO BE SCH 80 PVC UNLESS OTHERWISE NOTED.

SHEET GENERAL NOTES

- LOCATIONS OF EXISTING UTILITIES AND STRUCTURES ARE FROM THE BEST INFORMATION AVAILABLE. EXACT LOCATION AND COMPLETENESS ARE NOT GUARANTEED. CONTRACTOR TO POT HOLE FOR EXACT LOCATIONS. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICES ALERT A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION. NOTE THAT THIS DRAWING DOES NOT SHOW ALL UTILITIES PRESENT OR PROPOSED, SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
- EXISTING UTILITIES AND STRUCTURES LOCATED WITHIN THE PROJECT LIMITS ARE TO REMAIN AND BE PROTECTED.
- PIPES CONNECTING SOFTENERS, TANKS, OSHG UNIT, AND OTHER SYSTEM COMPONENTS ARE ABOVE GROUND UNLESS NOTED OTHERWISE AND ARE GENERALLY SHOWN SCHEMATICALLY AND NOT IN EXACT LOCATIONS. FOR CLARITY, ABOVE GROUND PIPING SHALL BE FASTENED TO CMU WALLS AND/OR INSTALLED TO MINIMIZE DISTURBANCE TO WALKING AREAS TO THE MAXIMUM EXTENT FEASIBLE. CONFIRM LOCATIONS AND HEIGHT OF PIPING WITH OWNER. NOT ALL REQUIRED FITTINGS ARE SHOWN. CONTRACTOR TO CONFIRM REQUIRED FITTINGS FROM INFERENCE BASED ON SIZES AND LOCATIONS OF PIPE AND REVIEW OF P&ID DRAWINGS INCLUDED IN APPENDIX A. ALL STRUTS, STRAPS, AND CLAMPS USED FOR FASTENING PIPES TO WALLS SHALL BE 304 SST.
- CPVC GLUE (WELD-ON 711 PRIMER WITH WELD-ON 729 GLUE, OR APPROVED EQUAL) SHALL BE USED AT ALL GLUED PVC JOINTS.
- ALL VALVE SEALS SHALL BE VITON OR APPROVED EQUAL. EPDM SEALS SHALL NOT BE PROVIDED.
- ALL GASKETS AND VALVE SEALS SHALL BE VITON OR APPROVED EQUAL. EPDM GASKETS AND SEALS SHALL NOT BE PROVIDED.
- ALL EXTERIOR PVC PIPE SHALL BE COATED TO PREVENT UV DEGRADATION.
- ALL HORIZONTAL HYDROGEN VENT PIPING SHALL HAVE A MINIMUM UPWARD SLOPE TOWARD THE VENT OUTLET OF 1/4" PER LINEAR FOOT.

SHEET KEYNOTES

- (N) BRINE TANK TO BE PROVIDED BY OWNER AND INSTALLED, CONNECTED, AND ANCHORED BY CONTRACTOR.
- (N) 4" SCH 80 PVC VENT OUTLET FROM HYPOCHLORITE STORAGE TANK W/ TEE AND SST SCREENS OVER EACH OPENING OF TEE.
- (N) 3650 GALLON HDX LPE HYPOCHLORITE STORAGE TANK, TO BE PROVIDED BY OWNER AND INSTALLED, CONNECTED, AND ANCHORED BY CONTRACTOR.
- (N) 4" SCH 80 PVC FROM HYDROGEN DILUTION BLOWERS TO HYPOCHLORITE STORAGE TANK. INSTALL VERTICAL SUPPORTS AS REQUIRED.
- (N) BALL VALVE.
- (N) 3" SCH 80 PVC FROM (N) ELECTROLYTIC CELL SKID TO (N) HYPOCHLORITE STORAGE TANK. INSTALL PIPE SUPPORTS AS REQUIRED.
- (N) PRESSURE REGULATING VALVE.
- (N) 1" SCH 80 PVC FROM (N) WATER SOFTENER #1 TO (N) BRINE TANK. SEE SHEET GENERAL NOTE 8. INSTALL VERTICAL SUPPORTS AS REQUIRED.
- (N) 1/2" OD PE TUBE FROM (N) BRINE TANK TO (N) OSHG ELECTROLYTIC CELL SKID.
- (N) 1 1/2" SCH 80 PVC OUTLET LINE FROM (N) BRINE TANK TO WATER SOFTENER BACKWASH. INSTALL 50 MICRON BRINE FILTER (PROVIDED BY OWNER AND LOCATION TO BE CONFIRMED BY OWNER) ON 1 1/2" LINE UPSTREAM OF CONNECTION TO 1/2" TUBE TO OSHG. CONNECT 1/2" LINE TO EACH WATER SOFTENER. SEE SHEET GENERAL NOTE 8.
- (N) 1 1/2" SCH 80 PVC (N) HYPOCHLORITE STORAGE TANKS INTERCONNECTION AND DISCHARGE TO (N) HYPOCHLORITE METERING PUMP SKIDS. INSTALL PIPE SUPPORTS AS REQUIRED.
- INSTALL (N) GRATING FLUSH WITH TOP OF (N) CONCRETE SLAB TO INSTALL (N) HYPOCHLORITE TANK INTERCONNECTION AND OUTLET PIPING UNDER (N) GRATE TO PASS UNDER (E) DOOR. MCNICHOLS MS-S-100 FIBERGLASS GRATING OR APPROVED EQUAL, APPROXIMATELY 3'-3" x 26'-8" (CONTRACTOR TO MEASURE TO CONFIRM).
- (N) 1 1/2" SCH 80 PVC INLET HEADER TO (N) METERING PUMP SKIDS FROM (N) HYPOCHLORITE STORAGE TANKS. CONTRACTOR TO CONNECT SKID INLET FOR EACH METERING PUMP TO INLET HEADER.
- (N) 1" SCH 80 PVC OUTLET HEADER FROM (N) METERING PUMP SKIDS TO (N) CHLORINE INJECTION POINT. CONTRACTOR TO CONNECT SKID OUTLET FOR EACH METERING PUMP TO OUTLET HEADER.
- (N) 1" SCH 80 PVC FROM (N) METERING PUMP SKIDS TO CHLORINE INJECTION POINT.
- (N) REDUCING TEE AND BALL VALVE TO (N) 0-100 PSI PRESSURE GAUGE.



1 WEST ELEVATION
NOT TO SCALE

ISSUE FOR BID

0 ISSUE FOR BID				NS	NS	9/30/2024
No.	Issue	Checked	Approved	Date		
Author	N. BLACK	Drafting Check	N. STEVENS	Project Manager	N. STEVENS	
Designer	N. BLACK	Design Check	N. STEVENS	Project Director	K. TOBIN	



Bar is one inch on original size sheet
0 ————— 1"



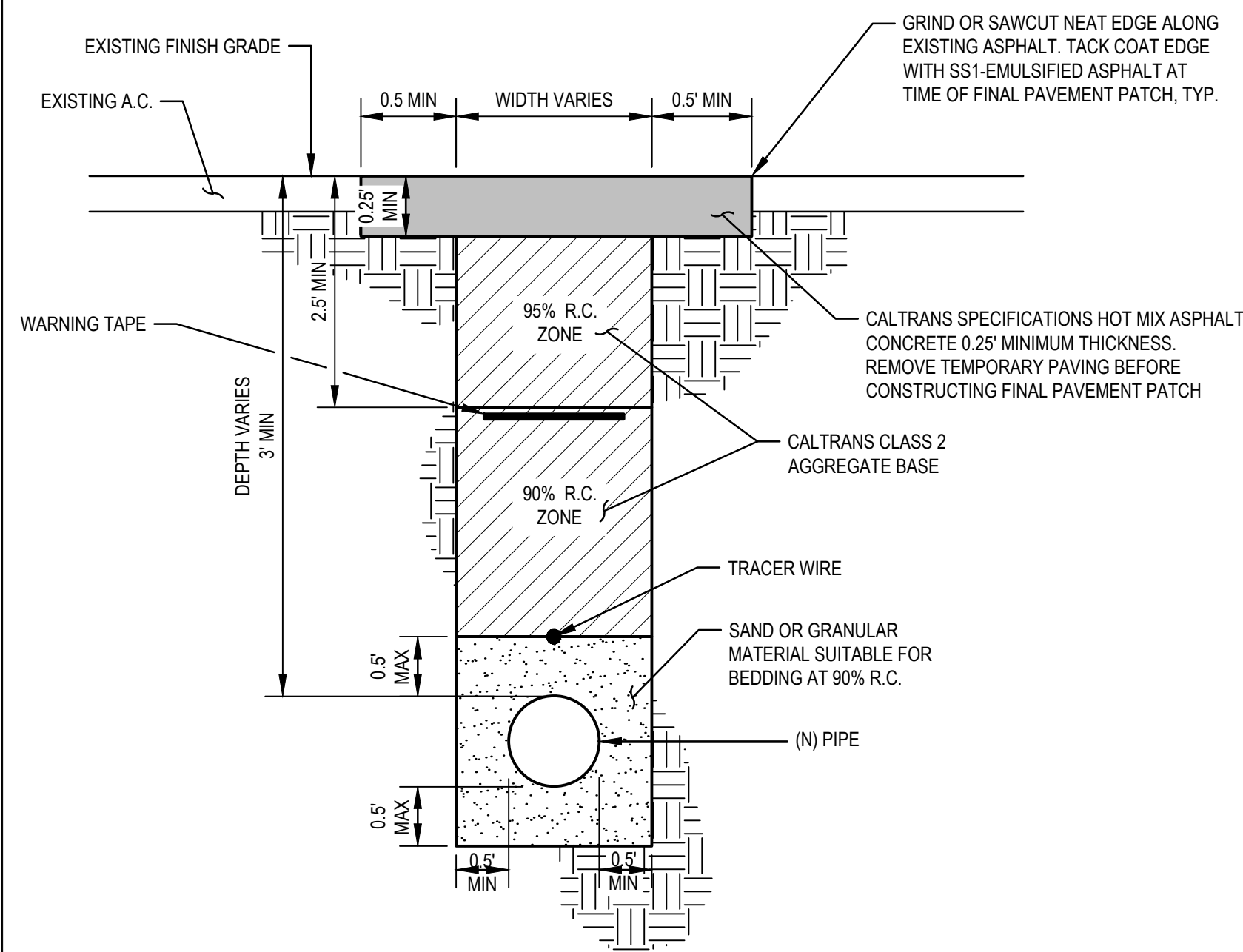
GHD Inc.
718 Third Street
Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330



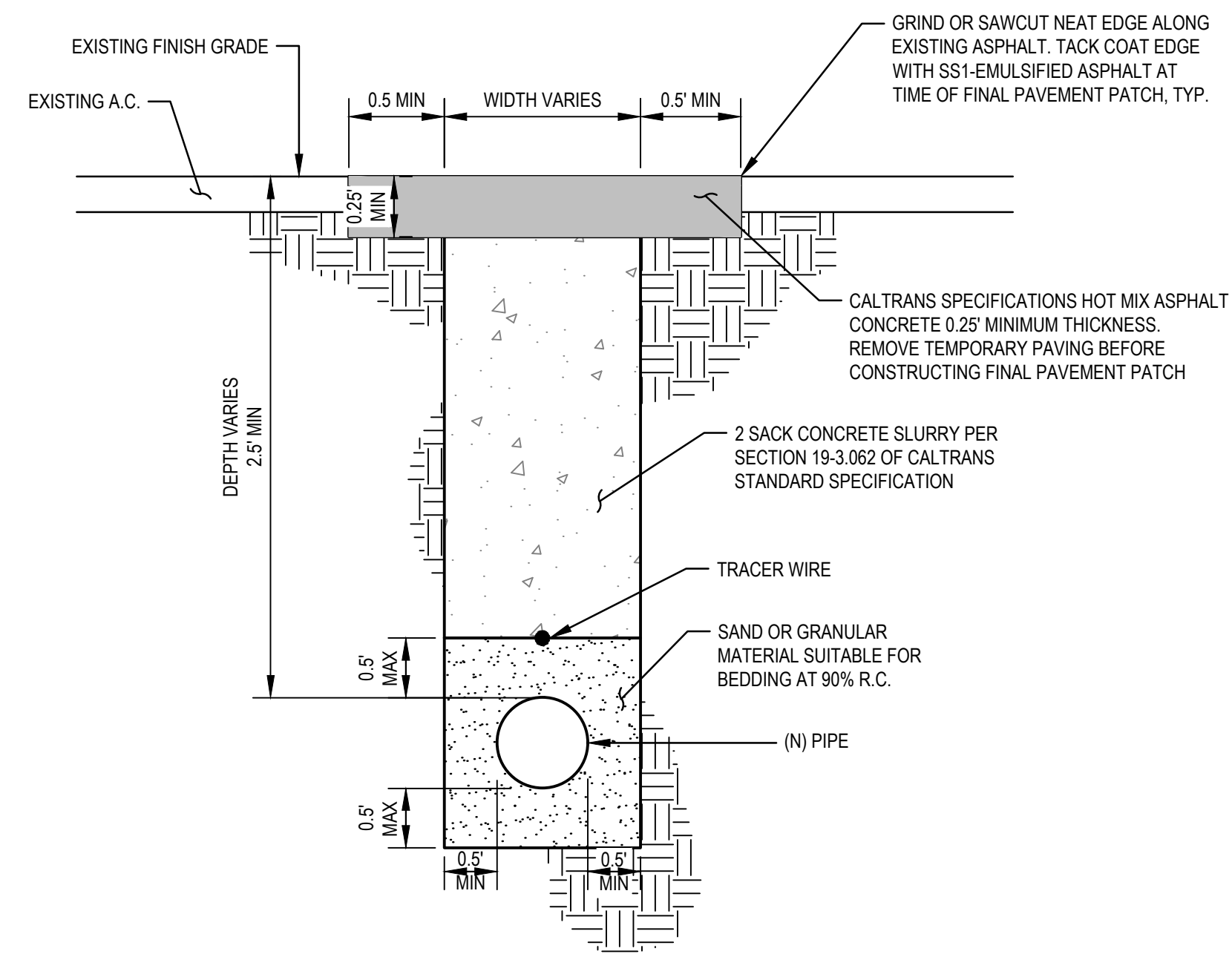
Client	HUMBOLDT BAY MUNICIPAL WATER DISTRICT		Title	CIVIL TANK AND PIPING ELEVATION
Project	OSHG INSTALLATION AND INTEGRATION		Project No.	12616149
	Date	10/1/2024	Scale	AS SHOWN

