SET NO. _____

POWER GENERATION STATION 2

CONTRACT DOCUMENTS

VOLUME 6 - DRAWINGS (PART 1 OF 2)

APRIL 2013

SPECIFICATION SD-317A

RECORD DRAWINGS

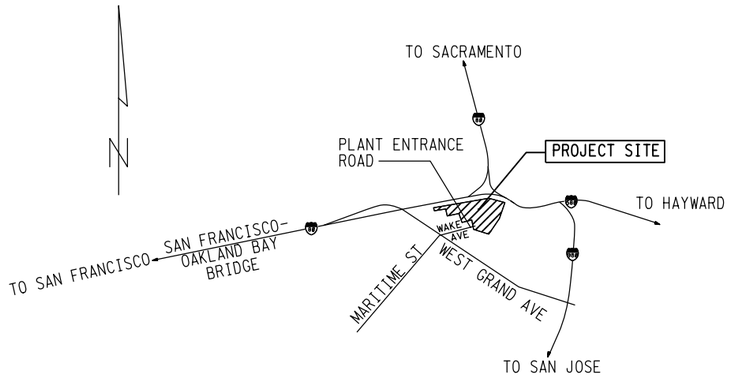
EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

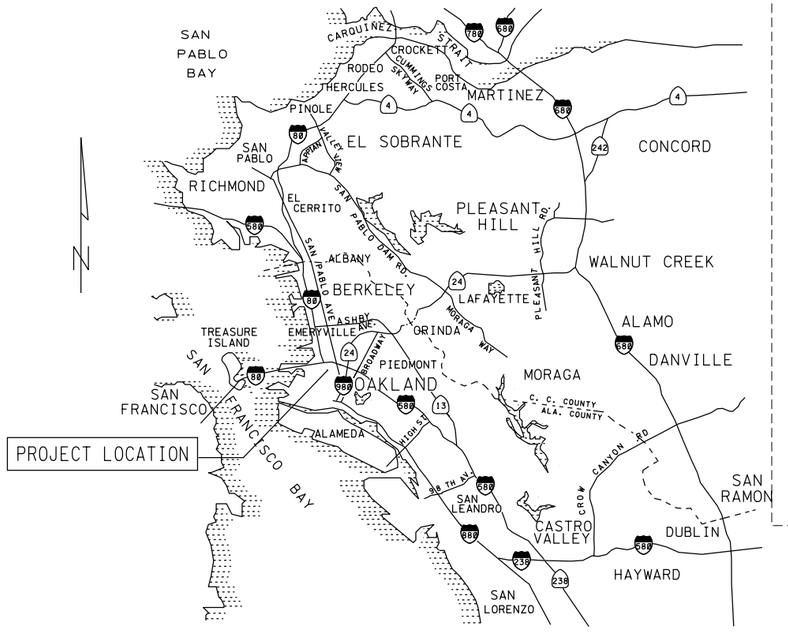
Recommended _____
Edward H. McCormick
Mgr. of Wastewater Engineering Division
R.P.E. No. C 33317

Approved _____
Kurt B. Haunschild
Acting Director of Wastewater
R.P.E. No. C 36554

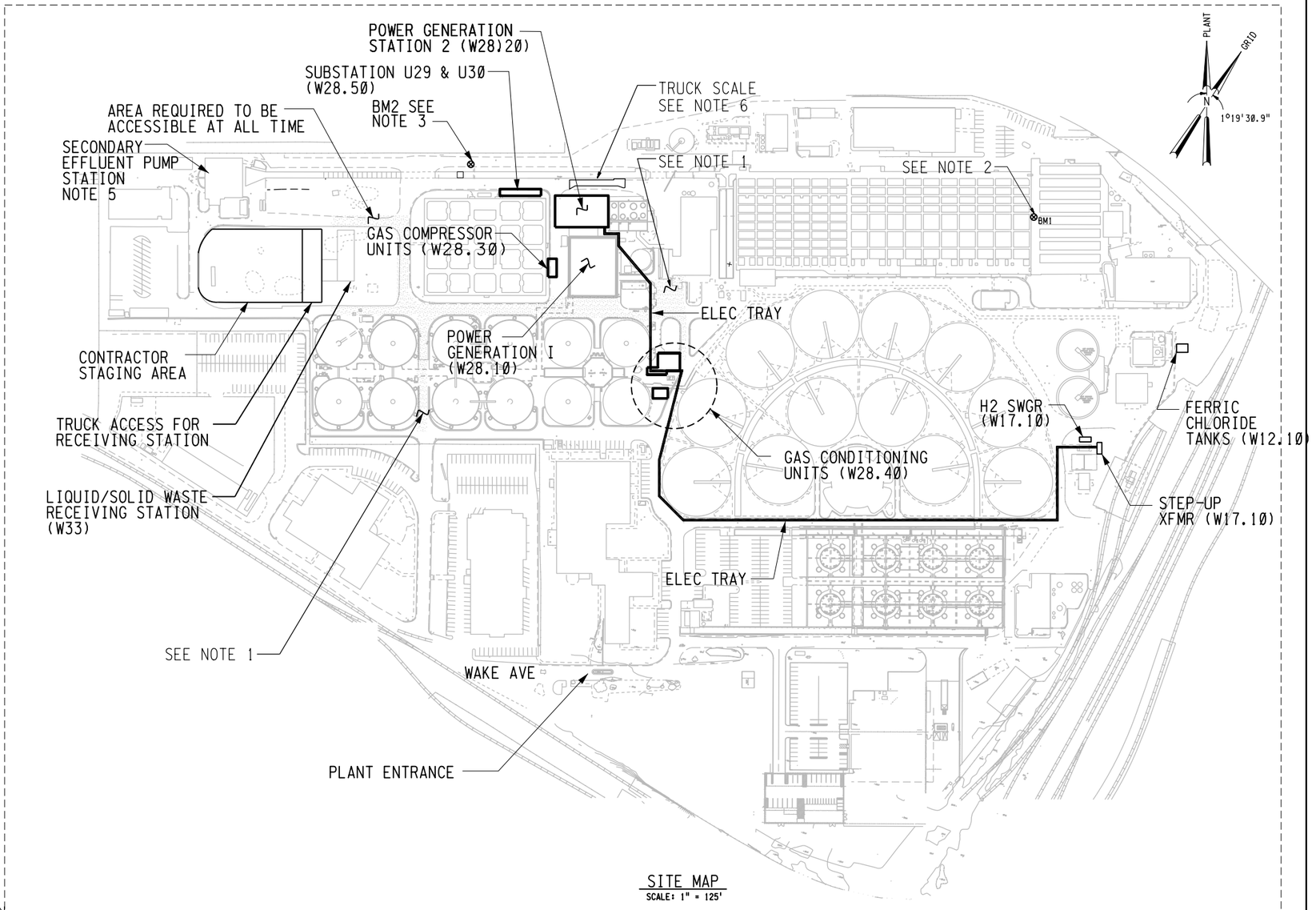
USER: fal
DATE: 26-AUG-2013 15:43
FILE: J:\SD\sd317A\sd317Acover.r00



VICINITY MAP



LOCATION MAP



SITE MAP
SCALE: 1" = 125'

NOTES:

1. AREA MUST BE KEPT OPEN (AVAILABLE FOR DIESEL DELIVERIES)
2. BENCHMARK 1 IS A 2" BRASS DISK SET IN THE WESTERLY WALL OF THE GRIT TANKS, APPROXIMATELY 50' SOUTH OF THE STAIRS TO THE PRIMARY EFFLUENT CHANNEL.
   N=2,128,479.177
   E=6,043,782.872
   ELEV=115.82 (PLANT DATUM)
3. BENCHMARK 2 IS A 2.5" BRASS DISK AT THE WESTERLY END OF THE COVERED PORTION OF THE FINAL EFFLUENT CHANNEL, N 4.27 W1650
   N=2,128,243.347
   E=6,042,568.205
   ELEV=113.005 (PLANT DATUM)
4. FOR AREA CODES SEE G-008. FOR ELECTRICALLY CLASSIFIED AREA SEE DRAWINGS (W28) E-080 AND (W28) E-081.
5. SECONDARY EFFLUENT PUMP STATION IS SOURCE FOR TEMP 480V (50A) AC. IF NEEDED FOR STAGING AREA TRAILERS.
6. ACCESS AND RAMP TO TRUCK SCALE SHALL BE CLEAR ALL THE TIME DURING CONSTRUCTION.

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 08AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DT / SDW
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

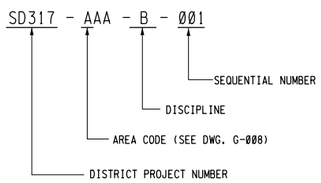
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL
LOCATION MAP, VICINITY MAP, SITE MAP AND NOTES

SCALE	AS SHOWN	SD317A-G-001	1
DATE	JAN2009	DRAWING NUMBER	REV.

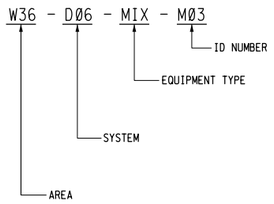
REF 1: W:\Drafters\SD\sd317A\ref\sd317abdr_consultant.mst
REF 2: W:\Drafters\SD\sd317A\STE\MWE\sd317bdr.mst
REF 3: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 4;
REF 5;
REF 6;
REF 7;
REF 8;
REF 9;

USER: fah
DATE: 26AUG-2013 15:31
FILE: J:\SD\sd317A\SD317AG001.R01
PLOT SCALE: 2561

DRAWING NUMBERING SYSTEM



EQUIPMENT NUMBERING SYSTEM



AREAS:

W10 : WET WEATHER STORAGE BASIN

W12 : INFLUENT PUMP STATION (FERRIC CHLORIDE FACILITY)

17 : ELECTRICAL MAIN SUB - STATION

W28 : POWER GENERATION STATION 1 AND 2

W34 : DIGESTER GAS BURNERS

W35 : DIGESTER CONTROL BUILDING AND SURROUNDING DIGESTERS (2-4)

INDEX OF DRAWINGS VOLUME 6

DRAWING NUMBER	DESCRIPTION
GENERAL	
	COVER SHEET
SD317A-G-001	LOCATION MAP, VICINITY MAP, SITE MAP AND NOTES
SD317A-G-002	INDEX OF DRAWINGS - VOLUME 6 AND DRAWING NUMBERING SYSTEM
SD317A-G-003	INDEX OF DRAWINGS - VOLUME 7
SD317A-G-004	DESIGN CRITERIA
SD317A-G-005	ABBREVIATIONS 1
SD317A-G-006	ABBREVIATIONS 2
SD317A-G-007	LEGEND AND SECTION, DETAILS, ELEVATION AND PHOTO DESIGNATION
SD317A-G-008	EQUIPMENT TAG AND GENERAL AREA CODES
SD317A-G-009	EQUIPMENT TAG DETAILS, SYSTEM CODES AND COLORS
SD317A-G-010	EQUIPMENT TAG EQUIPMENT CODES
W28.00-G-201	GAS AND HOT WATER FLOW DIAGRAM
W28.00-G-202	COOLING WATER FLOW DIAGRAM
W28.00-G-203	AIR FLOW DIAGRAM
W12 - FERRIC CHLORIDE PRIMARY STORAGE / FEED FACILITY	
CIVIL	
W12.10-C-101	FERRIC CHLORIDE YARD PIPING PLAN
STRUCTURAL	
W12.10-S-001	GENERAL STRUCTURAL NOTES AND TYPICAL PILE DETAILS
W12.10-S-101	TANK CONTAINMENT AREA - PLAN
W12.10-S-102	TANK CONTAINMENT AREA - SECTIONS
W12.10-S-103	TANK CONTAINMENT AREA - SECTIONS
W12.10-S-901	TYPICAL CONCRETE DETAILS
W12.10-S-902	TYPICAL HANDRAILING AND GRATING DETAILS
W12.10-S-903	TYPICAL EQUIPMENT PAD DETAILS
MECHANICAL	
W12.10-M-001	PIPING AND EQUIPMENT SYMBOLS, DESIGNATION SYSTEMS AND PIPING NOTES
W12.10-M-101	TANK CONTAINMENT AREA - PLAN
W12.10-M-201	TANK CONTAINMENT AREA - SECTIONS 1
W12.10-M-202	TANK CONTAINMENT AREA - SECTIONS 2
W12.10-M-203	DEMOLITION
W12.10-M-901	DETAILS 1
ELECTRICAL	
W12.10-E-001	ELECTRICAL SYMBOLS
W12.10-E-002	ELECTRICAL ABBREVIATIONS AND NOTES
W12.10-E-101	CHLORINATION BUILDING PARTIAL PLAN
W12.10-E-102	TANK CONTAINMENT AREA PLAN
W12.10-E-103	INFLUENT PUMPING STATION PARTIAL PLAN
W12.10-E-201	MISCELLANEOUS - SINGLE LINE DIAGRAM 1
W12.10-E-202	MISCELLANEOUS - SINGLE LINE DIAGRAM 2
W12.10-E-203	MISCELLANOEOUS - CONDUIT SCHEDULE
W12.10-E-301	FERRIC CHLORIDE SYSTEM CONTROL DIAGRAMS
W12.10-E-302	FERRIC CHLORIDE SYSTEM CONTROL DIAGRAMS
W12.10-E-901	FERRIC CHLORIDE SYSTEM DETAILS
W12.10-E-902	PANEL DETAILS
INSTRUMENTATION	
W12.10-I-001	SYMBOLS AND DESIGNATIONS
W12.10-I-101	FERRIC CHLORIDE SYSTEM 1 OF 2
W12.10-I-102	FERRIC CHLORIDE SYSTEM 2 OF 2
W12.10-I-901	DETAILS
W17 / W28 PGS EXPANSION	
CIVIL	
W17.10-C-047	SWITCHGEAR/TRANSFOMER SITE PLAN
W28.20-C-001	GENERAL CIVIL NOTES
~~W28.20-C-040.D~~	~~PAVING PLAN DEMO 1~~ (OBSOLETE)
~~W28.20-C-041.D~~	~~PAVING PLAN DEMO 2~~ (OBSOLETE)
W28.20-C-041	PAVING AND GRADING PLAN 1
W28.20-C-042	PAVING AND GRADING PLAN 2
W28.20-C-043	YARD PIPING PLAN 1
W28.20-C-044	YARD PIPING PLAN 2
W28.20-C-045	TUNNEL PIPING PLAN
W28.20-C-046	MISCELLANEOUS YARD PIPING PLAN
~~W28.20-C-047.D~~	~~DEMOLITION PIPING PLAN 1~~ (OBSOLETE)
~~W28.20-C-048.D~~	~~DEMOLITION PIPING PLAN 2~~ (OBSOLETE)
W28.20-C-201	TUNNEL PIPING SECTIONS AND DETAILS
W28.20-C-202	YARD PIPING SECTIONS AND DETAILS 1
W28.20-C-203	YARD PIPING SECTIONS
W28.20-C-204	MISCELLANEOUS DETAILS
~~W28.20-C-205.D~~	~~DEMOLITON DETAILS - PHOTOS 1~~ (OBSOLETE)
~~W28.20-C-206.D~~	~~DEMOLITION DETAILS - PHOTOS 2~~ (OBSOLETE)
~~W28.20-C-207.D~~	~~DEMOLITON DETAILS - PHOTOS 3~~ (OBSOLETE)
W28.20-C-301	POTHOLE AND CATCH BASIN SCHEDULES
W28.20-C-901	TYPICAL CIVIL DETAILS 1
W28.20-C-902	TYPICAL CIVIL DETAILS 2
W28.20-C-903	TYPICAL CIVIL DETAILS 3

INDEX OF DRAWINGS VOLUME 6 - CONTINUED

DRAWING NUMBER	DESCRIPTION
ARCHITECTURAL	
W28.20-A-001	PGS 2 BUILDING - BULDING DATA
W28.20-A-101	PGS 2 BUILDING FLOOR PLAN
W28.20-A-102	PGS 2 BUILDING LOWER ROOF PLAN
W28.20-A-104	PGS 2 BUILDING ENLARGED PLAN
W28.20-A-105	PGS 2 BUILDING REFLECTED CEILING PLAN
W28.20-A-106	PGS 2 BUILDING NORTH ELEVATION
W28.20-A-107	PGS 2 BUILDING EAST ELEVATION
W28.20-A-108	PGS 2 BUILDING SOUTH ELEVATION
W28.20-A-109	PGS 2 BUILDING WEST ELEVATION
W28.20-A-111	PGS 2 BUILDING INTERIOR ELEVATIONS 1
W28.20-A-112	PGS 2 BUILDING INTERIOR ELEVATIONS 2
W28.20-A-113	PGS 2 BUILDING INTERIOR ELEVATIONS 3
W28.20-A-114	PGS 2 BUILDING INTERIOR ELEVATIONS 4
W28.20-A-201	PGS 2 BUILDING SECTION
W28.20-A-203	PGS 2 BUILDING WALL SECTIONS
W28.20-A-205	PGS 2 BUILDING DETAILS 2
W28.20-A-206	PGS 2 BUILDING DETAILS 3
W28.20-A-207	PGS 2 BUILDING DETAILS 4
W28.20-A-209	PGS 2 BUILDING DETAILS 6
W28.20-A-210	PGS 2 BUILDING DETAILS 7
W28.20-A-301	PGS 2 BUILDING WINDOW & FINISH SCHEDULE
W28.20-A-302	PGS 2 BUILDING DOOR SCHEDULE
STRUCTURAL	
~~W17.10-S-102.D~~	~~DEMOLITION PLAN 2~~ (OBSOLETE)
W17.10-S-108	SWITCHGEAR/TRANSFORMER FOUNDATION PLAN
W17.10-S-115	PILE SUPPORTED DUCTBANK
W17.10-S-229	SWITCHGEAR/TRANSFORMER SECTIONS
~~W28.20-S-101.D~~	~~DEMOLITION PLAN 1~~ (OBSOLETE)
W28.20-S-101	PGS 2 BUILDING FOUNDATION / PILE PLAN
W28.20-S-102	PGS 2 BUILDING FLOOR PLAN
W28.20-S-103	PGS 2 BOILER ROOF AND ACCESS PLATFORM FRAMING PLAN
W28.20-S-107	PARTIAL SITE PLAN BETWEEN PGS 2 AND PGS 1 BUILDINGS
W28.20-S-112	CABLE TRAY SUPPORT PLAN 1
W28.20-S-113	CABLE TRAY SUPPORT PLAN 2
W28.20-S-114	ELECTRICAL PULL BOX PLAN
W28.20-S-200	PGS 2 BUILDING SECTION 1
W28.20-S-219	PGS 2 BUILDING SECTIONS AND DETAILS
W28.20-S-220	PGS 2 BUILDING SECTIONS AND DETAILS
W28.20-S-221	PGS 2 BUILDING SECTIONS AND DETAILS
W28.20-S-222	PGS 2 BUILDING SECTIONS AND DETAILS
W28.20-S-223	PGS 2 BUILDING SECTIONS AND DETAILS
W28.20-S-224	PGS 2 BUILDING SECTIONS AND DETAILS
W28.20-S-225	BUILDING CANOPY SECTIONS AND DETAILS 1
W28.20-S-226	BUILDING CANOPY SECTIONS AND DETAILS 2
W28.20-S-228	PIPE SUPPORTED DUCTBANK SECTIONS AND DETAILS
W28.20-S-233	CABLE TRAY SECTIONS AND DETAILS
W28.20-S-234	ABOVE GROUND PIPE SUPPORT SECTIONS AND DETAILS 1
W28.20-S-235	ABOVE GROUND PIPE SUPPORT SECTIONS AND DETAILS 2
W28.20-S-901	TYPICAL STRUCTURAL DETAILS
W28.20-S-902	TYPICAL STRUCTURAL DETAILS
W28.20-S-903	TYPICAL STRUCTURAL DETAILS
W28.20-S-904	TYPICAL STRUCTURAL DETAILS
W28.20-S-907	TYPICAL STRUCTURAL DETAILS
W28.20-S-908	TYPICAL STRUCTURAL DETAILS
W28.20-S-910	TYPICAL STRUCTURAL DETAILS
W28.20-S-911	TYPICAL STRUCTURAL DETAILS
W28.30-S-101	GAS COMPRESSOR FOUNDATION PLAN
W28.30-S-201	GAS COMPRESSOR SECTIONS
W28.40-S-101	GAS CONDITIONING UNITS FOUNDATION PLAN
W28.40-S-201	GAS CONDITIONING UNIT SECTIONS AND DETAILS 1
W28.40-S-202	GAS CONDITIONING UNIT SECTIONS AND DETAILS 2
W28.50-S-101	SUBSTATION FOUNDATION PLAN
W28.50-S-201	SUBSTATION SECTIONS

INDEX OF DRAWINGS VOLUME 6 - CONTINUED

DRAWING NUMBER	DESCRIPTION
MECHANICAL	
W28.10-M-101	NO. 3 COOLING WATER PUMPS PLAN
W28.20-M-001	GENERAL MECHANICAL LEGENDS AND SYMOBOLS
W28.20-M-002	HVAC SYMBOLS, LEGEND, AND ABBREVIATIONS
W28.20-M-003	MECHANICAL AND HVAC NOTES
~~W28.20-M-101D~~	~~MECHANICAL DEMOLITION PLAN~~ (OBSOLETE)
~~W28.20-M-102D~~	~~MECHANICAL DEMOLITION PLAN~~ (OBSOLETE)
W28.20-M-101	PGS 2 BUILDING FLOOR PLAN
W28.20-M-107	COOLING WATER LOOP PUMPS PLAN
~~W28.20-M-201D~~	~~MECHANICAL DEMOLITION DETAILS~~ (OBSOLETE)
W28.20-M-202	PGS 2 BUILDING SECTION 1
W28.20-M-203	PGS 2 BUILDING SECTION 2
W28.20-M-204	PGS 2 BUILDING SECTION 3
W28.20-M-205	AIR COMPRESSOR/OIL LUBE COOLER DETAILS
W28.20-M-209	NO. 3 COOLING WATER PUMP SECTIONS AND DETAILS
W28.20-M-210	COOLING WATER LOOP PUMPS SECTIONS AND DETAILS
W28.20-M-211	EXISTING WATER PUMPS RELOCATIONS
W28.20-M-212	COOLING LOOP SECTIONS AND DETAILS
W28.20-M-601	PGS 2 FLOOR DRAINAGE PLAN
W28.20-M-602	PGS 2 BUILDING PLUMBING PLAN
W28.20-M-802	PGS 2 BUILDING HVAC PLAN 2
W28.20-M-850	PGS 2 BUILDING HVAC SECTION 1
W28.20-M-853	PGS 2 BUILDING HVAC SECTIONS AND DETAILS
W28.20-M-901	TYPICAL MECHANICAL DETAILS 1
W28.20-M-902	TYPICAL MECHANICAL DETAILS 2
W28.20-M-903	TYPICAL MECHANICAL DETAILS 3
W28.20-M-904	TYPICAL MECHANICAL DETAILS 4
W28.20-M-905	TYPICAL MECHANICAL DETAILS 5
W28.20-M-906	TYPICAL MECHANICAL DETAILS 6
W28.20-M-907	TYPICAL HVAC DETAILS 1
W28.30-M-101	GAS COMPRESSOR PLANS
W28.30-M-201	GAS COMPRESSOR SECTIONS AND DETAILS
W28.40-M-101	GAS CONDITIONING PLAN 1
W28.40-M-102	GAS CONDITIONING PLAN 2
W28.40-M-201	GAS CONDITIONING UNITS SECTIONS AND DETAILS 1
W28.40-M-202	GAS CONDITIONING UNITS SECTIONS AND DETAILS 2

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 13AUG2012 RECORD DRAWING INSP. MAB		JK	

CONSULTANT

DESIGN BY:	DT/BA/WTT
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
EBMUD PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL
INDEX OF DRAWINGS - VOLUME 6
AND DRAWING NUMBERING SYSTEM

SCALE	AS SHOWN	SD317A-G-002	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 7: REF 8: REF 9:
REF 4: REF 5: REF 6:
REF 1: J:\SD\sd317A\ref\sd317abdr_consultant.mst
REF 2: REF 3:
PLOT SCALE: 0.166667:1
USER: rmojica
DATE: 14-MAY-2013 09:01
FILE: J:\SD\sd317A\SD317AG002.R01

INDEX OF DRAWINGS VOLUME 7

DRAWING NUMBER	DESCRIPTION
ELECTRICAL	
SD317A-W17-E-000	ELECTRICAL NOTES AND SHEET INDEX
SD317A-W17-E-001	LEGENDS, SYMBOLS, ABBREVIATIONS AND NOTES - SHEET 1
SD317A-W17-E-002	LEGENDS, SYMBOLS, ABBREVIATIONS AND NOTES - SHEET 2
SD317A-W17-E-040	SITE PLAN - MAIN SUBSTATION NEWINSTALLATION
SD317A-W17-E-040.D	SITE PLAN - MAIN SUBSTATION EXISTING SUBSTATION REMOVAL WORK
SD317A-W17-E-101	PGS 2 TO MAIN SUBSTAION - CONDUIT AND CABLE ROUTING
SD317A-W17-E-102	MAIN SUBSTATION AREA UG CONDUIT, GROUNDING AND MANHOLES
SD317A-W17-E-120	CONDUIT AND CABLE SCHEDULE MAIN SUBSTATION - SHEET 1
SD317A-W17-E-121	CONDUIT AND CABLE SCHEDULE MAIN SUBSTATION - SHEET 2
SD317A-W17-E-201	SINGLE LINE METER AND RELAY DIAGRAM - MAIN SUBSTATION 15KV H1/H2 SWITCHGEARS
SD317A-W17-E-202	SINGLE LINE METER AND RELAY DIAGRAM - 5KV M1-WEST SWITCHGEAR
SD317A-W17-E-203	SINGLE LINE METER AND RELAY DIAGRAM - 5KV M1-EAST SWITCHGEAR
SD317A-W17-E-204	MAIN SUBSTATION SWITCHGEAR H2 AUTOMATIC SYNCHRONIZING SCHEME
SD317A-W17-E-210	MAIN SUBSTATION SWITCHGEAR M1-WEST AND M1-EAST - MAIN-TIE-MAIN AUTO TRANSFER DESCRIPTION OF OPERATION
SD317A-W17-E-211	MAIN SUBSTATION SWITCHGEARS H1/H2 - THREE LINE PT SCHEMATICS - SYNCHRONIZING POTENTIALS
SD317A-W17-E-212	MAIN SUBSTATION SWITCHGEAR H1 MODIFICATION - THREE LINE AC SCHEMATIC - SHEET 1
SD317A-W17-E-213	MAIN SUBSTATION SWITCHGEAR H1 MODIFICATION - THREE LINE AC SCHEMATIC - SHEET 2
SD317A-W17-E-220	MAIN SUBSTATION SWITCHGEAR H2 PLAN AND ELEVATION - SHEET 1
SD317A-W17-E-221	MAIN SUBSTATION SWITCHGEAR H2 PLAN AND ELEVATION - SHEET 2
SD317A-W17-E-222	MAIN SUBSTATION SWITCHGEAR H2 NAME PLATE SCHEDULE
SD317A-W17-E-222A	MAIN SUBSTATION SWITCHGEAR H2 DEVICE LIST
SD317A-W17-E-223	MAIN SUBSTATION SWITCHGEAR H1 MODIFICATION ELEVATION, NAMPLATE SCHEDULE AND NEW DEVICE LIST
SD317A-W17-E-224	MAIN SUBSTATION SWITCHGEAR M1-EAST MODIFICATIONS ELEVATION, NAMEPLATE SCHEDULE AND DEVICE LIST
SD317A-W17-E-225	MAIN SUBSTATION SWITCHGEAR M1-WEST MODIFICATIONS ELEVATION, NAMEPLATE SCHEDULE AND DEVICE LIST
SD317A-W17-E-226	MAIN SUBSTATION SWITCHGEAR M1-EAST MODIFICATIONS - THREE LINE AC SCHEMATIC
SD317A-W17-E-227	MAIN SUBSTATION SWITCHGEAR M1-WEST MODIFICATIONS - THREE LINE AC SCHEMATIC
SD317A-W17-E-230	MAIN SUBSTATION SWITCHGEAR H2 AC AND DC PANEL SCHEDULES
SD317A-W17-E-301	MAIN SUBSTATION SWITCHGEAR H2 - FEEDER PGS 2 DC CONTROL SCHEMATIC
SD317A-W17-E-302	MAIN SUBSTATION SWITCHGEAR H2 - FEEDER T20 DC CONTROL SCHEMATIC
SD317A-W17-E-302A	MAIN SUBSTATION SWITCHGEAR H2 - XFMR T20 DIFF. PROTECTION DC CONTROL SCHEMATIC
SD317A-W17-E-303	MAIN SUBSTATION SWITCHGEAR H2 - FEEDER T21 DC CONTROL SCHEMATIC
SD317A-W17-E-303A	MAIN SUBSTATION SWITCHGEAR H2 - XFMR T21 DC CONTROL SCHEMATIC
SD317A-W17-E-304	MAIN SUBSTATION SWITCHGEAR H2 - FEEDER T23 DC CONTROL SCHEMATIC
SD317A-W17-E-304A	MAIN SUBSTATION SWITCHGEAR H2 - XFMR T23 DIFF. PROTECTION DC CONTROL SCHEMATIC
SD317A-W17-E-305	MAIN SUBSTATION SWITCHGEAR H2, FEEDER H2-H1 TIE-A DC CONTROL SCHEMATIC
SD317A-W17-E-306	MAIN SUBSTATION SWITCHGEAR H2, FEEDER H2-H1 TIE-B DC CONTROL SCHEMATIC
SD317A-W17-E-307	MAIN SUBSTATION SWITCHGEAR H2, PROTECTIVE RELAYS CONTACT TABLES -SHEET 1
SD317A-W17-E-308	MAIN SUBSTATION SWITCHGEAR H2, PROTECTIVE RELAYS CONTACT TABLES AUTO SYNC. RELAY SEL 451-4 -SHEET 2
SD317A-W17-E-309	MAIN SUBSTATION SWITCHGEAR H1, CONTROL SCHEMATICS
SD317A-W17-E-310	MAIN SUBSTATION SWITCHGEAR H1, CONTROL SCHEMATICS
SD317A-W17-E-311	MAIN SUBSTATION SWITCHGEAR H1, CONTROL SCHEMATICS
SD317A-W17-E-312	MAIN SUBSTATION SWITCHGEAR M1 - EAST TYPICAL FEEDER BREAKER DC CONTROL SCHEMATIC MODIFICATIONS
SD317A-W17-E-313	MAIN SUBSTATION SWITCHGEAR M1 - WEST TYPICAL FEEDER BREAKER DC CONTROL SCHEMATIC MODIFICATIONS
SD317A-W17-E-314	MAIN SUBSTATION SWITCHGEAR M1-WEST, TIE BREAKER (UNIT 102) DC CONTROL SCHEMATIC
SD317A-W17-E-315	MAIN SUBSTATION SWITCHGEAR M1-WEST, MAIN (UNIT 101) BREAKER DC CONTROL SCHEMATIC
SD317A-W17-E-316	MAIN SUBSTATION SWITCHGEAR M1-EAST, MAIN UNIT (UNIT 201) DC CONTROL SCHEMATIC
SD317A-W17-E-317	MAIN SUBSTATION SWITCHGEAR M1-WEST MODIFICATIONS, PGS1 INCOMING BREAKER UNITS 303 & 302 DC CONTROL SCHEMATIC - SHEET1
SD317A-W17-E-317A	MAIN SUBSTATION SWITCHGEAR M1-WEST MODIFICATIONS, PGS1 INCOMING BREAKER UNITS 303 & 302 DC CONTROL SCHEMATIC - SHEET 2
SD317A-W17-E-317B	MAIN SUBSTATION SWITCHGEAR M1-WEST MODIFICATIONS, PGS1 INCOMING BREAKER UNITS 303 & 302 THREE LINE SCHEMATIC
SD317A-W17-E-318	MAIN SUBSTATION SWITCHGEAR H2, H2A BUS DIFFERENTIAL AND BREAKER FAILURE LOCKOUT RELAYS SCHEMATIC
SD317A-W17-E-319	MAIN SUBSTATION SWITCHGEAR H2, H2B BUS DIFFERENTIAL AND BREAKER FAILURE LOCKOUT RELAYS SCHEMATIC
SD317A-W17-E-320	MAIN SUBSTATION SWITCHGEAR H2, TIE BREAKER H2-150 DC CONTROL SCHEMATIC
SD317A-W17-E-321	MAIN SUBSTATION SWITCHGEAR H2, FEEDER BREAKER H2-101 DC CONTROL SCHEMATIC
SD317A-W17-E-322	MAIN SUBSTATION SWITCHGEAR H2, FEEDER BREAKER H2-102 DC CONTROL SCHEMATIC
SD317A-W17-E-323	MAIN SUBSTATION SWITCHGEAR H2, FEEDER BREAKER H2-201 DC CONTROL SCHEMATIC
SD317A-W17-E-324	MAIN SUBSTATION SWITCHGEAR H2, FEEDER BREAKER H2-202 DC CONTROL SCHEMATIC
SD317A-W17-E-540	MAIN SUBSTATION SWITCHGEAR H1, I/O PROCESSOR SEL-2411-H1 SCHEMATIC
SD317A-W17-E-541	MAIN SUBSTATION SWITCHGEAR H1, REMOTE I/O MODULE SEL-2506-H1 SCHEMATIC
SD317A-W17-E-542	MAIN SUBSTATION SWITCHGEAR H2, I/O PROCESSOR SEL-2411-H2A SCHEMATIC
SD317A-W17-E-543	MAIN SUBSTATION SWITCHGEAR H2, REMOTE I/O MODULE SEL-2506-H2A1 SCHEMATIC
SD317A-W17-E-544	MAIN SUBSTATION SWITCHGEAR H2, REMOTE I/O MODULE SEL-2506-H2B1 SCHEMATIC
SD317A-W17-E-545	MAIN SUBSTATION SWITCHGEAR M1-EAST, I/O PROCESSOR SEL-2411-M1B1 SCHEMATIC
SD317A-W17-E-546	MAIN SUBSTATION SWITCHGEAR M1-EAST, REMOTE I/O MODULE SEL-2506-M1B1 SCHEMATIC
SD317A-W17-E-547	MAIN SUBSTATION SWITCHGEAR M1-EAST, REMOTE I/O MODULE SEL-2506-M1B2 SCHEMATIC
SD317A-W17-E-548	MAIN SUBSTATION SWITCHGEAR M1-EAST, REMOTE I/O MODULE SEL-2506-M1B3 SCHEMATIC
SD317A-W17-E-549	MAIN SUBSTATION SWITCHGEAR M1-EAST, I/O PROCESSOR SEL-2411-M1B2 SCHEMATIC
SD317A-W17-E-550	MAIN SUBSTATION SWITCHGEAR M1-WEST, REMOTE I/O MODULE SEL-2506-M1A1 SCHEMATIC
SD317A-W17-E-551	MAIN SUBSTATION SWITCHGEAR M1-WEST, REMOTE I/O MODULE SEL-2506-M1A2 SCHEMATIC
SD317A-W17-E-552	MAIN SUBSTATION SWITCHGEAR M1-WEST, REMOTE I/O MODULE SEL-2506-M1A3 SCHEMATIC
SD317A-W17-E-553	MAIN SUBSTATION SWITCHGEAR M1-WEST, I/O PROCESSOR SEL-2411-M1A2 SCHEMATIC
SD317A-W17-E-554	MAIN SUBSTATION SWITCHGEAR H2, I/O PROCESSOR SEL-2411-H2B SCHEMATIC
SD317A-W17-E-555	MAIN SUBSTATION SWITCHGEAR M1 WEST, I/O PROCESSOR SEL-2411-M1A1 SCHEMATIC
SD317A-W17-E-560	SCADA AND LOAD SHEDDING SYSTEM NETWORK TOPOLOGY
SD317A-W17-E-561	MAIN SUBSTATION SWITCHGEAR H1/H2-SCADA AND LOAD SHEDDING SYSTEM COMMUNICATION BLOCK DIAGRAM
SD317A-W17-E-562	MAIN SUBSTATION SWITCHGEAR M1-EAST-SCADA AND LOAD SHEDDING SYSTEM COMMUNICATION BLOCK DIAGRAM
SD317A-W17-E-563	MAIN SUBSTATION SWITCHGEAR M1-WEST-SCADA AND LOAD SHEDDING SYSTEM COMMUNICATION BLOCK DIAGRAM
SD317A-W17-E-901	ELECTRICAL DETAILS MAIN SUBSTATION
SD317A-W17-E-902	ELECTRICAL DETAILS MAIN SUBSTATION
SD317A-W17-E-903	ELECTRICAL DETAILS
SD317A-W17-E-904	ELECTRICAL DETAILS MAIN SUBSTATION MANHOLE DEVELOPMENTS

INDEX OF DRAWINGS VOLUME 7 - CONTINUED

DRAWING NUMBER	DESCRIPTION
SD317A-W28-E-000	ELECTRICAL NOTES AND SHEET INDEX
SD317A-W28-E-001	ELECTRICAL LEGENDS, ABBREVIATION & NOTES - SHEET1
SD317A-W28-E-002	ELECTRICAL LEGENDS, ABBREVIATION & NOTES - SHEET 2
SD317A-W28-E-004	PGS 2 MANHOLE DEVELOPMENTS
SD317A-W28-E-040	SUBSTATION U29/U30 ARRANGEMENT PLAN
SD317A-W28-E-040D	ELECTRICAL DEMOLITION PLAN
SD317A-W28-E-043	PGS 2 BUILDING EQUIPMENT ARRANGEMENT
SD317A-W28-E-080	HAZARDOUS AREA CLASSIFICATION SITE PLAN GAS COMPRESSOR LOCATION
SD317A-W28-E-081	HAZARDOUS AREA CLASSIFICATION SITE PLAN GAS CONDITION LOCATION
SD317A-W28-E-082	HAZARDOUS AREA CLASSIFICATION SITE PLAN TURBINE/GENERATOR LOCATION
SD317A-W28-E-101	U29/U30 CONDUITS, MANHOLE AND GROUNDING PGS 2 BUILDING AREA
SD317A-W28-E-102	PGS 1/PGS 2 AREA CONDUITS, TRAYS, AND GAS COMPRESSOR SKID GROUDIND PLAN
SD317A-W28-E-103	PGS 2 BUILDING UG CONDUITS
SD317A-W28-E-104	PGS 2 BUILDING GROUNDING SYSTEM
SD317A-W28-E-120	CONDUIT AND CABLE SCHEDULE - MEDIUM VOLTAGE POWER
SD317A-W28-E-121	CONDUIT AND CABLE SCHEDULE - LOW VOLTAGE POWER AND CONTROL SHEET 1
SD317A-W28-E-122	CONDUIT AND CABLE SCHEDULE - LOW VOLTAGE POWER AND CONTROL SHEET 2
SD317A-W28-E-123	CONDUIT AND CABLE SCHEDULE - LOW VOLTAGE POWER AND CONTROL SHEET 3
SD317A-W28-E-124	CONDUIT AND CABLE SCHEDULE - LOW VOLTAGE POWER AND CONTROL SHEET 4
SD317A-W28-E-125	CONDUIT AND CABLE SCHEDULE - LOW VOLTAGE POWER AND CONTROL SHEET 5
SD317A-W28-E-126	INSTRUMENTATION AND CONTROL CABLE SCHEDULE SHEET 1
SD317A-W28-E-127	INSTRUMENTATION AND CONTROL CABLE SCHEDULE SHEET 2
SD317A-W28-E-128	INSTRUMENTATION AND CONTROL CABLE SCHEDULE SHEET 3
SD317A-W28-E-130	PGS 2 BUILDING OVERHEAD CONDUIT AND TRAY SYSTEM
SD317A-W28-E-130A	PGS 2 BUILDING SECTION THRU COLUMN LINE 5
SD317A-W28-E-131	ELECTRICAL DISTRIBUTION SITE PLAN - OUTDOOR OVERHEAD FEEDER CABLE TRAY SYSTEM
SD317A-W28-E-132	GAS CONDITIONING SYSTEM - PLAN
SD317A-W28-E-140	PGS 2 BUILDING - LIGHT FIXTURE SCHEDULE
SD317A-W28-E-141	PGS 2 BUILDING - TITLE 24 COMPLIANCE
SD317A-W28-E-142	PGS 2 BUILDING - LIGHTING WIRING DIAGRAM AND DETAILS
SD317A-W28-E-150	PGS 2 BUILDING - LIGHTING PLAN
SD317A-W28-E-152	PGS 2 BUILDING CANOPY - LIGHTING PLAN
SD317A-W28-E-153	COOLING WATER LOOP PUMPS - POWER PLAN
SD317A-W28-E-154	COOLING LOOP SECTIONS AND DETAILS
SD317A-W28-E-160	PGS 2 BUILDING - POWER PLAN
SD317A-W28-E-161	NO. 3 COOLING WATER PUMPS POWER PLAN
SD317A-W28-E-202	SINGLE LINE METER AND RELAY DIAGRAM - PGS 2
SD317A-W28-E-203	SINGLE LINE METER AND RELAY DIAGRAM - PGS 1
SD317A-W28-E-204	PRIMARY UNIT SUBSTATION U30 - 5KV SWITCHGEAR AND M/V MOTOR CONTROLLER
SD317A-W28-E-205	PGS 2 MOTOR CONTROL CENTER - MCC-1 (GEN. UNIT GT-1)
SD317A-W28-E-207	PGS 2 MOTOR CONTROL CENTER - MCC-5 - GAS COMPRESSOR
SD317A-W28-E-208	PGS 2 MOTOR CONTROL CENTER MCC-4 - AUXILIARIES AND BUILDING SERVICES
SD317A-W28-E-210	PGS 2 GENERATOR BREAKER - THREE LINE AC SCHEMATIC
SD317A-W28-E-211	PGS 2 15KV SWITCHGEAR BUS - THREE LINE POTENTIAL SCHEMATIC
SD317A-W28-E-211A	PGS 2 15KV SWITCHGEAR - THREE LINE AC CURRENT SCHEMATIC BUS DIFFERENTIAL PROTECTION
SD317A-W28-E-212	PRIMARY UNIT SUBSTATION U30 - 5KV MOTOR CONTROLLER AC SCHEMATIC
SD317A-W28-E-220	15KV INDOOR SWITCHGEAR PGS 2 - PLAN AND ELEVATION
SD317A-W28-E-221	15KV INDOOR SWITCHGEAR PGS 2 - PANEL NAMEPLATE SCHEDULE AND DEVICE LIST
SD317A-W28-E-222	PGS 2 SECONDARY UNIT SUBSTATION U29 - PLAN ELEVATION AND NAMEPLATE SCHEDULE
SD317A-W28-E-223	PGS 2 MANUAL CONTROL PANEL ELEVATION, PANEL NAMEPLATE SCHEDULE AND DEVICE LIST
SD317A-W28-E-224	PRIMARY UNIT SUBSTATION U30-ELEVATION, NAMEPLATE SCHEDULE AND DEVICE LIST
SD317A-W28-E-230	PGS 2 BUILDING - 480V AND 208V PANEL SCHEDULES
SD317A-W28-E-231	PGS 1 GENERATOR 5KV SWITCHGEAR MODIFICATION - UNITS 7, 8 & 9
SD317A-W28-E-231A	PGS 1 GENERATOR 5KV SWITCHGEAR MODIFICATION - PANEL 7 & 9 NAMEPLATE SCHEDULE AND DEVICE LIST
SD317A-W28-E-232	PGS 1 GENERATOR 5KV SWITCHGEAR MODIFICATION - FEEDER CONDUITS INSTALLATION
SD317A-W28-E-301	PGS 2 GENERATOR BREAKER DC CONTROL SCHEMATIC
SD317A-W28-E-302	PGS 2 GENERATOR PROTECTIVE RELAY SEL-300G CONTACT TABLE
SD317A-W28-E-303	PGS 2 15KV SWITCHGEAR FEEDER BREAKER PGS2-100 DC CONTROL SCHEMATIC
SD317A-W28-E-304	PGS 2 15KV SWITCHGEAR FEEDER BREAKER PGS2-100 LINE PROTECTIVE RELAYS CONTACT TABLES
SD317A-W28-E-305	PGS 2 15KV SWITCHGEAR FEEDER BREAKER PGS2-100 LINE PROTECTIVE RELAYS CONTACT TABLES AUTO-SYNCHRONIZING RELAY
SD317A-W28-E-306	PGS 2 15KV SWITCHGEAR FEEDER BREAKER PGS2-103 DC CONTROL SCHEMATIC
SD317A-W28-E-307	PGS 2 15KV SWITCHGEAR FEEDER BREAKERS PROTECTIVE RELAYS CONTACT TABLE
SD317A-W28-E-308	PGS 2 15KV SWITCHGEAR FEEDER BREAKER PGS2-101 (U29) DC CONTROL SCHEMATIC
SD317A-W28-E-308B	PGS 2 15KV SWITCHGEAR BUS DIFFERENTIAL & BREAKER FAILURE LOCKOUT RELAYS SCHEMATIC
SD317A-W28-E-308C	15KV INDOOR SWITCHGEAR PGS2 XFMR T-22 DIFFERENTIAL PROTECTION DC CONTROL SCHEMATIC
SD317A-W28-E-309	PGS 1 GENERATOR 5KV SWITCHGEAR MODIFICATIONS U30 FEEDER BREAKER DC CONTROL SCHEMATIC
SD317A-W28-E-309A	PGS 1 GENERATOR 5KV SWITCHGEAR MODIFICATIONS U28 FEEDER BREAKER DC CONTROL SCHEMATIC
SD317A-W28-E-309B	PGS 1 GENERATOR 5KV SWITCHGEAR MODIFICATIONS MAIN BREAKER DC CONTROL SCHEMATIC
SD317A-W28-E-310	PGS 1 GENERATOR 5KV SWITCHGEAR MODIFICATIONS FEEDERS U29 & U30 SWITCHGEAR PROTECTIVE RELAYS CONTACT TABLES
SD317A-W28-E-311	PGS 1 GENERATOR 5KV SWITCHGEAR MODIFICATIONS PROTECTIVE RELAYS CONTACT TABLES AUTO SYNC, RELAY SEL 451-4
SD317A-W28-E-312	PRIMARY UNIT SUBSTATION U30 - 5KV FEEDERS PGS 1 - TIE BREAKER DC CONTRO_ SCHEMATIC
SD317A-W28-E-313	PRIMARY UNIT SUBSTATION U30 - MAIN BREAKER DC CONTROL SCHEMATIC
SD317A-W28-E-314	PRIMARY UNIT SUBSTATION U30 - 5KV BREAKERS PROTECTIVE RELAYS CONTACT TABLES
SD317A-W28-E-314A	PRIMARY UNIT SUBSTATION U30 BUS DIFFERENTIAL PROTECTIVE SCHEMATIC
SD317A-W28-E-315	PGS 2 15KV SWITCHGEAR DC PANEL SCHEDULE
SD317A-W28-E-316	PGS 2 CONTROL SCHEMATICS - ON SKID MOTORS AND LUBE OIL TANK HEATER
SD317A-W28-E-317	PGS 2 CONTROL SCHEMATICS - OFF SKID MOTORS
SD317A-W28-E-318	PGS 2 CONTROL SCHEMATICS - PLANT AUXILIARIES
SD317A-W28-E-319	GT-1 TURBINE CONTROL BOX INTERCONNECTION WIRING
SD317A-W28-E-320	GT-1 GENERATOR CONTROL BOX INTERCONNECTION WIRING
SD317A-W28-E-320A	GT-1 GENERATOR CONTROL BOX INTERCONNECTION WIRING
SD317A-W28-E-323	GT-1 TURBINE CONTROL BOX WIRING DIAGRAM
SD317A-W28-E-324	GT-1 GENERATOR CONTROL BOX WIRING DIAGRAM

INDEX OF DRAWINGS VOLUME 7 - CONTINUED

DRAWING NUMBER	DESCRIPTION
SD317A-W28-E-540	PGS 2 SWITCHGEAR I/O PROCESSOR SEL-2411-PGS2 SCHEMATIC
SD317A-W28-E-541	PGS 2 SWITCHGEAR REMOTE I/O MODULE SEL-2506-PGS2 SCHEMATIC
SD317A-W28-E-542	PGS 2 SWITCHGEAR, REMOTE I/O MODULE SEL-2506-PGS1 SCHEMATIC (LOAD SHED MODULE)
SD317A-W28-E-543	PRIMARY UNIT SUBSTATION U30 I/O PROCESSOR SEL-2411-U30 SCHEMATIC
SD317A-W28-E-544	PRIMARY UNIT SUBSTATION U30 REMOTE I/O MODULE SEL-2506-U30 SCHEMATIC
SD317A-W28-E-545	PGS 1 SWITCHGEAR MODIFICATION I/O PROCESSOR SEL-2411 PGS1 SCHEMATIC
SD317A-W28-E-560	PGS 1 AND PGS 2 SWITCHGEAR SCADA AND LOAD SHEDDING SYSTEM COMMUNICATION BLOCK DIAGRAM
SD317A-W28-E-701	PGS 2 BUILDING FIRE ALARM PLAN
SD317A-W28-E-750	PGS 2 BUILDING FIRE ALARM SYSTEM RISER DIAGRAM
SD317A-W28-E-801	PGS 2 BUILDING TELEPHONE, PA SYSTEM AND DATA COMMUNICATION
SD317A-W28-E-850	PGS 2 BUILDING PA SYSTEM BLOCK DIAGRAM
SD317A-W28-E-901	ELECTRICAL DETAILS
SD317A-W28-E-902	ELECTRICAL DETAILS
SD317A-W28-E-903	ELECTRICAL DETAILS
SD317A-W28-E-904	CABLE TRAYS THROUGH BUILDING WALL AND BELOW CANOPIES, SECTIONS AND DETAILS
SD317A-W28-E-905	PARTIAL CABLE TRAY PLAN BETWEEN PGS1 AND PGS 2 BUILDINGS
SD317A-W28-E-906	GENERATOR CABLE TERMINATION DETAIL AND BATTERY CHARGER/DC STARTER MOUNTING DETAIL
SD317A-W28-E-907	DETAIL - TURBINE SKID CABLE ENTRIES
SD317A-W28-E-908	ELECTRICAL DETAILS
SD317A-W28-E-909	ELECTRICAL DETAILS
INSTRUMENTATION	
SD317A-W28-I-001	LEGENDS, SYMBOLS, AND ABBREVIATIONS
SD317A-W28-I-101	P&D - GAS CONDITIONING & STORAGE
SD317A-W28-I-102	P&D - GAS COMPRESSORS
SD317A-W28-I-103	P&D - GAS TURBINE GENERATOR NO. 1
SD317A-W28-I-201	P&D - HEAT RECOVERY UNIT NO. 1
SD317A-W28-I-203	P&D - COOLING SYSTEM NO. 3 WATER PUMPS
SD317A-W28-I-204	P&D - COOLING SYSTEM COOLING WATER PUMPS
SD317A-W28-I-205	P&D - COOLING SYSTEM HEAT EXCHANGERS AND COOLING TOWERS
SD317A-W28-I-206	P&D - GAS TURBINE GENERATOR NO. 1 LUBE OIL SYSTEM
SD317A-W28-I-301	P&D - MISCELLANEOUS SYSTEMS
SD317A-W28-I-530	PANEL PCM-PGS 2 ELEVATION
SD317A-W28-I-560	PGS 2 NETWORK BLOCK DIAGRAM
SD317A-W28-I-901	TYPICAL INSTRUMENTATION DETAILS 1
SD317A-W28-I-902	TYPICAL INSTRUMENTATION DETAILS 2
SD317A-W28-I-903	TYPICAL INSTRUMENTATION DETAILS 3
SD317A-W28-I-904	TYPICAL INSTRUMENTATION DETAILS 4

REF 7; REF 8; REF 9;

REF 4; REF 5; REF 6;

REF 1; W:\Drafters\SD\sd317A\ref\sd317abdr_consultantmst
REF 2;
REF 3;

USER: fxh
DATE: 28-AUG-2013 15:32
FILE: J:\SD\sd317A\SD317A0003.R01
PLOT SCALE: 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	CT/TH
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL
INDEX OF DRAWINGS - VOLUME 7

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

SCALE	NONE	SD317A-G-003	1
DATE	JAN2009	DRAWING NUMBER	REV.

GAS TURBINE GENERATOR UNIT (DISTRICT FURNISHED)

* 1 UNIT (SPACE FOR 2ND UNIT).
* RECUPERATED GAS TURBINE.
* SOLAR MERCURY 50-6000R.
* 4,600 KW NET POWER OUT, ISO CONDITION (59 DEGREES F, 60 PERCENT RELATIVE HUMIDITY).
* 9,019 BTU/KWHR NET HEAT RATE.
* 12,470 VOTL, 3 PHASE, 60 HZ, SYNCHRONOUS GENERATOR.
* COMPLETE TURBINE/GENERATOR CONTROL SYSTEM.
* COMPLETE ACOUSTIC/WEATHER PROOF PACKAGED SKID (VENTILATION, FIRE PROTECTION, CONTROLS, FUEL, LUBRICATION OIL, COMBUSTION AIR, STARTING).
* DESIGN FOR OUTDOOR WEATHER EXPOSED INSTALLATION IN SEVERE MARINE ENVIRONMENT.

HEAT RECOVERY UNIT (HRU)

* 1 UNIT (SPACE FOR 2ND UNIT).
* BY-PASS UNIT.
* VERTICAL FINNED TUBE HEAT EXCHANGER.
* 13.25 MILLION BTUH RECOVERED HEAT.
* 190 DEGREES F OUTLET WATER TEMPERATURE.
* 140 DEGREES F INLET WATER TEMPERATURE.
* 530 GALLONS PER MINUTE (GPM) WATER FLOW RATE.

HRU HOT WATER PUMP

* 1 UNIT (SPACE FOR 2ND UNIT).
* AMERICAN NATIONAL STANDARDS INSTITUDE (ANSI) STYLE HORIZONTAL END SUCTION CENTRIFUGAL PUMP.
* 550 GPM WATER FLOW RATE.

HRU HOT WATER TEMPERATURE CONTROL VALVE

* 1 UNIT (SPACE FOR 2ND UNIT).
* THREE WAY GLOBE STYLE CONTROL VALVE WITH PNEUMATIC DIAGPHRAM ACTUATOR.
* 550 GPM WATER FLOW RATE.

GAS COMPRESSOR UNIT

* 1 UNIT (SPACE FOR 2ND UNIT).
* ROTARY SCREW COMPRESSOR SINGLE SCREW TYPE.
* 1,300 STANDARD CUBIC FEET PER MINUTE (SCFM) EACH.
* 250 POUNDS PER SQUARE INCH GAUGE (PSIG) OUTLET PRESSURE.
* 600 HP.
* APPROXIMATE SKID DIMENSION 12x20 FEET.
* COMPLETE CONTROL SYSTEM.
* DESIGNED FOR OUTDOOR WEATHER EXPOSED INSTALLATION IN SEVERE MARINE ENVIROMENT.

GAS CONDITIONING SYSTEM

* SINGLE STAGE COOLING AND ENGINEERED MEDIA ADSORPTION FOR SILOXANE REMOVAL.
* 1,200 SCFM - 3,000 SCFM
* 1 UNIT GAS BLOWER, 3,000 CFM
* GAS CHILLING/REHEATING PLUS ADSORPTION FOR 99.0 PERCENT SILOXANE REMOVAL.
* SYSTEM DESIGNED WITH 2 TIMES 50 PERCENT CAPACITY VESSELS.
* 2-YEAR MAINTENANCE AGREEMENT.

COOLING WATER SYSTEM

* NO.3 COOLING WATER FROM SECONDARY EFFLUENT CHANNEL.
* 2 NO. 3 COOLING WATER PUMPS - 825 GPM EACH.
* 2 COOLING WATER LOOP PUMPS - 375 GPM EACH.
* 2 COOLING WATER LOOP HEAT EXCHANGERS - 4.0 MILLION BTUH EACH.

ELECTRICAL SYSTEM

* GENERATION AT 12.47 KILOVOLTS (KV), 3 PHASE, 60 HERTZ (HZ).
* NEW 15 KV CABLING/CONDUIT AND NEW 15 KV SWITCHGEAR H-2 TO ALLOW CONNECTION TO EXISTING 12.47 KV POWER DISTRIBUTION SYSTEM.
* IF REQUIRED BY PG&E, A NEW ISOLATION TRANSFORMER 15 MEGAVOLT AMPERES (MVA); 12.47 KV/12.47 KV WILL BE ADDED ADJACENT THE EXISTING M-1/H-1 SWITCHYARD.
* EACH GENERATOR'S NEUTRAL WILL BE HIGH RESISTANCE GROUND THROUGH A DISTRIBUTION TRANSFORMER WITH SECOUNDARY LOADING RESISTOR.
* NEW LOW VOLTAGE MOTOR CONTROL CENTER (MCC) AND GENERATOR SWITCHGEAR TO BE LOCATED IN NEW PGS-2 CONTROL ELECTRICAL ROOM.
* EXISTING SUPERVISORY CONTROL WORKSTATION FOR EXISITNG PGS-1 TO BE RELOCATED TO NEW CONTROL ROOM AT PGS-2.
* MODIFICATION TO EXISTING PGS POWER DISTRIBUTION WILL BE MADE TO RECONNECT THE EXISTING PGS GENERATORS TO EXISTING 12.47 KV POWER DISTRIBUTION SYSTEM.
  - CONNECTION WILL BE VIA NEW 15 KV SWITCHGEAR H-2.
  - CONNECTION WILL INCLUDE A NEW 10 MVA; 12.47 KV/4.16 KV TRANSFORMER TO BE ADDED AT THE EXISTING M-1/H-1 SWITCHYARD.
* BLACK START CAPABILITY WITH PGS-1 GENERATOR CONNECTION TO PGS-2 PARALLELING SWITCHGEAR VIA 7500 KVA, 4.16 KV/12.47 KV TRANSFORMER LOCATED NORTH OF THE WET WEATHER STORAGE BASIN.

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	DT/TGM/CT
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
EBMUD PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL

DESIGN CRITERIA

SCALE	NONE	SD317A-G-004	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: W:\Drafters\SD\sd317A\ref\sd317Abdr_consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317Bbr.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fai
DATE: 28-AUG-2013 15:32
FILE: J:\SD\sd317A\SD317AG004.R01
PLOT SCALE: 0.166667:1

A

A	AMBER, AMMETER, AUTOMATIC
AB	ANCHOR BOLT
ABAND	ABANDONED
ABC	AGGREGATE BASE COURSE
ABS	ABSOLUTE
ABV	ABOVE
AC	AIR CONDITIONING, ALTERNATING CURRENT, ASPHALTIC CONCRETE
ACC	AREA CONTROL CENTER
ACI	AMERICAN CONCRETE INSTITUTE
ACK	ACKNOWLEDGE
ACST	ACOUSTIC
ADD	ADDITION
ADJ	ADJACENT, ADJUST
ADPTR	ADAPTER
AF	AIR FILTER, AMPERE FRAME
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AGG	AGGREGATE
AI	ANALOG INPUT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AIT	ANALYTICAL INDICATOR TRANSMITTER
AL	ALUMINUM, ACOUSTIC LINED
ALLOW	ALLOWANCE
ALM	ALARM
ALT	ALTERNATE
AM	AUTO-MANUAL
AMB	AMBIENT
AMP	AMPERES
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
AO	ANALOG OUTPUT
AP	ACCESS PANEL
APP	APPLIED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AS	ADJUSTABLE SWITCH, AIR SUPPLY, AMMETER SWITCH, AMPERE SENSOR
ASB	ASBESTOS
ASC	ADJUSTABLE SPEED CONTROLLER
ASPH	ASPHALT
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT	AMPERE TRIP
ATM	ATMOSPHERE
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION

B

B	BELL, BLUE
BB	BOTTOM BAR
BBH	BASEBOARD HEATER
B/C	BOTTOM OF CONCRETE
BC	BARE COPPER, BEGINNING OF CURVE, BOLT CIRCLE
B/D	BOTTOM OF DUCT
BD	BOARD
BDD	BACKDRAFT DAMPER
BF	BLIND FLANGE
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BG	BELOW GRADE
BHP	BRAKE HORSEPOWER
BITUM	BITUMINOUS
BKR	BREAKER
BLDG	BUILDING
BLK	BLOCK, BLACK
BLKG	BLOCKING
BLT	BOLT
BLU	BLUE
BLV	BALL VALVE
BM	BEAM, BENCHMARK
BO	BLOWOFF
BOT	BOTTOM
B/P	BOTTOM OF PIPE
BP	BYPASS
BRG	BEARING

B (CONTINUED)

BRK	BREAK
BRN	BROWN
BRZ	BRONZE
B&S	BELL & SPIGOT
BS	BOTH SIDES
BSHG	BUSHING
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
BV	BALL VALVE
BVC	BEGINNING OF VERTICAL CURVE
BTWN	BETWEEN

C

C	CABLE, CENTIGRADE, CLOSE, CONDUIT, STRUCTURAL STEEL CHANNEL
CAB	CABINET
CALIB	CALIBRATE
CAP	CAPACITY
CAT	CATALOG
CB	CATCH BASIN, CIRCUIT BREAKER
CC	CONTROL CABLE, COOLING COIL, CURB COCK
C-C	CENTER TO CENTER
CD	CEILING DIFFUSER, CENTER DISTANCE, CONDENSATION DRAIN
CDF	CONTROLLED DENSITY FILL
CEM	CEMENT
CER	CERAMIC
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CG	CEILING GRILLE
CHAM	CHAMFER
CHEM	CHEMICAL
CI	CAST IRON
CIMJ	CAST IRON MECHANICAL JOINT
CIP	CAST-IN-PLACE
CIR	CIRCLE
CIRC	CIRCULAR
CJ	CONSTRUCTION JOINT
CKT	CIRCUIT
CKV	CHECK VALVE
CL	CLASS, CONTROL LOOP, CLOSE, CENTER LINE
CL2	CHLORINE
CLT	CURRENT LIMITING
CLG	CEILING
CLJ	CONTROL JOINT
CLKG	CAULKING
CLO	CLOSET
CLR	CLEAR, CLEARANCE
CMU	CONCRETE MASONRY UNIT
CNDCT	CONDUCTIVITY
CNTL	CONTROL
CNTLR	CONTROLLER
CNTR	COUNTER
CNTOR	CONTACTOR
CO	CLEANOUT, CONTROL OUTPUT, COMPANY
CO2	CARBON DIOXIDE
COAX	COAXIAL
COL	COLUMN
COM	COMMON
COMP	COMPACTION
COMPT	COMPARTMENT
CON	CONCENTRIC
CONC	CONCRETE
COND	CONDUCTIVITY
CONF	CONFERENCE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS, CONTINUATION
CONTD	CONTINUED
COORD	COORDINATE
COP	COPPER PIPE
CORR	CORRUGATED
COTG	CLEANOUT TO GRADE
CP	CONTROL POINT
CPS	CATHODIC PROTECTION STATION
CPT	CONTROL POWER TRANSFORMER
CR	CEILING REGISTER, CONTROL RELAY, CORROSION RESISTANT
CRE	CORROSION RESISTANT
CRG	CARRIAGE

C (CONTINUED)

CRS	COATED RIGID STEEL CONDUIT, COLD ROLL STEEL
CS	CONTROL STATION, CONTROL SWITCH, CUP SINK
CT	CONDUIT, COURT, CURRENT TRANSFORMER
CTD	CENTERED
CTR	CENTER
CU FT	CUBIC FOOT
CU IN	CUBIC INCH
CU YD	CUBIC YARD
CV	CONTROL VALVE
CW	COLD WATER, CLEAR WELL

D

d	PENNY (NAIL SIZE)
D	DEPTH, DIMMER, DISCHARGE
DB	DECIBEL, DRY BULB
DBL	DOUBLE
DC	DIRECT CURRENT
DCS	DISTRIBUTED CONTROL SYSTEM
DECR	DECREASING
DEG	DEGREES
DEPT	DEPARTMENT
DESC	DESCRIPTION
DET	DETAIL
DF	DOUGLAS FIR
DF/L	DOUGLAS FIR/LARCH
DI	DIGITAL INPUT, DROP INLET
DIA	DIAMETER
DIAG	DIAGRAM, DIAGONAL
DIFF	DIFFERENCE, DELTA
DIMJ	DUCTILE IRON MECHANICAL JOINT
DIM	DIMENSION
DISC	DISCONNECT
DISCH	DISCHARGE
DISP	DISPENSER, DISPLAY
DIV	DIVISION
DL	DAYLIGHT, DOOR LOUVER, DISCRETE LATCHED OUTPUT
DMV	DIAPHRAGM VALVE
DN	DOWN
DO	DIGITAL OUTPUT, DITTO
DP	DEEP, DISCHARGE PRESSURE, DIFFERENTIAL PRESSURE
DPDT	DOUBLE POLE DOUBLE THROW
DR	DRAIN, DOOR, DRIVE
DS	DOWNSPOUT
DWG	DRAWING
DWL	DOWEL
DWV	DRAIN WASTE VENT
DWY	DRIVEWAY

E

E	EAST
(E)	EXISTING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EBMUD	EAST BAY MUNICIPAL UTILITY DISTRICT
EC	END OF CURVE
ECC	ECCENTRIC
EE	EMERGENCY EYEWASH
E/E	VOLTAGE-TO-VOLTAGE
EF	EACH FACE, EXHAUST FAN
EFF	EFFICIENCY
EFL	EFFLUENT
E/I	VOLTAGE-TO-CURRENT
EJ	EXPANSION JOINT
EL	ELEVATION (NUMERIC)
ELEC	ELECTRICAL
ELEV	ELEVATION (VIEW), ELEVATOR
ELB	ELBOW
EMBED	EMBEDMENT
EMER	EMERGENCY
EMTY	EMPTY
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER

E (CONTINUED)

EO	ELECTRIC OPERATOR
EP	EDGE OF PAVEMENT
EPV	ECCENTRIC PLUG VALVE
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ESP	EXTERNAL STATIC PRESSURE
EST	ESTIMATE
ETM	ELAPSED TIME METER
ETW	EDGE OF TRAVELLED WAY
EVC	END OF VERT CURVE
EW	EACH WAY
EWC	ELECTRIC WATER HEATER
EX	EXAMPLE, EXTRA
EXH	EXHAUST
EXP	EXPANSION, EXPOSED
EXIST	EXISTING
EXT	EXTERIOR
EXTR	EXTRUDED

F

F	FUSE, FAHRENHEIT
FAB	FABRICATE
FAC	FACTORY
FACIL	FACILITY
FB	FLAT BAR, FIRE ALARM BELL
FC	FACE OF CURB, FLEXIBLE CONNECTION, FLEXIBLE COUPLING, FAIL CLOSED, FERRIC CHLORIDE
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FIRE DAMPER, FLOOR DRAIN, FOUND
FDBK	FEEDBACK
FDC	FLEXIBLE DUCT CONNECTION
FDR	FEEDER
FF	FINISH FLOOR
F-F	FACE TO FACE
F/F	FACE OF FOOTING
FG	FINISH GRADE
FGL	FIBERGLASS
FH	FIRE HYDRANT, FLAT HEAD
FI	FLOW INDICATOR
FIG	FIGURE
FIN	FINISHED
FIT	FLOW INDICATOR TRANSMITTER
FL	FLASHING, FLOWLINE
FLH	FLATHEAD
FLEX	FLEXIBLE
FLG	FLANGE
FLGD	FLANGED
FLP	FAIL TO LAST POSITION
FLR	FLOOR
FLS	FLOAT SWITCH
FLUOR	FLUORESCENT
FMH	FLEXIBLE METAL HOSE
FND	FOUNDATION
FO	FAIL OPEN
FPM	FEET PER MINUTE
FPRF	FIREPROOF
FPS	FEET PER SECOND
FPT	FEMALE PIPE THREAD
FR	FILTRATION, FLOW RECORDER
FRP	FIBERGLASS REINFORCED PIPE
FS	FAR SIDE, FLOW SWITCH
FT	FOOT, FEET, FLOW TRANSMITTER
FTG	FOOTING
FU	FUSE
FURN	FURNACE
FUT	FUTURE
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
FXTR	FIXTURE
FW	FACE OF WALL, FILTERED WATER
FWD	FORWARD

G

G	GAS, GREEN
GA	GAUGE OR GAGE
GA/TS	GALVANIC ANODE/TEST STATION
GAL	GALLON
GALV	GALVANIZED
GC	GAS COCK
GDR	GRINDER
GFCI	GROUND-FAULT CIRCUIT INTERRUPTER
GFR	GROUND FAULT RELAY
GI	GALVANIZED IRON
GL	GLASS, GLUE LAM
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GRV	GROOVED (COUPLING)
GRN	GREEN
GSKT	GASKET
GSM	GALVANIZED SHEET METAL
GSP	GALVANIZED STEEL PIPE
GTV	GATE VALVE
GUT	GUTTER
GWB	GYPSUM WALLBOARD
GYP	GYPSUM

H

H	HEIGHT, HIGH, HAND, HORN, HORIZONTAL
HB	HOSE BIBB
HC	HEATING COIL, HOLLOW CORE
HD	HEAD
HDG	HOT-DIPPED GALVANIZED
HDP	HIGH DISCHARGE PRESSURE
HDR	HEADER
HDWD	HARDWOOD
HDWE	HARDWARE
HESO	HYDRAULIC EMERGENCY SHUTOFF VALVE
HEX	HEXAGONAL
HH	HAND HOLE, HIGH-HIGH
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
HOA	HAND-OFF-AUTOMATIC
HOR	HAND-OFF-REMOTE
HORIZ	HORIZONTAL
HP	HIGH PRESSURE, HIGH POINT, HORSEPOWER
HR	HOUR, HANDRAIL
HRU	HEAT RECOVERY UNIT
HS	HIGH SPEED
HSG	HOUSING
HT	HEAT
HTR	HEATER
HV	HIGH VOLTAGE, HOSE VALVE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HW	HOT WATER
HWH	HOT WATER HEATER
HWL	HIGH WATER LEVEL
HWR	HOT WATER RETURN
HWY	HIGHWAY
HX	HEAT EXCHANGER
HYDR	HYDRAULIC
HYD	HYDRANT
HZ	HERTZ (CYCLES PER SECOND)

I

IA	INSTRUMENT AIR
IC	INTERRUPTING CAPACITY
ID	IDENTIFICATION, INSIDE DIAMETER
I&C	INSTRUMENTATION & CONTROL
I/E	CURRENT-TO-VOLTAGE
IFC	IN FURRED CEILING
IFS	IN FURRED SPACE
IFW	IN FURRED WALL

I (CONTINUED)

I/I	CURRENT-TO-CURRENT
IJ	INSULATING JOINT
IJS	IN JOIST SPACE
IM	INTRUSION MONITOR
IN	INCH
INCAND	INCANDESCENT
INF	INFLUENT
INS	INSTRUMENTATION
INSUL	INSULATION
INST	INSTANTANEOUS
INT	INTERIOR
INTFC	INTERFACE
INSTR	INSTRUMENT
INTMD	INTERMEDIATE
INTLK	INTERLOCK
INV	INVERT
INV EL	INVERT ELEVATION
I/O	INPUT/OUTPUT
IR	INSIDE RADIUS
IS	INTRUSION SWITCH
IW	IN WALL
IWC	IN WALL CHASE
IWRC	INDEPENDENT WIRE ROPE CORE

J

J	JUNCTION BOX
JB	JUNCTION BOX
JCT	JUNCTION
JP	JOINT POLE
JST	JOIST
JT	JOINT

K

K	KEY, KEY INTERLOCK
KGV	KNIFE GATE VALVE
KIP	THOUSAND POUNDS
KSF	KIPS PER SQUARE FOOT
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
KWHD	KILOWATT HOUR DEMAND METER

L

L	LENGTH, LOW SPEED, LIGHTING CONTRACTOR, LOW
LA	LIGHTNING ARRESTER
LAB	LABORATORY
LAM	LAMINATED
LAV	LAVATORY
LB	POUND
LCP	LOCAL CONTROL PANEL
LDP	LOW DISCHARGE PRESSURE
LF	LINEAR FEET
LI	LEVEL INDICATOR
LIT	LEVEL INDICATOR TRANSMITTER
LL	LOW-LOW
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOA	LENGTH OVERALL
LOC	LOCATION, LOCAL
LONG	LONGITUDINAL
LOS	LOCK OUT STOP PUSHBUTTON
LP	LOW PRESSURE, LOW POINT, LIGHTING PANEL
LR	LONG RADIUS, LATCHING RELAY, LOCAL-REMOTE
LS	LEVEL SWITCH, LIME SLURRY
LSC	LANDSCAPE

L (CONTINUED)

LSP	LOW SUCTION PRESSURE
LT	LEFT, LIGHT, LEVEL TRANSMITTER
LT FLEX	LIQUID TIGHT FLEXIBLE CONDUIT
LV	LOW VOLTAGE
LTG	LIGHTING
LVL	LEVEL
LVR	LOUVER
LWL	LOW WATER LEVEL
LWR	LOWER

M

M	MOTOR, MAGNETIC CONTACTOR COIL
mA	MILLIAMPERE
MAINT	MAINTENANCE
MAN	MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MBH	1000 BTU'S PER HOUR
MBR	MEMBER
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MEMB	MEMBRANE
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MI	MALLEABLE IRON
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MK	MARK
ML&CS	MORTAR LINED & COATED STEEL
MLLW	MEAN LOWER LOW WATER
ML&PCS	MORTAR LINED & PLASTIC COATED STEEL
MLW	MEAN LOW WATER
M-M	MONUMENT TO MONUMENT
MO	MASONRY OPENING, MOTOR OPERATOR
MON	MONUMENT
MORT	MORTAR
MPT	MALE PIPE THREAD
MS	MOTOR STARTER
MSL	MEAN SEA LEVEL
MT	MOUNT
MTD	MOUNTED
MTG	MOUNTING
MTS	MOTOR THERMAL SWITCH
MTRG	METERING
MULT	MULTIPLY
MV	MILLIVOLT
MVA	MEGA-VOLT AMPERE
MW	MICROWAVE, MEGAWATT
MWS	MAXIMUM WATER SURFACE
MWWTP	MAIN WASTEWATER TREATMENT PLANT

NOTES

1. SEE DRAWING SD317A-G-006 FOR ABBREVIATIONS N THRU Z, AND FOR SYMBOLS.
2. ABBREVIATIONS OR SYMBOLS SHOWN ON DISCIPLINE SPECIFIC WASTEWATER STANDARD DRAWINGS SHALL TAKE PRECEDENCE OVER ABBREVIATIONS OR SYMBOLS SHOWN ON THIS DRAWING.

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
4	22APR2013	IN SERVICE 03AUG2013 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	EBMUD
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
EBMUD PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL

ABBREVIATIONS-1

SCALE	NONE	SD317A-G-005	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: W:\D-rafters\SD\sd317A\ref\sd317abdr_consultant.mst
REF 2: W:\D-rafters\SD\sd317A\ref\sd317bdr.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fah
DATE: 25-AUG-2013 15:22
FILE: J:\SD\sd317A\SD317AG005.R01
PLOT SCALE: 0.166667:1

N

N	NEUTRAL, NORTH
(N)	NEW
NA	NOT APPLICABLE, NOT AVAILABLE, NON-AUTOMATIC
NAD	NORTH AMERICAN DATUM
NC	NORMALLY CLOSED
NE	NORTHEAST
NEC	NATIONAL ELECTRICAL CODE
NECY	NECESSARY
NEG	NEGATIVE
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NO.	NUMBER
NOM	NOMINAL
NOMR	NORMAL
NP	NAMEPLATE
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NS	NEAR SIDE
NSG	NON-SHRINK GROUT
NTS	NOT TO SCALE
NW	NORTHWEST

O

O3	OZONE
OA	OUTSIDE AIR, OVERALL
OAD	OUTSIDE AIR DAMPER
OAT	OUTSIDE AIR TEMPERATURE
OC	ON CENTER, OPEN-CLOSE
OD	OUTSIDE DIAMETER, OVERFLOW DRAIN
OHC	OVERHEAD CRANE
OL	OVERLOAD
OO	ON-OFF
OP	OPEN
OP/NET	OPERATIONS NETWORK
OPNG	OPENING
OPP	OPPOSITE
OPS	OPERATION(S)
OR	OUTSIDE RADIUS
ORG	ORANGE
OSD	OPEN SITE DRAIN
OS&Y	OUTSIDE SCREW & YOKE
OVFL	OVERFLOW

P

P	POLE, PILOT
PB	PUSH BUTTON, PULL BOX
PC	POINT OF CURVATURE, PHOTO CELL, POLYMER COAGULANT, PORTLAND CEMENT
PCC	POINT OF COMPOUND CURVE
PDI	PULSE DURATION INPUT
PERF	PERFORATED
PERM	PERMANENT, PERMISSIBLE
PF	POWER FACTOR, PREFILTER
PG&E	PACIFIC GAS & ELECTRIC
PGV	PLUG VALVE
pH	HYDROGEN-ION CONCENTRATION
PH	PHASE, POWER HOUSE, POTHOLE
PHC	PREHEAT COIL
PI	POINT OF INTERSECTION, PULSE INPUT, PRESSURE INDICATOR
P&ID	PROCESS & INSTRUMENT DIAGRAM
PK	PEAK
P/L	PROPERTY LINE
PLAS	PLASTER
PLC	PROGRAMMABLE LOGIC CONTROL
PLCS	PLACES
PLSTC	PLASTIC
PLUM	PLUMBING
PLYWD	PLYWOOD
PMP	PUMP
PMPSCT	PUMP SUCTION
PNEU	PNEUMATIC
PNL	PANEL
PO	POLYMER
POC	POINT ON CURVE, POINT OF CONNECTION

P (CONTINUED)

PP	POWER POLE, PUMPING PLANT
PPLN	PIPELINE
PR	PAIR
PRC	POINT OF REVERSE CURVE
PRV	PRESSURE REGULATING VALVE, PRESSURE RELIEF VALVE
PRCST	PRECAST
PREFAB	PREFABRICATED
PRESS	PRESSURE
PRI	PRIMARY
PROP	PROPERTY
PRPSD	PROPOSED
PS	POWER SUPPLY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	PSI (ABSOLUTE)
PSIG	PSI (GAGE)
PT	POINT, POINT OF TANGENCY, POTENTIAL TRANSFORMER
PTN	PARTITION
PTS	POINTS
PV	PROCESS VARIABLE, PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PW	POTABLE COLD WATER
PWH	POTABLE HOT WATER
PWR	POWER

Q

QM	WATER QUALITY
QTY	QUANTITY
QUAL	QUALITY

R

R	RADIAL, RADIUS, RED, RISER, RUN
RA	RETURN AIR
RAD	RADIUS
RC	REINFORCED CONCRETE
RCF	RECIRCULATING FAN
RCP	REINFORCED CONCRETE PIPE
RCCP	REINFORCED CONCRETE CULVERT PIPE
RCVR	RECEIVER
RCVD	RECEIVED
RCPT	RECEPTACLE
RD	ROAD, ROOF DRAIN
RDA	RETURN AIR DAMPER
RDCR	REDUCER
RDL	ROOF DRAIN LEADER
RDWD	REDWOOD
RED	REDUCING, RED
REBAR	REINFORCING BAR
RECT	RECTANGULAR
REF	REFERENCE
REFR	REFRIGERATOR
REINF	REINFORCED, REINFORCEMENT
REL	RELATIVE
REM	REMOVABLE, REMOTE
REQD	REQUIRED
REQT	REQUIREMENT
RESIL	RESILIENT
RESV	RESERVOIR
RET	RETURN (CURB), RETAINING (WALL)
REV	REVERSE, REVISION
REVD	REVISED
RF	RETURN FAN
RGH	ROUGH
RGLTR	REGULATOR
RGS	RIGID GALVANIZED STEEL
RGTR	REGISTER
RH	REHEAT COIL
RI	RODDING INLET
RL	RAIN LEADER
RLA	RATED LOAD AMPS
RLY	RELAY
RM	ROOM, RAPID MIX

R (CONTINUED)

RMS	ROOT MEAN SQUARE
RMT	REMOTE
RMVD	REMOVED
RND	ROUND
RO	ROUGH OPENING
RP	RADIAL POINT
RPM	REVOLUTIONS PER MINUTE
RS	RIGID STEEL CONDUIT
RSP	REMOTE SET (CASCADE)
RS/PVC	RIGID STEEL, PVC COATED
RT	RIGHT, REMOTE TELEMETRY
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	REMOTE TERMINAL UNIT
RVR	REDUCED VOLTAGE REVERSING
RV	ROOF VENT
RVNR	REDUCED VOLTAGE NON-REVERSING
RW	RAW WASTEWATER
R/W	RIGHT-OF-WAY

S

S	SINGLE, SOUTH, SIREN, SOIL OR WASTE, SUCTION, SOURCE
SA	SUPPLY AIR, SOFTWARE ALARM, SURGE ARRESTER
SAN	SANITARY
SB	SODIUM BISULFITE
SC	SOLID CORE, SPEED CONTROL
SCD	SCREWED, STREAMING CURRENT DETECTOR
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE (SPEC FOR MATL)
SCHED	SCHEDULE (TABLE, TIME)
SCRN	SCREEN
SCV	SWING CHECK VALVE
SD	SMOKE DETECTOR, STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SE	SOUTHEAST
SEC	SECOND, SECONDARY
SECT	SECTION
SEL	SELECTOR
SEP	SEPARATOR
SEW	SEWER
SF	SUPPLY FAN
SGT	SLUICE GATE
SH	SHOWER, SPACE HEATER
SHT	SHEET
SHLD	SHIELD
SIM	SIMILAR
SK	SINK
S/N	SOLID NEUTRAL
SLGT	SLIDE GATE
SLP	SLOPE
SMS	SHEET METAL SCREWS
SO2	SULFUR DIOXIDE
SOG	SLAB ON GRADE
SOL	SOLENOID
SOLN	SOLUTION
SP	SPARE, SUCTION PRESSURE, SUMP PUMP
SPC	SPACE
SPCR	SPACER
SPD	SPEED
SPEC	SPECIFICATIONS
SPST	SINGLE POLE, SINGLE THROW
SPV	SPOOL VALVE
SQ	SQUARE
SS	SANITARY SEWER, SUBSTATION, START-STOP
SSMH	SANITARY SEWER MANHOLE
SST	STAINLESS STEEL
ST	START
STA	STATION
STD	STANDARD
STL	STEEL
STO	STORAGE
STP	STOP
ST PR	STATIC PRESSURE
STR	STRAINER
STRUCT	STRUCTURAL
SUBST	SUBSTITUTE
SUBSTA	SUBSTATION

S (CONTINUED)

SUCT	SUCTION
SURF	SURFACE
SUSP	SUSPENDED
SUW	SURFACE WASH
SV	SOLENOID VALVE, SIGNAL VOLTAGE
SW	SWITCH
SWGR	SWITCHGEAR
SYMM	SYMMETRICAL

T

T	THERMOSTAT, TREAD, THROW, TIME
TB	TERMINAL BLOCK,TERMINAL BOX, TOP BAR
T&B	TOP AND BOTTOM
TBG	TUBING
TC	TIME CLOCK, TIME CLOSE
T/C	THERMOCOUPLE
TCV	TEMPERATURE CONTROL VALVE
TD	TEMPERATURE DETECTOR RELAY, TIME DELAY
TDE	TEST DEVICE
TDH	TOTAL DYNAMIC HEAD
TDR	TIME DELAY RELAY
TEFC	TOTALLY ENCLOSED FAN COOLED (MOTORS)
TEL	TELEPHONE
TEMP	TEMPERATURE, TEMPORARY
TERM	TERMINAL
TEWAC	TOTALLY ENCLOSED WATER TO AIR COOLED (MOTORS)
T&G	TONGUE AND GROOVE
TH	TOTAL HEAD
THD	THREAD
THHN	HEAT RESISTANT THERMOPLASTIC ELECTRICAL WIRE
THK	THICK, THICKNESS
THRU	THROUGH
THWN	MOISTURE & HEAT RESISTANT THERMOPLASTIC ELECTRICAL WIRE
TIT	TEMPERATURE INDICATOR TRANSMITTER
TJB	TERMINAL JUNCTION BOX
TK	TANK
T/L	TRANSIT LINE
TMPD	TEMPERED
TOC	TOP OF CONCRETE, TOP OF CURB
TOP	TOP OF PAVEMENT
TOS	TOP OF STEEL
TOT	TOTAL
TOW	TOP OF WALL
TR	TOP REGISTER, TIMER RELAY
TRF	TRANSFER FAN
TRG	TRANSFER GRILLE
TRNSN	TRANSITION
TRTD	TREATED
TRTMT	TREATMENT
TS	STRUCTURAL STEEL TUBING, TIME SWITCH, TEST STATION
TSP	TWISTED SHIELDED PAIR, TOTAL STATIC PRESSURE
TST	TWISTED SHIELDED TRIAD
TSW	TEMPERATURE SWITCH
TTC	TELEPHONE TERMINAL CABINET
TW	TREATED WATER
TURB	TURBIDITY
TYP	TYPICAL

U

U	HEAT TRANSFER COEFFICIENT
UBC	UNIFORM BUILDING CODE
U-F	UNFORMED, FLOAT FINISH
UFC	UNIFORM FIRE CODE
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UPR	UPPER
UPS	UNINTERRUPTIBLE POWER SUPPLY
UR	URINAL
USS	UNIT SUBSTATION
U-TB	UNFORMED, TROWELED, HAIR BRUSH FINISH
UVR	UNDER VOLTAGE RELAY

V

V	VENT, VOLTS, VOLTMETER, VERTICAL
VA	VIRTUAL OR CALCULATED ANALOG, VOLT AMPERE
VAC	VACUUM, VOLTS ALTERNATING CURRENT
VAR	VARIES, VARIABLE
VAV	VARIABLE AIR VOLUME
VC	VERTICAL CURVE
VDC	VOLT, DIRECT CURRENT
VEL	VELOCITY
VER	VERIFY
VERT	VERTICAL
VF	VENT FAN
VFD	VARIABLE FREQUENCY DRIVE
VI	VIBRATION ISOLATOR
VIF	VERIFY IN FIELD
VLV	VALVE
VP	VAPOR PROOF
VPC	POINT OF VERTICAL CURVATURE
VPT	POINT OF VERTICAL TANGENCY
VS	VOLTMETER SWITCH
VTP	VERTICAL TURBINE PUMP
VTR	VENT THRU ROOF

W

W	WASTE, WATT, WEST, WHITE, WIDTH, WIRE, STRUCTURAL STEEL WIDE FLANGE
W/	WITH
WAW	WASH WATER
WB	WET BULB
WC	WATER CLOSET
WCO	WALL CLEANOUT
WDG	WINDING
WDO	WINDOW
WESP	WASTEWATER ENGINEERING STANDARD PRACTICE
WF	WATER FOUNTAIN
WH	WATER HEATER
WHD	WATT HOUR DEMAND
WHSE	WAREHOUSE
WHT	WHITE
WL	WATERLINE
WM	WATER METER, WATT METER
WOG	WATER, OIL, GAS
W/O	WITHOUT
WP	WEATHERPROOF, WORK POINT
WPJ	WEAKENED PLANE JOINT
WS	WATERSTOP, WATER SURFACE
WSHR	WASHER
WSP	WELDED STEEL PIPE
WT	WEIGHT
WTR	WATER
WTRPRF	WATERPROOF
WV	WATER VALVE
WW	WASTE WATER
WWF	WELDED WIRE FABRIC

X

XBAR	CROSSBAR
XCVR	TRANSCEIVER
XDCR	TRANSDUCER
XFMR	TRANSFORMER
XHVY	EXTRA HEAVY
XMSN	TRANSMISSION
XMTR	TRANSMITTER
XP	EXPLOSION PROOF
XRF	TRANSFORMER
XSECT	CROSS SECTION
XS	EXTRA STRONG
XXS	DOUBLE EXTRA STRONG

Y

Y	YELLOW
YD	YARD
YEL	YELLOW

SYMBOLS

∠	ANGLE (STRUCTURAL STEEL)
@	AT
℄	CENTERLINE
°	DEGREES
°C	DEGREES CENTIGRADE
°F	DEGREES FAHRENHEIT
ø	DIAMETER, PHASE
Δ	DELTA, DIFFERENCE
≥	GREATER THAN OR EQUAL TO
≤	LESS THAN OR EQUAL TO
#	NUMBER, POUND
/	OF
Ω	OHM
⏤	PLATE (STRUCTURAL STEEL)
±	PLUS OR MINUS

NOTES

1. SEE DRAWING SD317A-G-005 FOR ABBREVIATIONS A THRU M.
2. ABBREVIATIONS OR SYMBOLS SHOWN ON DISCIPLINE SPECIFIC WASTEWATER STANDARD DRAWINGS SHALL TAKE PRECEDENCE OVER ABBREVIATIONS OR SYMBOLS SHOWN ON THIS DRAWING.

REGISTERED PROFESSIONAL ENGINEER — THOMAS G. MOSSINGER — No. M26798 — Exp. 9/30/08 — MECHANICAL — STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2014 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	EBMUD
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON

EBMUD

PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL

ABBREVIATIONS-2

SCALE	NONE	SD317A-G-006	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: W:\D-rafters\SD\sd317A\ref\sd317abr_mst
REF 2: W:\D-rafters\SD\sd317A\ref\sd317abbr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fal
DATE: 26AUG-2013 15:22
FILE: J:\SD\sd317A\SD317AG006.R01
PLOT SCALE: 0.166667:1

LEGENDS

NEW — NEW WORK

EXISTING — EXISTING FACILITY

℄ — CENTER LINE

EXISTING FACILITY TO BE DEMOLISHED

CONCRETE

AGGREGATE

SAND

GROUT

FINISH GROUND SURFACE

COMPACTED GROUND

GRASS

STEEL - SECTION

NEW AC PAVEMENT - PLAN

NEW AC PAVEMENT - SECTION

CHECKER PLATING

METAL PLATING

GRATING

PIPE SECTION

SECTION DESIGNATION

A / W00.00-M-006 — SECTION DESIGNATION LETTER; DRAWING NUMBER ON WHICH SECTION APPEARS

SEE NOTE 5, TYP

SECTION A / W00.00-M-006 — SECTION DESIGNATION LETTER; DRAWING NUMBER ON WHICH SECTION IS CUT

DETAIL DESIGNATION

2 / M-006 — DETAIL DESIGNATION NUMBER; DRAWING NUMBER ON WHICH DETAIL APPEARS

DETAIL 2 / M-005 — DETAIL DESIGNATION NUMBER; DRAWING NUMBER ON WHICH DETAIL IS TAKEN

DETAIL 2 / TYP — DETAIL APPLICABLE TO MORE THAN ONE DRAWING

ELEVATION DESIGNATION

DIRECTION OF ELEVATION — A / M-106 — ELEVATION DESIGNATION NUMBER; DRAWING NUMBER ON WHICH ELEVATION APPEARS

PHOTO DESIGNATION

DIRECTION OF PHOTO — P3 / M-106 — PHOTO DESIGNATION NUMBER; DRAWING NUMBER ON WHICH PHOTO APPEARS

3" ON ORIGINAL DOCUMENT

0 1 2 3

EQUIPMENT LEGEND

A G — AIR TO GAS HX

CONDENSER UNIT

GAS BLOWER

PI — FE - FLOW ELEMENT; FIT - FLOW INDICATOR TRANSMITTER; FS - FLOW SWITCH; PI - PRESSURE INDICATOR; PIT - PRESSURE INDICATOR TRANSMITTER; TI - TEMPERATURE INDICATOR

FLOW CONTROLLER (FC)

G G HX — GAS TO GAS HX

G W HX — GAS TO CHILLED WATER HX

PUMP

PUMP DISCHARGE VALVE

301 — SILOXANES REMOVAL TANK

SINGLE SCREW GAS COMPRESSOR

SUCTION DIFFUSER

PIPE LEGEND

PROCESS ABBREVIATIONS	SERVICE
AHP	HIGH PRESSURE AIR
CO2	CARBON DIOXIDE SYSTEM
CW	COLD WATER
HW	HOT WATER
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CCWS	CIRCULATION COOLING WATER SUPPLY
CCWR	CIRCULATION COOLING WATER RETURN
CD	CONDENSATE DRAIN
DR	DRAIN
DS	DIGESTED SLUDGE
EXH	EXHAUST GAS
FE	FINAL EFFLUENT
FW	FIRE WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HPDG	HIGH PRESSURE DIGESTER GAS
IA	INSTRUMENT AIR
LOR	LUBE OIL RETURN
LOS	LUBE OIL SUPPLY
LOD	LUBE OIL DRAIN
LOV	LUBE OIL VENT
LPDG	LOW PRESSURE DIGESTER GAS
NG	NATURAL GAS
OF	OVERFLOW
PD	PUMPED DRAINAGE
SD	STORM DRAIN
SAD	SANITARY DRAIN
V	VENT
WGS	WASTE GAS
1W	POTABLE WATER
2W	NON-POTABLE WATER
3W	SECONDARY EFFLUENT
5W	FIRE PROTECTION WATER

PIPING DESIGNATION SYSTEM

NEW PIPING LABEL

6-DR# — PIPING SERVICE/SYSTEM CODE, # REPRESENTS NUMERIC DESIGNATION FOR SIMILAR SYSTEMS (BLANK IF NONE); PIPE SIZE IN INCHES

EXISTING PIPING LABEL

6-DR#

NOTES:

1. PIPING SYSTEM CODES DEFINED ON DRAWING SD317A-W28-G-009.
2. PIPING MATERIALS FOR EACH SERVICE SHALL BE AS SHOWN ON THE PIPE SCHEDULE OR AS SPECIFIED IN SPECIFICATION DIVISION 15.
3. DESIGNATION SYSTEM SIMILAR FOR HVAC DUCTING.
4. SEE PIPING SCHEDULE AND SPECIFICATIONS FOR NEW PIPING AND MATERIALS. IF EXISTING PIPING MATERIAL VARIES FROM WHAT IS LISTED IN THE PIPING SCHEDULE, THE MATERIAL SHALL BE INCLUDED IN THE PIPING LABEL.