Size ANSI D

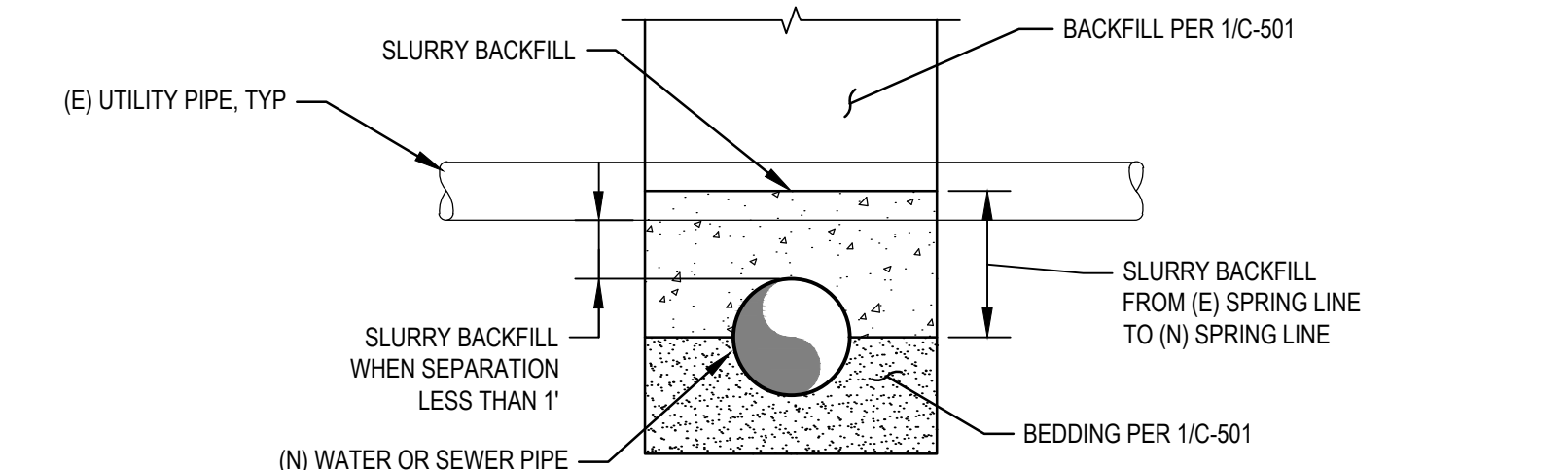
Sheet No. **C-201**
6 of 17



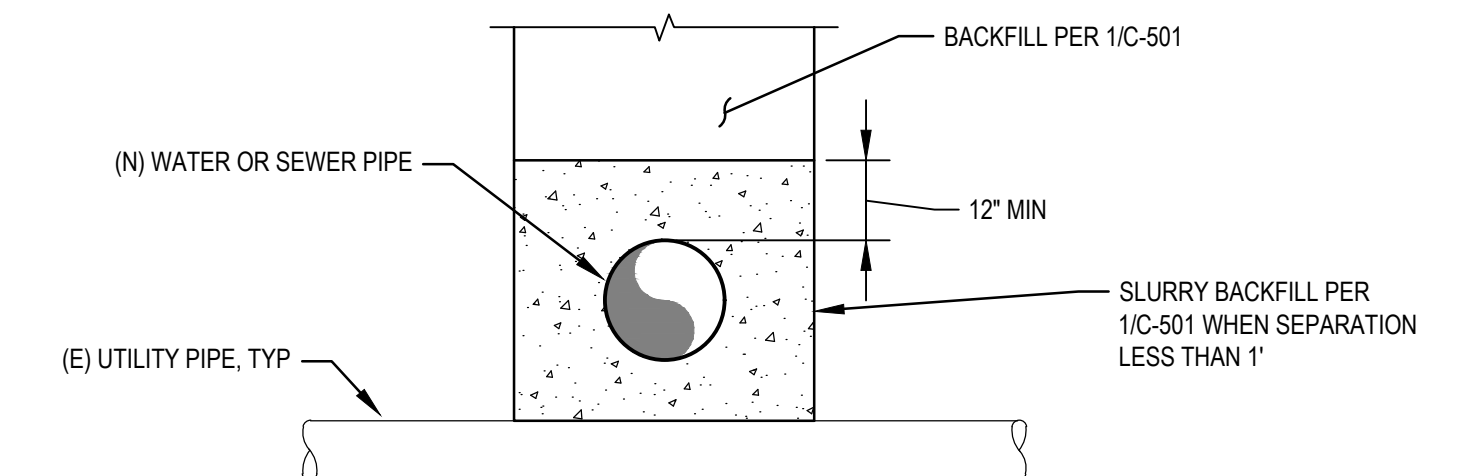
TYPE I TRENCH DETAIL - AGGREGATE BASE BACKFILL



TYPE II TRENCH DETAIL - CONCRETE SLURRY BACKFILL



NEW WATER OR SEWER UNDER EXISTING UTILITY

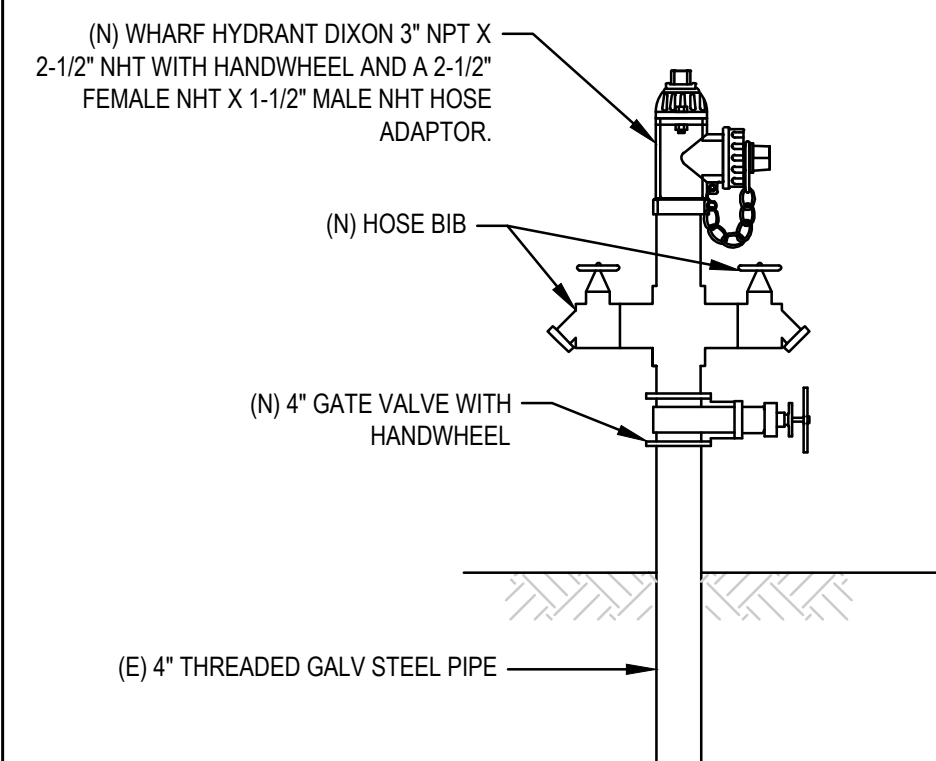


NEW WATER OR SEWER OVER EXISTING UTILITY

- NOTES:**
- CONTRACTOR TO COORDINATE WITH UTILITY OWNER PRIOR TO PERFORMING SLURRY BACKFILL.
 - SLURRY BACKFILL SHALL EXTEND 5' MIN BEYOND EACH SIDE OF (E) UTILITY PIPE CROSSING IN (N) UTILITY TRENCH.
 - UTILITY CROSSINGS SHALL CONFORM TO WATER MAIN SEPARATION CRITERIA SEPARATION CRITERIA, CALIFORNIA CODE OF REGULATIONS, TITLE 22 SECTION 64572. THIS INCLUDES THAT (N) WATER MAINS SHALL BE INSTALLED A MIN. OF 1' ABOVE (E) SEWER MAINS, AND THAT PARALLEL WATER AND SEWER MAINS SHALL BE SEPARATED BY A MIN. OF 10' HORIZONTALLY.

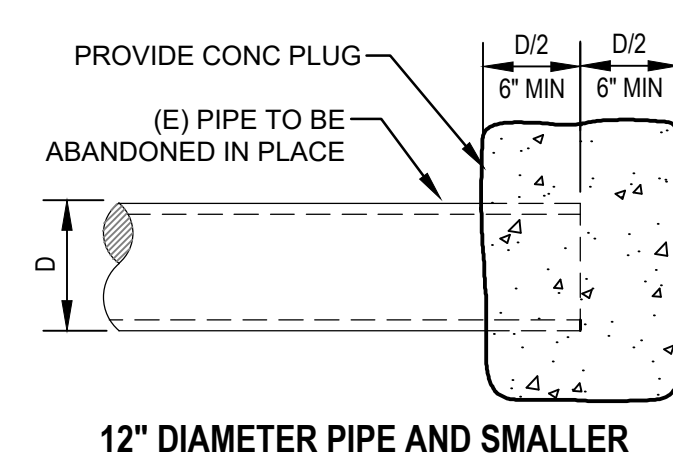
1 TYPICAL TRENCH DETAIL
SCALE: NTS

2 UTILITY CROSSING
SCALE: NTS

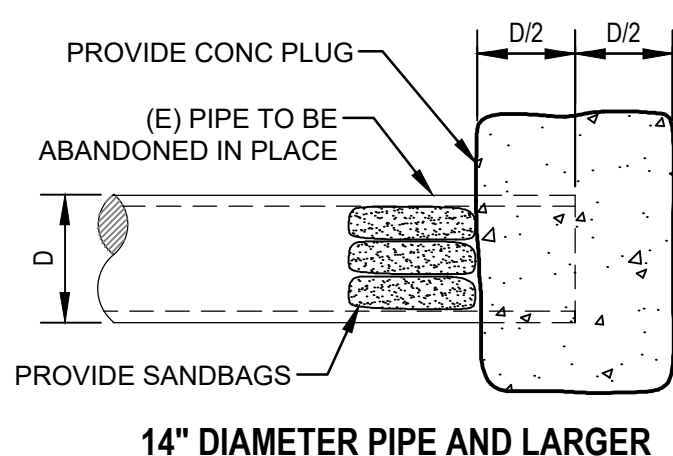


- NOTES:**
- CONTRACTOR TO LOCATE (E) MAIN AND PROVIDE FITTINGS AS REQUIRED.

3 WHARF HYDRANT FOR CHLORINE BUILDING
SCALE: NTS



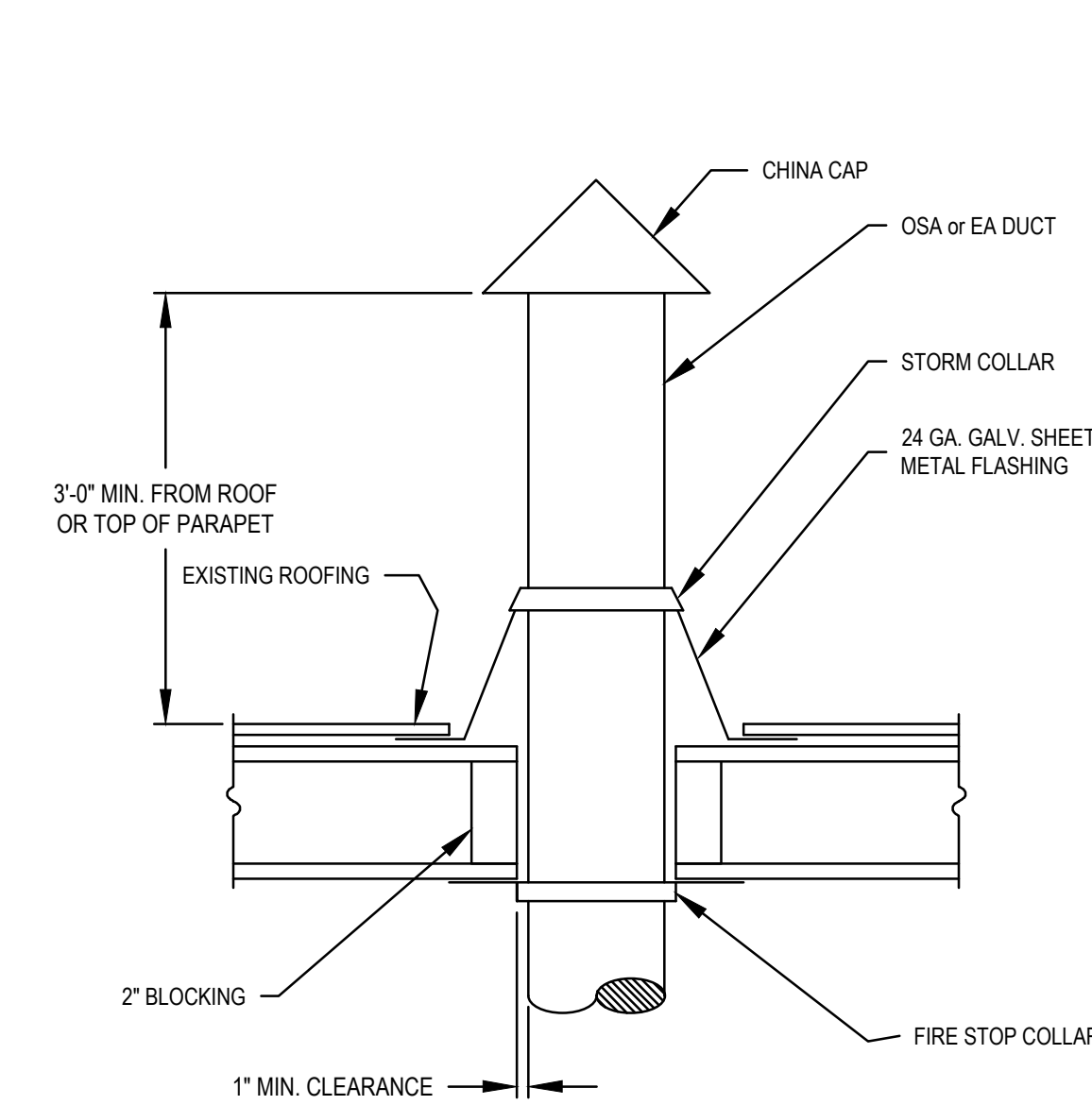
12" DIAMETER PIPE AND SMALLER



14" DIAMETER PIPE AND LARGER

- NOTES:**
- PIPE PLUGS SHALL BE INSTALLED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
 - SHALL BE INSPECTED BY THE OWNER'S REPRESENTATIVE BEFORE COVERING.

4 PLUG AND ABANDON EXISTING WATER MAIN
SCALE: NTS



5 VENT THROUGH ROOF DETAIL
SCALE: NTS

Bar is one inch on original size sheet
0 1"



Conditions of Use
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.



Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**
Project **OSHG INSTALLATION AND INTEGRATION**

Title **CIVIL DETAILS**

Project No. **12616149** Date **10/1/2024** Scale **AS SHOWN**

ISSUE FOR BID

Size **ANSI D**

Sheet No. **C-501** Sheet **7 of 17**

General Notes

- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST CALIFORNIA BUILDING CODE AND APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
- ARCHITECTURAL DRAWINGS, MECHANICAL/ELECTRICAL/PLUMBING DRAWINGS AND ALL OTHER DRAWINGS AS REQUIRED SHALL BE USED IN CONJUNCTION WITH STRUCTURAL DRAWINGS TO DEVELOP DETAILS AND DIMENSIONS FOR SHOP DRAWINGS, FABRICATION, ERECTION AND CONSTRUCTION. CONTRACTOR IS TO COORDINATE EQUIPMENT, SUPPORT CONDITIONS AND DIMENSIONS FOR SUPPORTING BEAMS, FRAMES AND OPENINGS FOR MECHANICAL EQUIPMENT AND PROVIDE THIS INFORMATION FOR REVIEW.
- THE CONTRACTOR SHALL MAINTAIN A SET OF LATEST REVIEWED SHOP DRAWINGS ON JOB SITE.
- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
- ALL CONDITIONS SHOWN OR NOTED AS EXISTING ARE BASED ON BEST INFORMATION CURRENTLY AVAILABLE AT THE TIME OF PREPARATION OF THESE DRAWINGS. NO WARRANTY IS IMPLIED AS TO THEIR ACCURACY. CONTRACTOR IS TO FIELD VERIFY ALL CONDITIONS. SHOULD CONDITIONS BECOME APPARENT WHICH DIFFER FROM THE CONDITIONS SHOWN HEREIN THEY SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE STRUCTURAL ENGINEER. THE STRUCTURAL ENGINEER WILL THEN PREPARE ADDITIONAL DRAWINGS AS MAY BE NEEDED TO ACCOMMODATE THE NEW CONDITIONS.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF EXISTING CONDITIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB. SHOULD ANY DISCREPANCIES OCCUR, NOTIFY ENGINEER FOR INSTRUCTIONS BEFORE PROCEEDING.
- IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE SHORING, BRACING AND OTHER WORKING PROVISIONS AS REQUIRED TO SAFELY COMPLETE THE STRUCTURE AND PROTECT AGAINST BODILY INJURY AND PROPERTY DAMAGE. SAFETY MEASURES SHALL MEET THE REQUIREMENTS OF ALL LOCAL, STATE AND FEDERAL GUIDELINES.
- TYPICAL DETAILS AND STRUCTURAL NOTES SHALL APPLY UNLESS OTHERWISE NOTED OR SHOWN. DETAILS OF CONSTRUCTION NOT FULLY SHOWN SHALL BE THE SAME NATURE AS SHOWN FOR SIMILAR CONDITION.
- THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE SHOWN, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY FIELD REPRESENTATIVES OF THE STRUCTURAL ENGINEER DO NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OF THE PROCEDURES FOR SUCH METHODS OF CONSTRUCTION. ANY SUPPORT SERVICES PERFORMED BY THE STRUCTURAL ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES WHICH ARE FURNISHED BY THE STRUCTURAL ENGINEER, WHETHER OF MATERIAL OR WORK, AND WHETHER PERFORMED PRIOR TO, DURING OR AFTER COMPLETION OF CONSTRUCTION, ARE PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS, BUT THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
- CONTRACTOR SHALL NOT SCALE DRAWINGS.