NOTES

1. FOR MECHANICAL STANDARD LEGEND, SEE DRAWING SD317A-W28-M-001 AND SD317A-W28-M-002.
2. FOR ELECTRICAL STANDARDS, SEE DRAWING SD317A-W17-E-001.
3. FOR INSTRUMENTATION STANDARDS, SEE DRAWING SD317A-W28-I-001.
4. AREA NUMBER OMITTED IF THE SECTION AND CALL-OUT LOCATIONS ARE IN THE SAME AREA NUMBER. SIMILAR CONDITION ALSO APPLIES TO DETAIL AND ELEVATION.

REGISTERED PROFESSIONAL ENGINEER — THOMAS G. MOSSINGER — No. M26798 — Exp. 9/30/08 — MECHANICAL — STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2015 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT — EBMUD

DESIGN BY:	EBMUD
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL
LEGEND AND SECTION, DETAIL, ELEVATION AND PHOTO DESIGNATION

SCALE	NONE	SD317A-G-007	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: W:\Drafters\SD\sd317A\ref\sd317abr.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317abr-consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fa\
PLOT SCALE: 0.166667:1\
DATE: 26-AUG-2013 15:22\
FILE: J:\SD\sd317A\SD317AG007.R01

MAIN WASTEWATER TREATMENT PLANT (WWP)	
CODE	AREA / FACILITY
W73	3 WATER (3W) LIFT STATION
W41	ADMINISTRATION BUILDING
W13	AERATED GRIT TANKS AND VORTEX GRIT TANKS
W32	BULK CHEMICAL STORAGE AREA
W36	DIGESTER EQUIPMENT BUILDING 1 AND DIGESTERS 5 TO 8
W37	DIGESTER EQUIPMENT BUILDING 2 AND DIGESTERS 9 TO 12
W34	DIGESTER GAS BURNERS
W35	DIGESTER HEATING BUILDING AND DIGESTERS 1 TO 4
W74	EFFLUENT PUMP STATION
W17	ELECTRICAL MAIN SUB-STATION H-1/M-1
W19	FIELD SERVICES OFFICE
W55	FINAL CLARIFIERS
W23	GRAVITY STATIONS, TANKS
W16	GRIT DEWATERING STATION
W85	HYPOCHLORITE STORAGE AREAS
W12	INFLUENT PUMP STATION
W42	LABORATORY
W18	MAINTENANCE BUILDING, OLD
W26	MAINTENANCE CENTER
W46	MID-PLANT PUMP STATION
W38	OIL STORAGE SHED
W54	OPERATIONS CENTER
W44	OXYGEN PRODUCTION PLANT
W14	PLANT AIR/PRECHLOR BUILDING
W21	PLANT UTILITIES
W83	POST HYPOCHLORITE INJECTION STATION & TRUCK UNLOADING
W28	POWER GENERATION STATION, COGEN
W24	PRIMARY SEDIMENTATION TANKS
W64	PROCESS WATER PLANT
W11	RAIL LOADING STATION
W45	REACTORS
W33	RESOURCE RECOVERY (R2) FACILITIES
W20	ROADS AND FENCES
W15	SCUM DEWATERING STATION
W25	SLUDGE DEWATERING BUILDING
W56	TASK OPS TRAILER
W30	WAS THICKENING STATION
W10	WET WEATHER STORAGE BASINS

(W74) EFFLUENT PUMP STATION
(W28) ELEC SUBSTATION U29 & U30
(W25) SLUDGE DEWATERING BUILDING
(W32) BULK CHEMICAL STORAGE AREA
(W34) DIGESTER GAS BURNERS
TRUCK SCALE
(W28) POWER GENERATION STATION 2
(W28) POWER GENERATION STATION 1
(W30) WASTE ACTIVATED SLUDGE THICKENING
(W64) FUTURE EAST BAYSHORE RECYCLED WATER FACILITY
(W73) 3 WATER (3W) LIFT STATION
(W24) PRIMARY SED CONTROL BLDG
(W64) EAST BAYSHORE RECYCLED WATER BUILDING
(W18) OLD MAINTENANCE BUILDING
(W24) PRIMARY SEDIMENTATION TANKS
(W24) PRIMARY SED BLOWER BLDG
(W13) AERATED GRIT TANK
(W28) GAS COMPRESSORS
(W33) LIQUID/SOLID WASTE RECEIVING STATION
(W10) WET WEATHER STORAGE BASIN
LIME SHED
(W13) AERATED GRIT BLOWER BLDG
(W15) SCUM THICKENING STATION
(W19) FIELD SERVICE BUILDING
(W12) INFLUENT PUMP STATION
(W37) DIGESTER EQUIP. BUILDING 2 & DIGESTERS 9-12
(W14) PRE-CHLORINATION BUILDING
(W36) DIGESTER EQUIP. BUILDING 1 & DIGESTERS 5-8
(W16) GRIT DEWATERING BUILDING
(W23) WET WEATHER PRIMARY SLUDGE THICKENERS
(W35) DIGESTER HEATING BUILDING & DIGESTERS 2-4
(W17) H-2
(W11) RAILROAD LOADING STATION
(W17) ELECTRICAL MAIN SUB-STATION H-1/M-1
DISCHARGE STATION FOR SEPTAGE HAULERS
(W85) SODIUM HYPOCHLORITE
(W55) SECONDARY CLARIFIERS 1-12
(W28) GAS CONDITIONING
(W44) OXYGEN PRODUCTION PLANT
(W42) LABORATORY
(W54) OPERATIONS CENTER
(W83) HYPOCHLORITE INJECTION STATION & TRUCK UNLOADING
(W45) REACTORS
(W41) ADMINISTRATION BUILDING
(W26) MAINTENANCE CENTER
(W46) MID-PLANT PUMP STATION
OLD COMPOST STORAGE FACILITIES

REF 1: 317site.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317Abdr_consultant.mst
REF 3: W:\Drafters\w20\w2000site.mst
REF 4: 317site.mst
REF 5: W:\Drafters\SD\sd317A\ref\sd317Abdr_consultant.mst
REF 6:
REF 7:
REF 8:
REF 9:

USER: fah
DATE: 23-AUG-2013 15:32
FILE: J:\SD\sd317A\SD317AG008.R01
PLOT SCALE: 225.000451

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2016 RECORD DRAWING INSP: MAB SD317A		JK	

REGISTERED PROFESSIONAL ENGINEER THOMAS G. MOSSINGER No. M26798 Exp. 9/30/08 MECHANICAL STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	EBMUD
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL

EQUIPMENT TAG AND GENERAL AREA CODES

SCALE	NONE	SD317A-G-008	1
DATE	JAN2009	DRAWING NUMBER	REV.

EQUIPMENT TAG SYSTEM CODES AND COLORS

WATER/WASTEWATER

PROCESS/SYSTEM TYPE	TAG COLOR		
	SYSTEM CODE	LETTER CODE	BACKGROUND CODE
APPLIED WATER SYSTEM	AW	WHITE	GREEN
BACKWASH SUPPLY WATER	BWS	WHITE	GREEN
BACKWASH WASTE WATER	BWW	WHITE	BROWN
BYPASS	BYP	WHITE	GREEN
CENTRATE	CENT	WHITE	BROWN
COLD WATER	CW	WHITE	GREEN
CHILLED WATER SYSTEM	CHW	WHITE	BROWN
CHLORINE CONTACT PUMPING	CCP	WHITE	BROWN
CIRCULATION COOLING WATER	CCW	WHITE	BROWN
CIRCULATION COOLING WATER RETURN	CCWR	WHITE	BROWN
CIRCULATION COOLING WATER SUPPLY	CCWS	WHITE	GREEN
CONDENSATE DRAIN	CD	WHITE	BROWN
COOLING WATER SYSTEM	CWS	WHITE	BROWN
DECANT WATER SYSTEM	DWS	WHITE	BROWN
DECHLORINATION	DCL	WHITE	BROWN
DEWATERED SLUDGE	DWT	WHITE	BROWN
DIGESTED SLUDGE	DSL	WHITE	BROWN
DRAIN	DR	WHITE	BROWN
FINAL EFFLUENT	FE	WHITE	BROWN
FILTERED WATER SYSTEM	FWS	WHITE	GREEN
FILTER-TO-WASTE SYSTEM	FTW	WHITE	BROWN
FILTRATE	FILT	WHITE	GREEN
FIRE SUPPRESSION SYSTEM, FIRE PROTECTION WATER	SW	WHITE	RED
GRIT	GR	WHITE	BROWN
HEATING AND VENTILATION SYSTEM	HVS	WHITE	GREEN
HOT PROCESS WATER	HWP	WHITE	BROWN
HOT WATER	HW	WHITE	GREEN
HOT WATER RETURN	HWR	WHITE	GREEN
HOT WATER SUPPLY	HWS	WHITE	GREEN
HYDRAULIC CONTROL WATER	HCW	WHITE	GREEN
IRRIGATION WATER SYSTEM	IRR	WHITE	GREEN
MICROFILTRATION	MF	WHITE	PURPLE
MICROFILTRATION BACKPULSE	MFB	WHITE	PURPLE
MICROFILTRATION CLEAN IN PLACE	MFC	WHITE	PURPLE
MICROFILTRATION FILTRATE	MFF	WHITE	PURPLE
MICROFILTRATION RECIRCULATION	MFR	WHITE	PURPLE
MICROFILTRATION SUPPLY	MFS	WHITE	BROWN
OVERFLOW	OF	WHITE	GREEN
POTABLE WATER	1W	WHITE	BLUE
PRE-CHLORINATION	PCL	WHITE	GREEN
PRIMARY EFFLUENT, PRIMARY TREATED SEWAGE	4W	WHITE	BROWN
PROCESS WATER	2W	WHITE	BROWN
PUMPED DRAIN	PD	WHITE	BROWN
QUALITY MONITOR SYSTEM	QMS	WHITE	BROWN
RAW SEWAGE, RAW SEWAGE SYSTEM	RS	WHITE	BROWN
RAW SLUDGE	RSL	WHITE	BROWN
RAW WATER SYSTEM	RWS	WHITE	BROWN
RECYCLE FLOW	REC	WHITE	GREEN
RECYCLED WATER, TERTIARY TREATED SEWAGE/EFFLUENT	RW	WHITE	BROWN
RETURN ACTIVATED SLUDGE	RAS	WHITE	GREEN
REWASH WATER	RWW	WHITE	BROWN
SANITARY DRAIN	SAD	WHITE	BROWN
SCUM	SC	WHITE	BROWN
SEAL WATER SYSTEM	2W	WHITE	GREEN
SECONDARY EFFLUENT, SECONDARY TREATED SEWAGE	3W	WHITE	GREEN
STEAM	ST	WHITE	GREEN
SURFACE WASH	SFW	WHITE	BROWN
THICKENED WASTE ACTIVATED SLUDGE	TWAS	WHITE	BROWN
VENT	V	WHITE	BROWN
WASH WATER SYSTEM	WWS	WHITE	GREEN
WASTE ACTIVATED SLUDGE	WAS	WHITE	BROWN
WASTE CHEMICAL SYSTEM	WCS	BLACK	YELLOW

OTHER LIQUID

PROCESS/SYSTEM TYPE	TAG COLOR		
	SYSTEM CODE	LETTER CODE	BACKGROUND CODE
HYDRAULIC OIL SUPPLY	HOS	BLACK	YELLOW
HYDRAULIC OIL RETURN	HOR	BLACK	BROWN
LIQUID FUEL SUPPLY	LFS	BLACK	YELLOW
LUBE OIL RETURN	LOR	BLACK	YELLOW
LUBE OIL SUPPLY	LOS	BLACK	YELLOW
LUBE OIL VENT	LOV	BLACK	YELLOW
REFRIGERANT	REF	BLACK	BROWN

GASES

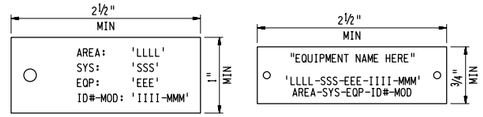
PROCESS/SYSTEM TYPE	TAG COLOR		
	SYSTEM CODE	LETTER CODE	BACKGROUND CODE
AIR, HIGH PRESSURE	AHP	BLACK	YELLOW
AIR, LOW PRESSURE	ALP	WHITE	BLUE
CARBON DIOXIDE SYSTEM	CO2	WHITE	BLUE
COMPRESSED AIR SYSTEM	CAS	WHITE	BLUE
DIGESTER GAS	DG	BLACK	YELLOW
HIGH PRESSURE DIGESTER GAS	HPDG	BLACK	YELLOW
LOW PRESSURE DIGESTER GAS	LPDG	BLACK	YELLOW
WASTE DIGESTER GAS	WDG	WHITE	GREEN
EXHAUST	EXH	WHITE	BLUE
FOUL AIR	FA	BLACK	YELLOW
INSTRUMENT AIR SYSTEM	IA	BLACK	YELLOW
NATURAL GAS	NG	BLACK	YELLOW
NITROGEN	N2	BLACK	YELLOW
OXYGEN SUPPLY	O2	BLACK	YELLOW
OZONE GAS SYSTEM	OGS	BLACK	YELLOW
SCOURING AIR SYSTEM	SAS	BLACK	YELLOW
SUPPLY	SUP	WHITE	BLUE
WASTE GAS SYSTEM	WGS	BLACK	YELLOW

CHEMICAL SYSTEMS

PROCESS/SYSTEM TYPE	TAG COLOR		
	SYSTEM CODE	LETTER CODE	BACKGROUND CODE
AMMONIA, LIQUID	AM	BLACK	YELLOW
CAUSTIC SODA	CA	BLACK	YELLOW
CHLORINE	CL2	BLACK	YELLOW
COAGULANT POLYMER	CP	BLACK	YELLOW
FERRIC CHLORIDE	FCL	BLACK	YELLOW
FILTER CONDITIONER POLYMER	PF	BLACK	YELLOW
FLUORIDE	FL	BLACK	YELLOW
HYDROGEN PEROXIDE	HP	BLACK	YELLOW
LIME SOLUTION	LS	BLACK	YELLOW
MAGNESIUM HYDROXIDE	MGH	BLACK	YELLOW
PERMANGANATE	PE	BLACK	YELLOW
POLYMER	POL	BLACK	YELLOW
PRIMARY COAGULANT	PC	BLACK	YELLOW
SODIUM BISULFITE	SB	BLACK	YELLOW
SODIUM HYPOCHLORITE	SHC	BLACK	YELLOW
SOLIDS CONDITIONER POLYMER	PS	BLACK	YELLOW
SULFURIC ACID	SA	BLACK	YELLOW

AUXILIARY AND POWER SYSTEMS

PROCESS/SYSTEM TYPE	TAG COLOR		
	SYSTEM CODE	LETTER CODE	BACKGROUND CODE
ELECTRIC POWER GENERATION (POWER GENERATION STATION)	EE	BLACK	ORANGE
FIRE DETECTION SYSTEM	FDS	WHITE	RED
HVAC	HVS	WHITE	BLACK
SITE SECURITY SYSTEM	SECR	WHITE	BLACK
STANDBY POWER SUPPLY	STBY	BLACK	ORANGE



HANGING TAG CABINET TAG (NAMEPLATE)

'LLLL' = AREA CODE PER DRAWING SD317A-G-Ø08

'SSS' = SYSTEM CODE PER TABLES, THIS DRAWING

'EEE' = EQUIPMENT CODE PER DRAWING SD317A-G-Ø1Ø

'IIII-MMM' = EQUIPMENT ID NUMBER AND OPTIONAL MODIFIER

EQUIPMENT TAG DETAIL

NTS

NOTES

1. TAG COLORS SHALL CONFORM WITH TABLE SHOWN ON THIS DRAWING AND ANSI Z535.1 "SAFETY COLOR CODE".



3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2017 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT / EBMUD

DESIGN BY:	EBMUD
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL
EQUIPMENT TAG DETAILS, SYSTEM CODES AND COLORS

SCALE	NONE	SD317A-G-009	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: W:\Drafters\SD\sd317A\ref\sd317abr.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317adr_consultant.mst
REF 3:
REF 4;
REF 5;
REF 6;
REF 7;
REF 8;
REF 9;

USER: fah
DATE: 28-AUG-2013 15:22
FILE: J:\SD\sd317A\SD317AG009.R01
PLOT SCALE: 0.166667:1

REF 7; REF 8; REF 9;

REF 4; REF 5; REF 6;

REF 1: W:\D-ofters\SD\sd317A\ref\sd317ddr.mst
REF 2: W:\D-ofters\SD\sd317A\ref\sd317ddr_consultant.mst
REF 3:

USER: fah
DATE: 26-AUG-2013 15:22
FILE: J:\SD\sd317A\SD317AG010.R01

PLOT SCALE: 0.166667:1

MECHANICAL

EQUIPMENT TYPE	EQUIPMENT CODE	EQUIPMENT TYPE	EQUIPMENT CODE
AERATOR	AER	HEATER	HTR
AERATED GRIT COLLECTOR	AGC	HOSE BIB	HB
AIR COMPRESSOR	ACP	HYDRANT	H
AIR CONDITIONING PACKAGE UNIT	ACU	HYDRAULIC OPERATED VALVE (ISOLATION)	HOV
AIR/VACUUM VALVE	AVV	HEATING VENTILATING UNIT	HVU
AIR FILTER	AF	HOOD	HOD
AIR FILTER REGULATOR	AFRG	HYDROPNEUMATIC TANK	TNK
AIR HANDLING UNIT	AHU	INSTRUMENT CABINET	IC
AIR OPERATOR VALVE (ISOLATION)	AOV	INSTRUMENT PANEL	IP
AIR RECEIVER	ARR	LOCKER	LKR
AIR RELEASE VALVE	ARV	LOUVER	LVR
ALTITUDE VALVE (LEVEL CONTROL VALVE)	LCV	METERING PUMP	PMP
AUTOMATIC DRAIN TRAP	ADT	MICROFILTRATION UNIT	MFU
BACKFLOW PREVENTER	BFP	MICROWAVE OVEN	MIC
BASKET STRAINER	STR	MIXER	MIX
BLOWER	BLW	MOTOR OPERATED VALVE (ISOLATION)	MOV
BOILER	BLR	NEEDLE/POWER NOZZLE	NOZ
BURNER, GAS FLARE	B	OZONE DESTRUCT UNIT	ODR
CATHODIC PROTECTION ANODE	CPA	OZONE GENERATOR	OGR
CATHODIC PROTECTION RECTIFIER	CPR	PACKED TOWER AERATOR	PTA
CATHODIC PROTECTION TEST STATION	ETS	PILOT VALVE	PV
CENTRIFUGE	CEN	PIPE	PIP
CHECK VALVE	CV	PRESSURE RELIEF VALVE/PRESSURE REDUCING VALVE	PRV
CHILLER UNIT	CHU	PRESSURE SUSTAINING VALVE	PSV
COLLECTOR	COL	PRESSURE VESSEL	PVL
COOLING TOWER	CTW	PNEUMATIC OPERATED VALVE (ISOLATION)	AOV
COMBINATION AIR VALVE	ACV	PULSATION DAMPENER	PDR
COMPRESSOR	CMP	PUMP	PMP
COMPRESSOR CONDENSER UNIT	CCU	REACTOR	RCT
CONDENSATE NEUTRALIZATION UNIT	SNU	RECEIVER	RCV
COOLER	CLR	REFRIGERATED DRYER	RDR
CRANE	CRN	REFRIGERATOR	REF
CYCLONE	CYC	SAFETY SHOWER	SHR
DAMPER	DMP	SCREEN	SCR
DEMISTER	DEM	SCRUBBER	SBR
DESICCANT DRYER	DDR	SELF CONTAINED BREATHING DEVICE (SCOTT AIR PAC)	SCB
DIFFUSER	DIF	SEPARATOR	SEP
DRINKING FOUNTAIN	DRK	SERVO VALVE & INTEGRAL OPERATING CYLINDER	SVO
DRYER	DRY	SILENCER	SIL
EDUCTOR	EDR	SLUDGE VACUUM COLLECTOR	SVC
ELECTRICAL RANGE, COOK TOP	CKT	SLUICE/SLIDE/WEIR/SHEAR/BUTTERFLY GATE/LOG	SGT
EMERGENCY EYEWASH	EYE	SOLENOID VALVE	SV
EMERGENCY LIGHTS	EML	STRAINER	STR
ENGINE	ENG	SUPPLY FAN	SF
EVAPORATOR	EVP	SURGE TANK	TNK
EXHAUST AIR DAMPER	EAD	SYPHON	SYP
EXHAUST FAN	EF	TANK	TNK
EXPANSION JOINT	EXJ	TRAP	TRP
FAN	FAN	TRAILER	TRL
FAN COIL UNIT	FACU	TRASH RAKE	RKE
FILTER	FLT	TURBINE	TRB
FIRE DAMPER	FD	VARIABLE AIR VOLUME UNIT	VAV
FIRE EXTINGUISHER	FEX	VACUUM BREAKER VALVE	VBV
FIRST AID KIT	KIT	VAPORIZER	VPR
FLOCCULATOR	FLC	VENT	VNT
GALLERY, PIPING	GAL	VIDEO PLAYER, TRAINING	VID
GRAVITY BELT THICKENER	GBT	WATER HEATER	WHR
GRAVITY SLUDGE THICKENER	GST	WYE STRAINER	STR
GOVERNOR	GOV		
HAND VALVE (ISOLATION)	HV		
HEAT EXCHANGER	HXR		
HEAT PUMP	HP		

ELECTRICAL

EQUIPMENT TYPE	EQUIPMENT CODE
ADJUSTABLE FREQUENCY DRIVE	VFD
AUTOMATIC TRANSFER SWITCH	ATS
BATTERY	BTR
BATTERY CHARGER	BYC
BREAKER	BRK
BUS DUCT	BD
CABLE	CBL
CAPACITOR	CAP
CONTROL CABINET	CP
CONTROL PANEL	CP
CONTROL RELAY	CR
CONTROL STATION	CS
CURRENT TRANSFORMER	CT
DISCONNECT	DISC
DISTRIBUTED CONTROL CABINET/DISTRIBUTED PROCESS UNIT	DPU
DISTRIBUTED CONTROL SYSTEM	DCS
EMERGENCY LIGHTS	EML
EXCITER	EXC
GENERATOR	GEN
HANDHOLE	HH
HARMONIC FILTER	HF
INVERTER	INV
JUNCTION BOX	JB
LIGHTING	LTG
LIGHTING PANEL	LP
LOAD CENTER	LCP
LOCAL CONTROL PANEL	LCP
MAIN CONTROL PANEL	MCP
MANHOLE	MH
MANUAL TRANSFER SWITCH	MTS
MEDIUM VOLTAGE CONTROLLER	MVC
METER	NOTE 5
METER PANEL, METER INSTRUMENT PANEL	MIP
MOTOR	MTR
MOTOR CONTROL CENTER	MCC
MOTOR GENERATOR SET	MGEN
MOTOR OPERATED DAMPER	MOD
MOTOR OPERATOR	MO
MOTOR STARTER	MS
MULTIFUNCTION PROTECTIVE RELAY	MPR
POTENTIAL TRANSFORMER	PT
POWER DISTRIBUTION PANEL	DP
POWER SUPPLY UNIT	PS
PROGRAMMABLE LOGIC CONTROLLER	PLC
PULL BOX	PB
RADIO TRANSMITTER/RECEIVER	RAD
RECTIFIER	REC
REGULATOR, VOLTAGE	RG
RELAY	RLY
REMOTE TERMINAL UNIT	RTU
RESISTOR	RES
SMOKE DETECTOR ELEMENT	SD
SWITCH, HAND	HS
SWITCH, NON-FUSED (FUSED)	SWN (SWF)
SWITCHBOARD	SWB
SWITCHGEAR	SWGR
TERMINAL BOARD	TB
TIMER	TMR
TRANSFORMER	XFR
UNINTERRUPTIBLE POWER SUPPLY	UPS
UNIT SUBSTATION	SS, U
VARIABLE FREQUENCY DRIVE	VFD

INSTRUMENTATION

EQUIPMENT TYPE	EQUIPMENT CODE	EQUIPMENT TYPE	EQUIPMENT CODE
ANALYZER ELEMENT	AE	PRESSURE CONTROL VALVE	PCV
ANALYZER INDICATING CONTROLLER	AIC	PRESSURE DIFFERENTIAL INDICATING TRANSMITTER	PDIT
ANALYZER INDICATING TRANSMITTER	AIT	PRESSURE DIFFERENTIAL SWITCH HIGH	PDSH
ANALYZER SWITCH HIGH, (LOW)	ASH, (ASL)	PRESSURE DIFFERENTIAL TRANSMITTER	PDT
CALIBRATION COLUMN	FQI	PRESSURE INDICATING CONTROLLER	PIC
CONDUCTIVITY ELEMENT	CE	PRESSURE INDICATING RECORDER	PIR
CONDUCTIVITY INDICATOR	CI	PRESSURE INDICATING TRANSMITTER	PIT
CONDUCTIVITY INDICATING TRANSMITTER	CIT	PRESSURE INDICATOR	PI
CONDUCTIVITY SWITCH HIGH	CSH	PRESSURE REDUCING VALVE	PCV
CONDUCTIVITY TRANSMITTER	CT	PRESSURE REGULATING VALVE	PCV
ELAPSED TIME METER (TIME TOTALIZING INDICATOR)	KQI	PRESSURE RELIEF VALVE (OPENS PROPORTIONAL TO PRESSURE)	PRV
FLOW CONTROL VALVE	FCV	PRESSURE SAFETY VALVE (FULL OPENING POP ACTION)	PSV
FLOW ELEMENT	FE	PRESSURE SWITCH HIGH, (LOW)	PSH, (PSL)
FLOW INDICATING RECORDER	FIR	PRESSURE TRANSMITTER	PT
FLOW INDICATING TRANSMITTER	FIT	REMOTE INPUT/OUTPUT	RIO
FLOW INDICATOR	FI	RESTRICTING ORIFICE	FE
FLOW QUANTITY INDICATOR (CALIBRATION COLUMN)	FQI	SPEED CONTROL	SC
FLOW SWITCH	FS	SPEED INDICATOR	SI
FLOW TRANSMITTER	FT	SPEED SENSING ELEMENT	SE
FLOW INDICATING CONTROLLER	FIC	STATUS LIGHT	YA
HAND SWITCH	HS	TEMPERATURE CONTROL VALVE	TCV
INPUT/OUTPUT	I/O	TEMPERATURE INDICATING CONTROLLER	TIC
LEVEL CONTROL VALVE	LCV	TEMPERATURE INDICATING RECORDER	TIR
LEVEL INDICATING CONTROLLER	LIC	TEMPERATURE INDICATING TRANSMITTER	TIT
LEVEL INDICATING RECORDER	LIR	TEMPERATURE INDICATOR	TI
LEVEL INDICATING TRANSMITTER	LIT	TEMPERATURE SWITCH HIGH, (LOW)	TSH, (TSL)
LEVEL INDICATOR	LI	TEMPERATURE TRANSMITTER	TT
LEVEL SWITCH HIGH, (LOW)	LSH, (LSL)	TIME TOTALIZING INDICATOR	KQI
LEVEL TRANSMITTER	LT	VIBRATION INDICATOR	VI
MAGNETIC FLOW METER	FIT	VIBRATION SENSOR (RADIAL, X-DIRECTION)	VXE
MOISTURE INDICATING TRANSMITTER	MIT	VIBRATION SENSOR (RADIAL, Y-DIRECTION)	VYE
MOISTURE SENSOR (OR DEW POINT)	ME	VIBRATION SENSOR (AXIAL THRUST)	VZE
MOISTURE SWITCH HIGH	MSH	VIBRATION TRANSMITTER (RADIAL, X-DIRECTION)	VXT
MULTIPOINT SCAN INDICATOR	UJI	VIBRATION TRANSMITTER (RADIAL, Y-DIRECTION)	VYT
POSITION SWITCH CLOSED, (OPEN)	ZSC, (ZSO)	VIBRATION TRANSMITTER (AXIAL THRUST)	VZT
POSITION TRANSMITTER	ZT	VOLTAGE SWITCH LOW	ESL
POWER INDICATOR	JI	WEIGHT INDICATING TRANSMITTER	WIT
POWER INDICATING CONTROLLER	JIC		
POWER TOTALIZING INDICATOR	JQI		
POWER TRANSMITTER	JT		

NOTES

1. THIS DRAWING PROVIDES A LIST OF CODES TO ASSIGN EQUIPMENT TAG NUMBERS AS GIVEN IN DISTRICT WESP 130.0.
2. THIS LIST IS NOT ALL INCLUSIVE. NEW EQUIPMENT CODES SHALL FOLLOW ANSI/IEEE 803.1-1992. SEE DRAWING SD317-I-001 FOR MORE INFORMATION REGARDING INSTRUMENTS CODES.
3. MAXIMO MAY USE ADDITIONAL EQUIPMENT CODES NOT INCLUDED ON THIS LIST. THESE ADDITIONAL CODES TYPICALLY REPRESENT A COMPONENT OF A MAJOR PIECE OF EQUIPMENT THAT HAS A CODE LISTED HEREIN.
4. ADD THE APPROPRIATE RELATED ENCLOSURE EQUIPMENT TYPE AS A MODIFIER, ie. MCC, SWR, ETC.
5. USE INSTRUMENT FUNCTIONAL IDENTIFIER.
6. PROTECTION RELAYS MAY USE THE ANSI/IEEE C37.2 DEVICE NUMBER(S) AS MODIFIER(S).

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2013 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	EBMUD
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
EBMUD PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL

EQUIPMENT TAG EQUIPMENT CODES

SCALE	NONE		
DATE	JAN2009	SD317A-G-010 DRAWING NUMBER	1 REV.

TO/FROM PGS 1

8-HWR
8-HWS
8-HWR
8-HWS
6-HWR
6-HWS
6-HWR
6-HWS

EXIST BOILER

THREE-WAY TEMPERATURE CONTROL VALVE (TYP)

8-HWR

FROM DIGESTERS
10-HWR
(IN PIPE GALLERY)

TO OTHER DIGESTERS
10-HWS

HOT WATER PUMP NO 1
W28-HWP-PMP-101

HEAT RECOVERY UNIT NO. 1
W28-HWP-HXR-101

W28-EE-TRB-101

GAS TURBINE GENERATOR NO. 1

HOT WATER PUMP NO. 2 (FUTURE)

(FUTURE)

(FUTURE)

4-HPDG

6-HPDG
4-HPDG

TO PGS I

LIT

LOW PRESSURE GAS HOLDER

SURGE TANK

LCP
LCP
LCP

FE FIT

GAS COMPRESSORS NO. 1, 2 & 3

18-LPDG

GAS COMPRESSOR NO. 1
W28-DG-CMP-101

8-LPDG

16-LPDG

(FUTURE)

EXIST DIGESTER GAS BURNERS

20-LPDG

16-LPDG

18-LPDG

NC

16-LPDG

TO BOILER

*FILTER

*GAS BLOWERS
W28-DG-BLW-101

HX
HX

*HEAT EXCHANGER/CHILLER
W28-DG-CHU-001

GAS CONDITIONING UNIT
W28-DG-GCD-001

101
102
201
202
301
302

*1ST STAGE SILOXANES REMOVAL (FUTURE)

* 2ND STAGE SILOXANES REMOVAL (FUTURE)

*POLISHING FILTER (TYP) (FUTURE)

*PART OF GAS CONDITIONING PACKAGE

W28-DG-TNK-101
W28-DG-TNK-102
W28-DG-TNK-201
W28-DG-TNK-202

NO 12
NO 2
FROM DIGESTERS
36-LPDG
36-LPDG

NOTE:

UNLESS NOTED OTHERWISE, ALL VALVES ARE NORMALLY OPEN.

NOTE

SEE G-007 FOR EQUIPMENT & PIPE LEGEND

REF 1: W:\Drafters\SD\sd317A\ref\sd317abdr_consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fal
DATE: 26-AUG-2013 15:32
FILE: J:\SD\sd317A\W28G20G201.R01

PLOT SCALE: 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DT/TGW
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
EBMUD PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
EBMUD RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

REGISTERED PROFESSIONAL ENGINEER THOMAS G. MOSSINGER No. M26798 Exp. 9/30/08 MECHANICAL STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL

GAS AND HOT WATER FLOW DIAGRAM

SCALE	NONE	W28.20-G-201	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 7: W28-CWS-HEX-101
REF 8: W28-CWS-HEX-201
REF 9: W28-CWS-PMP-101

REF 4: W28-CWS-PMP-102
REF 5: W28-CWS-PMP-202
REF 6: W28-CWS-PMP-

REF 1: W:\Drafters\SD\sd317A\ref\sd317abdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317adr-consultant.mst
REF 3:

USER: fa\
DATE: 26-AUG-2013 15:22
FILE: J:\SD\sd317A\W28200202.R01

PLOT SCALE: 0.166667:1

TO EFFLUENT PUMP STATION

SECONDARY EFFLUENT CHANNEL

EXISTING NO. 3W PUMPS TO PGS-1

18-3W

12-3W

8-3W

8-3W

W28-CWS-PMP-101

W28-CWS-PMP-201

6-3W

6-3W

6-3W

6-3W

FIT
FE

TI PI

DUAL BASKET STRAINER

NO. 3 WATER PUMPS

BF

BF

M

4-CCWS

FC

4-CCWR

TI PI

PI TI

NO. 2

NO. 1

W28-DG-CMP-101

W28-DG-CMP-201

GAS COMPRESSOR PACKAGE

6-CCWS

6-CCWR

GAS COMPRESSORS LUBE OIL/AFTERCOOLER COOLING SYSTEM

1" 2W MAKE UP WATER

E

TIT

6-CCWS

6-CCWS
SUPPLY

EXPANSION TANK

PI

6-CCWR

AIR SEPARATOR

D

6-CCWR
RETURN

3-CCWR

3-CCWS

BF

TI PI

NO. 1

W28-CWS-HEX-101

NO. 2

W28-CWS-HEX-201

6-3W

6-CCWR

6-CCWR
(TYP)

PGS 2 COOLING LOOP HEAT EXCHANGERS

6-CCWR

FS PI

W28-CWS-PMP-102

SUCTION DIFFUSER

6-CCWR

W28-CWS-PMP-202

SUCTION DIFFUSER

6-CCWR

W28-CWS-PMP-

FUTURE

SUCTION DIFFUSER

6-CCWR

1/2-3W

1/2-3W

CHEMICAL FEEDER

D

COOLING WATER LOOP PUMPS

COOLING WATER LOOP DIAGRAM

M

W285--CWS-MOV-101-BFV

2-CCWS

FC

2-CCWR

PI TI

TI PI

NO. 1

W28-CWS-HXR-L01

NO. 2

W28-CWS-HXR-L02

GAS TURBINE LUBE OIL COOLER

GAS TURBINE PACKAGE

NOTE

SEE G-007 FOR EQUIPMENT & PIPE LEGEND

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	DT/TGM
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

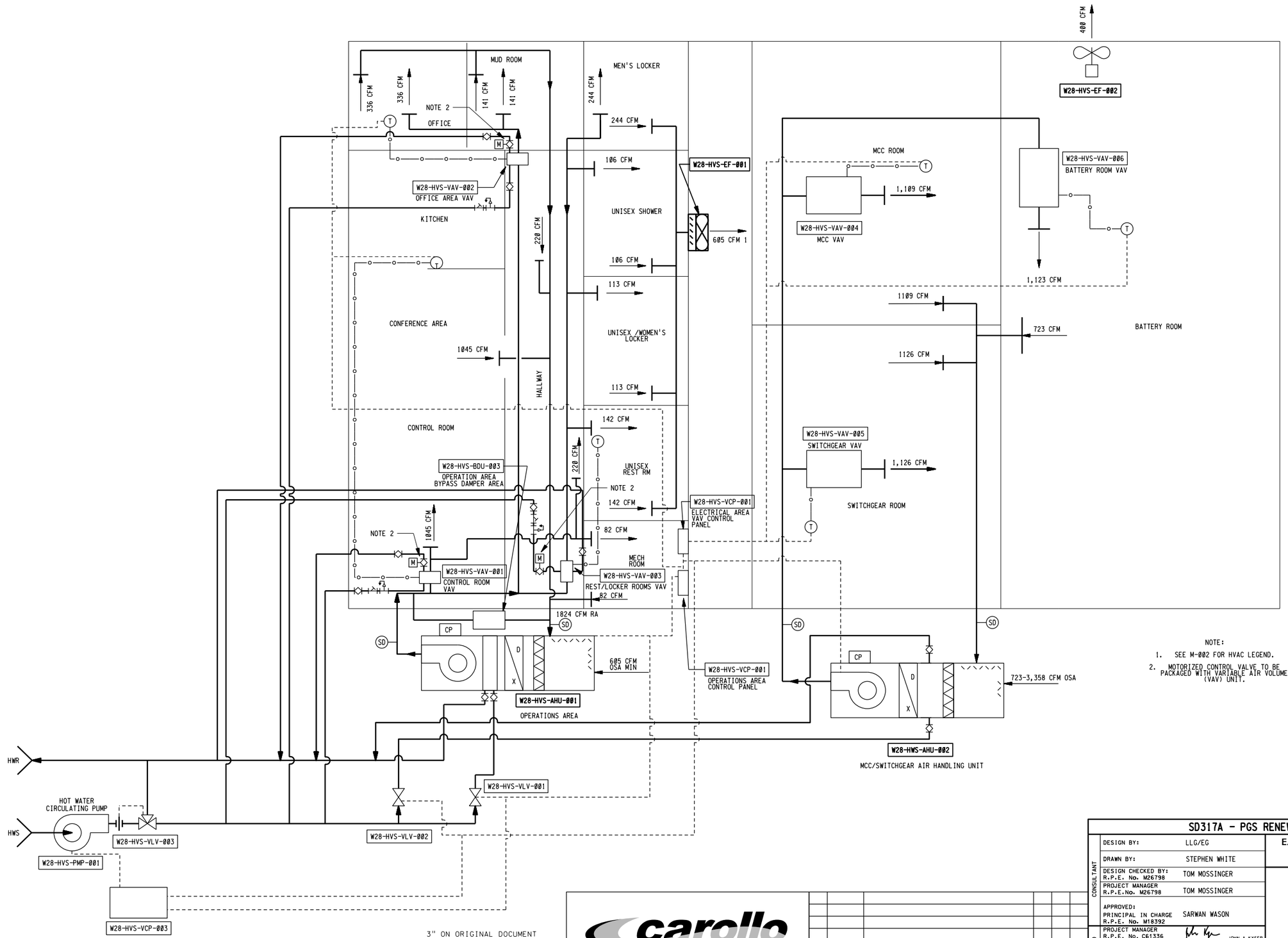
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL

COOLING WATER FLOW DIAGRAM

SCALE NONE
DATE JAN2009

W28.20-G-202
DRAWING NUMBER

1
REV.



NOTE:

1. SEE M-002 FOR HVAC LEGEND.
2. MOTORIZED CONTROL VALVE TO BE PACKAGED WITH VARIABLE AIR VOLUME (VAV) UNIT.

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	LLG/EG
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. M26798	TOM MOSSINGER
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
GENERAL

AIR FLOW DIAGRAM

SCALE NONE
DATE JAN2009

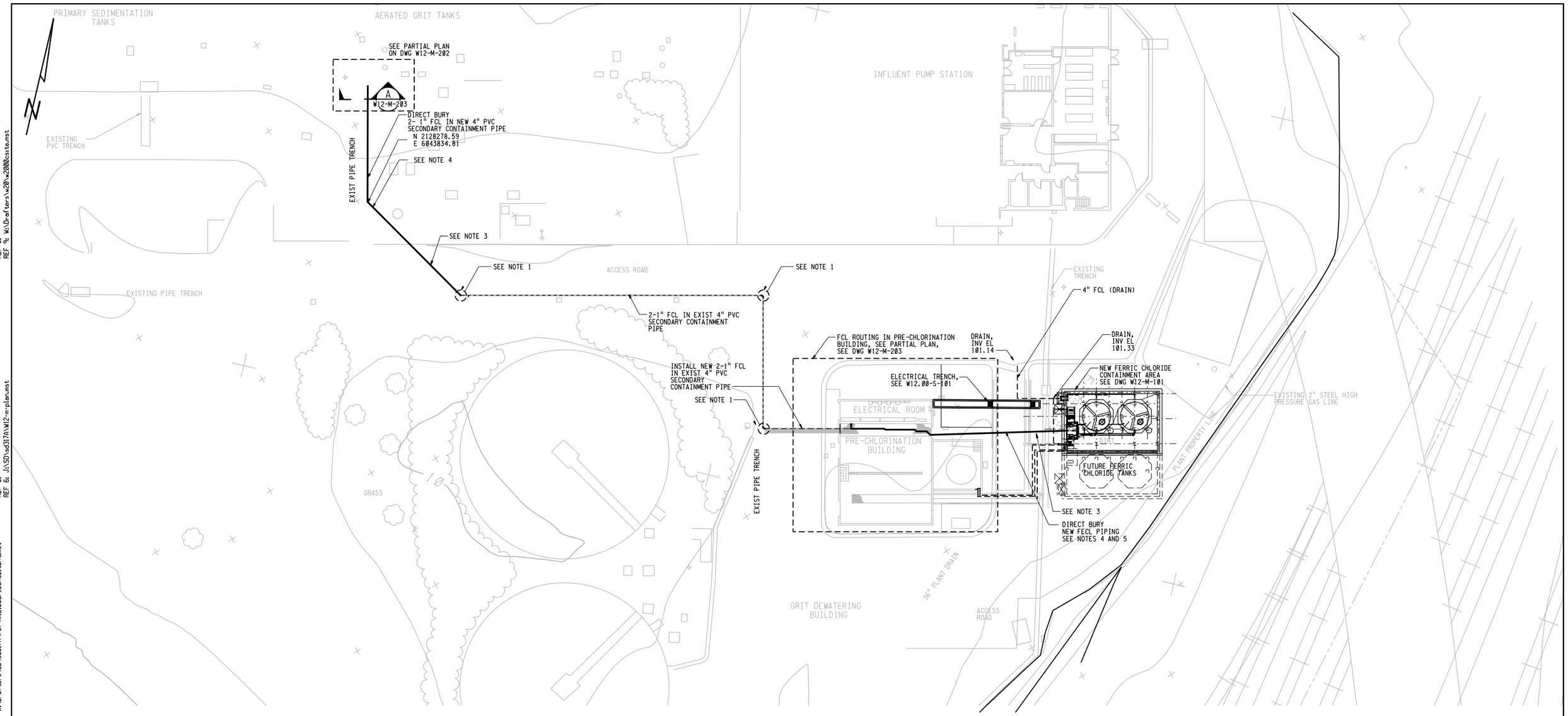
W28.20-G-203
DRAWING NUMBER

1
REV.

REF 1: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317bdr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fah
DATE: 28-AUG-2013 15:32
FILE: J:\SD\sd317A\W28D0203.R01

PLOT SCALE: 0.166667:1



REF 7; J:\SD\sd317A\W12STOP.MST
REF 8;
REF 9; W:\D-rafters\w20\w2000csts.mst

REF 4;
REF 5;
REF 6; J:\SD\sd317A\W12-m-plan.mst

REF 1; W:\D-rafters\SD\sd317A\ref\W2100dr_consultant.mst
REF 2;
REF 3;

USER: fa\
DATE: 23-AUG-2013 15:32
FILE: J:\SD\sd317A\W12100101.R03

PLOT SCALE: 40:1

NOTES

1. AT EACH BEND IN EXISTING 4" PVC, CUT OUT EXISTING FITTING AND PULL FLEXIBLE 1" FCL PIPES THROUGH, REPLACE FITTING W/ NEW 4" PVC CLAMSHELL FITTING.
2. INSTALL NEW 4" X 2" TEE W/ 2" BRANCH DIRECTED DOWNWARD. CONNECT DRAIN LINE TO TEE AND SLOPE NEW 2" DRAIN TO EXIST 26"X26" DRAIN INLET.
3. PROVIDE CONCRETE ENCASEMENT FOR H20 LOADING AT BOTH ROAD CROSSINGS.
4. EXISTING PAVEMENT IS 5" AC OVER 8" CLASS 2 AB. REPAIR CUT OR DISTURBED PAVEMENT TO EXISTING SECTION.
5. EXISTING SIDEWALK IS 5" CLASS C CONCRETE WITH 6" X 6" W1.4 X W1.4 OVER 2" AGGREGATE BASE. REPAIR CUT OF DISTURBED SIDEWALK TO EXISTING CONDITION.

REGISTERED PROFESSIONAL ENGINEER
DAVID McEWEN
No. 69475
Exp. 06-30-10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		REVISED PER COR#14	DCM	TMS	JK
0		ADDENDUM NO.#2 PER SD317A	FWB	-	TMS

CONSULTANT

DESIGN BY:	D. MCEWEN
DRAWN BY:	C. CHAVES
DESIGN CHECKED BY: R.P.E. No.	
PROJECT MANAGER R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
EBMUD RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH K. WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
CIVIL
FERRIC CHLORIDE YARD PIPING PLAN

SCALE 1"=20'
DATE 23JAN2009
W12.10-C-101
DRAWING NUMBER
3
REV.

A. GENERAL

G1 SCOPE:
THE GENERAL NOTES AND TYPICAL DETAILS ARE GENERAL AND APPLY TO ALL SD317A-W12 DRAWINGS EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY. SUBMIT SHOP DRAWINGS TO ENGINEER OF RECORD FOR REVIEW PRIOR TO FABRICATION AND/OR INSTALLATION.

G2 APPLICABLE SPECIFICATIONS AND CODES:
DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 2007 CALIFORNIA BUILDING CODE. THE ABOVE SHALL GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR THE FOLLOWING ARE MORE RESTRICTIVE.

G3 ALTERNATIVE DESIGN:
THE STRUCTURAL SYSTEMS AND DETAILS ON THESE PLANS ARE THE PRIORITY DESIGN. ALTERNATIVE SYSTEMS AND DETAILS MAY BE USED IF THE CONTRACTOR SUBMITS PLANS WITH SUBSTANTIATING CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF CALIFORNIA, ALONG WITH RELEVANT TEST DATA AND WRITTEN CONFIRMATION. IF THE ALTERNATIVE PLANS ARE ACCEPTED BY THE ENGINEER. ALTERNATE SYSTEMS OR DETAILS SHALL BE APPROVED IN WRITING BY ENGINEER OF RECORD.

REF 7; REF 8; REF 9;

G4 DIMENSIONS:
STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION DIMENSIONS AND NOTIFYING ENGINEER OF DISCREPANCIES IN A TIMELY MANNER.

G5 PROVISIONS FOR EQUIPMENT:
MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DRAWINGS SHALL BE PROVIDED PRIOR TO CASTING CONCRETE.

G6 MEANS, METHODS & CONSTRUCTION LOADS:
CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS AND SEQUENCE OF CONSTRUCTION AND SHALL MAKE ADEQUATE PROVISION TO MAINTAIN THE INTEGRITY OF ALL STRUCTURES AT ALL STAGES OF CONSTRUCTION. DETERMINATION OF AND PROVISIONS FOR CONSTRUCTION LOADING SHALL BE PROVIDED BY THE CONTRACTOR.

G7 SAFETY:
CONTRACTOR SHALL TAKE ADEQUATE PRECATUIONS TO ENSURE THE SAFETY OF WORKERS AND VISITORS TO THE SITE, INCLUDING BUT NOT LIMITED TO SHORING, BRACING AND ACCESS RESTRICTION AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY CODES AND STANDARDS.

REF 4; REF 5; REF 6;

G8 DESIGN LIVE LOADS: UNLESS INDICATED OTHERWISE,
A. FLOOR AREAS
1) TANK CONTAINMENT AREAS - 250 PSF
2) VEHICLE ACCESS AREAS - HS20 - 44 LOADING
3) OTHER AREAS - 100 PSF
B. GRATING, CHECKERED PLATE AND HATCHES - SAME LOADINGS AS ADJACENT FLOOR AREAS
C. STAIRS - 100 PSF

G9 WIND: BASIC WIND SPEED = 85 MPH, EXPOSURE C, Iw = 1.15

G10 SEISMIC LOADING: I = 1.5, SEE SPECIFICATION SECTION 01415.

G11 LIVE LOAD SIGNS:
LIVE LOAD SIGNS SHALL BE PROVIDED IN AREAS DESIGNATED BY THE ENGINEER. SIGNS SHALL BE AS REQUIRED IN THE SPECIFICATIONS.

G12 DRAINAGE SURFACES:
SLOPE DRAINAGE SURFACES UNIFORMLY TO DRAIN. SLOPE SHALL BE A MINIMUM OF 3/16" PER FOOT, UNLESS INDICATED OTHERWISE.

G13 FLOOR DRAINS:
SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATION AND SIZES.

G14 OPENINGS:
OPENINGS THROUGH NEW AND EXISTING WALLS AND SLABS FOR PIPES, DUCTS, CONDUITS, ETC. ARE NOT ALL SHOWN ON THE STRUCTURAL DRAWING. THE CONTRACTOR SHALL PROVIDE THESE OPENINGS IN ACCORDANCE WITH THE OTHER CONTRACT DRAWINGS.

G15 PIPE ENCASEMENT:
ALL PIPING PLACED UNDERNEATH STRUCTURES SHALL BE ENCASED IN CONCRETE, UNLESS INDICATED OTHERWISE.

G16 SPECIAL INSPECTION:
IN ACCORDANCE WITH CBC 2007, CHAPTER 17, THE FOLLOWING TYPES OF WORK REQUIRE SPECIAL INSPECTION. SPECIFICATIONS DESCRIBE ADDITIONAL INSPECTION, CERTIFICATION AND REPORTING.
1) CONCRETE - ALL STRUCTURAL CONCRETE.
2) REINFORCING STEEL.
3) WELDING - ALL FIELD AND SHOP WELDING
4) BOLTS INSTALLED IN CONCRETE - ALL EPOXY ANCHORS, WEDGE ANCHORS AND ANCHOR BOLTS.
5) PRECAST CONCRETE PILES.
6) PREFABRICATED ITEMS
7) SUBGRADES FOR FOOTINGS, MAT FOUNDATIONS AND SLABS-ON-GRADE.

CONCRETE

C1 APPLICABLE CODE AND MIX DESIGN:
CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE ACI BUILDING CODE (ACI 318 AND ACI 350R).

C2 REINFORCING STEEL DETAILS:
ALL DETAILING FABRICATION AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE SPECIFIED SHALL BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315), LATEST EDITION.

C3 DESIGN STRESSES:
A. CONCRETE, fc=4000 PSI ULTIMATE COMPRESSIVE STRESS AT 28 DAYS AND AS OTHERWISE SPECIFIED.
B. REINFORCING STEEL, ASTM A615, GRADE 60, (fy = 60,000 PSI) DEFORMED BARS TYPICAL.

C4 CONCRETE COVER:
CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS:
A. FOOTING AND FOUNDATION MATS CAST ON GROUND...3".
B. CONCRETE TO BE IN CONTACT WITH LIQUID...2".
C. CONCRETE TO BE IN CONTACT WITH GROUND OR WEATHER
1) BARS GREATER THAN #5...2"
2) BARS #5 OR LESS...1 1/2"
D. CONCRETE NOT TO BE EXPOSED TO GROUND, WEATHER OR LIQUID
1) BEAMS AND COLUMNS...1 1/2"
2) SLABS, WALLS AND JOISTS...1"

C5 BAR DEVELOPMENT AND LAP LENGTH:
ALL DEVELOPMENT AND SPLICE LENGTHS SHALL BE PER ACI 318. ALL LAP SPLICES SHALL BE CLASS B UNLESS OTHERWISE INDICATED. INFORMATION PERTINENT TO THIS TABLE INCLUDE fc=4000 PSI, FY=60,000 PSI, CLEAR SPACING GREATER OR EQUAL TO 3 BAR DIAMETER, CONCRETE COVER PER NOTE C4 AND CLASS B SPLICES.

BAR SIZE	DEVELOPMENT LENGTHS		SPLICE LENGTHS		MIN EMBEDMENT LENGTH (IN) W/ STD HOOK FOR BEAMS & COLS
	TOP BARS	OTHER	TOP BARS	OTHER	
#3	1'-7"	1'-3"	2'-0"	1'-7"	6
#4	2'-1"	1'-7"	2'-8"	2'-1"	7
#5	2'-7"	2'-0"	3'-4"	2'-7"	9
#6	3'-1"	2'-5"	4'-1"	3'-1"	10
#7	4'-6"	3'-6"	6'-0"	4'-6"	12
#8	5'-2"	4'-0"	6'-9"	5'-2"	14
#9	5'-10	4'-6"	7'-7"	5'-10"	15
#10	6'-5"	5'-0"	8'-5"	6'-5"	17
#11	7'-1"	5'-6"	9'-3"	7'-1"	19

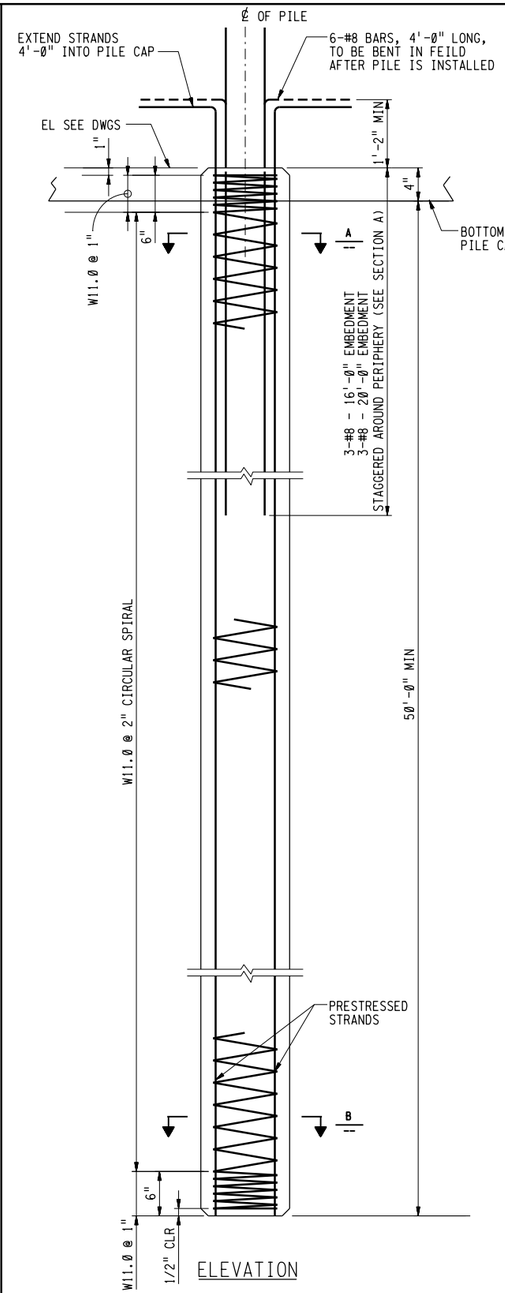
C6 RESTRICTED BAR ANCHORAGE:
IN CASES WHERE REINFORCING BARS CANNOT BE EXTENDED AS FAR AS REQUIRED DUE TO THE LIMITED EXTENT OF THE ADJACENT CONCRETE STRUCTURE, THE BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN STANDARD HOOKS.

C7 STANDARD HOOKS:
BARS ENDING IN RIGHT ANGLE BENDS OR HOOKS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318

C8 SLOPING SLABS:
MONOLITHIC SLABS WITH TOPS THAT ARE SLOPED SHALL HAVE BOTTOMS SLOPED THE SAME AMOUNT, MAINTAINING A UNIFORM SLAB THICKNESS, UNLESS OTHERWISE SHOWN.

C9 CHAMFERS:
EXCEPT AS OTHERWISE REQUIRED, EXPOSED CONCRETE CORNERS AND EDGES SHALL HAVE 3/4" CHAMFERS. REENTRANT CORNERS SHALL NOT HAVE FILLETS.

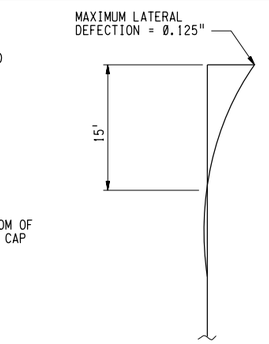
C10 COMPATIBLE FINISHES:
CURING COMPOUNDS AND OTHER SURFACE TREATMENTS, CONCRETE ADMIXTURES AND SUB-SLAB DRAINAGE SHALL BE REVIEWED BY CONTRACTOR AND CERTIFIED COMPATIBLE WITH FINISHES TO BE APPLIED LATER IN THE CONSTRUCTION SEQUENCE.



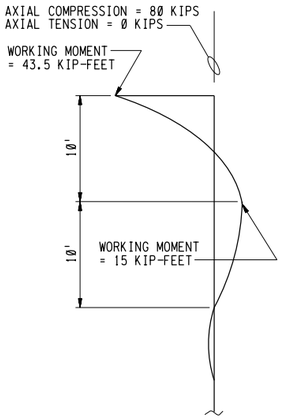
ELEVATION

TYPICAL PRECAST CONCRETE PILE

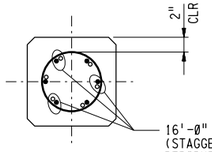
DETAIL 1 VAR
SCALE: NTS



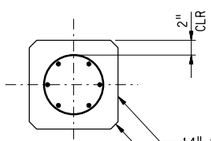
PILE DEFLECTION DIAGRAM



PILE LOAD DIAGRAM



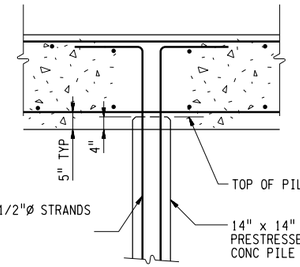
SECTION A -- SCALE: NTS



SECTION B -- SCALE: NTS

NOTES:

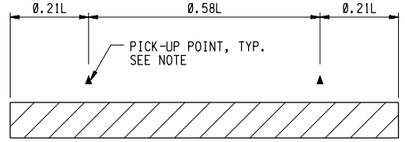
1. PILE DESIGN CRITERIA:
   A. PILE DESIGN IS BASED ON GEOTECHNICAL REPORT PREPARED BY EBMUD, DATED JANUARY 13, 2009.
   B. ALL PILES SHALL BE 14" SQUARE PRECAST PRESTRESSED CONRETE DRIVEN PILES.
   C. PILES SHALL CONFORM TO DUCTILE COLUMN REQUIREMENTS PER CBC, 2007 EDITION SECTION 1809.5.
   D. CONCRETE FOR PILES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH fc = 6,000 PSI AT 28 DAYS.
   E. PRESTRESSING STEEL: ASTM A416. GR 270.
   F. MILD REINFORCING STEEL: ASTM A615-GRADE 60.
   G. PILE ALLOWABLE CAPACITIES (WORKING LOADS):
      80 KIPS COMPRESSION
      14.5 KIPS LATERAL (DEFLECTION = 0.125")
      NO UPLIFT
      43.5 K-FT MOMENT
   H. PILES SHALL BE DESIGNED FOR AXIAL COMPRESSION COMBINED WITH LATERAL LOADS SHOWN ABOVE. PROVIDE MILD STEEL REINFORCING TO MEET MINIMUM STEEL REQUIREMENTS AND/OR RESIST BENDING MOMENTS AS REQUIRED.
   I. STRANDS: 1/2 INCH DIAMETER, 7 WIRE, STRESS RELIEVED PER ASTM A416, GRADE 270.
   J. SPIRAL WIRE: W11.0 PER ASTM A82 LAPPED SPLICES SHALL 80 WIRE DIAMETERS MINIMUM. SPIRAL WIRE AT SPLICES AND AT ENDS SHALL BE TERMINATED BY 135° HOOK WITH A 6 INCH TAIL HOOKED AROUND A LONGITUDINAL STRAND OR REBAR.
2. PILE DETAILS SHOWN ON THIS DRAWING APPLY TO TANK CONTAINMENT AREA. SEE SPECIFICATION SECTIONS 02468 AND 02455 FOR OTHER DETAILS.
3. SEE GENERAL STRUCTURAL NOTES ON THIS DRAWING.
4. FOR THE PURPOSE OF BIDDING, ASSUME 50-FOOT LENGTH FOR PILES.



(TYPICAL EXCEPT AS OTHERWISE SHOWN OR NOTED)
SEE PLANS FOR SLAB REBAR

TYPICAL PILE CONNECTION TO SLAB

DETAIL 2 VAR
SCALE: NTS



NOTES:

1. PICK-UP POINT SHALL BE MARKED PLAINLY ON EACH PILE.

PRESTRESSED PILE HANDLING

DETAIL 3 VAR
SCALE: NTS

REGISTERED PROFESSIONAL ENGINEER YOGESH B. PATEL #1765 Exp. 6/30/2009 STRUCTURAL STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT
DESIGN BY: C. PAO
DRAWN BY: E. POSADAS
DESIGN CHECKED BY: R.P.E. No. S1765 YOGESH B. PATEL
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475 DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503 TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336 JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703 JOSEPH L WONG

EBMUD
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
STRUCTURAL
GENERAL STRUCTURAL NOTES AND TYPICAL PILE DETAILS

SCALE AS SHOWN
DATE 23JAN2009
W12.10-S-001 DRAWING NUMBER
2 REV.

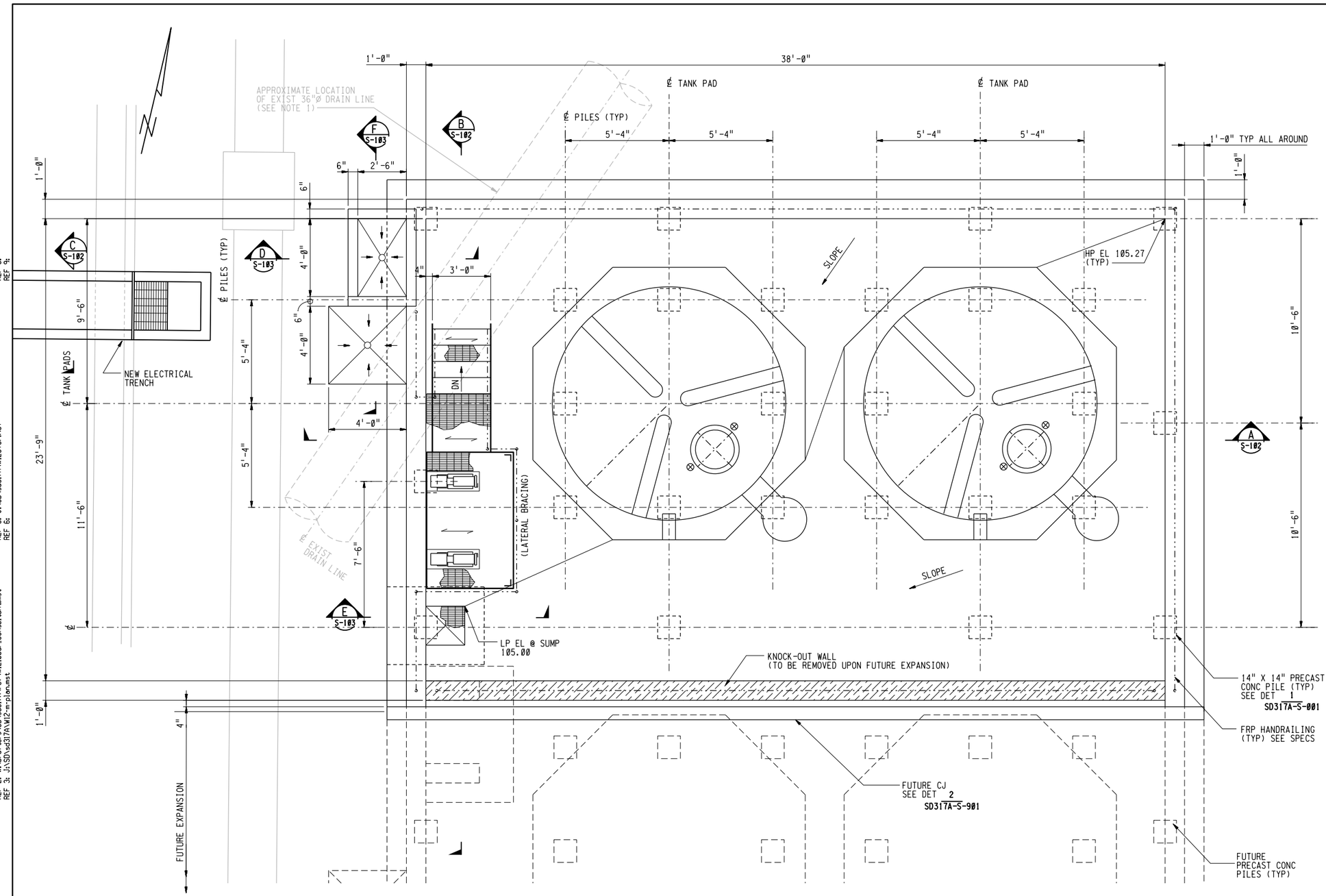
NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	YP		

Beyaz & Patel, Inc.
Consulting Engineers #0706-03
Walnut Creek, California

BROWN AND CALDWELL

3" ON ORIGINAL DOCUMENT
0 1 2 3

USER: fah
DATE: 26AUG-2013 15:22
FILE: J:\SD\sd317A\W12\DS001.DGZ
PLOT SCALE: 5.333364
REF 1: W:\D-drive\SD\sd317A\ref\SD317-bbr-mst
REF 2: W:\D-drive\SD\sd317A\ref\W12\Bbar-consultant.mst
REF 3:



REF 1: W:\D-afters\SD\sd317A\ref\SD317-bdr.mst
REF 2: W:\D-afters\SD\sd317A\ref\W12Bbdr_consultant.mst
REF 3: J:\SD\sd317A\W12-mplan.mst

REF 4:
REF 5: J:\SD\sd317A\W12STOP.MST
REF 6:

USER: fal
DATE: 22AUG-2013 15:22
FILE: J:\SD\sd317A\W12105101.DGN

PLOT SCALE: 5.333364:1

NOTES

1. EXISTING 36" DIAMETER DRAIN LINE IS APPROXIMATELY SHOWN. CONTRACTOR SHALL VERIFY LOCATION IN FIELD PRIOR TO INSTALLATION OF NEW CONCRETE PILES. CONTRACTOR SHALL PROTECT EXISTING DRAINS LINES AT ALL TIMES DURING CONSTRUCTION.
2. NOT USED.
3. NOT USED.
4. HANDRAILING, STAIR, PLATFORM GRATING AND STRUCTURAL SHAPES ARE FIBERGLASS REINFORCED PLASTIC (FRP), SEE SPECS SECTION 13237.
5. ALL SECTION AND DETAIL REFERENCES SHOWN ON THIS DRAWING ARE IN THE W12 SERIES OF DRAWINGS.

PLAN

REGISTERED PROFESSIONAL ENGINEER
YOGESH B. PATEL
#1765
Exp. 6/30/2009
STRUCTURAL
STATE OF CALIFORNIA

Beyaz & Patel, Inc.
Consulting Engineers W0706-03
Walnut Creek, California

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		REVISED PER CORR #14	DCM	TMS	JK
0		ADDENDUM NO. 2 PER SD317A	YP		

CONSULTANT

DESIGN BY:	C. PAO
DRAWN BY:	E. POSADAS
DESIGN CHECKED BY: R.P.E. No. S1765	YOGESH B. PATEL
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

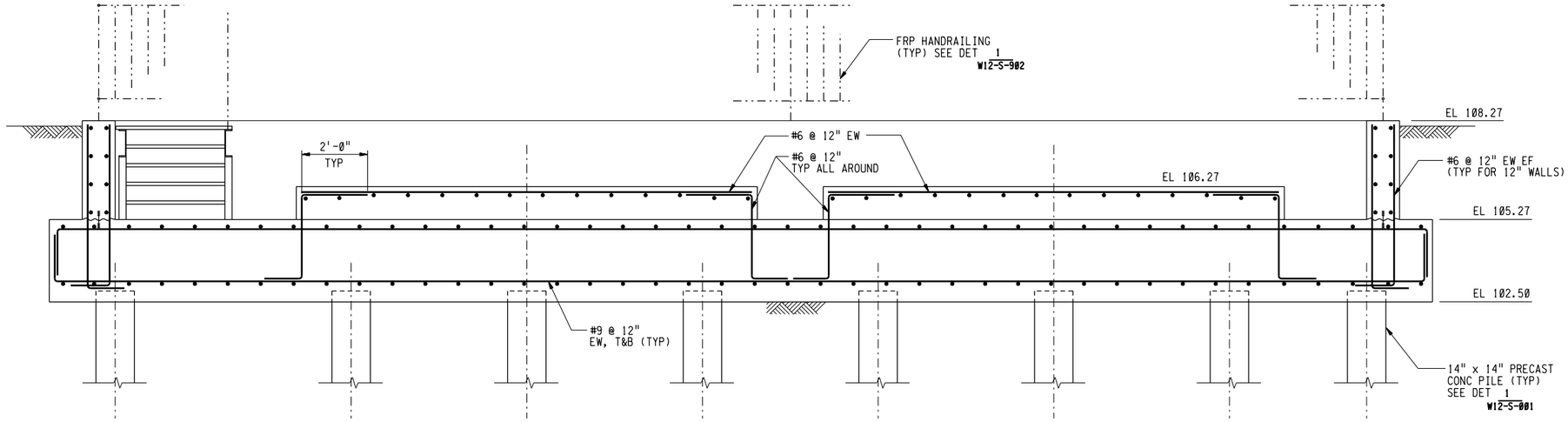
EBMUD

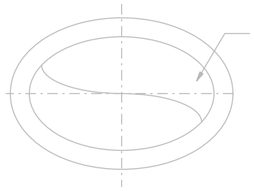
SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

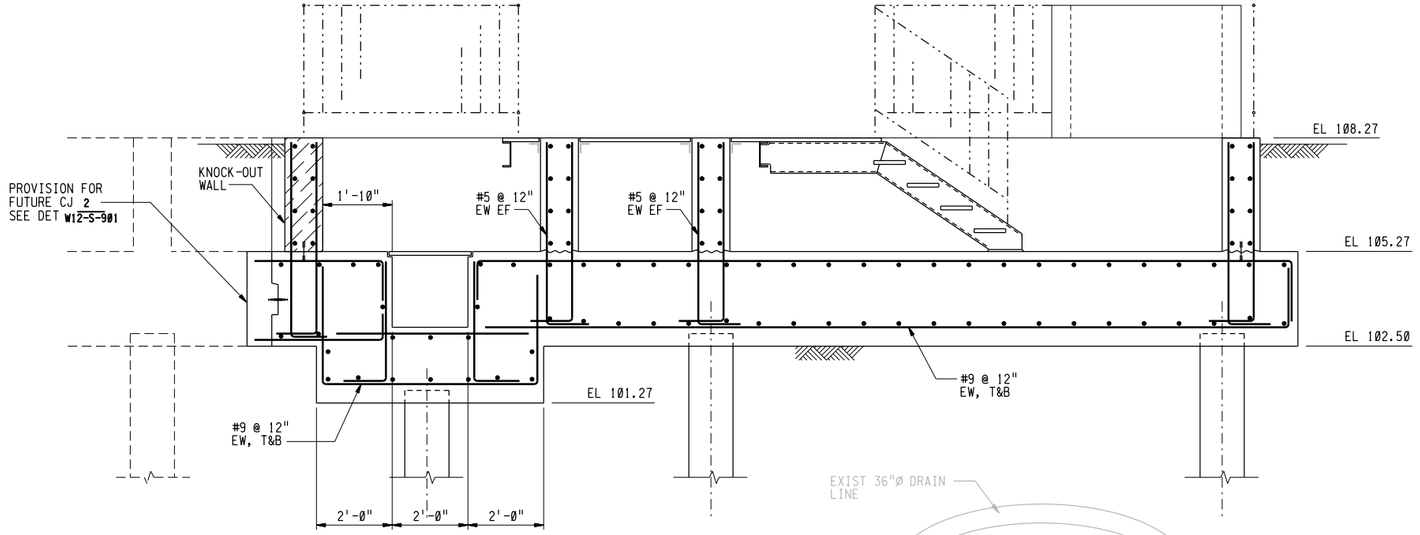
MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
STRUCTURAL
TANK CONTAINMENT AREA
PLAN

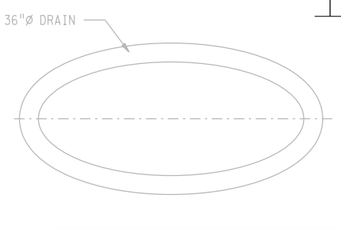
SCALE 3/8"=1'-0"
DATE 23JAN2009
W12.10-S-101
DRAWING NUMBER
3
REV.



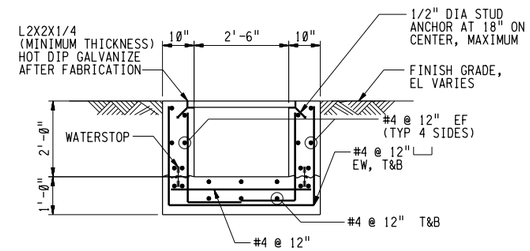


SECTION A
SCALE: 1/2"=1'-0" W12-S-101





SECTION B
SCALE: 1/2"=1'-0" W12-S-101



NOTES

1.GRATING SHALL BE 1 3/4" X 1/2" (MINIMUM)GALVANIZED STEEL, H20 TRUCK LOADING RATING.

2.CONCRETE SHALL BE CLASS "A" CONCRETE (4000PSI).

3.MAINTAIN 1/4" GAP BETWEEN GRATING REBATE AND GRATING.

4.PROVIDE SPACERS BETWEEN GRATING REBATE AND BOTTOM OF GRATING AS REQUIRED TO PROVIDE TOP FLUSH WITH TOP OF CONCRETE WALL. LEAVE 1" GAP EVERY 24" FOR DRAINAGE.

SECTION C
SCALE: 1/2"=1'-0" W12-S-101

REGISTERED PROFESSIONAL ENGINEER
YOGESH B. PATEL
#1765
Exp. 6/30/2009
STRUCTURAL
STATE OF CALIFORNIA

Beyaz & Patel, Inc.
Consulting Engineers W0706-03
Walnut Creek, California

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
3	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
2		REVISED PER CORR #14	DCM	TMS	JK
1		ADDENDUM NO. 2 PER SD317A	YP		

CONSULTANT

DESIGN BY:	C. PAO
DRAWN BY:	E. POSADAS
DESIGN CHECKED BY: R.P.E. No. S1765	YOGESH B. PATEL
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

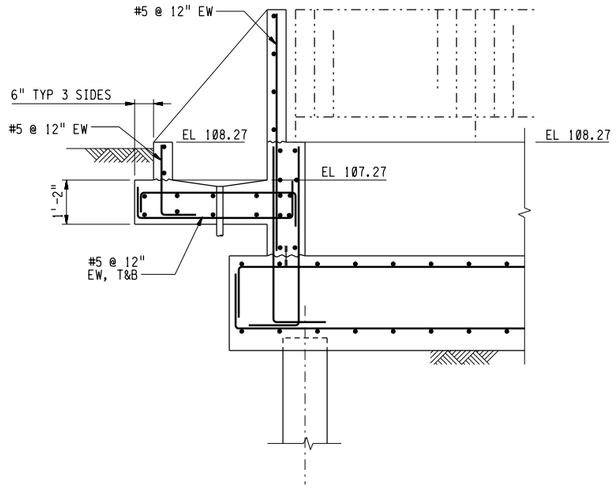
SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

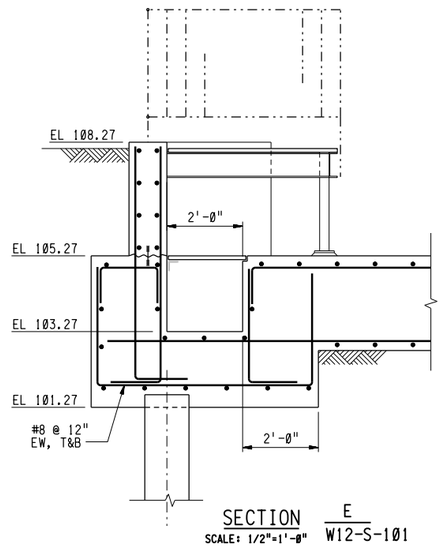
MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
STRUCTURAL
TANK CONTAINMENT AREA
SECTIONS

SCALE AS SHOWN
DATE 23JAN2009
W12.10-S-102
DRAWING NUMBER
3
REV.

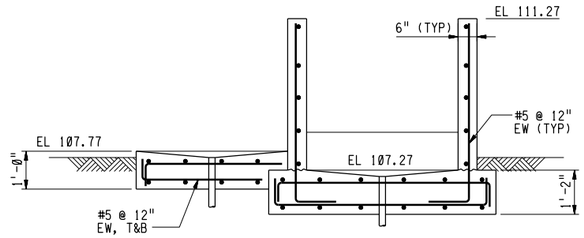
REF 7; REF 8; REF 9;
REF 4; REF 5; REF 6;
REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr-mst
REF 2: W:\Drafters\SD\sd317A\ref\W12Bbdr.consultant.mst
REF 3:
PLOT SCALE: 4.0000231
USER: fah
DATE: 28-AUG-2013 15:32
FILE: J:\SD\sd317A\W12105102.R03



SECTION D
SCALE: 1/2"=1'-0" W12-S-101



SECTION E
SCALE: 1/2"=1'-0" W12-S-101



SECTION F
SCALE: 1/2"=1'-0" W12-S-101

REF 7:
REF 8:
REF 9:

REF 4:
REF 5:
REF 6:

REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W12B0F-consultant.mst
REF 3:

USER: fah
DATE: 22-AUG-2013 15:32
FILE: J:\SD\sd317A\W12IS103.R02

PLOT SCALE: 4.000023:1

Beyaz & Patel, Inc.
Consulting Engineers #0706-03
Walnut Creek, California

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

REGISTERED PROFESSIONAL ENGINEER
YOGESH B. PATEL
#1765
Exp. 6/30/2009
STRUCTURAL
STATE OF CALIFORNIA

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	YP		

CONSULTANT

EBMUD

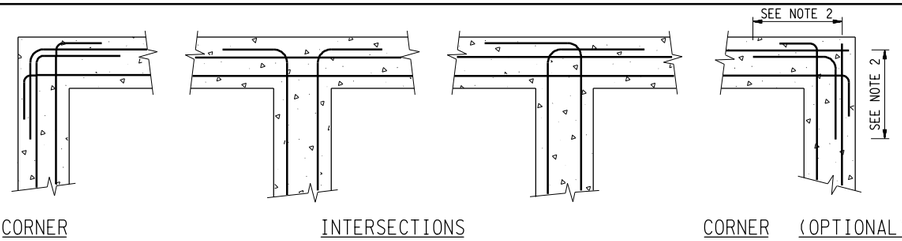
SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY: C. PAO
DRAWN BY: E. POSADAS
DESIGN CHECKED BY: R.P.E. No. S1765 YOGESH B. PATEL
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475 DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503 TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336 JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703 JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
STRUCTURAL
TANK CONTAINMENT AREA
SECTIONS

SCALE AS SHOWN
DATE 23JAN2009
W12.10-S-103
DRAWING NUMBER
2
REV.

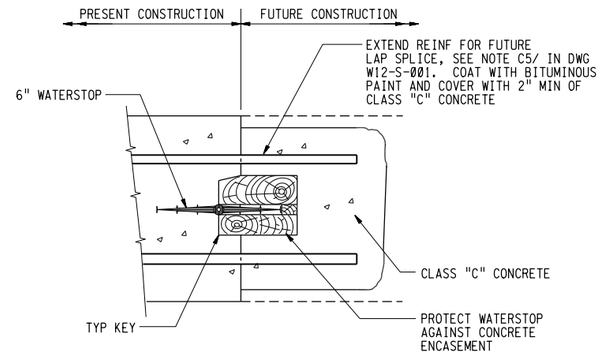


NOTES:

1. ALL 90° BENDS SHALL BE STANDARD HOOKS PER ACI 318 UNLESS OTHERWISE SPECIFIED.
2. BAR SPLICES, SEE GENERAL NOTES.

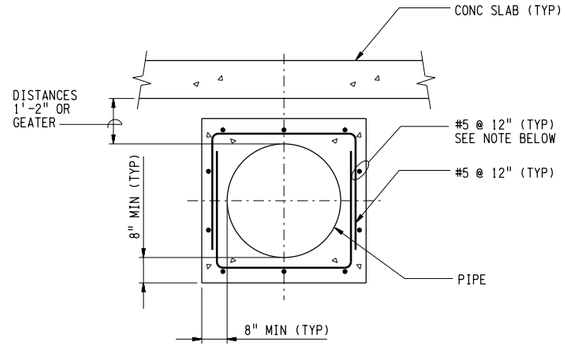
REINFORCING STEEL AT WALL INTERSECTIONS

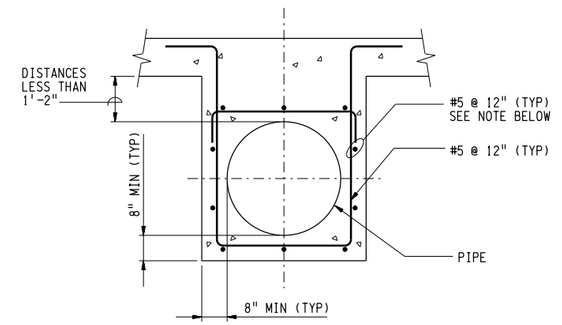
DETAIL 1 / VAR
SCALE: NTS



PROVISION FOR FUTURE CONSTRUCTION JOINT

DETAIL 2 / VAR
SCALE: NTS



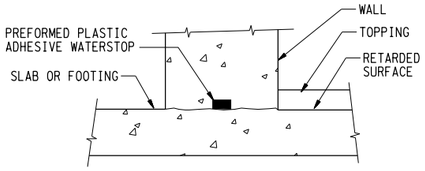


NOTES:

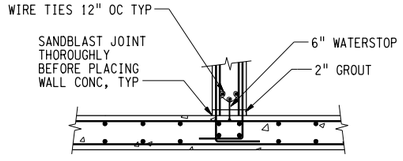
WHERE PIPE ENCASEMENT BEGINS OR TERMINATES AT STRUCTURE, EXTEND REINFORCING A MINIMUM OF 12" INTO STRUCTURE.

CONCRETE PIPE ENCASEMENT

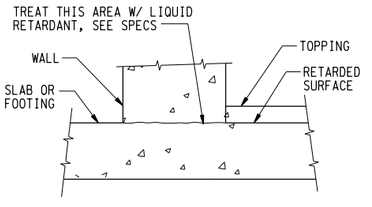
DETAIL 4 / VAR
SCALE: NTS



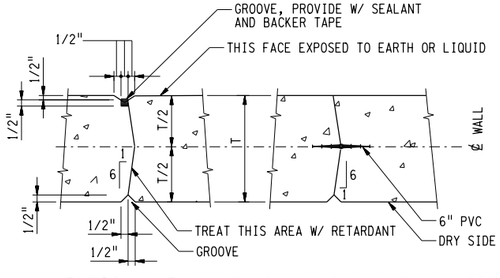
TYPICAL JOINT W/ PLASTIC ADHESIVE WATERSTOP (PROVIDE ONLY WHERE SHOWN ON DGWS



WALL AND SLAB WITH WATERSTOP

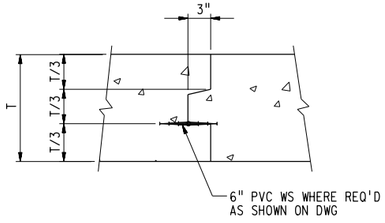


TYPICAL JOINT



TYPICAL KEY TYPICAL KEY W/ PVC WATERSTOP

VERTICAL WALLS TYPICAL CONSTRUCTION JOINTS



TYPICAL CONSTRUCTION JOINT IN SLAB

TYPICAL CONSTRUCTION JOINTS

DETAIL 3 / VAR
SCALE: NTS

3" ON ORIGINAL DOCUMENT
0 1 2 3

Beyaz & Patel, Inc.
Consulting Engineers W0706-03
Walnut Creek, California

REGISTERED PROFESSIONAL ENGINEER
YOGESH B. PATEL
#1765
Exp. 6/30/2009
STRUCTURAL
STATE OF CALIFORNIA

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT
EBMUD

DESIGN BY:	C. PAO
DRAWN BY:	E. POSADAS
DESIGN CHECKED BY: R.P.E. No. 51765	YOGESH B. PATEL
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

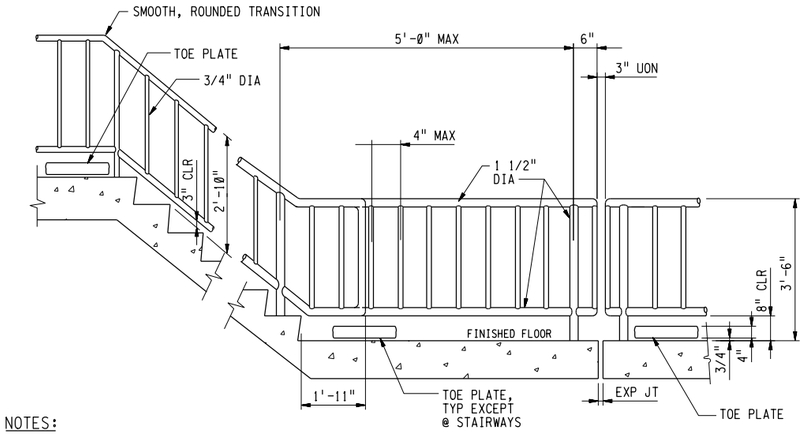
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
STRUCTURAL

TYPICAL CONCRETE DETAILS

SCALE AS SHOWN
DATE 23JAN2009
W12.10-S-901
DRAWING NUMBER
1
REV.

REF 7; REF 8; REF 9;
REF 4; REF 5; REF 6;
REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W12B6dr_consultant.mst
REF 3:
PLOT SCALE: 0.166668:1
USER: fah
DATE: 26-AUG-2013 15:32
FILE: J:\SD\sd317A\W12B59DL.R01

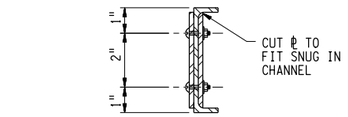


NOTES:

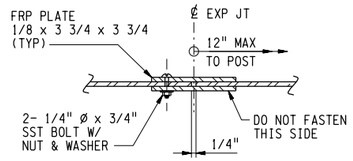
1. TERMINATE RAILING AS SHOWN WHERE NO HORIZONTAL RUN IS REQUIRED.TYP TOP AND BOTTOM OF STAIRS.
2. RAILING SHALL BE FRP AND SHALL CONFORM TO LATEST OSHA REQUIREMENTS. UNLESS INDICATED OTHERWISE.

GENERAL ELEVATION

DETAIL 1 / VAR
SCALE: NTS

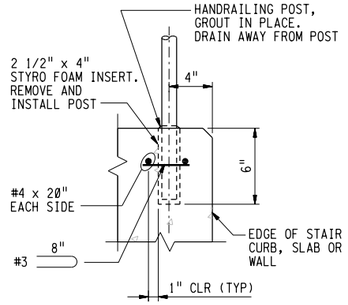


VERTICAL SECTION



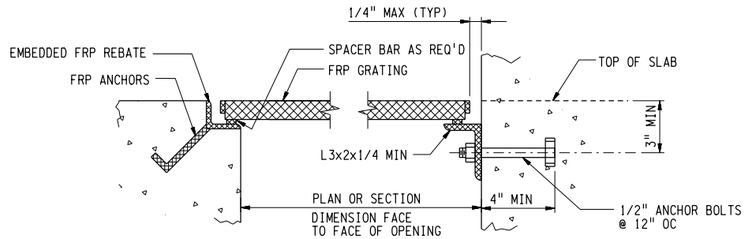
HORIZ SECTION
TOE PLATE SLIP JOINT

DETAIL 3 / VAR
SCALE: NTS



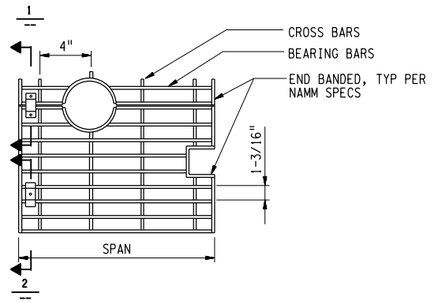
HANDRAILING POST MOUNTING

DETAIL 2 / VAR
SCALE: NTS



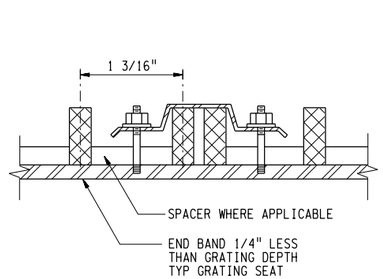
GRATING SUPPORT AT CONCRETE
(ALL MATERIALS ARE FRP)

DETAIL 5 / VAR
SCALE: NTS

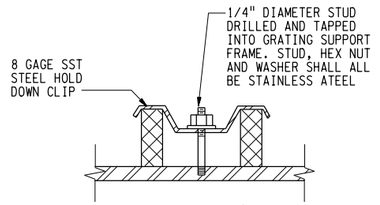


GRATING PLAN (FRP GRATING)

DETAIL 6 / VAR
SCALE: NTS



SECTION 1 / --
SCALE: NTS



SECTION 2 / --
SCALE: NTS

FRP (RTP) GRATING SCHEDULE		
TYPE	BEARING BAR/INCH	MAXIMUM SPAN
A	1 x 3/8 @ 1" OC	2'-6"
B	1 1/2 x 3/8 @ 1 1/2" OC	3'-6"
C	2 x 5/16 @ 2" OC	4'-Ø"

GRATING NOTES:

1. UNLESS OTHERWISE SPECIFIED, GRATING SHALL BE FIBERGLASS REINFORCED PLASTIC, (FRP SAME AS RTP, REINFORCED THERMAL PLASTIC). FRP GRATING SHALL CONFORM TO SPECIFICATION SECTION 13237. EACH GRATING PANEL SHALL SUPPORT A MAXIMUM WEIGHT OF 80 POUNDS.
2. UNLESS OTHERWISE SPECIFIED, PROVIDE 4 GRATING CLIPS APPROXIMATELY 4" FROM THE CORNERS OF EACH PIECE. ADJACENT PIECES MAY BE ANCHORED WITH ONE CLIP AND TWO STUDS, SEE SECTION 1 THIS DWG. FOR FRP GRATING, THE HOLD DOWN CLIP SHALL BE STAINLESS STEEL.
3. ALL GRATING SHALL BE JOB MEASURED PRIOR TO FABRICATION TO FIT RESPECTIVE SUPPORTS PREVIOUSLY SET IN CONCRET.
4. CLEAR SPAN SHALL BE PLAN DIMENSION, FACE TO FACE OF OPENING.
6. ALL SUPPORTS FOR FRP GRATING SHALL ALSO BE FRP.

REGISTERED PROFESSIONAL ENGINEER
YOGESH B. PATEL
#1765
Exp. 6/30/2009
STRUCTURAL
STATE OF CALIFORNIA

Beyaz & Patel, Inc.
Consulting Engineers W0706-03
Walnut Creek, California

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	C. PAO
DRAWN BY:	E. POSADAS
DESIGN CHECKED BY: R.P.E. No. S1765	YOGESH B. PATEL
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

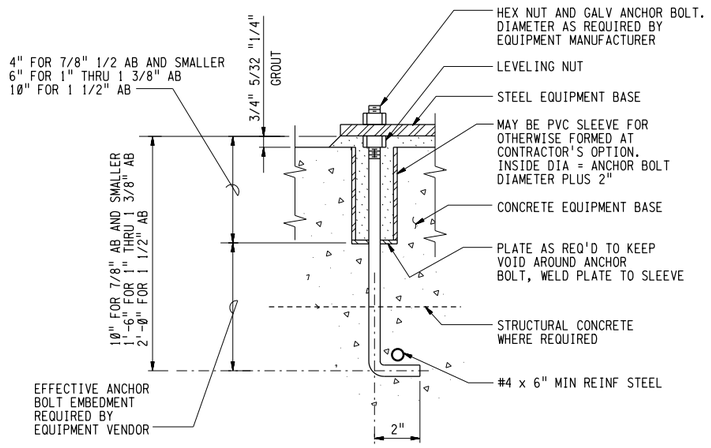
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
STRUCTURAL

TYPICAL HANDRAILING AND GRATING DETAILS

SCALE AS SHOWN
DATE 23JAN2009
W12.10-S-902
DRAWING NUMBER
1
REV.

REF 7: REF 8: REF 9:
REF 4: REF 5: REF 6:
REF 1: W:\D-efters\SD\sd317A\ref\SD317dbr-mst
REF 2: W:\D-efters\SD\sd317A\ref\W12805dbr_consultant.mst
REF 3:
PLOT SCALE: 0.166668:1
USER: fsh
DATE: 26-AUG-2013 15:22
FILE: J:\SD\sd317A\W12805902.R01

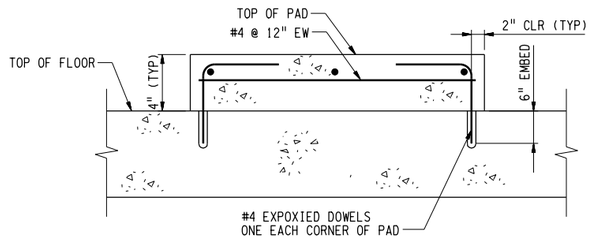


NOTES:

ANCHOR BOLTS SHALL BE MINIMUM SIZE SHOWN OR LONGER AS REQ'D BY EQUIPMENT MANUFACTURER.

ANCHOR BOLTS FOR EQUIPMENT

DETAIL SCALE: NTS — 2 / VAR



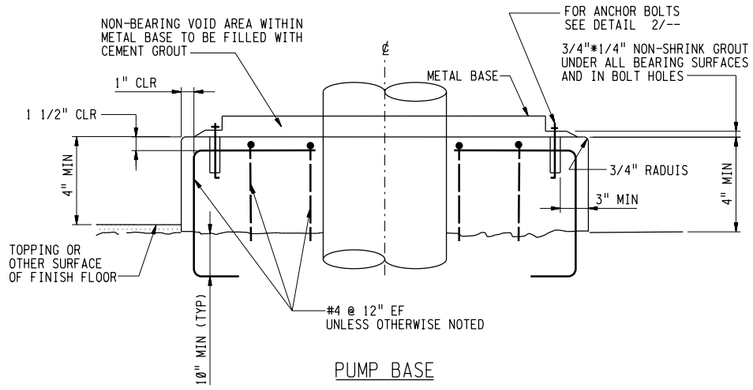
(SEE NOTE 5 RIGHT)

TYPICAL SMALL EQUIPMENT PAD

DETAIL SCALE: NTS — 3 / VAR

EQUIPMENT PAD NOTES:

1. ALL EQUIPMENT, INCLUDING TANKS, SHALL HAVE A CONCRETE EQUIPMENT BASE TO SUIT.
2. ANCHOR BOLTS SHALL BE SIZED FOR THE EQUIPMENT LOAD PLUS SEISMIC LOADS. (ZONE 4) SEE NOTE A (G 1Ø) ON DWG W12-S-ØØ1.
3. ANCHOR BOLTS SHALL BE SET IN POCKETS, EITHER PIPE OR BLOCKOUTS. SEE DETAIL 2/-. ANCHOR BOLT SHALL PENETRATE STRUCTURAL SLAB AS REQUIRED TO MEET MINIMUM SPECIFIED.
4. ALL PENETRATIONS FOR CONDUIT AND PIPING SHALL BE WITHIN CONCRETE EQUIPMENT PAD. PAD TO BE CONFIGURED ACCORDINGLY.
5. DETAIL 3 APPLIES FOR SMALL EQUIPMENT AND PIPE SUPPORT 4" HIGH PADS (2'-Ø" x 2'-Ø" MAX.)



PUMP BASE

DETAIL SCALE: NTS — 4 / VAR

REGISTERED PROFESSIONAL ENGINEER — YOGESH B. PATEL — #1765 — Exp. 6/30/2009 — STRUCTURAL — STATE OF CALIFORNIA

Beyaz & Patel, Inc. — Consulting Engineers — W0706-03 — Walnut Creek, California

3" ON ORIGINAL DOCUMENT (0 1 2 3)

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT: DESIGN BY: C. PAO; DRAWN BY: E. POSADAS; DESIGN CHECKED BY: R.P.E. No. S1765 YOGESH B. PATEL; ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475 DAVID McEWEN; APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503 TRACY MARIE STIGERS; PROJECT MANAGER R.P.E. No. C61336 JOHN A KYSER; RECOMMENDED: SR. ENGINEER R.P.E. No. M30703 JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
STRUCTURAL

TYPICAL EQUIPMENT PAD DETAILS

SCALE AS SHOWN | DATE 23JAN2009 | W12.10-S-903 DRAWING NUMBER | 1 REV.

REF 7: W:\Drafters\SD\sd317A\ref\W2106dr_consultant.mst
REF 8: W:\Drafters\SD\sd317A\ref\W2106dr-consultant.mst
REF 9:

REF 4: W:\Drafters\SD\sd317A\ref\SD317dwr.mst
REF 5:
REF 6:

REF 1:
REF 2:
REF 3:

USER: fah
DATE: 23-AUG-2013 15:32
FILE: J:\SD\sd317A\W2105903.R01

PLOT SCALE: 0.166668:1

PIPE AND FITTING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		EXISTING PIPE
		NEW PIPE
		BELOW GRADE PIPE
		WELDED JOINT
		GROOVED END JOINT
		FLANGED JOINT
		LOCK TYPE PUSH-ON JOINT OR RESTRAINED MECHANICAL JOINT (AS SPECIFIED)
ADAPTER SIDE		GROOVED END ADAPTER FLANGE
		FLANGED COUPLING ADAPTER
		FLANGED COUPLING ADAPTER WITH THRUST TIES
		FLEXIBLE COUPLING
		FLEXIBLE COUPLING WITH THRUST TIES
		STEEL BELLOWS EXP JOINT
		ELASTOMER BELLOWS EXP JOINT
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		CAP
		ANCHOR
		ELBOW, 90 DEGREE
		CROSS
		TEE
		ELBOW, 45 DEGREE
		LATERAL OR WYE
OFFSET TEE	OFFSET TEE	OFFSET TEE
		FLOW DIRECTION
		INSULATED PIPE

NOTES:

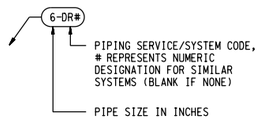
1. ONLY FLANGED END CONNECTIONS ARE SHOWN HERE FOR DOUBLE LINE FITTINGS. FITTINGS WITH OTHER END PATTERNS ARE SHOWN SIMILARLY ON THE CONSTRUCTION DRAWINGS. SEE PIPING SPECIFICATIONS.
2. SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE GENERIC ONLY. REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.

PRIMARY ELEMENT SYMBOLS

- STRAINER
- SIGHT GLASS
- FLEXIBLE (ELASTOMER) PIPE CONNECTION
- PRESSURE GAUGE
- PRESSURE GAUGE WITH DIAPHRAGM SEAL
- THERMOMETER
- ROTAMETER
- XX — AIR SET XX = SUPPLY PRESSURE - PSIG
- LEVEL (ULTRASONIC)
- QUICK DISCONNECT COUPLING WITH CAP
- ELECTROMAGNETIC FLOWMETER
- HB — HOSE BIBB/HOSE VALVE
- F — FLUSHING CONNECTION
- SPRAY NOZZLE
- ULTRASONIC FLOWMETER (CLAMP-ON)
- PULSATION DAMPENER

PIPING DESIGNATION SYSTEM

NEW PIPING LABEL



EXISTING PIPING LABEL



NOTES:

PIPING SYSTEM CODES

1W	POTABLE WATER
3W	NON-POTABLE WATER
FCL	FERRIC CHLORIDE
IA	INSTRUMENT AIR
SHC	SODIUM HYPOCHLORITE

3" ON ORIGINAL DOCUMENT

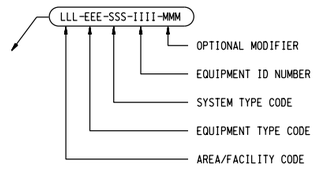
0 1 2 3

VALVE SYMBOLS

- GATE
- KNIFE GATE
- BUTTERFLY
- GLOBE
- BALL — OR
- SEATING PORT — ECCENTRIC PLUG
- PLUG OR COCK
- DIAPHRAGM
- PINCH
- SWING CHECK
- BALL CHECK
- HOSE BIBB (H/B)
- S — SAMPLE
- PRESSURE RELIEF
- AIR AND/OR VACUUM RELEASE
- REGULATED SIDE — PRESSURE CONTROL
- MULTI-PORT VALVE (BALL VALVE SHOWN. FOR OTHER VALVE TYPES, APPROPRIATE VALVE SYMBOL SHOWN.) ARROWS INDICATE FLOW PATTERN. SEATING PORTS ARE IMPLIED BY INDICATED FLOW PATTERN.
- S — SOLENOID VALVE
- NO — NORMALLY OPEN
- NC — NORMALLY CLOSED

EQUIPMENT DESIGNATION SYSTEM

NEW EQUIPMENT LABEL



EXISTING EQUIPMENT LABEL



NOTES:

1. EQUIPMENT TAG NUMBERING SHALL FOLLOW WESP 130. SEE STANDARD DRAWINGS SD317A-G-009 AND SD317A-G-010 FOR APPROPRIATE CODES.
2. SEE EQUIPMENT SCHEDULE(S) AND SPECIFICATIONS FOR NEW EQUIPMENT.

REGISTERED PROFESSIONAL ENGINEER
DAVID McEWEN
No. 69475
Exp. 06-30-10
CIVIL
STATE OF CALIFORNIA

GATE SYMBOLS

- SLUICE
- BUTTERFLY
- FLAP
- FABRICATED SLIDE
- SHEAR

VALVE ACTUATOR SYMBOLS

- M — LETTER DESIGNATION
  M = MOTORIZED ACTUATOR
  P = PNEUMATIC
  H = HYDRAULIC
- PNEUMATIC OPERATOR

PIPING NOTES

1. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED POINTS.
2. SIZE OF FITTINGS SHOWN ON PLANS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
3. LOCATION AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 15061. NO ATTEMPT HAS BEEN MADE TO SHOW ALL REQUIRED PIPE SUPPORTS. THE ABSENCE OF PIPE SUPPORTS AND DETAILS ON ANY DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR PROVIDING THEM THROUGHOUT THE PLANT.
4. ALL FLEXIBLE CONNECTORS OR FLANGED COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST TIES OR ANCHORS, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
5. SYMBOLS, LEGENDS, AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE PLANS, WHEREVER APPLICABLE. WHERE ABBREVIATIONS OR SYMBOLOGY CONFLICT WITH DRAWINGS SD317A-G-004 OR SD317A-G-005, THIS SHEET SHALL PREVAIL. NOT ALL OF THE VARIOUS PIPING COMPONENTS ARE NECESSARILY USED IN THE PROJECT.
6. NUMBER AND LOCATION OF UNIONS SHOWN ON PLANS IS ONLY APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
7. WHERE A GROOVED END COUPLING IS SHOWN, IT SHALL BE THE FLEXIBLE JOINT TYPE, UNLESS OTHERWISE SPECIFIED. WHERE A FLANGED COUPLING ADAPTER IS SHOWN, A STANDARD FLANGE SHALL BE JOINED TO THE COUPLING ADAPTER.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. DRAWINGS ARE DIAGRAMMATIC AND NO ATTEMPT HAS BEEN MADE TO SHOW ALL EXISTING PIPING.

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT: EBMUD

DESIGN BY:	T. KELLEY
DRAWN BY:	F. BURKE
DESIGN CHECKED BY: R.P.E. No.	
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C61336	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
MECHANICAL
PIPING AND EQUIPMENT SYMBOLS, DESIGNATION SYSTEMS AND PIPING NOTES

SCALE NO SCALE
DATE 23JAN2009
W12.10-M-001
DRAWING NUMBER
2
REV.

REF 7; REF 8; REF 9;
REF 4; REF 5; REF 6;
REF 1: W:\D-ofters\SD\sd317A\ref\SD317-bdr.mst
REF 2: W:\D-ofters\SD\sd317A\ref\W12IBdr_consultant.mst
REF 3:
PLOT SCALE: 0.166667:1
USER: fah
DATE: 26-AUG-2013 15:32
FILE: J:\SD\sd317A\W210M001.R02

REF 7: J:\SD\sd317A\W12mmplan.mst
REF 8: J:\SD\sd317A\W12-P-plan.MST
REF 9: J:\SD\sd317A\W12-E-plan.MST

REF 4:
REF 5:
REF 6:

REF 1: W:\Drafters\SD\sd317A\ref\SD317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W12BaDr-consultant.mst
REF 3:

USER: fa\
DATE: 22-AUG-2013 15:33
FILE: J:\SD\sd317A\W12M10LR03

PLOT SCALE: 5.333333:1

NOTES

1. THREE WAY BALL VALVE SHALL BE CONSTRUCTED WITH A PVC BODY, EPDM SEALS, A PTFE SEAT AND A PNEUMATIC ACTUATOR AND SHALL BE TYPE 23 MULTIPORT BY ASAHI / AMERICA,TRUE UNION 3-POSITION BY CHEMTROL, OR EQUAL.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE AND TRENCH LOCATIONS.
3. ALL SECTION AND DETAIL REFERENCES SHOWN ON THIS DRAWING ARE IN THE W12 SERIES OF DRAWINGS.
4. ALL PIPE SUPPORTS BELOW ELEVATION 108.00 SHALL BE FRP.
5. BALL CHECK VALVES SHALL BE PVC BODY, CHEMTROL SERIES BC, ASAHI/AMERICA OR EQUAL WITH EPDM OR PFTE SEALS.
6. TRUCK UNLOADING STATION SHALL INCLUDE 3" BALL VALVE AND QUICK CONNECT COUPLING.
7. PROVIDE FLUSHING CONNECTION TO HOSE FOR CONTAINMENT PIPE CLEANING FOLLOWING FCL LEAKAGE

EXIST CURB AND GUTTER
LIMIT OF AC PAVING SEE DWG W12-C-101
SLOPE
4" FCL (DRAIN TO EXIST MH), SEE DWG W12-C-101
NEW ELECTRICAL TRENCH
B M-201
D M-202
C M-202
BALL VALVE, TYP
TRUCK UNLOADING AREA SEE NOTE 6
3" FCL (DRAIN)
NOTE 5, TYP
3" FCL (FILL)
W12-FCL-LI-102B
W12-FCL-LI-101B
FERRIC CHLORIDE STORAGE TANK 2
W12-FCL-TNK-102
FERRIC CHLORIDE STORAGE TANK 1
W12-FCL-TNK-101
MANWAY
FLEXIBLE CONN(TYP)
W12-FCL-PMP-112
FERRIC CHLORIDE METERING PUMP 2
W12-FCL-PRV-112
W12-FCL-PSV-112
3" FCL (OVERFLOW)
1" FCL
FOR CONT SEE PARTIAL PLAN, DWG W12-M-203
2-1" FCL IN 4" PVC SECONDARY CONTAINMENT PIPE (FOR CONT SEE PARTIAL PLAN, DWG W12-M-203
SEE NOTE 7
4" FCL (DRAIN)
W12-FCL-FIT-115
W12-FCL-PSV-111
W12-FCL-PRV-111
W12-FCL-BLV-103 (NOTE 1)
A M-201
W12-FCL-PMP-111
FERRIC CHLORIDE METERING PUMP 1
EMERGENCY SHOWER AND EYE WASH (TYP)
4" VALVE BOX
1 1/2" 1W
½" 1A
1 1/2" 3W
½" 1A
W12-FCL-US-01
SEE DETAIL 2/W12-M-901
FERRIC CHLORIDE CONTAINMENT AREA
FUTURE FERRIC CHLORIDE STORAGE TANK 4
FUTURE FERRIC CHLORIDE STORAGE TANK 3
EXISTING UTILITY TRENCH
ACCESS ROAD
1 1/2" 1A
FIELD LOCATE AND CONNECT TO EXISTING PIPE
1 1/2" 1W
FIELD LOCATE AND CONNECT TO EXISTING PIPE
1½" 3W
CONNECT TO EXISTING PIPE
EXISTING CHLORINE TRENCH
½" 1A
FUTURE CONTAINMENT AREA

PLAN

3" ON ORIGINAL DOCUMENT
0 1 2 3

REGISTERED PROFESSIONAL ENGINEER
DAVID McEWEN
No. 69475
Exp. 06-30-10
CIVIL
STATE OF CALIFORNIA

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
3	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A			JK
2		REVISED PER CORR #14	DCM	TMS	JK
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT / EBMUD

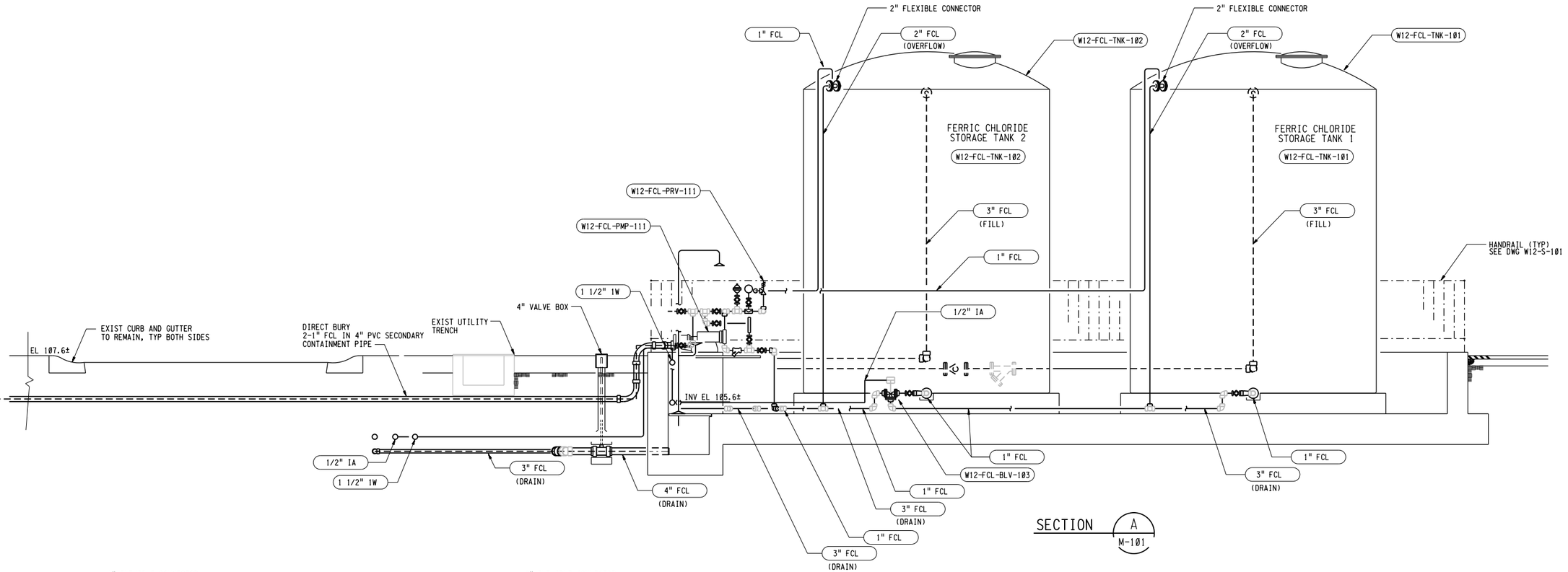
SD317A - PGS RENEWABLE ENERGY EXPANSION

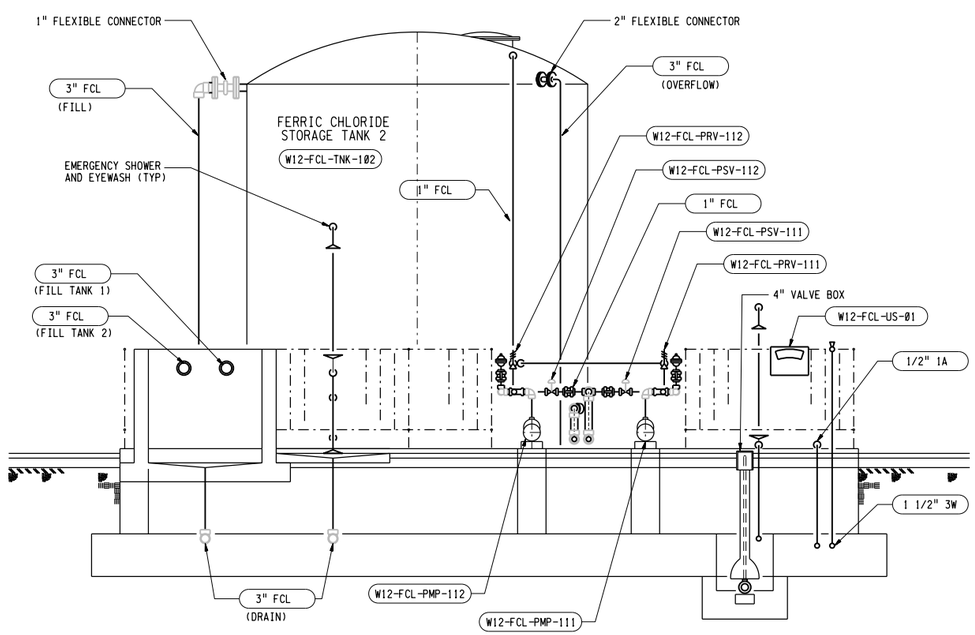
DESIGN BY:	D. McEWEN
DRAWN BY:	M. CHAVES
DESIGN CHECKED BY: R.P.E. No.	
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
MECHANICAL
TANK CONTAINMENT AREA
PLAN

SCALE 3/8"=1'-0"
DATE 23JAN2009
W12.10-M-101 DRAWING NUMBER
3 REV.





3" ON ORIGINAL DOCUMENT
0 1 2 3

REGISTERED PROFESSIONAL ENGINEER
DAVID McEWEN
No. 69475
Exp. 06-30-10
CIVIL
STATE OF CALIFORNIA

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
3	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A			JK
2		REVISED PER CORR #14	DCM	TMS	JK
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT

DESIGN BY:	D. McEWEN
DRAWN BY:	M. CHAVES
DESIGN CHECKED BY: R.P.E. No.	
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

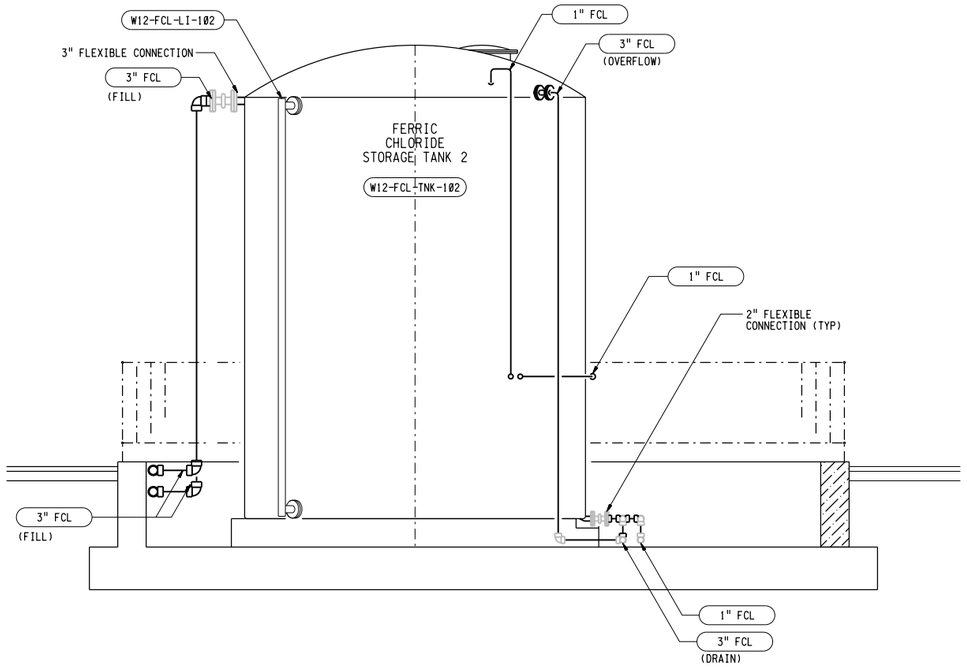
MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
MECHANICAL
TANK CONTAINMENT AREA
SECTIONS 1

SCALE 3/8"=1'-0"
DATE 23JAN2009

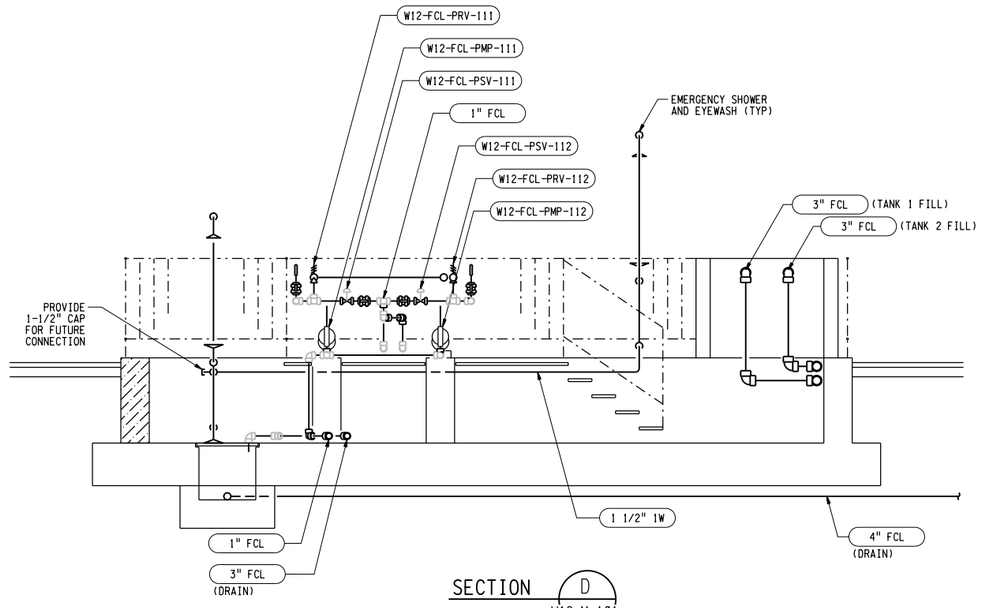
W12.10-M-201
DRAWING NUMBER

3
REV.

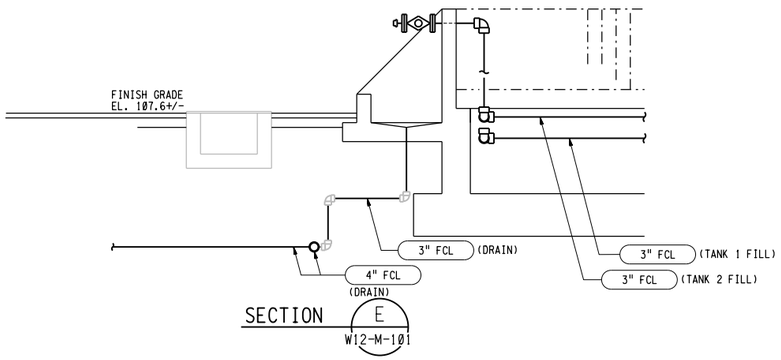
REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr-mst
REF 2: W:\Drafters\SD\sd317A\ref\W1210bdr.consultant.mst
REF 3:
PLOT SCALE: 5.3333331
USER: fah
DATE: 28-AUG-2013 15:33
FILE: J:\SD\sd317A\W1210M201.R03



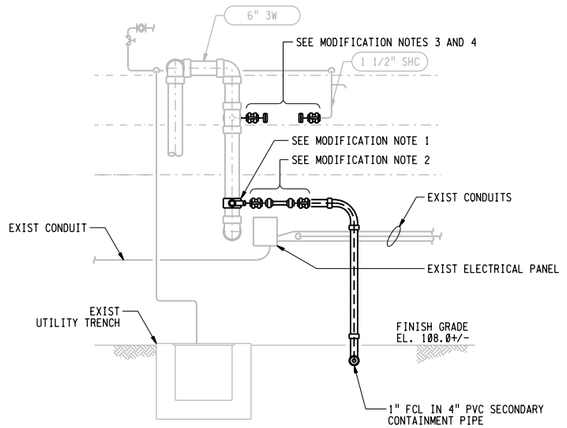
SECTION C
W12-M-101



SECTION D
W12-M-101



SECTION E
W12-M-101



SECTION A
-

MODIFICATION NOTES

1. PROVIDE 6" PVC PIPE TAPPING SADDLE WITH 1" SERVICE CONNECTION AND 1" ISOLATION BALL VALVE.
2. PROVIDE 1" DIA X 12" LONG CPVC SPOOL PIPE WITH FLANGES. PROVIDE 1" ISOLATION BALL VALVES WHERE SHOWN FOR REMOVAL AND/OR INSTALLATION OF PIPE SPOOL.
3. CUT EXISITNG 1 1/2" SHC TO FIT 1 1/2" DIA X 18" LONG PIPE SPOOL. PROVIDE BLIND FLANGES OR UNIONS AND 1 1/2" ISOLATION BALL VALVES WHERE SHOWN ON EXISITNG 1 1/2" SCH PIPE FOR REMOVAL AND/OR INSTALLATION OF PIPE SPOOL. AFTER MODIFICATIONS ARE MADE TO EXISTING 1 1/2" SHC PIPE FLUSH 6" 3W PIPE FOR 10 MINUTES TO PREVENT MIXING OF SODIUM HYPOCHLORIDE WITH FERRIC CHLORIDE.
4. PROVIDE WARNING SIGN NEAR THE MODIFIED SHC PIPE WITH THE FOLLOWING: "DANGER-SECURE FERRIC CHLORIDE (FCL) PIPE BEFORE CONNECTIONG TO SODIUM HYPO (SHC)".
5. PROVIDE FLUSHING CONNECTION TO HOSE FOR CONTAINMENT PIPE CLEANING FOLLOWING FCL LEAKAGE. DAYLIGHT CONTAINMENT PIPE USING TWO 45-DEG ELLS AND TERMINATION FITTING (TYP BOTH ENDS).

REGISTERED PROFESSIONAL ENGINEER
DAVID McEWEN
No. 69475
Exp. 06-30-10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A			JK
1		REVISED PER CORR #14	DCM	TMS	JK
0		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT

DESIGN BY:	D. McEWEN
DRAWN BY:	M. CHAVES
DESIGN CHECKED BY: R.P.E. No.	
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
MECHANICAL
TANK CONTAINMENT AREA
SECTIONS 2

SCALE 3/8"=1'-0"
DATE 23JAN2009

W12.10-M-202
DRAWING NUMBER

3
REV.

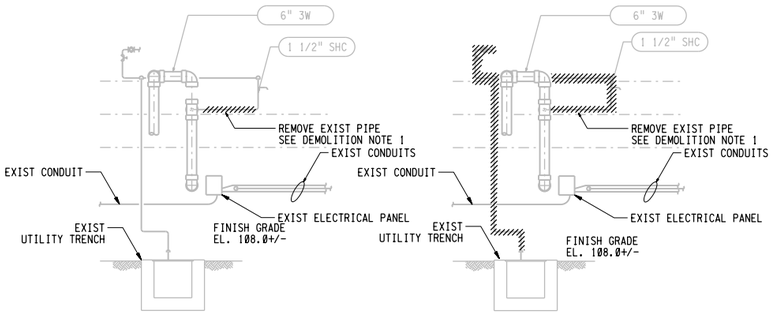
REF 7:
REF 8:
REF 9:

REF 4:
REF 5:
REF 6:

REF 1: W:\D-drives\SD\sd317A\ref\SD317-bdr-mst
REF 2: W:\D-drives\SD\sd317A\ref\W12100dr-consultant.mst
REF 3:

USER: fah
DATE: 23-AUG-2013 15:32
FILE: J:\SD\sd317A\W12M202.R03

PLOT SCALE: 5.333333:1

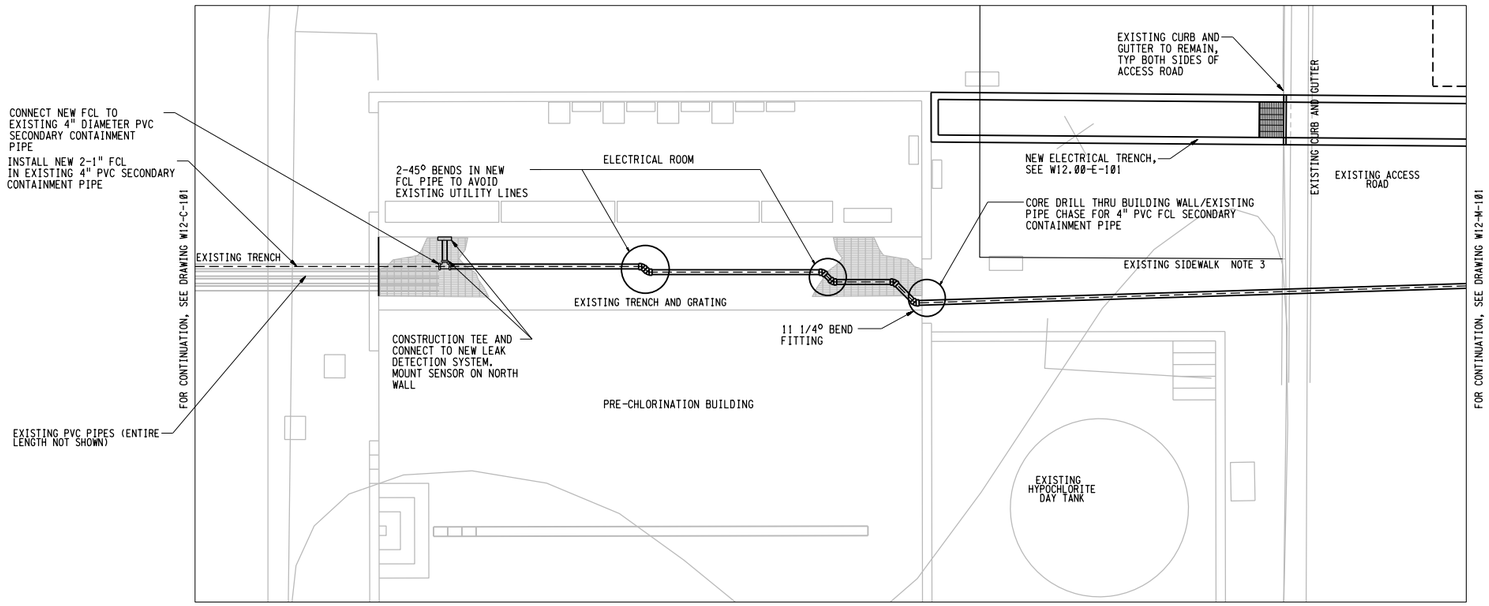


DEMOLITION SECTION A C-101

ALTERNATIVE BID ITEM SECTION A C-101

DEMOLITION NOTES:

1. CUT AND REMOVE EXISTING 1 1/2" SHC PIPING, VALVES, EQUIPMENT, HOSES, SUPPORTS AND ELECTRICAL CONDUITS WHERE SHOWN.
2. CUT AND REMOVE EXISTING 1 1/2" SHC PIPING, VALVES, EQUIPMENT, HOSES, SUPPORTS AND ELECTRICAL CONDUITS WHERE SHOWN. PROVIDE 1 1/2" CAP ON EXISTING 1 1/2" SHC NEAR EXISITING TRENCH.
3. DEMOLISH / REPLACE EXISTING SIDEWALK AS REQ'D TO PLACE BURIED PIPE.



PARTIAL PLAN

REGISTERED PROFESSIONAL ENGINEER
DAVID McEWEN
No. 69475
Exp. 06-30-10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
					JK
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A			JK
1		REVISED PER CORR #14	DCM	TMS	JK
0		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT: EBMUD

DESIGN BY:	D. McEWEN
DRAWN BY:	M. CHAVES
DESIGN CHECKED BY: R.P.E. No.	
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

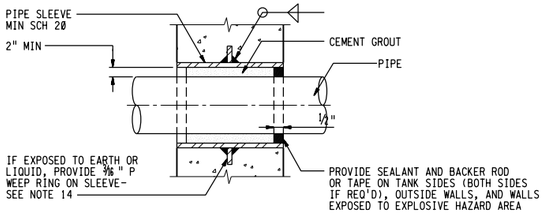
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
MECHANICAL

DEMOLITION

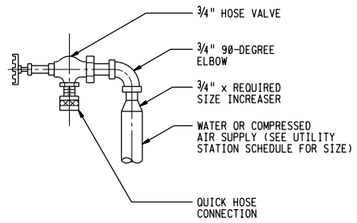
SCALE 3/16"=1'-0" | DATE 23JAN2009 | W12.10-M-203 DRAWING NUMBER | 3 REV.

USER: fah PLOT SCALE: 10.0000000:1 PLOT DATE: 26 AUG 2013 15:23
REF 1: W:\Projects\SD317A\Drawings\W12\W12.10-M-203.dgn
REF 2: W:\Projects\SD317A\Drawings\W12\W12.10-C-101.dgn
REF 3: W:\Projects\SD317A\Drawings\W12\W12.10-E-101.dgn
REF 4: W:\Projects\SD317A\Drawings\W12\W12.10-H-101.dgn
REF 5: W:\Projects\SD317A\Drawings\W12\W12.00-E-101.dgn
REF 6: W:\Projects\SD317A\Drawings\W12\W12.14-H-101.dgn
REF 7: W:\Projects\SD317A\Drawings\W12\W12.14-M-201.dgn
W:\Projects\SD317A\Drawings\W12\W12.10-M-203.dgn
W:\Projects\SD317A\Drawings\W12\W12.10-M-203_consultant.mst
W:\Projects\SD317A\Drawings\W12\W12.10-M-203_SD317A_50Pt.mst



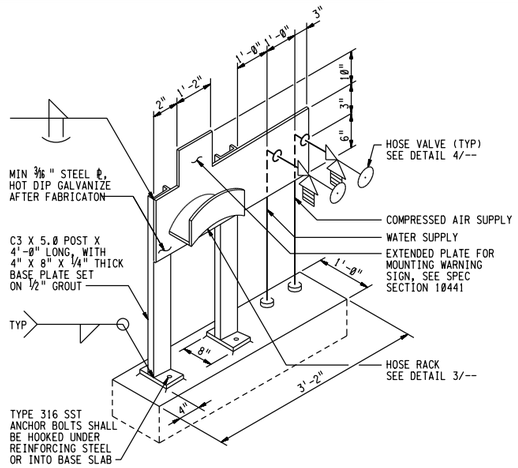
FOR WALLS
TYPE B PIPE PENETRATION

DETAIL 1 / VAR



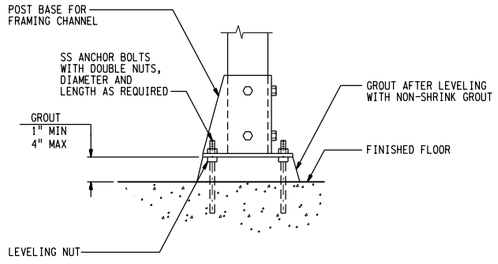
HOSE VALVE

DETAIL 4 / --



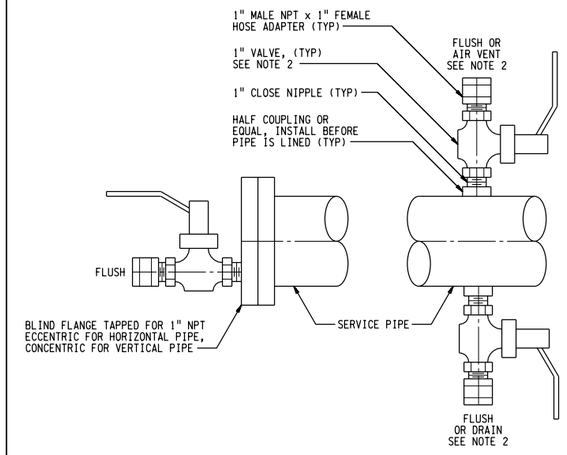
TYPE A POST MOUNTED UTILITY STATION

DETAIL 2 / M-101



FRAMING CHANNEL POST BASE
TYPICAL INSTALLATION

DETAIL 9 / VAR



END OF RUN CONDITION — HORIZONTAL RUN CONDITION

NOTES

1. DRAIN AND/OR AIR RELEASE SHALL BE PIPED DOWN NEAREST WALL WITH VALVE 4 FEET ABOVE FLOOR WHEN SERVICE PIPE IS MORE THAN 6-FEET ABOVE FLOOR.
2. FLUSHING COCK VALVE TYPE SHALL BE AS SPECIFIED IN PARAGRAPH 15150-2.02. AIR VENT DRAIN VALVE TYPE SHALL BE AS SPECIFIED IN PARAGRAPH 15095-3.03.

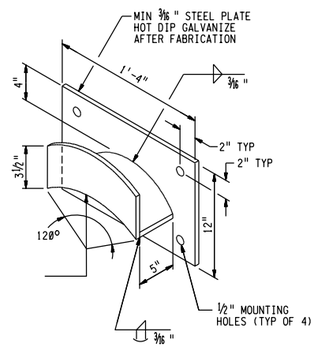
FLUSHING COCK, AIR VENT OR DRAIN

DETAIL 11 / VAR

PIPE PENETRATION TYPES					
	CONDITION		TYPE		
	FROM	TO	STEEL PIPE	CAST IRON	PLASTIC PIPE
1	TANK	TANK BELOW WS	B OR K	B OR J	B
2	TANK	TANK ABOVE WS	B	B	B
3	PASSAGE	TANK BELOW WS	B OR K	B OR J	B
4	PASSAGE	TANK ABOVE WS	B OR H	B OR H	B OR H
5	PASSAGE	OUTSIDE WALL	B	B	B
6	TANK	OUTSIDE WALL	B OR J	B OR J	B

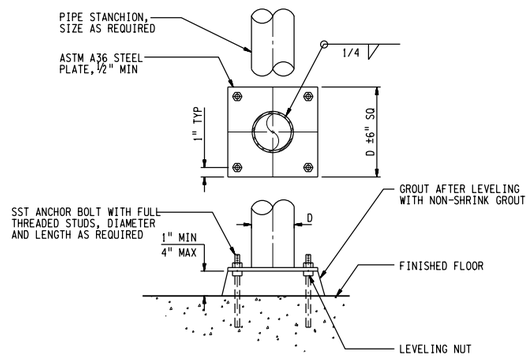
PIPE PENETRATION NOTES

1. WHERE PIPES PASS THROUGH WALLS, FLOORS OR CEILINGS, PENETRATIONS SHALL CONFORM TO TABLE EXCEPT AS OTHERWISE SPECIFIED.
2. IN TABLE, "TANK" SHALL MEAN ANY PART OF A STRUCTURE CONTAINING LIQUID OR IN CONTACT WITH THE EARTH.
3. IN TABLE, "PASSAGE" SHALL MEAN ROOM, GALLERY, TUNNEL OR SIMILAR ENCLOSURE.
4. IN TABLE, WATER SURFACE "WS" SHALL MEAN AN ELEVATION 9 INCHES ABOVE MAXIMUM WATER SURFACE SHOWN.
5. ALL STEEL SLEEVES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
6. IN CONDITION 5, TYPE B OR K PENETRATION SHALL BE USED WHERE ONE SIDE IS DESIGNATED AS HAZARDOUS (CLASSIFIED), WHERE FLOODING IS POSSIBLE OR WHERE SPECIFIED.
7. SEAL FLANGES SHALL BE DRILLED TO 150 POUND STANDARD. EACH JOINT SHALL BE FULL FACE GASKETED.
8. WHERE SPECIFIED, CAST IRON FLANGES MAY BE INSTALLED FLUSH WITH WALL AND TAPPED FOR STUDS.
9. PROVIDE CURB WHERE PENETRATING FLOOR, EXCEPT FOR PENETRATION TYPE H. CURB SHALL BE 4-INCHES HIGH BY 3-INCHES WIDE.
10. PROVIDE MINIMUM 3-INCHES CLEARANCE BETWEEN REINFORCING STEEL AND FERROUS METAL PENETRATIONS.
11. FLEXIBLE JOINTS SHALL BE PROVIDED FOR UNDERGROUND PIPING AS SPECIFIED.
12. INSULATION SHALL NOT EXTEND THROUGH SLEEVES, UNLESS OTHERWISE SPECIFIED.
13. WEEP RINGS SHALL HAVE A MINIMUM DIAMETER 3-INCHES GREATER THAN THE OUTSIDE PIPE DIAMETER.
14. "TANK SIDE OF WALL" SHALL MEAN SIDE OF WALL NORMALLY EXPOSED TO LIQUID, EARTH, OR OUTSIDE ATMOSPHERE.
15. SEAL WITH MASTIC SEALANT WHERE WALL IS EXPOSED TO LIQUID, EARTH, OR A HAZARDOUS (CLASSIFIED) AREA.
16. NOT ALL WALL PENETRATIONS ARE USED IN THESE CONTRACT DRAWINGS.
17. NEW OPENINGS IN EXISTING CONCRETE SHALL BE CUT 2" OVERSIZE, COATED WITH EPOXY BONDING COMPOUND AND FINISHED TO THE REQUIRED OPENING SIZE WITH PROFILING MORTAR.



HOSE RACK

DETAIL 3 / --



STANCHION BASE PLATE
TYPICAL INSTALLATION

DETAIL 10 / VAR

REGISTERED PROFESSIONAL ENGINEER
DAVID McEWEN
No. 69475
Exp. 06-30-10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	–	TMS

CONSULTANT EBMUD

SD317A – PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	T. KELLEY
DRAWN BY:	R. KULNYS
DESIGN CHECKED BY: R.P.E. No.	
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A. KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L. WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
MECHANICAL

DETAILS 1

SCALE NO SCALE
DATE 23JAN2009

W12.10-M-901
DRAWING NUMBER

2
REV.

REF 1: W:\Drafters\SD\sd317A\ref\SD317bdr-mst
REF 2: W:\Drafters\SD\sd317A\ref\W1210bdr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

PLOT SCALE: 0.166667:1
USER: fal
DATE: 28-AUG-2013 15:33
FILE: J:\SD\sd317A\W1210M901.R02

LEGEND FOR PLANS

- EXPOSED CONDUIT(S)
- CONCEALED CONDUIT RUN(S) (FLOOR, WALL, CEILING & UNDERGROUND)
- CONDUIT(S) TURN UPWARD
- CONDUIT(S) TURN DOWNWARD
- HOME RUN TO PANEL OR AS NOTED
- CXXXXXX — CONDUIT DESIGNATION (REFER TO CONDUIT SCHEDULE FOR SIZE, FILL, ROUTING, ETC.)
- G, L-5, 7 — CROSSHATCHES INDICATE NUMBER OF CONDUCTORS (TWO HOT, NEUTRAL, & GROUND). NO DESIGNATION OR CROSSHATCH INDICATES 2 #12 & #12 GND IN ¾" CONDUIT, APPLICABLE ONLY TO LIGHTING & RECEPTACLE CIRCUITS. L-5, 7 INDICATES LIGHTING PANEL CIRCUIT NUMBERS
- (E) — EXISTING CONDUIT(S)
- EXISTING CONDUIT & CONDUCTORS WHICH SHALL BE REMOVED
- EXISTING ELECTRICAL EQUIPMENT WHICH SHALL BE DISCONNECTED AND REMOVED
- CONDUIT SEAL FITTING FOR CLASS 1, DIVISION 1, GROUPS C & D HAZARDOUS (CLASSIFIED) LOCATIONS
- CONDUIT STUB UP AND CAP
- UNDERGROUND DUCT LINE (CONCRETE ENCASEMENT) – NUMBER OF CIRCLES DOES NOT REPRESENT THE NUMBER OF CONDUITS IN THE ENCASEMENT
- TERMINAL BLOCK/GROUND CONNECTION BOLTED TYPE
- GROUND CONNECTION, EXOTHERMIC WELD
- TERMINAL BLOCK IN DCS EQUIPMENT
- J — JUNCTION BOX
- T — TERMINAL BOX
- P OR PB — PULL BOX
- FIELD INSTRUMENTATION
- A 1a — INCANDESCENT OR HID TYPE LIGHTING FIXTURE. LETTER INDICATES TYPE AS SHOWN IN THE SCHEDULE. NUMBER INDICATES CIRCUIT NUMBER. LOWER CASE LETTER INDICATES THE SWITCH LEG. "ST" INSIDE SYMBOL INDICATES STROBE LIGHT.
- A 1a — WALL MOUNTED INCANDESCENT OR HID TYPE LIGHTING FIXTURE. (SAME AS ABOVE FOR DESIGNATION)
- AE 1a — EMERGENCY LIGHTING FIXTURE (SAME AS ABOVE FOR DESIGNATION)
- B 1a — POLE-MOUNTED INCANDESCENT OR HID TYPE LIGHTING FIXTURE (SAME AS ABOVE FOR DESIGNATION)
- C 1a — FLUORESCENT LIGHTING FIXTURE (SAME FOR DESIGNATION)
- D 1 EXIT — EXIT OR DIRECTIONAL SIGN (SAME FOR DESIGNATION)
- $M — MANUAL MOTOR STARTER WITH THERMAL OVERLOAD IN AN ENCLOSURE.
- $ — SINGLE POLE TOGGLE SWITCH (LETTER INDICATES SWITCH LEG)
- $3P — THREE-POSITION TOGGLE SWITCH WITH HAND-OFF-AUTO ENGRAVED PLATE
- $3W — THREE WAY TOGGLE SWITCH
- $4W — FOUR WAY TOGGLE SWITCH
- DUPLEX CONVENIENCE OUTLET
- SINGLE CONVENIENCE OUTLET
- SPECIAL RECEPTACLE. LETTER INDICATES TYPE AS SHOWN IN THE SCHEDULE. NUMBER IN PARENTHESES INDICATES CIRCUIT NUMBER, IF USED
- M — ELECTRIC MOTOR
- UNLESS OTHERWISE INDICATED, CONTROL STATION AS REQUIRED BY THE SCHEMATIC DIAGRAM IN NEMA 4X ENCLOSURE
- DISCONNECT SWITCH, HEAVY DUTY 600 VAC 3 POLE, NON-FUSIBLE; UNLESS OTHERWISE INDICATED, IN NEMA 4X ENCLOSURE
- CIRCUIT BREAKER IN NEMA 4X ENCLOSURE UNLESS OTHERWISE INDICATED
- COMBINATION 480 VAC, 3 POLE CIRCUIT BREAKER OR MCP-MAGNETIC STARTER WITH CONTROL TRANSFORMER, RELAYS, DEVICES AS REQUIRED BY THE SCHEMATIC DIAGRAM IN NEMA 4X ENCLOSURE
- F — DISCONNECT SWITCH, HEAVY DUTY 600VAC 3 POLE-FUSIBLE, NEMA 4X ENCLOSURE
- MS — MANUAL MOTOR STARTER
- PANEL

- HORN — H – HORN; HS – HORN/STROBE
- S — SOLENOID VALVE
- ALARM BELL
- GEN — GENERATOR
- GROUND ROD AND WELL
- GROUND ROD
- TH — THERMOSTAT
- SI D — FIRE DETECTION DEVICE: SI – SMOKE DETECTOR, IONIZATION TYPE; SP – SMOKE DETECTOR, PHOTOELETRIC TYPE; HF – HEAT DETECTOR, FIXED TEMP.; HR – HEAT DETECTOR, RATE OF RISE; FI – FLAME DETECTOR, INFARAED; FV – FLAME DETECTOR, ULTRAVIOLET; SH – SMOKE/HEAT DETECTOR; D – DUCT DETECTOR (TEXT OUTSIDE OF SYMBOL)
- M — MANUAL FIRE ALARM BOX
- HEATER
- MH — MH – MANHOLE, HH – HANDHOLE, PB – PULLBOX
- TELEPHONE
- X XX — LIGHT DESIGNATION SYMBOL

LEGEND FOR SINGLE LINE DIAGRAMS

- ST — SHUNT TRIP
- XX AT / YY AF — MOLDED CASE CIRCUIT BREAKER, SOLID-STATE OR THERMAL MAGNETIC, 600 V, XX LETTERING FOR AMP TRIP, YY LETTERING FOR AMP FRAME
- CB 1 — UNLESS OTHERWISE NOTED, THERMAL MAGNETIC CIRCUIT BREAKER AND FULL VOLTAGE NON-REVERSING MAGNETIC STARTER WITH OVERLOAD PROTECTION AND 480-120 VOLT CONTROL TRANSFORMER. NUMBER INDICATES NEMA STARTER SIZE
- SS — SAME AS ABOVE, EXCEPT SOLID-STATE STARTER AND THERMAL MAGNETIC CIRCUIT BREAKER
- VFD — VARIABLE FREQUENCY DRIVE UNIT
- (E) — HEAVY DUTY, FUSIBLE DISCONNECT (SAFETY) SWITCH, 600V
- F — HEAVY DUTY, FUSIBLE DISCONNECT (SAFETY) SWITCH, 600V
- HEAVY DUTY, NON-FUSIBLE DISCONNECT (SAFETY) SWITCH, 600V
- FUSES
- REACTOR
- CAPACITORS
- X KVA, 480-208V/120 — POWER TRANSFORMER – X LETTERING FOR SIZE OF TRANSFORMER; –DELTA; –DELTA WITH MIDPOINT GROUNDED; –GROUNDED WYE
- CURRENT TRANSFORMERS (CT), THREE CT'S
- POTENTIAL TRANSFORMERS (PT), THREE PT'S
- GS — GROUND FAULT SENSOR. WHEN SHOWN WITH BREAKER, SENSOR IS AN INTEGRAL PART OF THE BREAKER
- SURGE OR LIGHTNING ARRESTORS
- K — KEY INTERLOCK
- V — VOLTMETER
- A — AMMETER
- PF — POWER FACTOR METER

- F — FREQUENCY METER
- SY — SYNCHROSCOPE
- WH — WATTHOUR METER
- WM D — WATT METER, D-DEMAND
- VS — VOLTMETER SELECTOR SWITCH: OFF-AØ, BØ, CØ, AG, BG, CG
- AS — AMMETER SELECTOR SWITCH: OFF-AØ, BØ, CØ
- 2 — ELECTRIC MOTOR. NUMBER INDICATES HORSEPOWER
- METAL OXIDE VARISTORS(MOV)
- FUSES WITH BLOWN FUSE NEON LIGHT INDICATORS, PUSH-TO-TEST TYPE,600V
- SPECIAL RECEPTACLE AND PLUG, 600V
- (E) — EXISTING
- CABLE TERMINATIONS
- NEW
- EXISTING TO BE REMOVED.
- PULLOUT, DRAWOUT OR CONNECTOR
- ATS, AUTOMATIC TRANSFER SWITCH
- THERMAL OVERLOAD
- MEDIUM VOLTAGE CIRCUIT BREAKER
- SS — SOLID STATE STARTER WITH BYPASS CONTACTOR
- CONDUIT STUB UP AND CAP
- HH — HANDHOLE
- MH — MANHOLE
- P — PULLBOX

LEGEND FOR SCHEMATIC DIAGRAMS

- ETM — ELAPSED TIME METER
- TR # — TIME DELAY RELAY COIL
- CR # — CONTROL RELAY COIL.
- CR# — NORMALLY OPEN CONTACT
- CR# — NORMALLY CLOSED CONTACT
- PB# — NORMALLY OPEN MOMENTARY PUSHBUTTON
- PB# — NORMALLY CLOSED MOMENTARY PUSHBUTTON
- MAINTAINED PUSHBUTTONS
- H Ø A — SELECTOR SWITCH 3-POSITION
- SELECTOR SWITCH MOMENTARY SPRING RETURN TO CENTER
- TOGGLE SWITCH
- TRANSFORMER

- CB# 50A — CIRCUIT BREAKER
- FU# 5AMP — FUSE
- GROUND
- R — INDICATING LIGHT. LETTER INDICATES LENS COLOR.
- SHIELDED CABLE
- TERMINAL POINT FOR EXTERNAL CONNECTIONS
- 1 R — PUSH-TO-TEST INDICATING LIGHT. LETTER INDICATES LENS COLOR.
- S — SOLENOID
- HORN
- FS# — FLOW SWITCH, NORMALLY OPEN-CLOSES ON INCREASE (TYP.)
- FS# — FLOW SWITCH, NORMALLY CLOSED-CLOSES ON DECREASE (TYP.)
- LS# — LEVEL SWITCH, NORMALLY OPEN
- LS# — LEVEL SWITCH, NORMALLY CLOSED
- PS# — PRESSURE OR VACUUM SWITCH, NORMALLY OPEN
- PS# — PRESSURE OR VACUUM SWITCH, NORMALLY CLOSED
- TS# — TEMPERATURE SWITCH, NORMALLY OPEN
- TS# — TEMPERATURE SWITCH, NORMALLY CLOSED
- LM# — LIMIT OR TORQUE SWITCH, NORMALLY OPEN
- LM# — LIMIT OR TORQUE SWITCH, NORMALLY CLOSED
- TR# — NORMALLY OPEN, TIME DELAY CLOSE CONTACT
- TR# — NORMALLY CLOSED, TIME DELAY OPEN CONTACT
- FUSE HOLDER ASSEMBLY WITH BLOWN FUSE NEON INDICATOR
- CXXXXXX — CABLE/CONDUIT TAG NUMBER
- POTENTIOMETER
- CV — CV (CONTROL VALVE)

REGISTERED PROFESSIONAL ENGINEER — GREGG ALAN BOLT — Exp. 06-30-09 — ELECTRICAL — STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER — DAVID McEWEN — No. 69475 — Exp. 06-30-10 — CIVIL — STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	–	TMS

CONSULTANT

DESIGN BY:	M. SEKANDER
DRAWN BY:	F. BURKE
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
EBMUD RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A – PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL

ELECTRICAL SYMBOLS

SCALE NO SCALE
DATE 23JAN2009
W12.10-E-001 DRAWING NUMBER
2 REV.

REF 1: W:\Drafters\SD\sd317A\ref\SD317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W1210bdr.consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fal
DATE: 20-AUG-2013 15:33
FILE: J:\SD\sd317A\W1210E001.R02
PLOT SCALE: 0.166667:1

ABBREVIATIONS

A	AMMETER, AMPERES
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AIC	AMPERES INTERRUPTING CAPACITY
AFF	ABOVE FINISHED FLOOR
AMP	AMPERES
AS	AMMETER SWITCH
APPROX	APPROXIMATE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAGE
BATT	BATTERY
BLDG	BUILDING
C	CONDUIT
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CNTL	CONTROL
COMM	COMMUNICATION
CONT	CONTINUATION, CONTINUED, CONTINUOUS
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY, CORROSION-RESISTANT
CS	CONTROL STATION
CSCP	CHEMICAL STORAGE CONTROL PANEL
CT	CURRENT TRANSFORMER, COUNTER
CU	COPPER
DC	DIRECT CURRENT
DCS	DISTRIBUTED CONTROL SYSTEM
DIA	DIAMETER
DIAG	DIAGRAM
DISC	DISCONNECT
DIST	DISTRIBUTION
DISP	DISPLAY
DN	DOWN
DP	DISTRIBUTION PANEL
DPU	DISTRIBUTED PROCESSING UNIT
DWG	DRAWING
(E)	EXISTING
EA	EACH
ELEC	ELECTRIC, ELECTRICAL
EMERG	EMERGENCY
ENCL	ENCLOSURE
EQUIP	EQUIPMENT
ETM	ELAPSED TIME METER
EYS	ELECTRICAL WYE SEAL
(F)	FUTURE
FB	FIRE ALARM BELL
FDSCP	FIRE DETECTION SYSTEM CONTROL PANEL
FLUOR	FLUORESCENT
FS	FLOW SWITCH
FT	FEET, FOOT
FU	FUSE
FVNR	FORWARD VOLTAGE NON REVERSING
FVR	FORWARD VOLTAGE REVERSING
FWD	FORWARD
GALV	GALVANIZED
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HH	HANDHOLE
HMI	HUMAN MACHINE INTERFACE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HTR	HEATER
HV	HIGH VOLTAGE
HZ	HERTZ
IN	INCH
INST	INSTANTANEOUS
INSTR	INSTRUMENT, INSTRUMENTATION
I/O	INPUT/OUTPUT
IP	INSTRUMENTATION PANEL
J	JUNCTION BOX
JB	JUNCTION BOX
KCM	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES REACTIVE
KW	KILOWATTS
KWH	KILOWATT HOURS

ABBREVIATIONS (CONTINUED)

LA	LIGHTNING ARRESTOR
LCP	LOCAL CONTROL PANEL
LED	LIGHT EMITTING DIODE
LP	LIGHTING PANEL
LTG	LIGHTING
LOS	LOCK-OUT-STOP
M	MOTOR
MA	MILLIAMPERES
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MHTR	MOTOR SPACE HEATER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOV	MOTOR OPERATED VALVE, METAL OXIDE VARISTORS
MS	MANUAL PULL STATION
MTG	MOUNTING
MWWTP	MAIN WASTEWATER TREATMENT PLANT
(N)	NEW
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
N.I.C.	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OH	OVER HEAD
OL	OVERLOAD
PB	PULL BOX, PUSHBUTTON
PBC	PUSHBUTTON - CLOSE
PBO	PUSHBUTTON - OPEN
PBS	PUSHBUTTON - STOP
PC	PERSONAL COMPUTER
PE	PHOTOELECTRIC
PEC	PHOTOELECTRIC CELL
PF	POWER FACTOR
PGRS	PVC COATED GALVANIZED RIGID STEEL
PH	PHASE
PIT	PRESSURE INDICATOR TRANSMITTER
PL	PILOT LIGHT
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PRI	PRIMARY
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PWR	POWER
PWRS	POWER SUPPLY
R	RED
RCPT	RECEPTACLE
REQD	REQUIRED
RES	RESISTOR, RESISTANCE
REV	REVERSE
RIO	REMOTE INPUT/OUTPUT
RM	ROOM
RMS	ROOT MEAN SQUARE

ABBREVIATIONS (CONTINUED)

SD	SMOKE (FIRE) DETECTION DEVICE
SEC	SECONDS, SECONDARY
SECT	SECTION
SHT	SHEET
SN	SOLID NEUTRAL
SOL	SOLENOID
SPDT	SINGLE POLE, DOUBLE THROW
SPEC	SPECIFICATION
SS	STAINLES STEEL, SOLID STATE
SSW	SELECTOR SWITCH
SW	SWITCH
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
SYNC	SYNCHRONIZE
T	TERMINAL BOX
TB	TERMINAL BLOCK
TC	TELEPHONE CABINET, TELEPHONE CABLE
TEL	TELEPHONE
TEMP	TEMPERATURE
TSP	TWISTED SHIELDED PAIR
TD	TIME DELAY RELAY
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UPS	UNINTERRUPTIBLE POWER SUPPLY
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLTS, VOLTMETER
VA	VOLT-AMPERES, VALVE
VAR	VOLT AMPERE REACTIVE
VERT	VERTICAL
VFD/AFD	VARIABLE FREQUENCY DRIVE
VS	VOLTMETER SWITCH
W	WIRE, WATTS
WHM	WATTHOUR METER
WM	WATT-METER
WP	WEATHERPROOF
X	REACTOR, REACTANCE
XFMR	TRANSFORMER
Z	IMPEDANCE

GENERAL NOTES:

1. ELECTRICAL SYMBOLS AND STANDARD DETAILS DRAWINGS ARE GENERAL IN NATURE. SOME SYMBOLS AND DETAILS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS.

2. IDENTIFICATIONS (ID), SIZES, RATINGS, LOCATIONS AND SIMILAR INFORMATION ASSOCIATED WITH SYMBOLS MAY NOT BE SHOWN; SEE SPECIFICATIONS AND NATIONAL ELECTRICAL CODE FOR MINIMUM SIZE IF NOT SHOWN.

3. THE ELECTRICAL AND INSTRUMENTATION DRAWINGS USE THE SINGLE LINE, AND CONDUIT AND CABLE SCHEDULE IN CONJUNCTION WITH PLAN DRAWINGS SHOWING RACEWAY HOMERUNS TO DEPICT THE WORK. THE CONTRACTOR SHALL USE THESE DOCUMENTS TO DETERMINE AND PROVIDE THE NECESSARY RACEWAY AND WIRING SYSTEM FOR EACH EQUIPMENT. ALL RACEWAY SHALL BE ROUTED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.

4. IF EQUIPMENT SUPPLIED BY MANUFACTURER HAS A LARGER LOAD THAN INDICATED ON THE SINGLE LINE DIAGRAM, THE CONSTRUCTION MANAGER SHALL BE NOTIFIED. THE CABLE, CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE SIZED AS REQUIRED, TO ACCOMMODATE THE LARGER LOAD.

5. IN AREAS WHERE THERE ARE OVERHEAD BRIDGE CRANES, HOISTS, ETC., OR WHERE EQUIPMENT IS LIFTED AND MOVED FOR MAINTENANCE OR REPLACEMENT, NO RACEWAYS SHALL BE RUN OVERHEAD THAT WILL INTERFERE WITH THE OPERATION OF THE EQUIPMENT.

6. THE LOCATION OF THE CONTROL STATIONS AND DEVICES SHOWN ON THE PLAN DRAWINGS ARE DIAGRAMMATIC AND THE ACTUAL LOCATION SHALL BE COORDINATED IN THE FIELD WITH THE CONSTRUCTION MANAGER AT NO ADDITIONAL COST TO THE OWNER.

7. THE FINAL LOCATION OF MOTORS AND ACCESSORIES MAY NOT BE AS SHOWN. THE CONTRACTOR SHALL COORDINATE WITH THE STRUCTURAL AND MECHANICAL DRAWINGS AND SHOP DRAWINGS FOR THE EQUIPMENT PROVIDED FOR CONDUIT STUBUP AND TERMINATION LOCATIONS.

8. THE STANDARD DETAILS SHALL BE USED WHERE APPLICABLE.

9. ALL EQUIPMENT SHALL BE LABELED WITH NAMEPLATES. DESCRIPTION OF EQUIPMENT AND EQUIPMENT NUMBERS SHALL BE IN ACCORDANCE WITH THE SINGLE LINE OR CONTROL DIAGRAM DESCRIPTION. IF NAMEPLATE IS NOT DESCRIBED ON THE DRAWINGS, CONSULT WITH THE CONSTRUCTION MANAGER AND PROVIDE A NAMEPLATE THAT DESCRIBES AT LEAST THE NAME AND FUNCTION

REF 7; REF 8; REF 9;

REF 4; REF 5; REF 6;

REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W1210bdr_consultant.mst
REF 3:

USER: fal
DATE: 28-AUG-2013 15:33
FILE: J:\SD\sd317A\W1210E002.R02

PLOT SCALE: 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

REGISTERED PROFESSIONAL ENGINEER GREGG ALAN BOLTZ Exp. 06-30-09 ELECTRICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER DAVID McEWEN No. 69475 Exp. 06-30-10 CIVIL STATE OF CALIFORNIA

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP: MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT

DESIGN BY:	M. SEKANDER
DRAWN BY:	F. BURKE
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

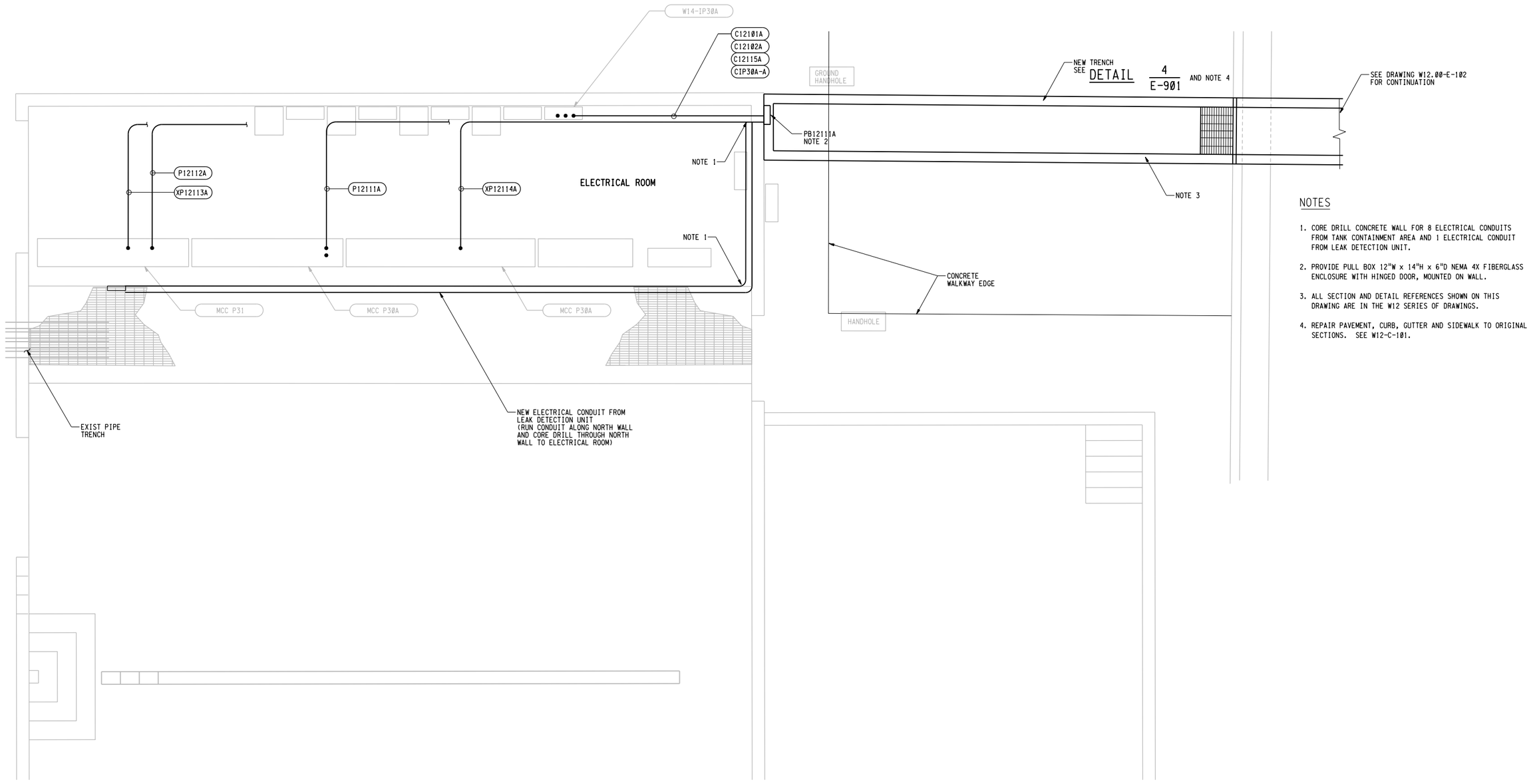
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL

ELECTRICAL ABBREVIATIONS AND NOTES

SCALE	NO SCALE	W12.10-E-002	2
DATE	23JAN2009	DRAWING NUMBER	REV.

REF 7: J:\SD\sd317A\W12-E-plan.MST
REF 8:
REF 9:
REF 4: J:\SD\sd317A\W12-mr-plan.mst
REF 5: J:\SD\sd317A\W12-E-plan.mst
REF 6: W:\Drafters\w20k_w2000systs.mst
REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W1210bdr_consultant.mst
REF 3:
USER: fal
DATE: 20-AUG-2013 15:33
FILE: J:\SD\sd317A\W1210E101.R03
PLOT SCALE: 5.333333:1



NOTES

1. CORE DRILL CONCRETE WALL FOR 8 ELECTRICAL CONDUITS FROM TANK CONTAINMENT AREA AND 1 ELECTRICAL CONDUIT FROM LEAK DETECTION UNIT.
2. PROVIDE PULL BOX 12"W x 14"H x 6"D NEMA 4X FIBERGLASS ENCLOSURE WITH HINGED DOOR, MOUNTED ON WALL.
3. ALL SECTION AND DETAIL REFERENCES SHOWN ON THIS DRAWING ARE IN THE W12 SERIES OF DRAWINGS.
4. REPAIR PAVEMENT, CURB, GUTTER AND SIDEWALK TO ORIGINAL SECTIONS. SEE W12-C-101.

CHLORINATION BLDG
PARTIAL PLAN

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
3	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
2		REVISED PER CORR #14	DCM	TMS	JK
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

REGISTERED PROFESSIONAL ENGINEER — GREGG ALAN BOLTZ — Exp. 06-30-09 — ELECTRICAL — STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER — DAVID McEWEN — No. 69475 — Exp. 06-30-10 — CIVIL — STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	M. SEKANDER
DRAWN BY:	K. BARNETT
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL
CHLORINATION BUILDING
PARTIAL PLAN

SCALE 3/8"=1'-0"
DATE 23JAN2009
W12.10-E-101 DRAWING NUMBER
3 REV.

REF 7: J:\SD\sd317A\W12-mnplan.mst
REF 6: J:\SD\sd317A\W12SITUP.MST
REF 4:
REF 5: J:\SD\sd317A\W12-E-plan.MST
REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 2: J:\SD\sd317A\W12-E-plan.mst
REF 3: W:\Drafters\SD\sd317A\ref\W210bdr_consultant.mst
USER: fah
DATE: 23-AUG-2013 15:33
FILE: J:\SD\sd317A\W12DGN\W12E102.R03
PLOT SCALE: 4:1

SEE DRAWING E-103 FOR CONTINUATION

EXIST TRENCH

W12-FCL-PNL-102 NOTE 1

W12-FCL-PNL-101 SEE NOTE 1

C12101F

C12101C

TRUCK UNLOADING AREA

TRENCH SEE DETAIL 4 W12-E-901

TRENCH ENDWALL

SEE DRAWING E-101 FOR CONTINUATION

C12115A P12111A
C12101A P12112A
C12102A XP12113A
C1P30A-A XP12114A
SEE NOTES 9, 10 AND 11

DUCT BANK SEE DETAIL 2 W12-E-901

C1P30A-A SEE NOTE 5

MOUNT SWITCH ON HAND RAIL

JB-LTG

EMERGENCY EYEWASH SHOWER

SEE NOTE 6 DETAIL 3/E-901

W12-FCL-LI-102B

W12-FCL-TNK-102
FERRIC CHLORIDE STORAGE TANK 2

W12-FCL-LE-102
SEE DETAIL 5/I-901

W12-FCL-PMP-112
FERRIC CHLORIDE METERING PUMP 2

W12-FCL-PSH-112
SEE DETAIL 1/I-901

W12-FCL-LSHH-102
SEE DETAIL 3/I-901

W12-FCL-LI-101B

W12-FCL-TNK-101
FERRIC CHLORIDE STORAGE TANK 1

W12-FCL-LE-101
SEE DETAIL 5/I-901

W12-FCL-LSHH-101
SEE DETAIL 3/I-901

C12101D
S12101G
SEE NOTE 7

C12103A
SEE NOTE 7

C12102D
S12102D
SEE NOTE 7

W12-FCL-SV-103

W12-FCL-FE-115
W12-FCL-FIT-115
SEE DETAIL 4/I-901

W12-FCL-PNL-115
SEE NOTE 1

W12-FCL-PSH-111
SEE DETAIL 1/I-901

W12-FCL-LIT-102

A E-901

P12111A
C12111D

S12111C
SEE NOTE 5

TB12111
SEE NOTE 3

JB12102

JB12101

W12-FCL-PNL-112

W12-FCL-PNL-111
SEE DWG E-902(TYP OF 2)

FRONT

TB12101
SEE NOTE 3

SUMP

W12-FCL-LIT-101
SEE NOTE 2

S12112A
SEE NOTE 5

C12112C
P12112A
SEE NOTE 5

SEE NOTE 6 DETAIL 3/E-901

W12-FCL-PMP-111
FERRIC CHLORIDE METERING PUMP 1

CORROSIVE AREA

FUTURE FERRIC CHLORIDE STORAGE TANK 4

FUTURE FERRIC CHLORIDE STORAGE TANK 3

NOTES:

1. MOUNT ON STAND PER DETAIL 1/E-901
2. MOUNT TRANSMITTER ON SIDE OF PANEL.
3. TERMINAL BOXES SHALL BE NEMA 4X, FIBERGLASS, HINGED FRONT DOOR. MOUNT ON STAND PER DETAIL 1/E-901
4. ROUTE CONDUITS TO CONTAINMENT AREA ON TOP OF WALL. CONDUITS SHALL NOT PENETRATE CONTAINMENT WALL
5. MOUNT CONDUITS ON WALL. CONDUITS SHALL NOT PENETRATE CONTAINMENT WALL.
6. PROVIDE POLE MOUNTED HID METAL HALIDE FIXTURE 100W. POLE SHALL BE 10 FT HIGH SQUARE ALUMINUM. FIXTURE SHALL BE CAST ALUMINUM RECILINEAR SHAPE, ENCLOSED AND GASKETED AND BAKED BROWN ENAMEL FINISH. CONTROLLED CUTOFF DOWNLIGHT TYPE II ROADWAY DISTRIBUTION. MANUFACTURER SHALL BE HOLOPHANE TYPE "SOMERSET" HUBBELL TYPE "RCM", OR EQUAL. PROVIDE WEATHER-PROOF RECEPTACLE IN BASE IF SHOWN
7. MOUNT CONDUITS ON WOOD BLOCKS ON GRADE EVERY 10 FT MAX NEXT TO PIPES. ROUTE CONDUITS UP TO TOP OF TANK SUPPORT OFF PIPES.
8. NEW CONDUITS TO BE ROUTED INTO EXISTING CABLE TRENCH AND BELOW CABLE TRENCH AND EXISTING PIPES. SEE SECTION A ON DRAWING E-109

NOTES (CONTINUED):

9. PROVIDE 6" DETECTABLE UNDERGROUND ELECTRICAL LINE WARNING TAPE. BURY WARNING TAPE 12" FROM FINISH GRADE. TAPE SHALL BE IMPRINTED WITH A WARNING CONTINUOUSLY ALONG THE LENGTH SIMILAR TO: "CAUTION - STOP DIGGING - BURIED ELECTRICAL LINE BELOW". TAPE SHALL BE MANUFACTURED BY SOMERSET (THOMAS & BETTS) "PROTECT-A-LINE OR EQUAL.
10. DIRECT BURY ELECTRICAL CONDUITS 30" (MINIMUM) BELOW FINISH GRADE. BEDDING SHALL BE TYPE 2 MATERIAL.
11. PROVIDE CONTINUOUS BARE COPPER #4/0 GROUND CONDUCTOR, BOND GROUNDING CONDUCTOR TO GROUNDING ELECTRODES, POWER SOURCE AND LOAD ENCLOSURES.

GENERAL NOTES:

A. LOCATION OF EQUIPMENT AND ELECTRICAL DEVICES ARE APPROXIMATE AND SHALL BE COORDINATED WITH MECHANICAL.

B. NOT ALL RACEWAY ARE SHOWN. SEE SINGLE LINE DIAGRAMS AND CONDUIT SCHEDULE FOR CABLE AND CONDUIT REQUIREMENTS.

C. ALL SECTION AND DETAIL REFERENCES SHOWN ON THIS DRAWING ARE IN THE W12 SERIES OF DRAWINGS.

PLAN

REGISTERED PROFESSIONAL ENGINEER GREGG ALAN BOLTZ Exp. 06-30-09 ELECTRICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER DAVID McEWEN No. 69475 Exp. 06-30-10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A			JK
2		REVISED PER CORR #14	DCM	TMS	JK
1		ADDENDUM NO. 2 PER SD317A	FWB	–	TMS

CONSULTANT

EBMUD

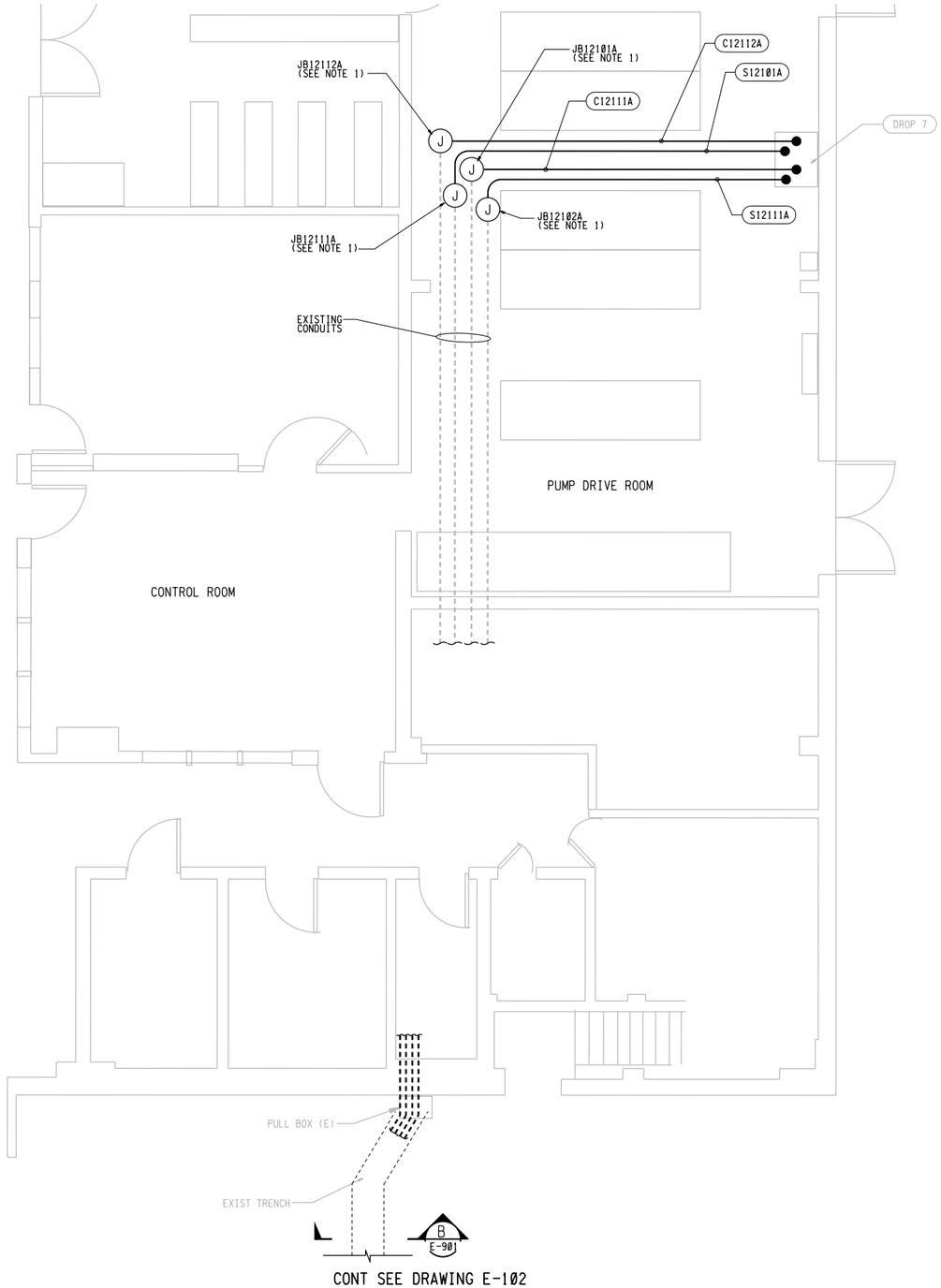
DESIGN BY: M. SEKANDER
DRAWN BY: N. HUNTER
DESIGN CHECKED BY: R.P.E. No. E14094 G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475 DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503 TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336 JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703 JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL
TANK CONTAINMENT AREA
PLAN

SCALE 1/2"=1'-0"
DATE 23JAN2009
W12.10-E-102 DRAWING NUMBER
3 REV.



INFLUENT PUMPING STATION
PARTIAL PLAN

3" ON ORIGINAL DOCUMENT
0 1 2 3

NOTES

1. INTERCEPT EXISTING SPARE CONDUIT. PROVIDE JB AND EXTEND CONDUIT TO DROP 7.

2. ALL SECTION AND DETAIL REFERENCES SHOWN ON THIS DRAWING ARE IN THE W12 SERIES OF DRAWINGS.

REGISTERED PROFESSIONAL ENGINEER GREGG ALAN BOLTZ Exp. 06-30-09 ELECTRICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER DAVID McEWEN No. 69475 Exp. 06-30-10 CIVIL STATE OF CALIFORNIA

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	D. McEWEN
DRAWN BY:	N. HUNTER
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSELAR L WONG

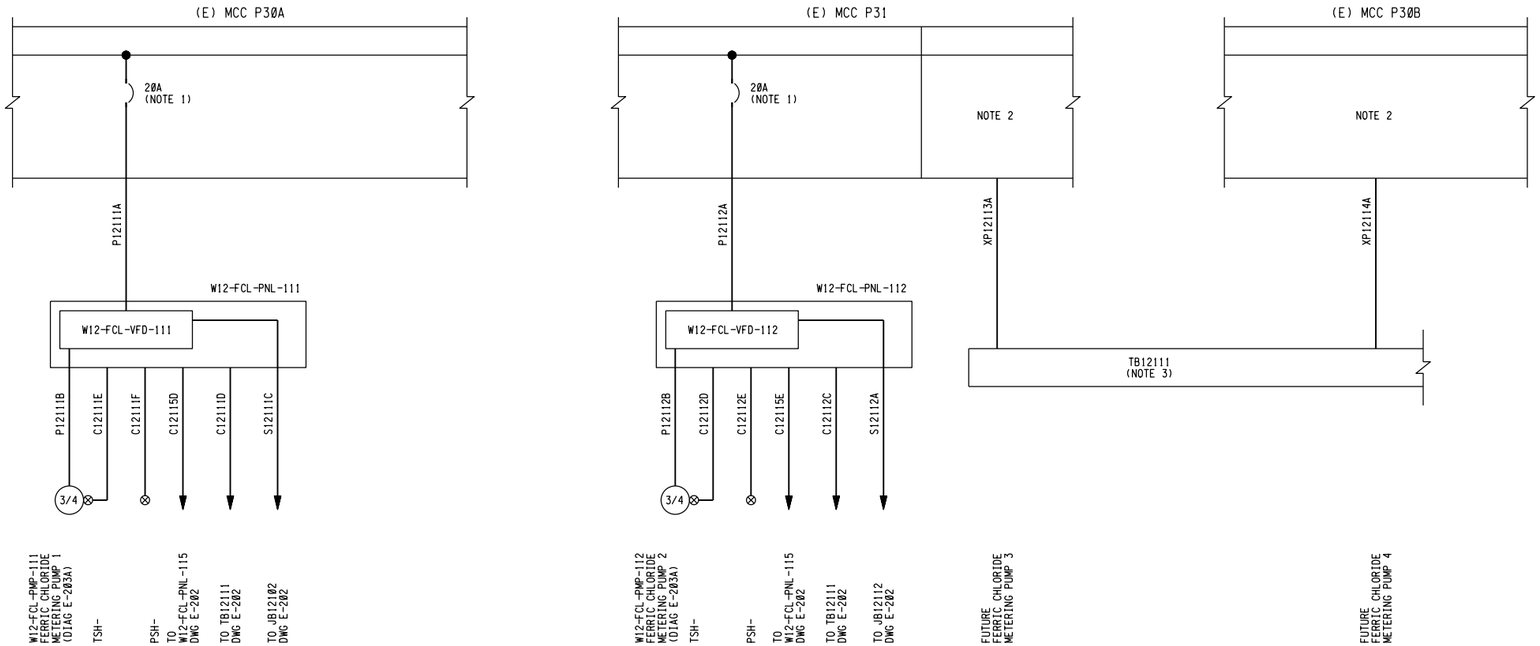
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

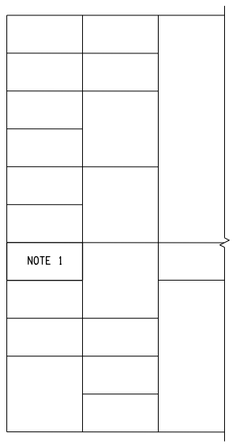
MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL
INFLUENT PUMPING STATION
PARTIAL PLAN

SCALE 1/4"=1'-0"
DATE 23JAN2009
W12.10-E-103 DRAWING NUMBER
2 REV.

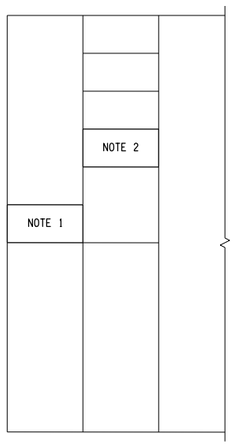
REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W12Bbdr_consultant.mst
REF 3:
REF 4: W:\Drafters\w20\w2000sesite.mst
REF 5: J:\SD\sd317A\W12-plan.mst
REF 6: J:\SD\sd317A\W12E103.MST
REF 7:
REF 8:
REF 9:

USER: fah
DATE: 23-AUG-2013 15:33
FILE: J:\SD\sd317A\W12E103.R02
PLOT SCALE: 61

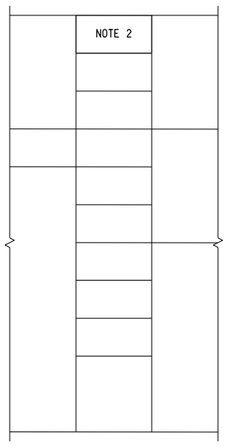




EXISTING MCC P30A
ELEVATION
NTS



EXISTING MCC P31
ELEVATION
NTS



EXISTING MCC P30B
ELEVATION
NTS

NOTES

1. PROVIDE 20A CIRCUIT BREAKER IN SPACE SHOWN. MCC IS A GE 8000 LINE TYPE.
2. SPACE IS RESERVED FOR FUTURE FERRIC CHLORIDE PUMPS.
3. TERMINATE SPARE CONDUITS TERMINAL BOX FOR FUTURE CONNECTION OF METERING PUMP.

REGISTERED PROFESSIONAL ENGINEER
GREGG ALAN BOLTZ
No. E14094
Exp. 06-30-09
ELECTRICAL
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
DAVID McEWEN
No. 69475
Exp. 06-30-10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT

DESIGN BY:	K. BARNETT
DRAWN BY:	R. KULNYS
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSELAR L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL
MISCELLANEOUS
SINGLE LINE DIAGRAM 1

SCALE NO SCALE
DATE 23JAN2009
W12.10-E-201
DRAWING NUMBER
2
REV.

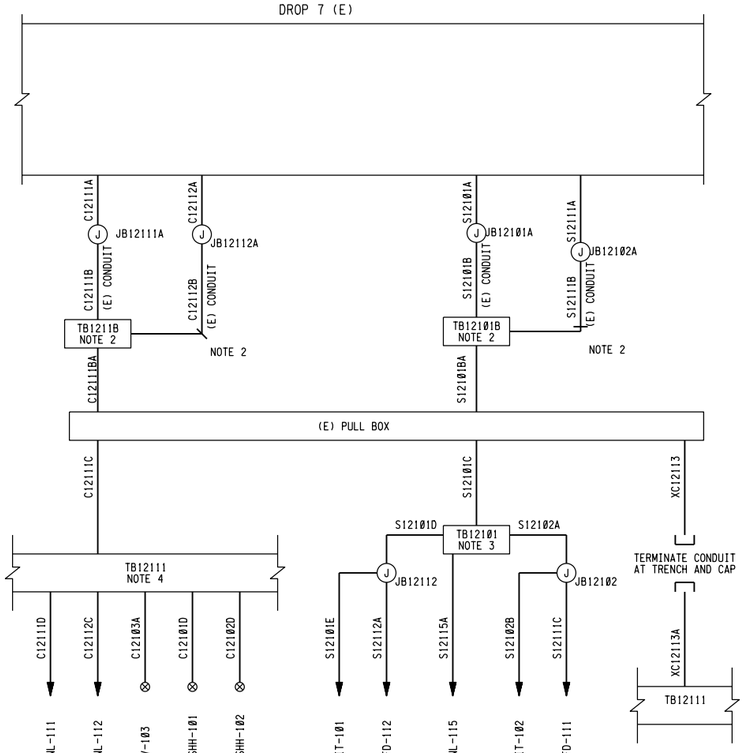
REF 7:
REF 8:
REF 9:

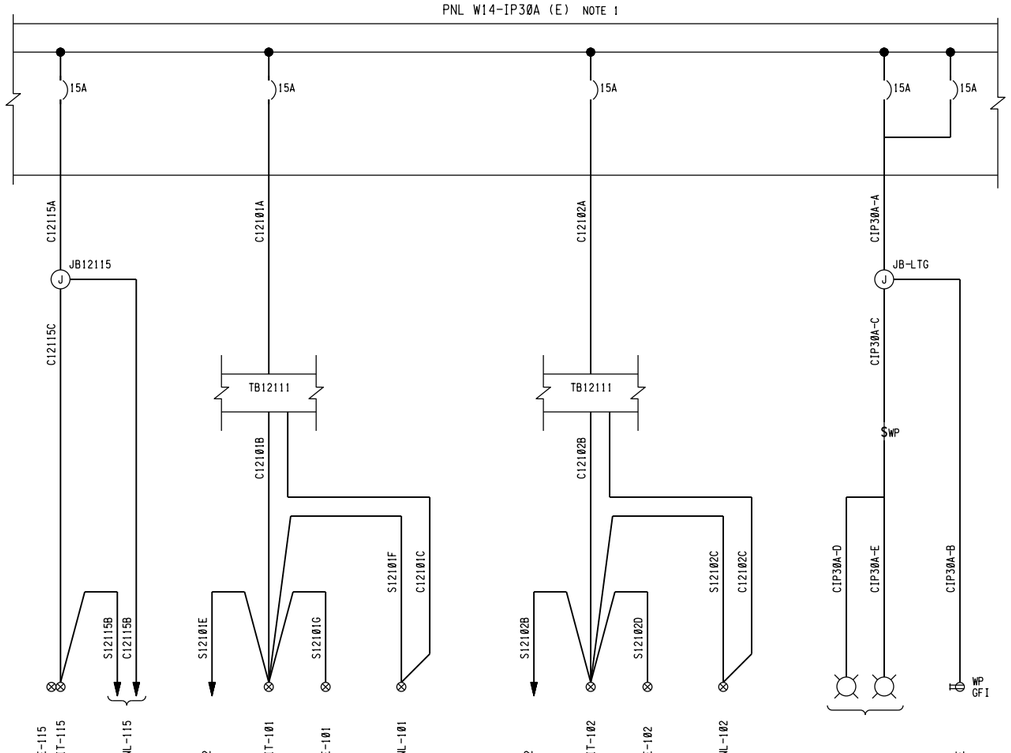
REF 4:
REF 5:
REF 6:

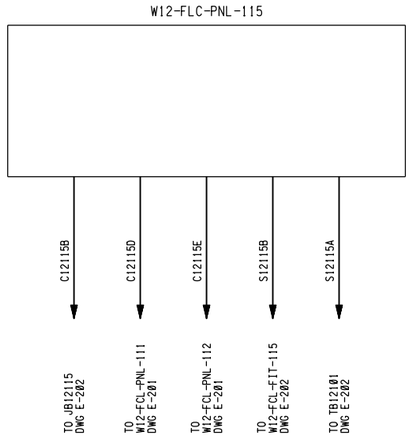
REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 2: SD317BASE.dgn
REF 3: W:\Drafters\SD\sd317A\ref\W1210bdr_consultant.mst

USER: fah
DATE: 26-AUG-2013 15:33
FILE: J:\SD\sd317A\W1210E201.R02

PLOT SCALE: 0.166667:1







NOTES

1. USE SPARE 15A CIRCUIT BREAKERS (CIRCUITS 12-32 ARE SHOWN SPARE 15A).
2. EXTEND EXISTING CONDUIT. SEE DETAIL 3, DRAWING E-901.
3. TERMINAL BOX SHALL BE NEMA 4X, 12"W X 10"H X 8"D MIN., MOUNT ON STAND PER DETAIL 1, DRAWING E-901.PROVIDE TERMINAL BLOCKS AND TERMINATE SPARE WIRES FOR FUTURE USE.
4. TERMINAL BOX SHALL BE NEMA 4X, 16W X 14H X 6"D MIN., MOUNT ON STAND PER DETAIL 1, DRAWING E-901.PROVIDE TERMINAL BLOCKS AND TERMINATE SPARE WIRES FOR FUTURE USE.