Design Criteria

2022 CALIFORNIA BUILDING CODE (2022 CBC)
 AMERICAN CONCRETE INSTITUTE (ACI):
 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-18) AND COMMENTARY
 AMERICAN SOCIETY OF CIVIL ENGINEERS
 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-16)

SEISMIC LOADS:

RISK CATEGORY: III
 COMPONENT IMPORTANCE FACTOR: $I_e = 1.25$
 MAPPED SPECTRAL RESPONSE ACCELERATIONS:
 $S_s = 2.674 g$ $S_1 =$ SITE SPECIFIC GROUND ANALYSIS
 SITE CLASS: D
 SPECTRAL RESPONSE COEFFICIENTS:
 $S_{DS} = 2.139 g$ $S_{D1} =$ SITE SPECIFIC GROUND ANALYSIS
 SEISMIC DESIGN CATEGORY: E

WIND LOADS

NOMINAL DESIGN WIND SPEED, V = 102 MPH
 RISK CATEGORY = III
 WIND EXPOSURE = C

Concrete Notes

- ALL WORK TO CONFORM TO THE REQUIREMENTS OF THE FOLLOWING PUBLICATIONS:
 - ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-LATEST EDITION) AND "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" (ACI 315-LATEST EDITION).
 - "SPECIFICATION FOR WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT" (LATEST EDITION) BY THE WIRE REINFORCEMENT INSTITUTE, INC.
 - ACI "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES" (ACI 350-LATEST EDITION), AND "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" (ACI 315-LATEST EDITION).
- MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS:
 CAST-IN-PLACE CONCRETE, $f_c = 4,000$ PSI
- AIR CONTENT: 6% +/- 1.5% (CONCRETE EXPOSED TO FREEZING AND CONCRETE EXPOSED TO DEICER CHEMICALS)
- CEMENT FOR CONCRETE SHALL MEET THE REQUIREMENT OS ASTM C-150. CEMENT SHALL BE "TYPE II", (USE TYPE V CEMENT IF REQUIRED BY SOILS REPORT).
- AGGREGATES FOR CONCRETE SHALL MEET THE REQUIREMENTS OF ASTM C-33. MAXIMUM AGGREGATE SIZE SHALL BE 3/4" (UNO).
- MAXIMUM SLUMP: 5" (3" AT SLOPING SURFACES).
- MAXIMUM WATER CEMENT RATION (W/C) SHALL BE 0.40
- PRIOR TO PLACING CONCRETE, MIX DESIGNS SEALED BY A QUALIFIED DESIGN PROFESSIONAL SHALL BE SUBMITTED FOR REVIEW.
- CONCRETE SHALL BE MACHINE-MIXED, READYMIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C-94.
- CONCRETE ACCESSORIES MUST BE ADEQUATE TO MAINTAIN REINFORCING ACCURATELY IN PLACE AND BE NON-CORROSIVE, NON-STAINING TYPE.
- PROVIDE WATERSTOPS IN ALL EXPANSION AND CONSTRUCTION JOINTS BELOW EXTERIOR GRADE OR BELOW WATER LEVEL.
- LOCATE CONTROL JOINTS IN CONCRETE WALLS WHERE SHOWN ON PLAN. CONCRETE WALL CONTROL JOINTS ARE TO COINCIDE WITH MASONRY WALL CONTROL JOINTS ABOVE. ALL EXTRA REINFORCING REQUIRED AT CONTROL JOINTS MUST BE SHOWN ON REINFORCING SHOP DRAWINGS.
- MAXIMUM FLOOR AREA BETWEEN CONTROL JOINTS IN SLAB-ON-GRADE SHALL NOT EXCEED 400 SQUARE FEET. THE MAXIMUM LENGTH-TO-WIDTH RATIO OF A FLOOR PANEL BOUNDED BY CONTROL JOINTS SHALL NOT EXCEED 1.5. ALL JOINTS LOCATIONS MUST BE SUBMITTED ON SHOP DRAWINGS AND RECEIVE APPROVAL OF ARCHITECT BEFORE CONSTRUCTION BEGINS. ALL EXTRA REINFORCING REQUIRED AT JOINTS MUST BE SHOWN ON REINFORCING SHOP DRAWINGS. AT SUPPORTED SLABS, THE CONTRACTOR MAY LOCATE CONSTRUCTION JOINTS DEPENDING ON QUANTITY OF CONCRETE THAT CAN BE ECONOMICALLY PLACED AND FINISHED PER POUR, (UNLESS OTHERWISE NOTED). SLABS-ON-GRADE PLACED IN CONTINUOUS STRIPS SHALL ALLOW A MINIMUM OF 48 HOURS TO ELAPSE BETWEEN PLACING OF ADJACENT STRIP.
- SAW-CUT CONTROL JOINTS IMMEDIATELY AFTER CONCRETE HAS SET SUFFICIENTLY SO THAT CUTTING DOES NOT PRODUCE SHREDDING OF THE CONCRETE, BUT BEFORE CONCRETE HAS HAD A CHANCE TO CRACK DUE TO INITIAL SHRINKAGE. THE CUTTING PERIOD WILL VARY ACCORDING TO THE RATE OF SETTING OF THE CONCRETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO CUT THESE JOINTS AT THE PROPER TIME AND USING THE PROPER PROCEDURE TO MINIMIZE SHRINKAGE CRACKING AND TO PRODUCE CLEAN, STRAIGHT JOINTS.
- BEGIN CONCRETE CURING AS SOON AS FINISHING OPERATIONS ARE COMPLETE (WITHIN TWO HOURS).
- REFER TO ELECTRICAL AND CIVIL DRAWINGS FOR ALL DEPRESSIONS, REVEALS, GROOVES, REGLETS, DOVETAILS, CURBS, TREAD INSERTS, SLAB INSERTS, PROJECTIONS, SILLS, PIPE SLEEVES, DUCT OPENINGS, CONDUIT OPENINGS, ETC. THAT ARE TO BE CAST WITH CONCRETE.

Foundation Notes






- FOUNDATION DESIGN IS BASED ON GEOTECHNICAL INVESTIGATION BY GHD INC. FOR HUMBOLDT BAY MUNICIPAL WATER DISTRICT DATED AUGUST 2019 FOR THE NEARBY 12KV SWITCHGEAR PROJECT.

VERTICAL FOUNDATION PRESSURE: 3,000 PSF
 LATERAL RESISTANCE: COEFFICIENT OF FRICTION = 0.30
 LATERAL BEARING = 300 PSF/FT
- ALL FOOTINGS TO BEAR ON NATURAL UNDISTURBED SOIL OR COMPACTED STRUCTURAL HAVING MINIMUM BEARING CAPACITY AS INDICATED.
- ALL COMPACTED STRUCTURAL FILL SHALL CONFORM ALL RECOMMENDATION CONTAINED IN THE PROJECT GEOTECHNICAL REPORT.
- ALL SOIL SURROUNDING AND BENEATH FOOTINGS SHALL BE PROTECTED FROM FROST DURING THE COURSE OF CONSTRUCTION.
- BACKFILLING SHALL PROCEED TO EQUAL HEIGHTS ON BOTH SIDES OF FOUNDATION WALLS, PIERS, GRADE BEAMS, TO PREVENT MOVEMENT DUE TO UNBALANCED EARTH PRESSURE. WHERE EARTH IS ON ONE SIDE OF WALL ONLY, BACKFILLING AND COMPACTION SHALL NOT START UNTIL FLOOR SLABS OR ADEQUATE BRACING IS PROVIDED FOR LATERAL SUPPORT AT TOP AND BOTTOM OF WALL.

Concrete Anchorage

- ANCHOR BOLTS AND ALL-THREAD RODS SHALL BE STAINLESS STEEL TYPE 316 MATERIAL UNLESS OTHERWISE NOTED.
- POST-INSTALLED CONCRETE ANCHORS SHALL BE PROVIDED WHERE SPECIFICALLY NOTED AND SHALL NOT BE CONSIDERED WHERE CAST-IN-PLACE ANCHORS ARE SPECIFIED.
- ADHESIVES USED FOR SETTING DOWELS AND ANCHORS SHALL BE IN CONFORMANCE WITH ASTM C881, TYPE IV. ACCEPTABLE MANUFACTURERS FOR ADHESIVES ARE AS FOLLOWS:
 CONCRETE:
 SIMPSON SET-XP (ICC ESR-2508)
 HILTI HIT-RE 500 V3 (ICC ESR-3814)
- ANCHORS OR DOWELS EMBEDDED IN ADHESIVES SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.
- HOLES RECEIVING ADHESIVE ANCHORS SHALL BE CLEAN AND FREE OF DUST PRIOR TO APPLYING ADHESIVE.
- HOLES DRILLED INTO REINFORCED CONCRETE OR MASONRY SHALL NOT DAMAGE OR CUT EXISTING REINFORCING STEEL. HOLES DRILLED INTO PRE-STRESSED OR POST-TENSIONED CONCRETE SHALL HAVE A CLEARANCE OF ONE INCH MINIMUM FROM TENDONS. LOCATE EXISTING REINFORCING STEEL AND/OR TENDONS USING NON-DESTRUCTIVE METHODS PRIOR TO DRILLING.
- ALL ANCHORS INSTALLED WITH ADHESIVES SHALL HAVE CONTINUOUS SPECIAL INSPECTION IN ACCORDANCE WITH CODE SECTION 1701.5.

ISSUE FOR BID

		Bar is one inch on original size sheet 		 <p>GHD Inc. 718 Third Street Eureka California 95501 USA T 1 707 443 8326 F 1 707 444 8330</p>	 <p>www.ghd.com</p>	Client HUMBOLDT BAY MUNICIPAL WATER DISTRICT Project OSHG INSTALLATION AND INTEGRATION	Title STRUCTURAL NOTES 1	Project No. 12616149 Date 10/1/2024 Scale AS SHOWN	Sheet No. S-001 Sheet 8 of 17																					
<table border="1"> <tr> <th>No.</th> <th>Issue</th> <th>Checked</th> <th>Approved</th> <th>Date</th> </tr> <tr> <td>0</td> <td>ISSUE FOR BID</td> <td>NS</td> <td>NS</td> <td>9/30/2024</td> </tr> </table>		No.	Issue	Checked	Approved	Date	0	ISSUE FOR BID	NS	NS	9/30/2024	<table border="1"> <tr> <td>Author</td> <td>N. TORTORA</td> <td>Drafting Check</td> <td>R. RAMOSO</td> <td>Project Manager</td> <td>N. STEVENS</td> </tr> <tr> <td>Designer</td> <td>N. TORTORA</td> <td>Design Check</td> <td>C. CRUZ</td> <td>Project Director</td> <td>K. TOBIN</td> </tr> </table>		Author	N. TORTORA	Drafting Check	R. RAMOSO	Project Manager	N. STEVENS	Designer	N. TORTORA	Design Check	C. CRUZ	Project Director	K. TOBIN	Conditions of Use This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.		Project No. 12616149 Date 10/1/2024 Scale AS SHOWN		Sheet No. S-001 Sheet 8 of 17
No.	Issue	Checked	Approved	Date																										
0	ISSUE FOR BID	NS	NS	9/30/2024																										
Author	N. TORTORA	Drafting Check	R. RAMOSO	Project Manager	N. STEVENS																									
Designer	N. TORTORA	Design Check	C. CRUZ	Project Director	K. TOBIN																									

QUALIFICATIONS OF INSPECTORS AND TESTING TECHNICIANS	
<p>THE QUALIFICATIONS OF ALL PERSONNEL PERFORMING SPECIAL INSPECTION AND TESTING ACTIVITIES ARE SUBJECT TO THE APPROVAL OF THE BUILDING OFFICIAL. THE CREDENTIALS OF ALL INSPECTORS AND TESTING TECHNICIANS SHALL BE PROVIDED IF REQUESTED.</p> <p>KEY FOR MINIMUM QUALIFICATIONS OF INSPECTION AGENTS:</p> <p>WHEN THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE DEEMS IT APPROPRIATE THAT THE INDIVIDUAL PERFORMING A STIPULATED TEST OR INSPECTION HAVE A SPECIFIC CERTIFICATION OR LICENSE AS INDICATED BELOW, SUCH DESIGNATION SHALL APPEAR BELOW THE AGENCY NUMBER ON THE SCHEDULE.</p>	
PE/SE	STRUCTURAL ENGINEER - A LICENSED SE OR PE SPECIALIZING IN THE DESIGN OF BUILDING STRUCTURES
PE/GE	GEOTECHNICAL ENGINEER - A LICENSED GE OR PE SPECIALIZING IN SOIL MECHANICS AND FOUNDATIONS
EIT	ENGINEER-IN-TRAINING - A GRADUATE ENGINEER WHO HAS PASSED THE FUNDAMENTALS OF ENGINEERING EXAMINATION
AMERICAN CONCRETE INSTITUTE (ACI) CERTIFICATION	
ACI-CFTT	CONCRETE FIELD TESTING TECHNICIAN - GRADE 1
ACI-CCI	CONCRETE CONSTRUCTION INSPECTOR
ACI-LTT	LABORATORY TESTING TECHNICIAN - GRADE 1&2
ACI-STT	STRENGTH TESTING TECHNICIAN
AMERICAN WELDING SOCIETY (AWS) CERTIFICATION	
AWS-CWI	CERTIFIED WELDING INSPECTOR
AWS/AISC-SSIC	CERTIFIED STRUCTURAL STEEL INSPECTOR
INTERNATIONAL CODE COUNCIL (ICC) CERTIFICATION	
ICC-SWSI	STRUCTURAL STEEL AND WELDING SPECIAL INSPECTOR
ICC-SFSI	SPRAY-APPLIED FIREPROOFING SPECIAL INSPECTOR
ICC-PCSI	PRESTRESSED CONCRETE SPECIAL INSPECTOR
ICC-RCSI	REINFORCED CONCRETE SPECIAL INSPECTOR

STATEMENT OF SPECIAL INSPECTIONS
<p>THIS STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED AS A CONDITION FOR PERMIT ISSUANCE IN ACCORDANCE WITH THE SPECIAL INSPECTION AND STRUCTURAL TESTING REQUIREMENTS OF THE BUILDING CODE SECTIONS 1704 AND 1705.</p> <p>THIS STATEMENT OF SPECIAL INSPECTIONS ENCOMPASS THE FOLLOWING DISCIPLINES:</p> <p><input checked="" type="checkbox"/> STRUCTURAL SPECIAL INSPECTIONS PER 1704 AND 1705 <input type="checkbox"/> STRUCTURAL SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE <input type="checkbox"/> STRUCTURAL SPECIAL INSPECTIONS FOR WIND RESISTANCE</p> <p>THE SCHEDULE OF SPECIAL INSPECTIONS SUMMERIZES THE SPECIAL INSPECTIONS AND TEST REQUIRED. SPECIAL INSPECTORS WILL REFER TO THE APPROVED PLANS AND SPECIFICATIONS FOR DETAILED SPECIAL INSPECTION REQUIREMENTS. ANY ADDITIONAL TESTS AND INSPECTIONS REQUIRED BY THE APPROVED PLANS AND SPECIFICATIONS WILL ALSO BE PERFORMED.</p> <p>THE SPECIAL INSPECTIONS IDENTIFIED ARE IN ADDITION TO THOSE REQUIRED BY OTHER SECTIONS OF THE BUILDING CODE. SPECIAL INSPECTION IS NOT A SUBSTITUTE FOR INSPECTION BY THE BUILDING OFFICIAL HAVING JURISDICTION OR CONTRACTING OFFICER</p> <p>THE SPECIAL INSPECTION COORDINATOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. DISCOVERED DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF SUCH DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. THE SPECIAL INSPECTION PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITIES.</p> <p>INTERIM REPORTS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL OR CONTRACTING OFFICER AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 1704.1.2.</p> <p>A FINAL REPORT OF SPECIAL INSPECTIONS DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL INSPECTIONS, TESTING AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED PRIOR TO ISSUANCE OF A CERTIFICATE OF USE AND OCCUPANCY PER SECTION 1704.1.2. THE FINAL REPORT WILL DOCUMENT THE REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF DISCREPANCIES NOTED IN INSPECTIONS.</p> <p>JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.</p> <p>THE CONTRACTOR IS REQUIRED TO COORDINATE ALL INSPECTIONS. THE CONTRACTOR SHALL NOTIFY GHD INC. AND THE SPECIAL INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO ANY SPECIAL INSPECTIONS THAT ARE REQUIRED. THE CONTRACTOR SHALL NOTIFY GHD INC., THE ARCHITECT, AND THE SPECIAL INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO ANY CONCRETE TO BE POURED.</p> <p>THE INSPECTORS AND TESTING AGENCIES SHALL BE ENGAGED BY THE OWNER OR THE OWNER'S AGENT, AND NOT BY THE CONTRACTOR OR SUBCONTRACTOR WHOSE WORK IS TO BE INSPECTED OR TESTED PER SECTION 1704.1. ANY CONFLICT OF INTEREST MUST BE DISCLOSED TO THE BUILDING OFFICIAL/CONTRACTING OFFICER, PRIOR TO COMMENCING WORK. IF APPROPRIATE AGENTS ARE NOTED AS "TO BE DETERMINED (TBD)", THE OWNER IS RESPONSIBLE TO COORDINATE THE ASSEMBLY OF A SPECIAL INSPECTION TEAM. ALL SPECIAL INSPECTORS AND TESTING LABORATORIES SHALL BE SUBMITTED TO GHD INC. AND THE BUILDING OFFICIAL / CONTRACTING OFFICE FOR REVIEW.</p> <p>SPECIALLY INSPECTED WORK THAT IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE BUILDING OFFICIAL/CONTRACTING OFFICER IS SUBJECT TO REMOVAL OR EXPOSURE.</p> <p>CONTINUOUS INSPECTION IS ALWAYS REQUIRED DURING THE PERFORMANCE OF THE WORK UNLESS OTHERWISE SPECIFIED. WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE CONTINUOUSLY OBSERVED, IT IS THE AGENT'S RESPONSIBILITY TO EMPLOY A SUFFICIENT NUMBER OF INSPECTORS TO ASSURE THAT ALL THE WORK IS INSPECTED IN ACCORDANCE WITH THE PROVISIONS OF THE BUILDING CODE.</p>

TABLE 1705.3 - CONCRETE	
<p>ITEM 1: INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p>	<p>REFERENCE STANDARD: ACI-318, SECTIONS 3.5, 7.1 - 7.7</p>
<p>ITEM 2: INSPECTION OF ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p>	<p>REFERENCE STANDARD: ACI 318, SECTIONS 8.1.3, 21.1.8</p>
<p>ITEM 3: INSPECTION OF ANCHORS POST INSTALLED IN HARDENED CONCRETE MEMBERS</p> <p><input type="checkbox"/> PERIODIC <input checked="" type="checkbox"/> CONTINUOUS</p>	<p>REFERENCE STANDARD: ACI 318, SECTIONS 8.1.3, 21.1.8</p>
<p>ITEM 4: VERIFYING USE OF REQUIRED DESIGN MIX.</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p>	<p>REFERENCE STANDARD: ACI 318, CHAPTER 4 AND SECTIONS 5.2-5.4</p>
<p>ITEM 5: AT TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS AND DETERMINE THE TEMPERATURE OF THE CONCRETE.</p> <p><input type="checkbox"/> PERIODIC <input checked="" type="checkbox"/> CONTINUOUS</p>	<p>REFERENCE STANDARD: ASTM C172, ASTM C31, ACI 318, SECTIONS 5.6 AND 5.8</p>
<p>ITEM 6: INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.</p> <p><input type="checkbox"/> PERIODIC <input checked="" type="checkbox"/> CONTINUOUS</p>	<p>REFERENCE STANDARD: ACI 318, SECTIONS 5.9 AND 5.10</p>
<p>ITEM 7: INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p>	<p>REFERENCE STANDARD: ACI 318, SECTIONS 5.11 - 5.13</p>
<p>ITEM 8: INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p>	<p>REFERENCE STANDARD: ACI 318, SECTIONS 6.1.1</p>

CONTRACTOR STATEMENT OF RESPONSIBILITY

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OR FABRICATION OF A SYSTEM OR COMPONENT DESIGNATED ABOVE AS PART OF THE MAIN WIND FORCE OR MAIN SEISMIC FORCE RESISTING SYSTEMS ABOVE MUST SUBMIT A STATEMENT OF RESPONSIBILITY PER 1706.

SCHEDULE OF INSPECTIONS

THIS STATEMENT OF SPECIAL INSPECTIONS INCLUDES THE FOLLOWING BUILDING SYSTEMS:	
<input checked="" type="checkbox"/> SOILS AND FOUNDATIONS <input checked="" type="checkbox"/> CAST-IN-PLACE CONCRETE <input type="checkbox"/> PRECAST CONCRETE <input type="checkbox"/> MASONRY LEVEL 1 <input type="checkbox"/> MASONRY LEVEL 2	<input type="checkbox"/> WOOD CONSTRUCTION <input checked="" type="checkbox"/> MECHANICAL & ELECTRICAL SYSTEMS <input type="checkbox"/> ARCHITECTURAL SYSTEMS <input type="checkbox"/> STRUCTURAL STEEL <input type="checkbox"/> COLD-FORMED STEEL FRAMING

TABLE 1705.11 - DESIGNATED SEISMIC FORCE RESISTING SYSTEMS

<p>ITEM 1: 1705.11.6 - MECHANICAL AND ELECTRICAL COMPONENTS</p> <p>SCOPE:</p> <p>A. INSPECT ANCHORAGE OF ELECTRICAL EQUIPMENT FOR EMERGENCY OR STAND-BY POWER SYSTEMS.</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p> <p>B. INSPECT ANCHORAGE OF NON-EMERGENCY ELECTRICAL EQUIPMENT.</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p> <p>C. INSPECT INSTALLATION OF PIPING SYSTEMS AND ASSOCIATED MECHANICAL UNITS CARRYING FLAMMABLE, COMBUSTIBLE, OR HIGHLY TOXIC CONTENTS.</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p>
--

TABLE 1705.6 - SOILS AND FOUNDATION

<p>REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOIL</p> <p>SCOPE: A. TYPE</p> <p>1) VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p> <p>2) VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p> <p>3) PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p> <p>4) VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.</p> <p><input type="checkbox"/> PERIODIC <input checked="" type="checkbox"/> CONTINUOUS</p> <p>5) PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.</p> <p><input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> CONTINUOUS</p>
--

Reinforcing Steel

- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED BARS. DEFORMATIONS SHALL BE IN ACCORDANCE WITH ASTM A305.
- ALL REINFORCING STEEL TO BE WELDED SHALL BE ASTM A706. REBAR WELDING SHALL BE IN ACCORDANCE WITH AWS D1.4.
- REINFORCING SHALL BE FABRICATED AND PLACED ACCORDING TO CRSI, "MANUAL OF STANDARD PRACTICE".
- THE FOLLOWING MINIMUM CLEAR DISTANCES BETWEEN REINFORCING STEEL AND FACE OF CONCRETE SHALL BE MAINTAINED UNLESS OTHERWISE NOTED:

SLABS ON GRADE _____	CENTER OF SLAB
CONCRETE BELOW GRADE, FORMED AND UNFORMED _____	3"
ALL OTHER CONCRETE _____	3"

CONCRETE EXPOSED TO EARTH OR WEATHER:	
NO. 6 THROUGH NO. 18 BAR _____	2"
NO. 5 BAR, W31 OR D31 WIRE & SMALLER _____	1 1/2"

CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
SLABS, WALLS, JOISTS _____	1 1/2"
NO. 14 AND NO. 18 BAR _____	1 1/2"
NO. 11 BAR & SMALLER _____	3/4"
- REINFORCING INDICATED AS "CONTINUOUS" SHALL BE SPLICED WITH A BAR OVERLAP AS SHOWN IN THE REINF SPLICE DETAIL ON ST-501.
- ADDITIONAL DIAGONAL REINFORCING AT OPENINGS IN WALLS AND SLABS SHALL BE PLACED IMMEDIATELY INWARD OF CURTAIN OR REINFORCING EACH FACE.
- SPLICES OF HORIZONTAL REBAR IN WALLS AND FOOTINGS SHALL BE STAGGERED 4'-0" MINIMUM.
- BARS ENDING IN RIGHT ANGLE BENDS OR HOOKS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318. PROVIDE STANDARD HOOK IN BARS WHICH TERMINATE AT WALL OR SLAB EDGES / INTERSECTIONS THAT PROVIDE LESS THAN THE SPECIFIED DEVELOPMENT LENGTH.
- EXCEPT AS OTHERWISE REQUIRED, EXPOSED CONCRETE CORNERS AND EDGES SHALL HAVE 3/4" CHAMFERS. RE-ENTRANT CORNERS SHALL NOT HAVE FILLETS.
- ALL REINFORCING STEEL, DOWELS, ANCHOR BOLTS, AND OTHER INSERTS SHALL BE WELL SECURED IN PLACE PRIOR TO CONCRETE OR GROUT POUR. ADEQUATE SUPPORTS SHALL BE PROVIDED FOR ALL REINFORCING STEEL.
- ALL BENDING OF REINFORCING STEEL SHALL CONFORM TO THE LATEST EDITION OF THE BUILDING CODE. NO HEATING SHALL BE ALLOWED FOR BENDING OF REINFORCING STEEL UNLESS APPROVED BY STRUCTURAL ENGINEER. REINFORCEMENT SHALL NOT BE FIELD BENT UNLESS NOTED OTHERWISE.
- DOWELS FOR WALLS AND COLUMNS SHALL BE THE SAME SIZE AND SPACING AS THE VERTICAL BARS IN THE WALL/COLUMN UNLESS NOTED OTHERWISE.
- NO WELDING OF REINFORCING STEEL SHALL BE PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER OF RECORD. WELDING OF REINFORCING STEEL SHALL CONFORM TO AWS D1.4 USING PROPER LOW HYDROGEN ELECTRODES. FIELD WELDING OF REINFORCING STEEL SHALL BE PERFORMED BY WELDERS SPECIFICALLY CERTIFIED FOR REINFORCING STEEL.
- CONCRETE SLABS WITH SLOPED TOP SURFACE SHALL HAVE BOTTOM SLOPED TO MATCH TOP SURFACE, THEREBY MAINTAINING UNIFORM THICKNESS INDICATED ON THE DRAWINGS. AT THE SUB-CONTRACTOR'S OPTION, THE SLAB BOTTOM SURFACE MAY BE KEPT LEVEL MAINTAINING THE INDICATED THICKNESS AS A MINIMUM, PROVIDED THE MAXIMUM THICKNESS DOES NOT EXCEED 125% OF THE INDICATED THICKNESS FOR ELEVATED SLABS, AND 200% FOR SLABS AT GRADE

0 ISSUE FOR BID		NS	NS	9/30/2024
No.	Issue	Checked	Approved	Date
Author	N. TORTORA	Drafting Check	R. RAMOSO	Project Manager
Designer	N. TORTORA	Design Check	C. CRUZ	Project Director
				N. STEVENS
				K. TOBIN



Bar is one inch on original size sheet
0 1"



Conditions of Use
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.



Client	HUMBOLDT BAY MUNICIPAL WATER DISTRICT	
Project	OSHG INSTALLATION AND INTEGRATION	
Project No.	Date	Scale
12616149	10/1/2024	AS SHOWN

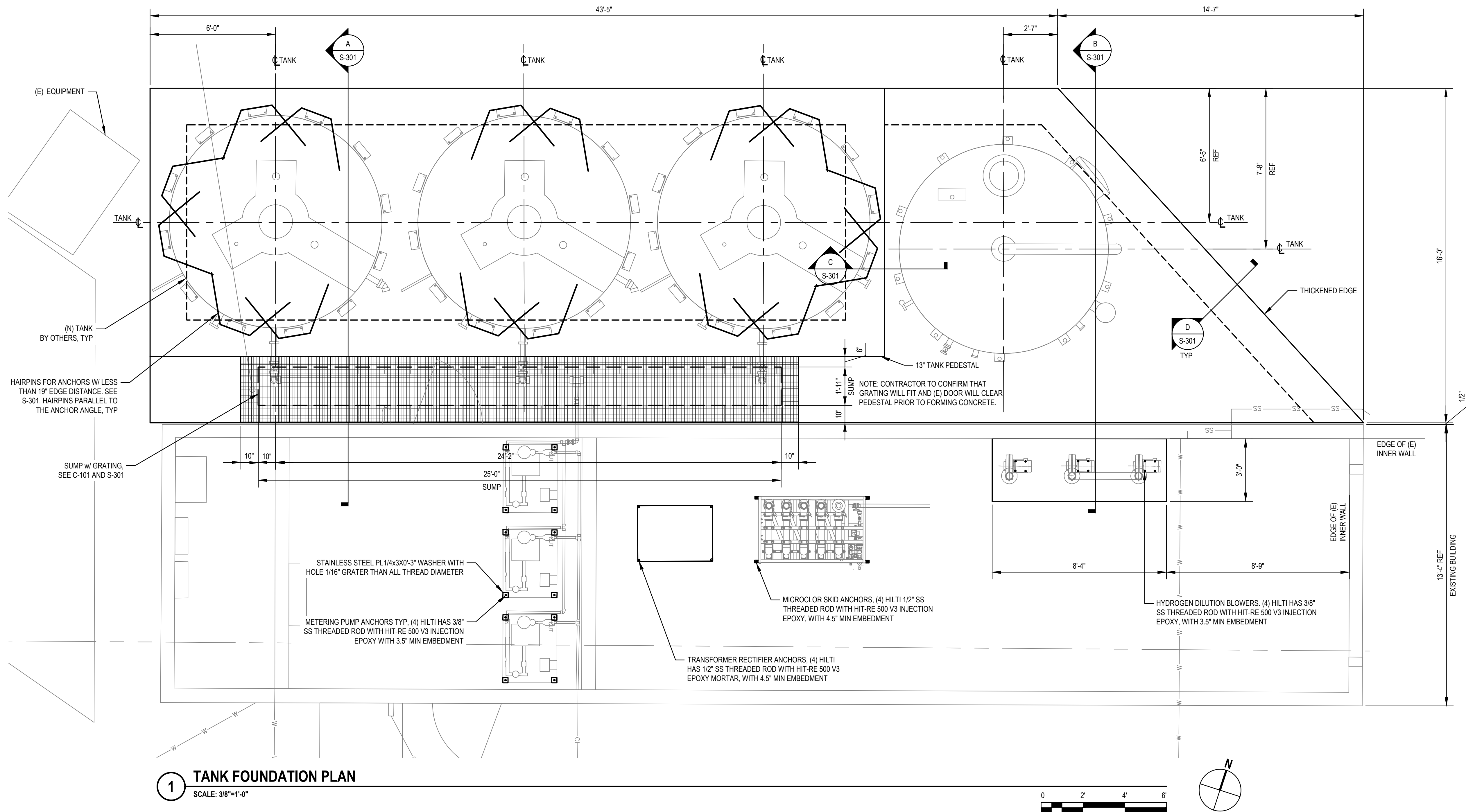
Title	STRUCTURAL NOTES 2
Sheet No.	S-002
Sheet	9 of 17

ISSUE FOR BID

Size ANSI D

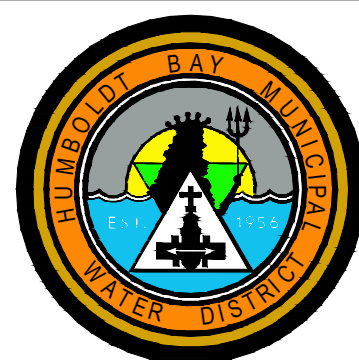
SHEET GENERAL NOTES

- FOR TANK LOCATIONS, SEE CIVIL DRAWINGS.
- SEE SHEETS S-001 & S-002 FOR CONCRETE, REINFORCEMENT & ANCHOR NOTES, AND TYPICAL DETAILS S-501.
- SEE CIVIL AND ELECTRICAL SHEETS FOR OTHER INFORMATION NOT SHOWN.