REF 1: W:\D-afters\SD\sd317A\ref\SD317-bdr-mst
REF 2: W:\D-afters\SD\sd317A\ref\W12Bdr-consultant.mst
REF 3:

REF 4:
REF 5:
REF 6:

REF 7:
REF 8:
REF 9:

USER: fal
DATE: 26-AUG-2013 15:23
FILE: J:\SD\sd317A\W12IE202.R02

PLOT SCALE: 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

REGISTERED PROFESSIONAL ENGINEER GREGG ALAN BOLTZ No. E14094 Exp. 06-30-09 ELECTRICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER DAVID McEWEN No. 69475 Exp. 06-30-10 CIVIL STATE OF CALIFORNIA

CONSULTANT

EBMUD

DESIGN BY:	K. BARNETT
DRAWN BY:	R. KULNYS
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL
MISCELLANEOUS
SINGLE LINE DIAGRAM 2

SCALE NO SCALE
DATE 23JAN2009

W12.10-E-202
DRAWING NUMBER

2
REV.

CONDUIT NO	CONDUIT SIZE	CABLE SIZE	FROM	TO	VIA/REMARKS
C12101A	3/4" RSG/PVC40	2#12, #12G	PNL W14-IP30A	TB12111	PB1211A, TRENCH
C12101B	3/4" PVC40	2#12, #12G	TB12111	W12-FCL-LIT-101	
C12101C	3/4" PVC40	2#12, #12G	TB12111	W12-FCL-PNL-101	
C12101D	3/4" PVC40	2#14, #14G	TB12111	W12-FCL-LSHH-101	
S12101A	1" RSG	4PR#16 (1 SP)	DROP 7	JB12101A	
S12101B		4PR#16 (1 SP)	JB12101A	TB12101B	EX CONDUIT, SECT 4/E-901
S12101BA	2" RSG	1-12PR#16 (5 SP)	TB12101B	EX PULL BOX	
S12101C	2" RSG/PVC40	1-12PR#16 (5 SP)	EX PULL BOX	TB12101	CABLE IN TRENCH
S12101D	3/4" RSG	3PR#16	TB12101	JB12112	
S12101E	3/4" RSG	1PR#16	JB12112	W12-FCL-LIT-101	
S12101F	3/4" RSG	1PR#16	W12-FCL-LIT-101	W12-FCL-PNL-101	
S12101G	3/4" RSG	VENDOR CABLE	W12-FCL-LIT-101	W12-FCL-LE-101	
C12102A	3/4" RSG/PVC40	2#12, #12G	PNL W14-IP30A	TB12111	PB1211A, TRENCH
C12102B	3/4" PVC40	2#12, #12G	TB12111	W12-FCL-LIT-102	
C12102C	3/4" PVC40	2#12, #12G	TB12111	W12-FCL-PNL-102	
C12102D	3/4" PVC40	2#14, #14G	TB12111	W12-FCL-LSHH-102	
S12102A	3/4" RSG	2PR#16	TB12101	JB12102	
S12102B	3/4" RSG	1PR#16	JB12102	W12-FCL-LIT-102	
S12102C	3/4" RSG	1PR#16	W12-FCL-LIT-102	W12-FCL-PNL-102	
S12102D	3/4" RSG	VENDOR CABLE	W12-FCL-LIT-102	W12-FCL-LE-102	
C12103A	3/4" PVC40	4#14, #14G	TB12111	W12-FCL-SV-103	
C12111A	1" RSG	20#14, #14G	DROP 7	JB12111A	
C12111B	1" RSG	20#14, #14G	JB12111A	TB12111B	EX CONDUIT, SECT 4/E-901
C12111BA	2" RSG	1-37C#14	TB12111B	EX PULL BOX	
C12111C	2" RSG/PVC40	1-37C#14	W12-FCL-PNL-112	TB12111	CABLE IN TRENCH
C12111D	1" PVC40	14#14, #14G	W12-FCL-PNL-111	TB12111	
C12111E	3/4" PVC40	2#14, #14G	W12-FCL-PNL-111	W12-FCL-TSH-111	
C12111F	3/4" PVC40	2#14, #14G	W12-FCL-PNL-111	W12-FCL-PSH-111	
P12111A	3/4" RSG/PVC40	3#12, #12G	MCC P30A	W12-FCL-VFD-111	PB1211A, TRENCH
P12111B	3/4" PVC40	VENDOR CABLE	W12-FCL-VFD-111	W12-FCL-PMP-111	
S12111A	1" RSG	4PR#16	W12-FCL-PNL-112	JB12102A	
S12111B	1" RSG	4PR#16	JB12102A	TB12101B	EX CONDUIT, SECT 4/E-901
S12111C	3/4" RSG	2PR#16	W12-FCL-VFD-111	JB12102	
C12112A	1" RSG	15#14, #14G	DROP 7	JB12111A	
C12112B	1" RSG	15#14, #14G	JB12111A	TB12111B	EX CONDUIT, SECT 4/E-901
C12112C	1" PVC40	10#14, #14G	TB12111	W12-FCL-PNL-112	
C12112D	3/4" PVC40	2#14, #14G	W12-FCL-PNL-112	W12-FCL-TSH-112	
C12112E	3/4" PVC40	2#14, #14G	W12-FCL-PNL-112	W12-FCL-PSH-112	
P12112A	3/4" RSG/PVC40	3#12, #12G	MCC P31	W12-FCL-VFD-112	PB1211A, TRENCH
P12112B	3/4" PVC40	VENDOR CABLE	W12-FCL-VFD-112	W12-FCL-PMP-112	
S12112A	3/4" RSG	2PR#16	JB12112	W12-FCL-VFD-112	
XC12113	2" RSG		EX PULL BOX	EX TRENCH	
XC12113A	2" PVC40		EX TRENCH	TB12111B	
XP12113A	3/4" RSG/PVC40	PULLCORD	MCC P31	TB12111	PB1211A, TRENCH, (FUT PUMP 3)
XP12114A	3/4" RSG/PVC40	PULLCORD	MCC P30B	TB12111	PB1211A, TRENCH (FUT PUMP 4)

CONDUIT NO	CONDUIT SIZE	CABLE SIZE	FROM	TO	VIA/REMARKS
C12115A	3/4" RSG/PVC40	2#12, #12G	PNL W14-IP30A	JB12115	PB1211A, TRENCH, TB12111
C12115B	3/4" PVC40	2#12, #12G	JB12115	W12-FCL-PNL-115	
C12115C	3/4" PVC40	2#12, #12G	JB12115	W12-FCL-FIT-115	
C12115D	3/4" PVC40	2#14	W12-FCL-PNL-111	W12-FCL-PNL-115	
C12115E	3/4" PVC40	2#14	W12-FCL-PNL-112	W12-FCL-PNL-115	
S12115A	3/4" RSG	1PR#16	TB12101	W12-FCL-PNL-115	
S12115B	3/4" RSG	1PR#16	W12-FCL-PNL-115	W12-FCL-FIT-115	
CIP30A-A	3/4" RSG/PVC40	3#12, #12G	PNL W14-IP30A	JB-LTG	PB1211A, TRENCH, TB12111
CIP30A-B	3/4" PVC40	2#12, #12G	JB-LTG	RECPTACLE	
CIP30A-C	3/4" PVC40	2#12, #12G	JB-LTG	SWITCH	
CIP30A-D	3/4" PVC40	2#12, #12G	SWITCH	LIGHT-1	
CIP30A-E	3/4" PVC40	2#12, #12G	SWITCH	LIGHT-2	

REF 7; REF 8; REF 9;

REF 4; REF 5; REF 6;

REF 1: M:\D-drive-s\SD\sd317A\ref\SD317-bdr-mst
REF 2: M:\D-drive-s\SD\sd317A\ref\W1210bdr_consultant.mst
REF 3: M:\D-drive-s\SD\sd317A\ref\W1210bdr_consultant.mst

USER: fah
DATE: 28-AUG-2013 15:33
FILE: J:\SD\sd317A\W1210E203.R02

PLOT SCALE= 0.166666681

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

REGISTERED PROFESSIONAL ENGINEER GREGG ALAN BOLTZ No. E14094 Exp. 06-30-09 ELECTRICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER DAVID McEWEN No. 69475 Exp. 06-30-10 CIVIL STATE OF CALIFORNIA

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	K. BARNETT
DRAWN BY:	R. KULNYS
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

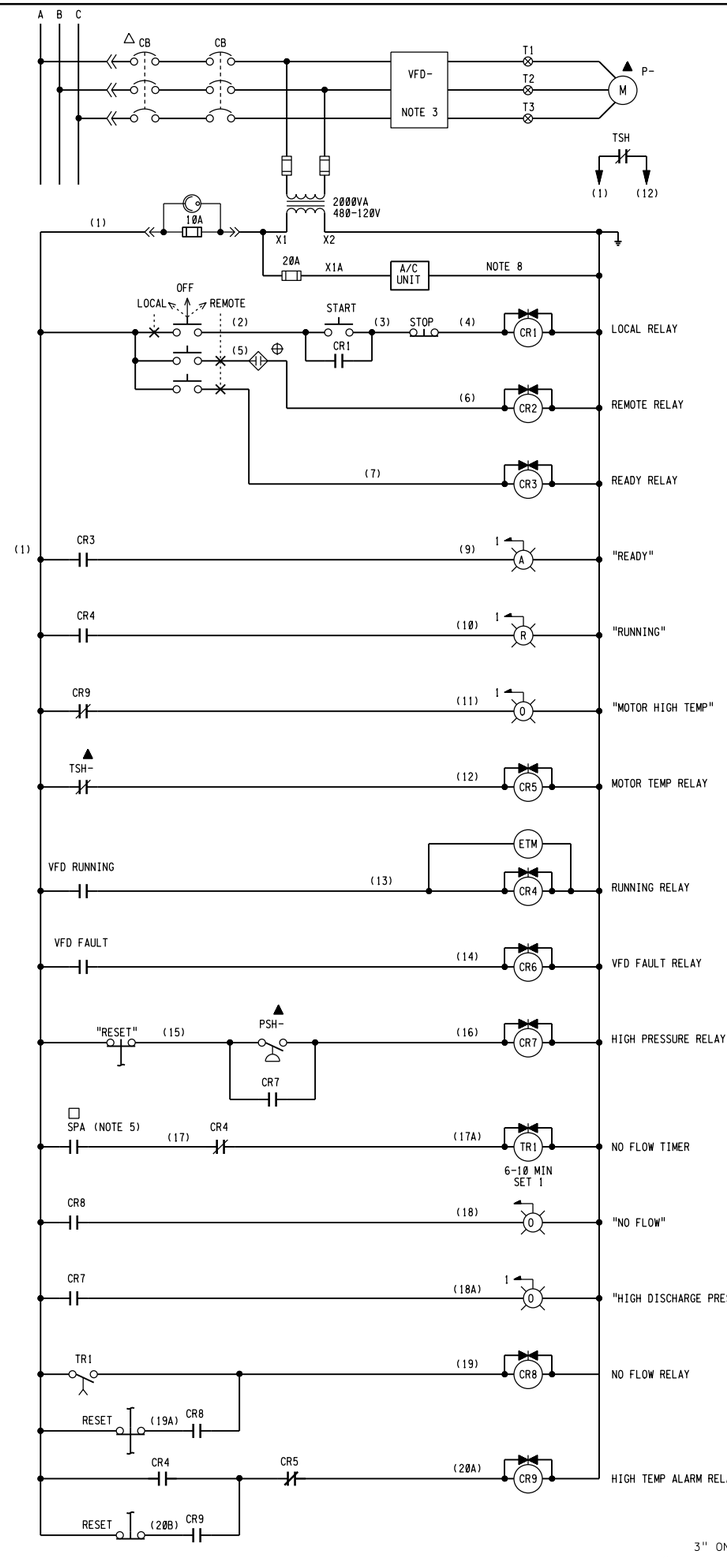
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

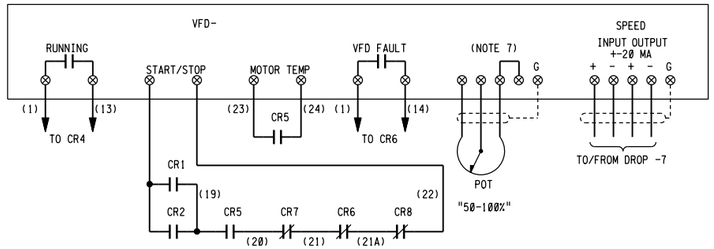
MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL
MISCELLANEOUS
CONDUIT SCHEDULE

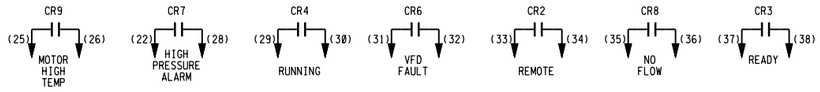
SCALE NO SCALE
DATE 23JAN2009

W12.10-E-203
DRAWING NUMBER

2
REV.







EQUIPMENT NUMBER	DESCRIPTION	VFD-	PSH-	TSH-	P-
W12-FCL-PNL-111	FERRIC CHLORIDE METERING PUMP 1 CONTROL PANEL	W12-FCL-VFD-111	W12-FCL-PSH-111 (PSH-111)	W12-FCL-TSH-111 (TSH-111)	W12-FCL-PMP-111
W12-FCL-PNL-112	FERRIC CHLORIDE METERING PUMP 2 CONTROL PANEL	W12-FCL-VFD-112	W12-FCL-PSH-112 (PSH-112)	W12-FCL-TSH-112 (TSH-112)	W12-FCL-PMP-112

DIAGRAM E301A

NTS

NOTES

1. WHEN THE LOR SWITCH IS IN THE LOCAL POSITION, MOTOR SPEED SHALL BE CONTROLLED BY POTENTIOMETER WHEN LOR IS IN "REMOTE", SPEED IS CONTROLLED FROM DROP.
2. PROVIDE 10K OHM POTENTIOMETER.
3. PROVIDE ABB ACS550 SERIES, 6 PULSE VFD. VFDs SHALL BE INSTALLED IN CONTROL PANELS. SEE PANEL DETAILS ON DRAWING E-902.
4. INDICATING AND CONTROL DEVICES ARE LOCATED ON PANEL DOOR. ALL OTHER DEVICES ARE LOCATED IN PANEL UNLESS OTHERWISE NOTED.
5. SPA = SITE PROGRAMABLE ALARM.
6. CONTROL DEVICES AND INDICATING LAMP NAMEPLATE WORDING SHALL BE AS SHOWN IN QUOTATION MARKS ON CONTROL DIAGRAM.
7. PROGRAM VFD SO MINIMUM MOTOR SPEED IS 50 PERCENT OF RATED AT MINIMUM CONTROL INPUT SIGNAL (4mA OR POTENTIOMETER) AND 100 PERCENT OF RATED AT MAXIMUM INPUT SIGNAL. (20mA OR POTENTIOMETER).
8. PROVIDE PANEL AIR CONDITIONING UNIT, 4000BTU/H, 115V, NEMA 4X 316 STAINLESS STEEL ENCLOSURE, THERMOSTATICALLY CONTROLLED WITH SHORT CYCLE PROTECTION, GALVANIZED STEEL INTERNAL CONSTRUCTION, INTERNAL CORROSION RESISTANT COATING, COMPRESSOR HEATER, REPLICABLE FILTERS WITH 2 SETS SPARE FILTERS AND COATING ADHESIVE, UL RECOGNIZED, COOPER B-LINE MODEL KNA4C4P32R OR EQUAL.
9. ALL WIRE 600V, TYPE MTW, #16 AWG MINIMUM EXCEPT 480V WIRE AND WIRES X1, X2 AND X1A SHALL BE #12 AWG.

LEGEND

- ▲ LOCATED IN THE FIELD
- ⊕ LOCATED IN DROP 7
- △ LOCATED IN MCC
- □ LOCATED W12-FCL-PNL-115

REGISTERED PROFESSIONAL ENGINEER GREGG ALAN BOLTZ Exp. 06-30-09 ELECTRICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER DAVID McEWEN No. 69475 Exp. 06-30-10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT

DESIGN BY:	D. McEWEN
DRAWN BY:	H. KARIMI
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL
FERRIC CHLORIDE SYSTEM
CONTROL DIAGRAMS

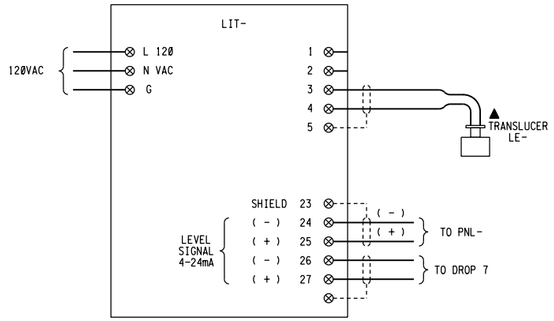
SCALE	NO SCALE	W12.10-E-301	2
DATE	23JAN2009	DRAWING NUMBER	REV.

REF 7: REF 8: REF 9:

REF 4: REF 5: REF 6:

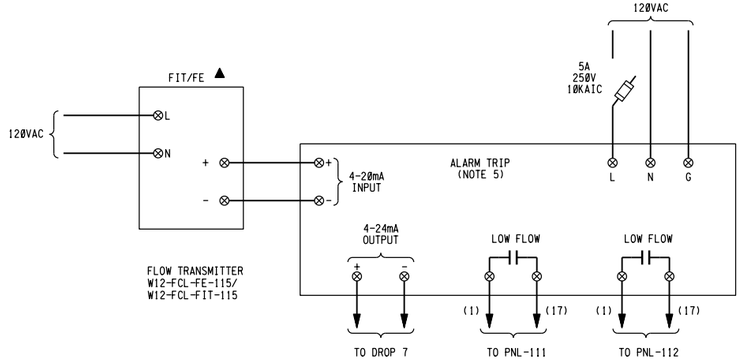
REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W1210bdr-consultant.mst
REF 3:

USER: fal
PLOT SCALE: 0.166667:1
DATE: 26-AUG-2013 15:33
FILE: J:\SD\sd317A\W1210E301.R02



EQUIPMENT NUMBER	DESCRIPTION	LE-	PNL-
W12-FCL-LIT-111	FERRIC CHLORIDE STORAGE TANK 1 LEVEL TRANSMITTER	W12-FCL-LE-101	W12-FCL-PNL-101(LI)
W12-FCL-LIT-112	FERRIC CHLORIDE STORAGE TANK 2 LEVEL TRANSMITTER	W12-FCL-LE-102	W12-FCL-PNL-102 (LI)

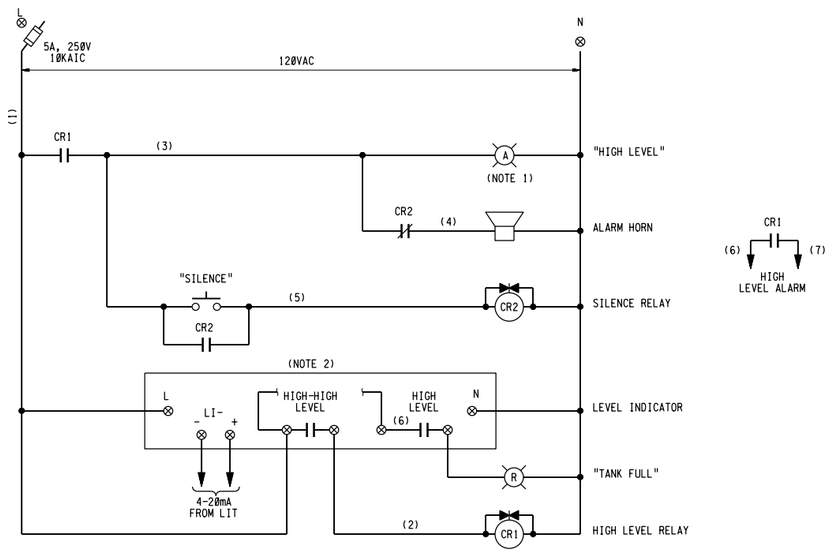
DIAGRAM E302A



EQUIPMENT NUMBER	DESCRIPTION
W12-FCL-PNL-115	FERRIC CHLORIDE FLOW ALARM PANEL

DIAGRAM E302C

NOTE 4



EQUIPMENT NUMBER	DESCRIPTION	LI-	LIT-
W12-FCL-PNL-101	FERRIC CHLORIDE STORAGE TANK 1 LEVEL PANEL	W12-FCL-LI-101	W12-FCL-LIT-111
W12-FCL-PNL-102	FERRIC CHLORIDE STORAGE TANK 2 LEVEL PANEL	W12-FCL-LI-102	W12-FCL-LIT-112

DIAGRAM E302B

(NOTE 4)

NOTES

1. PROVIDE ROTATING WARNING LIGHT AND HIGH-HIGH LEVEL RELAY IN SAME NEMA 4X ENCLOSURE AS LEVEL INDICATOR, SEE DRAWING SD317A-W12-E-902 FOR PANEL LAYOUT.
2. PROVIDE WESHLER, BG-252, MODEL 2B3H1PAK1XXXXKX. FACEPLATE MARKINGS OF 0-100 PERCENT. SET TANK FULL ALARM AT 98 PERCENT AND TANK HIGH LEVEL ALARM AT 100 PERCENT OF TANK CAPACITY.
3. INDICATING LAMP NAMEPLATE WORDING SHALL BE AS SHOWN IN QUOTATION MARKS ON CONTROL DIAGRAM.
4. SEE DRAWING SD317A-W12-E-902 FOR ADDITIONAL INFORMATION ABOUT PANELS, ALL PANEL WIRING # 16 MIN, 600V MTW.
5. PROVIDE CURRENT ALARM TRIP WITH DISPLAY, 4-20MA INPUT AND OUTPUT, TWO ALARM RELAYS, MOORE INDUSTRIES SPA-HLPRG-2PRG-U-AO-DIN, OR EQUAL.

LEGEND

- ▲ LOCATED IN THE FIELD
- ⊕ LOCATED IN DROP
- △ LOCATED IN MCC
- □ LOCATED W12-FCL-PNL-115

REF 7: W12-FCL-PNL-101(LI)
REF 8: W12-FCL-PNL-102 (LI)
REF 4: W12-FCL-PNL-101
REF 5: W12-FCL-PNL-102
REF 6: W12-FCL-PNL-115

REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W12Bbdr-consultant.mst
REF 3:

USER: fah
DATE: 22-AUG-2013 15:33
FILE: J:\SD\sd317A\W12DE302.R02

PLOT SCALE: 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

REGISTERED PROFESSIONAL ENGINEER GREGG ALAN BOLTZ No. E14094 Exp. 06-30-09 ELECTRICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER DAVID McEWEN No. 69475 Exp. 06-30-10 CIVIL STATE OF CALIFORNIA

CONSULTANT

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	D. McEWEN
DRAWN BY:	H. KARIMI
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSELAR L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL
FERRIC CHLORIDE SYSTEM
CONTROL DIAGRAMS

SCALE NO SCALE
DATE 23JAN2009

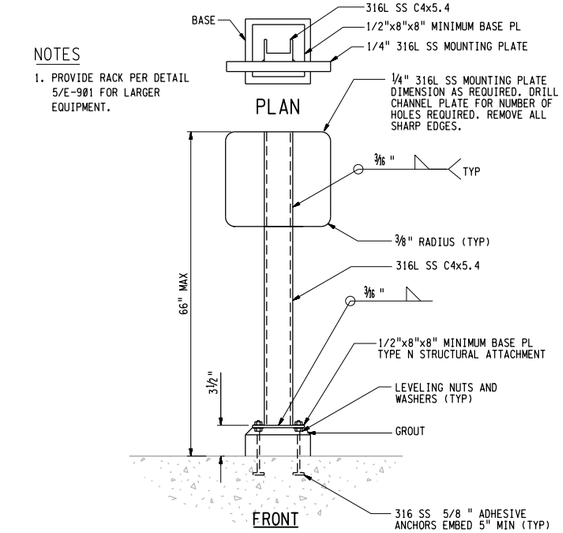
W12.10-E-302
DRAWING NUMBER

2
REV.

REF 7: REF 8: REF 9:
REF 4: REF 5: REF 6:
REF 1: W:\Data\sd\sd317A\ref\SD317A-bdr.mst
REF 2: W:\Data\sd\sd317A\ref\W12B0dr_consultant.mst
REF 3:
USER: fah
DATE: 23-AUG-2013 15:32
FILE: J:\SD\sd317A\W12B0E901.R03
PLOT SCALE: 0.166667:1

CONTROL STATION MOUNTING ON CONCRETE

DETAIL 1 / VAR

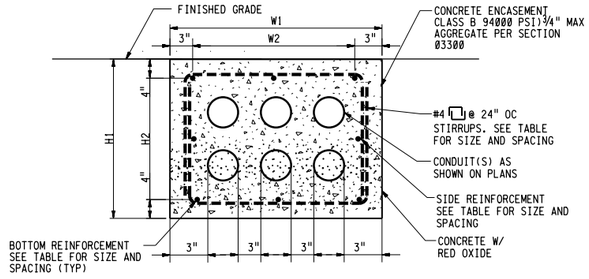


NOTES

1. PROVIDE RACK PER DETAIL 5/E-901 FOR LARGER EQUIPMENT.

REINFORCED CONCRETE ENCASEMENT FOR UNDERGROUND CONDUIT INSTALLATION

DETAIL 2 / VAR

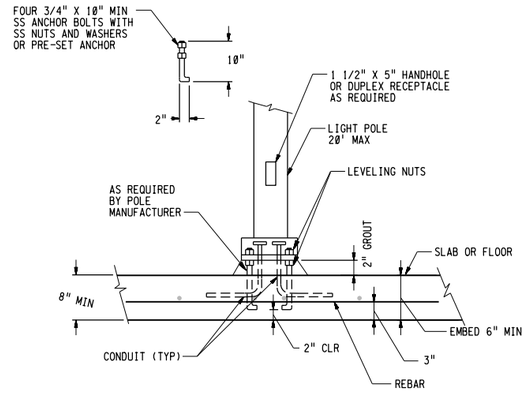


DUCT BANK REINFORCEMENT						
	STIRRUPS		TOP AND BOTTOM		SIDE	
H1	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING
1"-12"	3	H2/3	5	6	3	6
13"-24"	4	H2/2	6	6	4	H/3
25"-36"	5	H2/3	8	6	5	H/3
36"-48"	5	H2/3	10	6	5	H/4

FINISHED GRADE

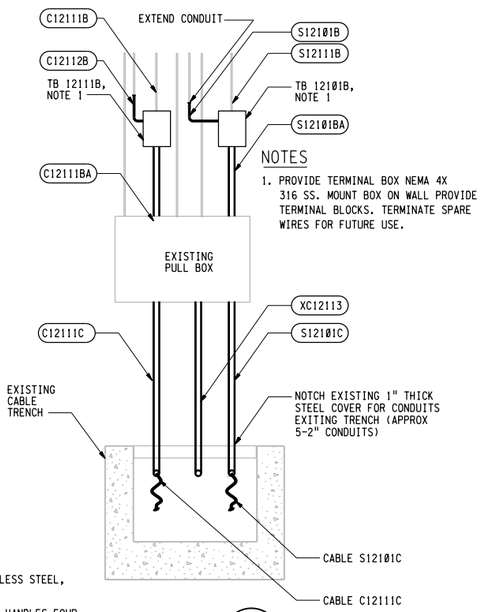
NOTES

1. W1 SHALL NOT EXCEED H1 BY MORE THAN 50%.
2. H1 SHALL NOT EXCEED W1 BY MORE THAN 50%.
3. PROVIDE REINFORCEMENT STEEL AND CONCRETE AS SPECIFIED IN SECTION 03300.
4. SPACERS SHALL BE STAGGERED BETWEEN LAYERS TO PREVENT FORMATION OF WEAK AREAS. DUCT SPACERS SHALL BE UNDERGROUND DEVICES WUNPEECE, OR EQUAL. MINIMUM OF 12" BETWEEN DUCT SPACERS.



MOUNTING FOR LIGHT POLE ON PAD

DETAIL 3 / VAR



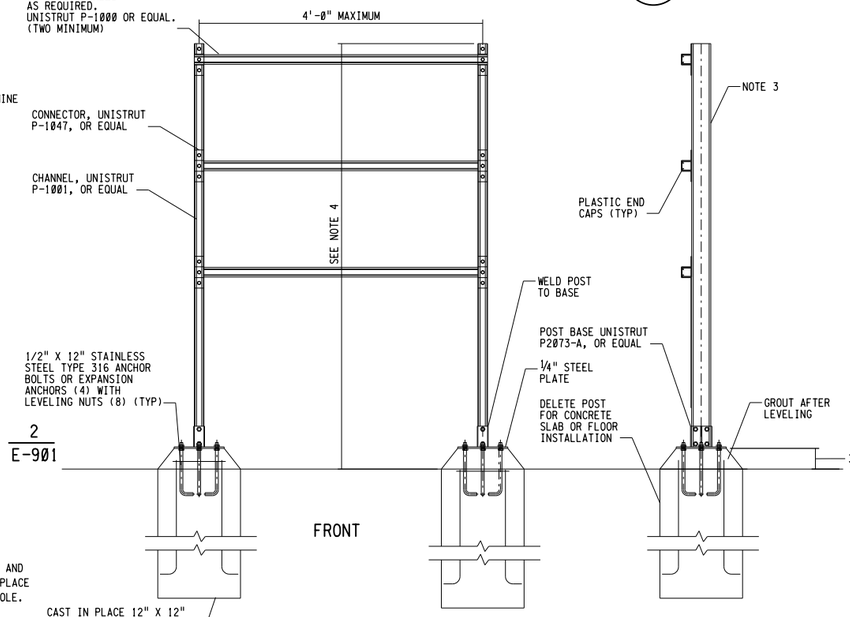
NOTES

1. PROVIDE TERMINAL BOX NEMA 4X 316 SS. MOUNT BOX ON WALL PROVIDE TERMINAL BLOCKS. TERMINATE SPARE WIRES FOR FUTURE USE.

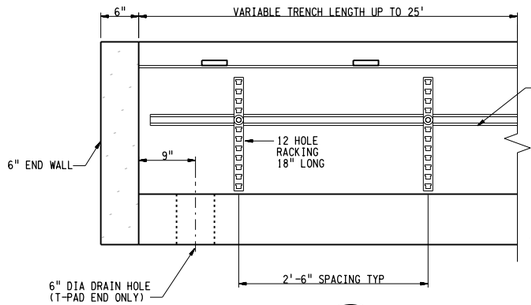
SECTION B / E-103

NOTES

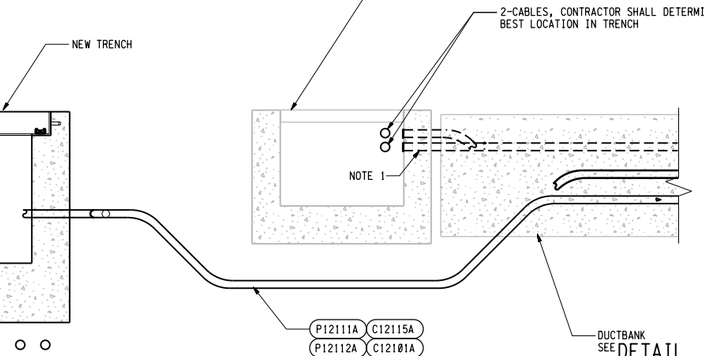
1. ALL STRUCTURAL STEEL SHALL BE 316 STAINLESS STEEL, UNLESS OTHERWISE NOTED.
2. MOUNT INDICATORS OR EQUIPMENT OPERATING HANDLES FOUR TO FIVE FEET ABOVE FLOOR OR PLATFORM.
3. SEE DETAIL 1/E-901 FOR STAND TO MOUNT SMALL EQUIPMENT.



EQUIPMENT RACK-NOTE 3
DETAIL NTS / 5 / VAR



SECTION C / E-901

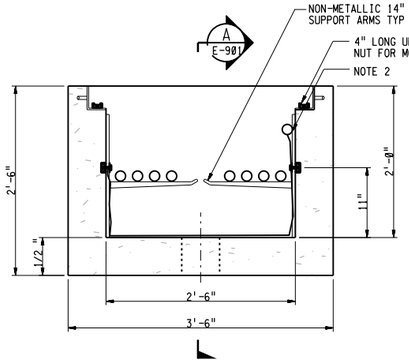


SECTION A / E-102

NOTES

1. CORE DRILL HOLES THRU TRENCH WALL FOR 3-2" CONDUITS. 1-2" HOLE AND CONDUIT IS FOR FUTURE CABLE FOR FUTURE FERRIC CHLORIDE TANKS. PLACE SPARE HOLE SO THAT IS ACCESSIBLE. PROVIDE REMOVABLE PLUG FOR HOLE.

SECTION A / E-901



NOTES

1. PROVIDE PRECAST CONCRETE TRENCH. SEE SECTION 16112 FOR TRENCH SPECIFICATIONS.
2. #4/0 BARE COPPER GROUND CABLE. PROVIDE THE GROUND CABLE THE ENTIRE LENGTH OF THE TRENCH, SUPPORTED NEAR THE TOP OF THE WALL EVERY 6 FEET. PROVIDE THE #6 GROUND CABLE WITH COMPRESSION FITTINGS FROM THE #4/0 CABLE TO EACH CABLE RACK. WHERE RACKS ARE SUPPORTED FROM THE SAME EMBEDDED CHANNEL IN THE TRENCH WALL. ONLY ONE OF THE RACKS WILL BE REQUIRED TO BE GROUNDED. THE RACKS ALONG 20 FEET OF TRENCH. GROUND CABLES SHALL CROSS THE TRENCH BY FOLLOWING THE WALLS AND FLOOR.

DETAIL 4 / VAR

3" ON ORIGINAL DOCUMENT
0 1 2 3

REGISTERED PROFESSIONAL ENGINEER GREGG ALAN BOLTZ No. E14094 Exp. 06-30-09 ELECTRICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER DAVID McEWEN No. 69475 Exp. 06-30-10 CIVIL STATE OF CALIFORNIA

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE @3AUG2012 RECORD DRAWING INSP: MAB SD317A		JK	
2		REVISED PER CORR #14	DCM	TMS	JK
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT

DESIGN BY:	D. McEWEN
DRAWN BY:	H. KARIMI
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

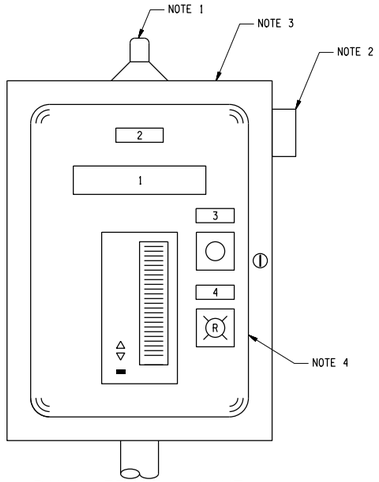
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL
FERRIC CHLORIDE SYSTEM
DETAILS

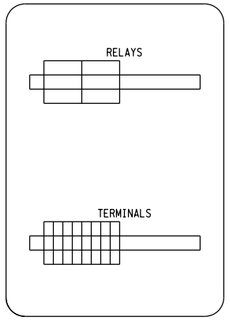
SCALE NO SCALE
DATE 23JAN2009

W12.10-E-901
DRAWING NUMBER

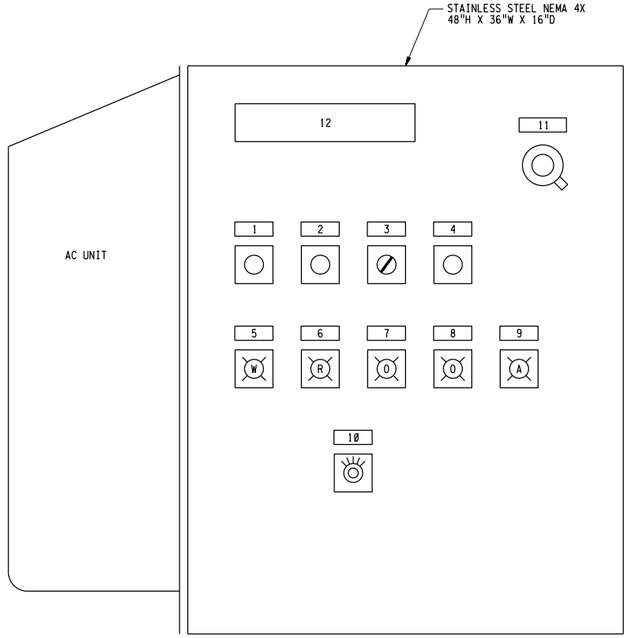
3
REV.

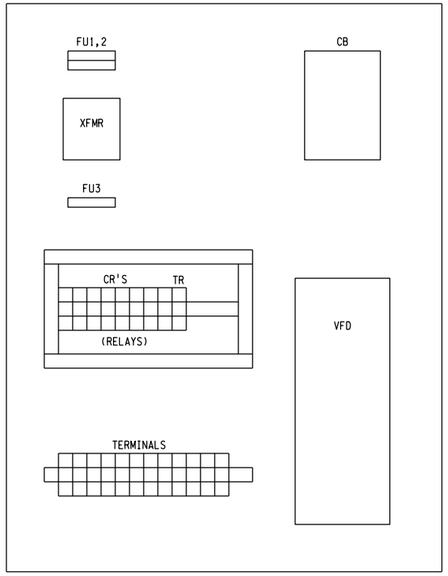


PANEL FRONT LAYOUT



INTERIOR PANEL LAYOUT





NOTES

1. PROVIDE ROTATING WARNING LIGHT, ORANGE LENS, FEDERAL SIGNAL MODEL 121S OR EQUAL.
2. PROVIDE ALARM HORN, FEDERAL SIGNAL MODEL 450 OR EQUAL.
3. PANEL SHALL BE NEMA 4X FIBERGLASS 20"H X 15"W X 12"D SWING OUT PANEL, HINGED WITH WINDOW COVER.
4. PROVIDE NAME PLATE FOR CONTROL PANEL WITH EQUIPMENT NUMBER AND DESCRIPTION.
5. PANEL SHALL BE NEMA 4X FIBERGLASS 20"H X 15"W X 12"D WITH HINGED WINDOW COVER.

LEGEND

- PUSH BUTTON
- PILOT LIGHT
  O = ORANGE
  R = RED
  W = WHITE
- SELECTOR SWITCH
- POTENTIOMETER

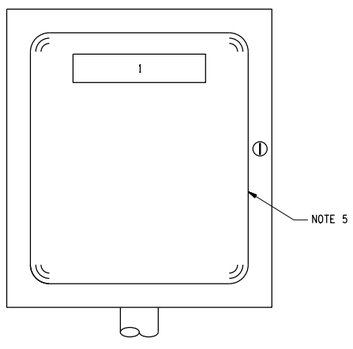
ITEM	NAMEPLATE
1.	NAMEPLATE: FERRIC CHLORIDE STORAGE TANK 1 LEVEL PANEL W12-FCL-PNL-101
2.	HIGH-HIGH LEVEL ALARM
3.	ALARM SILENCE
4.	TANK FULL

W12-FCL-PNL-101
NAME PLATE LEGEND

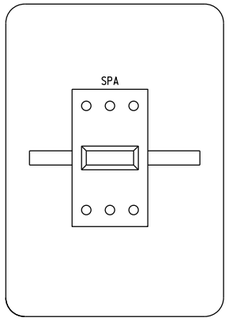
ITEM	NAMEPLATE
1.	NAMEPLATE: FERRIC CHLORIDE STORAGE TANK 2 LEVEL PANEL W12-FCL-PNL-101
2.	HIGH-HIGH LEVEL ALARM
3.	ALARM SILENCE
4.	TANK FULL

W12-FCL-PNL-102
NAME PLATE LEGEND

ITEM	DISCRIPTION
W12-FCL-PNL-101	FERRIC CHLORIDE STORAGR TANK 1 LEVEL PANEL
W12-FCL-PNL-102	FERRIC CHLORIDE STORAGE TANK 2 LEVEL PANEL



PANEL FRONT LAYOUT



INTERIOR FRONT LAYOUT

ITEM	NAMEPLATE
1.	W12-FCL-PNL-115 SITE PROGRAMABLE ALARM PANEL

W12-FCL-PNL-115
NAME PLATE LEGEND

ITEM	DISCRIPTION
W12-FCL-PNL-115	FERRIC CHLORIDE FLOW ALARM PANEL

PANEL FRONT LAYOUT

ITEM	NAMEPLATE
1.	PUMP START
2.	PUMP STOP
3.	LOCAL-OFF-REMOTE
4.	RESET
5.	READY
6.	RUNNING
7.	MOTOR HIGH TEMPERATURE
8.	HIGH DISCHARGE PRESSURE
9.	NO FLOW ALARM
10.	MANUAL FLOW SETTING 50%-100%
11.	MAIN DISCONNECT
12.	W12-FCL-PNL-111 FERRIC CHLORIDE METERING PUMP 1 CONTROL PANEL

W12-FCL-PNL-111
NAME PLATE LEGEND

INTERIOR FRONT LAYOUT

ITEM	NAMEPLATE
1.	PUMP START
2.	PUMP STOP
3.	LOCAL-OFF-REMOTE
4.	RESET
5.	READY
6.	RUNNING
7.	MOTOR HIGH TEMPERATURE
8.	HIGH DISCHARGE PRESSURE
9.	NO FLOW ALARM
10.	MANUAL FLOW SETTING 50%-100%
11.	MAIN DISCONNECT
12.	W12-FCL-PNL-112 FERRIC CHLORIDE METERING PUMP 2 CONTROL PANEL

W12-FCL-PNL-112
NAME PLATE LEGEND

ITEM	DISCRIPTION
W12-FCL-PNL-111	FERRIC CHLORIDE METERING PUMP 111
W12-FCL-PNL-112	FERRIC CHLORIDE METERING PUMP 112





3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING	INSP. MAB	SD317A	JK
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT
EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	XXX
DRAWN BY:	R. KULNYS
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
ELECTRICAL
PANEL DETAILS

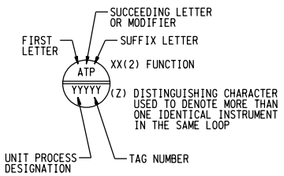
SCALE NO SCALE
DATE 23JAN2009
W12.10-E-902
DRAWING NUMBER
2
REV.

REF 7: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 8: W:\Drafters\SD\sd317A\ref\W12IObdr.consultant.mst
REF 9:
REF 4:
REF 5:
REF 6:
USER: fal
DATE: 26-AUG-2013 15:33
FILE: J:\SD\sd317A\W12IEC902.R02
PLOT SCALE: 0.166667:1
REF 1:
REF 2:
REF 3:

INSTRUMENT LETTER IDENTIFICATION TABLE

	FIRST LETTER (4)		SUCCEEDING LETTER (3)		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (5, 19)		ALARM		
B	BURNER, COMBUSTION, FIRE		USER'S CHOICE(1)	USER'S CHOICE(1)	USER'S CHOICE(1)
C	CONDUCTIVITY			CONTROL(13)	CLOSED
D	DENSITY, DAMPER	DIFFERENTIAL(4)			DISCRETE
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		ENERGIZED
F	FLOW RATE	RATIO(FRACTION)			FAILOVER RESET
G	USER'S CHOICE (1)		GLASS VIEWING DEVICE(9)		READY
H	HAND				1ST ALARM OR HI
I	CURRENT (ELECTRICAL)		INDICATE (10)		INCREASE
J	POWER	SCAN (7)			MOTOR POWER
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION(22)	
L	LEVEL		LIGHT (11)		3RD ALARM OR LOW
M	MOISTURE/MASS	MOMENTARY(4)			MANUAL
N	EQUIPMENT STATUS		REMOTE I/O INPUT	USER'S CHOICE(1)	USER'S CHOICE(1)
O	VIDEO		ORIFICE,RESTRICTION		OPENED
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		STOP
Q	QUANTITY, TORQUE	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD (ER)		RUNNING
S	SPEED/FREQUENCY	SAFETY(8)		SWITCH(13)	
T	TEMPERATURE			TRANSMIT(18)	
U	MULTIVARIABLE (6)		MULTIFUNCTION(12)	MULTIFUNCTION(12)	MULTIFUNCTION(12)
V	VIBRATION, MECHANICAL ANALYSIS(19)			VALVE,DAMPER, LOUVER (13)	
W	WEIGHT, FORCE		WELL		
X	SPECIAL/EQUIPMENT	X AXIS	SPECIAL EQUIP	SPECIAL EQUIP	SPECIAL EQUIP
Y	EVENT, STATE, COMPUTER CONTROL OUTPUT	Y AXIS		RELAY,COMPUTE, CONVERT(13,14,18)	
Z	POSITION, DIMENSION	Z AXIS		DRIVER,ACTUATOR, SPECIAL FINAL CONTROL ELEMENT	

EXAMPLE



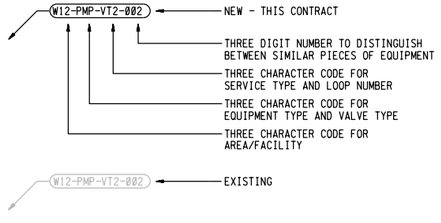
NOTES FOR TABLE

1. ANY UNASSIGNED LETTER IS DEFINED AS A USER'S CHOICE LETTER WHICH IS INTENDED TO BE USED TO COVER A MEANING FOR A PARTICULAR PROJECT.
2. "X" IS USED TO REPRESENT ANY "SPECIAL" FUNCTION OR VARIABLE AND MAY BE DEFINED AS FOLLOWS:

SPECIAL FUNCTION OR VARIABLE

COND	CONDUCTIVITY
I/P	CURRENT TO PNEUMATIC
OO	ON-OFF (E.G. FOR LAMPS)
OC	OPEN-CLOSED
SS	START-STOP
SCD	STREAMING CURRENT
TURB	TURBIDITY
CL2	CHLORINE
FLUO	FLUORIDE

EQUIPMENT DESIGNATION SYSTEM



VALVE TYPE CODES

AGV	GATE VALVE ABOVE GROUND
BCV	BALL CHECK VALVE
BLV	BALL VALVE
BTV	BUTTERFLY VALVE
CCV	CUSHIONED CHECK VALVE
EPV	ECCENTRIC PLUG VALVE
KGV	KNIFE GATE VALVE
SCV	SWING CHECK VALVE
UGV	GATE VALVE UNDERGROUND
VDR	VALVE, DRAIN
VDW	VALVE, WASHDOWN
VLV	VALVE
VPY	VALVE, POLYMER
VSL	VALVE, SLUDGE
VSU	VALVE, SUPERNATANT
V1W	VALVE, NO.1 WATER
V2W	VALVE, NO.2 WATER
V3W	VALVE, NO.3 WATER

EQUIPMENT TYPE CODES

ACP	AIR COMPRESSORS
AGC	AERATED GRIT CHAMBER
BIO	BIO FILTER
CFR	CHEMICAL FEEDERS
CRN	CRANES
EML	EMERGENCY LIGHTS
ENG	ENGINES
FAN	FANS
FLT	FILTERS
INS	INSTRUMENTATION
MCC	MOTOR CONTROL CENTERS
MFE	MAGNETIC FLOW METER
MSL	MISCELLANEOUS EQUIPMENT
MTR	MOTORS
MXR	MIXERS
PDR	PULSATION DAMPENER
PMP	PUMPS.
SEE	STATIONARY ELEC. EQUIP.
SGR	SLUDGE GRINDERS
SGT	SLUICE GATES
SPR	SPEED REDUCERS
TFD	TRANSFORMERS
TKS	TANKS
TNK	TANK
XRF	TRANSFORMER

EQUIPMENT SYMBOLS

- BALL VALVE
- GATE VALVE
- S — 4-WAY SOLENOID ACTIVATED VALVE
- CHECK VALVE
- BUTTERFLY VALVE
- PRESSURE ACTIVATED VALVE
- SELF ACTUATED PRESSURE CONTROL VALVE
- BALL CHECK VALVE OR ANTI-SYPHON
- OR PLUG VALVE
- DOUBLE ACTION CYLINDER ACTUATOR
- RELIEF VALVE
- S SOLENOID ACTUATED; M MOTOR ACTUATED; P PNEUMATICALLY OPERATED; H HYDRAULICALLY ACTUATED
- FLEXIBLE CONNECTION
- 3 WAY BALL VALVE
- UNION
- "Y" STRAINER
- CAP
- PLUG
- REDUCED PRESSURE ZONE BACKFLOW PREVENTOR W/RELIEF
- FLUSH CONNECTOR M=MALE F=FEMALE
- INJECTOR, EJECTOR
- CONCENTRIC REDUCER/INCREASER
- ECCENTRIC REDUCER/INCREASER
- DIAPHRAGM SEAL
- ANNULAR SEAL
- QUICK DISCONNECT COUPLING W/CAP
- FAN
- MIXER
- CENTRIFUGAL PUMP
- ROTARY LOBE PUMP
- CONCENTRIC TUBE HEAT EXCHANGER
- SPIRAL HEAT EXCHANGER
- GRINDER
- SUMP PUMP
- PROGRESSIVE CAVITY PUMP
- VFD — VARIABLE FREQUENCY DRIVE (VSD - VARIABLE SPEED DRIVE)
- SIGHT GLASS
- M — ELECTROMAGNETIC FLOWMETER
- 3-WAY PLUG VALVE
- ULTRASONIC LEVEL OR FLOW
- VOICE COMMUNICATION POINT
- ATMOSPHERIC VENT
- ATMOSPHERIC VENT WITH BIRD SCREEN
- AIR VENT AND/OR VACUUM RELEASE
- INLET FILTER OR SILENCER
- SEDIMENT TRAP
- DRIP OR AUTOMATIC DRIP TRAP
- AIR TRAP
- DRAIN
- CONDENSATION TRAP
- LIQUID SURFACE
- N E — NEW TO EXISTING PIPE CONNECTION
- FI — ROTAMETER
- CALIBRATION COLUMN
- FLAME ARRESTER
- LS — FLOAT SWITCH
- TE — THERMOWELL
- M — MOTOR
- C — CONTROL UNIT

LOGIC & CONTROL SEQUENTIAL SYMBOLS

- I-2 — INTERLOCK SYMBOL WITH NUMBER TO DESCRIBE CONTROL STATEMENTS OR INTERLOCK FUNCTIONS ON THE P&ID
- R — RESET
- I OR I — INTERLOCK SYMBOL

RTU / COMPUTER SYMBOLS

- XXXX / XXXX — NORMALLY ACCESSIBLE TO OPERATOR AS INDICATOR/CONTROLLER/RECORDER OR ALARM POINT
- XXXX / XXXX / XXXX — NORMALLY NOT ACCESSIBLE TO OPERATOR AS
  a. INPUT/OUTPUT INTERFACE
  b. COMPUTATION/SIGNAL CONDITIONING WITHIN THE COMPUTER
  c. BLIND CONTROLLER OR SOFTWARE CALCULATION MODULE

INSTRUMENT OR FUNCTION SYMBOLS

- FIELD LOCATED INSTRUMENT
- FRONT FACE FIELD LOCAL CONTROL PANEL MOUNTED (OPERATOR ACCESSIBLE)
- INSIDE FIELD LOCAL CONTROL PANEL MOUNTED (NORMALLY NOT OPERATOR ACCESSIBLE)
- FRONT FACE MAJOR CONTROL ROOM PANEL CONSOLE MOUNTED
- INSIDE MAJOR CONTROL ROOM PANEL CONSOLE MOUNTED
- LOCAL ON-OFF INDICATING LAMPS
- REMOTE ON-OFF INDICATING LAMPS
- BACKUP CONTROL AND DISPLAY TO CONFIGURABLE CONTROL SYSTEM
- CONFIGURABLE CONTROL SYSTEM ACCESSIBLE TO OPERATOR
- CONFIGURABLE CONTROL SYSTEM NOT ACCESSIBLE TO OPERATOR
- NORMALLY ACCESSIBLE TO OPERATOR AS PACKAGED PROGRAMMABLE LOGIC CONTROLLER (PLC) OR DIGITAL LOGIC CONTROL INTEGRAL TO CONTROL SYSTEM
- NORMALLY NOT ACCESSIBLE TO OPERATOR AS PACKAGED PROGRAMMABLE LOGIC CONTROLLER (PLC) OR DIGITAL LOGIC CONTROL INTEGRAL TO CONTROL SYSTEM
- DCS - REMOTE I/O
- MICROWAVE SYSTEM
- EXISTING FIELD INSTRUMENT

PROCESS INDICATORS

- XXXXXXXXX — INTERFACE TO OR FROM PROCESS NUMBER INDICATES DRAWING WHERE CONTINUED
- D XX / XX S — XX = INTERFACE NO. (2 DIGITS); D = DESTINATION DRAWING No.; S = SOURCE DRAWING No.
- INTERFACE TO OR FROM PROCESS EXTERNAL TO PROJECT
- 12-CENT — PIPE IDENTIFIER
- INTERLOCK SYMBOL WITH NUMBER TO DESCRIBE CONTROL STATEMENTS OR INTERLOCK FUNCTIONS ON THE P&ID
- STREAM/LINE NUMBER

SIGNAL DESIGNATORS

- ANALOG/DISCRETE CONTROL SIGNAL
- a. DIGITAL/ANALOG COMMUNICATION DATA LINK. b. DIGITAL CONTROL SYSTEM SOFTWARE LINK BETWEEN FUNCTION MODULES.
- ELECTROMAGNETIC, RADIATION, OR SONIC SIGNAL WITHOUT TUBING OR WIRING
- ELECTRICAL HEAT TRACING ON VESSEL
- DI DO AI AO — ELECTRIC (DISCRETE / ANALOG) CONTROL SIGNALS
- DIRECT PROCESS CONNECTION
- MECHANICAL LINK
- CAPILLARY TUBING (FILLED SYSTEM)
- PNEUMATIC SYSTEM
- HYDRAULIC SIGNAL
- 1 / 1 — CONTINUATION OF SIGNAL OR SAMPLE LINE

VALVE DESIGNATIONS

NO	NORMALLY OPEN
NC	NORMALLY CLOSED
FO	FAIL OPEN
FC	FAIL CLOSED

SWITCH DESIGNATIONS

LOR	LOCAL-OFF-REMOTE
HOA	HAND-OFF-AUTOMATIC
PB	PUSH BUTTON
SS	START-STOP
LOS	LOCK OUT STOP

3" ON ORIGINAL DOCUMENT

0 1 2 3

REGISTERED PROFESSIONAL ENGINEER — GREGG ALAN BOLTZ — No. E14094 — Exp. 06-30-09 — ELECTRICAL — STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER — DAVID McEWEN — No. 69475 — Exp. 06-30-10 — CIVIL — STATE OF CALIFORNIA

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT — EBMUD

DESIGN BY:	M. SEKANDER
DRAWN BY:	F. BURKE
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

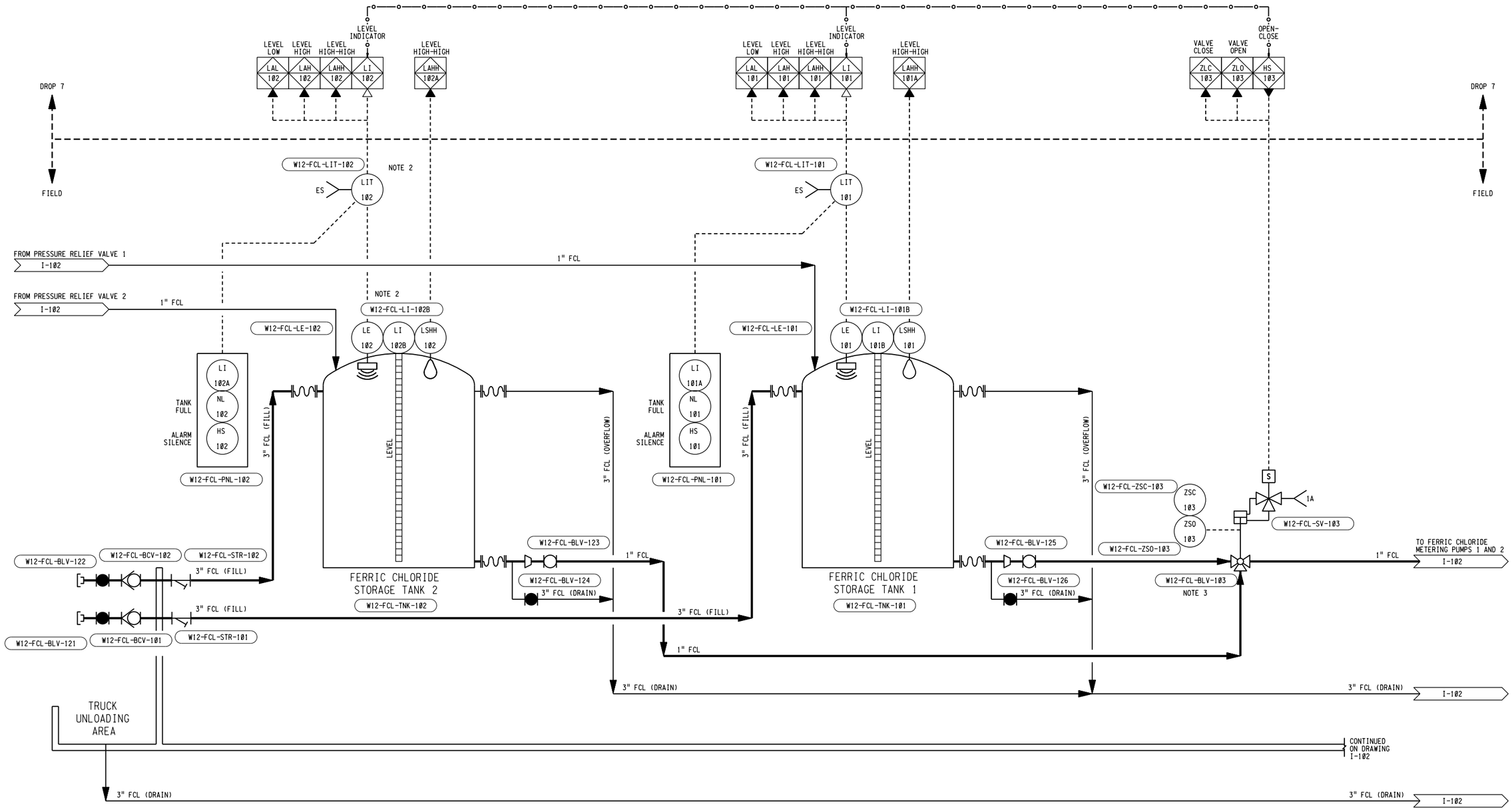
MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
INSTRUMENTATION AND P&IDs

SYMBOLS AND DESIGNATIONS

SCALE NO SCALE | DATE 23JAN2009 | DRAWING NUMBER W12.10-I-001 | REV. 2

REF 7; REF 8; REF 9;
REF 4; REF 5; REF 6;
REF 1: W:\Drafters\SD\sd317A\ref\SD317-bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W12Bdcr.consultant.mst
REF 3:

USER: fal
DATE: 26-AUG-2013 15:23
FILE: J:\SD\sd317A\W12I001.DGN
PLOT SCALE: 0.166667'/1



REF 4; REF 5; REF 6;

REF 1: W:\Q-ofters\SD\sd317A\ref\SD317-bdr-mst
REF 2: W:\Q-ofters\SD\sd317A\ref\W12Bdor-consultant.mst
REF 3:

USER: fal
DATE: 26-AUG-2013 15:33
FILE: J:\SD\sd317A\W12I101.R03

PLOT SCALE: 0.166667:1

NOTES

1. PROVIDE WESHLER, BG-252 EDGEWISE 6" VERTICAL WITH 4 DIGIT DISPLAY, SETPOINT OF HIGH/HIGH-HIGH, RED LED, INPUT 4-20 mA AND RETRANSMIT 4-20 mA, POWER 120 VAC, SINGLE BARGRAPH.
2. PROVIDE STRIP-TYPE LEVEL INDICATOR PER SPEC 13217.
3. THREE WAY BALL VALVE SHALL BE CONSTRUCTED WITH A PVC BODY, EPOM SEALS, A PTFE SEAT AND A PNEUMATIC ACTUATOR AND SHALL BE TYPE 23 MULTIPORT BY ASAHI / AMERICA,TRUE UNION 3-POSITION BY CHEMTROL, OR EQUAL.

REGISTERED PROFESSIONAL ENGINEER GREGG ALAN BOLTZ No. E14094 Exp. 06-30-09 ELECTRICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER DAVID McEWEN No. 69475 Exp. 06-30-10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
A	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP: MAB SD317A		JK	
A		P&ID CLARIFICATION			
A		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT EBMUD

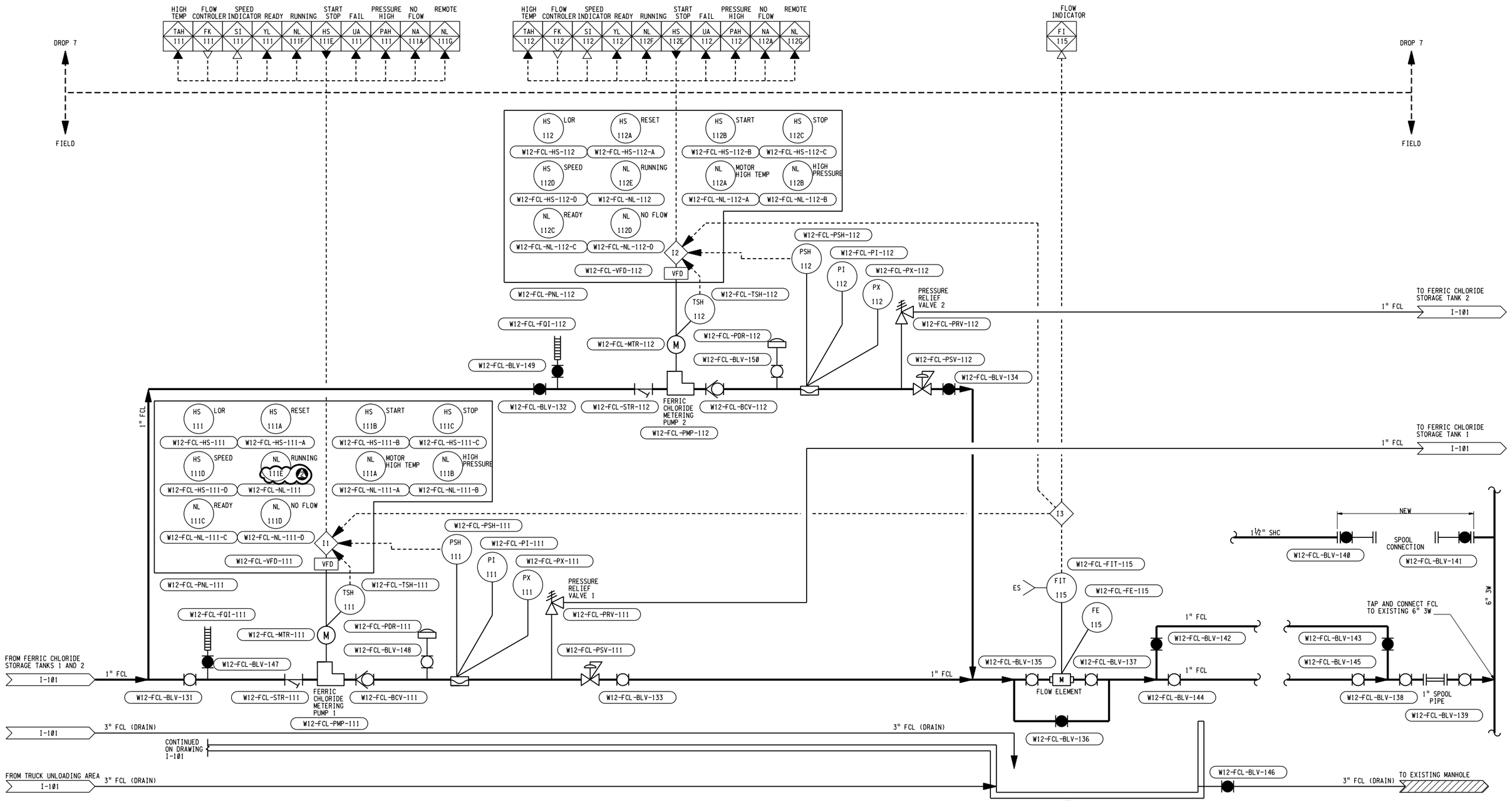
SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	D. McEWEN
DRAWN BY:	M. CHAVES
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
INSTRUMENTATION AND P&IDs
FERRIC CHLORIDE SYSTEM
1 OF 2

SCALE NO SCALE
DATE 23JAN2009
W12.10-I-101 DRAWING NUMBER
3 REV.



3" ON ORIGINAL DOCUMENT
0 1 2 3

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
A	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
A		P&ID CLARIFICATION			
A		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

REGISTERED PROFESSIONAL ENGINEER GREGG ALAN BOLTZ No. E14094 Exp. 06-30-09 ELECTRICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER DAVID McEWEN No. 69475 Exp. 06-30-10 CIVIL STATE OF CALIFORNIA

CONSULTANT

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	D. McEWEN
DRAWN BY:	M. CHAVES
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

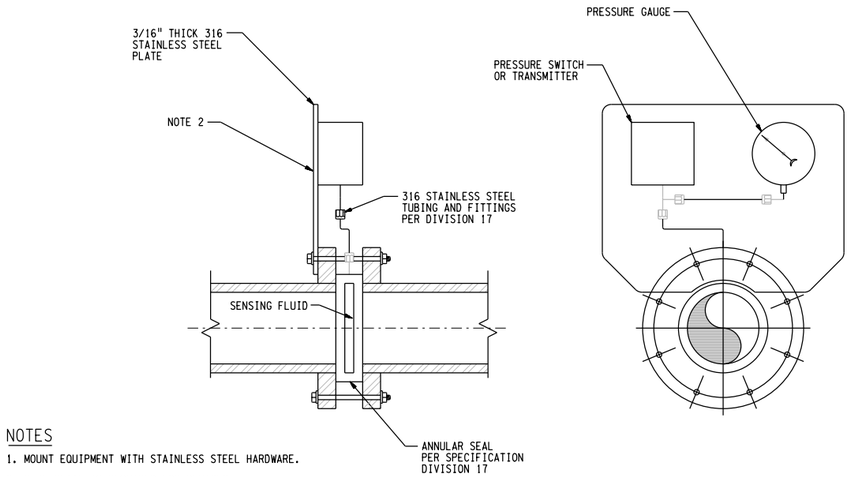
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
INSTRUMENTATION AND P&IDs
FERRIC CHLORIDE SYSTEM
2 OF 2

SCALE NO SCALE
DATE 23JAN2009

W12.10-I-102
DRAWING NUMBER

3
REV.

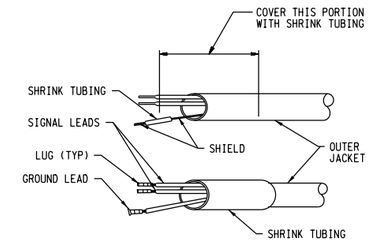


NOTES

1. MOUNT EQUIPMENT WITH STAINLESS STEEL HARDWARE.
2. SIZE PLATE AS REQUIRED FOR DEVICES.

ANNULAR SEAL WITH PRESSURE GAUGE AND SWITCH

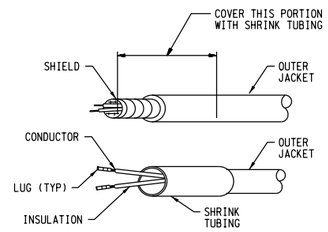
DETAIL 1 / VAR — SCALE: NO SCALE



TERMINATION OF SHIELDED SIGNAL CABLE

NOTE

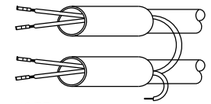
1. SHIELD GROUNDED AT TERMINATION



TERMINATION OF SHIELDED SIGNAL CABLE

NOTE

1. SHIELD NOT GROUNDED AT TERMINATION

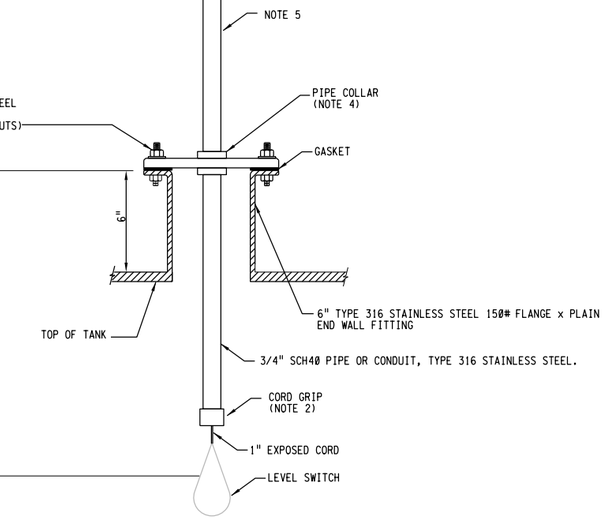


NOTE

1. UNACCEPTABLE METHOD OF GROUNDING SIGNAL CABLE SHIELD AT THE CONTROLLER END.

SIGNAL CABLE GROUNDING METHODS

DETAIL 2 / VAR — SCALE: NO SCALE

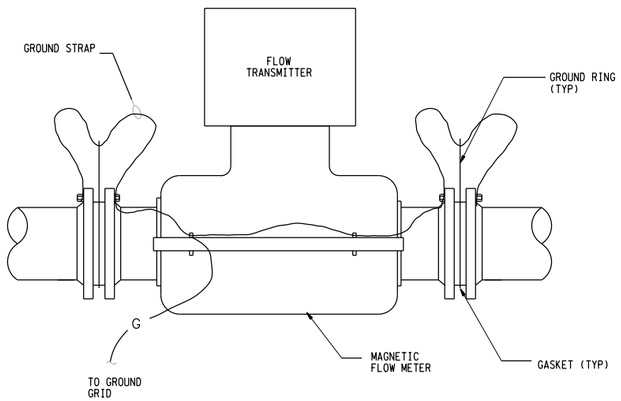


NOTES

1. DISTANCE REQUIRED FOR SWITCH TO ACTUATE AT SPECIFIED LEVEL (d) .
2. PROVIDE NON-METALIC CORD GRIP SIZED FOR CORD ON SWITCH, T&B 2672 SERIES OR EQUAL. CONNECT TO CONDUIT WITH TYPE 316 STAINLESS STEEL COUPLING. PROVIDE SIMILAR GRIP FOR CONDUIT STUB- UP (NOT SHOWN) ALSO.
3. COORDINATE FLANGE UNIT AND STAND PIPE WITH TANK SUPPLIER OR CONCRETE INSTALLATION WORK.
4. TWO-PIECE CLAMP-TYPE PIPE COLLAR, TYPE 316 STAINLESS STEEL, STAFFORD 19S101PST, OR EQUAL. PROVIDE ONE ON EACH SIDE OF COVER TO SECURE PIPE. PROVIDE ONE WRAP OF VINYL TAPE UNDER CLAMP (SCOTCH 33, OR EQUAL) IF NECESSARY TO BUILD UP PIPE DIAMETER. BORE 1.06" HOLE IN END CAP FOR PIPE.
5. PROVIDE MINIMUM 12" OF PIPE BETWEEN TOP COLLAR AND GRIP TO ALLOW FOR ADJUSTMENT OF SWITCH ACTUATION LEVEL.
6. PROVIDE SLACK IN CABLE TO ALLOW WITHDRAWAL OF SWITCH WITHOUT DISCONNECTION. STORE CABLE BY WRAPPING CABLE AROUND BASE OF FLANGE. CONDUIT STUP-UP (NOT SHOWN) SHALL BE WITHIN 6 INCHES OF FLANGE AND SAME HEIGHT AS FLANGE.

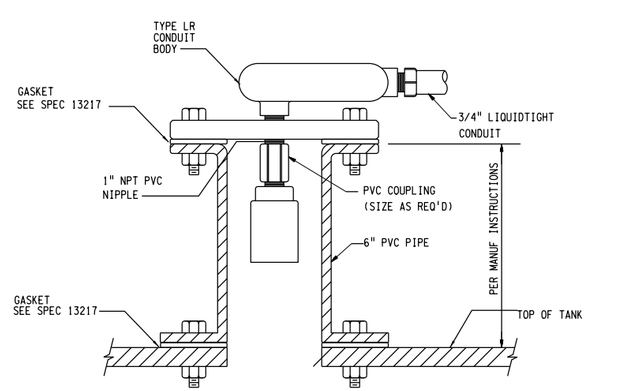
LEVEL SWITCH INSTALLATION - FLANGE MOUNTED

DETAIL 3 / VAR — SCALE: NO SCALE



MAGNETIC FLOW METER INSTALLATION

DETAIL 4 / VAR — SCALE: NO SCALE



MOUNTING FOR ULTRASONIC TRANSDUCER

DETAIL 5 / VAR — SCALE: NO SCALE

REGISTERED PROFESSIONAL ENGINEER — GREGG ALAN BOLTZ — No. E14094 — Exp. 06-30-09 — ELECTRICAL — STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER — DAVID McEWEN — No. 69475 — Exp. 06-30-10 — CIVIL — STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT (0 1 2 3)

BROWN AND CALDWELL

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO. 2 PER SD317A	FWB	-	TMS

CONSULTANT: EBMUD

DESIGN BY:	D. McEWEN
DRAWN BY:	H. KARIMI
DESIGN CHECKED BY: R.P.E. No. E14094	G. BOLTZ
ENGINEER IN RESPONSIBLE CHARGE R.P.E.No. C69475	DAVID McEWEN
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. C35503	TRACY MARIE STIGERS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
INFLUENT PUMP STATION
INSTRUMENTATION AND P&IDs
DETAILS

SCALE NO SCALE | DATE 23JAN2009 | W12.10-I-901 DRAWING NUMBER | 2 REV.

REF 1: W:\D-rfers\SD\sd317A\ref\SD317-tdr-mst
REF 2: W:\D-rfers\SD\sd317A\ref\W12108dr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fsh
DATE: 26-AUG-2013 15:34
FILE: J:\SD\sd317A\W12101901.R02

PLOT SCALE: 0.166666

REF 4;
REF 5;
REF 6;

REF 7;
REF 8;
REF 9;

REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2:
REF 3:

USER: fah
DATE: 26-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A001.R01

PLOT SCALE: 10.666667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

BUILDING DATA

EAST BAY MUNICIPAL UTILILTY DISTRICT
POWER GENERATION STATION
RENEWABLE ENERGY EXPANSIONS PROJECT
OAKLAND,CA

APPLICABLE CODES:	CBC- CALIFORNIA BUILDING CODE - 2007 EDITION CFC- CALIFORNIA FIRE CODE - 2007 EDITION CPC- CALIFORNIA PLUMBING CODE - 2007 EDITION CEC- CALIFORNIA ELECTRICAL CODE - 2007 EDITION CITY OF OAKLAND LOCAL CODES AND ORINANCES
CONSTRUCTION TYPE:	TYPE IIB UNSPRINKLED
OCCUPANCY GROUP:	F-1 WITH NON-SEPARATED B
FIRE PROTECTION:	SHALL BE EQUIPPED WITH A FIRE DETECTION AND ALARM SYSTEM
NO. OF STORIES:	1
AREA:	3,281 SF

LICENSED ARCHITECT
KAREN BURKS
NO. C-12893
EXP. 10/31/09
ARCHITECT
STATE OF CALIFORNIA

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

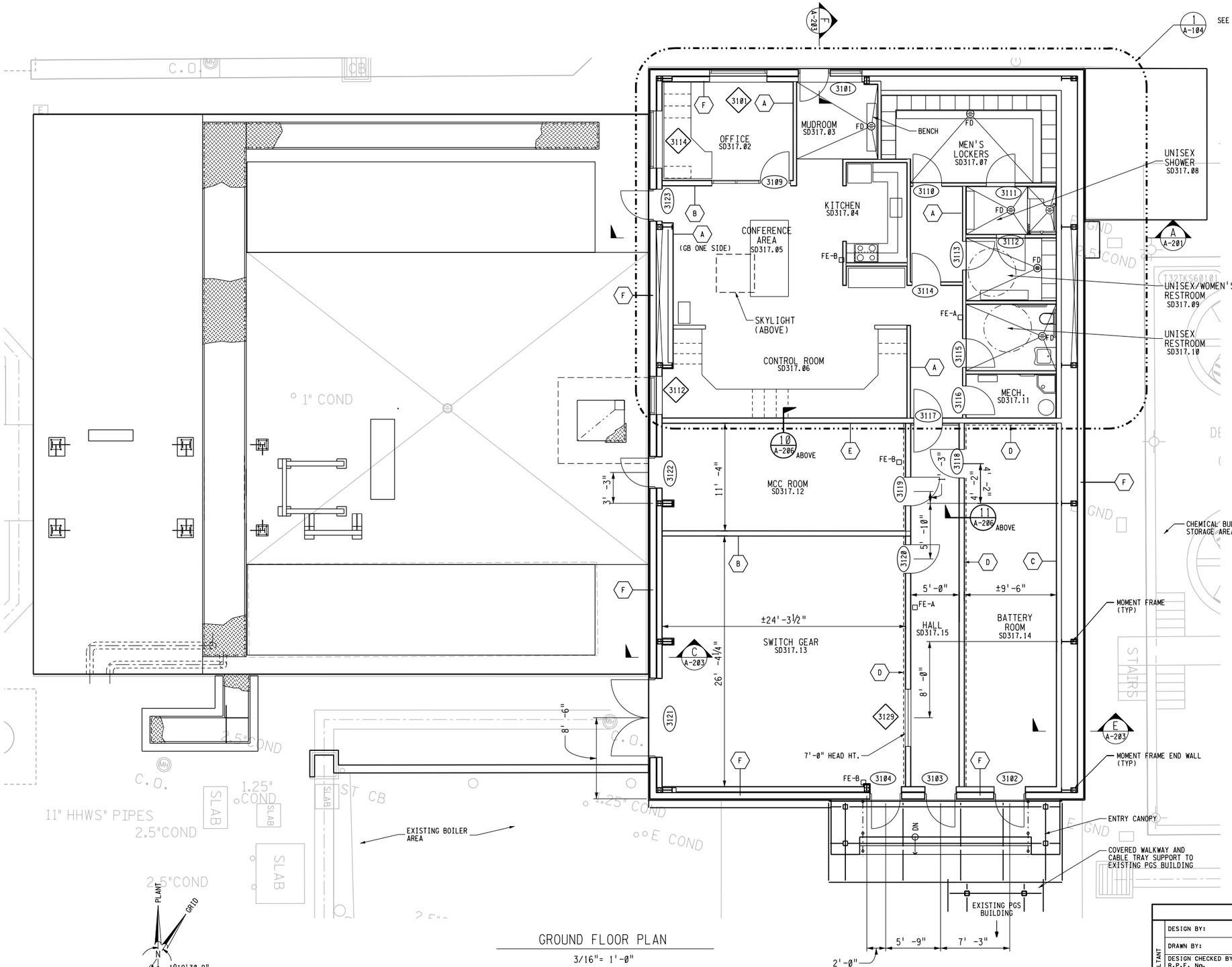
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS BUILDING
BUILDING DATA

SCALE NO SCALE
DATE JAN2009

W28.20-A-001
DRAWING NUMBER

1
REV.

REF 7: W:\Drafters\w20\w2000site.mst
REF 6:
REF 5:
REF 4: J:\SD\sd317A\w2820a101.MST
REF 3:
REF 2: W:\Drafters\SD\sd317A\ref\w28208ar_consultant.mst
REF 1: W:\Drafters\SD\sd317A\ref\sd317adr.mst
USER: fal
DATE: 25-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A101.R02
PLOT SCALE: 10.666667:1



GROUND FLOOR PLAN
3/16"= 1'-0"

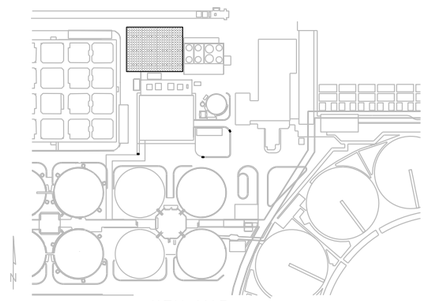
WALL TYPES

INTERIOR:

- A — INTERIOR PARTITION: 3 5/8" METAL STUDS 12' TALL WITH 5/8" GYPSUM WALL BOARD EACH SIDE.
- B — INTERIOR PARTITION: 6" METAL STUDS 12' TALL WITH 5/8" GYPSUM WALL BOARD EACH SIDE.
- C — INTERIOR PARTITION: 6" METAL STUD WITH 5/8" GYPSUM WALL BOARD ON ONE SIDE
- D — 1-HOUR RATED INTERIOR PARTITION: 6" METAL STUDS WITH 5/8" TYPE 'X' GYPSUM WALL BOARD EACH SIDE AND R-19 BATT INSULATION. WALL TO EXTEND TO UNDERSIDE OF ROOF DECK, U.N.O. SEE 10 AND 11/A-210
- E — SOUND INSULATED INTERIOR PARTITION: 6" METAL STUDS WITH 5/8" GYPSUM WALL BOARD EACH SIDE AND R-19 BATT INSULATION. WALL TO EXTEND TO UNDERSIDE OF ROOF DECK, U.N.O. SEE 11/A-210
- F — EXTERIOR WALL WITH METAL SIDING AND INSULATION

NOTES

1. DIMENSIONS TAKEN TO FACE OF STUDS OR CONCRETE UNLESS NOTED OTHERWISE.
2. SEE MECHANICAL DRAWINGS FOR LOUVER SIZES.
3. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR EQUIPMENT LOCATION AND NUMBERING.
4. BRACE TOP OF INTERIOR PARTION WALLS TO METAL BUILDING SYSTEM SECONDARY FRAMING.