ISSUE FOR BID

0 ISSUE FOR BID		NS	NS	9/30/2024
No.	Issue	Checked	Approved	Date
Author	N. TORTORA	Drafting Check	C. CRUZ	Project Manager
Designer	N. TORTORA	Design Check	R. RAMOSO	Project Director
				N. STEVENS
				K. TOBIN



Bar is one inch on original size sheet
0 1"



GHD
GHD Inc.
718 Third Street
Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330

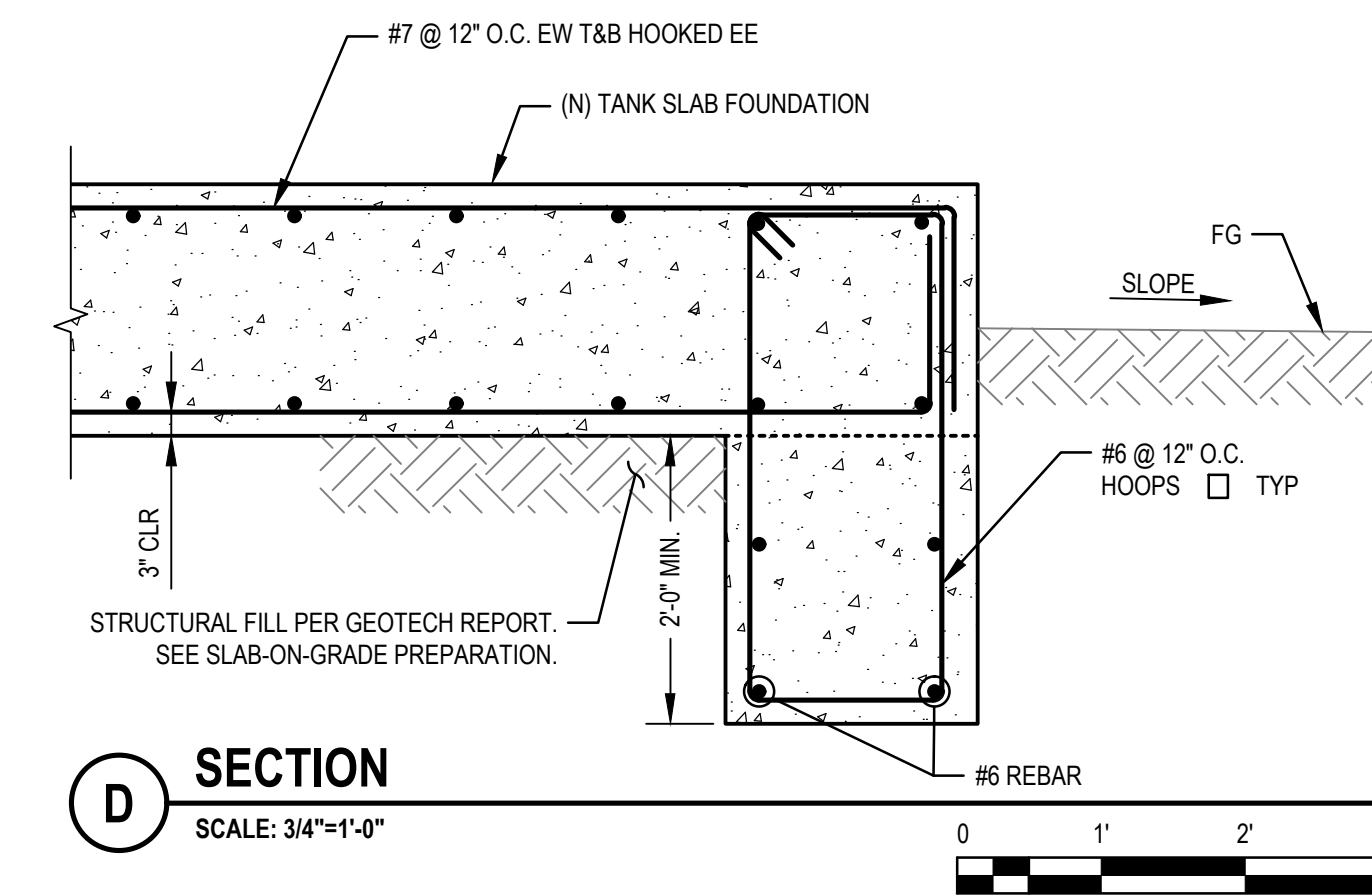
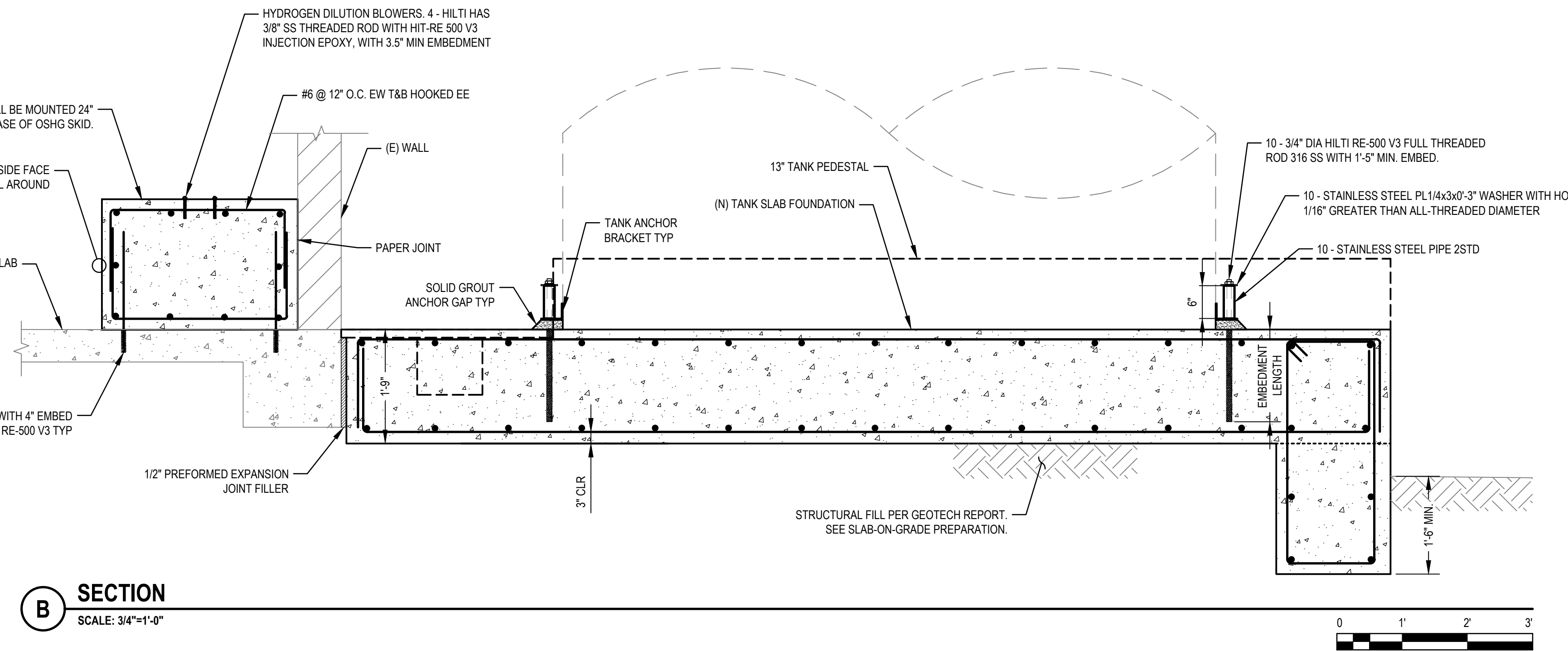
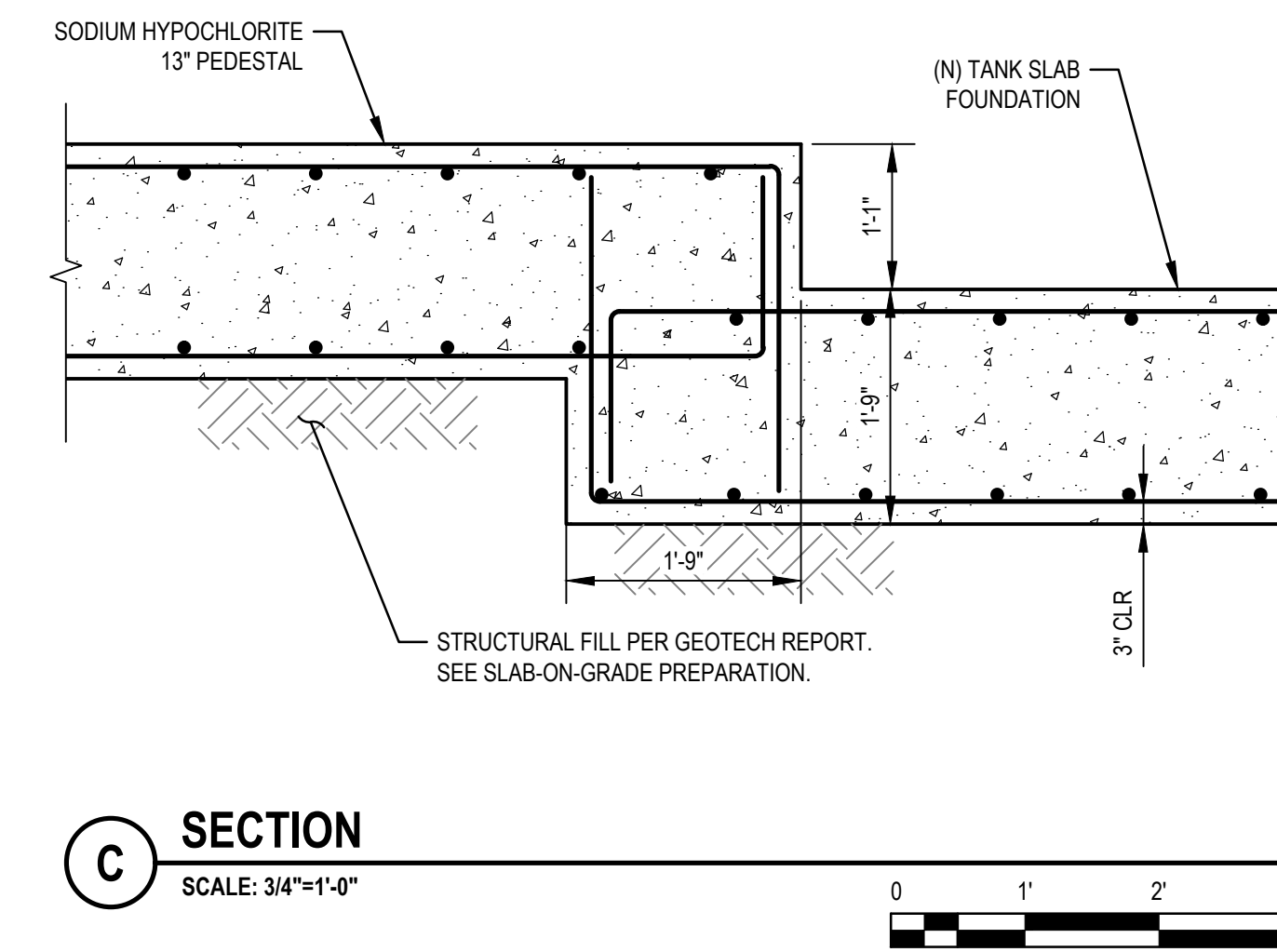
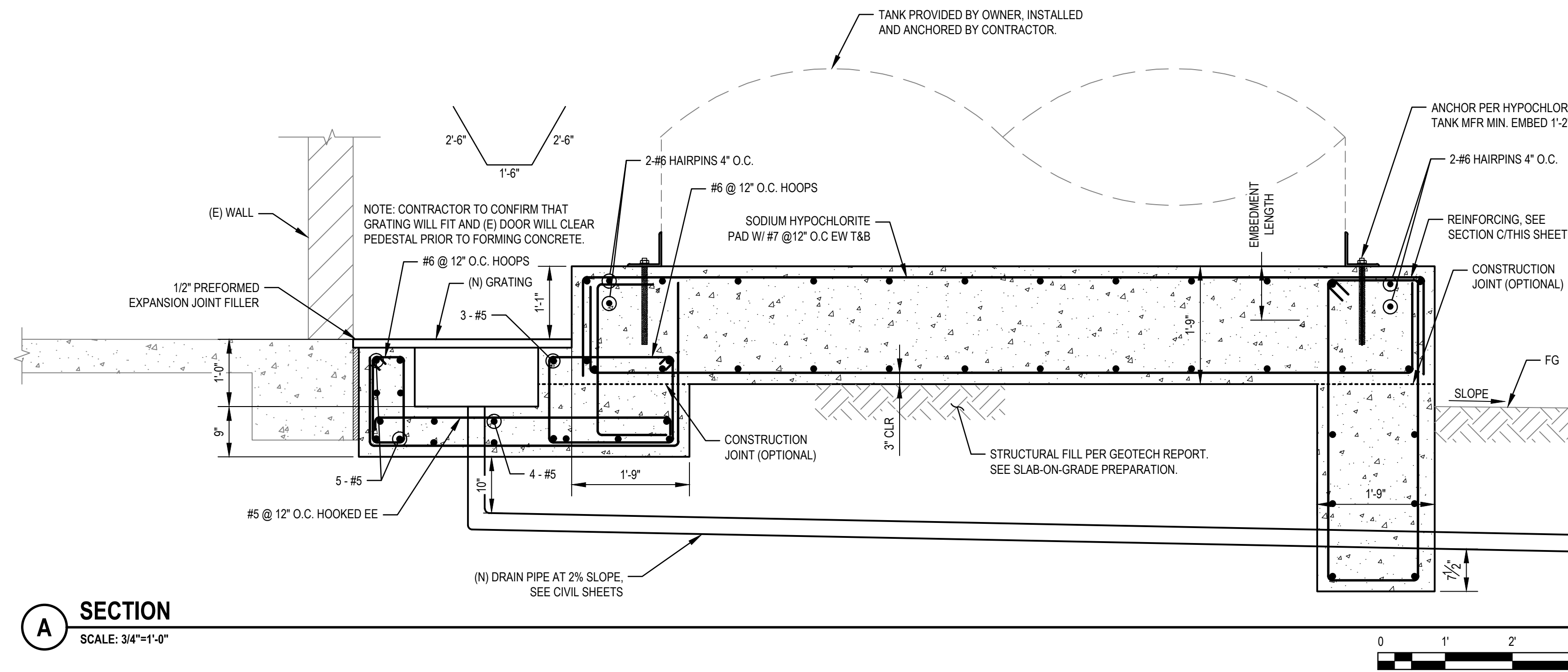


Client	HUMBOLDT BAY MUNICIPAL WATER DISTRICT	
Project	OSHG INSTALLATION AND INTEGRATION	
Project No.	12616149	Date
		10/1/2024
Scale	AS SHOWN	

Title	TANK FOUNDATION PLAN	
Sheet No.	S-101	Sheet
		10 of 17

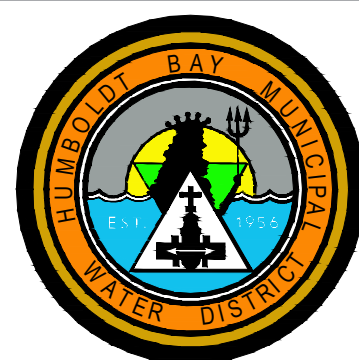
SHEET GENERAL NOTES

- FOR TANK LOCATIONS, SEE CIVIL DRAWINGS.
- LOCATE SLAB REINFORCEMENT PRIOR TO DRILLING AND ADJUST TANK OPERATION +/- 2" MAX TO AVOID DAMAGING REINFORCEMENT.