KEY MAP

REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1	25FEB2009	ADDENDUM NO. 2 AS PER SD317A	DT	TGM	SKW

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	DAVID TSAI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No.	CARL GENTRY
PROJECT MANAGER R.P.E.No.M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No.M18392	SARWAN WASON

EBMUD

PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

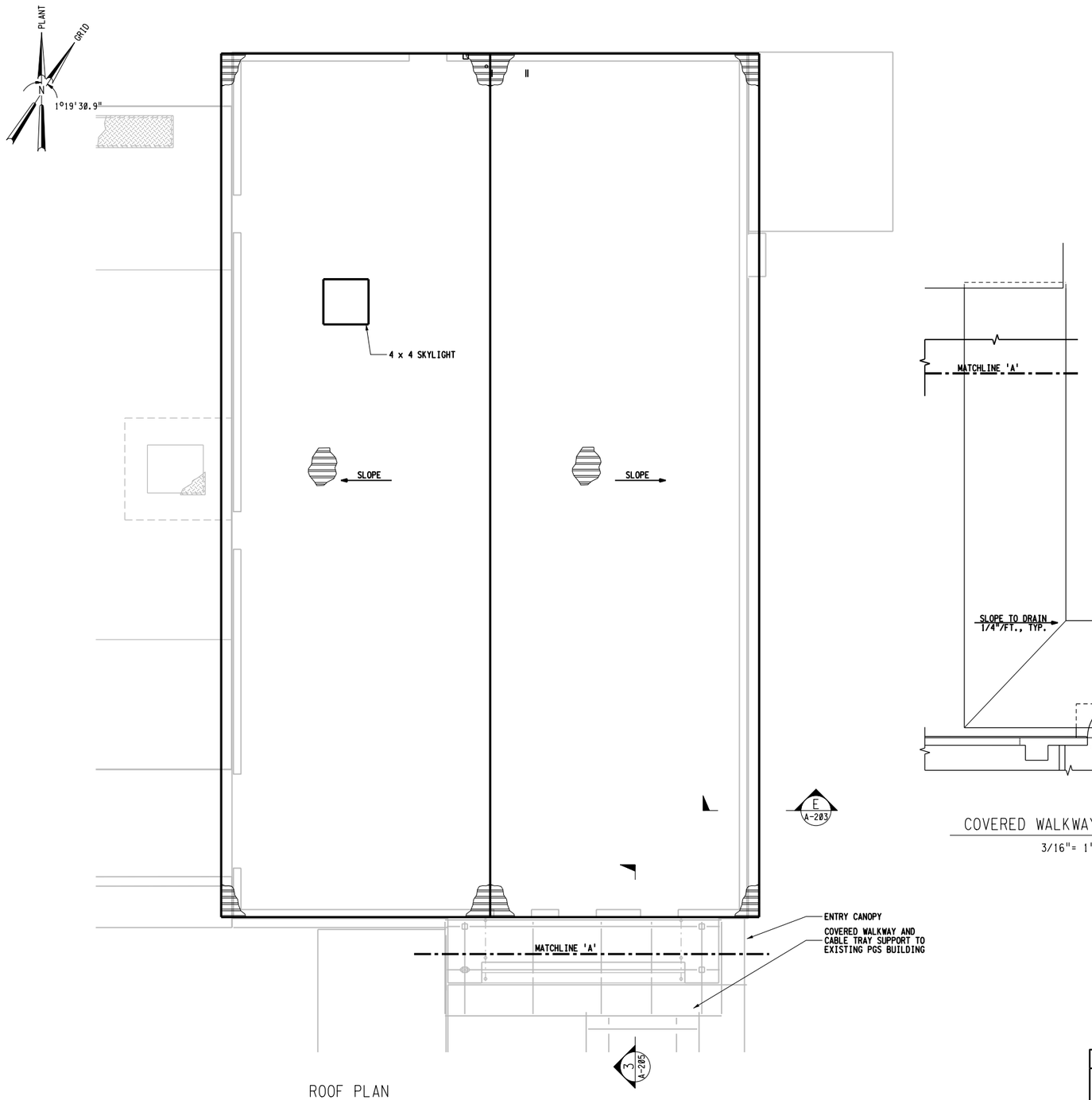
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
FLOOR PLAN

SCALE 3/16"=1'-0"
DATE JAN. 2009

W28.20-A-101
DRAWING NUMBER

2
REV.

REF 7:
REF 8: J:\SD\sd317A\w2820s100.mst
REF 4:
REF 5:
REF 6:
REF 1: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 3:
USER: fah
DATE: 28-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A102.R01
PLOT SCALE: 10.666667:1

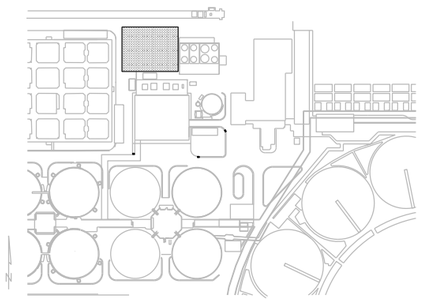


ROOF PLAN

3/16"= 1'-0"

COVERED WALKWAY ROOF PLAN

3/16"= 1'-0"



KEY MAP

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAI
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT

EBMUD

DESIGN BY:	DAVE TSAI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No.	CARL GENTRY
PROJECT MANAGER R.P.E.No.M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No.M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2

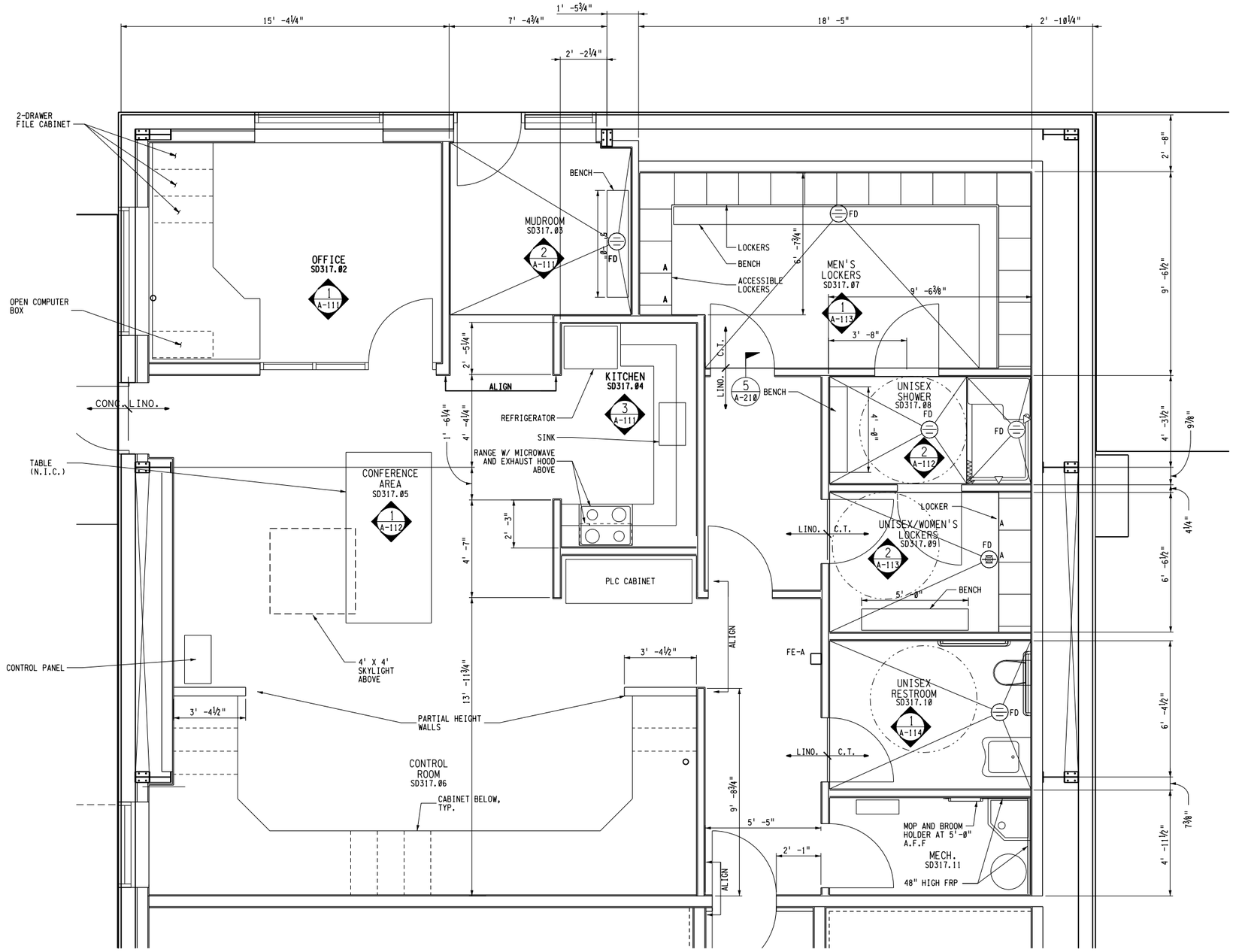
ARCHITECTURAL

PGS 2 BUILDING
LOWER ROOF PLAN

SCALE 3/16"=1'-0"
DATE JAN.2009

W28.20-A-102
DRAWING NUMBER

1
REV.



LICENSED ARCHITECT
KAREN BURKS
NO. C-12893
EXP. 10/31/09
ARCHITECT
STATE OF CALIFORNIA

PLANT GRID N 1°19'30.9"

1 A101 ENLARGED PLAN

3/8"=1'-0"

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT

EBMUD

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2

ARCHITECTURAL

PGS 2 BUILDING
ENLARGED PLAN

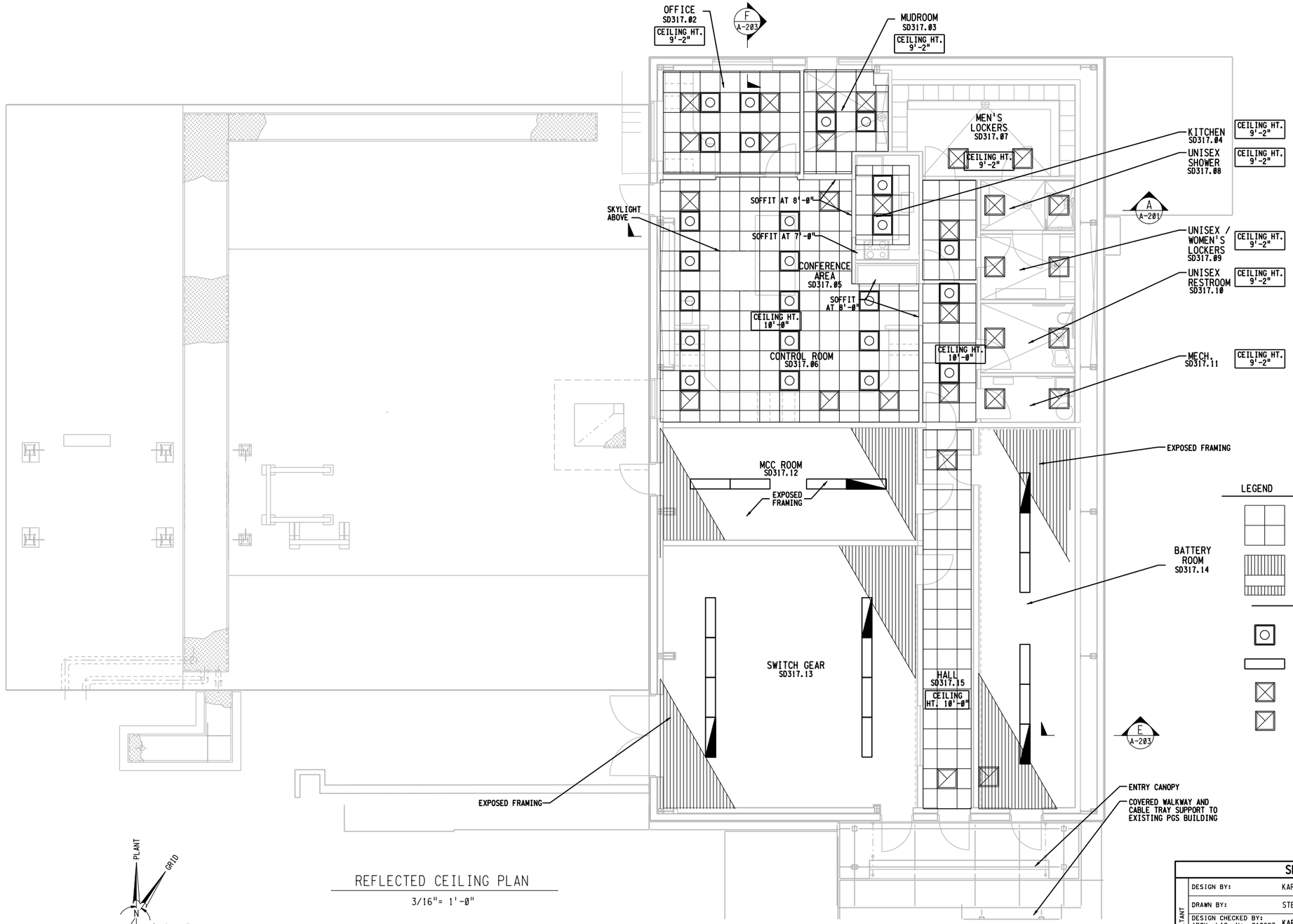
SCALE 3/8"=1'-0"
DATE JAN.2009

W28.20-A-104
DRAWING NUMBER

1
REV.

REF 7; J:\SD\sd317A\w2820s100.mst
REF 8;
REF 9;
REF 4;
REF 5;
REF 6; J:\SD\sd317A\w2820s101.MST
REF 1; W:\Drafters\SD\sd317A\ref\W2820dr_consultant.mst
REF 2;
REF 3;
USER: fai
DATE: 28-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A104.R01
PLOT SCALE: 5.333333:1

REF 7: J:\SD\sd317A\w2820a01.mst
REF 8: J:\SD\sd317A\w2820a01.mst
REF 9: J:\SD\sd317A\w2820a01.MST
REF 4:
REF 5:
REF 6: J:\SD\sd317A\w2820a105.MST
REF 1: W:\Drafters\SD\sd317A\ref\sd317bar.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820bar-consultant.mst
REF 3:
PLOT SCALE: 10.666667:1
USER: fah
DATE: 28-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A105.R01



LEGEND

- 2' x 2' ACOUSTIC CEILING TILE
- EXPOSED STEEL FRAMING AND METAL DECK
- 2' x 2' RECESSED FLUORESCENT LIGHT FIXTURE, SED
- SUSPENDED FLUORESCENT LIGHT FIXTURE, SED
- 2' x 2' SUPPLY AIR REGISTER, SMD
- 2' x 2' RETURN AIR REGISTER, SMD

REFLECTED CEILING PLAN

3/16"= 1'-0"

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

LICENSED ARCHITECT KAREN BURKS NO. C-12893 EXP. 10/31/09 ARCHITECT STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS

EBMUD

PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
REFLECTED CEILING PLAN

SCALE 3/16"=1'-0"
DATE JAN.2009

W28.20-A-105
DRAWING NUMBER

1
REV.

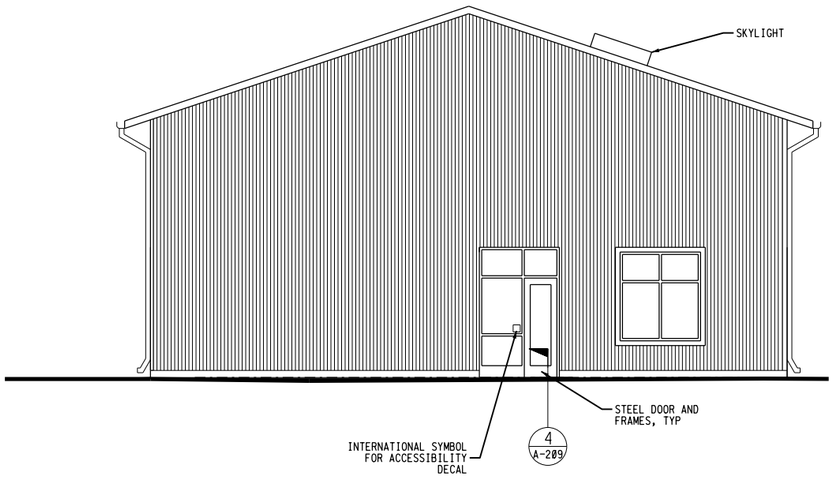
REF 7:
REF 8:
REF 9:

REF 4:
REF 5:
REF 6:

REF 1: W:\D-afters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\D-afters\SD\sd317A\ref\W2820bdr-consultant.mst
REF 3:

USER: fal
DATE: 26-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A106.R02

PLOT SCALE: 0.666667:1



NORTH ELEVATION

3/16"= 1'-0"

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1	25FEB2009	ADDENDUM NO. 2 AS PER SD317A	DT	TGM	SKW

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAI
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No.	CARL GENTRY
PROJECT MANAGER R.P.E.No.M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No.M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

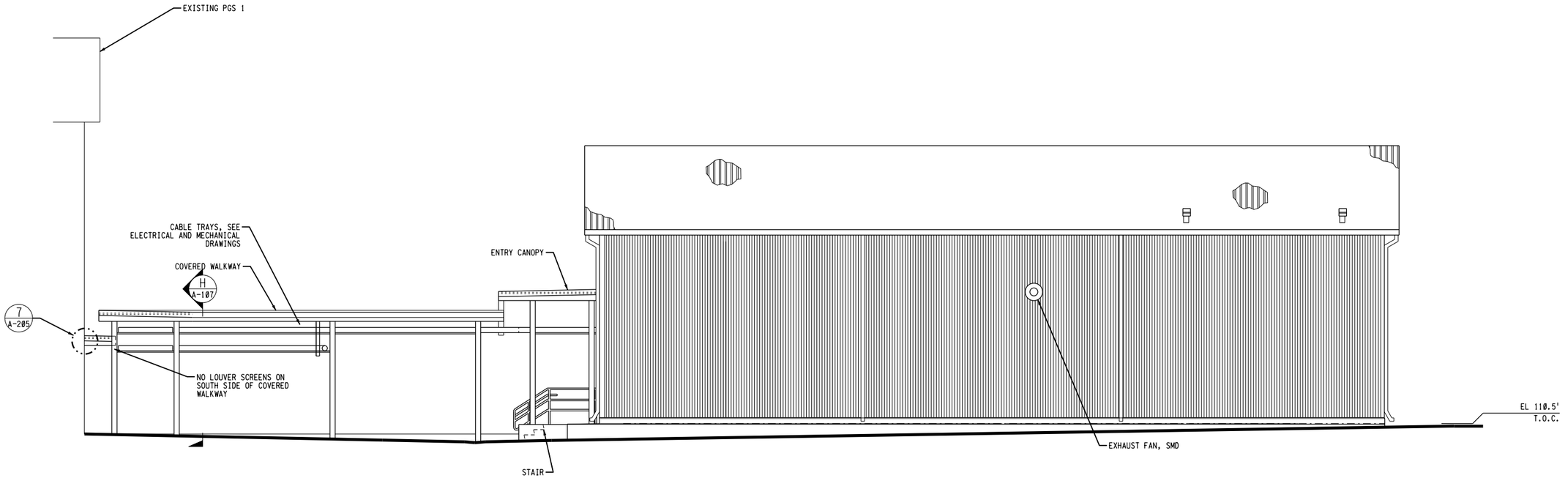
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2

ARCHITECTURAL

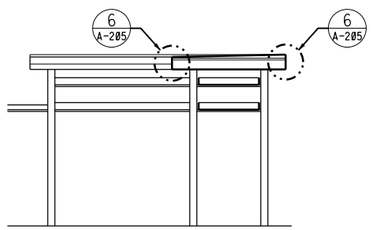
PGS 2 BUILDING
NORTH ELEVATION

SCALE	3/16"=1'-0"	W28.20-A-106 DRAWING NUMBER	2 REV.
DATE	JAN.2009		



EAST ELEVATION

3/16"= 1'-0"



WALKWAY H

3/16"=1'-0" A-107

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No.	CARL GENTRY
PROJECT MANAGER R.P.E.No.M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No.M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND. CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
EAST ELEVATION

SCALE 3/16"=1'-0"

DATE JAN.2009

W28.20-A-107
DRAWING NUMBER

1
REV.

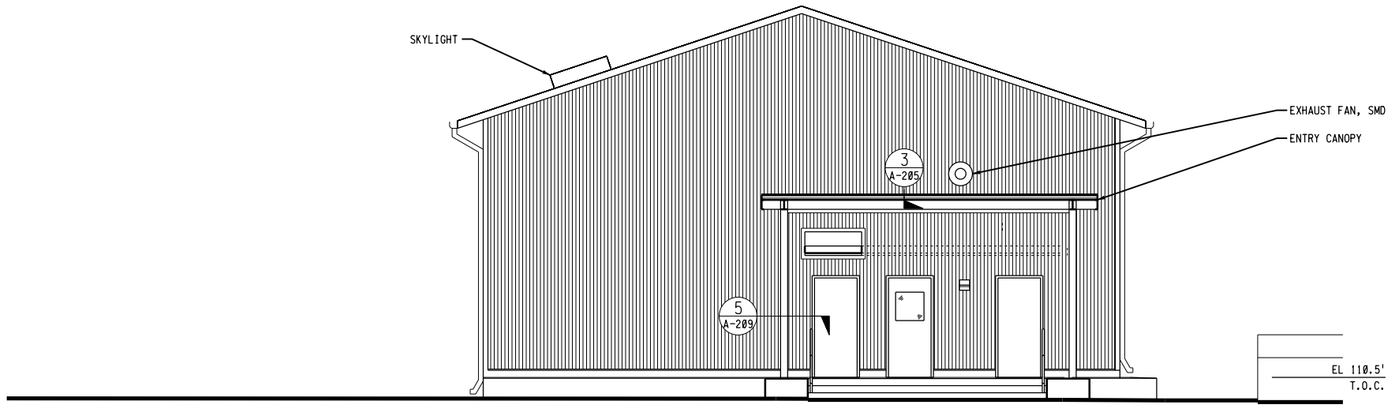
REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

REF 1: W:\Drafters\SD\sd317A\ref\sd317adr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820adr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fah
DATE: 22-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A107.R01

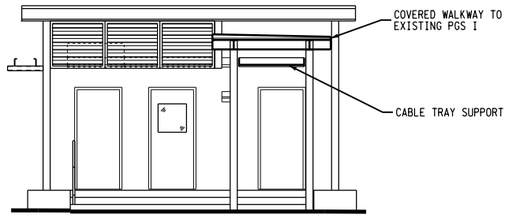
PLOT SCALE: 10.666667:1

REF 7:
REF 8:
REF 9:
REF 4:
REF 5:
REF 6:
REF 1: W:\Drafters\SD\sd317A\ref\w2820dor-mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820dor-consultant.mst
REF 3:
USER: fah
DATE: 26-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A108.R01
PLOT SCALE: 10.666667:1



SOUTH ELEVATION

3/16"= 1'-0"



SOUTH ENTRY CANOPY ELEVATION

3/16"= 1'-0"

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAI
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No.	CARL GENTRY
PROJECT MANAGER R.P.E.No.M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No.M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

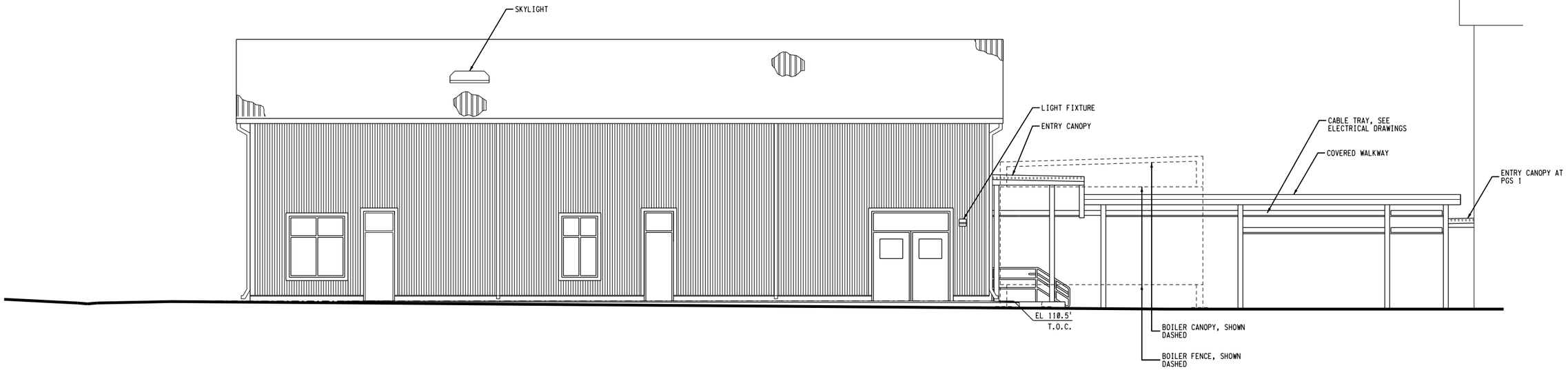
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
SOUTH ELEVATION

SCALE 3/16"=1'-0"
DATE JAN.2009

W28.20-A-108
DRAWING NUMBER

1
REV.

REF 7;
REF 8;
REF 9;
REF 4;
REF 5;
REF 6;
REF 1: W:\D-rters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\D-rters\SD\sd317A\ref\W28x28bdr_consultant.mst
REF 3:
USER: fai
DATE: 26-AUG-2013 15:26
FILE: J:\SD\sd317A\W28x28A109.R01
PLOT SCALE: 10.666667:1



WEST ELEVATION

3/16"= 1'-0"

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT EBMUD

DESIGN BY:	DAVE TSAI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No.	CARL GENTRY
PROJECT MANAGER R.P.E.No.M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No.M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

REGISTERED PROFESSIONAL ENGINEER DAVID TS-A No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

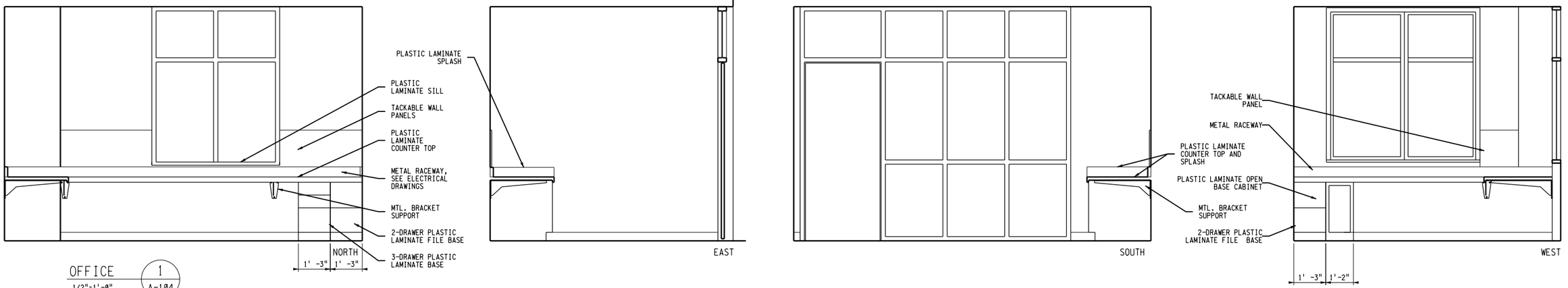
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
WEST ELEVATION

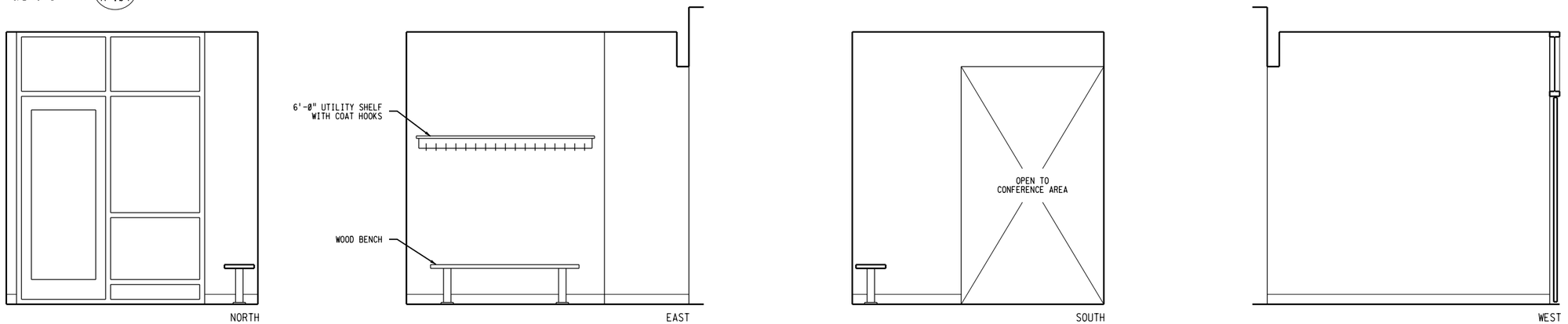
SCALE 3/16"=1'-0"
DATE JAN.2009

W28.20-A-109
DRAWING NUMBER

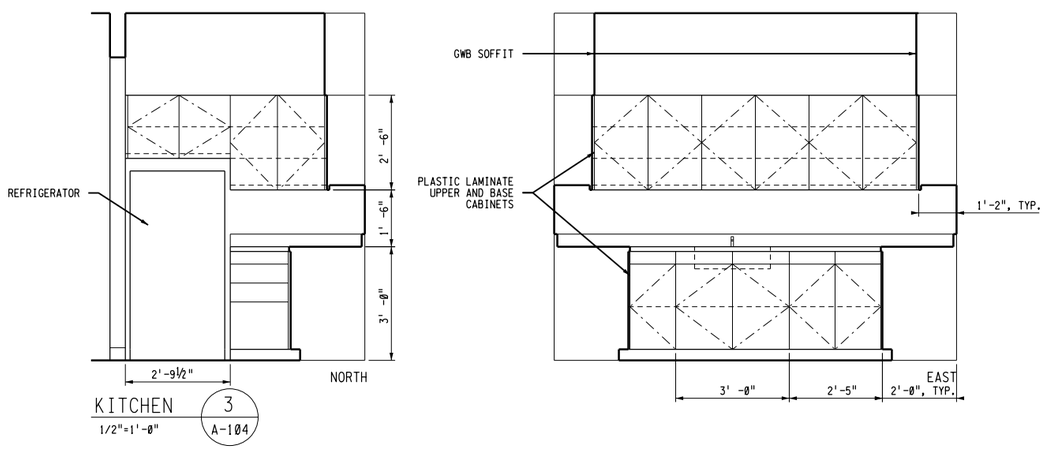
1
REV.



OFFICE 1 — 1/2"=1'-0" — A-104



MUDROOM 2 — 1/2"=1'-0" — A-104



KITCHEN 3 — 1/2"=1'-0" — A-104

LICENSED ARCHITECT KAREN BURKS NO. C-12893 EXP. 10/31/09 ARCHITECT STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A	JK		

CONSULTANT — EBMUD

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

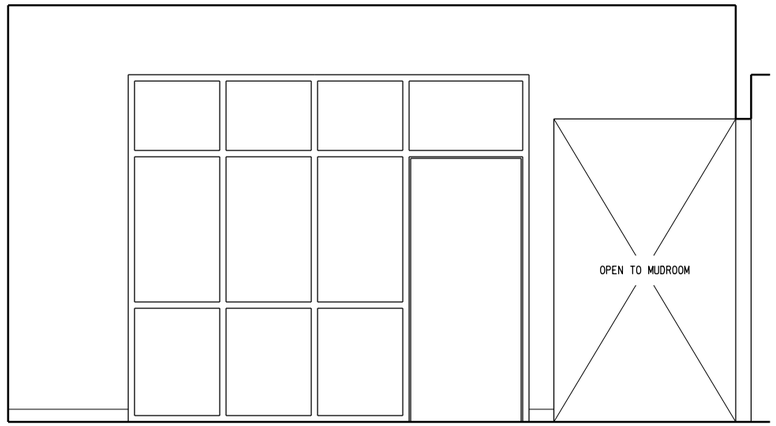
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
INTERIOR ELEVATIONS 1

SCALE 1/2"=1'-0" | DATE JAN.2009 | W28.20-A-111 DRAWING NUMBER | 1 REV.

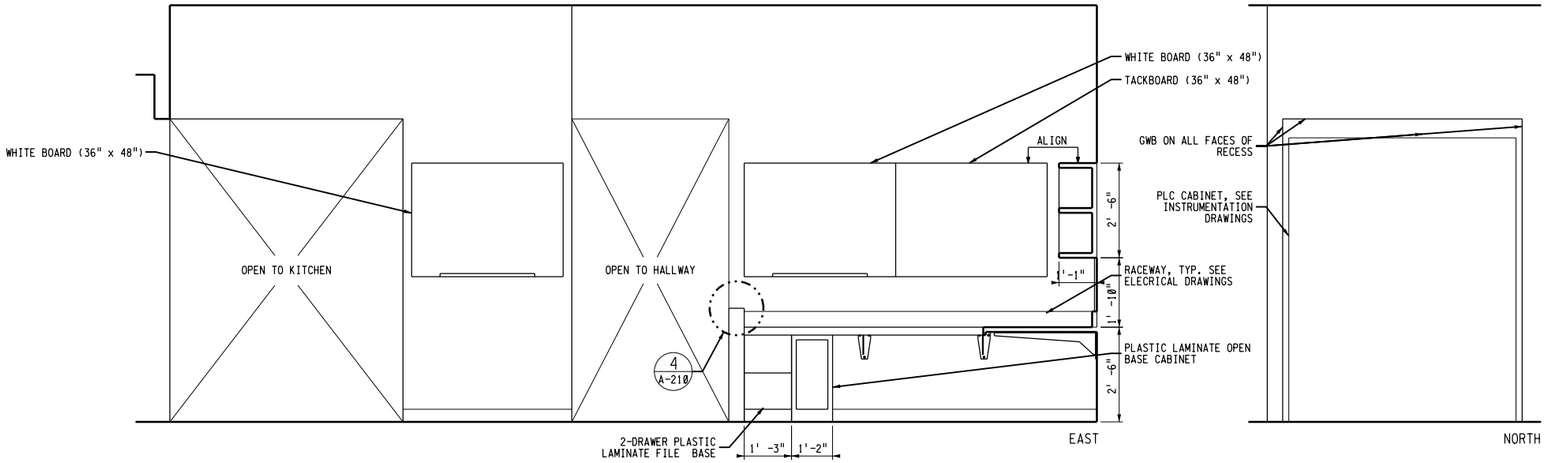
REF 1: W:\D-ofters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\D-ofters\SD\sd317A\ref\W28280bdr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fsh
DATE: 26-AUG-2013 15:35
FILE: J:\SD\sd317A\W28280111.R01
PLOT SCALE: 4:1

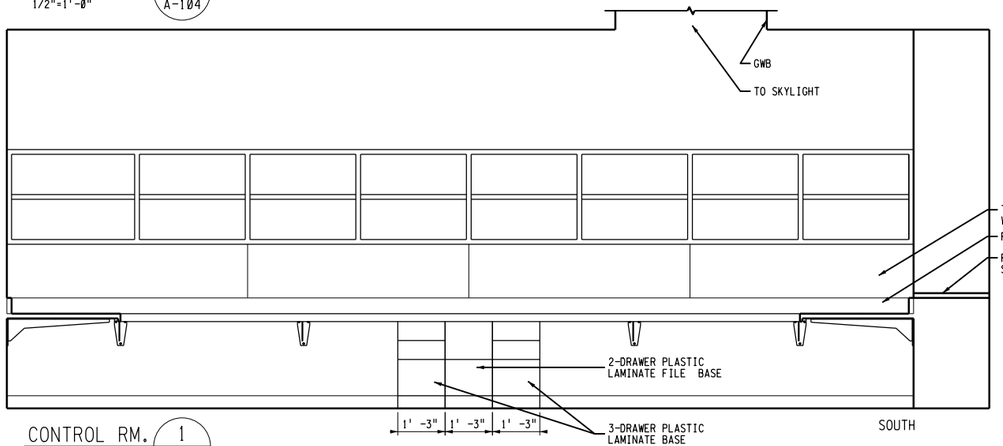
REF 7;
REF 8;
REF 9;



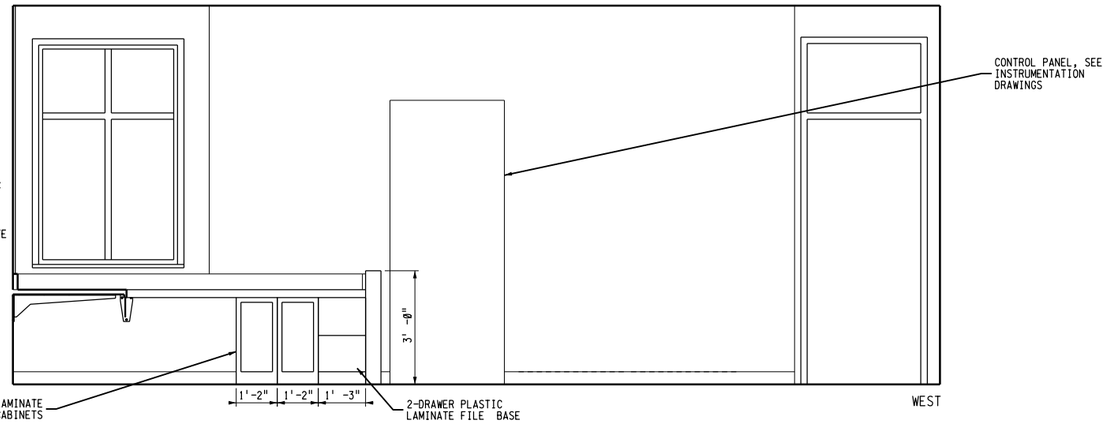
CONTROL RM. 1 / A-104
1/2"=1'-0"



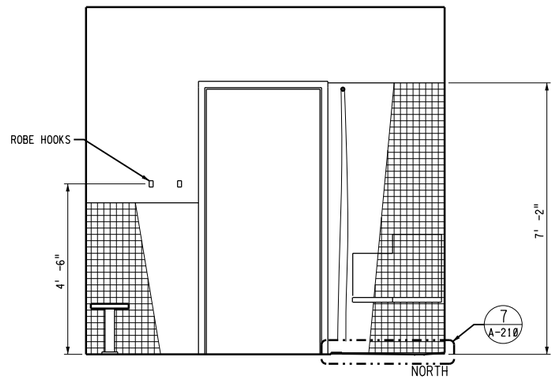
REF 4;
REF 5;
REF 6;

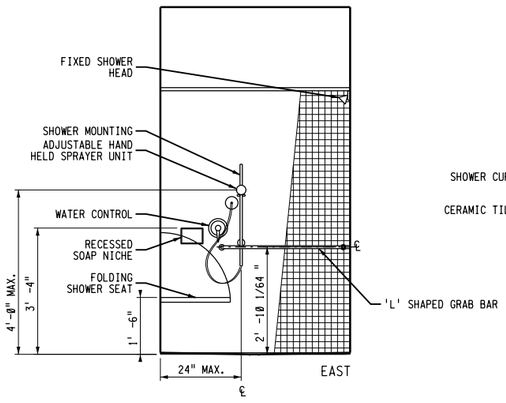


CONTROL RM. 1 / A-104
1/2"=1'-0"

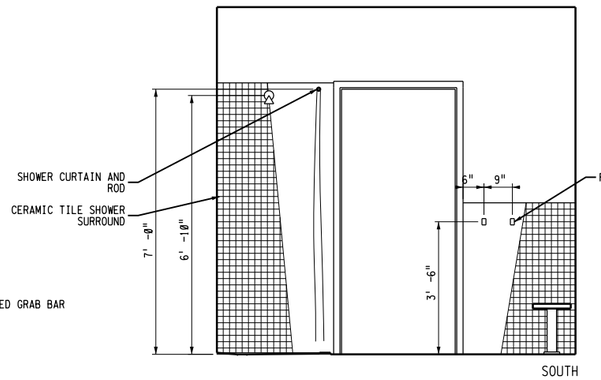


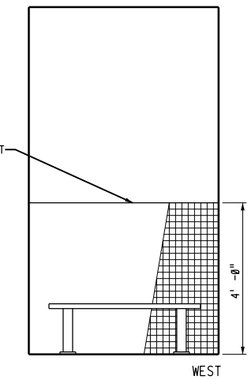
REF 1: W:\Drafters\SD\sd317A\ref\sd317adr.mst
REF 2: W:\Drafters\SD\sd317A\ref\w28206dr_consultant.mst
REF 3:





SHOWER 2 / A-104
1/2"=1'-0"





LICENSED ARCHITECT
KAREN BURKS
NO. C-12893
EXP. 10/31/09
ARCHITECT
STATE OF CALIFORNIA

USER: fah
DATE: 28-AUG-2013 15:35
FILE: J:\SD\sd317A\W28206M12.R01
PLOT SCALE: 4:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION		BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING	INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT / EBMUD

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

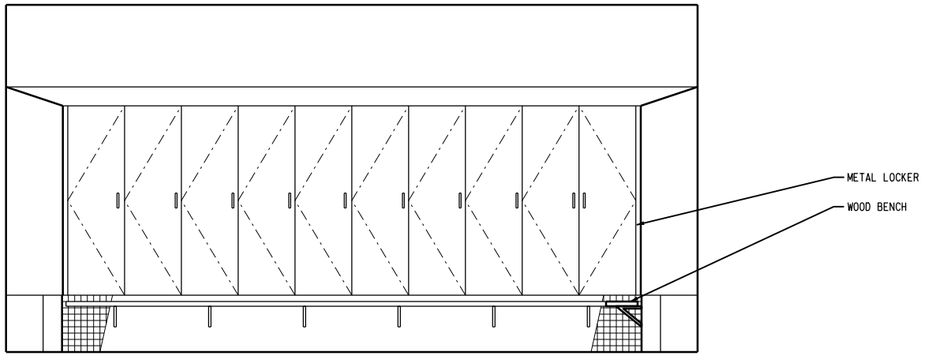
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
INTERIOR ELEVATIONS 2

SCALE 1/2"=1'-0"
DATE JAN.2009

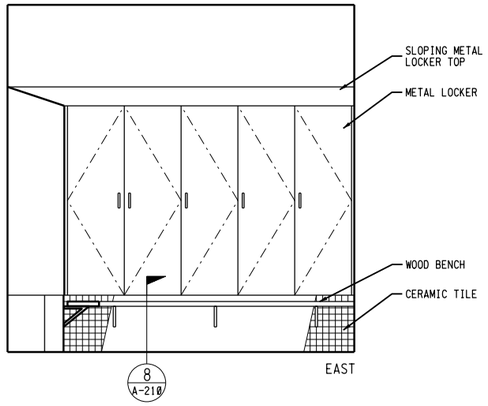
W28.20-A-112
DRAWING NUMBER

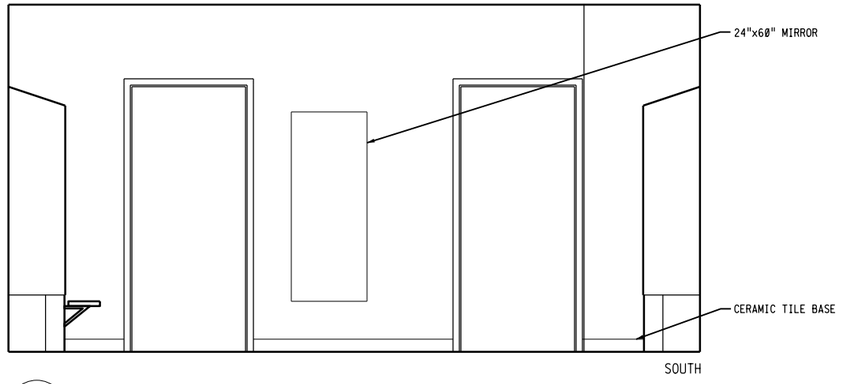
1
REV.

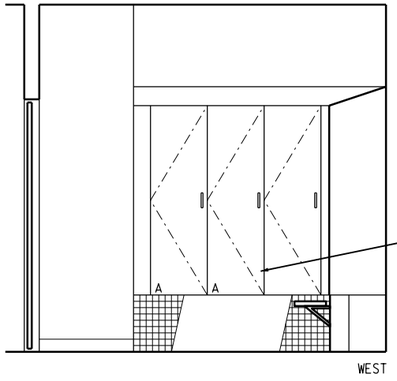
REF 7;
REF 8;
REF 9;



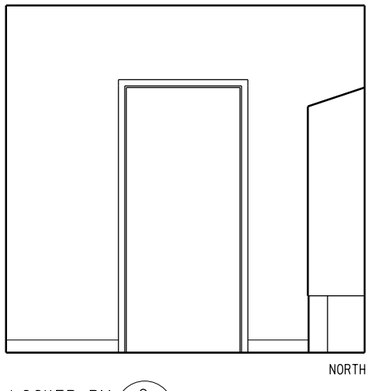
LOCKER RM 1 — A-104
1/2"=1'-0"

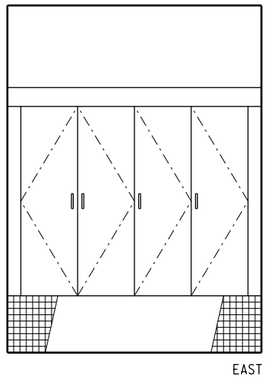


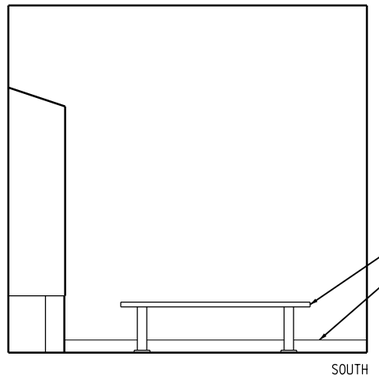


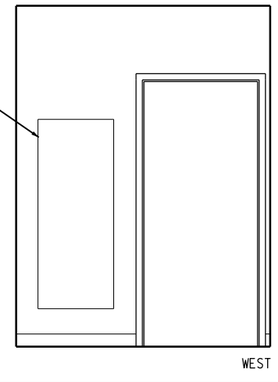


LOCKER RM 1 — A-104
1/2"=1'-0"









LOCKER RM 2 — A-104
1/2"=1'-0"

LICENSED ARCHITECT
KAREN BURKS
NO. C-12893
EXP. 10/31/09
ARCHITECT
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT / EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

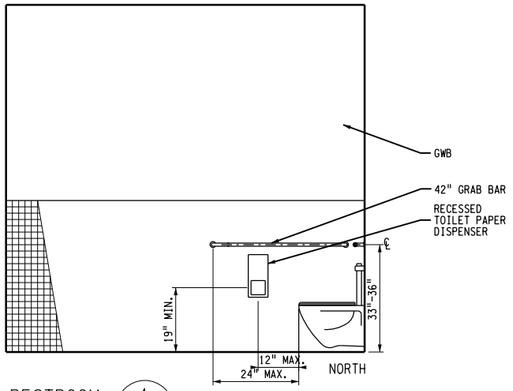
DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

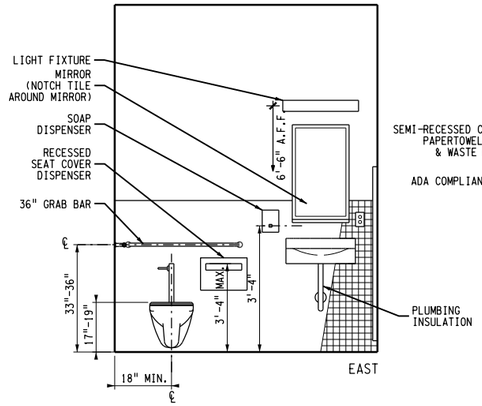
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
INTERIOR ELEVATIONS 3

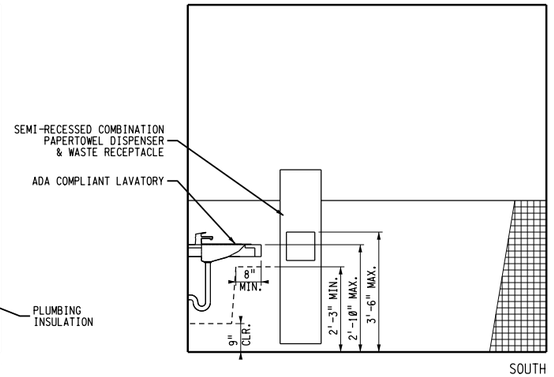
SCALE 1/2"=1'-0"
DATE JAN.2009
W28.20-A-113
DRAWING NUMBER
1
REV.

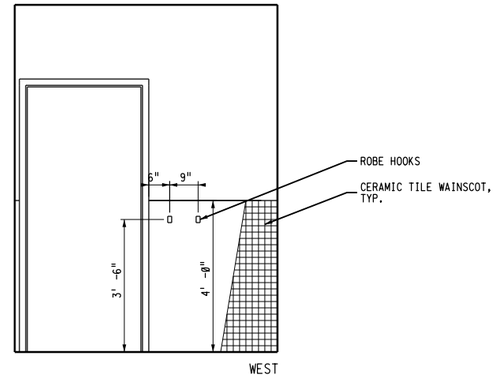
REF 4;
REF 5;
REF 6;
REF 1: W:\Drafters\SD\sd317A\ref\W28208dr_consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317Bdr.mst
REF 3:
PLOT SCALE: 4:1
USER: fah
DATE: 26-AUG-2013 15:35
FILE: I:\SD\sd317A\W28208A13.R01



RESTROOM 1
1/2"=1'-0" A-104







REF 7: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 8: W:\Drafters\SD\sd317A\ref\sd176bdr.mst
REF 9:

REF 4:
REF 5:
REF 6:

USER: fah
DATE: 26-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A114.R01

PLOT SCALE: 4:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

LICENSED ARCHITECT
KAREN BURKS
NO. C-12893
EXP. 10/31/09
ARCHITECT
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
INTERIOR ELEVATIONS 4

SCALE 1/2"=1'-0"
DATE JAN.2009

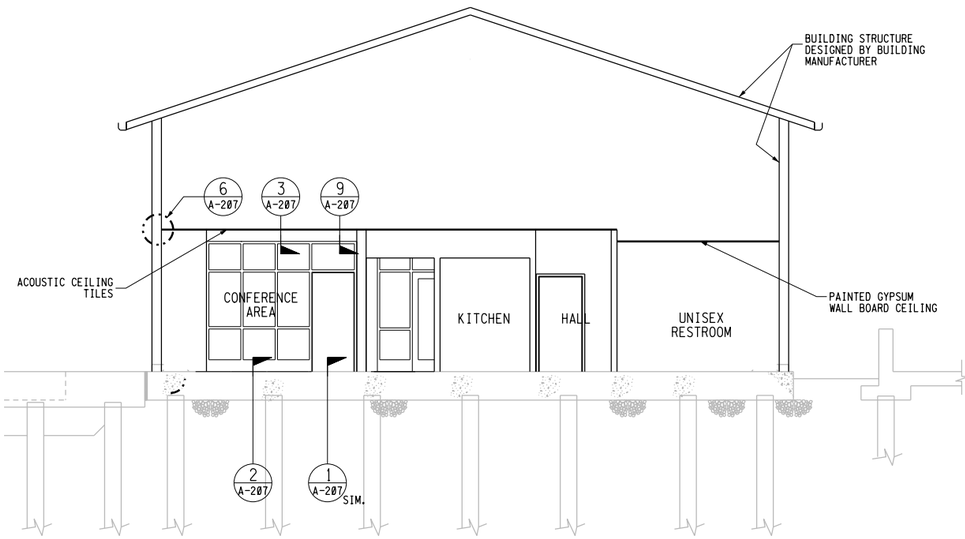
W28.20-A-114
DRAWING NUMBER

1
REV.

REF 4: J:\SD\sd317A\w2820s200.MST
REF 5:
REF 6:

REF 7:
REF 8:
REF 9:

REF 1: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 3:



SECTION A / A-101
3/16"=1'-0"

REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

USER: fal
DATE: 28-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A201.R01

PLOT SCALE: 10.666667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A	JK		

CONSULTANT
EBMUD

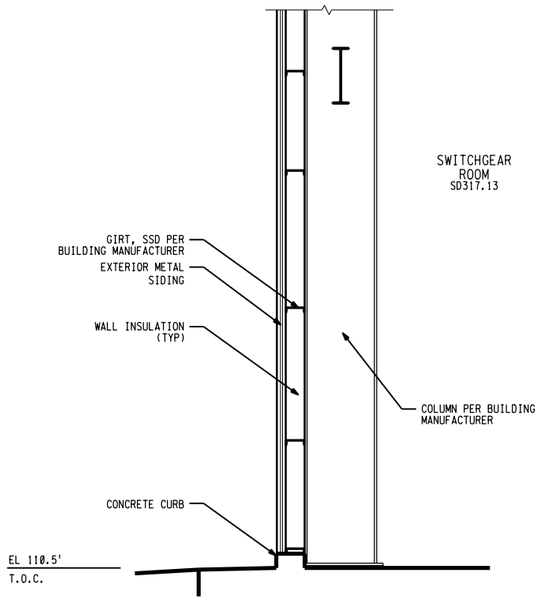
DESIGN BY:	DAVE TSAI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No.	CARL GENTRY
PROJECT MANAGER R.P.E.No.M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No.M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

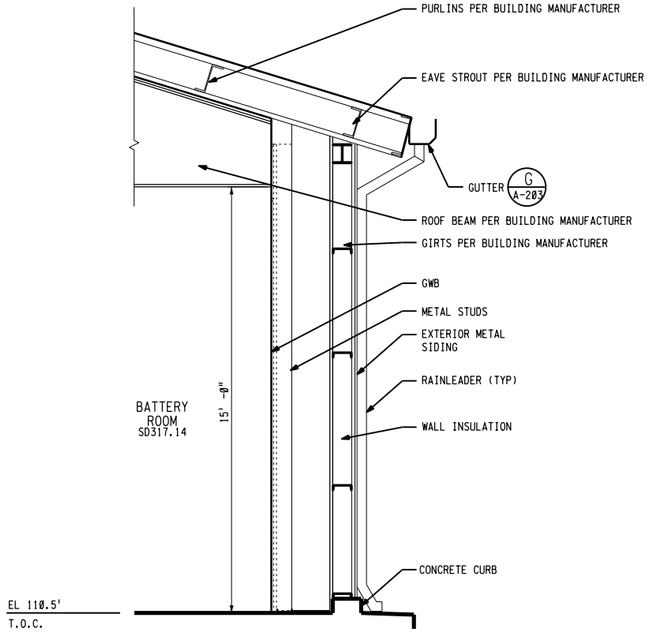
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
SECTION

SCALE 3/16"=1'-0"
DATE JAN.2009
W28.20-A-201
DRAWING NUMBER
1
REV.



SECTION C
3/8"1'-0" A-101



SECTION E
3/8"1'-0" A-101

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT
EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	DAVE TSAI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No.	CARL GENTRY
PROJECT MANAGER R.P.E.No.M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No.M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
WALL SECTIONS

SCALE 3/8"=1'-0"
DATE JAN.2009
W28.20-A-203
DRAWING NUMBER
1
REV.

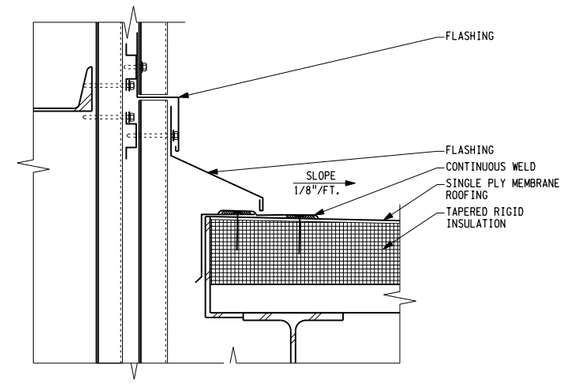
REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

REF 7:
REF 8:
REF 9:

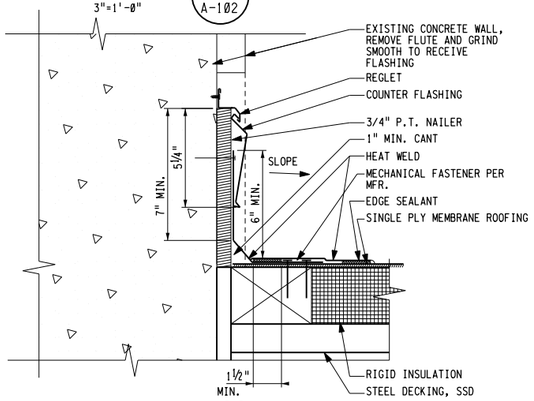
REF 4:
REF 5:
REF 6:

REF 1: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 3:

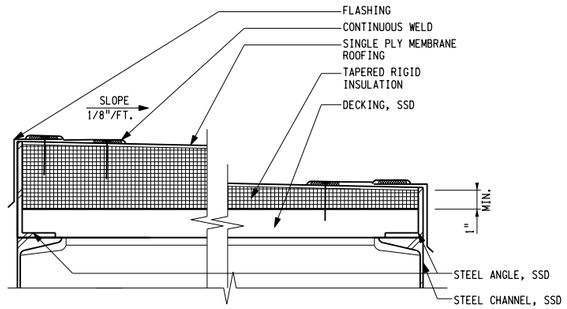
USER: fai
DATE: 20-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820A203.R01
PLOT SCALE: 5.3333331



CANOPY 3 / A-102
3"=1'-0"



SIDEWALL 7 / A-107
3"=1'-0"



EAVE 6 / A-107
3"=1'-0"

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT: EBMUD

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

LICENSED ARCHITECT — KAREN BURKS — NO. C-12893 — EXP. 10/31/09 — ARCHITECT — STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

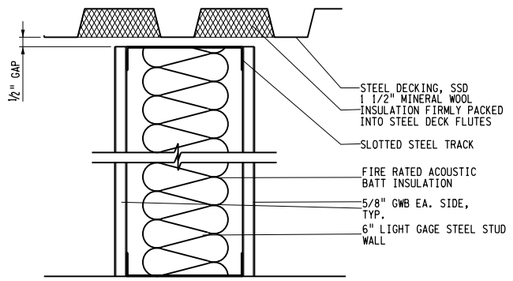
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
DETAILS 2

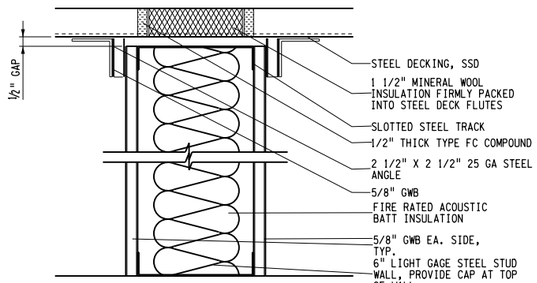
SCALE 3" = 1'-0"
DATE JAN.2009
W28.20-A-205
DRAWING NUMBER
1
REV.

REF 1: W:\D-afters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2: W:\D-afters\SD\sd317A\ref\sd317bar.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fsh
DATE: 23-AUG-2013 15:36
FILE: J:\SD\sd317A\W2820A205.R01
PLOT SCALE: 0.666667:1



WALL 11 / 3"=1'-0" / A-101



WALL 10 / 3"=1'-0" / A-101

REF 7;
REF 8;
REF 9;

REF 4;
REF 5;
REF 6;

REF 1: W:\Drafters\SD\sd317A\ref\sd317hdr-mst
REF 2: W:\Drafters\SD\sd317A\ref\W28206dr_consultant.mst
REF 3:

USER: fah
DATE: 22-AUG-2013 15:36
FILE: J:\SD\sd317A\W28206206.R01

PLOT SCALE: 0.666667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

LICENSED ARCHITECT KAREN BURKS NO. C-12893 EXP. 10/31/09 ARCHITECT STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2

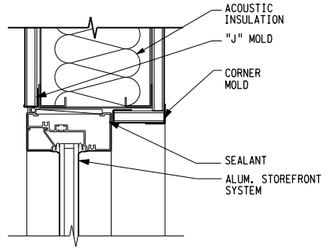
ARCHITECTURAL

PGS 2 BUILDING
DETAILS 3

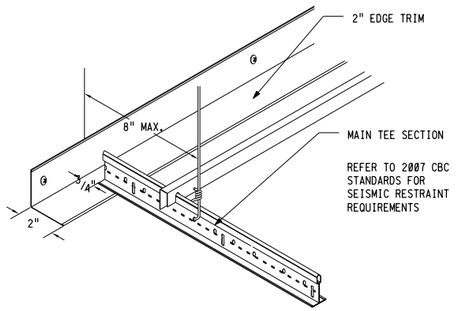
SCALE 3" = 1'-0"
DATE JAN.2009

W28.20-A-206
DRAWING NUMBER

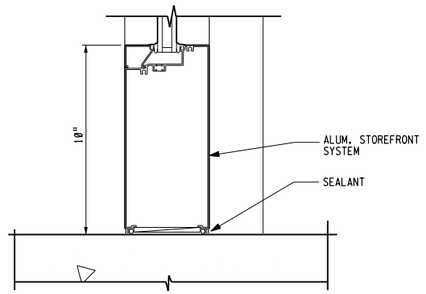
1
REV.



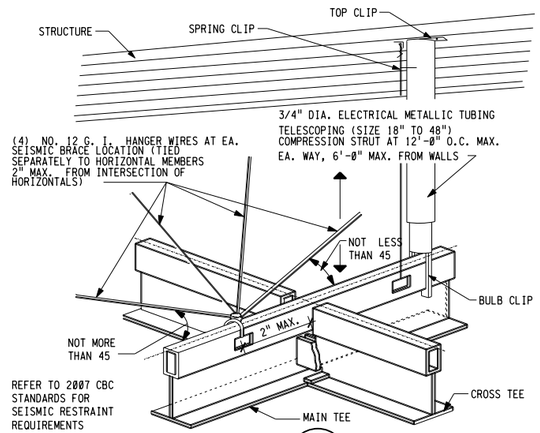
HEAD 3
3"=1'-0" A-201



CEILING 6
3"=1'-0" A-201



SILL 2
3"=1'-0" A-201



CEILING 9
3"=1'-0" A-201

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

LICENSED ARCHITECT KAREN BURKS NO. C-12893 EXP. 10/31/09 ARCHITECT STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS

EBMUD

PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
DETAILS 4

SCALE 3" = 1'-0"
DATE JAN.2009
W28.20-A-207
DRAWING NUMBER
1
REV.

REF 7:
REF 8:
REF 9:

REF 4:
REF 5:
REF 6:

REF 1: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 3:

USER: fal
DATE: 20-AUG-2013 15:36
FILE: J:\SD\sd317A\W2820A207.R01

PLOT SCALE: 0.666667:1

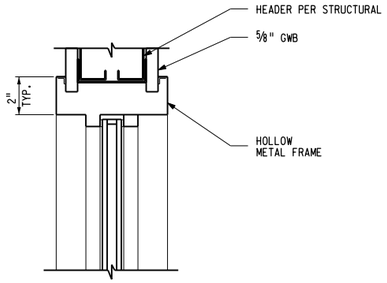
REF 7;
REF 8;
REF 9;

REF 4;
REF 5;
REF 6;

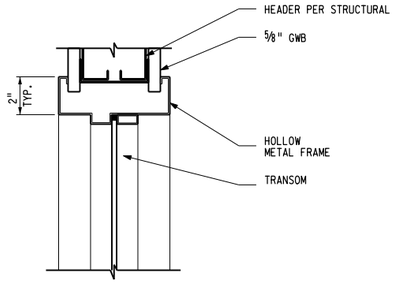
REF 1: W:\Drafters\SD\sd317A\ref\sd317abar.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820dar_consultant.mst
REF 3:

USER: fah
DATE: 22-AUG-2013 15:36
FILE: J:\SD\sd317A\W2820A209.R01

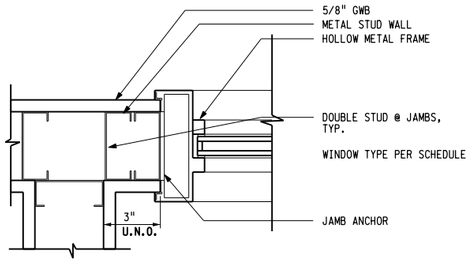
PLOT SCALE: 0.666667:1



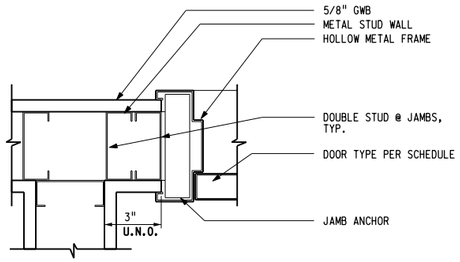
HEAD 12 / A-301
3"=1'-0"



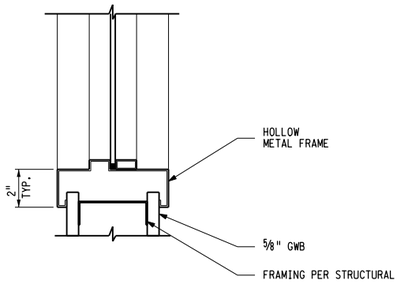
HEAD 9 / A-302
3"=1'-0"



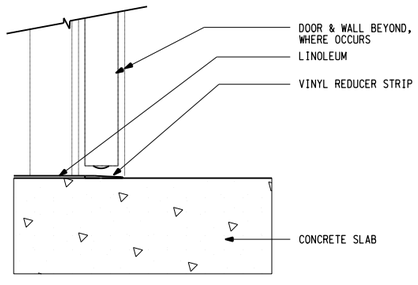
JAMB 11 / A-301
3"=1'-0"



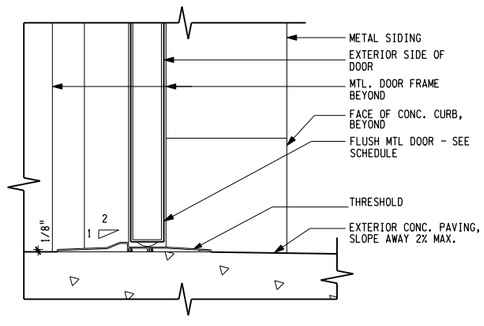
JAMB 8 / A-302
3"=1'-0"



SILL 10 / A-301
3"=1'-0"



THRESHOLD 7 / A-302
3"=1'-0"



THRESHOLD 4 / A-106
3"=1'-0"

LICENSED ARCHITECT
KAREN BURKS
NO. C-12893
EXP. 10/31/09
ARCHITECT
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT
EBMUD

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

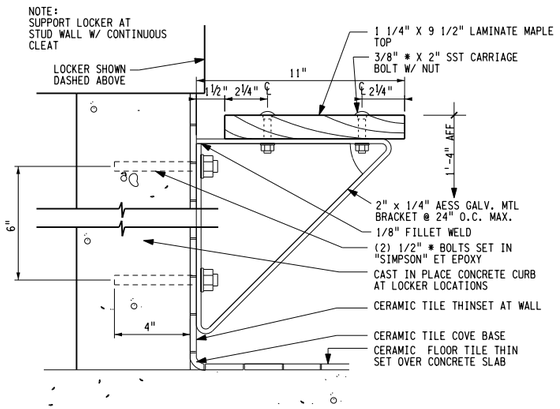
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
DETAILS 6

SCALE AS NOTED
DATE JAN.2009

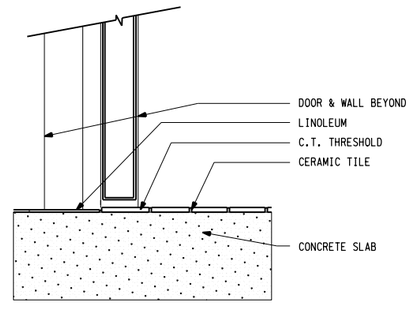
W28.20-A-209
DRAWING NUMBER

1
REV.

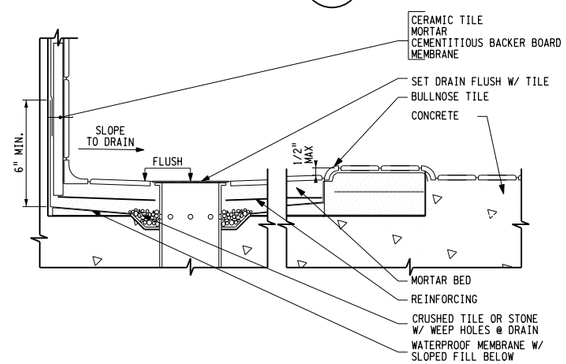
REF 7:
REF 6:
REF 3:
REF 4:
REF 5:
REF 65:
REF 1: W:\D-afters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\D-afters\SD\sd317A\ref\w28280bdr_consultant.mst
USER: fsh
DATE: 23-AUG-2013 15:36
FILE: J:\SD\sd317A\W28280A210.R01
PLOT SCALE: 0.666667:1



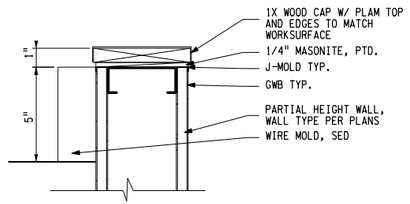
BENCH 8 / A-113
3"=1'-0"



THRESHOLD 5 / A-104
3"=1'-0"



SHOWER PAN 7 / A-112
3"=1'-0"



WALL CAP 4 / A-112
3"=1'-0"

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT EBMUD

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

LICENSED ARCHITECT
KAREN BURKS
NO. C-12893
EXP. 10/31/09
ARCHITECT
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
DETAILS 7

SCALE 3" = 1'-0"
DATE JAN.2009

W28.20-A-210
DRAWING NUMBER

1
REV.

REF 7;
REF 8;
REF 9;

REF 4;
REF 5;
REF 6;

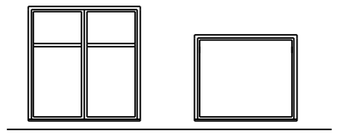
REF 1: W:\Drafters\SD\sd317A\ref\W2820bar-consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 3:

USER: fsh
DATE: 28-AUG-2013 15:36
FILE: J:\SD\sd317A\W2820A30LR01

PLOT SCALE: 0.166667:1

WINDOW TYPES

NOT TO SCALE



WINDOW SCHEDULE

ALUM. - ALUMINUM
ANOD. - ANODIZED ALUMINUM
CLR. - CLEAR FINISH
PTD. - PAINTED
STL. - STEEL
F.F. - FACTORY FINISH
H.M. - HOLLOW METAL

NO.	NOMINAL SIZE		FRAME MAT'L	FRAME FINISH	TYPE	DETAILS			GLASS TYPE			REMARKS	NO.
	WIDTH	HEIGHT				HEAD	JAMB	SILL	SINGLE	INSUL.	TEMP.		
3101	5'-8"	6'-0"	H.M.	PTD.	A					X		HORIZONTAL LOUVER BLINDS	3101
3102	NOT USED											NOT USED	3102
3103	NOT USED											NOT USED	3103
3104	NOT USED											NOT USED	3104
3105	NOT USED											NOT USED	3105
3106	NOT USED											NOT USED	3106
3107	NOT USED											NOT USED	3107
3108	NOT USED											NOT USED	3108
3109	NOT USED											NOT USED	3109
3110	NOT USED											NOT USED	3110
3111	NOT USED											NOT USED	3111
3112	4'-0"	6'-0"	H.M.	PTD.	A					X		LAMINATED ACOUSTICAL GLASS / BLINDS	3112
3113	NOT USED											NOT USED	3113
3114	5'-8"	6'-0"	H.M.	PTD.	A					X		LAMINATED ACOUSTICAL GLASS / BLINDS	3114
3115	NOT USED											NOT USED	3115
3116	NOT USED											NOT USED	3116
3117	NOT USED											NOT USED	3117
3118	NOT USED											NOT USED	3118
3119	NOT USED											NOT USED	3119
3120	NOT USED											NOT USED	3120
3121	NOT USED											NOT USED	3121
3122	NOT USED											NOT USED	3122
3123	NOT USED											NOT USED	3123
3124	NOT USED											NOT USED	3124
3125	NOT USED											NOT USED	3125
3126	NOT USED											NOT USED	3126
3127	NOT USED											NOT USED	3127
3128	NOT USED											NOT USED	3128
3129	6'-0"	4'-0"	H.M.	PTD.	B	12/A-209	11/A-209	10/A-209		X		ONE HOUR FIRE RATED GLAZING	3129

ROOM FINISH SCHEDULE

A.C.T. - ACOUSTIC CEILING TILE
LINO. - LINOLEUM
CONC. - CONCRETE
C.T. - CERAMIC TILE
EX. MTL. - EXPOSED METAL DECK & STRUCTURE
F.F. - FACTORY FINISH
G.W.B. - GYPSUM WALL BOARD
F.R.P. - FIBER REINFORCED PLASTIC

ROOM NO.	ROOM NAME	FLOOR		BASE	NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		CEILING			REMARKS	ROOM NO.
		MAT'L	FINISH	MAT'L	MAT'L	FINISH	MAT'L	FINISH	MAT'L	FINISH	MAT'L	FINISH	MAT'L	HEIGHT	FINISH		
SD317.01	NOT USED															NOT USED	SD317.01
SD317.02	OFFICE	LINO.	F.F.	RUBBER	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	A.C.T.	9'-2"	F.F.	-	SD317.02
SD317.03	MUD ROOM	LINO.	F.F.	RUBBER	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	A.C.T.	9'-2"	F.F.	-	SD317.03
SD317.04	KITCHEN	LINO.	F.F.	RUBBER	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	A.C.T.	9'-2"	F.F.	-	SD317.04
SD317.05	CONFERENCE AREA	LINO.	F.F.	RUBBER	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	A.C.T.	10'-0"	F.F.	-	SD317.05
SD317.06	CONTROL ROOM	LINO.	F.F.	RUBBER	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	A.C.T.	10'-0"	F.F.	-	SD317.06
SD317.07	MEN'S LOCKERS	C.T.	F.F.	C.T.	G.W.B./C.T.	PAINT/F.F.	G.W.B.	PAINT	G.W.B./C.T.	PAINT/F.F.	G.W.B./C.T.	PAINT/F.F.	G.W.B.	9'-2"	PAINT	-	SD317.07
SD317.08	UNISEX SHOWER	C.T.	F.F.	C.T.	G.W.B./C.T.	PAINT/F.F.	G.W.B./C.T.	PAINT/F.F.	G.W.B./C.T.	PAINT/F.F.	G.W.B./C.T.	PAINT/F.F.	G.W.B.	9'-2"	PAINT	-	SD317.08
SD317.09	UNISEX/WOMEN'S LOCKERS	C.T.	F.F.	C.T.	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B./C.T.	PAINT/F.F.	G.W.B.	PAINT	G.W.B.	9'-2"	PAINT	-	SD317.09
SD317.10	UNISEX RESTROOM	C.T.	F.F.	C.T.	G.W.B./C.T.	PAINT/F.F.	G.W.B./C.T.	PAINT/F.F.	G.W.B./C.T.	PAINT/F.F.	G.W.B./C.T.	PAINT/F.F.	G.W.B.	9'-2"	PAINT	-	SD317.10
SD317.11	MECHANICAL ROOM	LINO.	F.F.	RUBBER	G.W.B./F.R.P.	PAINT/F.F.	G.W.B.	PAINT	G.W.B./F.R.P.	PAINT/F.F.	G.W.B.	PAINT	G.W.B.	9'-2"	PAINT	-	SD317.11
SD317.12	MCC ROOM	CONC.	SEAL	RUBBER	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	EX. MTL.	VARIES	PAINT	-	SD317.12
SD317.13	SWITCH GEAR	CONC.	SEAL	RUBBER	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	EX. MTL.	VARIES	PAINT	-	SD317.13
SD317.14	BATTERY ROOM	CONC.	COAT	RUBBER	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	EX. MTL.	VARIES	PAINT	-	SD317.14
SD317.15	HALL	LINO.	F.F.	RUBBER	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	G.W.B.	PAINT	A.C.T.	10'-0"	F.F.	-	SD317.15

NOTES:
(1) WALL AND CEILING MATERIALS SHALL NOT EXCEED THE FLAME SPREAD CLASSIFICATIONS IN CBC TABLE 8-B.

LICENSED ARCHITECT
KAREN BURKS
NO. C-12893
EXP. 10/31/09
ARCHITECT
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

EBMUD

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

CONSULTANT

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
WINDOW AND FINISH SCHEDULE

SCALE NONE
DATE JAN.2009

W28.20-A-301
DRAWING NUMBER

1
REV.

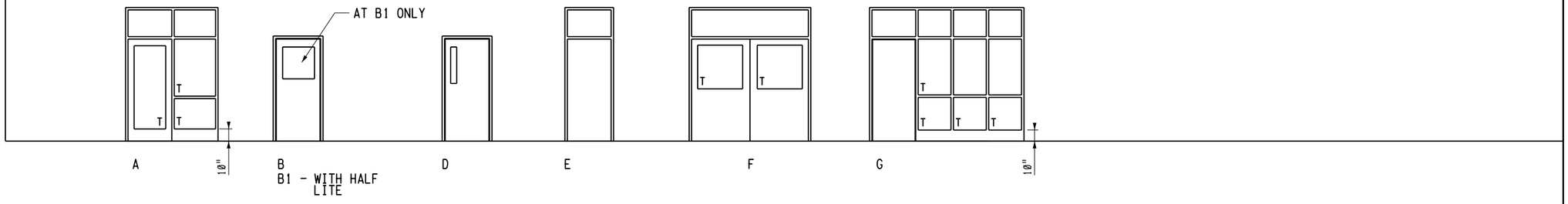
DOOR SCHEDULE

ALUM. - ALUMINUM
ANOD. - ANODIZED ALUMINUM
CLR. - CLEAR FINISH
PTD. - PAINTED
STL. - STEEL
F.F. - FACTORY FINISH
H.M. - HOLLOW METAL
M - METAL
MANUF.- TO BE DETERMINED BY METAL BUILDING MANUFACTURER

NO.	DOOR						FRAME					DETAILS			HRDWR GRP	GLAZING	REMARKS	NO.
	WIDTH	HEIGHT	THICK	TYPE	MAT'L	FINISH	WIDTH	HEIGHT	DEPTH	MAT'L	FINISH	HEAD	JAMB	SILL				
3101	3'-0"	7'-0"	0'-1 3/4"	A	H.M.	PTD.	6'-4"	9'-2"	MANUF.	H.M.	PTD.	4/A-209	MANUF.	4/A-209	3	X		3101
3102	3'-0"	7'-0"	0'-1 3/4"	B	H.M.	PTD.	3'-4"	7'-2"	MANUF.	H.M.	PTD.	MANUF.	MANUF.	4/A-209	2			3102
3103	3'-0"	7'-0"	0'-1 3/4"	B1	H.M.	PTD.	3'-4"	7'-2"	MANUF.	H.M.	PTD.	MANUF.	MANUF.	4/A-209	3	X		3103
3104	3'-0"	7'-0"	0'-1 3/4"	B	H.M.	PTD.	3'-4"	7'-2"	MANUF.	H.M.	PTD.	MANUF.	MANUF.	4/A-209	2			3104
3105	NOT USED																NOT USED	
3106	NOT USED																NOT USED	
3107	NOT USED																NOT USED	
3108	NOT USED																NOT USED	
3109	3'-0"	7'-0"	0'-1 3/4"	G	WOOD	PTD.	8'-2"	9'-2"	4"	ALUM.	ANOD.	3/A-210	3/A-210-SIM	-	5		HORIZ. LOUVER BLINDS @ SIDELITE	3109
3110	3'-0"	7'-0"	0'-1 3/4"	B	WOOD	PTD.	3'-4"	7'-2"	4 7/8"	H.M.	PTD.	9/A-209	8/A-209	5/A-210	6			3110
3111	3'-0"	7'-0"	0'-1 3/4"	B	WOOD	PTD.	3'-4"	7'-2"	4 7/8"	H.M.	PTD.	9/A-209	8/A-209	-	7			3111
3112	3'-0"	7'-0"	0'-1 3/4"	B	WOOD	PTD.	3'-4"	7'-2"	4 7/8"	H.M.	PTD.	9/A-209	8/A-209	-	7			3112
3113	3'-0"	7'-0"	0'-1 3/4"	B	WOOD	PTD.	3'-4"	7'-2"	4 7/8"	H.M.	PTD.	9/A-209	8/A-209	5/A-210	6			3113
3114	3'-0"	7'-0"	0'-1 3/4"	B	WOOD	PTD.	3'-4"	7'-2"	4 7/8"	H.M.	PTD.	9/A-209	8/A-209	-	8			3114
3115	3'-0"	7'-0"	0'-1 3/4"	B	WOOD	PTD.	3'-4"	7'-2"	4 7/8"	H.M.	PTD.	9/A-209	8/A-209	5/A-210	9			3115
3116	3'-0"	7'-0"	0'-1 3/4"	B	WOOD	PTD.	3'-4"	7'-2"	4 7/8"	H.M.	PTD.	9/A-209	8/A-209	-	10			3116
3117	3'-0"	7'-0"	0'-1 3/4"	D	H.M.	PTD.	3'-4"	7'-2"	7 1/4"	H.M.	PTD.	9/A-209	8/A-209	-	11	X	1 HR., FIRELITE VISION PANEL	3117
3118	3'-0"	7'-0"	0'-1 3/4"	B	H.M.	PTD.	3'-4"	7'-2"	7 1/4"	H.M.	PTD.	9/A-209	8/A-209	7/A-209	12		1 HR.	3118
3119	3'-0"	7'-0"	0'-1 3/4"	B	H.M.	PTD.	3'-4"	7'-2"	7 1/4"	H.M.	PTD.	9/A-209	8/A-209	7/A-209	12		1 HR.	3119
3120	3'-0"	7'-0"	0'-1 3/4"	D	H.M.	PTD.	3'-4"	7'-2"	7 1/4"	H.M.	PTD.	9/A-209	8/A-209	7/A-209	12	X	1 HR., FIRELITE VISION PANEL	3120
3121	(2) 4'-0"	7'-0"	0'-1 3/4"	F	H.M.	PTD.	8'-4"	9'-2"	MANUF.	H.M.	PTD.	MANUF.	MANUF.	4/A-209	13	X		3121
3122	3'-0"	7'-0"	0'-1 3/4"	E	H.M.	PTD.	3'-4"	9'-2"	MANUF.	H.M.	PTD.	MANUF.	MANUF.	4/A-209	12	X		3122
3123	3'-0"	7'-0"	0'-1 3/4"	E	H.M.	PTD.	3'-4"	9'-2"	MANUF.	H.M.	PTD.	MANUF.	MANUF.	4/A-209	14	X	SOUND CONTROL, LOUVER BLINDS @ GLAZING	3123
3124	3'-0"	7'-0"	0'-1 3/4"	B	H.M.	PTD.	3'-4"	7'-2"	4 7/8"	H.M.	PTD.	TA222	TA222	4/A-209	2			3124

DOOR TYPES

NOT TO SCALE



3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1	25FEB2009	ADDENDUM NO. 2 AS PER SD317A	DT	TGM	SKW

CONSULTANT
EBMUD

DESIGN BY:	KAREN BURKS
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER ARCH. LIC. No. C12893	KAREN BURKS
APPROVED: PRINCIPAL IN CHARGE ARCH. LIC. No. C12893	KAREN BURKS
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

LICENSED ARCHITECT
KAREN BURKS
NO. C-12893
EXP. 10/31/09
ARCHITECT
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
ARCHITECTURAL
PGS 2 BUILDING
DOOR SCHEDULE

SCALE NONE
DATE JAN.2009
W28.20-A-302
DRAWING NUMBER
2
REV.

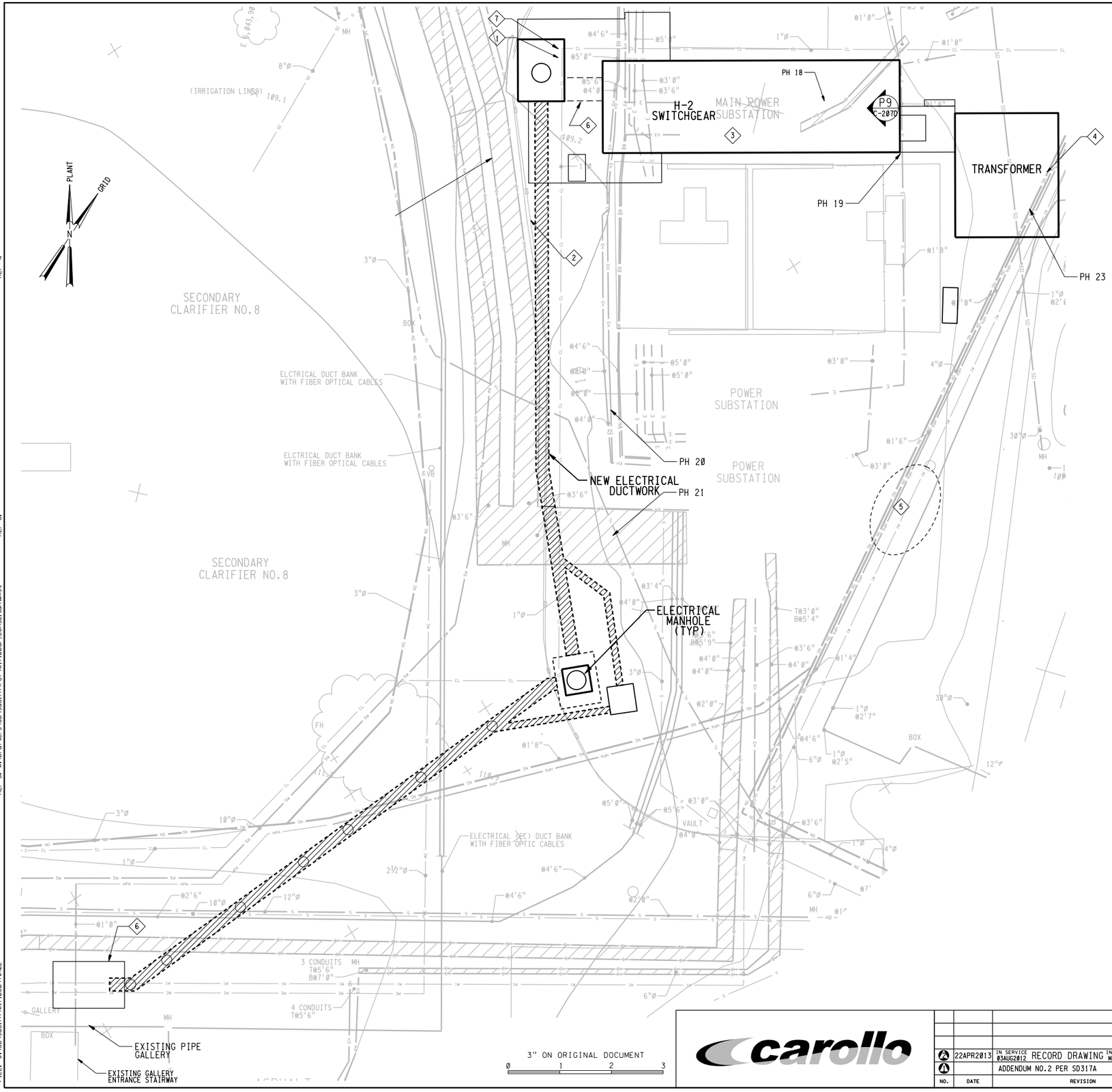
REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fah
DATE: 26-AUG-2013 15:36
FILE: J:\SD\sd317A\W2820A302.R02
PLOT SCALE: 0.166667:1

REF 1: PGS Expansion.dgn
REF 2: W:\Drafters\SD\sd317A\ref\wd317hdr.mst
REF 3: W:\Drafters\SD\sd317A\ref\W1710dgn_consultant.mst
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fai
DATE: 22-AUG-2013 15:24
FILE: J:\SD\sd317A\W1710C047.R02

PLOT SCALE: 20:1



KEY NOTES

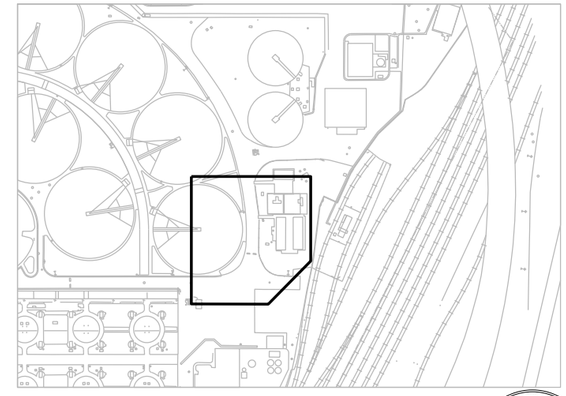
1. SEE NOTE 23 ON C-001.
2. EXISTING GUARD RAIL.
3. REMOVE EXISTING CONCRETE SLAB AND PART OF EXISTING CONCRETE WALK TO MAKE ROOM FOR NEW SLAB. SEE STRUCTURAL DRAWINGS.
4. RELOCATE EXISTING 3" NG STEEL PIPE AS NECESSARY FOR INSTALATION OF NEW SLAB.
5. SOME UTILITIES SHOW HAVE BEEN RELOCATED. CONTRACTOR MUST LOCATE UTILITIES AND FIELD VERIFY PRIOR TO START OF CONSTRUCTOR.
6. PROTECTIVE CONCRETE SLAB PER TYP DETAIL TS600 TYP.
7. RELOCATE CHLORINE PIPE AS NECESSARY TO FACILITATED CONSTRUCTION.

GENERAL NOTES

FOR PILE LOCATION. SEE DRAWING W17.00-S-115. CONTRACTOR SHALL HAND DIG STRUCTURES (SLAB AND MANHOLES) TO UNCOVER UNDERGROUND UTILITIES TO A DEPTH OF 4' OR TOP OF PILES.

LEGEND

= ELECTRICAL DUCTBANK. SEE ELECTRICAL DRAWINGS.



KEY MAPS

REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1		ADDENDUM NO.2 PER SD317A	DT	TGM	SKW

EBMUD

CONSULTANT

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

SWITCHGEAR/TRANSFORMER SITE PLAN

SCALE 1"=10'
DATE JAN2009
W17.10-C-047 DRAWING NUMBER
2 REV.

GENERAL CIVIL NOTES

1. GENERAL CIVIL NOTES APPLY TO ALL DRAWINGS.
2. ALL PIPING BEYOND THE LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE TRENCHED PER TYPICAL DETAIL (TC162 TYP) AND SPECIFICATIONS.
3. ALL DUCTILE IRON, CAST IRON, PUSH-ON OR MECHANICAL JOINT PIPE SHALL BE MECHANICALLY RESTRAINED UNLESS NOTED OTHERWISE.
4. THE CONTRACTOR SHALL REPLACE IN KIND, OR REPAIR EXISTING ITEMS DAMAGED BY THE CONTRACTOR'S ACTIVITIES. NOT ALL THE EXISTING ITEMS ARE SHOWN ON THE DRAWINGS. THE DRAWINGS OF THE EXISTING ITEMS ARE AVAILABLE FROM THE DISTRICT ON REQUEST. THE PRIMARY REFERENCE USED IN THE DESIGN FOR ESTABLISHING EXISTING INFRASTRUCTURE IS THE DISTRICT CONTRACT RECORD DRAWINGS.
5. WHEREVER NEW ELECTRICAL CONDUITS ARE SHOWN PARALLELING EXISTING ELECTRICAL CONDUITS, THE NEW CONDUITS SHALL BE PLACED DIRECTLY ADJACENT TO AND AT THE SAME ELEVATION AS THE EXISTING CONDUITS. THE NEW CONCRETE ENCASEMENT SHALL ABUT THE EXISTING ENCASEMENT. THE SIDES OF THE EXISTING DUCT BANKS MAY NOT BE FLAT.
6. AT CONNECTIONS TO EXISTING BURIED PIPING, THE CONTRACTOR SHALL EXPOSE THE EXISTING PIPE, VERIFY LOCATION, INVERT, MATERIALS, DIMENSIONS AND SUBMIT A SHOP DRAWING OF THE PROPOSED CONNECTION FOR REVIEW PRIOR TO FABRICATION OF CONNECTING PIPING. THE CONTRACTOR SHALL FURNISH ALL NECESSARY SLEEVES, FLANGES, NIPPLES, COUPLINGS, FITTINGS, TOOLS, LABOR, ETC. NEEDED TO COMPLETE THE CUT-IN OR CONNECTIONS, AT NO ADDITIONAL COST TO THE DISTRICT, WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.
7. WHENEVER NEW PIPING OR CONDUIT CROSSES EXISTING PIPING OR CONDUIT, THE CONTRACTOR SHALL EXPOSE THE EXISTING ITEMS, VERIFY LOCATION AND ELEVATION PRIOR TO FABRICATION OF NEW PIPING, AND SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER. SOME OF THE EXISTING PIPING OR CONDUITS AS SHOWN ON THE DRAWINGS ARE LOCATED FROM THE BEST AVAILABLE INFORMATION AND ARE SHOWN FOR THE CONTRACTOR'S CONVENIENCE. NOT ALL THE EXISTING PIPING OR CONDUITS ARE SHOWN ON THE DRAWINGS. SUBMITTALS SHALL BE MADE PRIOR TO PLANNED INSTALLATION OF NEW FACILITIES. MINIMUM COVER SHALL BE MAINTAINED PER SPECIFICATIONS AND DRAWINGS.
8. ALL EXISTING PIPING AND ELECTRICAL CONDUITS SHALL BE SUPPORTED AND PROTECTED IN PLACE DURING TRENCHING OR EXCAVATION WORK BY THE CONTRACTOR. THE CONTRACTOR SHALL NOT DISTURB THE LOCATIONS, ALIGNMENTS AND ELEVATIONS OF THE EXISTING PIPING AND CONCRETE ENCASED ELECTRICAL CONDUITS, UNLESS OTHERWISE APPROVED BY ENGINEER.
9. ALL CLEAN OUTS SHALL BE CONSTRUCTED PER TYPICAL DETAIL TP004. RESTRAINED JOINTS SHALL BE PROVIDED INSTEAD OF THRUST BLOCKS.
10. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING STRUCTURES. CONTRACTOR SHALL VERIFY LENGTHS IN FIELD PRIOR TO FABRICATION OF PIPING AND SUBMIT SHOP DRAWINGS FOR REVIEW.
11. ALL BURIED VALVES SHALL BE INSTALLED IN VALVE BOXES PER TYPICAL DETAIL.
12. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, ALL PIPING SHALL HAVE A MINIMUM OF 12" CLEARANCE FROM NEAREST PIPELINE.
13. THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN ADEQUATE DRAINAGE PATTERNS AT THE SITE. WATER SHALL NOT BE ALLOWED TO POND OR STAND DUE TO CONTRACTOR'S ACTIVITIES.
14. ALL NEW PIPING SHALL BE CONSTRUCTED AT ITS NEW LOCATION THEN INTERCONNECTED WITH EXISTING PIPING. THE NEW PIPING SHALL BE TESTED AND OPERATIONAL PRIOR TO REMOVAL OF ANY PORTION OF THE EXISTING PIPING.
15. TIE-IN TO EXISTING SYSTEMS SHALL BE MADE WITHOUT INTERRUPTION OF EXISTING SERVICE, UNLESS NOTED OTHERWISE. CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 01140 AND SUBMIT A PROPOSED SCHEDULE OF INTERRUPTION OF SERVICE IN ACCORDANCE WITH THE SPECIFICATIONS.
16. WHERE INDICATED IN THE PIPING SCHEDULE, ALL PIPING JOINTS SHALL BE RESTRAINED TYPE JOINTS.
17. REFER TO SPECIFICATION SECTION 01140, 01145, AND OTHER APPLICABLE SECTIONS FOR WORK RESTRICTIONS AND CONSTRAINTS.
18. ADJUST NEW AND EXISTING MANHOLE FRAMES AND COVERS TO FINISHED SURFACE ELEVATION PER DISTRICT STD DWG, UNLESS SHOWN OTHERWISE ON DWGS. ADJUST EXISTING VALVE BOXES, SURVEY MONUMENTS, AND CLEANOUTS TO FINISHED SURFACE ELEVATION PER DISTRICT STD DWG.
19. CONTACT DISTRICT PRIOR TO BEGINNING ANY WORK, IN ORDER TO IDENTIFY UTILITES IN THE WORK AREA WHICH MAY NOT BE SHOWN ON DWGS.
20. **PIPE AND DUCT SIZES INDICATED ON P&IDs ARE FOR GENERAL REFERENCE ONLY. IN CASE OF A CONFLICT WITH MECHANICAL OR CIVIL DRAWINGS, THE PIPE AND DUCT SIZES INDICATED ON THE MECHANICAL AND CIVIL DRAWINGS SHALL GOVERN.**
21. AFTER EXISTING EQUIPMENT/PIPE SUPPORT REMOVAL, ALL REMAINING EXPOSED ANCHOR BOLTS AND DOWELS SHALL BE CUT Δ" BELOW THE SURFACE AND PATCH CONCRETE SURFACE WITH EPOXY GROUT.
22. CAREFULLY REMOVE EXISTING CONCRETE AS REQUIRED TO EXPOSE REINFORCING. DO NOT OVERCUT OR DAMAGE EXISTING REINFORCING.
23. NOT ALL UNDERGROUND UTILITIES SHOWN, CONTRACTOR SHALL REMOVE, RELOCATE AND REROUTE AS REQUIRED TO FACILITATE THE NEW PILES, FOUNDATION, PIPING, CONDUITS, DUCTBANK INSTALLATION.
24. CONTRACTOR SHALL PAY SPECIAL ATTENTION TO LOCATE, POTHOLE, REROUTE, EXISTING HIGH PRESSURE AND LOW PRESSURE DIGESTER GAS AND NATURAL GAS PIPES IN THE AREA AFFECTED BY WORK.
25. NOT ALL STRUCTURES, EQUIPMENT, PIPING AND CONDUITS ARE SHOWN FOR CLARITY. CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATIONS FOR ALL EXISTING STRUCTURES, PIPES AND CONDUITS WITHIN THE AREA AFFECTED BY THE CONTRACTOR. ALL EXISTING PIPES AND CONDUITS SHALL BE FULLY SUPPORTED AND PROTECTED DURING DEMOLITION AND NEW INSTALLATION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING STRUCTURES, EQUIPMENT PULL BOXES, VALVES AND OPERATORS DURING CONSTRUCTION.
26. FIELD VERIFY THE EXISTING PULL BOX LOCATIONS AND RELOCATE THEM AS NEEDED TO FACILITATE THE WORK AFFECTED
27. NO LIVE PIPING OR CONDUITS SHALL BE DISCONNECTED WITHOUT PRIOR APPROVAL OF THE OWNER
28. CONTRACTOR SHALL POTHOLE ALL EXISTING PIPE LINES, CONDUITS, AND DUCTBANKS PRIOR TO SITE EXCAVATION WORK TO VERIFY THEIR ACTUAL LOCATIONS AND ELEVATIONS
29. ANY DIMENSIONS TAKEN FROM THE WET WEATHER STORAGE FACILITY ARE TAKEN FROM THE TOP OUTER EDGE OF THE WALL.

REF 7; REF 8; REF 9;

REF 4; REF 5; REF 6;

REF 1: W:\Drafters\SD\sd317A\ref\sd317Bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820Bdr_consultant.mst
REF 3:

PLOT SCALE: 0.166667:1

USER: fai
DATE: 28-AUG-2013 15:34
FILE: J:\SD\sd317A\W2820C001.R01

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAI
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON

EBMUD

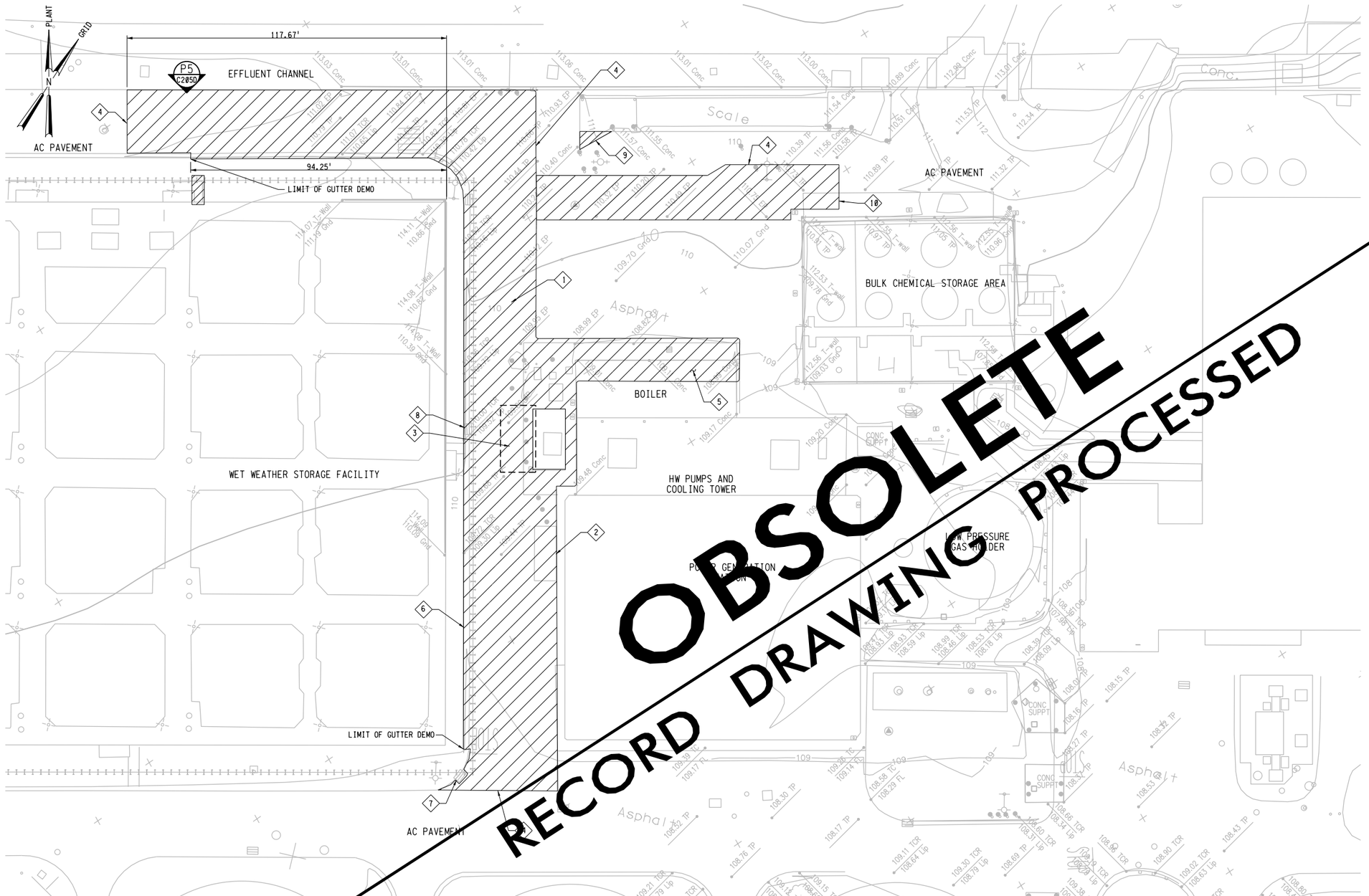
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

GENERAL CIVIL NOTES

SCALE	NONE	W28.20-C-001	1
DATE	JAN2009	DRAWING NUMBER	REV.

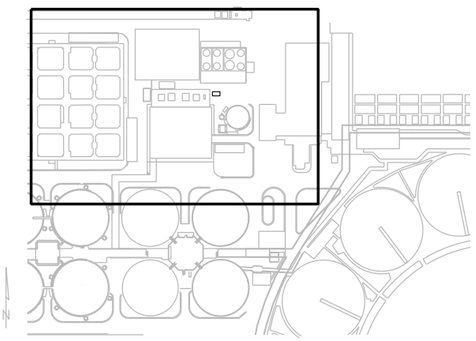


GENERAL NOTES

1. FOR ADDITIONAL DEMOLITION SEE DWG. C-047.D
2. UNLESS OTHERWISE NOTED PROTECT EXISTING CURB AND GUTTER TO REMAIN PLACE. NEW PAVING TO MATCH ELEVATION OF EXISTING PAVING AT CURB AND GUTTER.
3. CONTRACTOR SHALL AT ALL TIMES MAINTAIN A CLEAR 14' PASSAGE FOR SLUDGE TRUCKS ALONG THE SOUTH EDGE OF THE EFFLUENT CHANNEL.
4. FOR CONSTRUCTION SEQUENCING SEE SPECIFICATIONS

KEY NOTES

1. STRIP EXISTING PAVING AS SHADED AND HATCHED UNLESS OTHERWISE NOTED. EXISTING AC IS 6" THICK.
2. TEAM BUILDING WILL BE REMOVED OR RELOCATED BY EBMUD.
3. REMOVE 12" THICK CONCRETE CAP LOCATED UNDER EXISTING AC.
4. SAWCUT EXISTING AC PAVING AND MATCH EXISTING ELEVATIONS. CONTRACTOR TO VERIFY EXISTING ELEVATION FIELD.
5. SEE STRUCTURAL DRAWINGS FOR CONCRETE SLAB REMOVAL.
6. REMOVE EXISTING GUTTER.
7. PROTECT EXISTING CATCH BASIN.
8. REMOVE AND REPLACE EXISTING CATCH BASIN WITH NEW. PROTECT EXISTING PIPES THAT REMAIN
9. MODIFY EXISTING TRUCK SCALE RAMP TO ONLY ALLOW STRAIGHT TRAFFIC BY REMOVING THE CORNER OF THE CONCRETE RAMP.
10. SAWCUT AND REMOVE EXISTING CONCRETE WALK.



KEY MAPS

OBSOLETE
RECORD DRAWING - PROCESSED

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAI
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

REF 1: J:\SD\sd317A\w2820c301demo.mST
REF 2: J:\SD\sd317A\w2820c302demo.mST
REF 3: W:\Drafters\SD\sd317A\ref\W2828c0r-consultant.mst
REF 4: J:\SD\sd317A\w2820c302demo.mST
REF 5: W:\Drafters\SD\sd317A\ref\sd317bdr.mST
REF 6:
REF 7:
REF 8:
REF 9:

USER: fai
DATE: 26-AUG-2013 15:34
FILE: J:\SD\sd317A\W2820C040D.R01
PLOT SCALE: 40:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

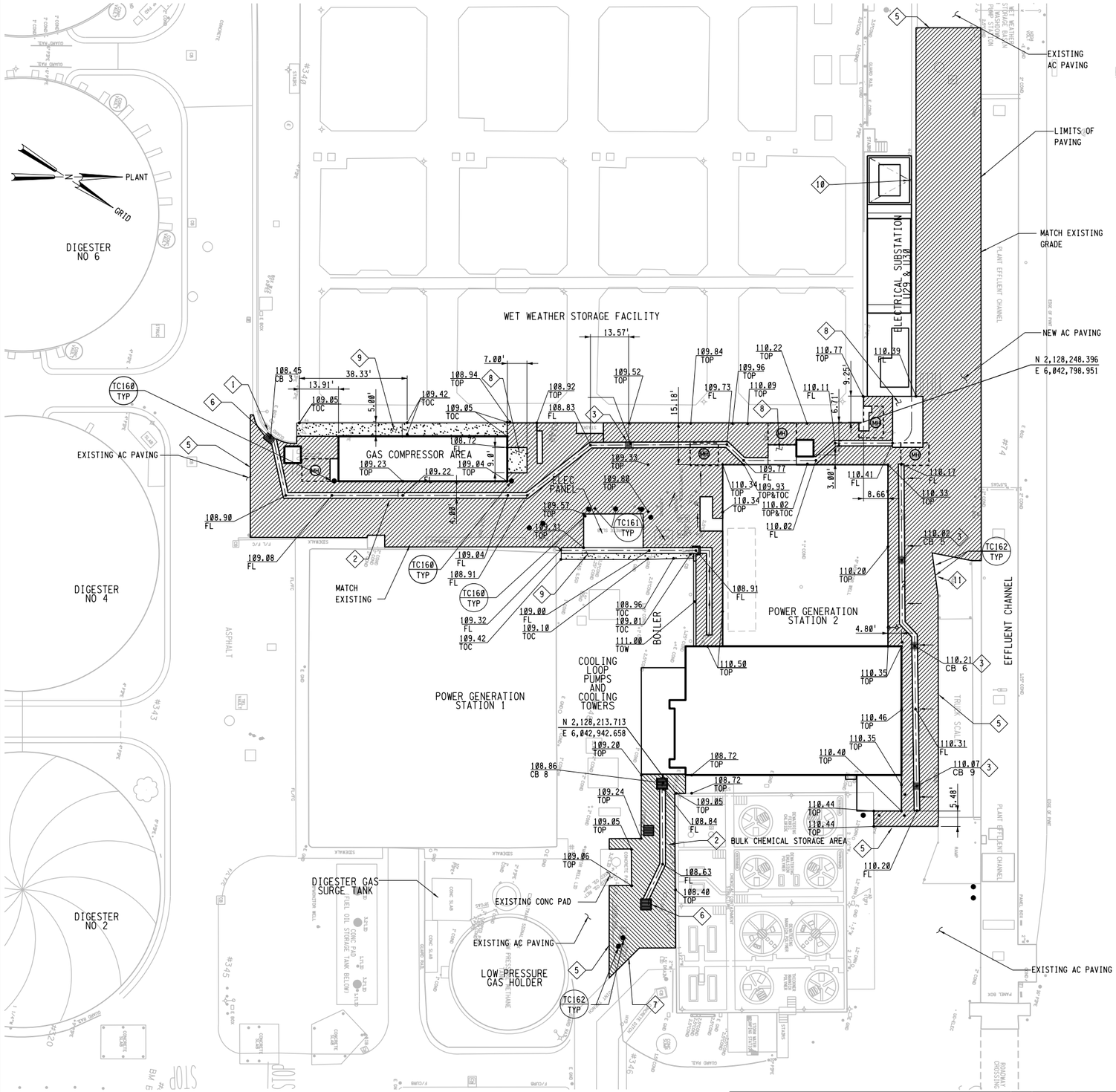
EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

PAVING PLAN DEMO 1

SCALE 1"=20'
DATE JAN2009
W28.20-C-040.D
DRAWING NUMBER
1
REV.

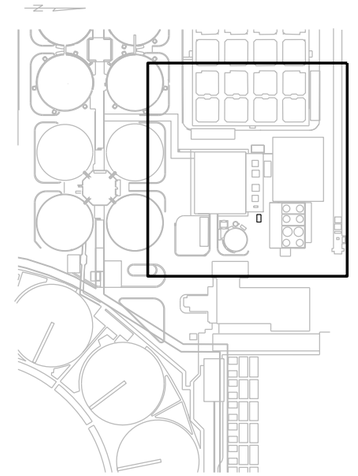


KEY NOTES

1. SLOPE AND GRADIENT OF EXIST PAVEMENT SHALL BE MAINTAINED TOWARDS EXISTING CATCH BASIN.
2. VALLEY GUTTER PER DETAIL TC104 TYP
3. CATCH BASIN PER DETAIL TC004 TYP
4. SINGLE FACE GUARD RAIL PER DETAIL TC150 TYP
5. MATCH NEW AC PAVING TO ORIGINAL ELEVATION AT SAWCUT. CONTRACTOR TO VERIFY EXISTING ELEVATION IN FIELD.
6. FLOW LINE OF CROSS GUTTER TO MATCH TOP ELEVATION OF EXISTING CATCH BASIN BOX.
7. MATCH TOP OF AC PAVING TO TOP EDGE OF PIPE DUCT.
8. CONSTRUCT CONCRETE PAD PER TYPICAL DETAIL TS600 TYP
   VALLEY GUTTER TO BE CONSTRUCTED AS PART OF CONCRETE PAD. 2" REBAR CLEARANCE TO BE MAINTAINED.
9. CONCRETE SIDEWALK PER TYPICAL DETAIL SECTION TC120 TYP
   PLACE 3/8" EXPANSION JOINTS AGAINST BOTH THE EXISTING STRUCTURE AND THE NEW STRUCTURE. SLOPE AS SHOWN ON DRAWINGS.
10. NEW ROLLED CURB & GUTTER PER TYPICAL DETAIL TC163 TYP
    MATCH THE FL ELEVATION OF THE NEW GUTTER WITH THAT OF THE EXISTING AT THE LIMIT OF GUTTER DEMO SEE DWG C-040.D
11. MODIFY EXISTING TRUCK SCALE RAMP TO ONLY ALLOW STRAIGHT TRAFFIC BY REMOVING THE CORNER OF THE RAMP. PAVE OVER CONCRETE REMOVAL AND MATCH TO EXISTING.

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING GRADING, PAVING, AND CONTOUR LINES ADJACENT TO THE CONSTRUCTION AREA.
2. FOR CONSTRUCTION SEQUENCING SEE SPECIFICATION.
3. FOR ELETRICAL DEMOLITIONS AND MODIFACTIONS SEE ELECTRICAL DRAWINGS.
4. NEW AC PAVING SHALL CONSIST OF 6" AC AND 12" TYPE 2, CLASS B ABC COMPACTED TO 95% COMPACTION.
5. MATCHING TO EXISTING PAVED AREA MAY REQUIRE REPAVING WHICH SHALL CONSIST OF REMOVING THE EXISTING AC, RECOMPACTING, AND GRADING THE EXISTING AND ANY NEW ABC, AS NECCESSARY TO 95% COMPACTION. THEN PLACE NEW AC TO MATCH THE EXISTING GRADE.
6. UNLESS OTHERWISE NOTED, PROTECT EXISTING CURB AND GUTTER TO REMAIN IN PLACE. NEW PAVING TO MATCH ELEVATION OF EXISTING PAVING AT CURB AND GUTTER.
7. FOR CATCH BASIN INFORMATION SEE C-301.



KEY MAPS

REGISTERED PROFESSIONAL ENGINEER DAVID T.S.A. No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

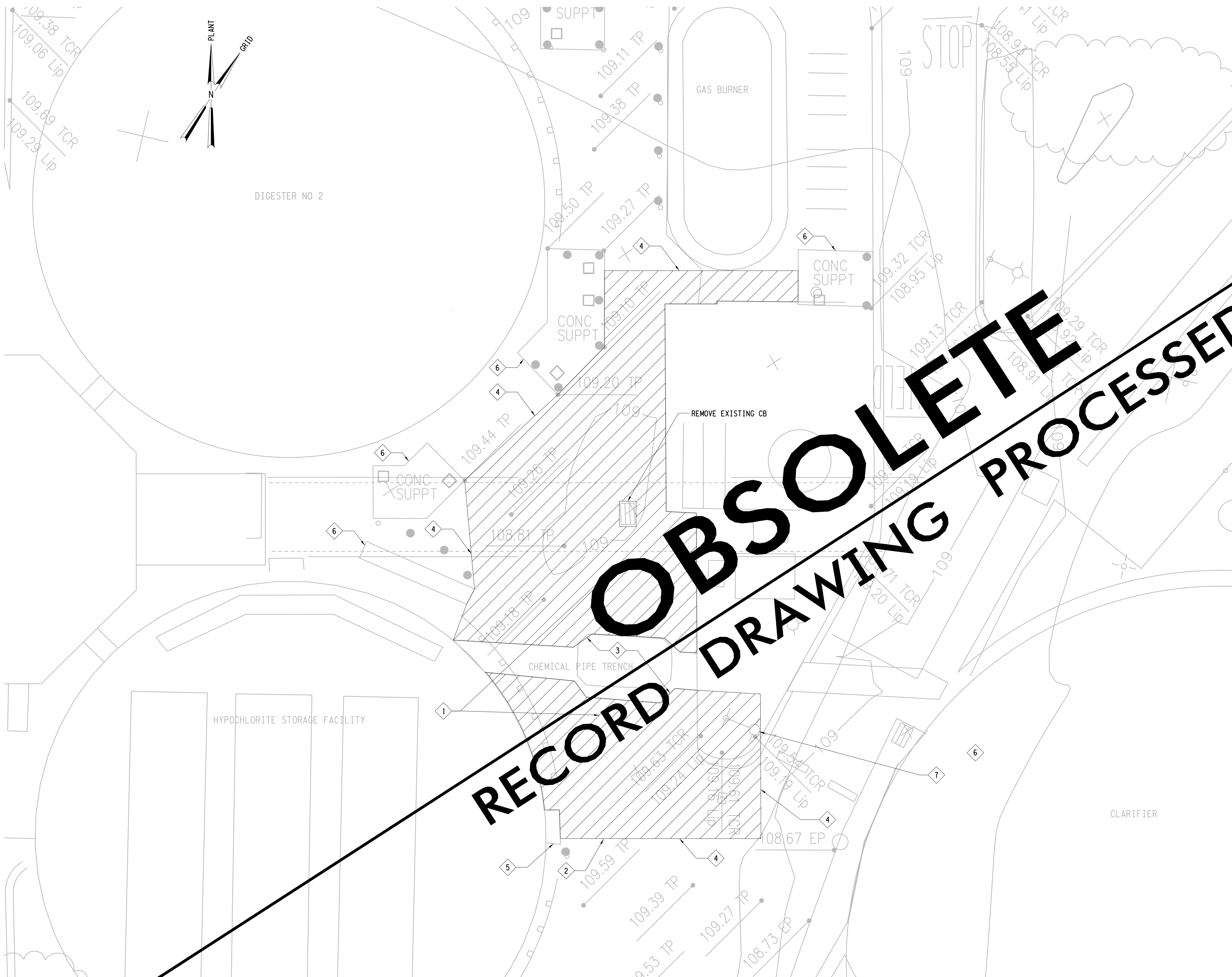
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

PAVING AND GRADING PLAN 1

SCALE 1"=20'
DATE JAN2009
W28.20-C-041
DRAWING NUMBER
1
REV.

REF 7; J:\w20.20\w2020c100.m00
REF 8; W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 4; W:\Drafters\w20\w2000ssite.mst
REF 5;
REF 6;
REF 1; J:\w20.20\w2020c041.m00
REF 2; W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 3;
USER: fal
DATE: 26AUG-2013 15:24
FILE: J:\SD\sd317A\W2820C041.R01
PLOT SCALE: 40:1

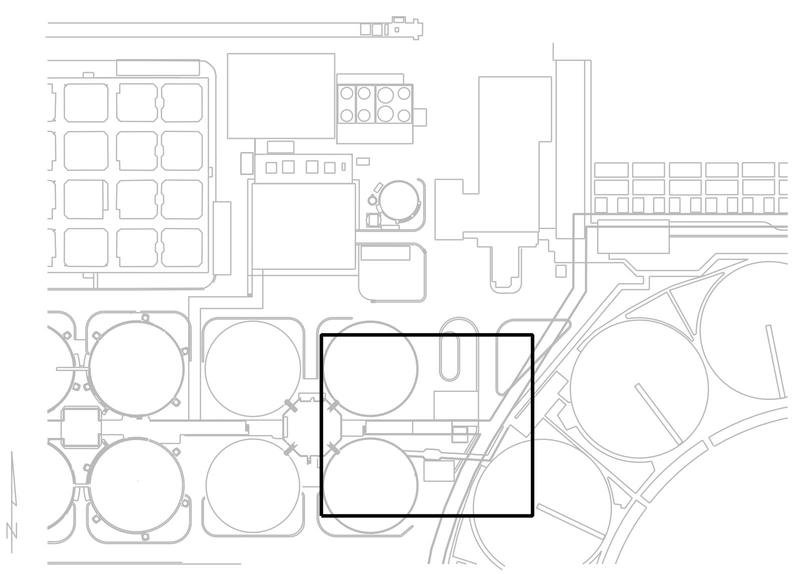


GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING GRADING, PAVING, AND CONTOUR LINES ADJACENT TO THE CONSTRUCTION AREA.
2. FOR CONSTRUCTION SEQUENCING SEE SPECIFICATION.
3. FOR ADDITIONAL DEMOLITION, SEE DWG. C-048.D.
4. THE DIGESTER GALLERY IS H-20 LOAD RATED. IF EQUIPMENT OR VEHICLES OVER THIS LOADING ARE BEING USED IN THIS AREA, THE GALLERY MUST BE PROTECTED.

KEY NOTES

1. STRIP EXISTING PAVING AS SHADED AND HATCHED UNLESS OTHERWISE NOTED.
2. LIMIT OF PAVING DEMO IS THE CENTERLINE OF THE HYPOCHLORITE STORAGE FACILITY.
3. LIMITS OF ASPH REMOVAL AT WALL OF CHEMICAL PIPE TRENCH. DO NOT DESTURB CHEMICAL PIPE TRENCH.
4. SAWCUT EXISTING AC PAVING AND MATCH EXISTING ELEVATIONS. CONTRACTOR TO VERIFY EXISTING ELEVATION IN FIELD.
5. PROTECT EXISTING STEPS.
6. DO NOT DISTURB CONCRETE FOUNDATION OF EXISTING EQUIPMENT.
7. RELOCATE EXISTING LIGHT POLE SEE C-044



KEY MAP

REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A. KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L. WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

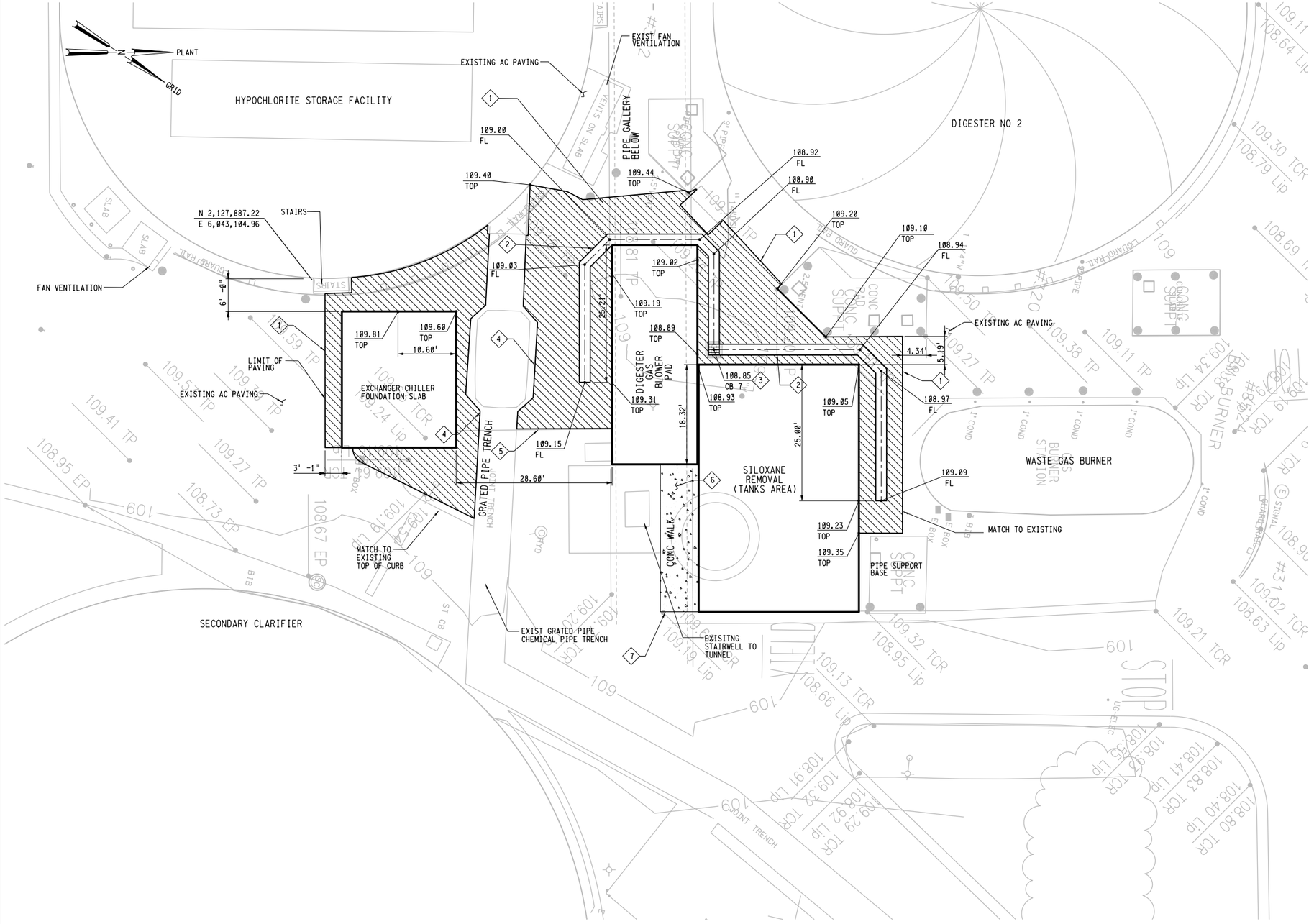
PAVING PLAN DEMO 2

SCALE 1"=10'
DATE JAN2009
W28.20-C-041.D
DRAWING NUMBER
REV. 1

USER: fal
DATE: 26-AUG-2013 15:34
FILE: J:\SD\sd317A\w2820C041D.R01
PLOT SCALE: 20:1

REF 1: J:\SD\sd317A\w2820c301demo.mST
REF 2: J:\w20\bak\sd317a_ref\w2800xsite-D.m01
REF 3: J:\SD\sd317A\w2820c302demo.mST
REF 4: W:\Drafters\SD\sd317A\ref\sd317bdr.mST
REF 5: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 6:
REF 7:
REF 8:
REF 9:

REF 7: W:\D-rafters\SD\sd317A\ref\W2820dr_consultant.mst
REF 8: J:\w28.20\w2820c100.mst
REF 4:
REF 5:
REF 6:
REF 1: W:\D-rafters\SD\sd317A\ref\W2820dr_consultant.mst
REF 2:
REF 3:
USER: fah
DATE: 28-AUG-2013 15:24
FILE: J:\SD\sd317A\W2820C042.R01
PLOT SCALE: 20:1

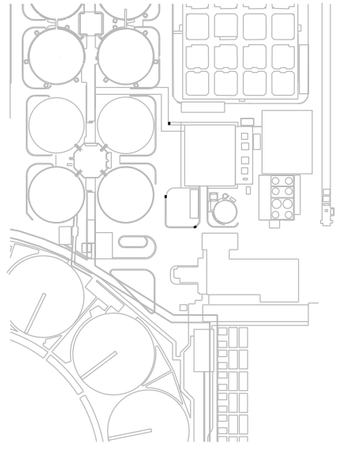


GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING GRADING, PAVING, AND CONTOUR LINES ADJACENT TO THE CONSTRUCTION AREA.
2. FOR CONSTRUCTION SEQUENCING SEE SPECIFICATION.
3. FOR ELETRICAL DEMOLITIONS AND MODIFACTIONS SEE ELECTRICAL DRAWINGS.
4. NEW AC PAVING SHALL CONSIST OF 6" AC AND 12" TYPE 2, CLASS B ABC COMPACTED TO 95% COMPACTION.
5. MATCHING TO EXISTING PAVED AREA MAY REQUIRE REPAVING WHICH SHALL CONSIST OF REMOVING THE EXISTING AC, RECOMPACTING, AND GRADING THE EXISTING AND ANY NEW ABC, AS NECCESSARY TO 95% COMPACTION. THEN PLACE NEW AC TO MATCH THE EXISTING GRADE.
6. UNLESS OTHERWISE NOTED, PROTECT EXISTING CURB AND GUTTER TO REMAIN IN PLACE. NEW PAVING TO MATCH ELEVATION OF EXISTING PAVING AT CURB AND GUTTER.
7. FOR CATCH BASIN INFORMATION SEE C-301.

KEY NOTES

1. MATCH NEW AC PAVING TO ORIGINAL ELEVATION AT SAWCUT. CONTRACTOR TO VERIFY EXISTING ELEVATION IN FIELD.
2. VALLEY GUTTER PER DETAIL TC104 TYP.
3. CATCH BASIN PER DETAIL TC004 TYP
4. MATCH TOP OF AC PAVEMENT WITH TOP EDGE AT EXISTING GRATED PIPE TRENCH.
5. MATCH TOP OF AC PAVING TO TOP OF CONRETE VERTICAL CURB.
6. SIDEWALK PER DETAIL TC120 TYP.
7. MATCH THE FRONT OF THE CONCRETE WALK WITH THE TOP OF THE EXISTING ROLLED CURB.



KEY MAP

REGISTERED PROFESSIONAL ENGINEER DAVID TSAY No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

PAVING AND GRADING PLAN 2

SCALE 1"=10'
DATE JAN2009
W28.20-C-042
DRAWING NUMBER
1
REV.

WET WEATHER STORAGE FACILITY

GAS COMPRESSOR AREA (SEE DWG M-103)

EXISTING SHORING

POWER GENERATION STATION 1

POWER GENERATION STATION 2 (SEE DWG M-101)

COOLING WATER LOOP PUMPS AREA

EXISTING BOILER

BULK STORAGE FACILITY

SIDEWALK

F/L F/C

CHEMICAL CONTAINMENT STRUCTURE

1-AHP
16-LPDG
6-CCWS
6-CCWR
6-HPDG
4-CD
15-SD
INV EL S=103.96
INV EL NE = 104.93
INV EL 103.5±
LOW VOLTAGE
HIGH VOLTAGE
DUCTBANK SEE ELEC.
TC160 TYP
5-NG
CL EL 106.8
INV EL N=104.78
CL EL 101.60
CL EL 106.5
6" CO
INV 100.81
8-HWR
8-HWS
6-SAD
INV 103.89
1-NC
CL EL 104.76
CL EL 104.76
SEE SHEET S-114
CL EL 106.73
SEE DWG M-101 FOR PIPING CONT
2 FORCE BALANCED FLEXIBLE EXPANSION JOINT
HIGH VOLTAGE DUCTBANK SEE ELEC.
12" CO
TP412 TYP
8" DRAIN
TP040 TYP
8" CO
INV EL=106.40
INV 100.93
10-LPDG
6-SAD
6" CO
6" CO
12-SD
INV EL SW=105.07
INV EL NE=105.40
SEE DWG M-101 FOR PIPING CONT
INV EL 106.46
8-SD
1-1A
6-HPDG
CL EL 106.5
2-1W
2-2W
CL EL 104.02
CL EL 108.29
2-1W CL EL 105.88
2-2W CL EL 105.88
INV EL E=106.10
INV EL W=106.3
CB
12-SD
B C-204
A C-204
SEE DWG C-045 FOR CONT
INV 100.43
2 FORCE BALANCED FLEXIBLE EXPANSION JOINTS, 1 JOINT PER HOT WATER LINE
SEE DWG M-107 FOR CONT
INV EL 105.56
INV EL 105.93
8" DRAIN
TP412 TYP
8-CO
INV EL 105.74
10-SD
INV EL 105.78
10" CO
8" DRAIN
TP412 TYP
(TYP)
SEE DWG M-107 FOR PIPING ARRANGEMENT THIS AREA
INV EL W=106.80
INV EL E=105.30
12-SD
INV EL 105.88
POWER GENERATION STATION 2 (SEE DWG M-101)
INV EL N=103.96
SEE DWG M-107 FOR PIPING CONT
INV 105.50
6-3W
12-SD
INV EL W=105.18
INV EL S=104.24
INV 106.43
D C-046
E C-046
TC161 TYP
8
INV 106.43
TC160 TYP
C C-046
16-LPDG
SEE C-202 FOR CONT
MONITOR WELL
PLANT GRID
REF 7;
REF 8;
REF 9; W:\D-ofters\SD\sd317A\ref\sd317bdr.mst
REF 4;
REF 5;
REF 6;
REF 1: W:\D-ofters\w20\w2000sstm.mst
REF 2: W:\D-ofters\w20\w2000xuti.mst
REF 3: W:\D-ofters\SD\sd317A\ref\W2820bdr_consultant.mst
USER: fal
DATE: 22-AUG-2013 15:34
FILE: J:\SD\sd317A\W2820C043.R01
PLOT SCALE: 20.0000031

GENERAL NOTES

1. FOR CONSTRUCTION SEQUENCING SEE SPECIFICATION.
2. FOR ELETRICAL DEMOLITIONS AND MODIFACTIONS SEE ELECTRICAL DRAWINGS.
3. FOR PIPING IN THE EXISTING BOILER AREA SEE MECHANICAL DRAWINGS.
4. DEMO EXISTING SOLDIER PILES AS NECESSARY FOR NEW PIPING

KEY NOTES

1. DEMOLISH EXIST CONCRETE STAIRS AND RECONSTRUCT AFTER INSTALLATION OF ELECTRICAL DUCTBANK
2. RE-USE EXISTING 15" STORM DRAIN
3. CONNECT NEW 5" NG AND NEW ELECTRICAL CONDUIT TO EXISTING AT THE CHANNEL WALL
4. RE-USE EXST 15-SD FROM CB 1 TO CB 3
5. EXIST FIRE HYDRANT TO BE RELOCATED.
6. 2 STEEL BALL JOINTS LOCATED ON 8-HPDG VERTICAL PIPE.
7. 1 BELLOWS TYPE EXPANSION JOINT LOCATED ON 18-LPDG. 1 FORCE BALANCED FLEXIBLE EXPANSION JOINT ON EACH 6-CCW. 3 STEEL BALL JOINTS ON 8-HPDG.
8. PLACE REMOVABLE GUARD POSTS EVERY 5', 14 IN TOTAL ALONG THE BULK STORAGE FACILITY, PLACED 3' FROM THE WALL.
9. RELOCATED EXIST LIGHT POLE. CONNECT TO ASSOCIATED WIRING/CONDUIT. CONTRACTOR TO REROUTE CONDUIT AND WIRING AS NECESSARY.
10. RELOCATE EXISTING LIGHT POLE.
11. RELOCATE EXISTING FIRE HYDRANT. CONNECT TO EXISTING WATER SOURCE CONTRACTOR TO REROUTE WATER AS NECESSARY TO ESTABLISH NEW CONNECTION.

LEGEND

ELECTRICAL DUCTBANK SEE ELECTRICAL DRAWINGS.

KEY MAPS

REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE @3AUG12 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT: EBMUD

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

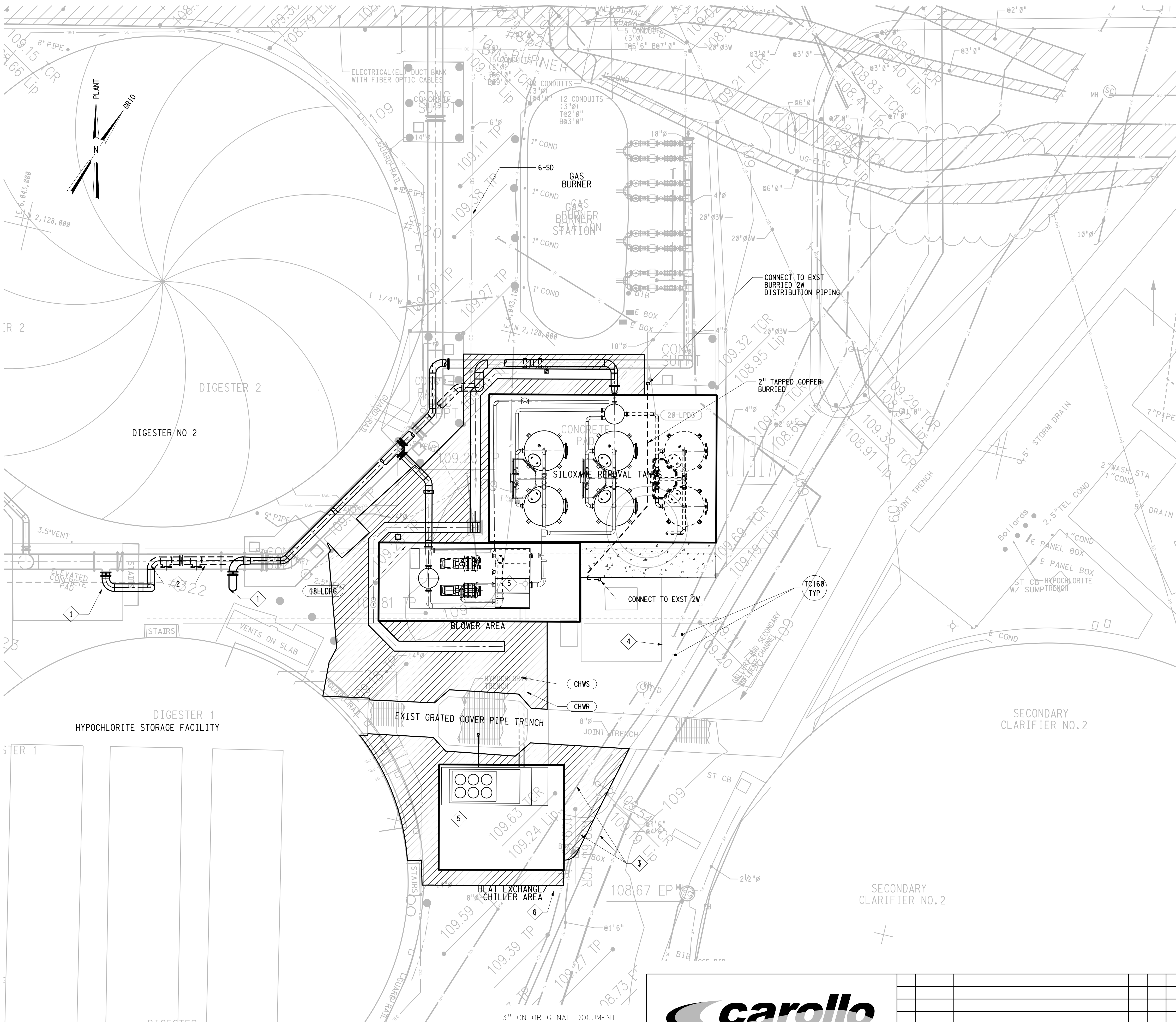
SD317A – PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

YARD PIPING PLAN 1

SCALE 1"=10'
DATE JAN2009
W28.20-C-043 DRAWING NUMBER
1 REV.

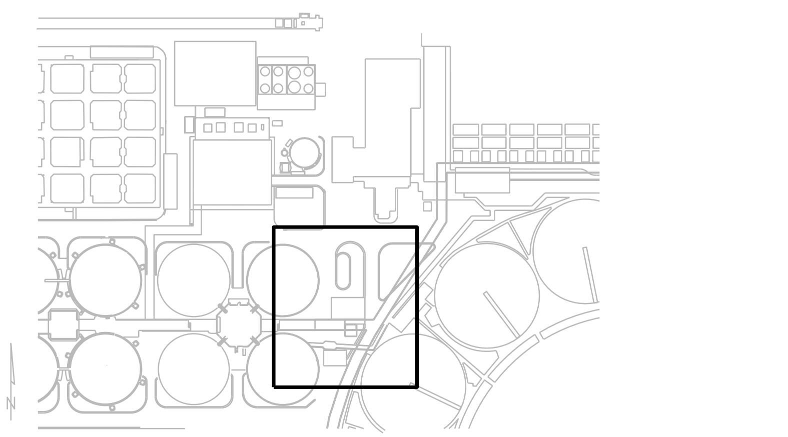


GENERAL NOTES

1. FOR MECHANICAL PIPING CONTINUATION SEE MECH DRAWINGS.
2. EQUIPMENT DRAINS AS SHOWN ARE ESTIMATED LOCATIONS ONLY.
3. CONTRACTOR SHALL MODIFY LOCATIONS OF DRAIN PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
4. PROVIDE CHAIN OPERATORS PER FOR ALL BUTTERFFLY VALVES PER DETAIL TMXX LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.
5. FOR CONDENSATION DRAIN INFORMATION COMING FROM THE GAS CONDITIONING AREA SEE DWG M-104 AND M-105.

KEY NOTES

1. CONNECT TO EXIST 18" BFV LPDG. SEE DWG M-104
2. 18" x18" TEE WITH BF (FOR FUTURE SULFUR REMOVAL CONNECTION)
3. SEE NOTE 23 IN C-001.
4. INSTALL RELOCATED FIRE HYDRANT AND CONNECT TO EXISTING 8" 5W LINE. CONTRACTOR WILL RELOCATE AND LENGHTEN THE 8" 5W LINE TO FACILITATE THIS CONNECTION
5. SEE DWG M-104 FOR MORE PIPING DETAIL OF GAS CONDITIONING AREA
6. RELOCATE EXIST LIGHT POLE AND CONNECT TO ASSOCIATED WIRING/CONDUIT



KEY MAPS

REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG12 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

CONSULTANT / EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

YARD PIPING PLAN 2

SCALE 1"=10'
DATE JAN2009

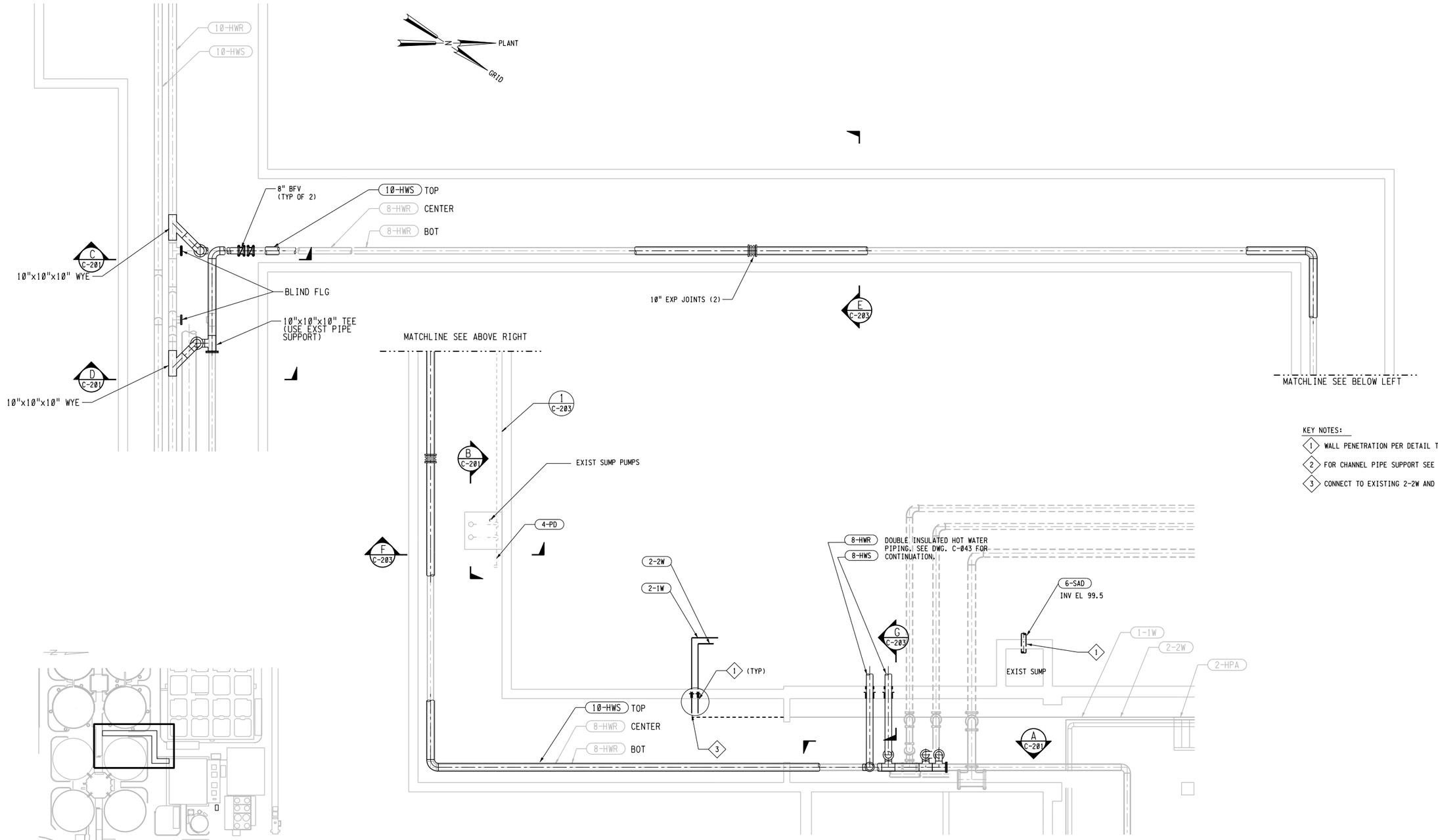
W28.20-C-044
DRAWING NUMBER

REV. 1

USER: fal
DATE: 26-AUG-2013 15:34
FILE: J:\SD\sd317A\W2820C044.R01

PLOT SCALE: 20:1

REF 7; J:\SD\sd317A\w2820c105.MST
REF 8; J:\SD\sd317A\w2820c105.MST
REF 4;
REF 5;
REF 6; W:\Drafters\SD\sd317A\ref\sd317bdr.mST
REF 1; W:\Drafters\SD\sd317A\ref\W2020bdr_consultant.mst
REF 2;
REF 3; J:\SD\sd317A\w2820c310.MST
USER: fal
DATE: 22-AUG-2013 15:24
FILE: J:\SD\sd317A\W2820C045.R01
PLOT SCALE: 10.666666:1



KEY NOTES:

1. WALL PENETRATION PER DETAIL TP304.
2. FOR CHANNEL PIPE SUPPORT SEE TP612.
3. CONNECT TO EXISTING 2-2W AND 2-1W WITH 2" ISOLATION VALVES.

KEY MAPS

TUNNEL PIPING PLAN

Δ"=1'-0"

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAI
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	BA/DT
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

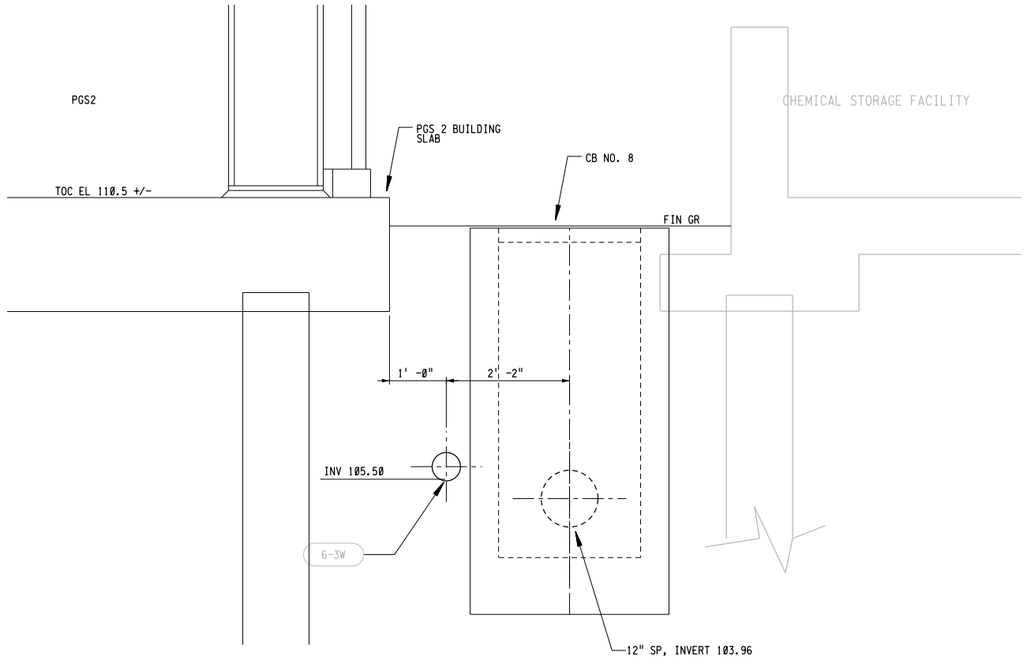
EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

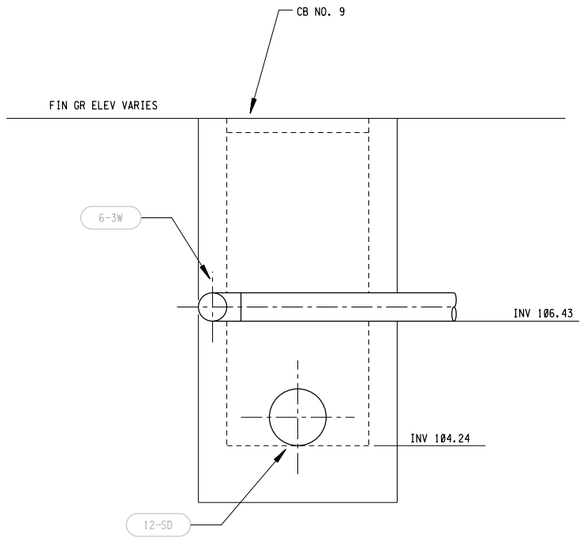
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

TUNNEL PIPING PLAN

SCALE 3/16"=1'-0"
DATE JAN2009
W28.20-C-045
DRAWING NUMBER
1
REV.



SECTION D
3/4"=1'-0"
C-043



SECTION E
3/4"=1'-0"
C-043

REF 7:
REF 8:
REF 9:

REF 4:
REF 5:
REF 6:

REF 1:
REF 2:
REF 3:

USER: fah
DATE: 22-AUG-2013 15:24
FILE: J:\SD\sd317A\W2820C046.R01

PLOT SCALE: 2.666667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAY
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

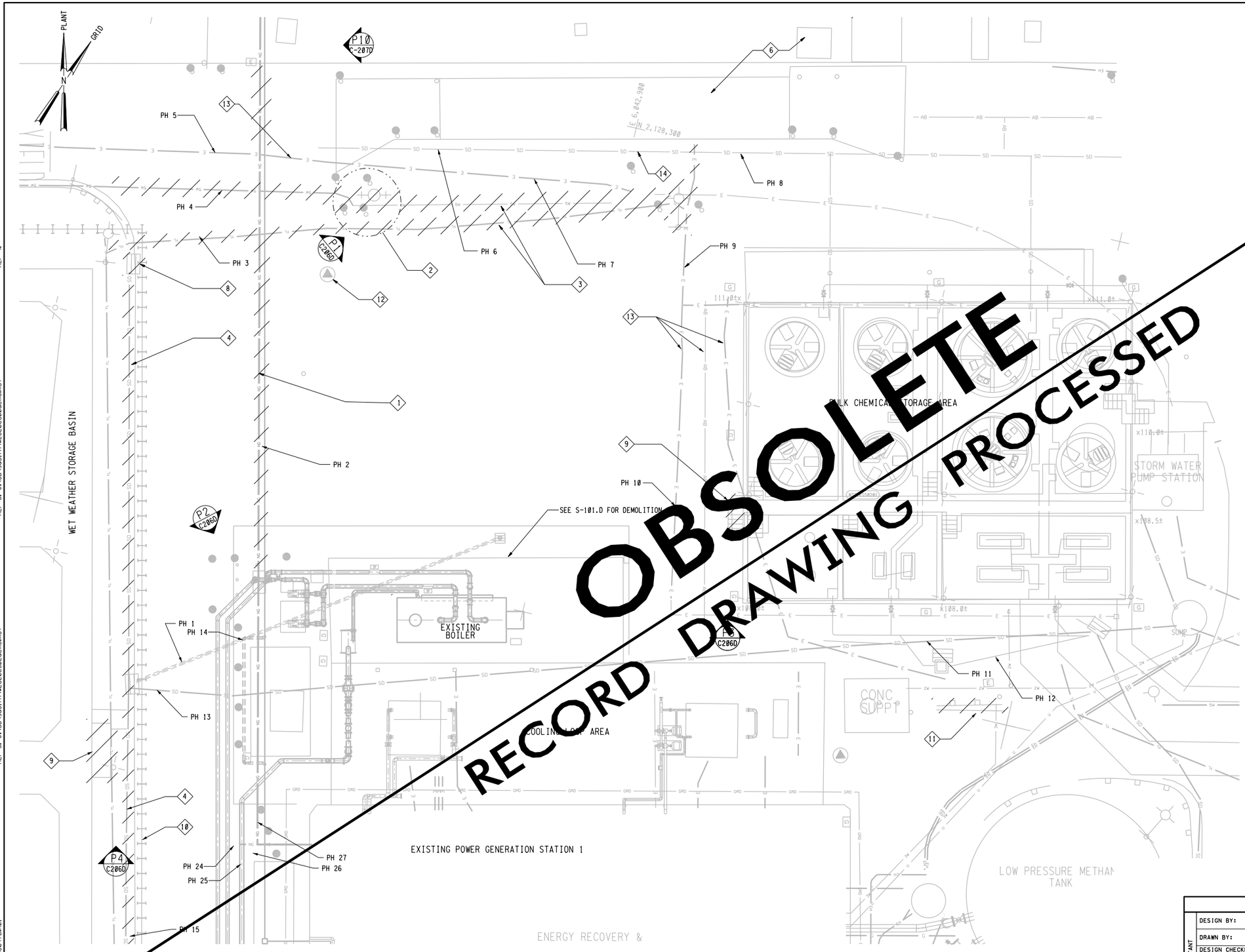
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

MISCELLANEOUS YARD PIPING PLAN

SCALE	AS SHOWN	W28.20-C-046	1
DATE	JAN2009	DRAWING NUMBER	REV.

OBSOLETE
RECORD DRAWING
PROCESSED

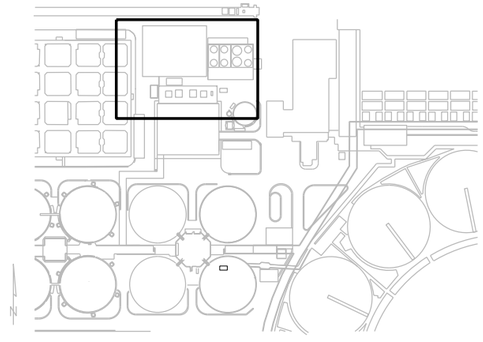


GENERAL NOTES

1. FOR CONSTRUCTION SEQUENCING SEE SPECIFICATION.
2. FOR ELECTRICAL DEMOLITIONS AND MODIFICATIONS SEE ELECTRICAL DRAWINGS.
3. FOR MECHANICAL PIPING CONTINUATION SEE MECH DRAWINGS.
4. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS.
5. FOR POTHOLE INFORMATION SEE SHEET SD317-W28-C-C301.

KEY NOTES

1. REMOVE EXISTING 5" HIGH PRESSURE NG AND ELEC CONDUIT.SEE SPECIFICATION 01145 FOR SPECIAL REQUIREMENTS.
2. REMOVE EXISTING FIRE HYDRANT AND BOLLARDS, RELOCATE FIRE HYDRANT. FOR NEW HYDRANT LOCATION. SEE DWG C-043.
3. REMOVE EXISTING ELEC CONDUITS AND WATER LINE. SEE ELECTRICAL DRAWINGS FOR CONDUIT DEMO.
4. REMOVE EXISTING 18" STORM DRAIN.
5. REMOVE EXISTING BOILER PIPING, SEE DWG M-101.D
6. EXISTING TRUCK SCALE AND SCALE HOUSE TO REMAIN
7. ~~REMOVE AND RELOCATE EXISTING PUMPS. SEE M-107 FOR RELOCATED.~~
8. REMOVE CATCH BASIN.
9. REMOVE AND REPLACE EXISTING STAIRS IF NECESSARY DURING CONSTRUCTION
10. EXISTING SOLDIER PILE
11. REMOVE GUARD RAIL.
12. CLOSE MONITORING WELL PER SPECIFICATION SECTION 01351.
13. RELOCATE EXISTING ELECTRICAL DUCTBANK AND CONDUIT AS REQUIRED TO FACILITATE CONSTUCTION OF PGS2.
14. EXISTING 10" SD



KEY MAPS

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAY
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

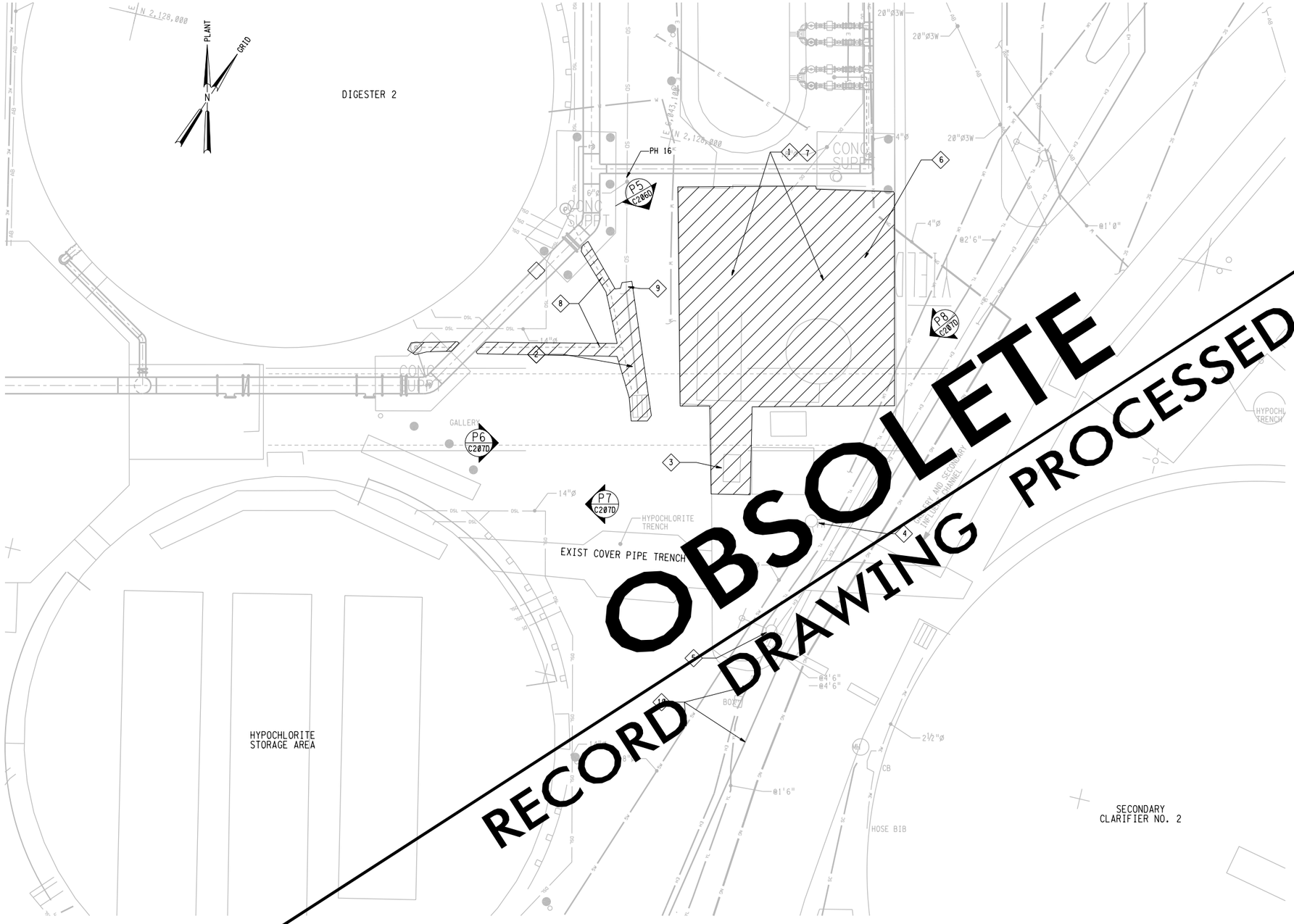
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

DEMOLITION PIPING PLAN 1

SCALE 1"=10'
DATE JAN2009
W28.20-C-047.D
DRAWING NUMBER
1
REV.

REF 1: J:\SD\sd317A\w2820c301demo.mST
REF 2: J:\SD\sd317A\w2820c-c2080ctie-D.m01
REF 3: J:\SD\sd317A\w2828c-302demo.mST
REF 4: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 5: J:\SD\sd317A\ref\W2820bdr_c2080ctie1.m01
REF 6: J:\SD\sd317A\w2828c-300demo.mST
REF 7: W:\Drafters\SD\sd317A\ref\sd317bdr.mST
REF 8:
REF 9:

USER: fah
DATE: 22-AUG-2013 15:24
FILE: J:\SD\sd317A\W2820C047D.R01
PLOT SCALE: 20:1



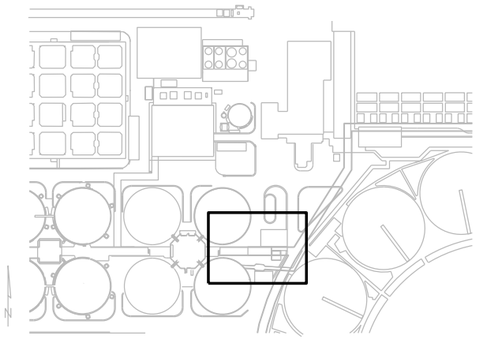
OBSOLETE
RECORD DRAWING PROCESSED

GENERAL NOTES

1. FOR CONSTRUCTION SEQUENCING SEE SPECIFICATION.
2. FOR ELETRICAL DEMOLITIONS AND MODIFACTIONS SEE ELECTRICAL DRAWINGS.
3. FOR MECHANICAL PIPING CONTINUATION SEE MECH DRAWINGS.
4. FOR POTHOLE INFORMATION SEE SHEET C-301.

KEY NOTES

1. REMOVE EXISTING CHEMICAL TANKS, PUMPS, PIPING, AND ASSOCIATED APPURTENANCES.
2. REMOVE EXISTING CATCH BASIN
3. REMOVE EXISTING ELEC CABINET AND CONC SLAB
4. REMOVE AND RELOCATE EXISTING FIRE HYDRANT, SEE DWG C-044 FOR NEW LOCATION.
5. RELOCATE EXISTING LIGHT POLE AND WIRING.
6. REMOVE CONC SLAB.
7. REMOVE EXISTING ABANDONED 18" LPDG IN THIS AREA. PLUG BOTH ENDS OF 18"-LPDG.
8. REMOVE AND RELOCATE EXISTING 2" CONDENSATION DRAINS.
9. REMOVE AS MUCH SD PIPE AS NECESSARY TO INSTALL NEW CATCH BASIN FOR MORE INFORMATION SEE DWG C-044.
10. SEE NOTE 23 IN C-001.



KEY MAPS

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAI
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

REF 4: W:\Drafters\SD\sd317A\w2820c-300demo.dgn
REF 5: J:\SD\sd317A\w2820c-2400ex-01.dgn
REF 6: J:\SD\sd317A\w2820c-3300ex.dgn

REF 7:
REF 8:
REF 9:

REF 1: J:\SD\sd317A\w2820c-301demo.dgn
REF 2: J:\w2820base\sd317a-ref\w2820ex-01.dgn
REF 3: W:\Drafters\SD\sd317A\ref\w2820bdr_consultant.mst

USER: fai
DATE: 22-AUG-2013 15:24
FILE: J:\SD\sd317A\W2820C048D.R01

PLOT SCALE: 20:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

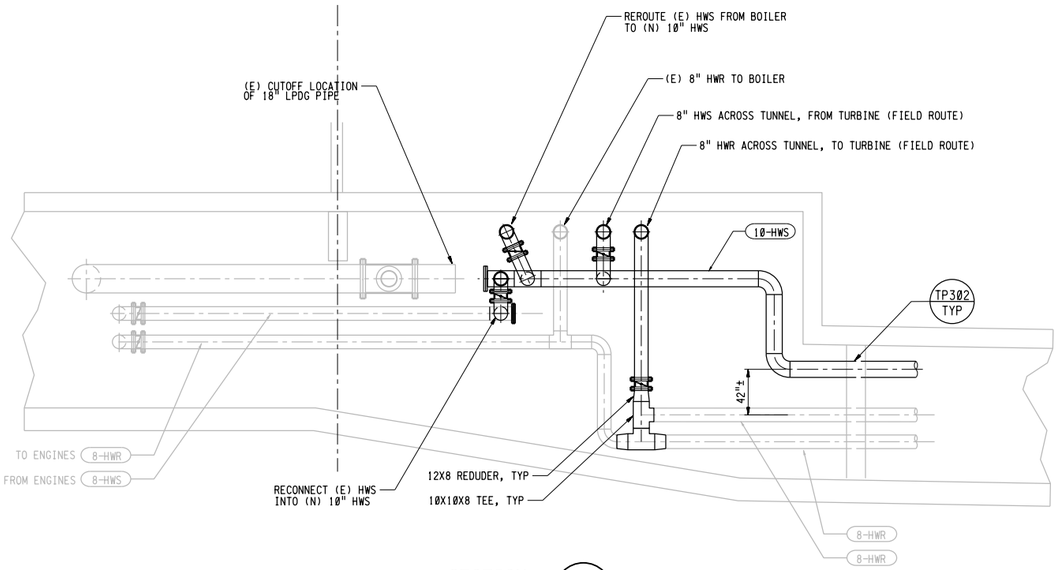
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

DEMOLITION PIPING PLAN 2

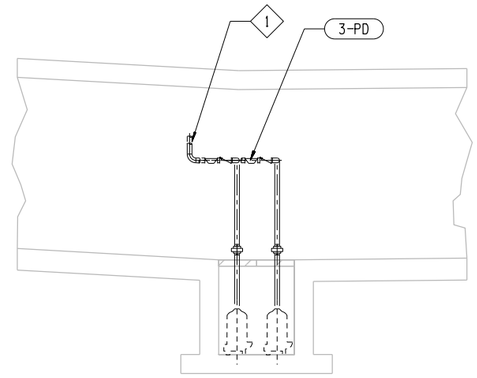
SCALE 1"=10'
DATE JAN2009

W28.20-C-048.D
DRAWING NUMBER

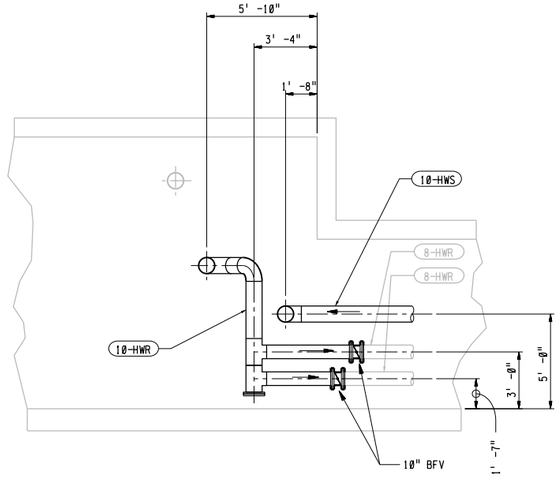
1
REV.



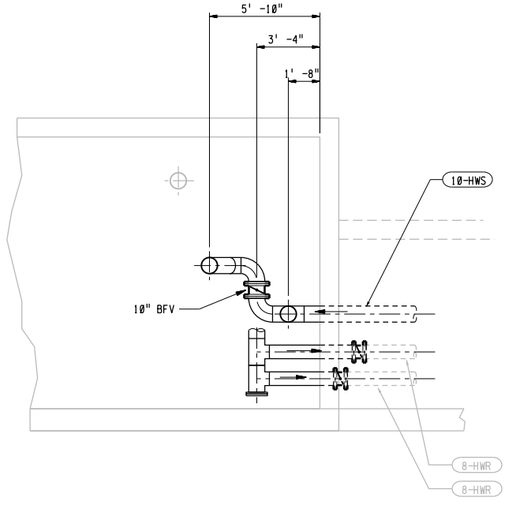
SECTION A
NTS C045



SECTION B
1/4"=1'-0" C045



SECTION C
1/4"=1'-0" C045



SECTION D
1/4"=1'-0" C045

GENERAL NOTES:

1. FOR PIPE GUIDEANCHORS AND EXPANSION JOINT SEE C045.

KEY NOTES:

<1> CONNECT 3" PUMP DISCHARGE TO EXISTING 4" PUMP DISCHARGE PIPE.

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAY
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	BA/DT
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

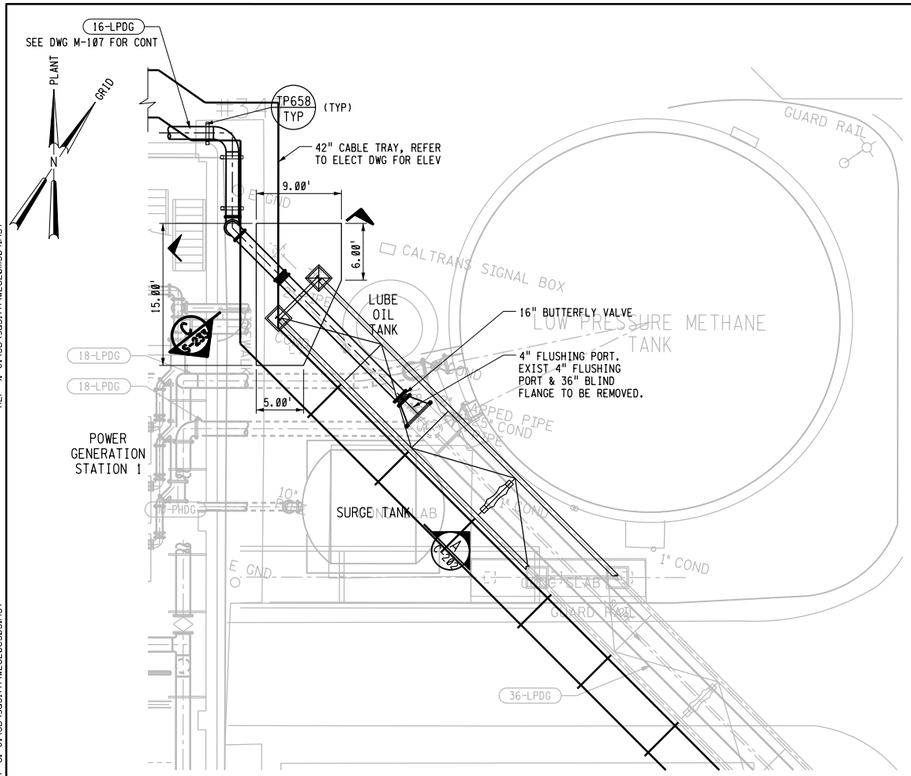
SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL
TUNNEL PIPING
SECTIONS AND DETAILS

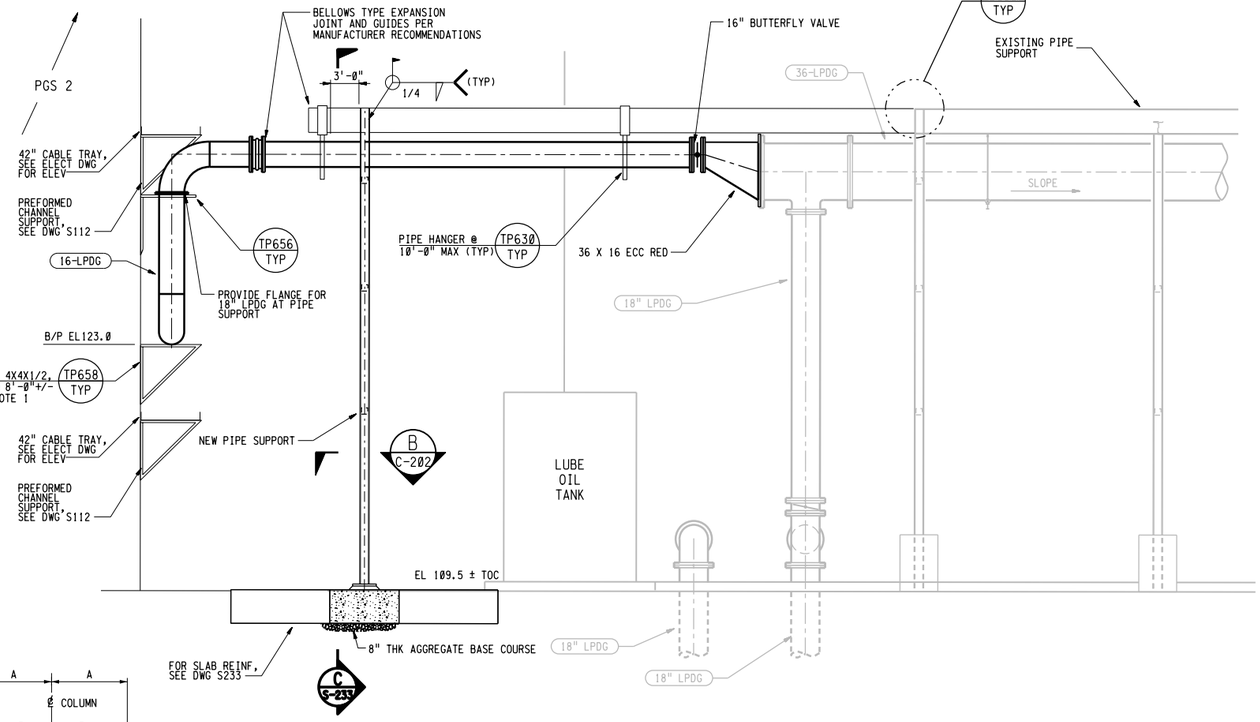
SCALE	AS SHOWN	W28.20-C-201	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: W:\Drafters\SD\sd317A\ref\W2020bdr_consultant.mst
REF 2:
REF 3:
REF 4: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:
USER: fah
DATE: 28-AUG-2013 15:24
FILE: J:\SD\sd317A\W2820C201.R01
PLOT SCALE: 81



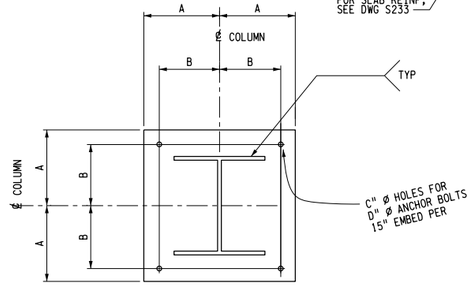
PARTIAL SITE PLAN

1/8"=1'-0"



SECTION A / C-202

1/4"=1'-0"



BASE PLATE

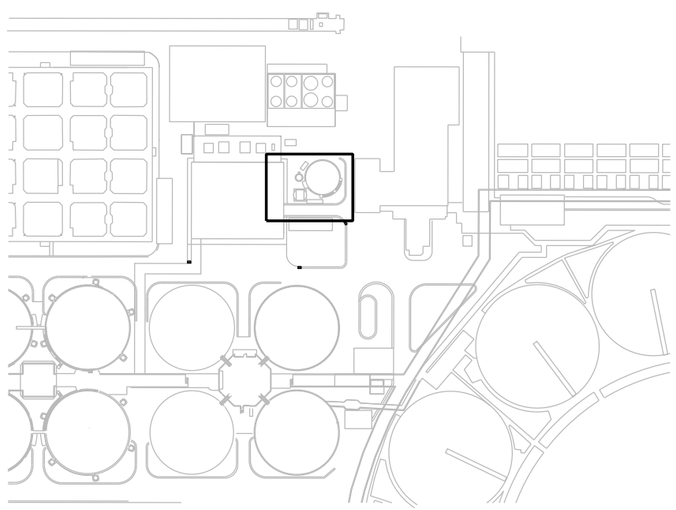
COLUMN (W SIZE)	A	B	C	D	BASE PLATE SIZE
W10	8½"	6 1/2"	1⁵⁄₁₆"	1"	PL 1¼X1'-5X1'-5"

SECTION B / C-202

NTS

NOTE:

1. REMOVE EXISTING ARCH FLUTE ON PGS 1 WALL PRIOR TO INSTALL OF SUPPORT. DO NOT CUT OR DAMAGE EXISTING REINF.



KEY MAP

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

REGISTERED PROFESSIONAL ENGINEER CARL A. GENTRY No. C28410 Exp. 3/31/08 CIVIL STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	BA/DT/SP
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL
YARD PIPING
SECTIONS AND DETAILS 1

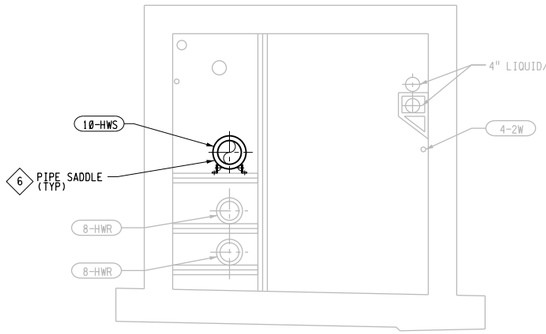
SCALE AS SHOWN
DATE JAN2009

W28.20-C-202
DRAWING NUMBER

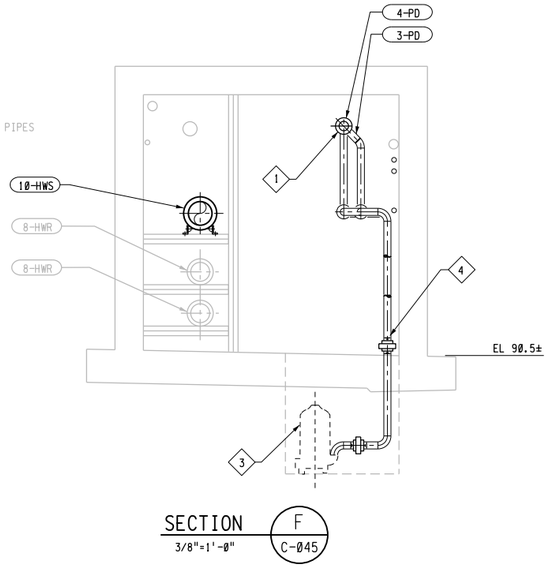
1
REV.

REF 1: W:\D-rafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2:
REF 3:
REF 4:
REF 5:
REF 6: J:\SD\sd317A\W2820C202.R01
REF 7: J:\SD\sd317A\w2820C304.MST
REF 8: J:\SD\sd317A\w2820C303.MST
REF 9: J:\SD\sd317A\w2820m504.MST
REF 10: J:\SD\sd317A\w2820c305.MST

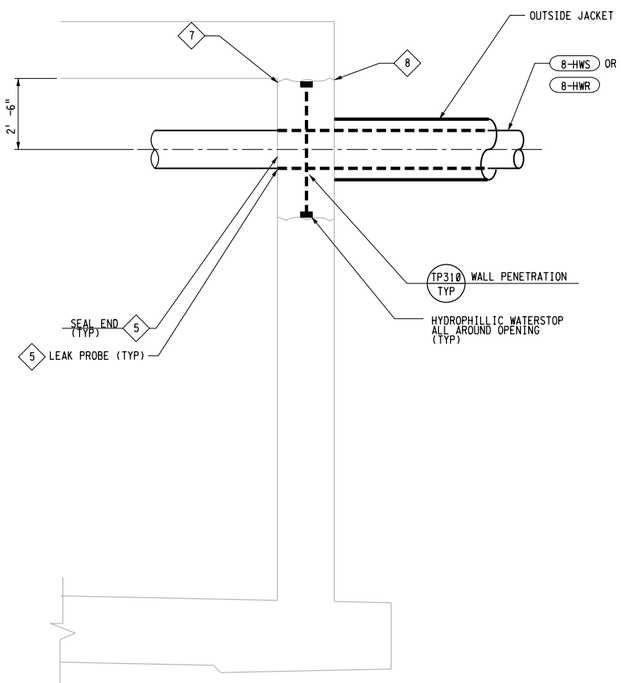
USER: fal
DATE: 26-AUG-2013 15:34
FILE: J:\SD\sd317A\W2820C202.R01
PLOT SCALE: 161



SECTION D
3/8"=1'-0"
C-045



SECTION F
3/8"=1'-0"
C-045



SECTION G
NTS
C-045

GENERAL NOTES:

1. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS
2. EQUIPMENT DRAINS AS SHOWN ARE ESTIMATED LOCATIONS ONLY. CONTRACTOR SHALL MODIFY LOCATIONS OF DRAIN PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.

KEY NOTES;

1. CONNECT NEW 3-PD TO EXISTING 4-PD HEADER
2. NOT USED
3. RELOCATE EXISTING SUMP PUMPS TO THE SOUTH SUMP WALL TO CLEAR NEW PIPING ABOVE AND RECONNECT. REUSE EXISTING PUMP DISCHARGE VALVES.
4. REMOVE EXISTING PUMP DRAIN AND REPLACE W/ 3-PD AS SHOWN.
5. JACKET CONDUIT END SEAL BY PIPE MANUFACTURER. (TYP)
6. ALTERNATE PIPE ROLLERS LOCATION BETWEEN HORIZONTAL PIPE SUPPORT. PROVIDE INSULATION SHIELD WHERE PIPE IS NOT SUPPORTED BY ROLLERS.
7. REMOVE EXISTING CONCRETE AS REQUIRED TO EXPOSE REINF. CUT EXISTING REINF ONLY AS REQUIRED FOR THE PIPE PENETRATION. DO NOT CUT OR DAMAGE ANY EXISTING REINF AND INCORPORATE INTO NEW WORK. COAT CONC SURFACE WITH EPOXY RESIN PORTLAND CEMENT BONDING AGEANT PRIOR TO PLACING NEW CONCRETE.
8. SLOPE TOP 1/2" OVER WALL THICKNESS TOWARDS WALL FACE WHERE CONC IS PLACED TO ALLOW AIR TO ESCAPE.

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAI
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

YARD PIPING SECTIONS

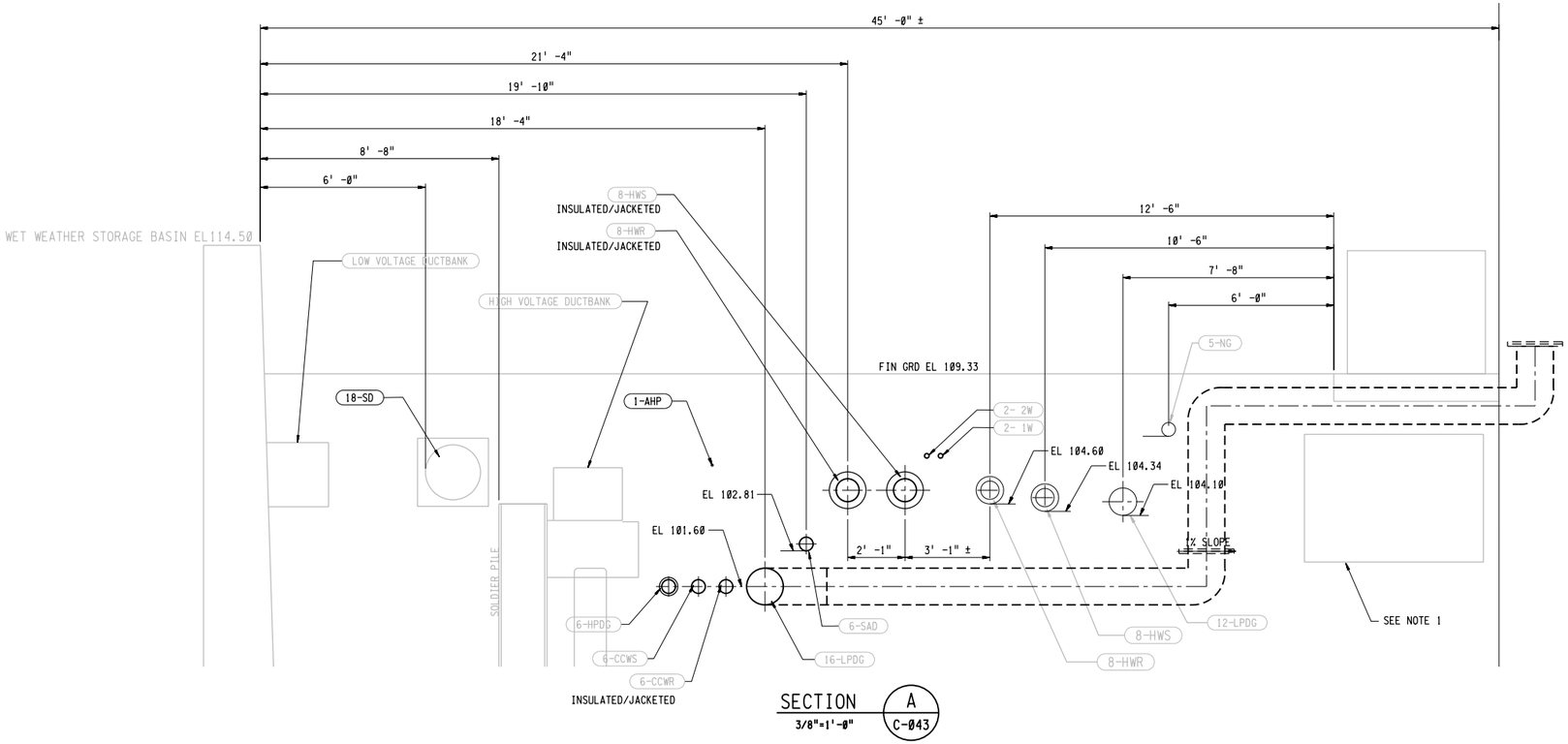
SCALE AS SHOWN
DATE JAN2009

W28.20-C-203
DRAWING NUMBER

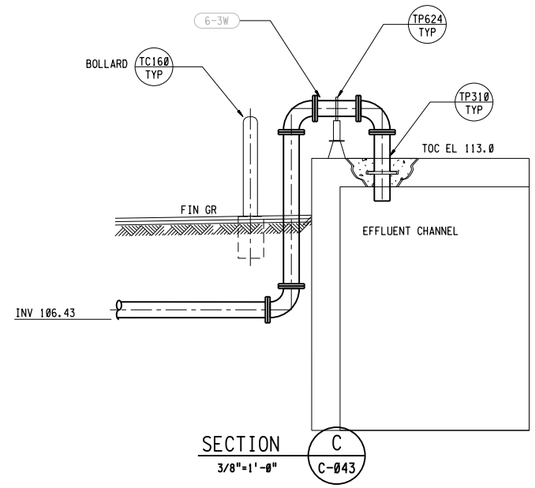
1
REV.

REF 7; REF 8; REF 9;
REF 4; REF 5; REF 6;
REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2:
REF 3: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
PLOT SCALE: 5.333333:1
USER: fsh
DATE: 28AUG 2013 15:24
FILE: J:\SD\sd317A\W2820C203.R01

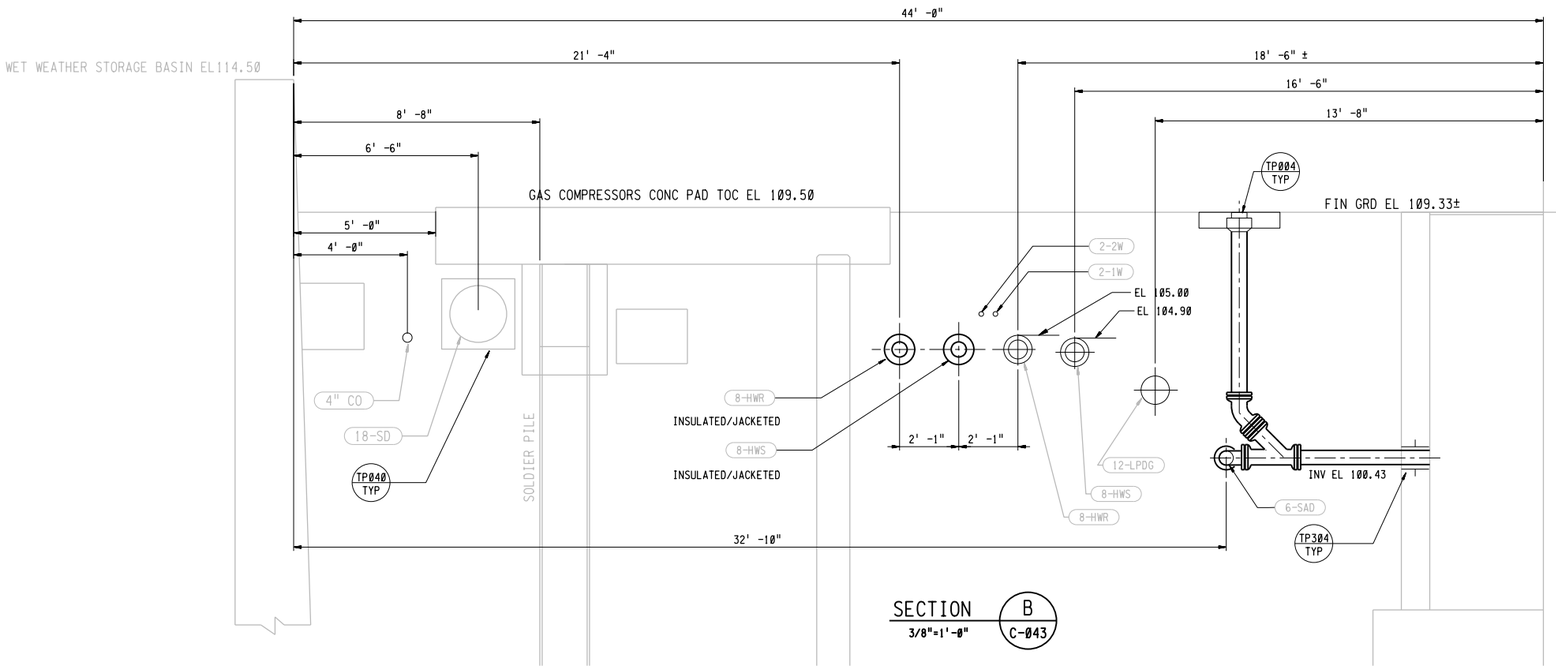
REF 7:
REF 8:
REF 9:
REF 4:
REF 5:
REF 6:
REF 1: W:\Drafters\SD\sd317A\ref\W2020dr_consultant.mst
REF 2:
REF 3:
PLOT SCALE: 5.333333:1
USER: fah
DATE: 26-AUG-2013 15:24
FILE: J:\SD\sd317A\W2820C204.R01



SECTION A
3/8"=1'-0"
C-043



SECTION C
3/8"=1'-0"
C-043



SECTION B
3/8"=1'-0"
C-043

GENERAL NOTES:

1. EXISTING DUCTBANK SIZES AND ELEVATION UNKNOWN. CONTRACTOR SHALL FIELD VERIFY PRIOR TO PIPING FABRICATION. ADJUST PIPING LOCATION AND ELEVATION AS REQUIRED.

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAY
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT / EBMUD

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMEND: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

MISCELLANEOUS DETAILS

SCALE AS SHOWN
DATE JAN2009

W28.20-C-204
DRAWING NUMBER

1
REV.

OBSOLETE
RECORD DRAWING
PROCESSED



DETAIL P1 / NTS / C-045

REMOVE EXIST 8" ELBOW WITH INSULATION AND PROVIDE BF CONNECT NEW ELBOW AND 8" HWR. SEE DWG C-045 FOR MODIFICATION.



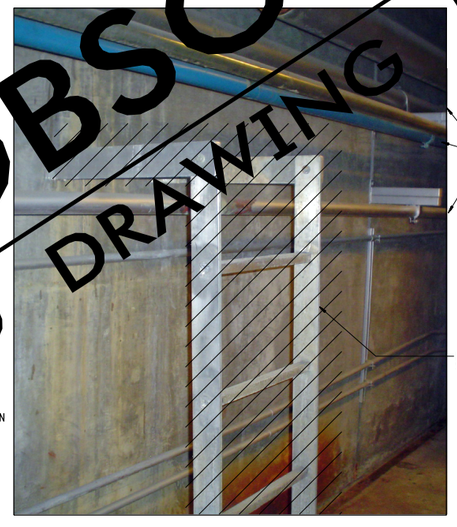
DETAIL P2 / NTS / C-045



REMOVE EXIST PUMP DISCHARGE AND RELOCATE EXIST PLUG VALVES AND CHECK VALVES. SEE DWG C-045 FOR MODIFICATION.

RELOCATE EXIST PUMPS AND ASSOCIATED ELEC. WIRING/CONDUIT AND APPURTENANCES AS REQ'D TO CLEAR NEW PIPING INSTALLATION

DETAIL P3 / NTS / C-045



DETAIL P4 / NTS / C-045



DETAIL P5 / NTS / C040D

DEMO EXISTING STEPS PER TYPICAL DETAIL TS198 TYP, DEMO GUARD RAIL AND HANDRAIL AS SHOWN. ATTACH NEW GUARD RAIL TO CLOSE OFF OLD LANDING ENTERANCE. MATCH EXISTING RAIL. ATTACH NEW STAIRS AND HAND RAIL PER TYPICAL DETAILS TA343 TYP STAIRS TO BE CONSTRUCTED IN ALUMINUM

REGISTERED PROFESSIONAL ENGINEER DAVID T.S.A. No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
4	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL
DEMOLITION DETAILS
PHOTOS 1

SCALE NONE
DATE JAN2009
W28.20-C-205.D
DRAWING NUMBER
1
REV.

REF 1: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W28.20bdr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fal
DATE: 25-AUG-2013 15:34
FILE: J:\SD\sd317A\W2820C205D.R01
PLOT SCALE: 5.333333:1



RELOCATE EXISTING LIGHTPOLE AND FIRE HYDRANT.

DETAIL P1 C047D



REMOVE EXISTING CONCRETE STAIR AND HANDRAILS AS REQUIRED TO FACILITATE THE CONSTRUCTION OF ELEC DUCTBANKS. RE-CONSTRUCT STAIRS WITH MATERIALS IN KIND.

DETAIL P3 C047D



REMOVE EXISTING CONCRETE STAIR AND HANDRAILS AS REQUIRED TO FACILITATE THE CONSTRUCTION OF ELEC DUCTBANKS. RE-CONSTRUCT STAIRS WITH MATERIALS IN KIND.

DETAIL P4 C047D



REMOVED CHEMICAL TANK, PUMPS, PIPING, AND ASSOCIATED APPURTENANCES TO FACILITATE THHE CONSTRUCTION OF NEW GAS CONDITIONING FACILITY.

DETAIL P5 C048D

OBSOLETE
RECORD DRAWING PROCESSED

REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT EBMUD

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL
DEMOLITION DETAILS
PHOTOS 2

SCALE NONE
DATE JAN2009
W28.20-C-206.D
DRAWING NUMBER
1
REV.

REF 1: W:\D-ofters\SD\sd317A\ref\sd317bdr-mST
REF 2: W:\D-ofters\SD\sd317A\ref\W28.20bdr.consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fal
DATE: 26-AUG-2013 15:24
FILE: J:\SD\sd317A\W2820C206D.R01
PLOT SCALE: 0.166667:1

OBSOLETE
RECORD DRAWING PROCESSED



REMOVE CHEMICAL TANK, PUMPS, PIPING, ELECTRICAL CABINET, AND ASSOCIATED CONDUIT PIPING AND WIRING

DETAIL P6 / C-048D



DETAIL P7 / C-048D



DETAIL P8 / C-048D



DEMO EXISTING PAD TO MAKE ROOM FOR THE NEW FOUNDATION SWITCHGEAR.

DETAIL P9 / C-048D



REMOVE EXISTING BOLLARDS AND STEPS AS NECESSARY TO FACILITATE CONSTRUCTION. REPLACE WHEN FINISHED. RECONNECT REROUTED NG AND ELECTRICAL CONDUIT BELOW GRADE AT CHANNEL WALL.

DETAIL P10 / C-047D

REGISTERED PROFESSIONAL ENGINEER DAVID T.S.A. No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT / EBMUD

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL
DEMOLITION DETAILS
PHOTOS 3

SCALE NONE | DATE JAN2009 | W28.20-C-207.D DRAWING NUMBER | 1 REV.

REF 1: W:\D-afters\SD\sd317A\ref\sd317adr.mST
REF 2: W:\D-afters\SD\sd317A\ref\W2820dar-consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fal
DATE: 23-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820C207D.R01
PLOT SCALE: 0.166667:1

CATCH BASIN SCHEDULE

BASIN NUMBER	INVERTS	INVERT EL	RIM EL
CB 1	18" SD S 18" SD E 10" SD NE	103.96 103.46 104.94	109.23
CB 2	18" SD N 18" S	104.04 104.54	108.63
CB 3	18" SD N	104.78	EXISTING
CB 4	12" SD SW 8" SD NE 10" SD N	105.07 105.40 105.40	108.86
CB 5	8" SD W 12" SD E	106.30 106.10	110.07
CB 6	12" SD W 12" SD E	106.00 105.30	110.22
CB 7	6" SD	105.85±	108.85
CB 8	18" SD 18" SD 12" SD N	 103.96	108.90
CB 9	12" SD W 12" SD S	105.18 104.24	110.22

POTHOLE SCHEDULE

POTHOLE NO.	PIPE	DEPTH TO TOP OF PIPE
PH 1	10" STEEL	4.2'
PH 2	5" STEEL	3.3'
PH 3	CONCRETE ENCASEMENT	TOP 19" BOTTOM 2.75'
PH 4	6" STEEL	3.75'
PH 5	CONCRETE ENCASEMENT	TOP 2.25' BOTTOM 3.4'
PH 6	10" CORRIGATED STEEL	4.9'
PH 7	CONCRETE ENCASEMENT	2.25'
PH 8	10" CORRIGATED STEEL	4.3'
PH 9	CONCRETE ENCASEMENT	2.3'
PH 10	CONCRETE ENCASEMENT	TOP 1.6' BOTTOM 2.3'
PH 11	18" RCP & CONCRETE ENCASEMENT	4.5' TOP 2'(FOUND ON TOP OF 18" RCP) BOTTOM 2.5'
PH 12	12" PLASTIC	2.7'
PH 13	18" RCP	4.75'
PH 14	6" STEEL	3.6'
PH 15	18" RCP	4.5'
PH 16	6" CORRIGATED STEEL	2.3'
PH 17	CONCRETE ENCASEMENT	TOP 1.6' BOTTOM 3.3'
PH 18	CONCRETE ENCASEMENT	TOP 4.5' BOTTOM 6.75'
PH 19	CONCRETE ENCASEMENT	TOP 1.2' BOTTOM 2.8'
PH 20	CONCRETE ENCASEMENT	TOP 1.3' BOTTOM 3.1'
PH 21	CONCRETE ENCASEMENT	TOP 2.3' BOTTOM 5.25'
PH 22	CONCRETE ENCASEMENT	TOP 3' BOTTOM 6.4'
PH 23	3" STEEL 1.5" PLASTIC 8" STEEL CONCRETE ENCASEMENT	2' 5.4' 5.5' 5.2' (FOUND UNDER 3" NG)
PH 24	8" PLASSTIC	4.1'
PH 25	8" PLASTIC	4'
PH 26	8" STEEL	5'
PH 27	6" STEEL 2" PLASTIC	3.2' 2' (FOUND DIRECTLY ABOVE THE 6" LINE)

REF 7:
REF 8:
REF 9:

REF 4:
REF 5:
REF 6:

REF 1: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W28B0bdr_consultant.mst
REF 3:

USER: fah
DATE: 26-AUG-2013 15:35
FILE: J:\SD\sd317A\W28B0C301.R01

PLOT SCALE: 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAI
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

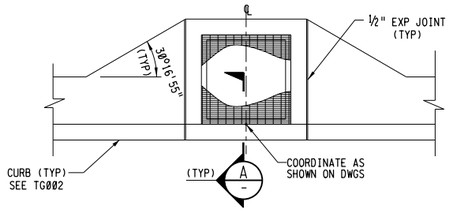
DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

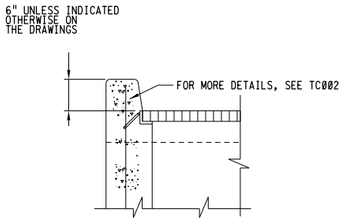
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

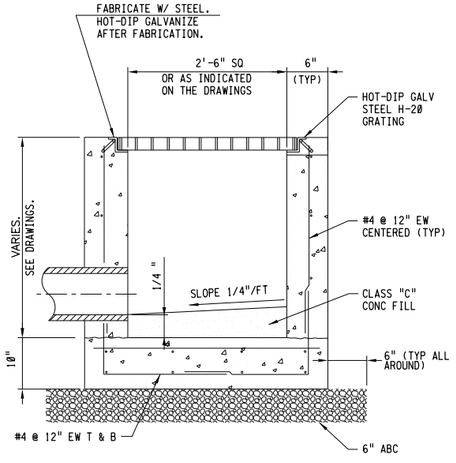
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL
POTHOLE AND CATCH BASIN
SCHEDULES

SCALE	NONE	W28.20-C-301	1
DATE	JAN2009	DRAWING NUMBER	REV.