ISSUE FOR BID

0 ISSUE FOR BID		NS	NS	9/30/2024
No.	Issue	Checked	Approved	Date
Author	N. TORTORA	Drafting Check	R. RAMOSO	Project Manager
Designer	N. TORTORA	Design Check	C. CRUZ	Project Director
				N. STEVENS
				K. TOBIN



Bar is one inch on original size sheet
0 1"



GHD
GHD Inc.
718 Third Street
Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330
www.ghd.com

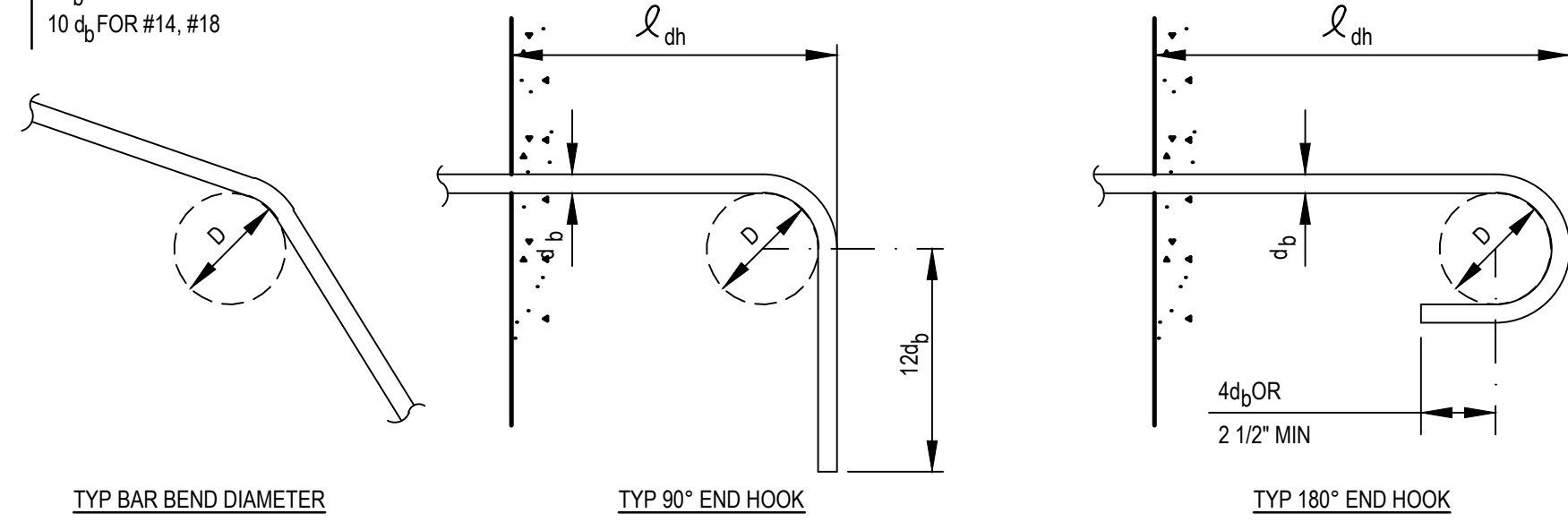
Conditions of Use
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.



Client	HUMBOLDT BAY MUNICIPAL WATER DISTRICT		Title	STRUCTURAL SECTIONS
Project	OSHG INSTALLATION AND INTEGRATION		Project No.	12616149
	Date	10/1/2024	Scale	AS SHOWN

Sheet No.	S-301
Sheet	11 of 17

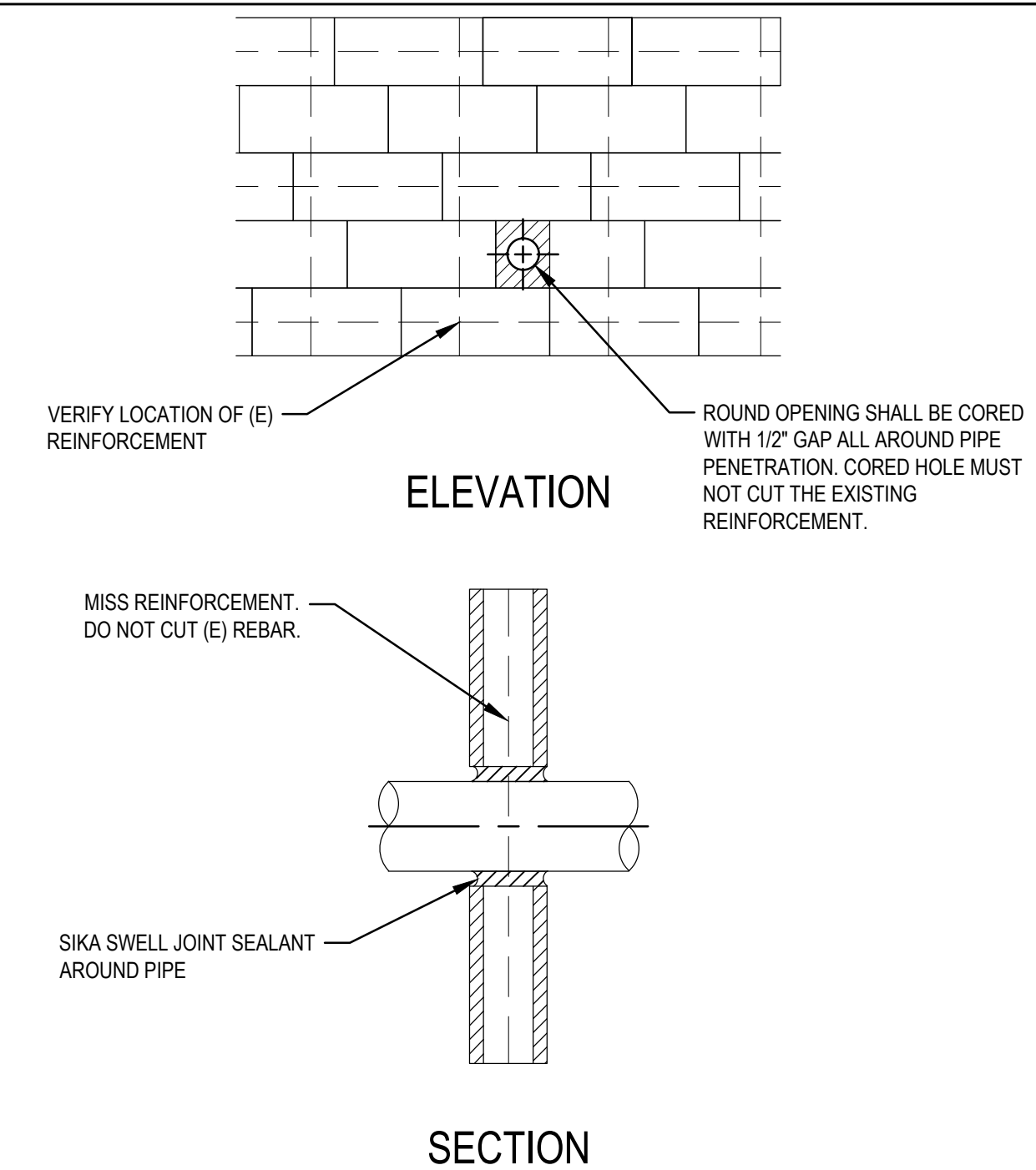
D= 6 d_b FOR #3 TO #8
8 d_b FOR #9, #10, #11
10 d_b FOR #14, #18



BAR SIZE	MINIMUM TENSION EMBEDMENT LENGTHS (l _{dh}) FOR STANDARD END HOOKS ON REINFORCING BARS			
	NORMAL WEIGHT CONCRETE, f _c PSI			
	3000	4000	5000	6000
#3	6	6	6	6
#4	8	7	6	6
#5	10	9	8	7
#6	12	10	9	9
#7	14	12	11	10
#8	16	14	12	11
#9	18	15	14	13
#10	20	17	16	14
#11	22	19	17	16
#14	38	33	29	27
#18	50	43	39	35

1) FACTORS HAVE BEEN REDUCED PER ACI 318-08 SECTION 12.5.3 (a). INCREASE MINIMUM TENSION EMBEDMENT LENGTHS BY 1.4 WHEN CONCRETE COVER IS LESS THAN 2 1/2"

2 BAR ENDS AND STD HOOKS



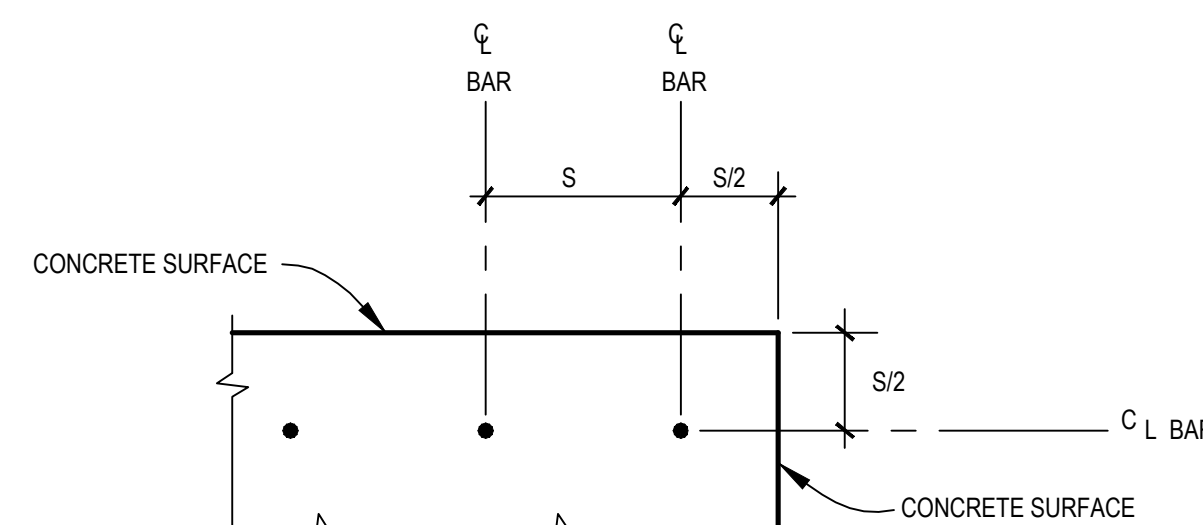
3 CMU PIPE PENETRATION

BAR SIZE	DEVELOPMENT LENGTH (l _d)											
	3000 PSI CONC (f _c)				4000 PSI CONC (f _c)				5000 PSI CONC (f _c)			
	TOP		OTHER		TOP		OTHER		TOP		OTHER	
#3	13	22	12	17	12	19	12	15	12	17	12	13
#4	18	29	14	22	15	25	12	19	14	23	12	17
#5	22	36	17	28	19	31	15	24	17	28	13	22
#6	26	43	20	33	23	37	18	29	20	34	16	26
#7	38	63	29	48	33	54	25	42	29	49	23	38
#8	43	72	33	55	37	62	29	48	34	56	26	43
#9	49	81	37	62	42	70	33	54	38	63	29	48
#10	56	89	43	69	49	78	38	60	44	69	34	54
#11	68	98	52	76	59	85	45	66	53	76	41	59

BAR SIZE	TENSION LAP SPlice LENGTH (CLASS 'B' SPlice)											
	3000 PSI CONC (f _c)				4000 PSI CONC (f _c)				5000 PSI CONC (f _c)			
	TOP		OTHER		TOP		OTHER		TOP		OTHER	
#3	17	28	16	22	16	25	16	19	16	22	16	17
#4	23	38	18	29	20	33	16	25	18	29	16	23
#5	28	47	22	36	25	41	19	31	22	36	17	28
#6	34	56	26	43	29	49	23	38	26	44	20	34
#7	49	82	38	63	43	71	33	55	38	63	30	49
#8	56	93	43	72	49	81	38	62	44	72	34	56
#9	63	105	49	81	55	91	42	70	49	81	38	63
#10	73	116	56	90	63	101	49	78	57	90	44	70
#11	88	128	68	99	76	111	59	85	68	99	53	76

NOTES:

- LENGTHS SHOWN ARE FOR GRADE 60 UNCOATED BARS.
- LENGTHS SHOWN ARE IN INCHES.
- INCREASE LENGTHS 30% FOR LIGHT WEIGHT CONCRETE
- TOP BARS: HORIZONTAL BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THEM.
- THE QUANTITY 's' IS LIMITED TO NO LESS THAN 3d_b AND IS DEFINED AS SHOWN IN GRAPHIC:



1 BAR DEVELOPMENT AND LAP SPlice LENGTHS FOR CONCRETE

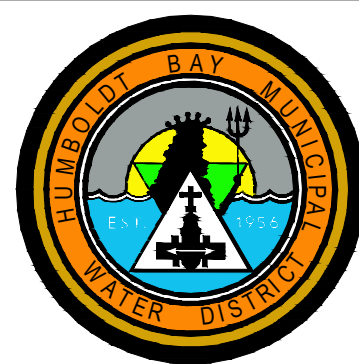
4 WALL CORNER REINFORCING

NOTES:

- UNLESS NOTED OTHERWISE, SIZE AND SPACING OF CORNER OR INTERSECTION REINFORCING SHALL MATCH HORIZONTAL REINFORCING SHOWN IN SPECIFIC SECTIONS OR DETAILS. VERTICAL REINFORCING NOT SHOWN FOR CLARITY.
- UNLESS NOTED OTHERWISE, BAR SPlice SHALL BE LOCATED OUTSIDE OF CORNER OR INTERSECTION AREA TO AVOID CONGESTION. CONTRACTORS OPTION TO PROVIDE SINGLE BENT BAR IN LIEU OF SPlice CONFIGURATION AT ONE END ONLY.
- SEE GENERAL STRUCTURAL NOTES FOR SPlice LENGTH. HORIZONTAL WALL BARS SHALL BE CONSIDERED TOP BARS FOR DEVELOPMENT AND SPlice LENGTHS.