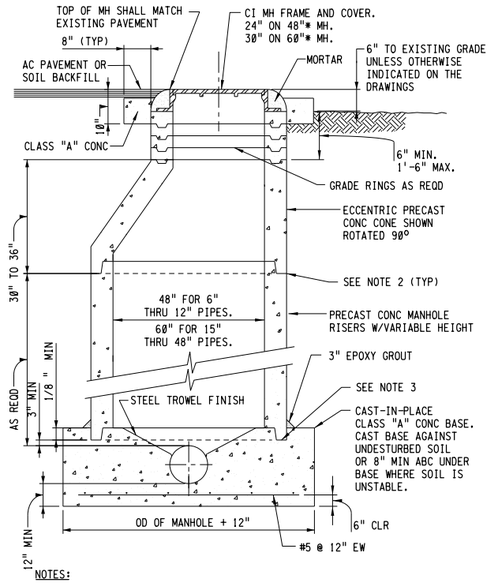
TYPE 1 - CATCH BASIN AT CURB AND GUTTER





CATCH BASIN

TC004

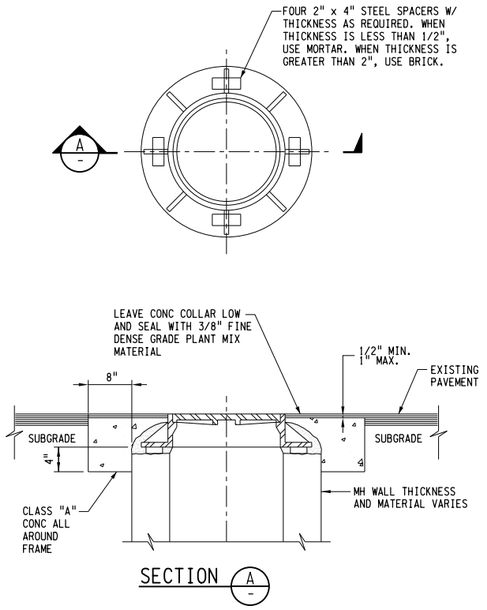


NOTES:

1. LOCATE MANHOLE COVER ON DOWNSTREAM SIDE OF MANHOLE. SET MANHOLE FRAME IN GROUT.
2. SEAL JOINTS WITH PRECAST CONCRETE JOINT SEALANT.
3. FORM GROOVE IN MANHOLE BASE W/STEEL OR ALUMINUM BASE RING PER MFRS DETAIL.

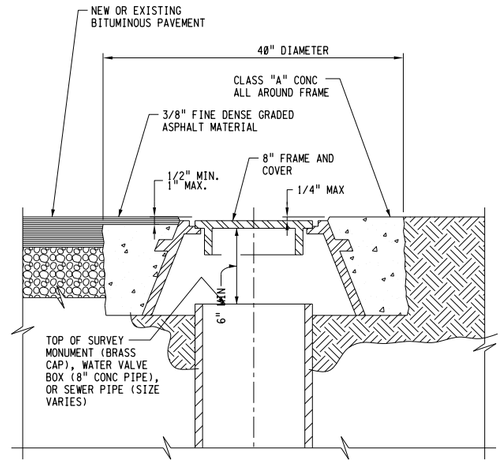
MANHOLE

TC012



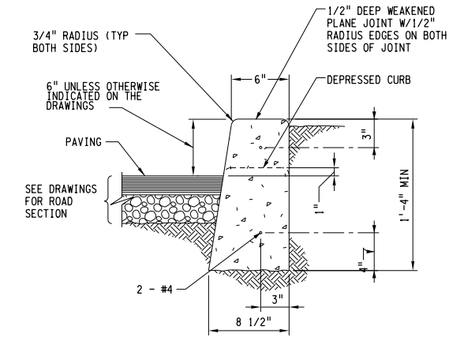
MANHOLE FRAME GRADE ADJUSTMENT

TC024



GRADE ADJUSTMENT FOR WATER VALVE, SURVEY MONUMENT, OR SEWER CLEANOUT FRAME

TC040



NOTES:

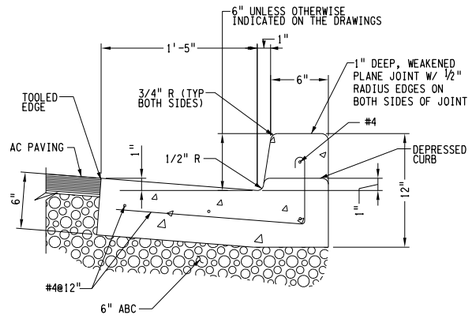
1. CURB SHALL BE FINISHED ON TOP, 8" DOWN FRONT FACE, AND 2" DOWN BACK.
2. EXPANSION JOINTS SHALL BE PLACED AT END OF CONCRETE PLACEMENT, AT POINTS OF CURVATURE, BOTH SIDES OF DRIVEWAYS AND WALKWAYS, CURB RETURNS, STRUCTURES, AND AT MAXIMUM DISTANCE OF 30 FEET. EXPANSION JOINTS SHALL BE 3/4" THICK W/ 1/4" RADIUS EDGES AT BOTH SIDES OF JOINT. USE BITUMINOUS EXPANSI0N JOINT MATERIAL.
3. REINFORCING STEEL SHALL NOT PASS THROUGH EXPANSION JOINTS.
4. WEAKENED PLANE JOINTS SHALL BE INSTALLED AT 15 FEET OC.
5. CURB SHALL BE DEPRESSED FOR DRIVEWAYS, ROADWAYS, SIDEWALKS FOR HANDICAPPED ACCESS, AND WHERE INDICATED ON THE DRAWINGS.

CURB DETAIL

3" ON ORIGINAL DOCUMENT

0 1 2 3

TC100



NOTES:

1. CURB SHALL BE FINISHED ON TOP, 8" DOWN FRONT FACE AND 2" DOWN BACK.
2. EXPANSION JOINTS SHALL BE PLACED AT END OF CONCRETE PLACEMENT, AT POINTS OF CURVATURE, BOTH SIDES OF DRIVEWAYS AND WALKWAYS, CURB RETURNS, STRUCTURES AND AT MAXIMUM DISTANCE OF 30 FEET. EXPANSION JOINTS SHALL BE 3/4" THICK W/ 1/4" RADIUS EDGES AT BOTH SIDES OF JOINT. USE BITUMINOUS EXPANSI0N JOINT MATERIAL.
3. REINFORCING STEEL SHALL NOT PASS THROUGH EXPANSION JOINTS.
4. WEAKENED PLANE JOINTS SHALL BE INSTALLED AT 15 FEET OC.
5. CURB SHALL BE DEPRESSED FOR DRIVEWAYS, ROADWAYS, SIDEWALKS FOR HANDICAPPED ACCESS, AND WHERE INDICATED ON THE DRAWINGS.

YARD CURB AND GUTTER

TC102

REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

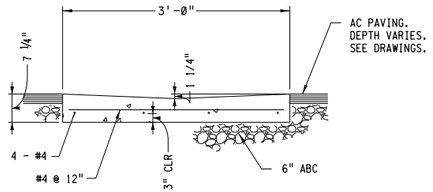
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

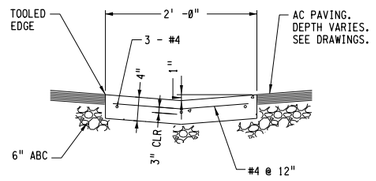
TYPICAL CIVIL DETAILS 1

SCALE	NONE	W28.20-C-901	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 7; REF 8; REF 9;
REF 4; REF 5; REF 6;
REF 1: W:\Drafters\SD\sd317A\ref\sd317hdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 3;
USER: fa\
DATE: 22-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820C901.R01
PLOT SCALE: 0.166667:1



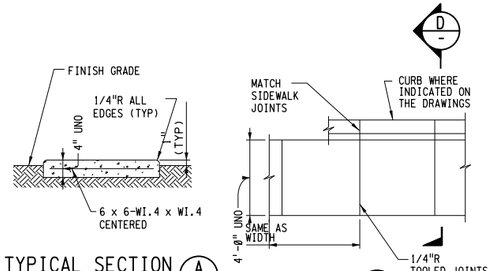
SECTION - CROSS GUTTER (A)



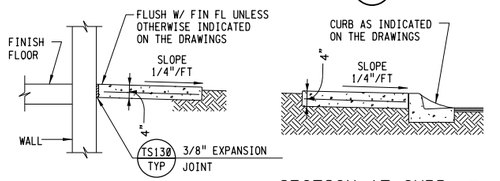
SECTION - VALLEY GUTTER (B)

CROSS GUTTER AND VALLEY GUTTER

REF 7; REF 8; REF 9;



TYPICAL SECTION (A) PLAN (B)

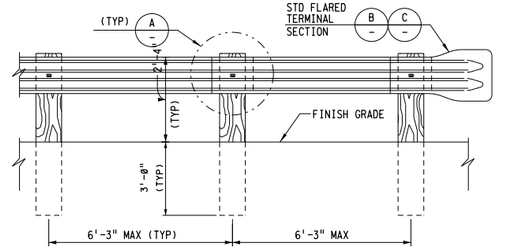


SECTION AT BUILDING (C) SECTION AT CURB (D)

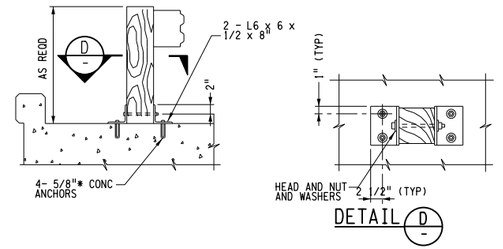
NOTES:

1. EXPANSION JOINTS SHALL BE INSTALLED AT END OF CONCRETE PLACEMENT, AT POINTS OF CURVATURE, AT STRUCTURES, AND AT MAXIMUM DISTANCE NOT TO EXCEED 100 FEET. EXPANSION JOINTS SHALL BE 3/4" THICK. TOOL EDGES 1/4" RADIUS.
2. CONTRACTION JOINTS SHALL BE INSTALLED AT A MAXIMUM SPACING OF 15 FT.
3. ELEVATIONS SHALL BE AS INDICATED ON THE DRAWINGS.

SIDEWALK

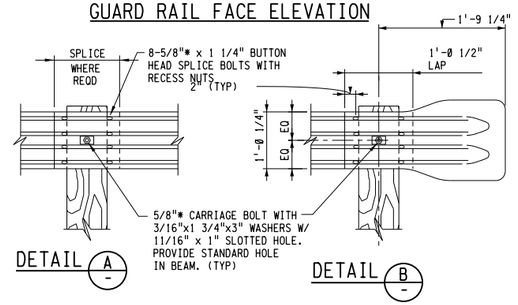


GUARD RAIL FACE ELEVATION

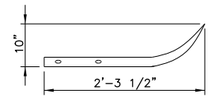


DETAIL (D)

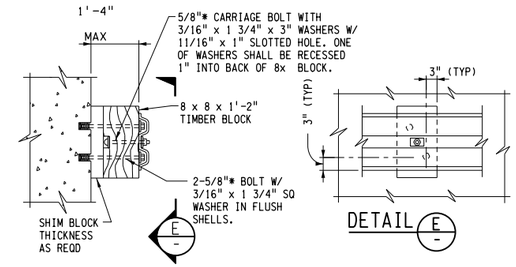
GUARD RAIL INSTALLATION ON STRUCTURES



DETAIL (A) DETAIL (B)



DETAIL (C)



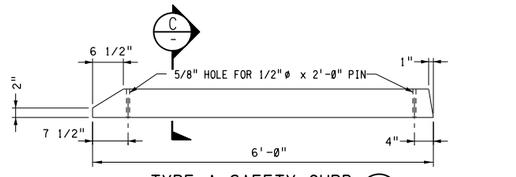
DETAIL (E)

ATTACHMENT OF GUARD RAIL TO STRUCTURES WALL

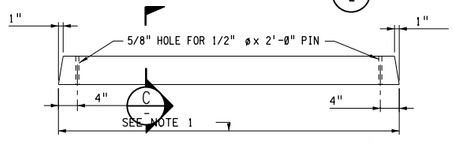
NOTES:

1. POSTS AND BLOCKS SHALL BE NOMINAL 8 x 8 ROUGH AND UNPAINTED. PRESSURE TREAT AFTER HOLES ARE DRILLED.
2. ALL GUARD RAIL, FITTINGS, AND HARDWARE SHALL BE HOT-DIP GALV.

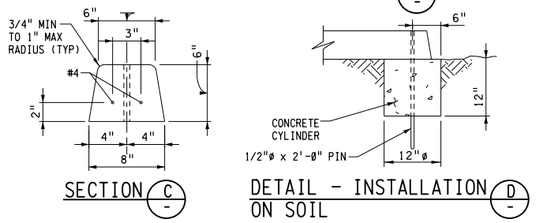
SINGLE FACE GUARD RAIL



TYPE A SAFETY CURB (A)



TYPE B1, B2 AND B3 SAFETY CURB (B)

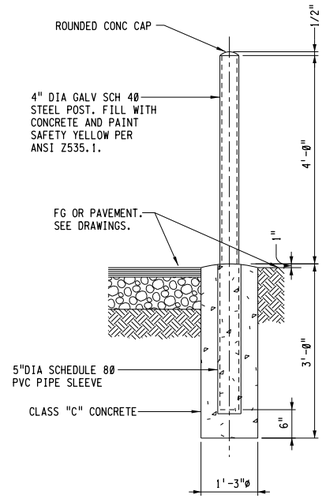


SECTION (C) DETAIL - INSTALLATION ON SOIL (D)

NOTE:

1. TYPE B-1 = 3'-0"; TYPE B-2 = 4'-0"; AND TYPE B-3 = 6'-0".

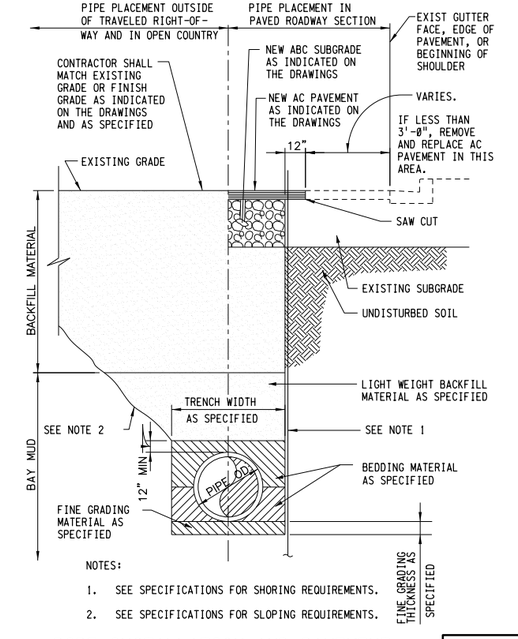
PRECAST SAFETY CURB



NOTE:

1. PROVIDE 3/8" EJ MATERIAL WHERE INSTALLED IN CONC PAVING.

REMOVABLE GUARD POST



NOTES:

1. SEE SPECIFICATIONS FOR SHORING REQUIREMENTS.
2. SEE SPECIFICATIONS FOR SLOPING REQUIREMENTS.

PIPE INSTALLATION AND PAVEMENT

REGISTERED PROFESSIONAL ENGINEER DAVID TSAI No. C28432 Exp. 3/31/10 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

EBMUD CONSULTANT

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

TYPICAL CIVIL DETAILS 2

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG
SCALE	NONE
DATE	JAN2009

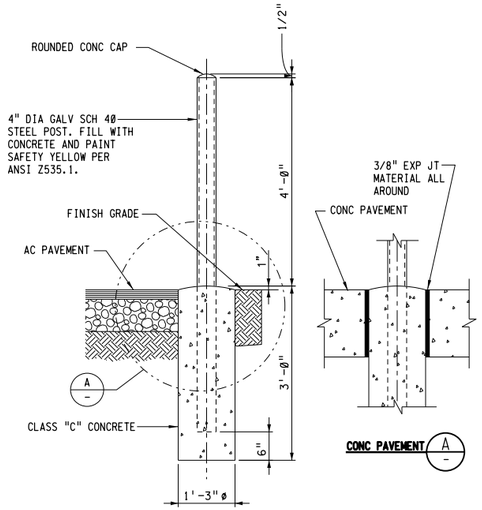
W28.20-C-902 DRAWING NUMBER

1 REV.

REF 1: W:\Drafters\SD\sd317A\ref\W2820dsf_consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820dsf.mst
REF 3:

PLOT SCALE: 0.166667:1
USER: fa\
DATE: 28-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820C902.R01

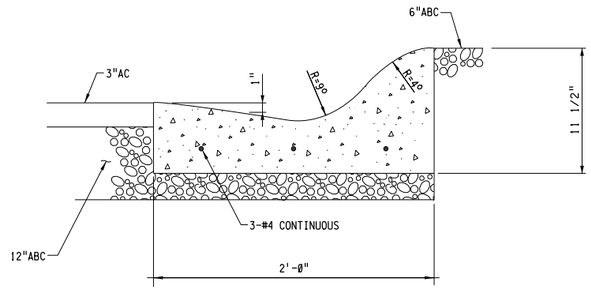
REF 4; REF 5; REF 6;



AC PAVEMENT AND FINISH GRADE

GUARD POST

TC160



ROLLED CURB AND GUTTER

TC163

REF 7:
REF 8:
REF 9:

REF 4:
REF 5:
REF 6:

REF 1: W:\Drafters\SD\sd317A\ref\sd317Adr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820dsf_consultant.mst
REF 3:

USER: fa\
DATE: 22-AUG-2013 15:35
FILE: J:\SD\sd317A\W2820C903.R01

PLOT SCALE: 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

EBMUD

DESIGN BY:	BA
DRAWN BY:	JCI/DJD
DESIGN CHECKED BY: R.P.E. No. C23394	WALT LAPSLEY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

REGISTERED PROFESSIONAL ENGINEER
DAVID TSAI
No. C28432
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

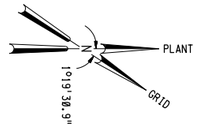
SD317A - PGS RENEWABLE ENERGY EXPANSION

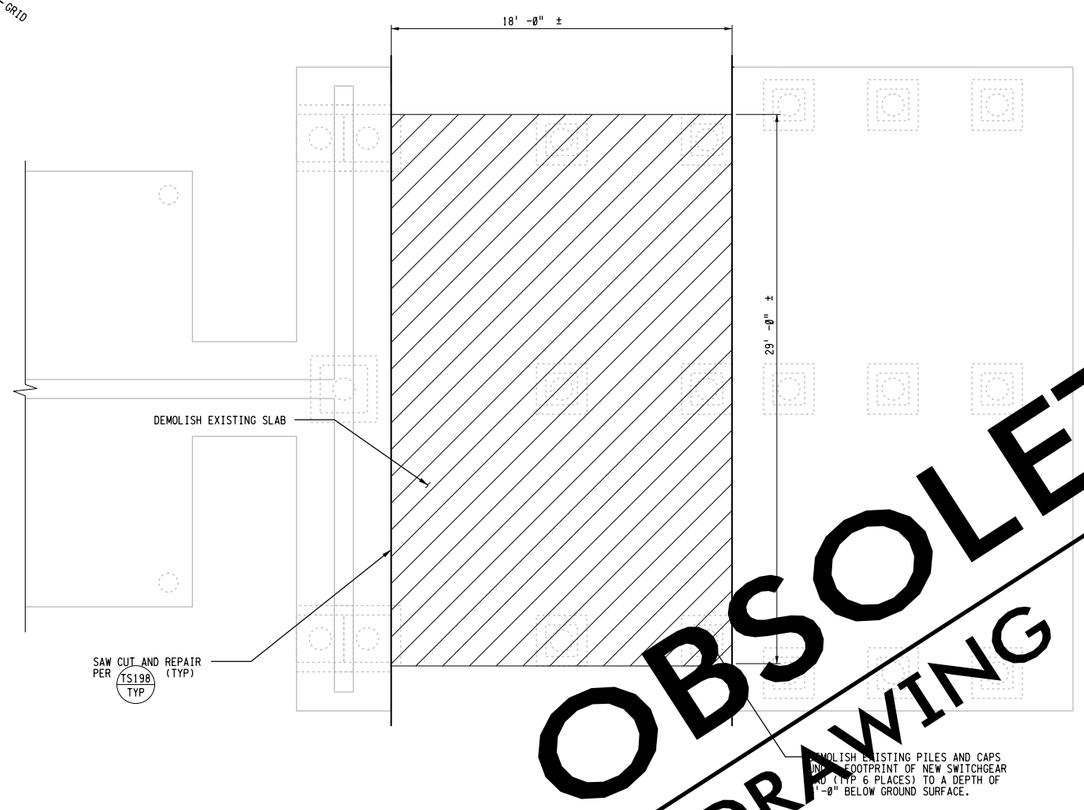
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
CIVIL

TYPICAL CIVIL DETAILS 3

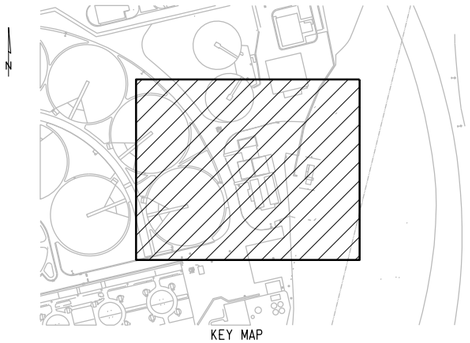
SCALE	NONE	W28.20-C-903	1
DATE	JAN2009	DRAWING NUMBER	REV.





PLAN-EXISTING H1 SUBSTATION

Δ"=1'



KEY MAP

OBSOLETE
RECORD DRAWING PROCESSED

REGISTERED PROFESSIONAL ENGINEER
CARL A. GENTRY
No. C28410
Exp. 3/31/08
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

DEMOLITION PLAN 2

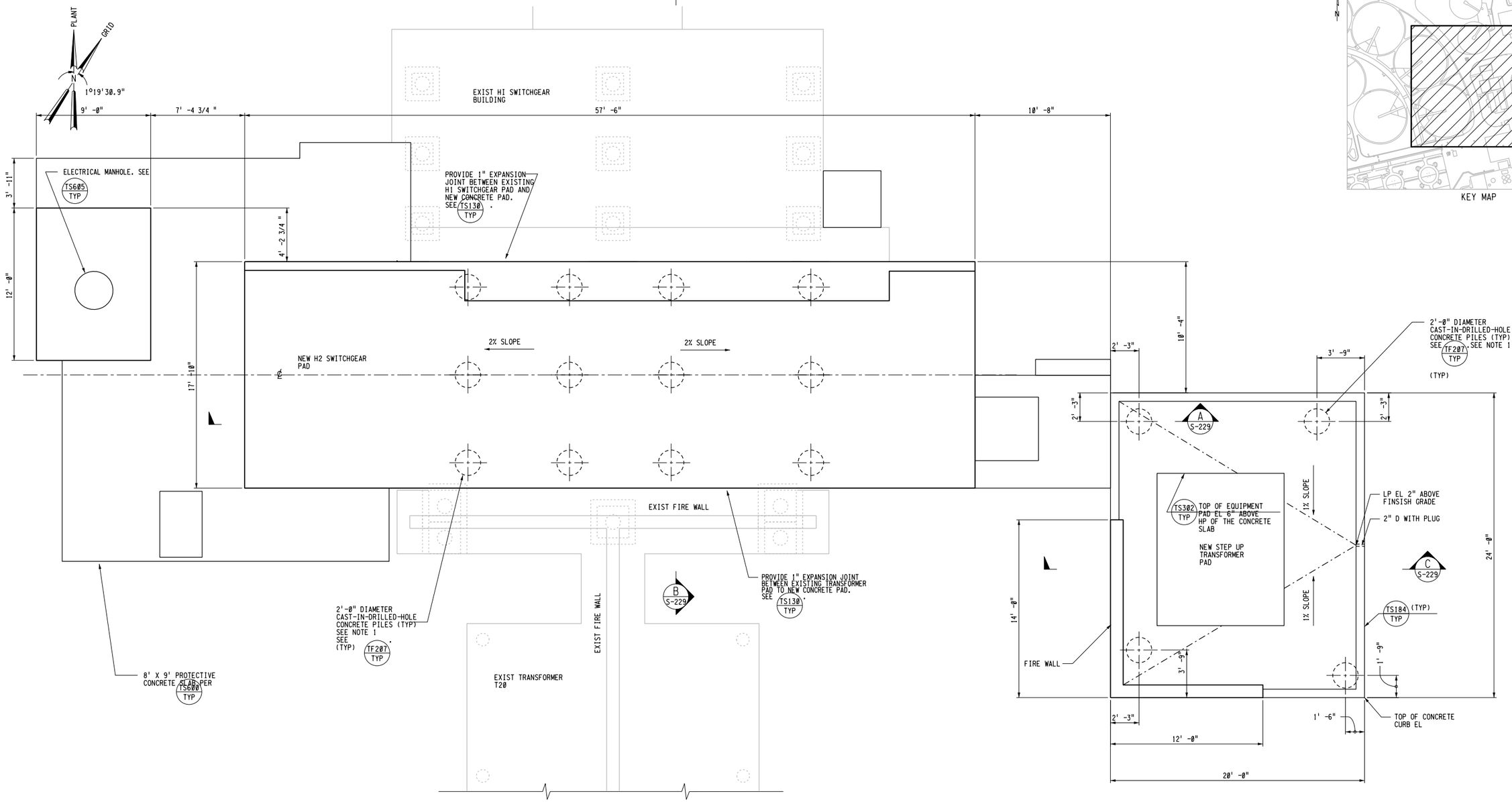
SCALE Δ" = 1'-0"
DATE JAN2009

W17.10-S-102.D
DRAWING NUMBER

1
REV.

REF 1: W:\Drafters\SD\sd317A\ref\W1710bdr_consultant.mst
REF 2: J:\SD\sd317A\w2826b02demo.MST
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fal
DATE: 26-AUG-2013 15:36
FILE: J:\SD\sd317A\W1710S102D.R01
PLOT SCALE: 8:1



KEY MAP

PLAN

Δ" = 1'-0"

NOTES:

1. BEFORE DRILLING CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITY LINES, DUCT BANKS ETC. AND NOTIFY THE ENGINEER IF THERE IS ANY CONFLICT BETWEEN THE LOCATION OF PILES AND EXISTING BURIED STRUCTURES. IN CASE OF A CONFLICT, CONTRACTOR SHALL ALLOCATE 14 DAYS FOR ENGINEER FOR RE- DESIGN AND RELOCATION OF PILES.
2. PILES SUPPORTING MANHOLES NOT SHOWN FOR CLARITY.
3. DESIGN LIVE LOAD 300 PSF.
4. EXISTING ELEVATIONS SHALL BE CONFIRMED PRIOR TO CONSTRUCTION.
5. * DIMENSIONS PER EQUIPMENT MFR.

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	JCI/GVV
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
SWITCHGEAR/TRANSFORMER FOUNDATION PLAN

SCALE Δ" = 1'-0"
DATE JAN2009

W17.10-S-108
DRAWING NUMBER

1
REV.

REGISTERED PROFESSIONAL ENGINEER
CARL A. GENTRY
No. C28410
Exp. 3/31/08
CIVIL
STATE OF CALIFORNIA

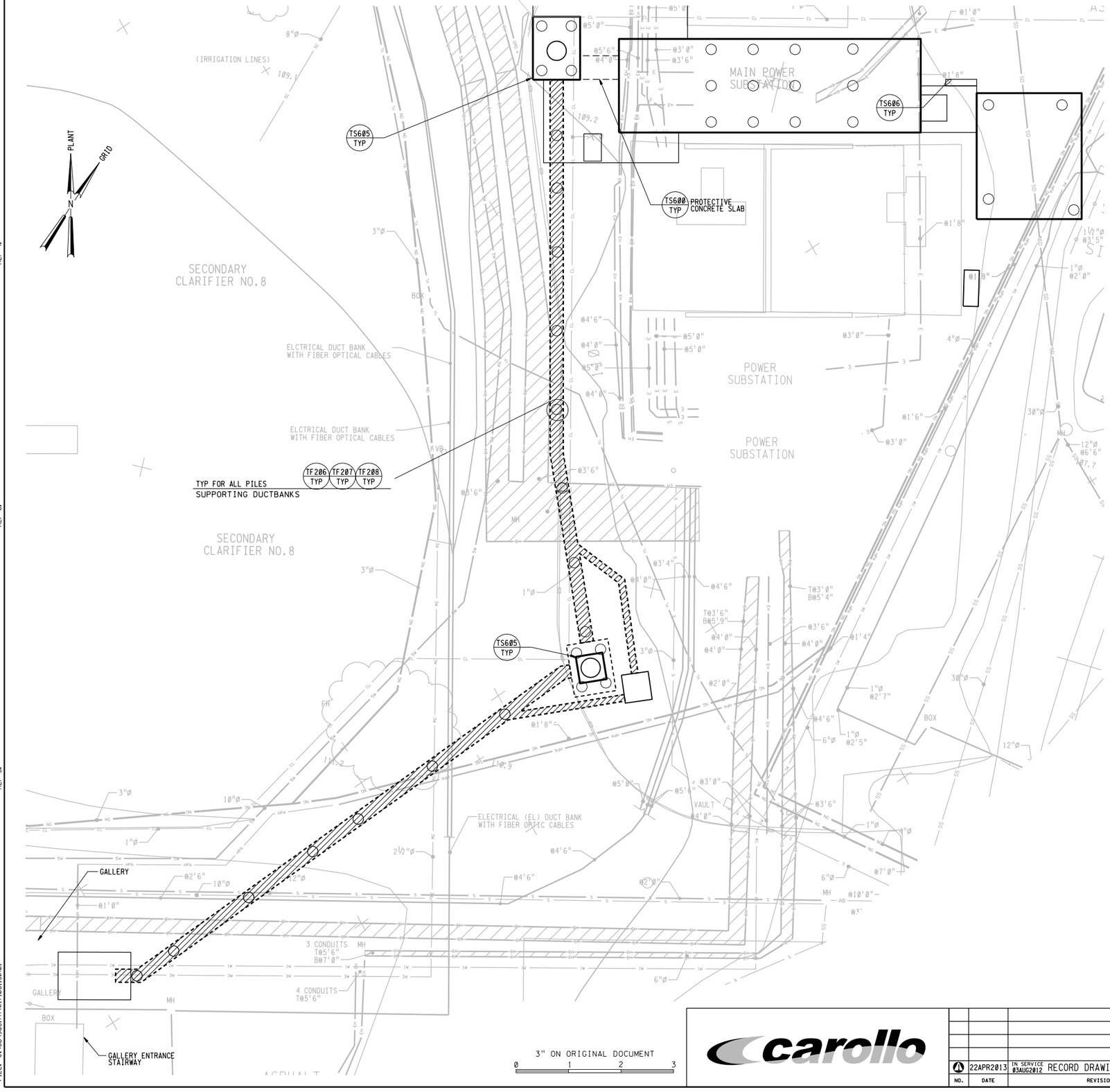
REF 1: W:\Drafters\SD\sd317A\ref\W1708dr_consultant.mst
REF 2:
REF 3:
REF 4:
REF 5: J:\SD\sd317A\w2020s600.MST
REF 6:
REF 7:
REF 8:
REF 9:

USER: fal
DATE: 23-AUG-2013 15:36
FILE: J:\SD\sd317A\W1708S108.R01
PLOT SCALE: 8:1

REF 7: W:\D-rafters\SD\sd317A\ref\sd317bdr.mst
REF 8: W:\D-rafters\SD\sd317A\ref\W17100dr_consultant.mst
REF 9:

REF 4:
REF 5:
REF 6:

PLOT SCALE= 20:1
USER: fsh
DATE: 26-AUG-2013 15:36
FILE: J:\SD\sd317A\W17105115.R01



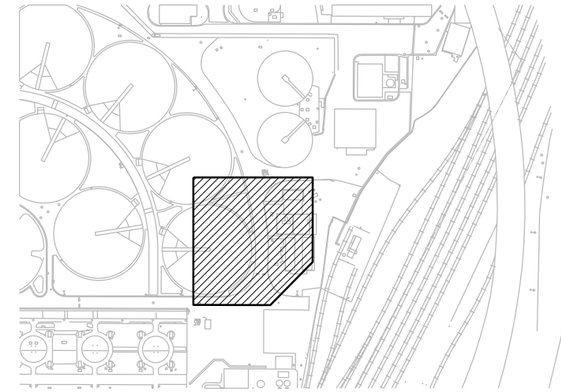
3" ON ORIGINAL DOCUMENT
0 1 2 3

NOTES:

1. PILE CAPS NOT SHOWN FOR CLARITY. SEE TF208 TYP.
2. EXACT LOCATION OF EXISTING UTILITIES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
3. LOCATIONS OF DUCTBANKS AND'OR MANHOLES MAY REQUIRE MODIFICATIONS BASE ON ACTUAL AVAILABLE SPACE.

LEGEND:

ELECTICAL DUCTBANK, SEE ELECTRICAL DWGS.



KEY MAPS

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 6/30/09 CIVIL STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A	JK		

CONSULTANT

EBMUD

DESIGN BY:	
DRAWN BY:	
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

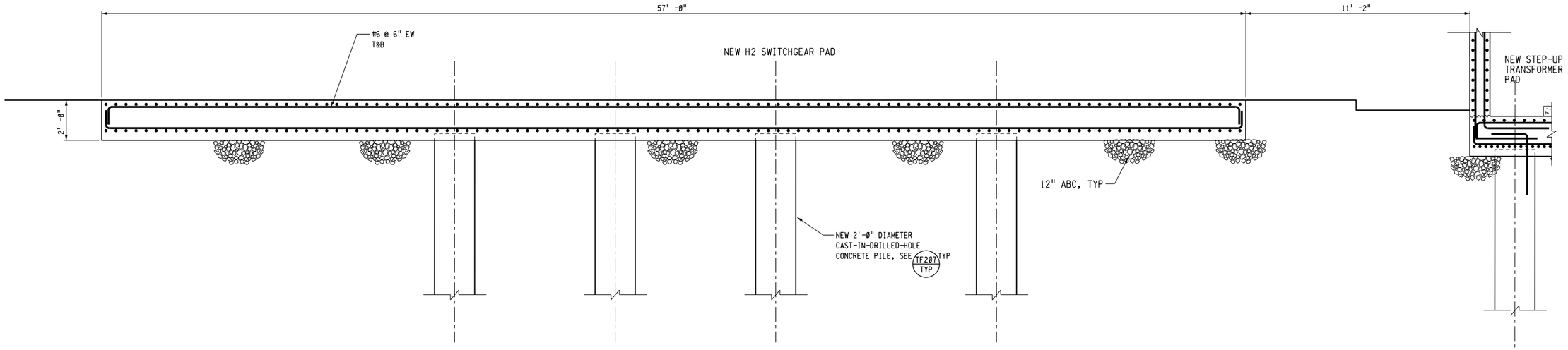
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

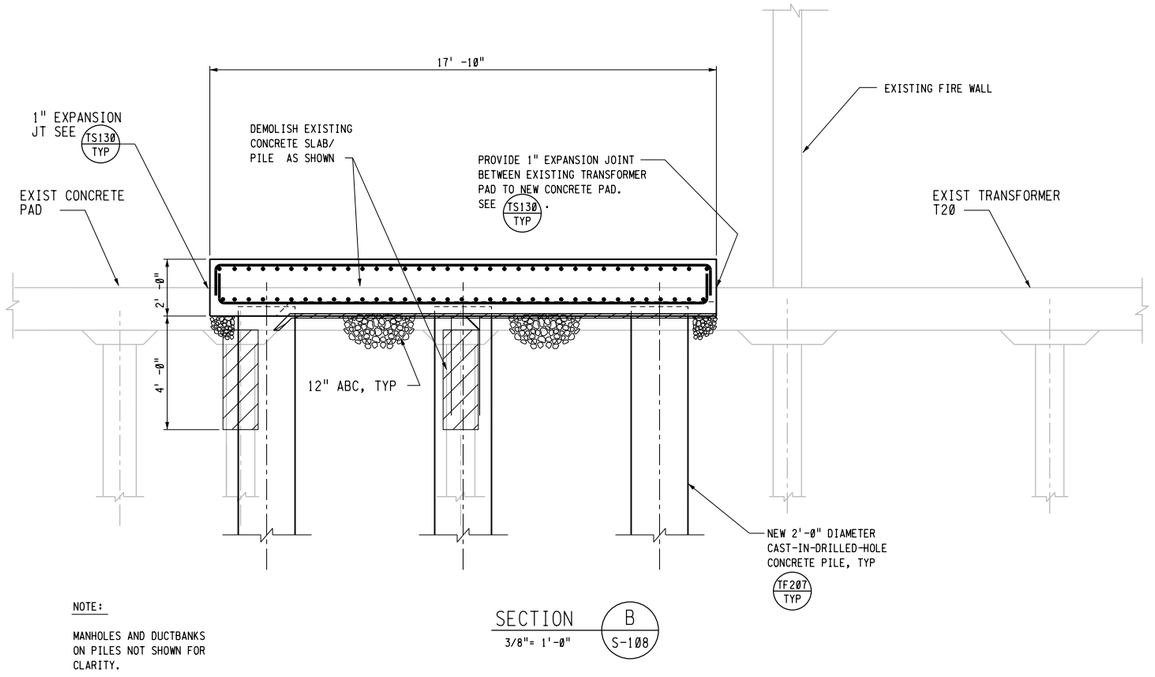
PILE SUPPORTED DUCTBANK

SCALE	1"=10'	W17.10-S-115	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 7: J:\SD\sd317A\w2820s600.MST
REF 8: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 9:
REF 4: J:\SD\sd317A\w2820s600.MST
REF 5: J:\SD\sd317A\w2820s600.MST
REF 6: J:\SD\sd317A\w2820s600.MST
REF 1: W:\Drafters\SD\sd317A\ref\W1710bdr_consultant.mst
REF 2:
REF 3:
USER: fal
DATE: 25-AUG-2013 15:36
FILE: J:\SD\sd317A\W1710S229.R01
PLOT SCALE: 5.333333:1



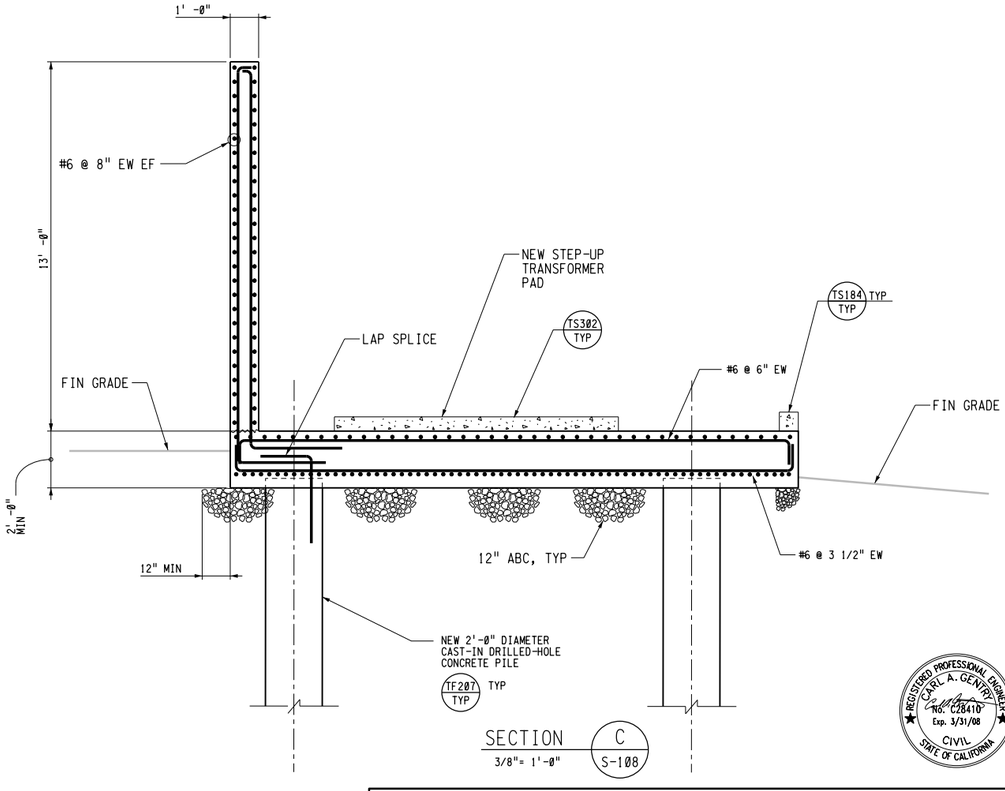
SECTION A
3/8"= 1'-0"
S-108



NOTE:

MANHOLES AND DUCTBANKS ON PILES NOT SHOWN FOR CLARITY.

SECTION B
3/8"= 1'-0"
S-108



SECTION C
3/8"= 1'-0"
S-108

REGISTERED PROFESSIONAL ENGINEER
CARL A. GENTRY
No. C28410
Exp. 3/31/08
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
4	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

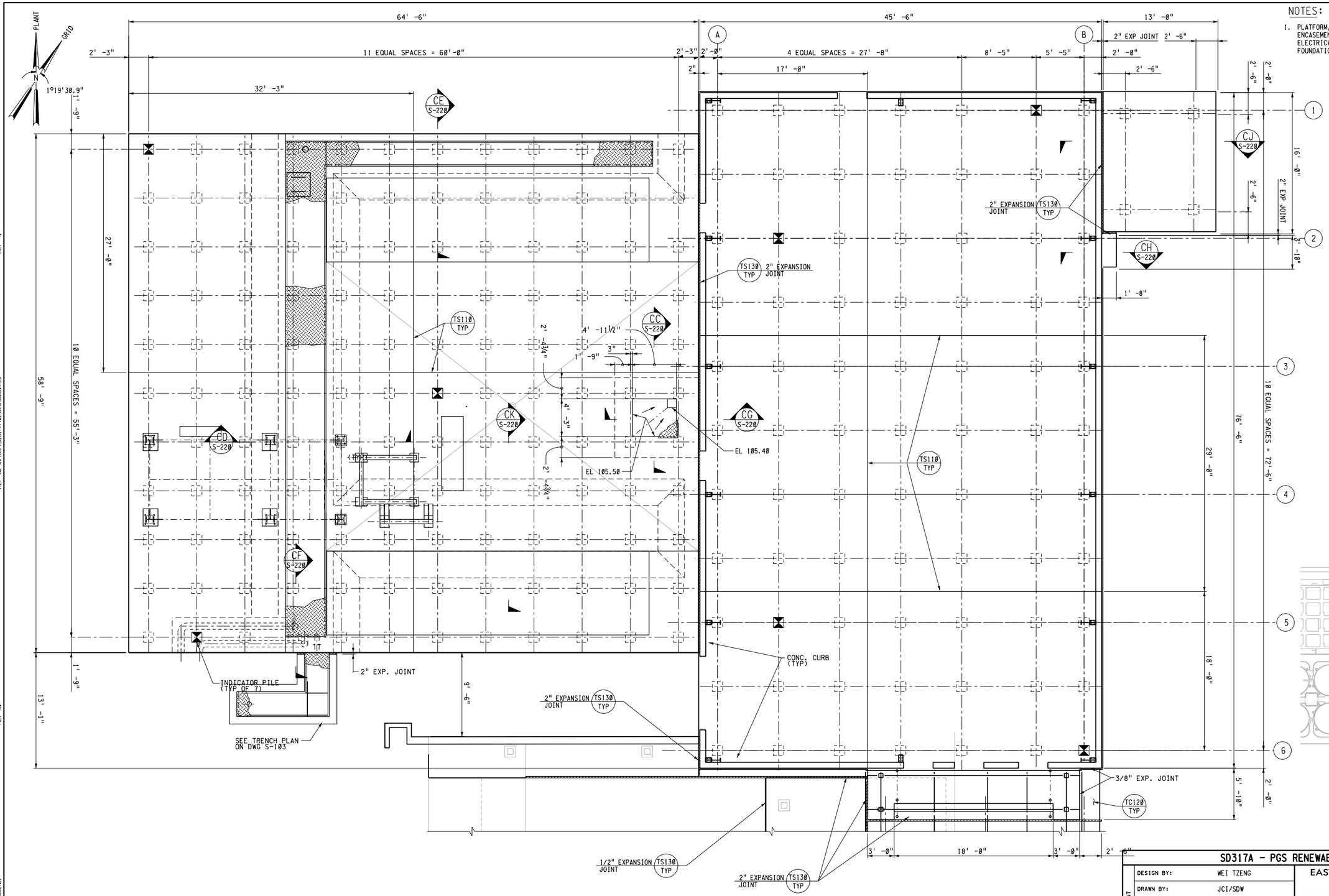
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
SWITCHGEAR/TRANSFORMER
SECTIONS

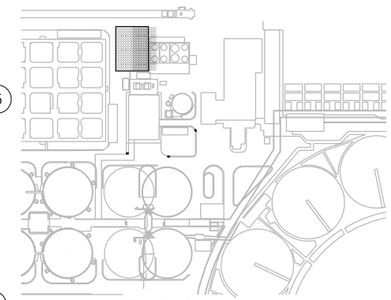
SCALE	AS SHOWN	W17.10-S-229	1
DATE	JAN2009	DRAWING NUMBER	REV.

NOTES:

1. PLATFORM, EQUIPMENT, EQUIPMENT PADS, PIPE SUPPORT AND CONDUIT ENCASEMENT SUPPORT NOT SHOWN FOR CLARITY. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR PIPE AND CONDUIT ENCASEMENT UNDER FOUNDATION SLAB. FOR SUPPORT DETAIL. SEE TP042 TYP AND TS603 TYP.



KEY MAP



REGISTERED PROFESSIONAL ENGINEER WEI-THIANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

FOUNDATION AND PILE PLAN

3/16"= 1'-0"

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP: MAB SD317A	JK		

CONSULTANT

DESIGN BY:	WEI TZENG
DRAWN BY:	JCI/SDW
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PGS 2 BUILDING
FOUNDATION/PILE PLAN

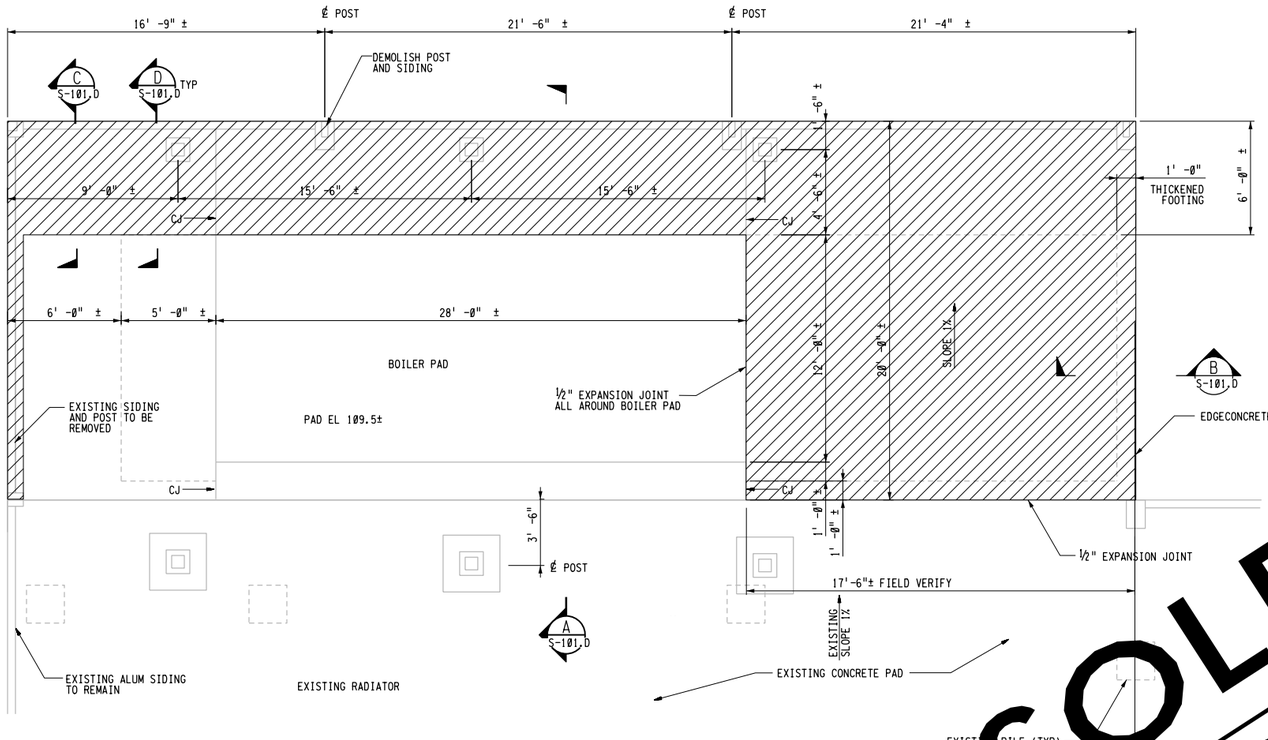
SCALE 3/16"=1'-0"
DATE JAN2009

W28.20-S-101
DRAWING NUMBER

1
REV.

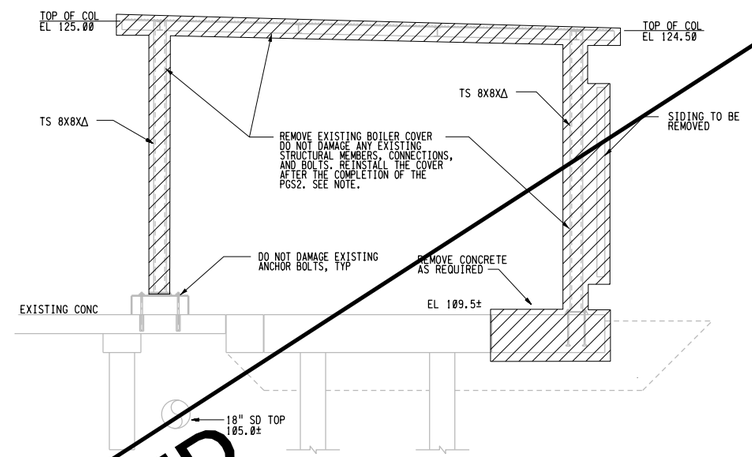
REF 1: W:\D-rafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2: J:\SD\sd317A\W2820s100.mst
REF 3: J:\SD\sd317A\W2820s101.mst
REF 4: W:\D-rafters\SD\sd317A\ref\sd317bdr.mst
REF 5: J:\SD\sd317A\W2820s100.mst
REF 6: J:\SD\sd317A\W2820s101.mst
REF 7: J:\SD\sd317A\w2820s110.MST
REF 8:
REF 9:

USER: fsh
DATE: 26-AUG-2013 15:36
FILE: J:\SD\sd317A\W2820S101.R01
PLOT SCALE: 10.666667:1



FLOOR PLAN

1/4"=1'-0"

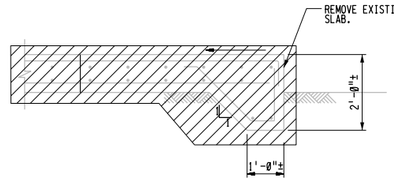


SECTION A S-101.D

1/4"=1'-0"

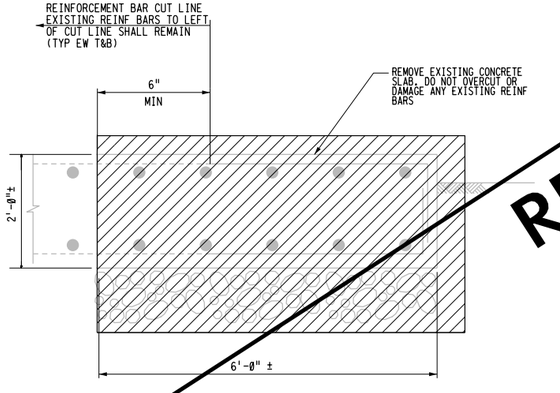
NOTE:

CONTRACTOR SHALL INSTALL A TEMPORARY COVER AS REQUIRED TO PROTECT EXISTING BOILER DURING CONSTRUCTION



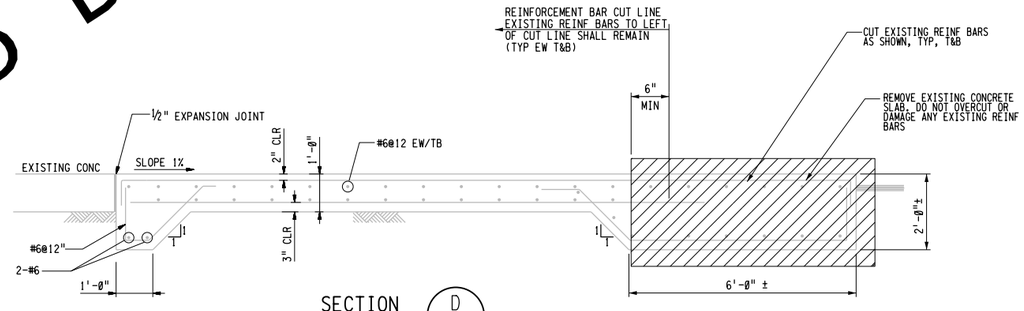
SECTION B S-101.D

1/2"=1'-0"



SECTION C S-101.D

3/4"=1'-0"



SECTION D S-101.D

1/2"=1'-0"

OBSOLETE

RECORD DRAWING PROCESSED

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
4	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT EBMUD

DESIGN BY:	WEI TZENG
DRAWN BY:	JCI/DSM
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

DEMOLITION PLAN 1

SCALE	AS SHOWN	W28.20-S-101.D	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: J:\SD\sd317A\w28201801demo.mst
REF 2: W:\Drafters\SD\sd317A\ref\W28201bdr_consultant.mst
REF 3: W:\Drafters\SD\sd317A\ref\sd317bdr.mST
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fal
DATE: 26-AUG-2013 15:36
FILE: J:\SD\sd317A\W28201801D.R01
PLOT SCALE: 81

PLANT GRID

1°19'30.9"

BOTTOM OF TRENCH LP EL 108.17

BOTTOM OF TRENCH HP EL 108.50

37' -0" (TYP)

TA408 TYP (TYP 3 PLACES)

℄ OF FUTURE GAS TURBINE GENERATOR

EL 110.50

EL 110.50

EL 110.30

RIM EL 110.25 (TYP)

TA500 TYP (TYP)

SLOPE (TYP)

4' -2"

℄ W12

H S224

(TYP) TS302 TYP

J S-224

℄ OF GAS TURBINE GENERATOR

EL 110.50

℄ OF ENCLOSURE AIR INTAKE

BOTTOM OF TRENCH HP EL 108.50

13' -0½"

12' -5"

℄ OF COMBUSTION AIR INTAKE FILTER

℄ OF TURBINE EXHAUST DUCT & DUCT SUPPORT

TOP OF CURB EL 110.83

1' -5⅜"

17' -11"

4' -3"

7' -10"

NOTE 9

EXIST BOILER AREA SEE NOTE 6

PLATFORM SEE DWG S-103

2' -0"

41' -6"

2' -0"

13' -7"

3' -4"

RIM EL 110.42 (TYP)

EL 110.50

OFFICE

MUD ROOM

MEN'S LOCKER

CONFERENCE AREA

SHOWER

41 S-221 CURB (TYP)

WOMEN'S LOCKER

EL 110.50

RESTROOM

CONTROL ROOM

MECH ROOM

TS130 TYP 2" EXPANSION JOINT (TYP)

MCC ROOM

BATTERY ROOM

SWITCHGEAR ROOM

HALL

3' -4" 2' -5" 3' -4" 3' -11" 3' -4" 4' -1"

2'-0"

SLOPE

EL 110.50

EL 110.40 (TYP)

EL 110.36

A B

1 2 3 4 5 6

2' -0" 14' -6" 14' -6" 14' -6" 14' -6" 14' -6" 7' -10"

9' -10½" 3' -4" 1' -7" 16' -4" 8' -4" 2' -4"

12' -10" 6' -9" 8' -1" 2' -4"

6' -6"

9' -1½"

8' -1"

GENERAL NOTES:

1. CJ NOT SHOWN FOR CLARITY, SEE DWG S-101 FOR CJ LOCATION.
2. DESIGN LIVE LOAD:
   A. PGS2 BUILDING, GAS TURBINE GENERATOR AREA AND HVAC PAD = 300 LBS PER SQ FT
   B. PLATFORM AND STAIRS = 100 LBS PER SQ FT
3. SEE MECH DWGS FOR PIPING, HVAC, SUPPORTS, AND EQUIPMENT LOCATIONS.
4. SEE ELEC DWGS FOR EQUIPMENT PADS & CONDUITS LOCATION.
5. * VERIFY DIMENSIONS WITH EQUIPMENT MFR.
6. FOR EXISTING BOILER FRAMING, SEE DWG S-103.
7. FOR CANOPY FRAMING DETAIL, SEE DWG S-107
8. LIGHTING POLE SUPPORTS NOT SHOWN FOR CLARITY. SEE ELECTRICAL DRAWINGS FOR LIGHTING POLE SUPPORT LOCATION. FOR LIGHTING POLE SUPPORT DETAIL, SEE TS108 TYP AND TS109 TYP.
9. DATUM A PER SOLAR TURBINES SHOP DRAWINGS

KEY MAP

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

FLOOR PLAN

3/16"= 1'-0"

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK	EW	

CONSULTANT EBMUD

DESIGN BY:	WEI TZENG
DRAWN BY:	JCI/SDW
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PGS 2 BUILDING
FLOOR PLAN

SCALE 3/16"=1'-0"
DATE JAN2009

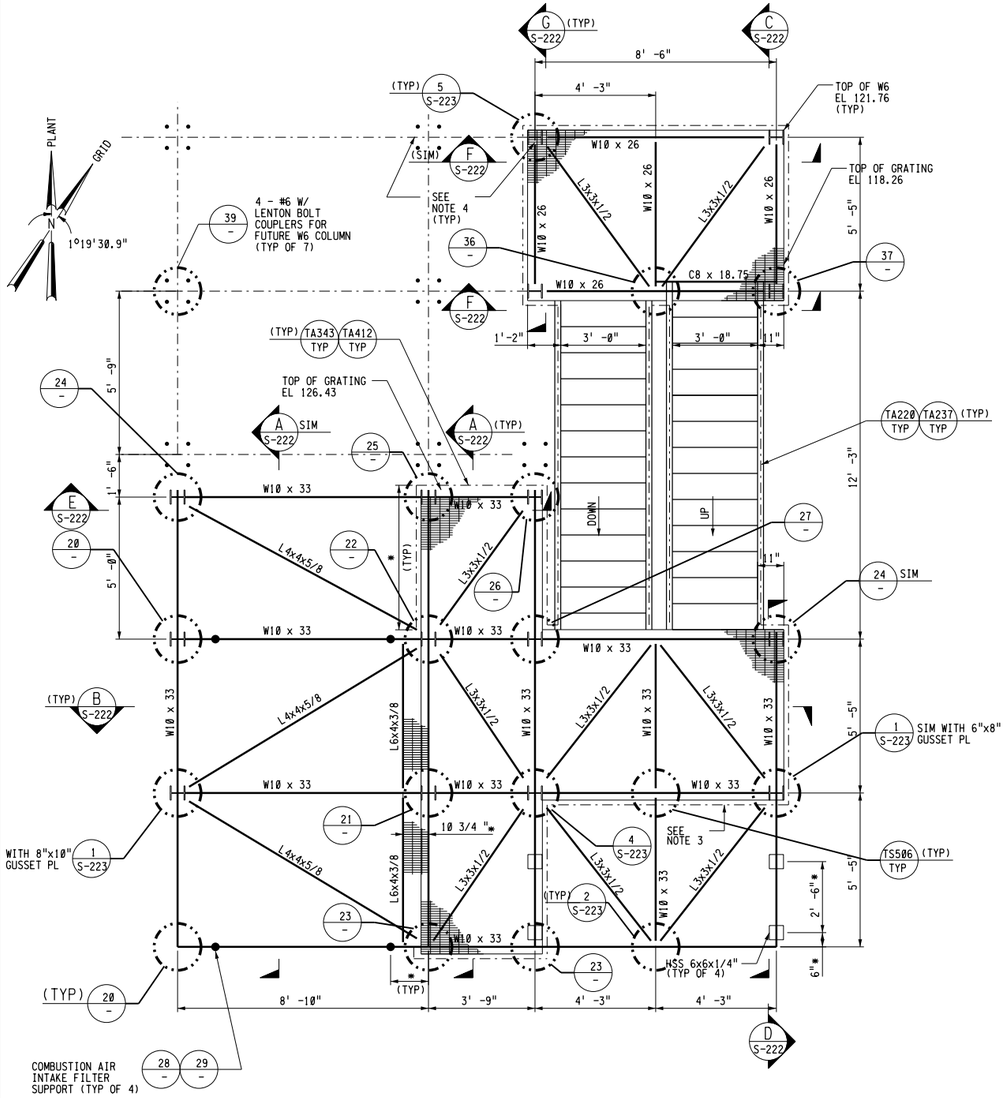
W28.20-S-102
DRAWING NUMBER

1
REV.

REF 1: W:\D-afters\SD\sd317A\ref\W2820bdr-consultant.mst
REF 2: W:\D-afters\SD\sd317A\ref\sd317bar.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fsh
DATE: 23-AUG-2013 15:36
FILE: J:\SD\sd317A\W2820S102.R01
PLOT SCALE: 10.666667:1

REF 7; J:\SD\sd317A\w2820s102.mst
REF 8; J:\SD\sd317A\w2820s201.MST
REF 9; J:\SD\sd317A\w2820s203.MST
REF 4;
REF 5;
REF 6;
REF 1; W:\Drafters\SD\sd317A\ref\W2820bdr-consultant.mst
REF 2; W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 3;
PLOT SCALE: 10.666667:1
USER: fal
DATE: 20-AUG-2013 15:36
FILE: J:\SD\sd317A\W2820S103.R01

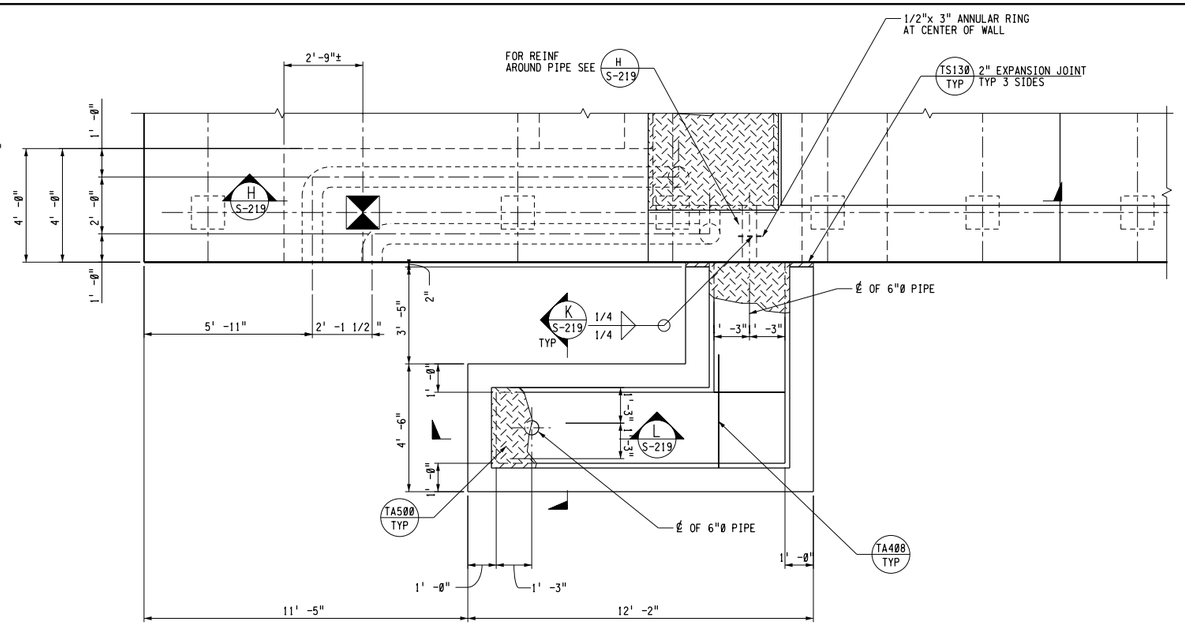


NOTES:

1. DESIGN LIVE LOAD = 100 PSF
2. * VERIFY THE DIMENSION WITH GAS TURBINE GENERATOR MFR.
3. LOWER CUARDRAIL AS REQ'D TO CLEAR ENCLOSURE AIR INLET
4. LOCATE HOOKS OF #PILE DOWELS AS REQD TO CLEAR WITH 3/4" NELSON DEFORMED BAR ANCHORS AND #SPIRAL

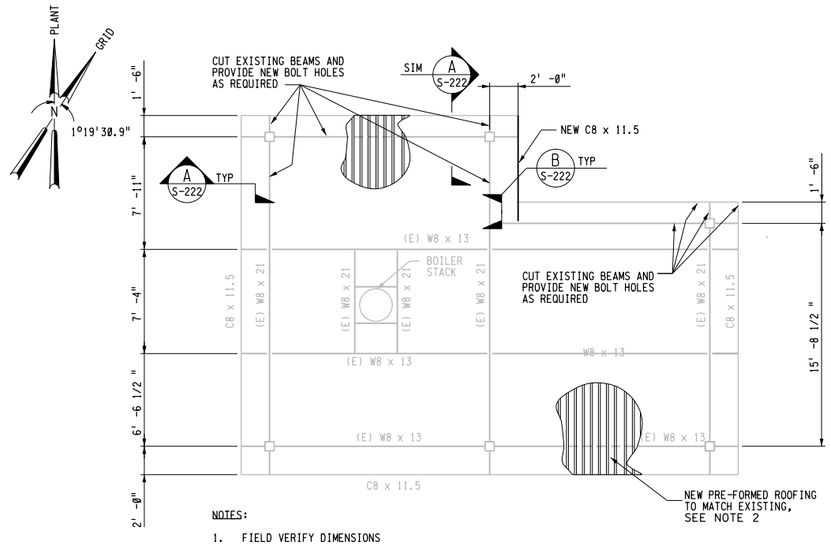
PLATFORM FRAMING PLAN

3/8"= 1'-0"



TRENCH PLAN

3/8"= 1'-0"

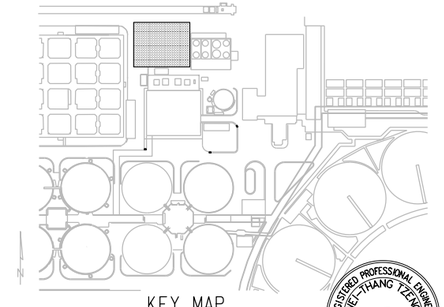


NOTES:

1. FIELD VERIFY DIMENSIONS
2. WELDING DETAIL SHALL MATCH EXISTING ROOFING WELDING DETAIL.

EXISTING BOILER ROOF FRAMING PLAN

3/16"= 1'-0"



KEY MAP

REGISTERED PROFESSIONAL ENGINEER WEI-TEHANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT — EBMUD

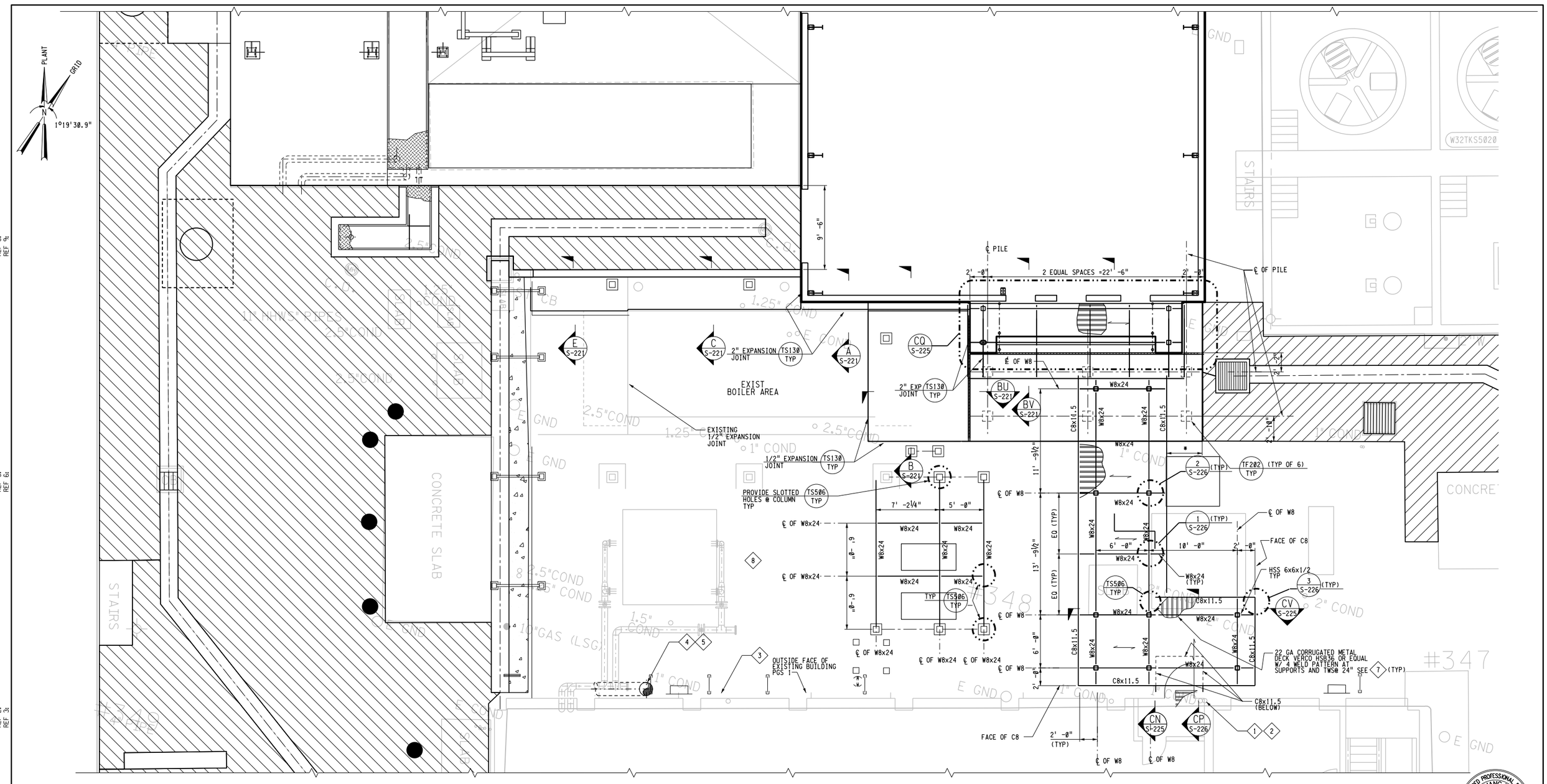
DESIGN BY:	WEI TZENG
DRAWN BY:	GVV/SDW
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PGS 2 BUILDING BOILER ROOF AND
ACCESS PLATFORM FRAMING PLAN

SCALE 3/16"=1'-0"
DATE JAN2009
W28.20-S-103
DRAWING NUMBER
1
REV.

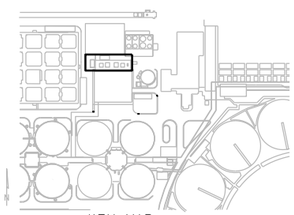


PLAN

3/16"=1'-0"

KEY NOTES:

1. LOCATION OF EXISTING PGS1 COLUMNS SHALL BE VERIFIED BEFORE CUTTING THE DOOR OPENING.
2. FOR CANOPY ABOVE THE DOOR OPENING, THE CONCRETE ANCHORS SHALL BE AWAY FROM THE EXISTING COLUMNS. LOCATE EXISTING CONCRETE BARS PRIOR TO DRILLING.
3. PIPE SUPPORTS SHALL BE INSTALLED AWAY FROM THE EXISTING PGS/1 COLUMNS. LOCATION OF EXISTING REBARS SHALL BE VERIFIED PRIOR TO DRILLING. FOR PIPE SUPPORT DETAILS SEE DRAWING M-107.
4. LOCATION OF THE EXISTING PILES AND PILE CAPS SHALL BE VERIFIED PRIOR TO INSTALLATION OF 18IN. LPDC. DEMO OF EXISTING SLAB PER TS198 TYP TO STAY 12" CLEAR OF THE PILES AND PILE CAPS.
5. THE EXISITNG SLAB SHALL BE REPAIRED AFTER INSTALLATION OF THE PIPE AND ANCHOR BLOCK. CHIP AWAY CONCRETE TO EXPOSE EXISTING REBAR. USE COLD COUPLING OR WELD NEW BARS TO THE EXISTING BARS. ADD BARS FOR THE OPENNING PER TS180 TYP
6. *FIELD VERIFY THE DIMENSIONS PROIOR TO FABRICATION OF CANOPY STUCTURE.
7. METAL DECK DESIGN LIVE LOAD = 20 PSF.
8. FOR ADDITIONAL PIPE SUPPORTS IN EXISTING BOILER AREA, SEE DRAWING M-107.



KEY MAP

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	DT	JK	
1	25FEB2009	ADDENDUM NO. 2 PER SD317A	DT	TGM	SKW

CONSULTANT

DESIGN BY:	WEI TZENG/Y NOURI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PARTIAL SITE PLAN
BETWEEN PGS 2 AND PGS 1 BUILDINGS

SCALE 3/16"=1'-0"
DATE JAN2009

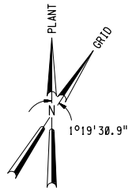
W28.20-S-107
DRAWING NUMBER

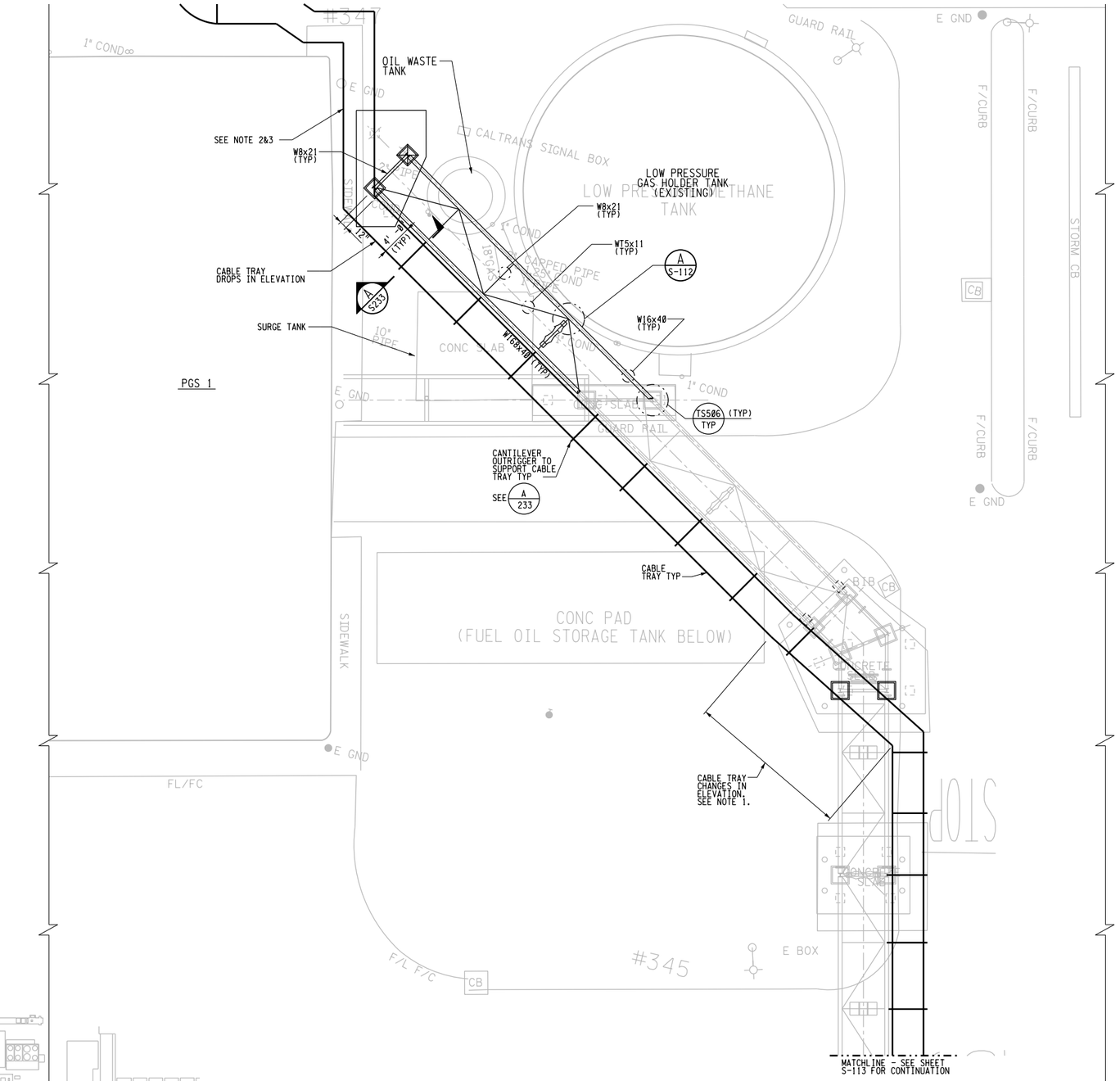
2
REV.

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

REF 7:
REF 8:
REF 9:
REF 4:
REF 5:
REF 6:
REF 1: W:\D-rafters\SD\sd317A\ref\W28206dr_consultant.mst
REF 2:
REF 3:

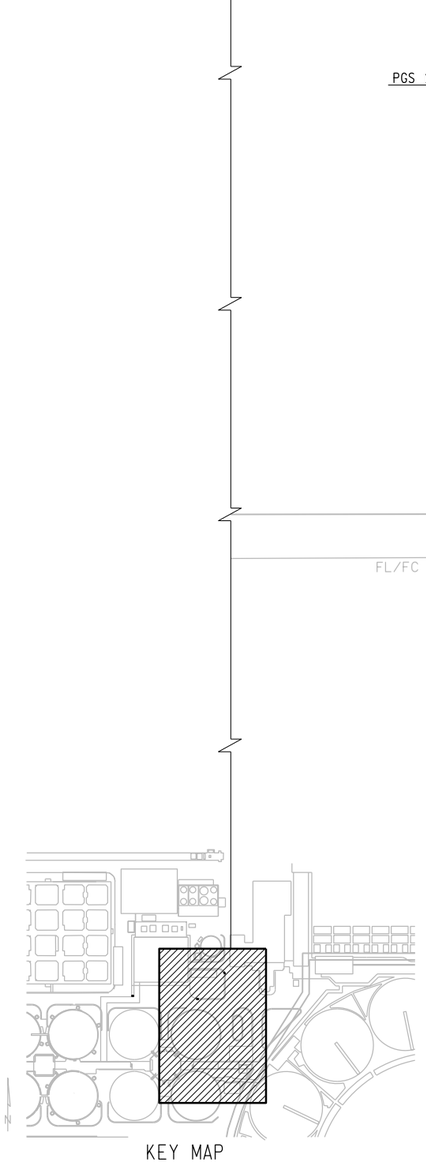
USER: fal
DATE: 26-AUG-2013 15:36
FILE: J:\SD\sd317A\W28205107.R02
PLOT SCALE: 10.666667:1

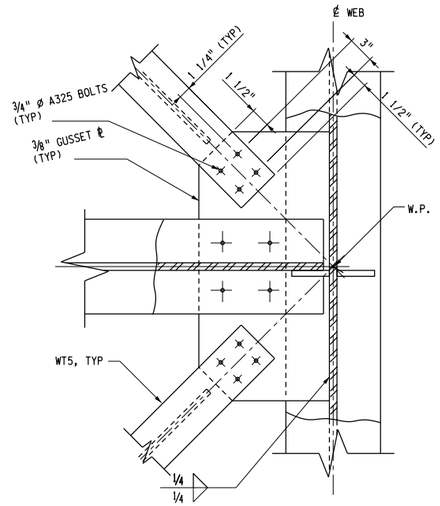




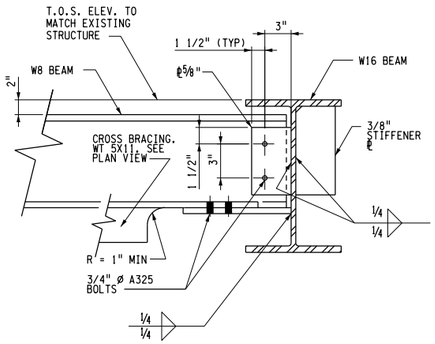
TOP PLAN

1/8" = 1'-0"





PLAN



ELEVATION

CROSS-BEAM CONNECTION

DETAIL A / S-112

SCALE: NTS

NOTES:

1. CONTRACTOR SHALL ROUTE CABLE TRAY AND PROVIDE SUPPORT SUCH THAT IT DOES NOT INTERFERE WITH EXISTING PIPES AND STRUCTURAL MEMBERS. SUBMIT SHOP DRAWINGS AND DETAILS FOR ENGINEERS APPROVAL.
2. CONTRACTOR TO DESIGN AND PROVIDE PREFORMED CHANNEL SUPPORT WITH SEISMIC BRACING @ 5'-0" +/- ON PGS 1 WALL. DESIGN LOAD 100 PLF.
3. CHIPAWAY EXISTING ARCHITECTURAL FLUTE ON PGS 1 WALL AT LOCATION OF SUPPORTS. USE ALL-THREAD EPOXY BOND RODS. DO NOT DAMAGE OR CUT EXISTING REIENF. USE EPOXY TO ACHIEVE FULL BEARING OF SUPPORTS AT THE WALL.

REGISTERED PROFESSIONAL ENGINEER CARL A. GENTRY No. C28410 Exp. 3/31/08 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT EBMUD

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	EDDIE LONGORIA
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2

STRUCTURAL

CABLE TRAY SUPPORT
PLAN 1

SCALE 1/4"=1'-0"
DATE JAN2009

W28.20-S-112
DRAWING NUMBER

1
REV.

REF 1: W:\D-rafters\SD\sd317A\ref\W2820sdr-consultant.mst
REF 2: W:\D-rafters\SD\sd317A\ref\sd317bor.mst
REF 3:
REF 4:
REF 5:
REF 6: J:\SD\sd317A\W2820S112.R01
REF 7: W:\D-rafters\w20\w2000site.mst
REF 8:
REF 9:
PLOT SCALE: 16:1
USER: fsh
DATE: 23-AUG-2013 15:37
FILE: J:\SD\sd317A\W2820S112.R01

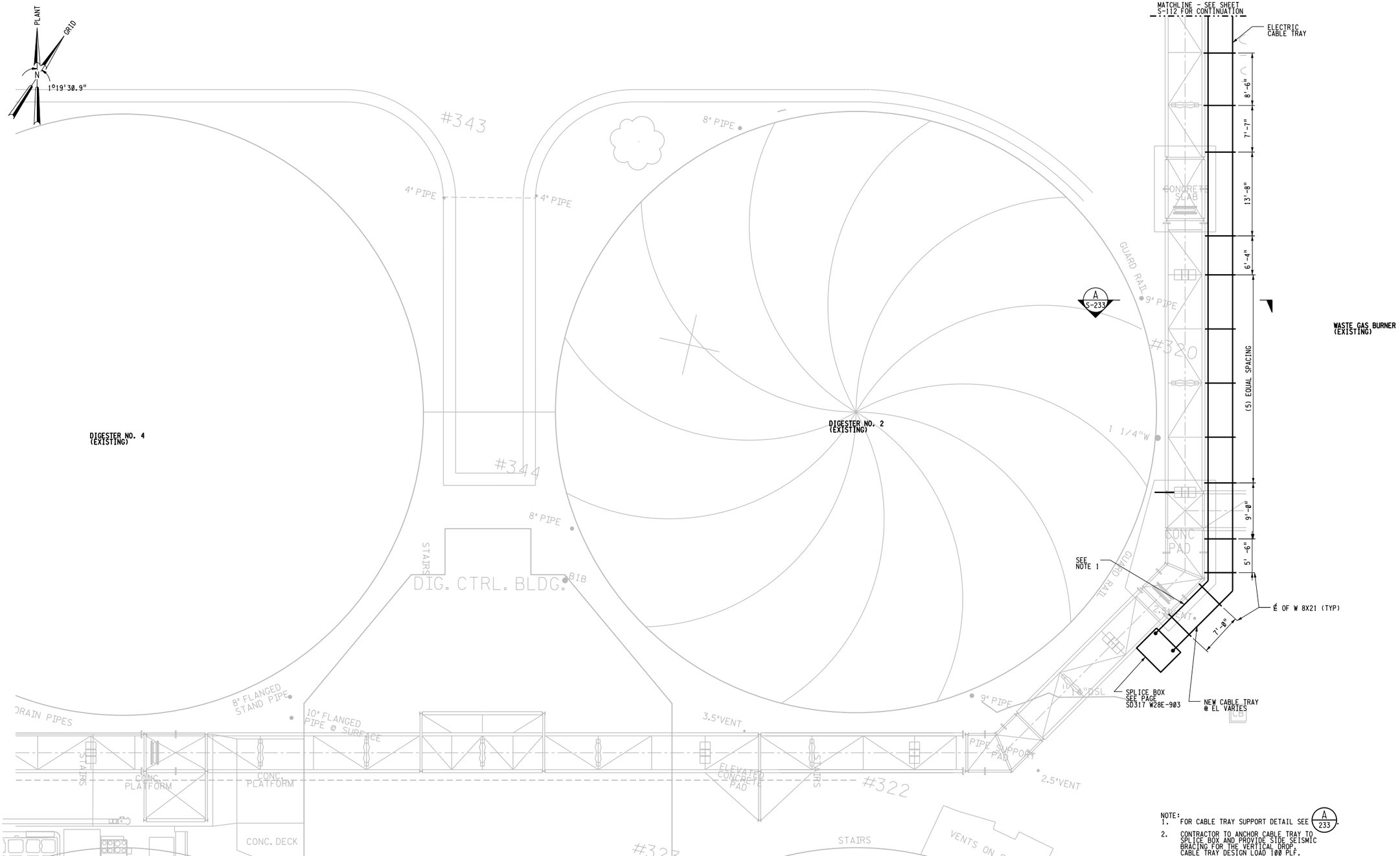
REF 7:
REF 8:
REF 9:

REF 4: J:\SD\sd317A\w2020c205.MST
REF 5: W:\Drafters\w20\w2000asite.mst
REF 6:

REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr-consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317bar.mst
REF 3:

PLOT SCALE: 16:1

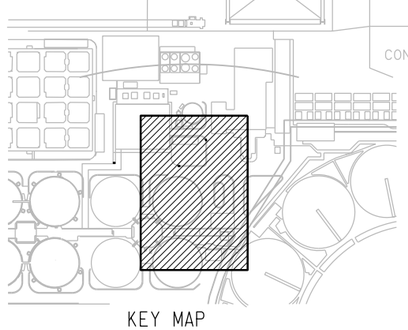
USER: fsh
DATE: 26-AUG-2013 15:37
FILE: J:\SD\sd317A\W2820S113.R01



PLAN

1/8"=1'-0"

NOTE:
1. FOR CABLE TRAY SUPPORT DETAIL SEE (A / 233).
2. CONTRACTOR TO ANCHOR CABLE TRAY TO SPLICE BOX AND PROVIDE SIDE SEISMIC BRACING FOR THE VERTICAL DROP. CABLE TRAY DESIGN LOAD 100 PLF.



3" ON ORIGINAL DOCUMENT
0 1 2 3

REGISTERED PROFESSIONAL ENGINEER
CARL A. GENTRY
No. C28410
Exp. 3/31/08
CIVIL
STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT
EBMUD

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	EDDIE LONGORIA
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

CABLE TRAY SUPPORT PLAN 2

SCALE 1/8"=1'-0"
DATE JAN2009

W28.20-S-113
DRAWING NUMBER

1
REV.

PLANT

WET WEATHER STORAGE FACILITY

GAS COMPRESSOR AREA

ELECTRICAL SUBSTATION

HDPE CONDUIT W/ CONC CAPFIELD ROUTED TO HH-S22

TS600 TYP 8'-0" X 3'-0" ROTECTIVE CONCRETE SLAB

TS600 TYP 7'x9' PROTECTIVE CONCRETE SLAB

ADD WELDED REBAR TO EXST SOLDIER PILES (SIMILAR TO DETAILS ON S-227)

INDICATOR PILE LOCATION (TYP)

℄ MANHOLE & DUCT BANK

TS605 TYP

ELECTRICAL MANHOLE INSTALLED ON WET WEATHER STORAGE BASIN

TS600 TYP 11'x18' PROTECTIVE CONCRETE SLAB

TF202 TYP TF206 TYP FOUR PILES FOR EACH MANHOLE

TS605 TYP

TF202 TYP TF206 TYP TF208 TYP FOR ALL PILES SUPPORTING DUCTBANK

TS603 TYP TS606 TYP

TS605 TYP MANHOLE FOR SUMP

CUT ASBUILT INDICATOR PILE 1' BELOW BOTTOM OF FOUNDATION SLAB

HH-S22

PGS2

B S-228

C S-228

A S-228

20' -10"

EQUALLY SPACED (TYP)

2' -0"

8' -5"

2' -10"

KEY NOTES

1. PILES SUPPORTING DUCTBANKS SHALL BE SPACED @ MAXIMUM 10'-0".
2. CONTRACTOR TO POTHOLE BEFORE DRIVING PILES TO AVOID DAMAGING EXISTING UTILITIES, OR BURIED STRUCTURES.

LEGEND

ELECTRICAL DUCT BANK SEE ELECTRICAL DRAWINGS.