ISSUE FOR BID

0 ISSUE FOR BID		NS	NS	9/30/2024
No.	Issue	Checked	Approved	Date
Author	N. TORTORA	Drafting Check	R. RAMOSO	Project Manager
Designer	N. TORTORA	Design Check	C. CRUZ	Project Director
			N. STEVENS	
			K. TOBIN	



Bar is one inch on original size sheet
0 1"



Client	HUMBOLDT BAY MUNICIPAL WATER DISTRICT		Title	STRUCTURAL DETAILS
Project	OSHG INSTALLATION AND INTEGRATION		Project No.	12616149
	Date	10/1/2024	Scale	AS SHOWN

Size	ANSI D
Sheet No.	S-501
Sheet	12 of 17

ABBREVIATIONS

Table of abbreviations including (D) DEMOLISH, (E) EXISTING, (F) FUTURE, (N) NEW, A AMPERES, AF ALTERNATING CURRENT, etc.

ELECTRICAL SYMBOLS LEGEND

Lighting symbols table including LIGHTING FIXTURE, RECESSED, RECESSED DOWN LIGHT FIXTURE, etc.

Switching symbols table including LIGHT SWITCH, SPST - MOUNTING HEIGHT: +44" AFF, UON, etc.

Power symbols table including DUPLEX RECEPTACLE, 20A 125V 2P 3W, GROUNDING TYPE, etc.

Communication symbols table including CCTV CAMERA, CEILING MOUNT, INTERCOM CALL IN SWITCH, etc.

Equipment symbols table including MAIN SWITCHBOARD, DISTRIBUTION PANEL BOARD, etc.

Conduit symbols table including CONDUIT INSTALLED ABOVE GRADE, CONDUIT INSTALLED UNDERGROUND, etc.

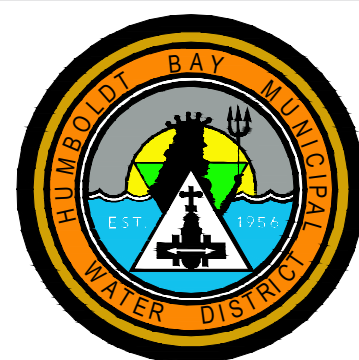
Object Lines symbols table including NEW OBJECTS, EXISTING OBJECTS TO REMAIN, etc.

Annotation symbols table including KEYNOTE, RACEWAY, FEEDER OR CIRCUIT DESIGNATION, etc.

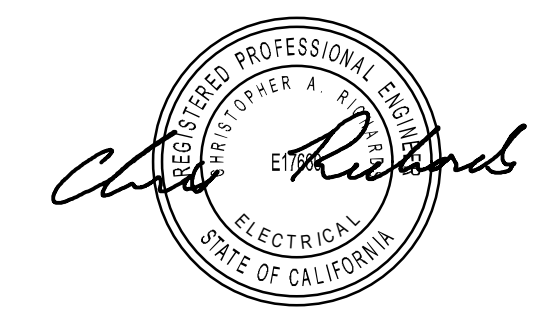
GENERAL ELECTRICAL NOTES

- 1. UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL EQUIPMENT INDICATED SHALL BE NEW AND PROVIDED BY THE CONTRACTOR COMPLETE, INSTALLED, TESTED AND FUNCTIONING.
2. CONSTRUCTION MATERIALS AND INSTALLATION SHALL MEET ALL RECOGNIZED CODES OF THE AUTHORITY HAVING JURISDICTION.

Revision table with columns: No, Issue, Description, Date. Includes entry: 0 ISSUE FOR BID, NS NS, 9/30/2024.



Bar is one inch on original size sheet 0 1"



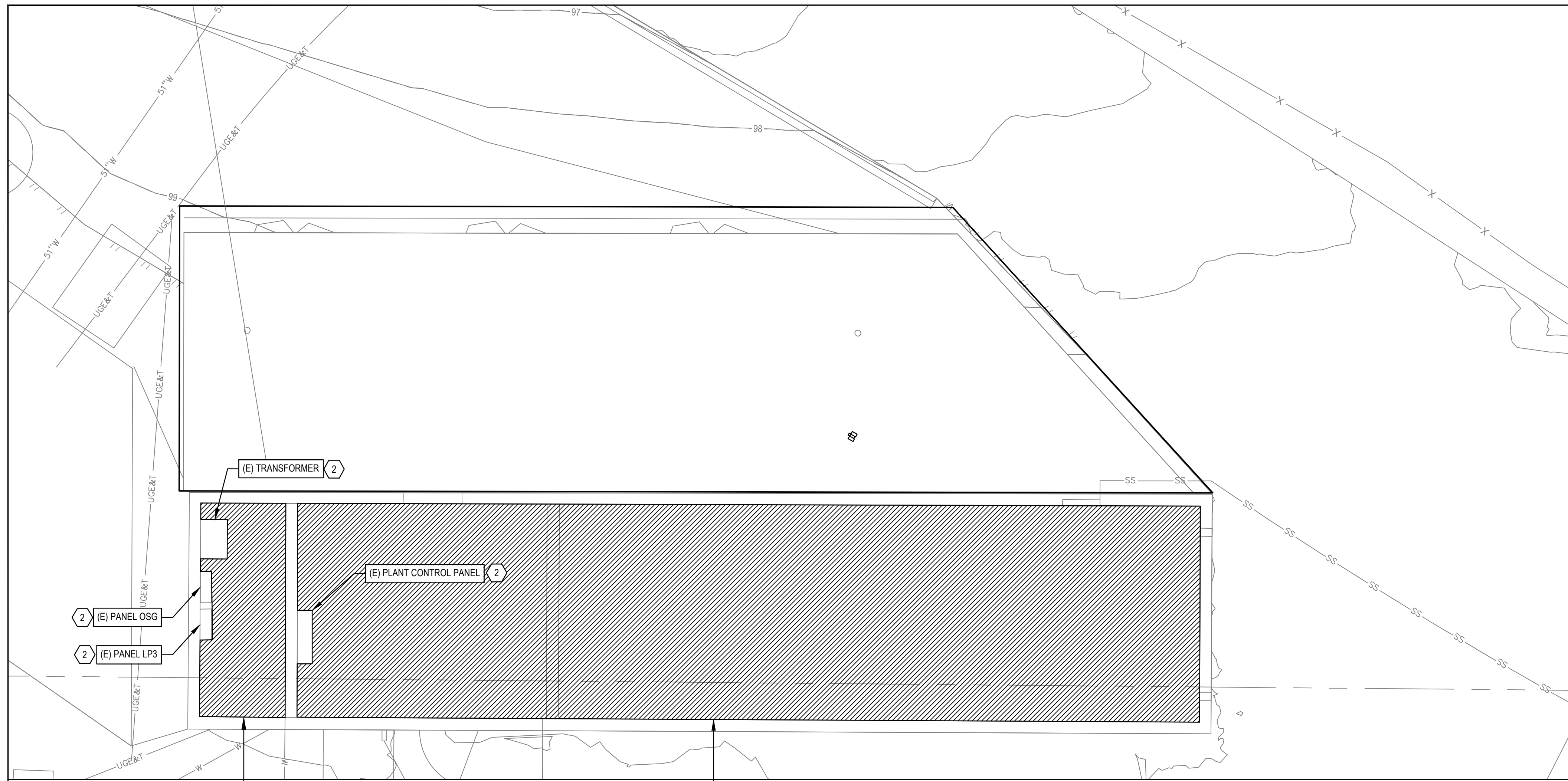
GHD logo and contact information: GHD Inc., 718 Third Street, Eureka California 95501 USA.



Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT, Project: OSHG INSTALLATION AND INTEGRATION, Project No: 12616149, Date: 10/1/2024, Scale: AS SHOWN.

Title: ELECTRICAL ANNOTATION, Sheet No: E-001, 13 of 17.

ISSUE FOR BID



SHEET GENERAL NOTES

1. PROTECT (E) LIGHTS, VENTILATION, AND GENERAL RECEPTACLES IN PLACE.
2. SEE CD101 AND CD102 FOR MORE DEMOLITION DETAIL.

SHEET KEYNOTES

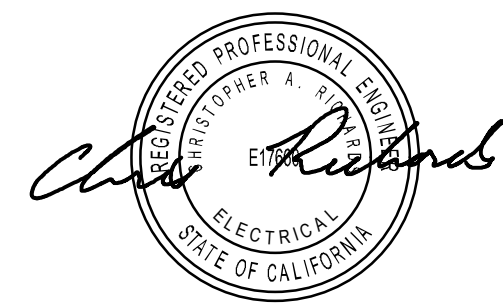
1. DISCONNECT AND REMOVE (E) PROCESS EQUIPMENT AND ASSOCIATED CIRCUITS BACK TO MAIN PANEL.
2. PROTECT (E) PANELS IN PLACE.

ISSUE FOR BID

0 ISSUE FOR BID		NS	NS	9/30/2024
No.	Issue	Checked	Approved	Date
Author	A. YOUNG	Drafting Check	C. RICHARDS	Project Manager
Designer	C. RICHARDS	Design Check	C. RICHARDS	Project Director
				N. STEVENS
				K. TOBIN



Bar is one inch on original size sheet
0 1"



GHD
GHD Inc.
718 Third Street
Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330

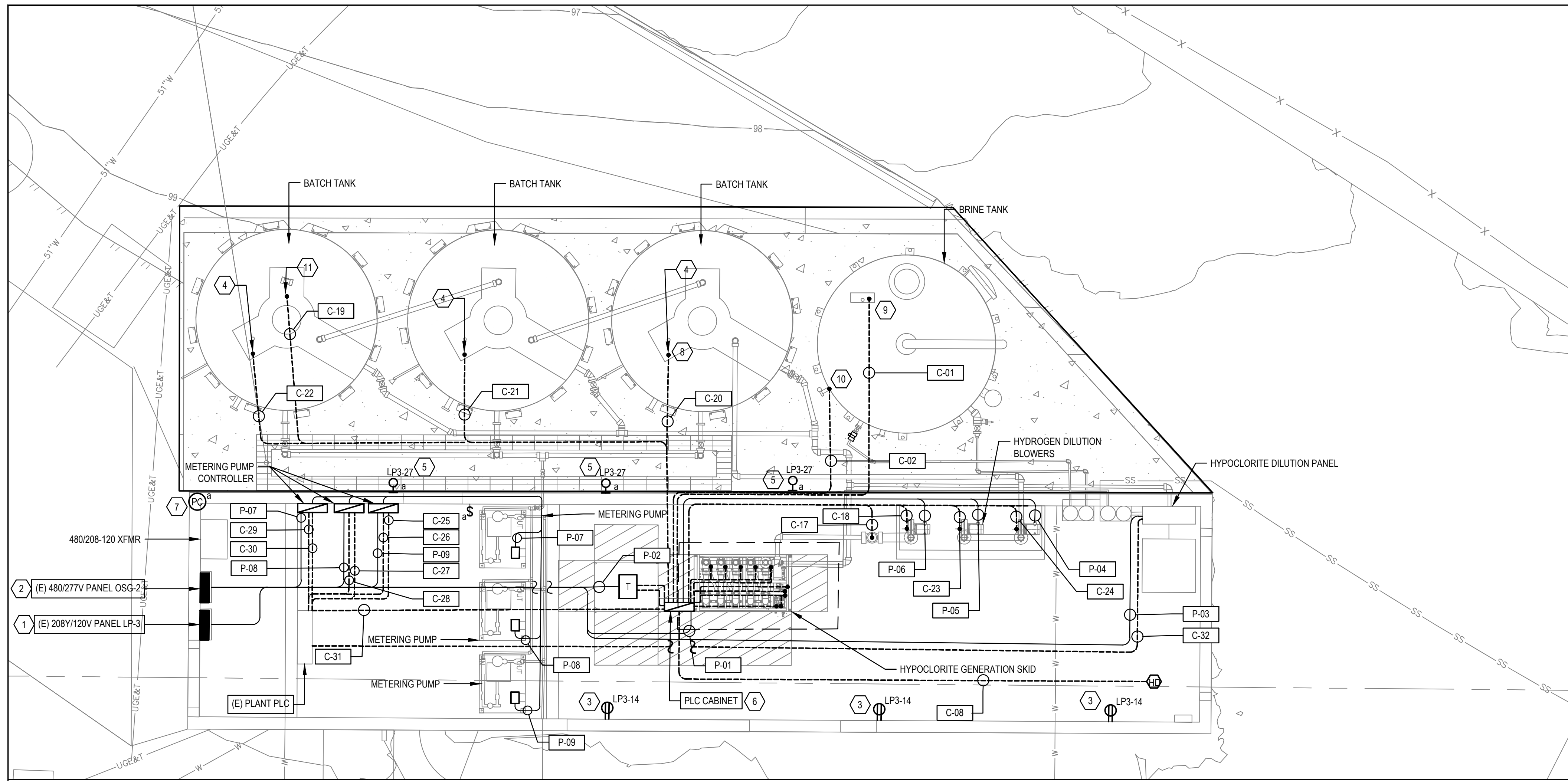


Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**
Project **OSHG INSTALLATION AND INTEGRATION**

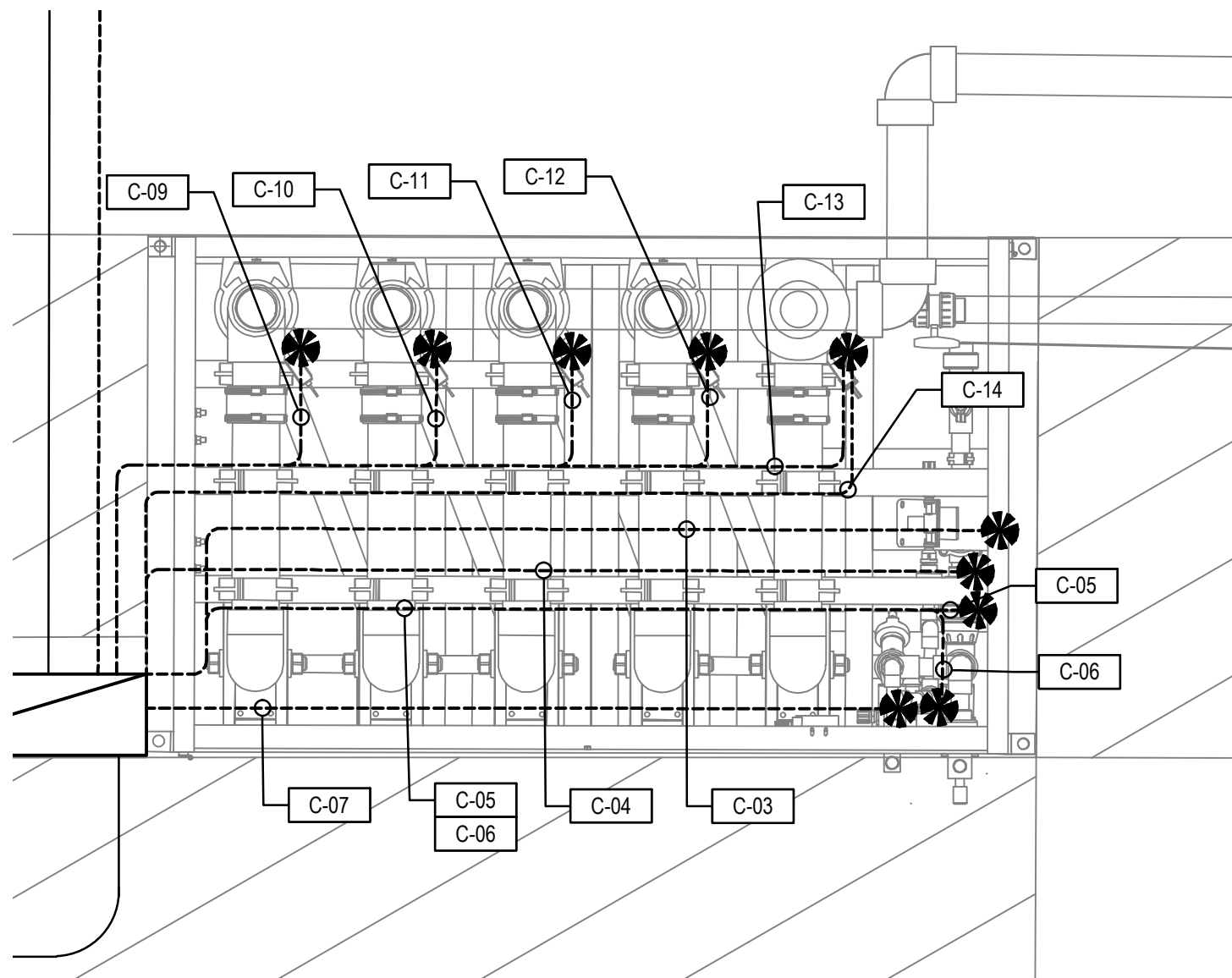
Title **ELECTRICAL DEMO**

Project No. **12616149** Date **10/1/2024** Scale **AS SHOWN**

Sheet No. **ED-101** Sheet **14 of 17**



1 ELECTRICAL SITE PLAN
1/4" = 1'0"



2 ELECTRICAL PLAN HYPOCHLORITE GENERATION - ENLARGED PLAN
1" = 1'0"

SHEET GENERAL NOTES

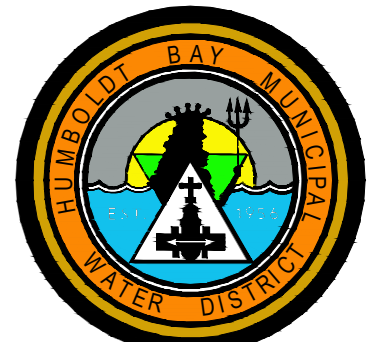
1. FIELD COORDINATE ALL WALL MOUNTED EQUIPMENT TO AVOID PROCESS PIPING.
2. STUB UP LOCATIONS AND EQUIPMENT LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FIELD VERIFY CONDITIONS PRIOR TO COMMENCING WORK.
3. COORDINATE WITH OWNER BETWEEN TEMPORARY AND NEW CONDITIONS. FINAL CONDITIONS BEING SHOWN.

SHEET KEYNOTES

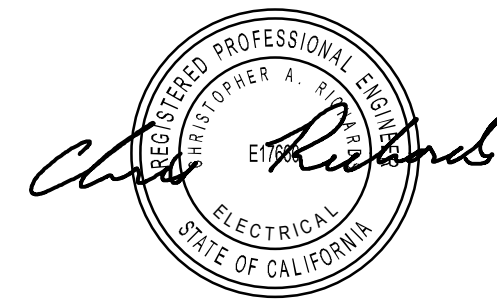
1. DISCONNECT LP3 FROM EXISTING SOURCE AND RECONNECT TO TRANSFORMER.
2. PROVIDE BLANK COVERS WHERE MISSING ON PANEL.
3. PROVIDE (N) DUPLEX RECEPTACLE AND TYPICAL POWER CIRCUIT.
4. INSTALL OWNER FURNISHED SUBMERSIBLE PRESSURE TRANSDUCER PER MANUFACTURER RECOMMENDATIONS.
5. PROVIDE EXTERIOR WALL MOUNTED LIGHT TYPE KIM LIGHTING CY1-15-3K7-1-4-R OR EQUAL AND CONNECT TO LIGHTING POWER CIRCUIT AND WALL SWITCH AS NOTED.
6. CONNECT SKID PLC TO PLANT NETWORK. ALL CONTROLS VIA PLANT NETWORK.
7. PROVIDE LINE VOLTAGE WEATHERPROOF PHOTOCELL AND MOUNT ON ROOF OF BUILDING. ROUTE EXTERIOR LIGHTING POWER CIRCUIT BETWEEN SWITCH AND FIXTURES VIA PHOTOCELL.
8. LOCATE FS-201 AND ROUTE CONTROL CONDUIT TO THAT LOCATION AND CONNECT.
9. LOCATE SV-001 AND ROUTE CONTROL CONDUIT TO THAT LOCATION AND CONNECT.
10. LOCATE LT-001 AND LIT-001 AND ROUTE CONTROL CONDUIT TO THEM AND CONNECT.
11. INSTALL AIR SWITCH FS-201 TO BE PROVIDED BY OWNER, PER MANUFACTURER INSTRUCTIONS.

ISSUE FOR BID

0 ISSUE FOR BID		NS	NS	9/30/2024
No.	Issue	Checked	Approved	Date
Author	A. YOUNG	Drafting Check	C. RICHARDS	Project Manager
Designer	C. RICHARDS	Design Check	C. RICHARDS	Project Director
				N. STEVENS
				K. TOBIN



Bar is one inch on original size sheet
0 1"



GHD GHD Inc.
718 Third Street
Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330



Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**
Project **OSHG INSTALLATION AND INTEGRATION**

Title **ELECTRICAL LAYOUT**

Project No. **12616149** Date **10/1/2024** Scale **AS SHOWN**

Size **ANSI D**
Sheet No. **E-101** Sheet **15 of 17**

Table: CONDUIT AND CABLE SCHEDULE. Columns include CKT #, DESCRIPTION, FROM, TO, CONDUIT TYPE, CONDUIT SIZE, CABLE SIZE, and REMARKS. Lists various electrical circuits and their specifications.

REMARKS: 1. CONNECT HYPOCHLORITE SKID PLC TO AVAILABLE PORT IN INDUSTRIAL NETWORK SWITCH IN PLANT PLC CABINET.

Table: ELECTRICAL CONNECTION SCHEDULE FOR PROCESS EQUIPMENT. Columns include EQUIP ID, EQUIPMENT NAME, LOCATION, VOLTAGE, PHASE, FLA, MCA, MOCP, CIRCUIT, CB, CONDUIT, WIRE, DISCONNECT, and NOTES.

Table: EXISTING PANEL SCHEDULE. Includes panel name (E) LP3, voltage (208/120), NEMA rating (1), mounting (WALL), and location (ELECTRICAL ROOM). Contains a detailed table with columns for CKT NO., USE, DESCRIPTION, BKR SIZE, CKT KVA, CKT AMPS, WIRE SIZE, LENGTH, PHASE, VOLTAGE DROP %, and WIRE MATERIAL.

ISSUE FOR BID

Project information and metadata including: 0 ISSUE FOR BID, Author A. YOUNG, Designer C. RICHARDS, and project date 9/30/2024.

Logo of Humboldt Bay Municipal Water District and project title: PANEL AND CONDUIT SCHEDULES.

Graphic showing a bar scale (0 to 1 inch) and a note: 'Bar is one inch on original size sheet'.

Professional Engineer seal for C. Richards, State of California, Electrical.

GHD Inc. logo and contact information: 718 Third Street, Eureka California 95501 USA.

QR code and website information: www.ghd.com

Client information: HUMBOLDT BAY MUNICIPAL WATER DISTRICT, Project: OSHG INSTALLATION AND INTEGRATION.

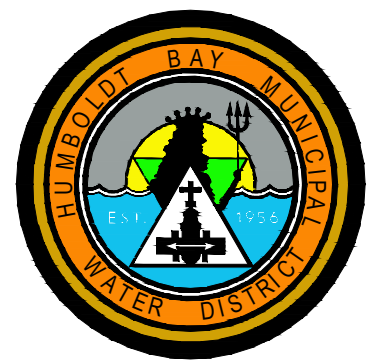
Project details: Project No. 12616149, Date 10/1/2024, Scale AS SHOWN, Sheet No. E-601.

PANEL SCHEDULE																		
PANEL NAME: (N) LP3		VOLTAGE: 208/120		NEMA RATING:		MOUNTING:		WALL		NOTES:								
MAINS RATING: 225		PHASE: 3		AIC RATING:		LOCATION: ELECTRICAL ROOM												
BUS RATING: A		WIRE: 4		DEMAND FACTOR: STD														
CKT NO.	USE	DESCRIPTION	BKR SIZE	CKT KVA	CKT AMPS	WIRE SIZE	WIRE LENGTH (FT)	VOLTAGE DROP %	PHASE	VOLTAGE DROP %	WIRE LENGTH (FT)	WIRE SIZE	CKT AMPS	CKT KVA	BKR SIZE	DESCRIPTION	USE	CKT NO.
1			15/3						A						30/3			2
3		CL2 STORAGE ROOM HEATER	15/3						B						30/3	CL2 ROOM HEATER		4
5			15/3						C						30/3			6
7		CL2 ROOM NOMINAL VENT FAN	15/1						A						15/1	CL2 RM EMERGENCY VENT FAN		8
9		PUMP RM & CL2 CHLORINATION RM LIGHTS	15/1						B						15/1	CL2 SUPPLY CONTROL POWER		10
11		EMERGENCY LIGHTS	15/1						C						20/1	DILUTION PANEL PUMP		12
13		CL2 RM GFI OUTLET FOR GAS HEATER	15/1						A						20/1	ACID CLEANING CART RECEPT.		14
15		CL2 RM OUTLET	15/1						B						15/1	CL2 TANK RM FAN		16
17			40/3						C						20/1	CL2 TANK RM LIGHTS		18
19			40/3						A						20/1	CL2 TANK RM LIGHTS		20
21		SPARE	40/3						B						20/1	CL2 BLDG OUTSIDE LIGHTS		22
23			20/1						C						40/3			24
25		CL2 CYLINDER STORAGE HOIST	20/1						A						40/3	SPARE		26
27		EXTERIOR LIGHTS	20/1						B						40/3			28
29		BLANK	20/1						C						20/1	BLANK		30
31		BLANK	20/1						A						20/1	BLANK		32
33		BLANK	20/1						B						20/1	BLANK		34
35		BLANK	20/1						C						20/1	BLANK		36
37		BLANK	20/1						A						20/1	BLANK		38
39		BLANK	20/1						B						20/1	BLANK		40
41		BLANK	20/1						C						20/1	BLANK		42
CONNECTED KVA			DEMAND KVA			DEMAND AMPS			USE LEGEND			VOLTAGE DROP CALCULATION			ASSUMPTIONS:			
PHASE A: 4.7			4.7			17.0			D LOAD TYPE			VOLTAGE DROP IS BASED ON THE IEEE RED BOOK AND 2011 NEC CHAPTER 9 TABLE 9 FORMULA:			POWER FACTOR			
PHASE B: 4.7			4.7			17.0			H HVAC			VD = 1 * (R * PF + X * SIN(ACOS(PF))) * L			VARIED BY LOAD TYPE			
PHASE C: 4.7			4.7			17.0			L LIGHTING			WITH AN ADDITIONAL MULTIPLIER OF 2 FOR SINGLE PHASE AND			RGS			
									M MOTOR			1.732 FOR 3-PHASE LOADS			CU			
									R RECEPTACLE			R AND X VALUES ARE TAKEN FROM 2011 NEC CHAPTER 9 TABLE 9.						
									P PANEL									
									O OTHER									

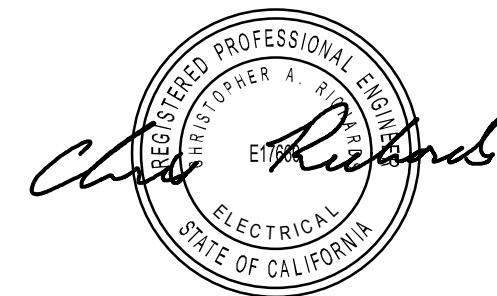
PANEL SCHEDULE																		
PANEL NAME: OSG		VOLTAGE: 480/277		NEMA RATING:		MOUNTING:		WALL		NOTES:								
MAINS RATING: 200		PHASE: 3		AIC RATING:		LOCATION: ELECTRICAL ROOM												
BUS RATING: 225		WIRE: 4		DEMAND FACTOR: STD														
CKT NO.	USE	DESCRIPTION	BKR SIZE	CKT KVA	CKT AMPS	WIRE SIZE	WIRE LENGTH (FT)	VOLTAGE DROP %	PHASE	VOLTAGE DROP %	WIRE LENGTH (FT)	WIRE SIZE	CKT AMPS	CKT KVA	BKR SIZE	DESCRIPTION	USE	CKT NO.
1			20/3	2.90	10.47	10	30	0.12	A						80/3			2
3		CONTROL PANEL	20/3	2.90	10.47	10	30	0.12	B						80/3	TRANSFORMER 111		4
5			20/3	2.90	10.47	10	30	0.12	C						80/3			6
7		METERING PUMP 301	20/3	0.60	2.17	12	10	0.01	A	0.01	10	12	2.17	0.60	20/3	METERING PUMP 303		8
9			20/3	0.60	2.17	12	10	0.01	B	0.01	10	12	2.17	0.60	20/3			10
11			20/3	0.60	2.17	12	10	0.01	C	0.01	10	12	2.17	0.60	20/3			12
13		METERING PUMP 302	20/3	0.60	2.17	12	10	0.01	A						20/1	BLANK		14
15			20/3	0.60	2.17	12	10	0.01	B						20/1	BLANK		16
17			20/3	0.60	2.17	12	10	0.01	C						20/1	BLANK		18
19		BLANK	20/1						A						20/1	BLANK		20
21		BLANK	20/1						B						20/1	BLANK		22
23		BLANK	20/1						C						20/1	BLANK		24
25		BLANK	20/1						A						20/1	BLANK		26
27		BLANK	20/1						B						20/1	BLANK		28
29		BLANK	20/1						C						20/1	BLANK		30
CONNECTED KVA			DEMAND KVA			DEMAND AMPS			USE LEGEND			VOLTAGE DROP CALCULATION			ASSUMPTIONS:			
PHASE A: 4.7			4.7			17.0			D LOAD TYPE			VOLTAGE DROP IS BASED ON THE IEEE RED BOOK AND 2011 NEC CHAPTER 9 TABLE 9 FORMULA:			POWER FACTOR			
PHASE B: 4.7			4.7			17.0			H HVAC			VD = 1 * (R * PF + X * SIN(ACOS(PF))) * L			VARIED BY LOAD TYPE			
PHASE C: 4.7			4.7			17.0			L LIGHTING			WITH AN ADDITIONAL MULTIPLIER OF 2 FOR SINGLE PHASE AND			RGS			
									M MOTOR			1.732 FOR 3-PHASE LOADS			CU			
									R RECEPTACLE			R AND X VALUES ARE TAKEN FROM 2011 NEC CHAPTER 9 TABLE 9.						
									P PANEL									
									O OTHER									

ISSUE FOR BID

No.	0	ISSUE FOR BID	NS	NS	9/30/2024
Author	A. YOUNG	Drafting Check	C. RICHARDS	Project Manager	N. STEVENS
Designer	C. RICHARDS	Design Check	C. RICHARDS	Project Director	K. TOBIN



Bar is one inch on original size sheet
0 1"



GHD Inc.
718 Third Street
Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330



Client HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project OSHG INSTALLATION AND INTEGRATION

Title PANEL AND CONDUIT SCHEDULES
2

Project No. 12616149 Date 10/1/2024 Scale AS SHOWN

Sheet No. E-602 Sheet 17 of 17