KEY MAPS

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT / EBMUD

DESIGN BY:	WEI TZENG
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
ELECTRICAL PULL BOX
PLAN

SCALE 1"=10'
DATE JAN2009

W28.20-S-114
DRAWING NUMBER

1
REV.

USER: fai
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\W28205114.R01
PLOT SCALE: 20:1
REF 1: W:\Drafters\SD\sd317A\ref\W28200dr_consultantnst
REF 2:
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

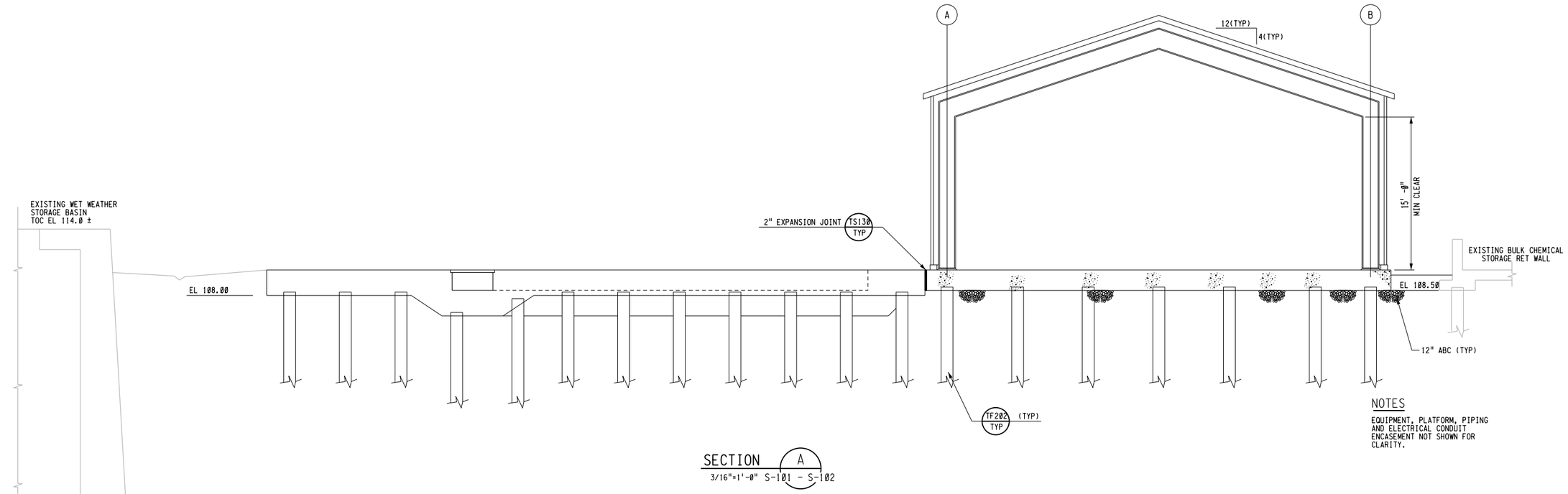
REF 7;
REF 8;
REF 9;

REF 4;
REF 5;
REF 6;

REF 1: W:\Drafters\SD\sd317A\ref\sd317abor.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2828bor.consultant.mst
REF 3:

USER: fah
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\W2828DS200.R01

PLOT SCALE: 10.666667:1



SECTION A
3/16"=1'-0" S-101 - S-102

NOTES

EQUIPMENT, PLATFORM, PIPING AND ELECTRICAL CONDUIT ENCASEMENT NOT SHOWN FOR CLARITY.



3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT — EBMUD

DESIGN BY:	WEI TZENG
DRAWN BY:	JCI/SDW
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

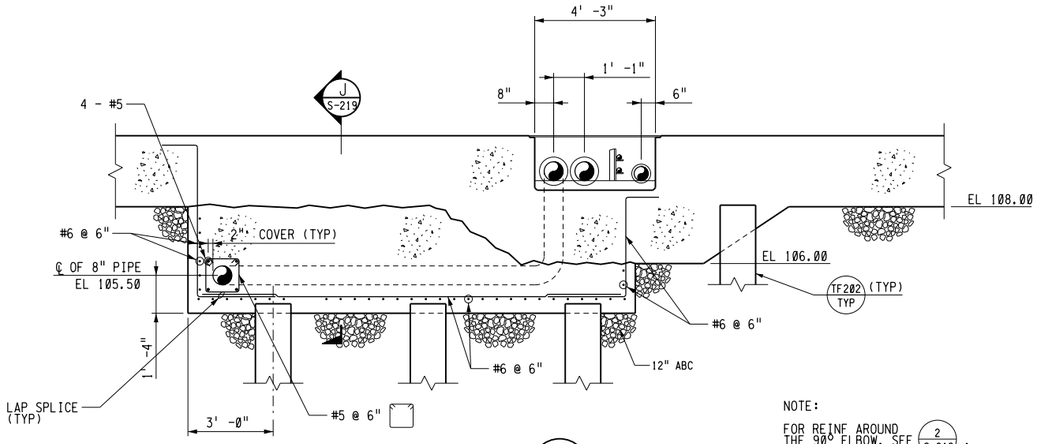
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PGS 2 BUILDING
SECTION 1

SCALE 3/16"=1'-0"
DATE JAN2009

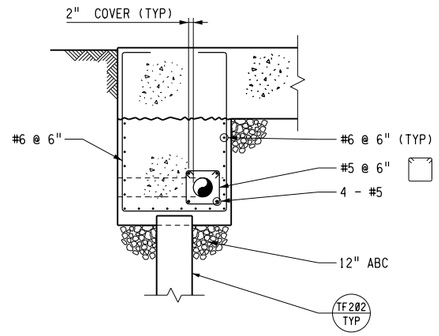
W28.20-S-200
DRAWING NUMBER

1
REV.

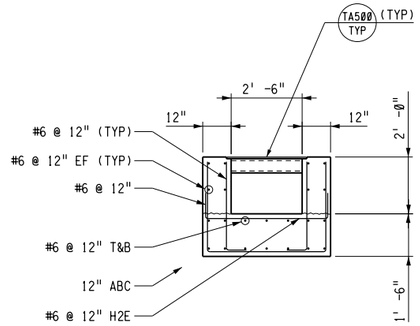


NOTE:
FOR REINF AROUND THE 90° ELBOW, SEE 2 S-219 .

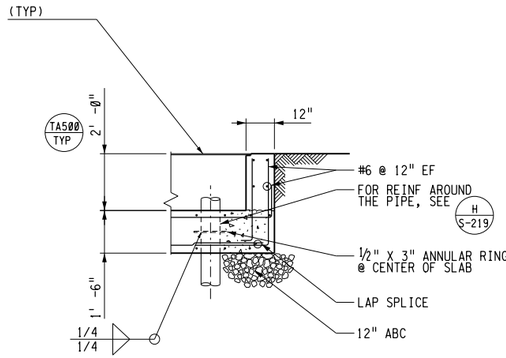
SECTION H
3/8"-1'0" S-103



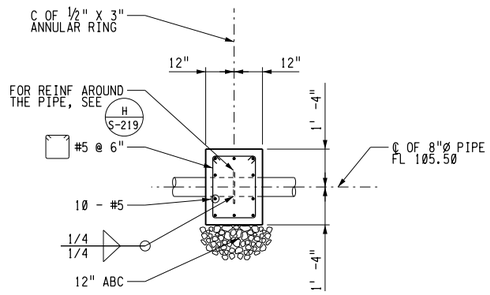
SECTION J
3/8"-1'0" S-219



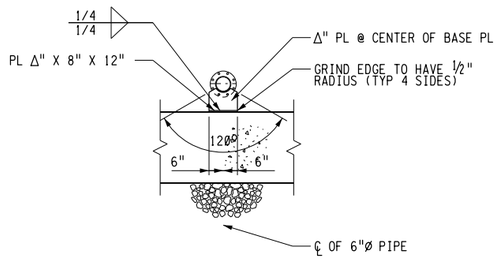
SECTION K
3/8"-1'0" S-103



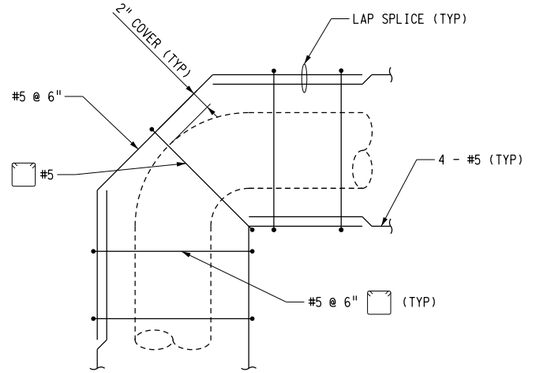
SECTION L
3/8"-1'0" S-103



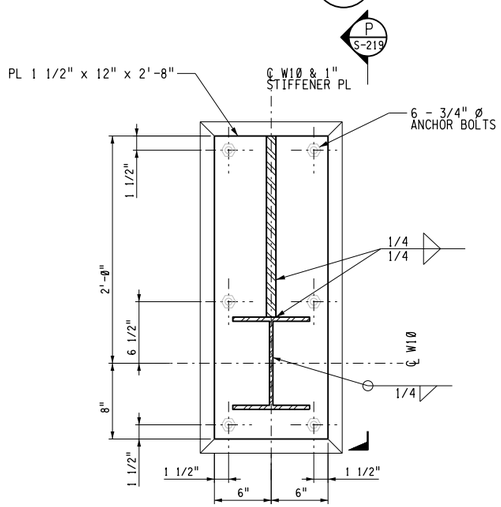
SECTION N
3/8"-1'0" M-101



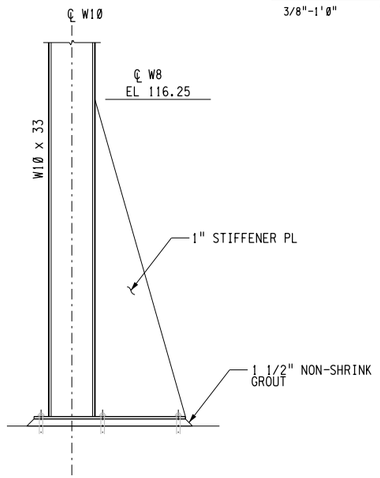
PIPE SUPPORT 1
N.T.S. M-101



DETAIL 2
N.T.S. S-219



DETAIL 21
1 1/2" = 1'-0" S-224



SECTION P
3/4" = 1'-0" S-219

3" ON ORIGINAL DOCUMENT
0 1 2 3

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT — EBMUD

DESIGN BY:	WEI TZENG
DRAWN BY:	HERB GARCIA
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

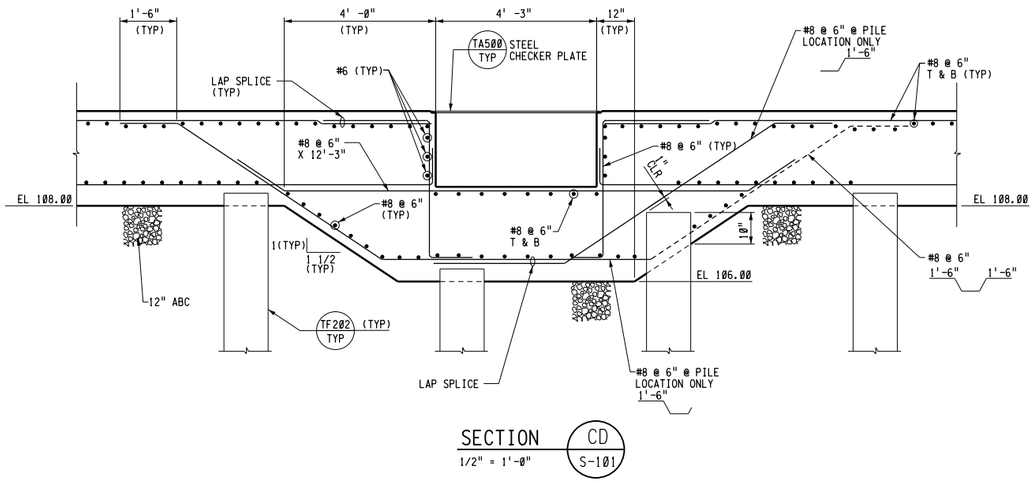
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PGS 2 BUILDING
SECTIONS AND DETAILS

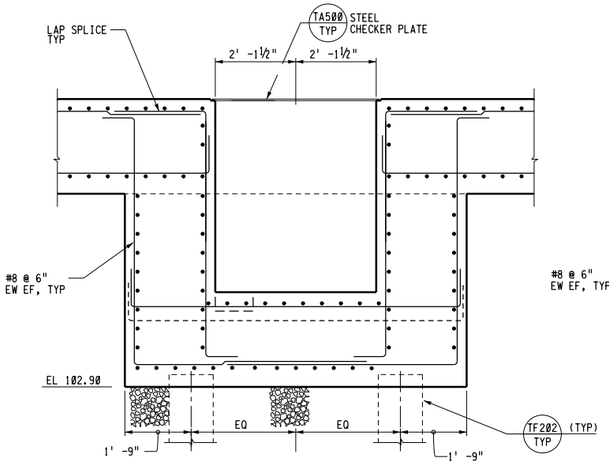
SCALE	AS NOTED	W28.20-S-219	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2:
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

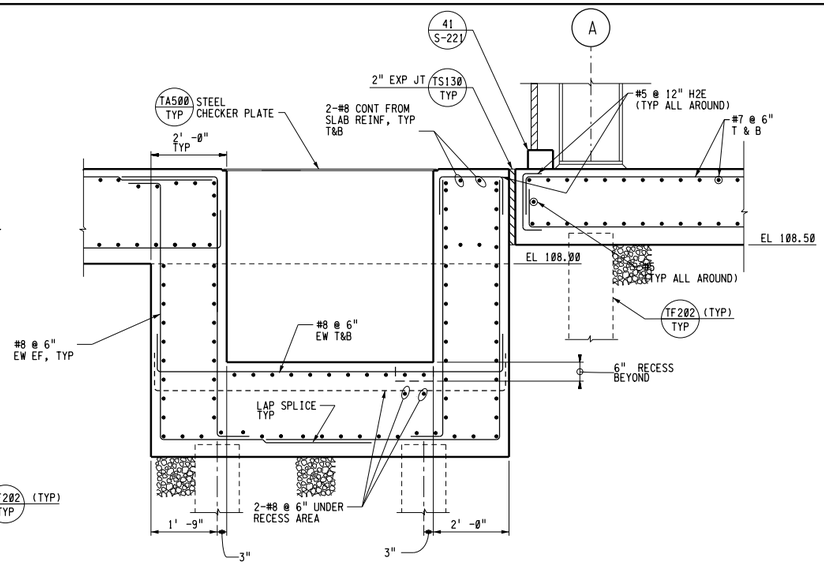
PLOT SCALE: 5.3333331
USER: fah
DATE: 26-AUG-2013 15:37
FILE: J:\SD\sd317A\W2820S219.R01



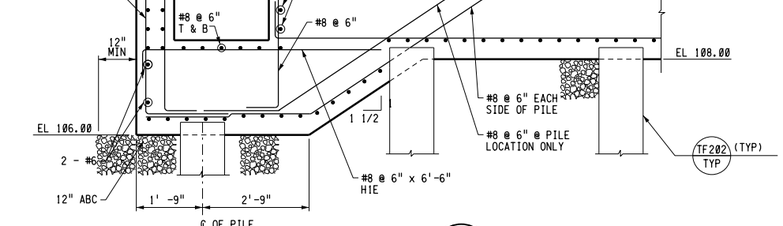
SECTION CD
1/2" = 1'-0"
S-101



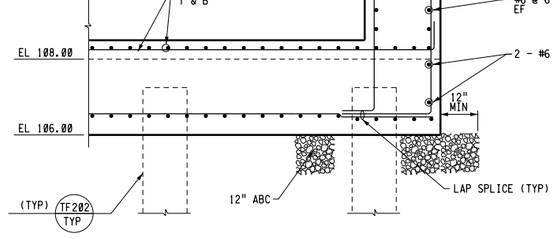
SECTION CC
1/2" = 1'-0"
S-101



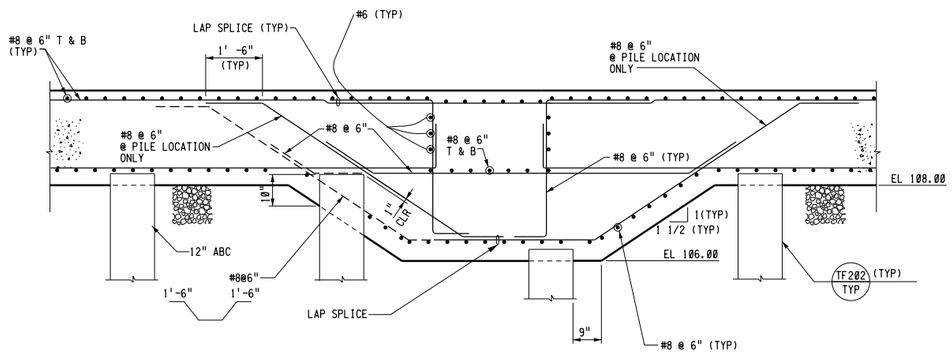
SECTION CG
1/2" = 1'-0"
S-101



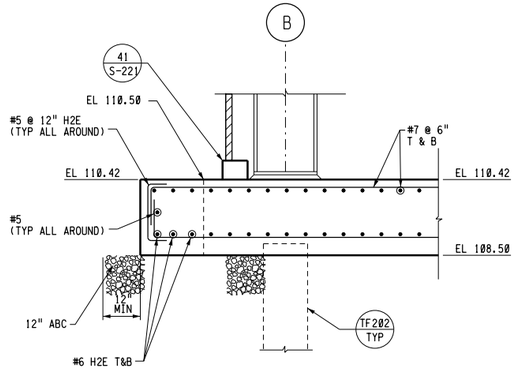
SECTION CE
1/2" = 1'-0"
S-101



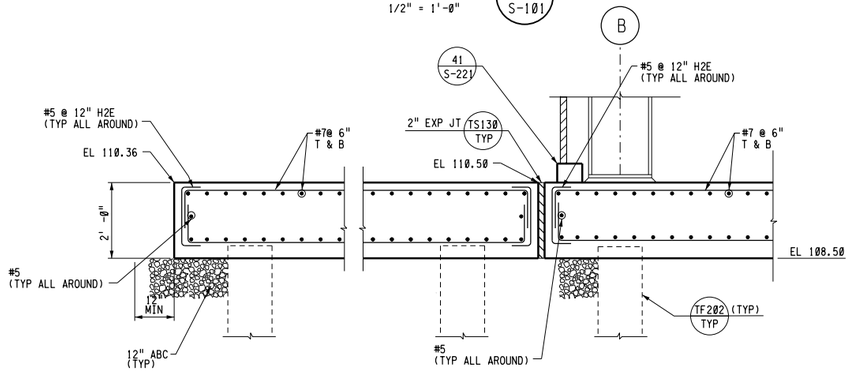
SECTION CF
1/2" = 1'-0"
S-101



SECTION CK
1/2" = 1'-0"
S-101



SECTION CH
1/2" = 1'-0"
S-101



SECTION CJ
1/2" = 1'-0"
S-101

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT EBMUD

DESIGN BY:	WEI TZENG
DRAWN BY:	JAMES MORVAY
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

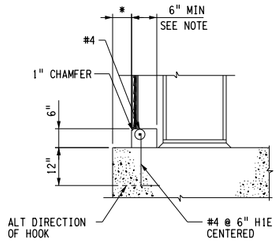
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PGS 2 BUILDING
SECTIONS AND DETAILS

SCALE AS SHOWN
DATE JAN2009
W28.20-S-220
DRAWING NUMBER
1
REV.

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

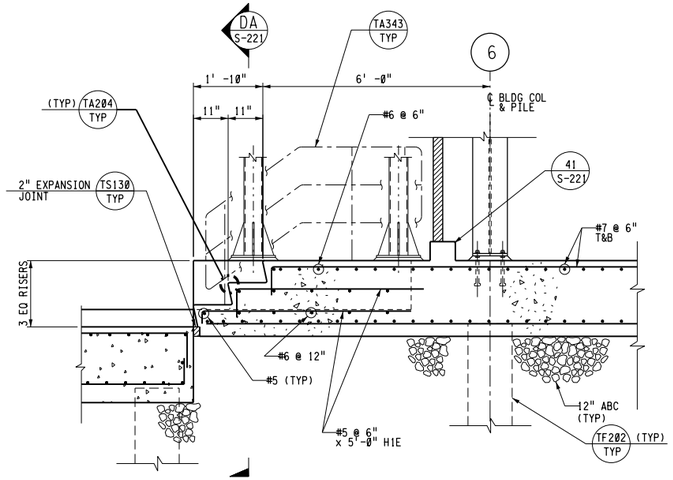
REF 7; REF 8; REF 9;
REF 4; REF 5; REF 6;
REF 1; REF 2; REF 3;

PLOT SCALE: 4:1
USER: fal
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\W28205220.R01

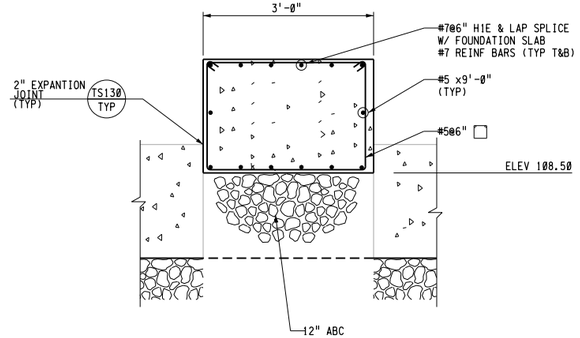


NOTE: * VERIFY DIMENSION W/ BLDG MFR

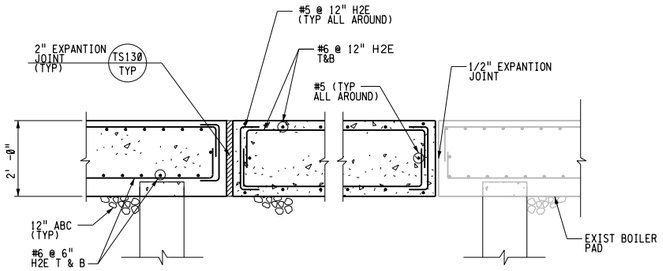
DETAIL 41 — 1/2" = 1'- 0" — S-102



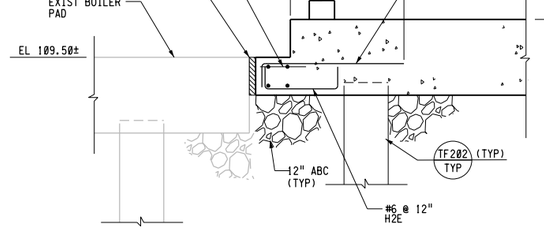
SECTION BV — 1/2" = 1'- 0" — S-107



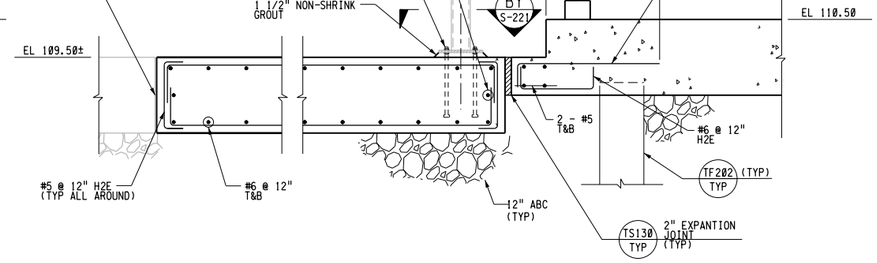
SECTION DA — 3/4" = 1'- 0" — S-221



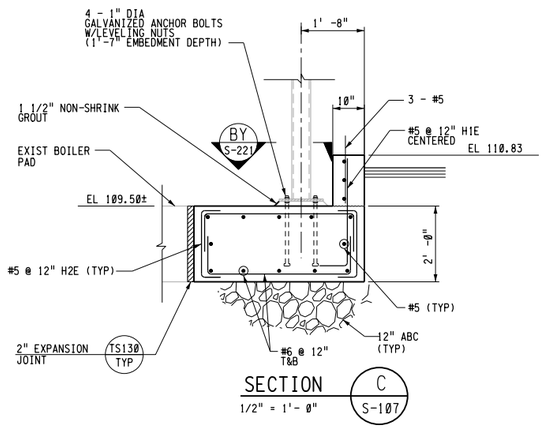
SECTION BU — 1/2" = 1'- 0" — S-107



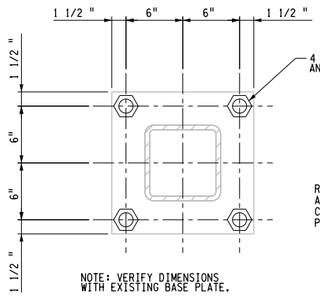
SECTION A — 1/2" = 1'- 0" — S-107



SECTION B — 1/2" = 1'- 0" — S-107

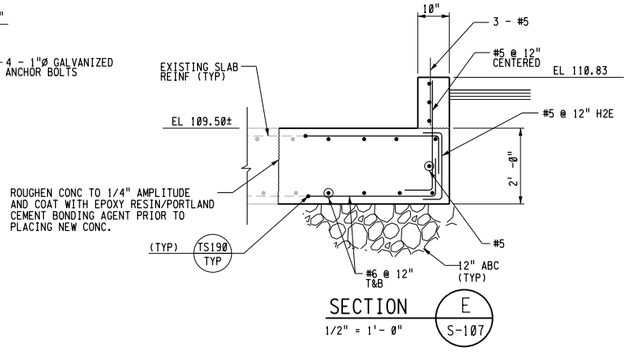


SECTION C — 1/2" = 1'- 0" — S-107



NOTE: VERIFY DIMENSIONS WITH EXISTING BASE PLATE.

SECTION BY — 1 1/2"=1'-0" — S-221



SECTION E — 1/2" = 1'- 0" — S-107

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A	JK		

CONSULTANT EBMUD

DESIGN BY:	WEI TZENG
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

REGISTERED PROFESSIONAL ENGINEER — WEI-THANG TZENG — No. C35597 — Exp. 9/30/09 — CIVIL — STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2

STRUCTURAL

PGS 2 BUILDING
SECTIONS AND DETAILS

SCALE AS SHOWN
DATE JAN2009

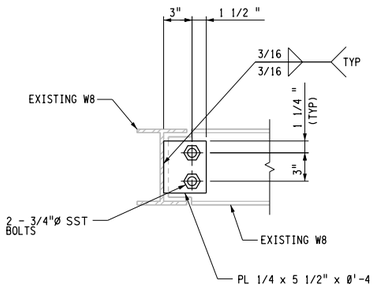
W28.20-S-221
DRAWING NUMBER

1 REV.

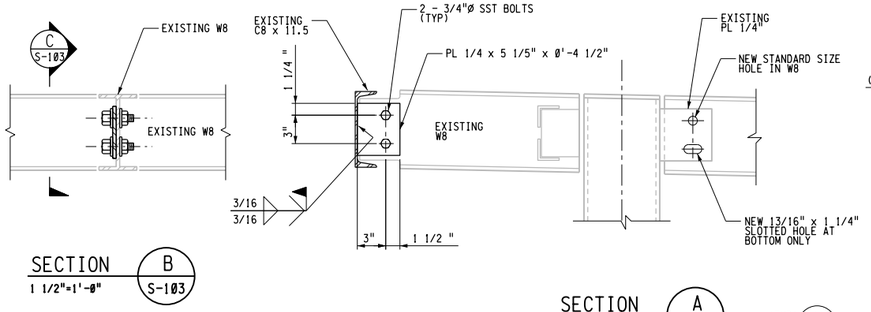
REF 1: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W28280dr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: fah
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\W28280221.R01

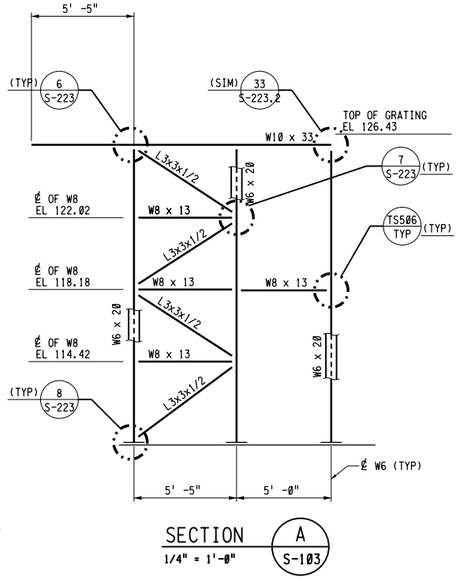
PLOT SCALE: 4:1



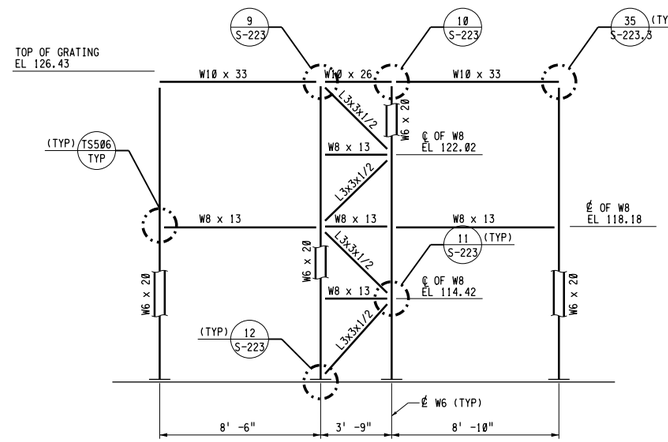
SECTION C S-103
1 1/2"=1'-ø"



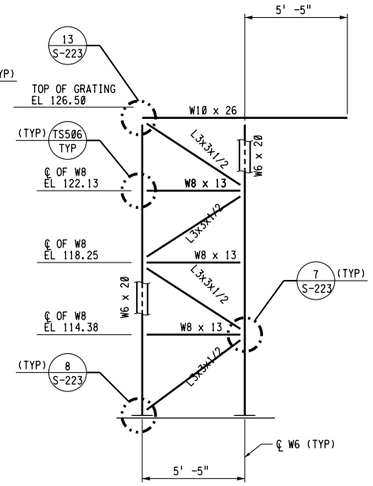
SECTION B S-103
1 1/2"=1'-ø"



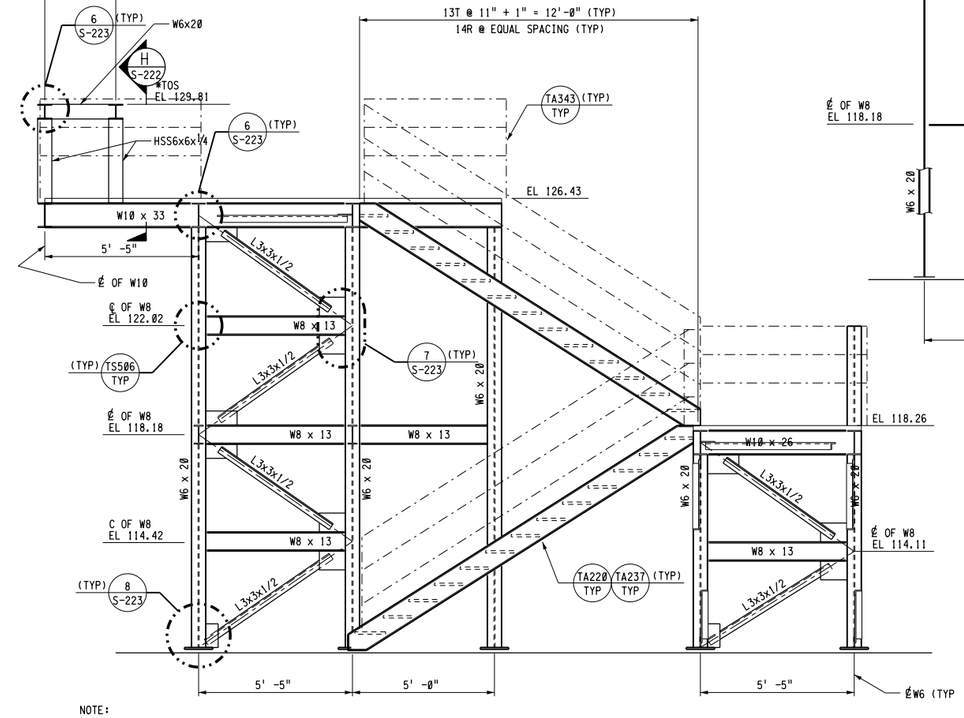
SECTION A S-103
1/4" = 1'-ø"



SECTION B S-103
1/4" = 1'-ø"



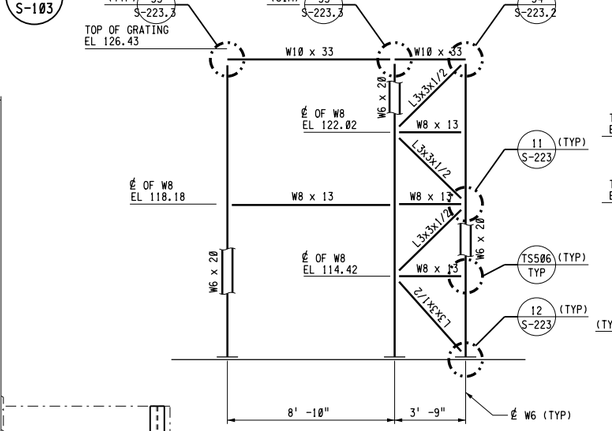
SECTION D S-103
1/4" = 1'-ø"



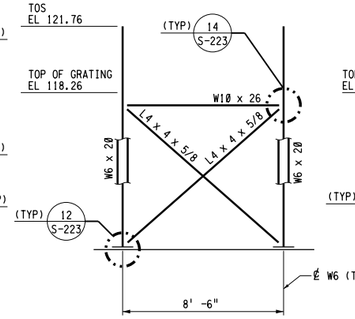
NOTE:

* VERIFY DIMENSION WITH EQUIPMENT MANUFACTURER.

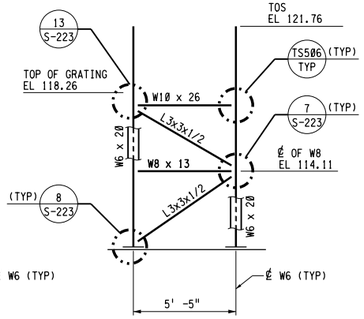
SECTION C S-103
3/8" = 1'-ø"



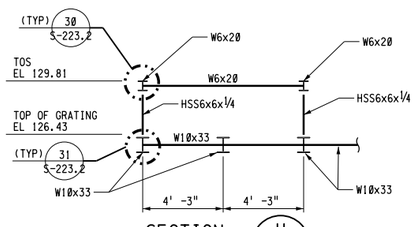
SECTION E S-103
1/4" = 1'-ø"



SECTION F S-103
1/4" = 1'-ø"



SECTION G S-103
1/4" = 1'-ø"



SECTION H S-222
1/4" = 1'-ø"

REGISTERED PROFESSIONAL ENGINEER
WEI-THANG YEZ(EC)
No. C35597
Exp. 9/30/09
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
4	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT / EBMUD

DESIGN BY:	WTT/YN
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PGS 2 BUILDING
SECTIONS AND DETAILS

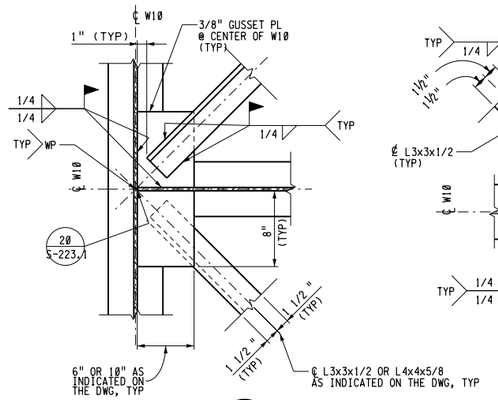
SCALE AS SHOWN
DATE JAN2009

W28.20-S-222
DRAWING NUMBER

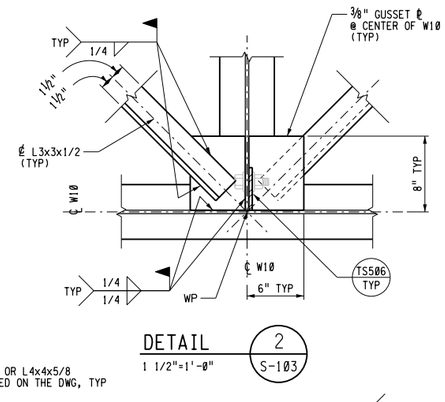
1 REV.

REF 7: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 6: W:\Drafters\SD\sd317A\ref\W2828dsr_consultant.mst
REF 5:
REF 4:
REF 3:
REF 2: W:\Drafters\SD\sd317A\ref\W2828dsr_consultant.mst
REF 1:

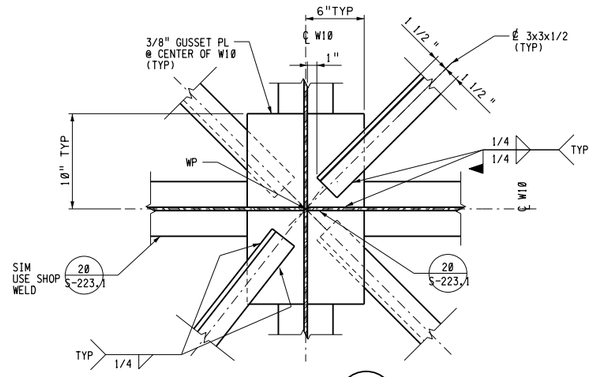
PLOT SCALE: 5.3333333:1
USER: fal
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\W2828DS222.R01



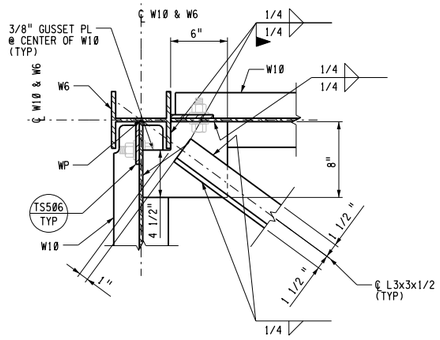
DETAIL 1 — 1 1/2"=1'-0" — S-103



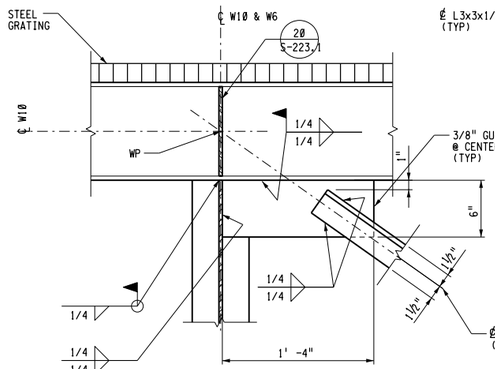
DETAIL 2 — 1 1/2"=1'-0" — S-103



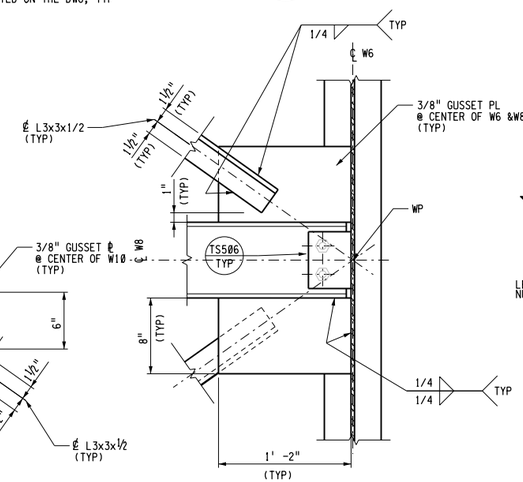
DETAIL 4 — 1 1/2"=1'-0" — S-103



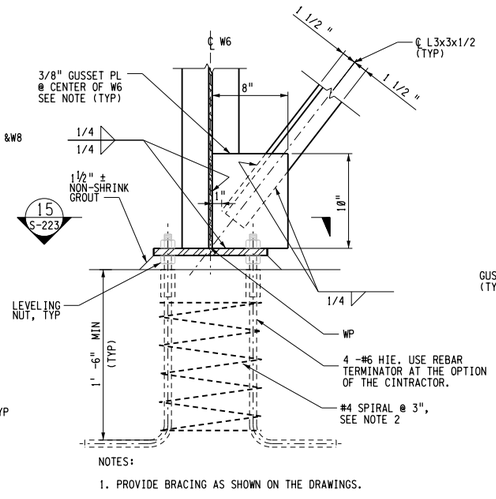
DETAIL 5 — 1 1/2"=1'-0" — S-103



DETAIL 6 — 1 1/2"=1'-0" — S-222



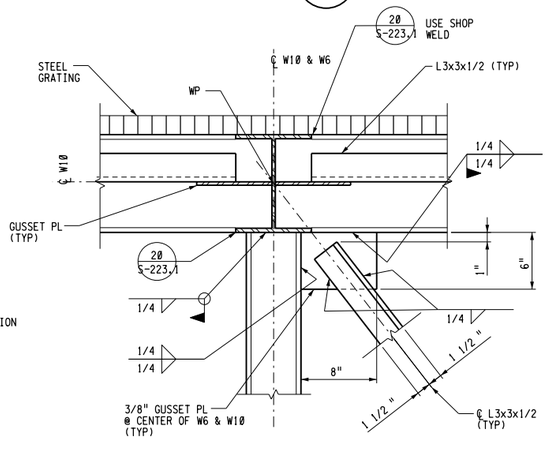
DETAIL 7 — 1 1/2"=1'-0" — S-222



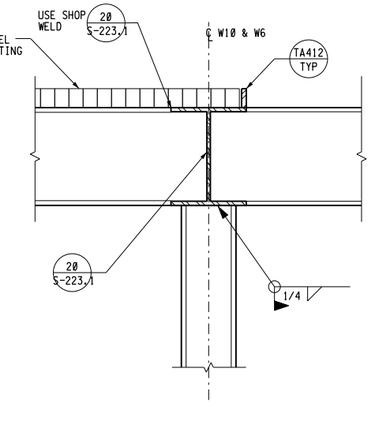
NOTES:

1. PROVIDE BRACING AS SHOWN ON THE DRAWINGS.
2. #4 SPIRAL IS NOT REQUIRED FOR THE COL BASE PLATE CONFLICT WITH THE PILE REINF BARS.

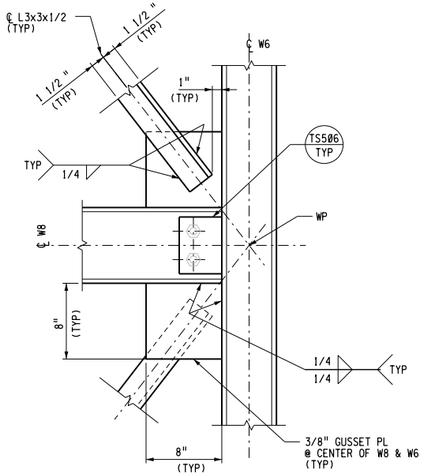
DETAIL 8 — 1 1/2"=1'-0" — S-222



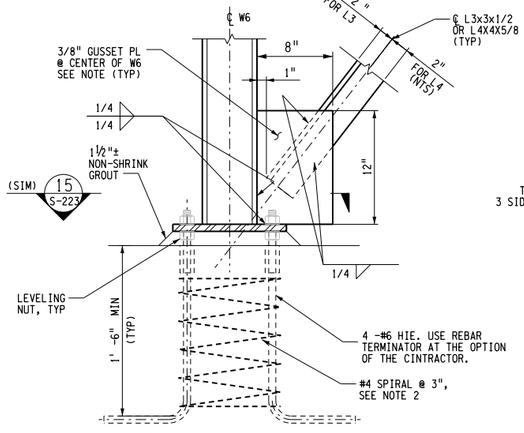
DETAIL 9 — 1 1/2"=1'-0" — S-222



DETAIL 10 — 1 1/2"=1'-0" — S-222



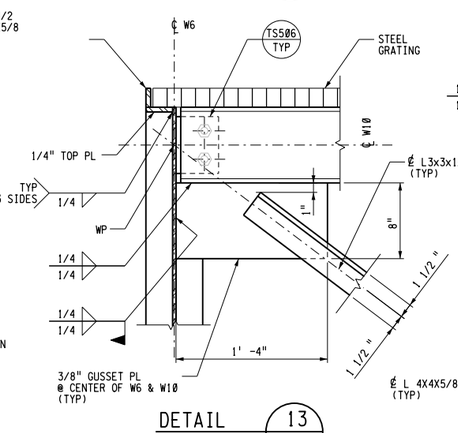
DETAIL 11 — 1 1/2"=1'-0" — S-222



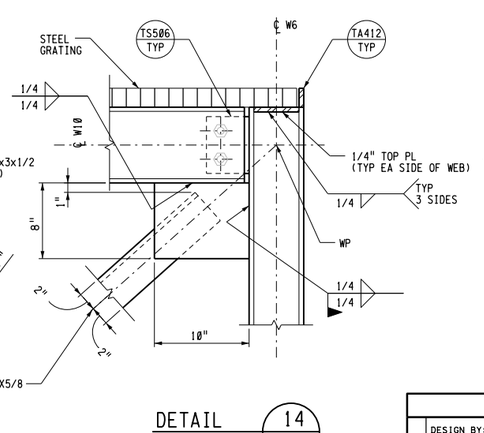
NOTES:

1. PROVIDE BRACING AS SHOWN ON THE DRAWINGS.
2. #4 SPIRAL IS NOT REQUIRED FOR THE COL BASE PLATE CONFLICT WITH THE PILE REINF BARS.

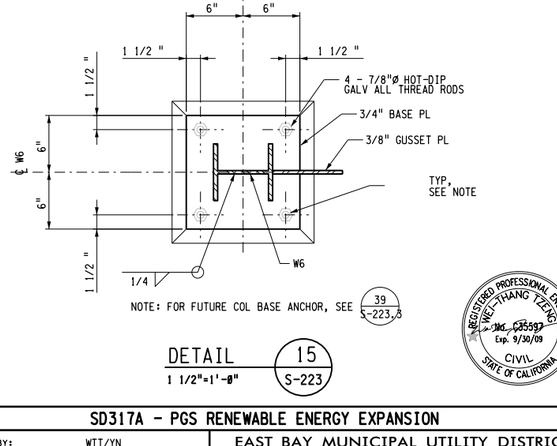
DETAIL 12 — 1 1/2"=1'-0" — S-222



DETAIL 13 — 1 1/2"=1'-0" — S-222



DETAIL 14 — 1 1/2"=1'-0" — S-222



DETAIL 15 — 1 1/2"=1'-0" — S-223

REGISTERED PROFESSIONAL ENGINEER — WEI-THIANG YZENAS — No. C35597 — Exp. 9/30/09 — CIVIL — STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT (0 1 2 3)

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A – PGS RENEWABLE ENERGY EXPANSION

CONSULTANT: EBMUD

DESIGN BY:	WTT/YN
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

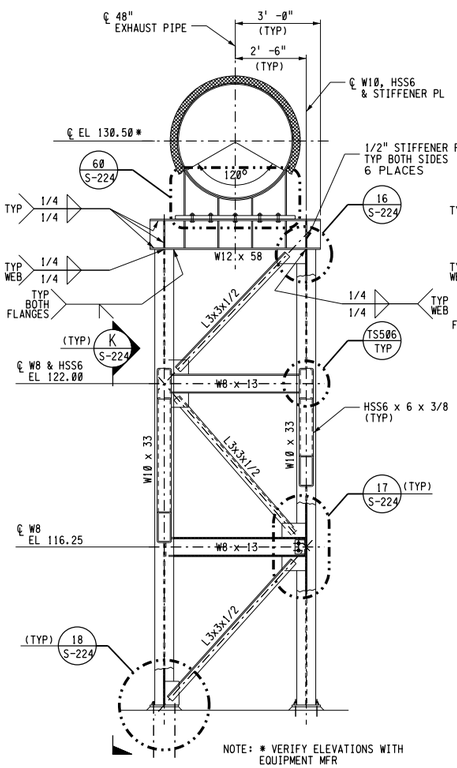
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PGS 2 BUILDING
SECTIONS AND DETAILS

SCALE 1½"=1'-0" | DATE JAN2009

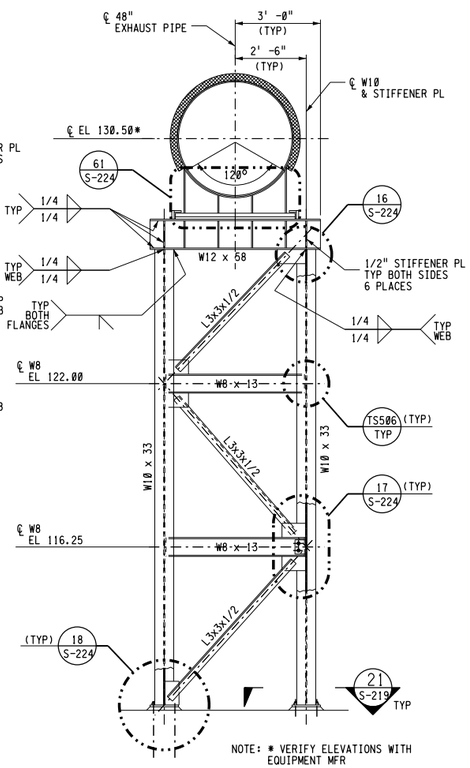
W28.20-S-223 — DRAWING NUMBER — 1 REV.

REF 1: W:\D-rafters\SD\sd317A\ref\W2820bdr_consultantnst
REF 2: W:\D-rafters\SD\sd317A\ref\W2820bdr_consultantnst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:

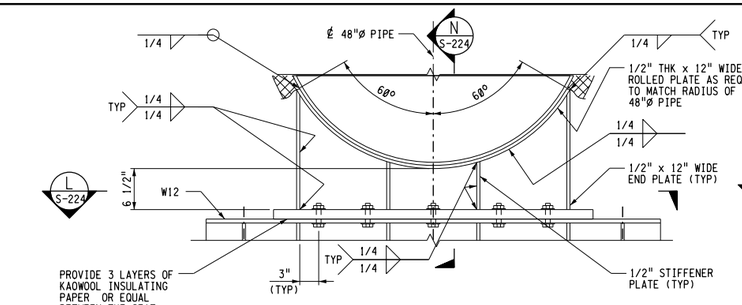
USER: fah
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\w2820s223.R01
PLOT SCALE: 1.333333:1



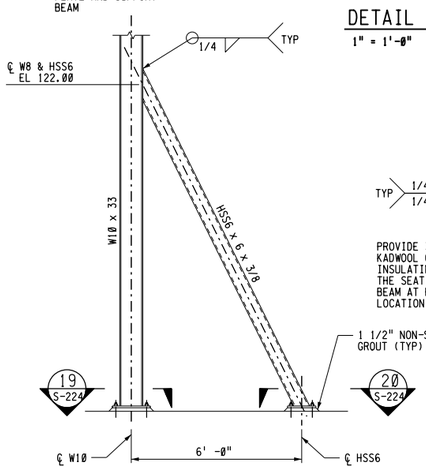
SECTION H
1/2" = 1'-0" S-102



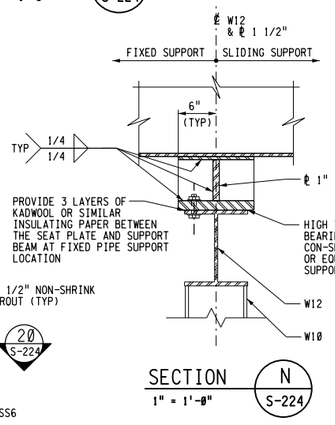
SECTION J
1/2" = 1'-0" S-102



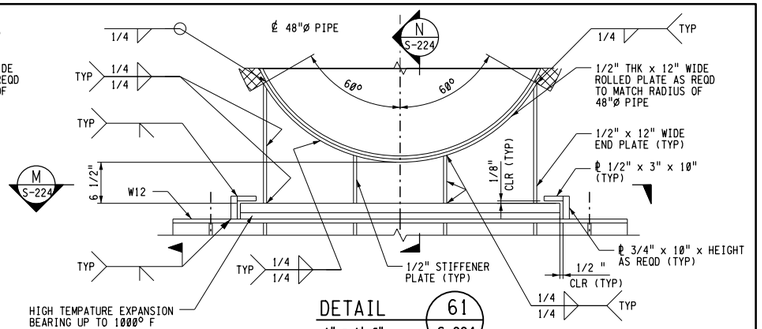
DETAIL 60
1" = 1'-0" S-224



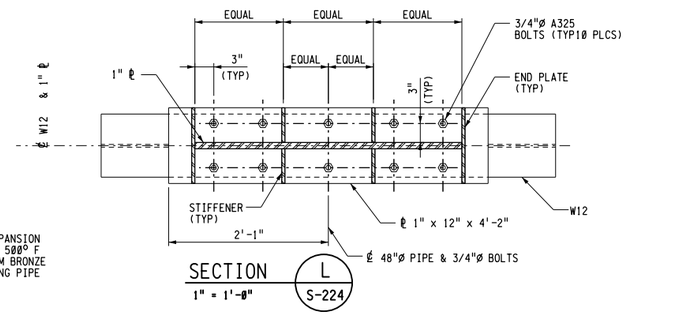
SECTION K
1/2" = 1'-0" S-224



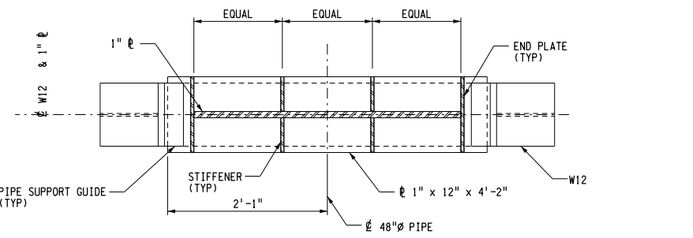
SECTION N
1" = 1'-0" S-224



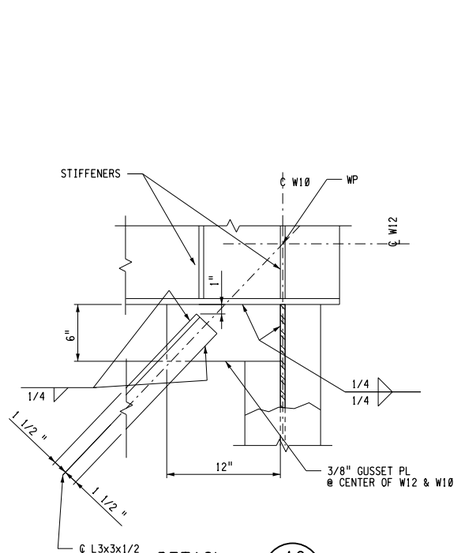
DETAIL 61
1" = 1'-0" S-224



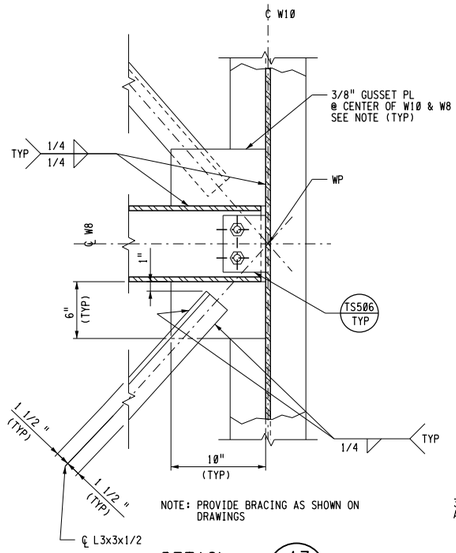
SECTION L
1" = 1'-0" S-224



SECTION M
1" = 1'-0" S-224

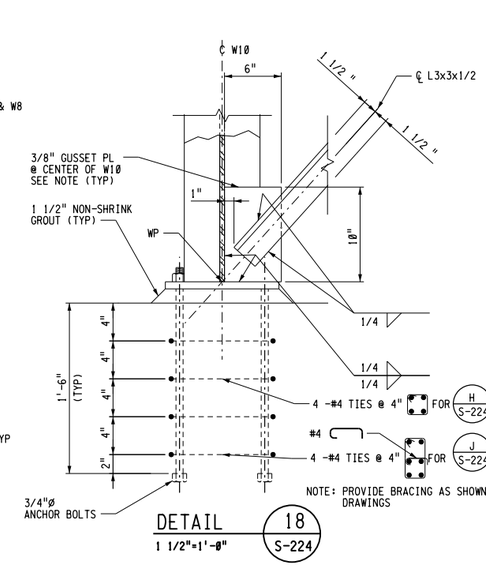


DETAIL 16
1 1/2"=1'-0" S-224



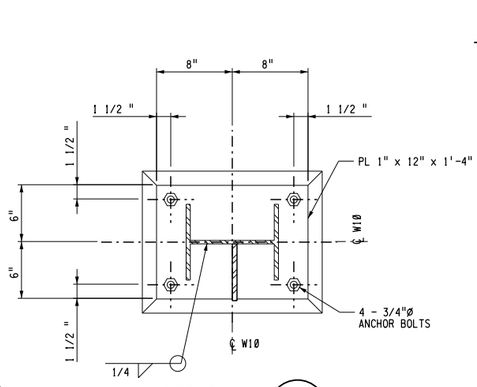
NOTE: PROVIDE BRACING AS SHOWN ON DRAWINGS

DETAIL 17
1 1/2"=1'-0" S-224

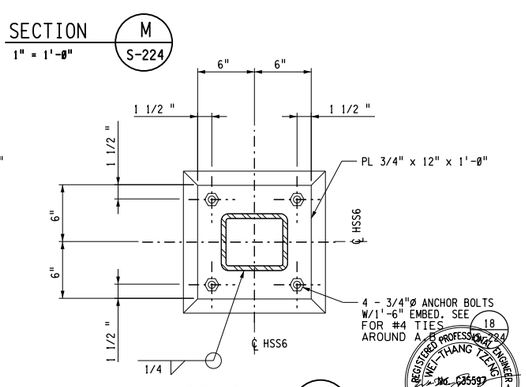


NOTE: PROVIDE BRACING AS SHOWN ON DRAWINGS

DETAIL 18
1 1/2"=1'-0" S-224



DETAIL 19
1 1/2"=1'-0" S-224



DETAIL 20
1 1/2"=1'-0" S-224

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT

DESIGN BY:	WTT/YN
DRAWN BY:	SDW/NP
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PGS 2 BUILDING
SECTIONS AND DETAILS

SCALE AS SHOWN
DATE JAN2009

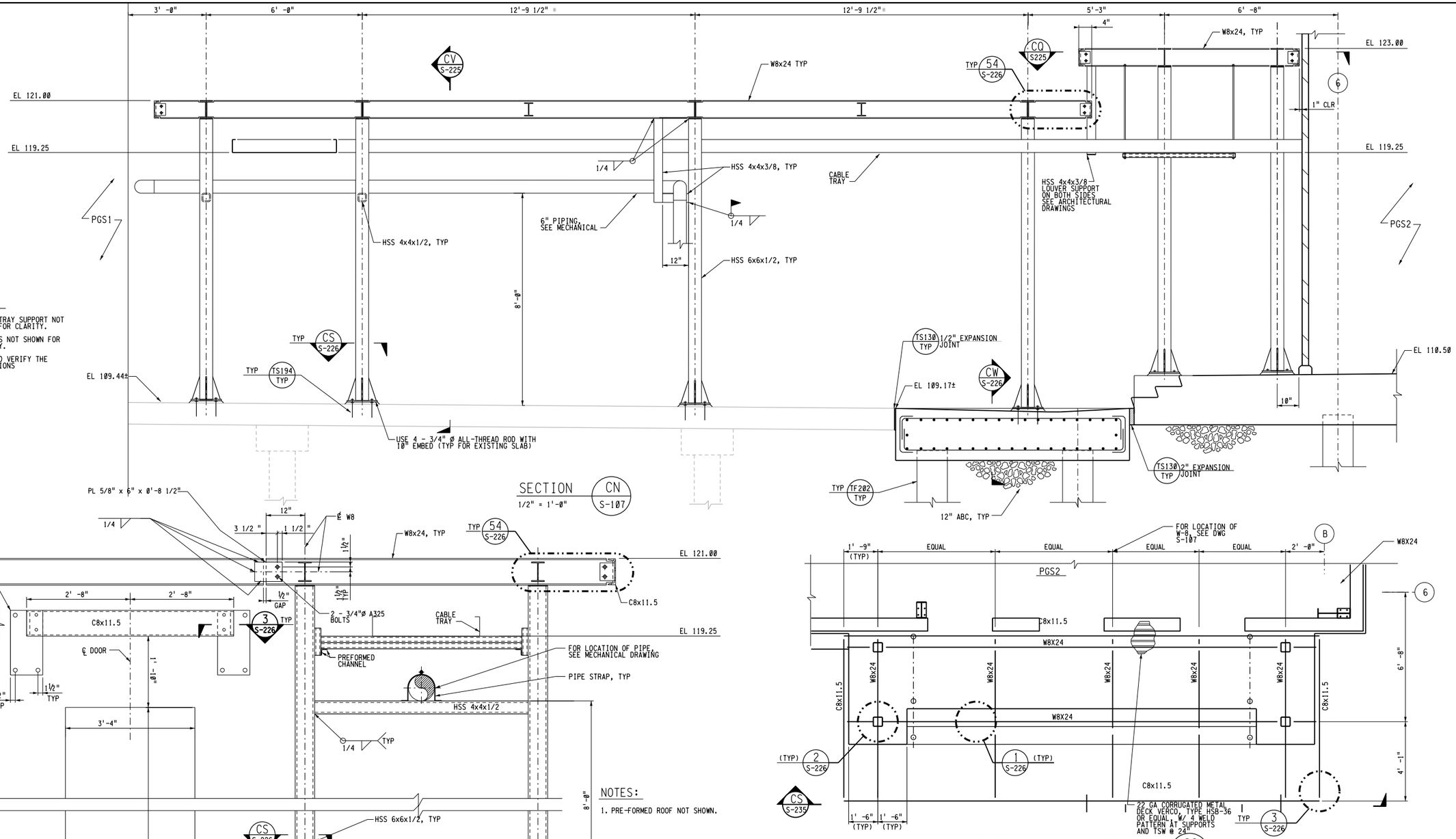
W28.20-S-224
DRAWING NUMBER

1 REV.

REF 1: W:\Drafters\SD\sd317A\ref\w2820bdr_consultantmst
REF 2:
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8: W:\Drafters\SD\sd317A\ref\sd317bdr.mst

USER: fah
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\W2820S224.R01
PLOT SCALE: 2:1

REF 7:
REF 8:
REF 4: J:\SD\sd317A\w2820s100.mst
REF 5:
REF 6:
REF 1: W:\Drafters\SD\sd317A\ref\sd317abdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820sdr_consultant.mst
REF 3:
USER: fai
DATE: 26-AUG-2013 15:37
FILE: J:\SD\sd317A\W2820S225.R01
PLOT SCALE: 2.666667:1



NOTE:

1. CABLE TRAY SUPPORT NOT SHOWN FOR CLARITY.
2. LOUVERS NOT SHOWN FOR CLARITY.
3. * FIELD VERIFY THE DIMENSIONS

SECTION CN S-107
1/2" = 1'-0"

SECTION CV S-107
3/4"=1'-0"

NOTES:

1. PRE-FORMED ROOF NOT SHOWN.

PGS 2 BUILDING CANOPY FRAMING CQ S-107
3/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	WTT/YN
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON

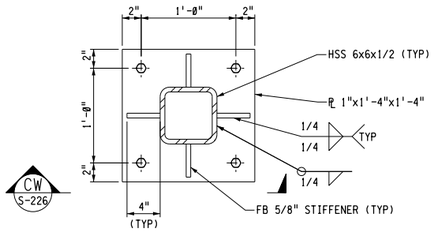
EBMUD

PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

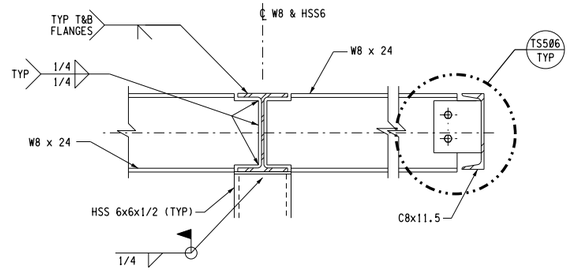
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
BUILDING CANOPY
SECTIONS AND DETAILS 1

SCALE	AS SHOWN	W28.20-S-225	1
DATE	JAN2009	DRAWING NUMBER	REV.

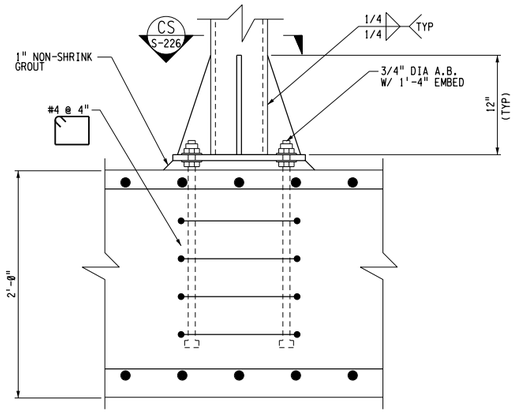


NOTE: IF NECESSARY SHIFT BOLT HOLES 3".
MAINTAIN 1½" EDGE DISTANCE.

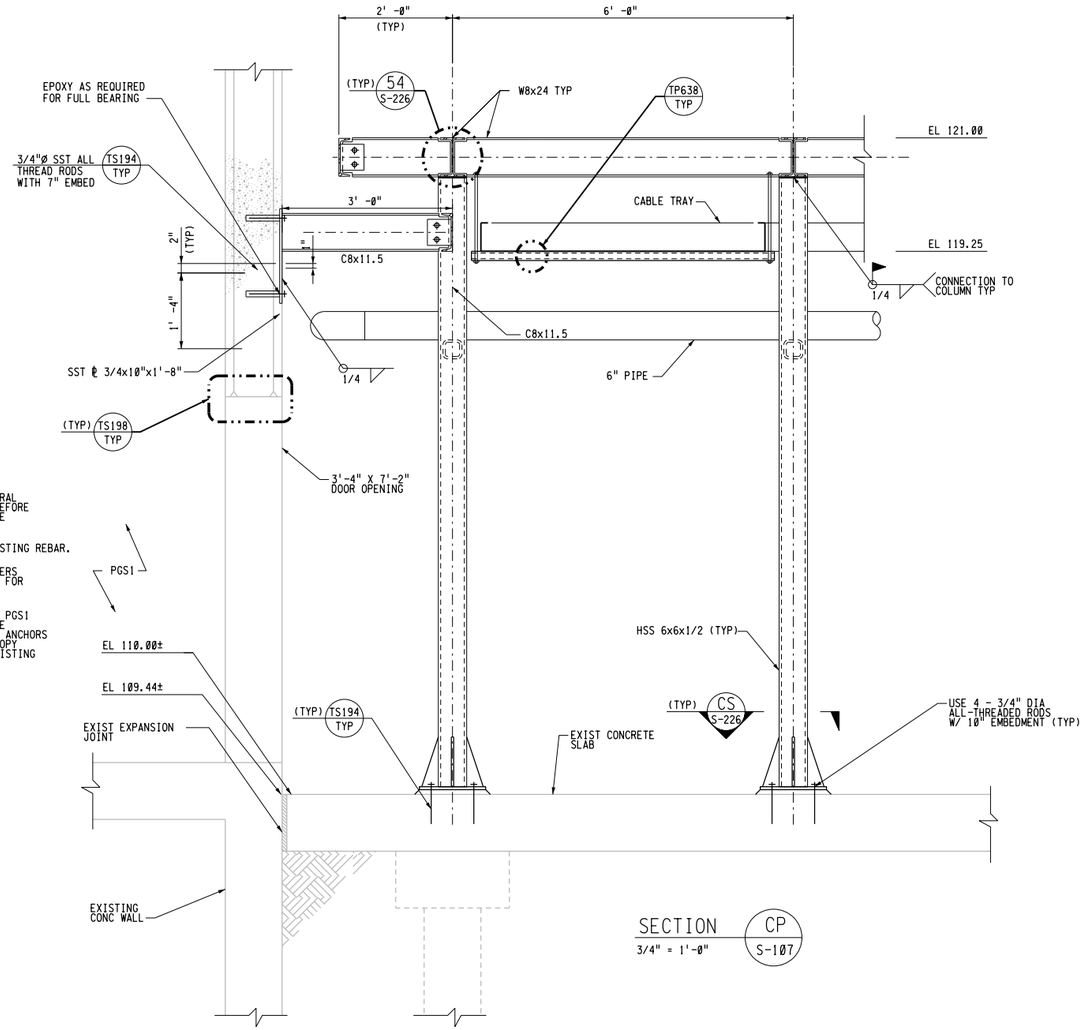
SECTION CS
1 1/2"=1'-0" S-226 & S-234
S-234



DETAIL 54
1 1/2"=1'-0" S-225



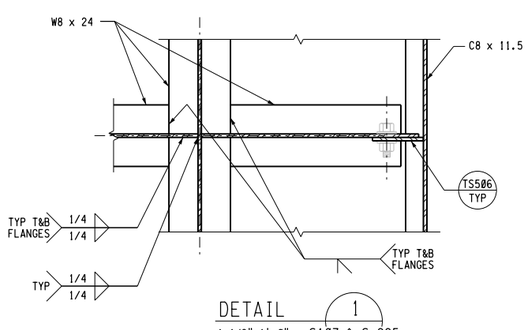
SECTION CW
1 1/2"=1'-0" S-225



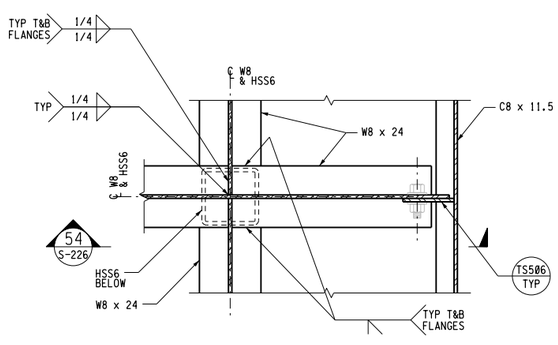
SECTION CP
3/4" = 1'-0" S-107

NOTES:

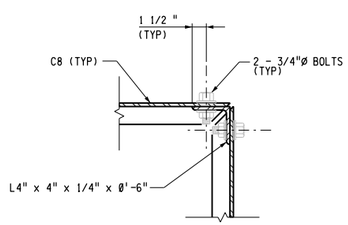
1. CONCRETE WALL ARCHITEXTURAL FLUTE SHALL BE REMOVED BEFORE INSTALLATION OF END PLATE CONCRETE ANCHORS
2. DO NOT CUT OR DAMAGE EXISTING REBAR.
3. PREFORMED METAL AND LOUVERS AND INSULATION NOT SHOWN FOR CLARITY.
4. LOCATION OF THE EXISTING PGSI CONCRETE COLUMNS SHALL BE FIELD VERIFIED. CONCRETE ANCHORS SUPPORTING THE COVER CANOPY SHALL BE CLEAR OF THE EXISTING COLUMNS.



DETAIL 1
1 1/2"=1'-0" S107 & S-225



DETAIL 2
1 1/2"=1'-0" S107 & S-225



DETAIL 3
1 1/2"=1'-0" S107 & S-225

REGISTERED PROFESSIONAL ENGINEER
WEI-THANG TZENG
No. C35597
Exp. 9/30/09
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT
EBMUD

DESIGN BY:	WTT/YN
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

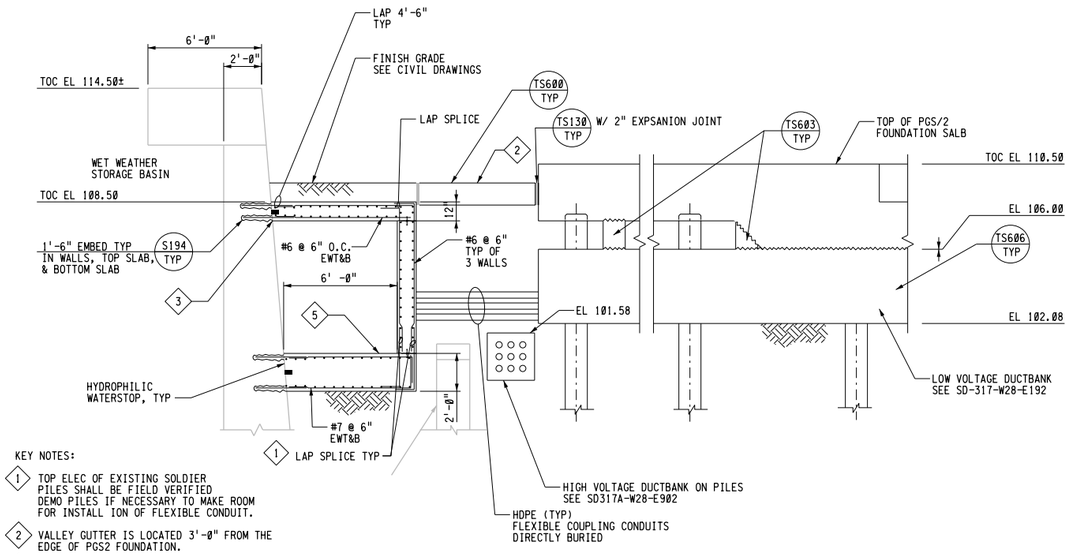
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
BUILDING CANOPY
SECTIONS AND DETAILS 2

SCALE AS SHOWN
DATE JAN2009
W28.20-S-226
DRAWING NUMBER
1
REV.

REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2:
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

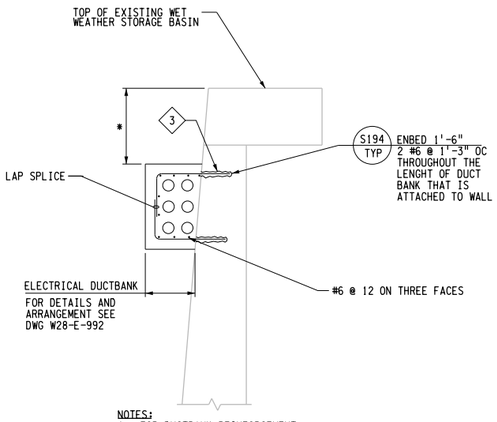
USER: fah
DATE: 26-AUG-2013 15:37
FILE: J:\SD\sd317A\W28205226.R01
PLOT SCALE: 2.666667:1



KEY NOTES:

1. TOP ELEC OF EXISTING SOLDIER PILES SHALL BE FIELD VERIFIED DEMO PILES IF NECESSARY TO MAKE ROOM FOR INSTALL ION OF FLEXIBLE CONDUIT.
2. VALLEY GUTTER IS LOCATED 3'-0" FROM THE EDGE OF PGS2 FOUNDATION.
3. ROUGHEN SURFACE OF EXISTING CONCRETE TO 1/4 AMPLITUDE. APPLY EPOXY BONDING AGENT IMMEDIATELY BEFORE PLACING NEW CONCRETE.
4. FOR DETAILS OF CONNECTION OF DUCT BANK TO MANHOLE SEE TS602 TYP
5. FOR DETAILS OF SUMP, MH COVER, GRADE RINGS, AND CHANGES IN REINFORCING SEE TS605 TYP

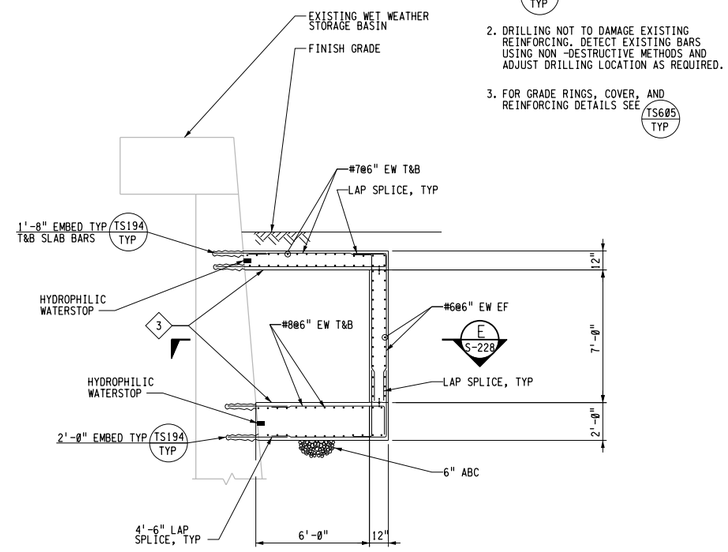
SECTION A — 1/4"= 1'-0" — S-114



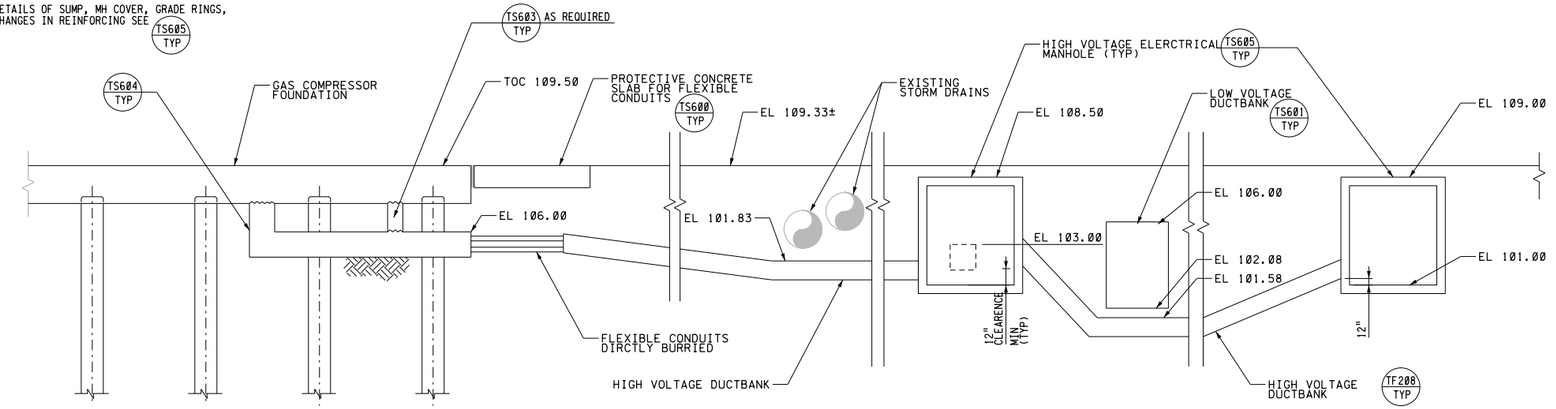
NOTES:
1. FOR DUCTBANK REINFORCEMENT, SEE TYP TF208 TYP
2. * SEE CIVIL DRAWINGS. 2'-0" MIN FILL COVER.

SECTION B — 1"= 1" — S-114

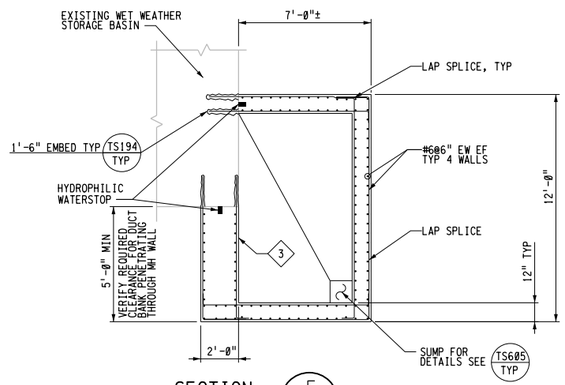
NOTES:
1. CONDUITS ENTERING MANHOLE NOT SHOWN FOR CLARITY. FOR DETAILS OF CONNCETION SEE TS602 TYP
2. DRILLING NOT TO DAMAGE EXISTING REINFORCING. DETECT EXISTING BARS USING NON -DESTRUCTIVE METHODS AND ADJUST DRILLING LOCATION AS REQUIRED.
3. FOR GRADE RINGS, COVER, AND REINFORCING DETAILS SEE TS605 TYP



SECTION D — 1/4"= 1'-0" — S-111



SECTION C — NTS — S-114



SECTION E — 1/4"= 1'-0" — S-228

NOTES:
1. DUCTBANK SLAB AND MANHOLES SUPPORTED ON PILE NOT SHOWN FOR CLARITY. FOR PILE LOCATION SEE S-114.
2. DUCTBANK CONNECTION TO THE SLAB SHOWN FOR ILLUSTRATION PURPOSES. FOR ACCURATE LOCATION SEE ELECTRICAL DRAWING.

3" ON ORIGINAL DOCUMENT (0 1 2 3)

carollo

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1	22APR2013	ADDENDUM NO.2 PER SD317A	DT	TGM	SKW

EBMUD

CONSULTANT

DESIGN BY:	WTT/YN
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
PIPE SUPPORTED DUCTBANK
SECTIONS AND DETAILS

SCALE AS SHOWN
DATE JAN2009

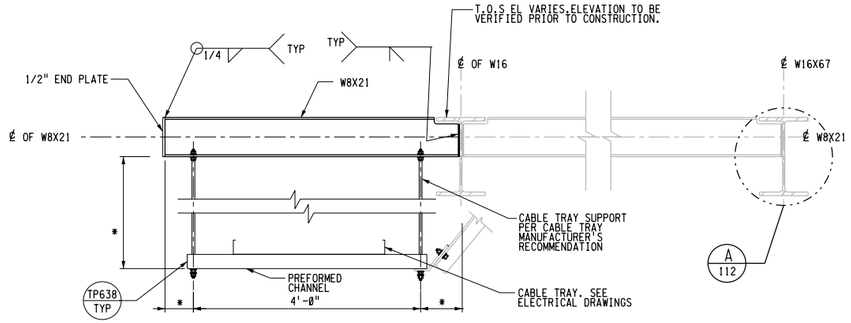
W28.20-S-228 — DRAWING NUMBER — 2 REV.

REGISTERED PROFESSIONAL ENGINEER — WEI-THANG YEZNG — No. C35597 — Exp. 9/30/09 — CIVIL — STATE OF CALIFORNIA

REF 7; REF 8; REF 4; REF 5; REF 6;
REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr.consultant.nst
REF 2:
REF 3:

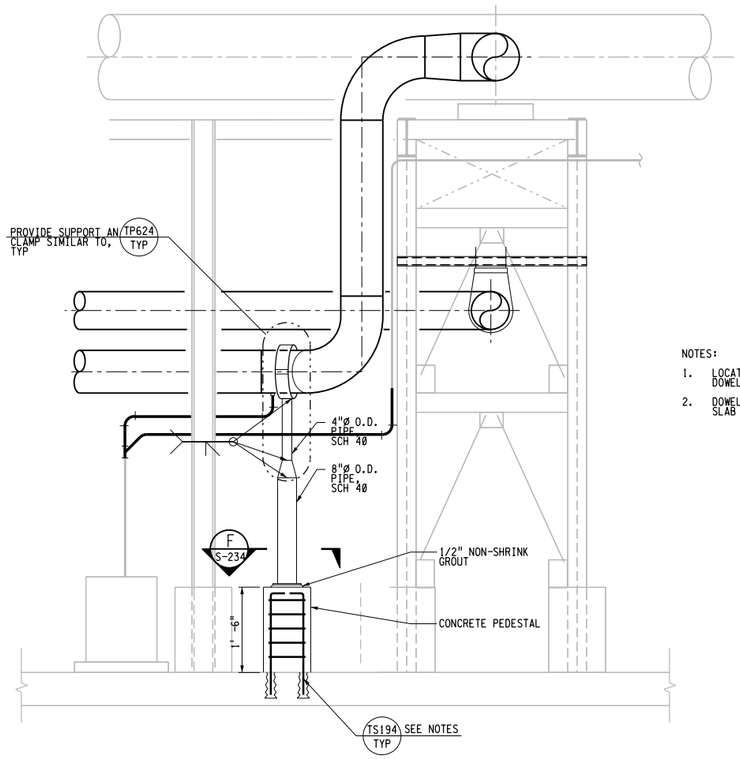
USER: fal
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\W28205228.R02
PLOT SCALE: 4:1

REF 7:
REF 8:
REF 9:
REF 4:
REF 5:
REF 6:
REF 1: W:\D-drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2:
REF 3:
USER: fsh
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\W2820S233.R01
PLOT SCALE: 2.666667:1



*- CONTRACTOR TO CHOOSE DIMENSIONS SUCH THAT CABLE TRAY DOES NOT INTERFER WITH EXISITNG CABLE TRAY, EXISTING PIPE, AND EXISTING STRUCTURAL MEMEBERS.

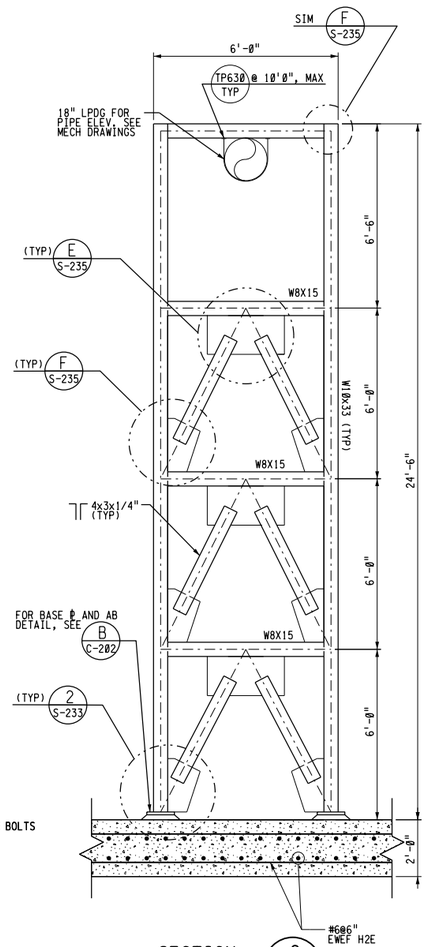
SECTION A / 3/4"=1'-0" / S-113



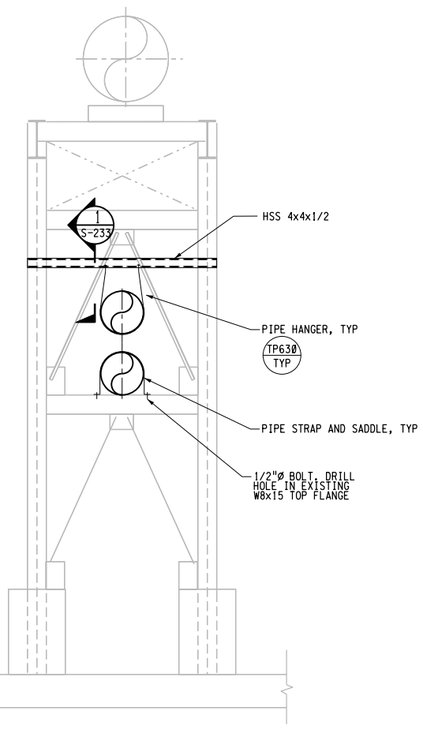
SECTION B / 3/8"=1'-0" / M-104

NOTES:

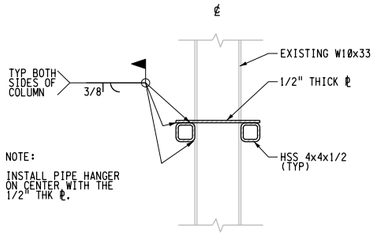
1. LOCATE EXISTING REINF PRIOR TO DRILLING DOWELS, ADJUST DOWEL LOCATION IF NECESSARY.
2. DOWEL EMBED TO STAY 1" CLEAR OF EXISTING SLAB BOTTOM BORES UP TO MAX 1=6"



SECTION C / 1/2"=1'-0" / C-202



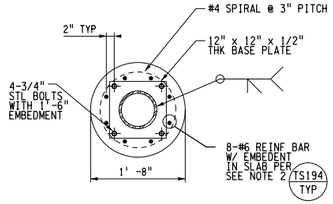
SECTION D / 3/8"=1'-0" / S-235



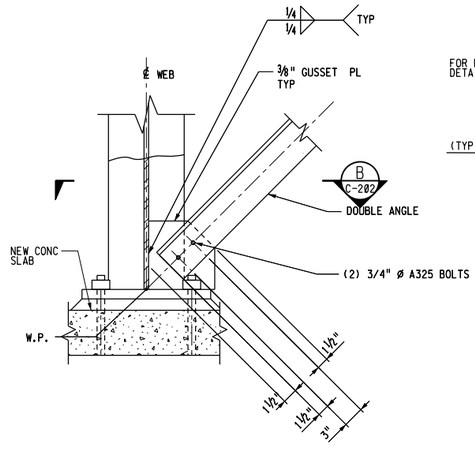
NOTE:

INSTALL PIPE HANGER ON CENTER WITH THE 1/2" THK ℄.

DETAIL 1 / 3/4"=1'-0" / S-233



DETAIL F / 3/4" = 1'-0" / S-234



DETAIL 2 / 3/4"=1'-0" / C-233

REGISTERED PROFESSIONAL ENGINEER CARL A. GENTRY No. C28410 Exp. 3/31/08 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT / EBMUD

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	JAMES MORVAY
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

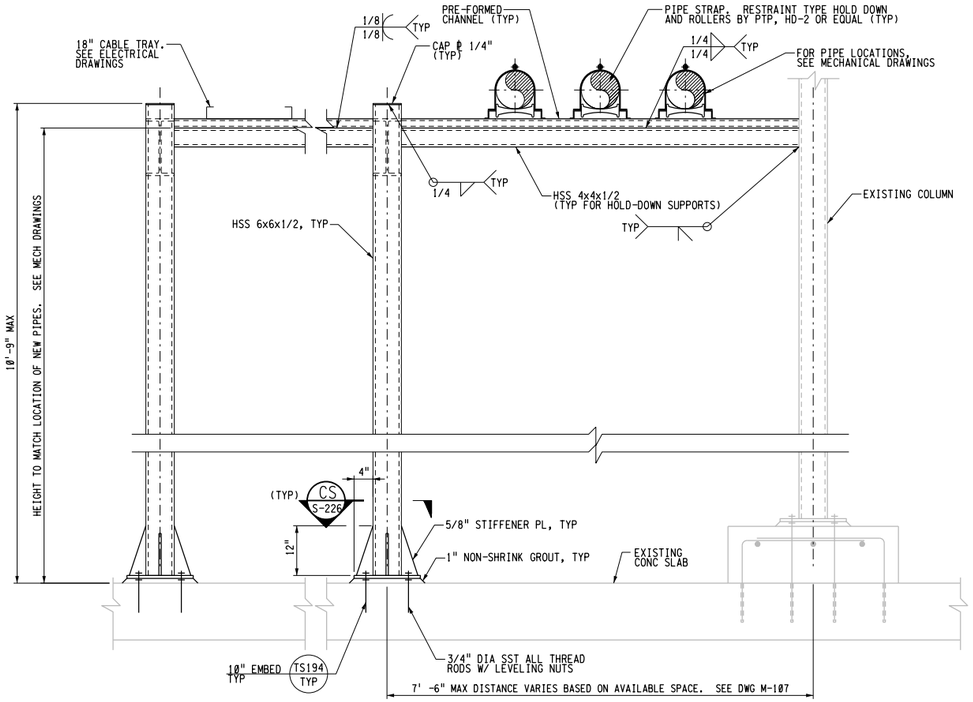
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

CABLE TRAYSECTIONS AND DETAILS

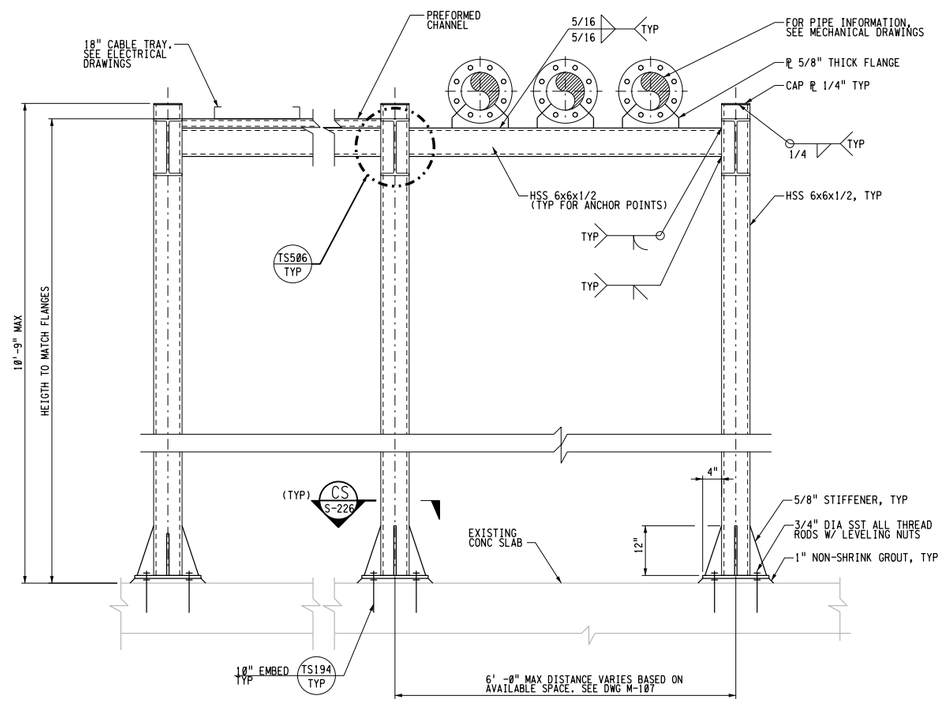
SCALE AS SHOWN
DATE JAN2009

W28.20-S-233
DRAWING NUMBER

1
REV.



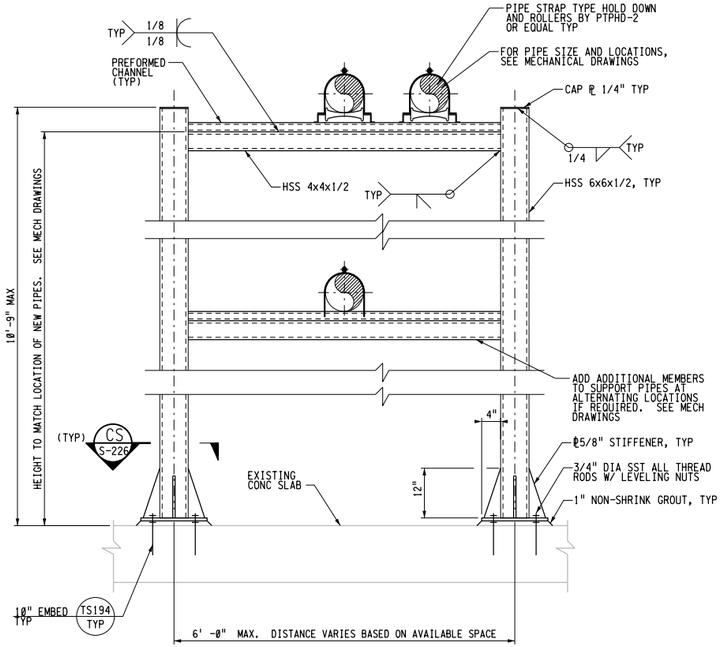
DETAIL 80
3/4" = 1'-0" M-107



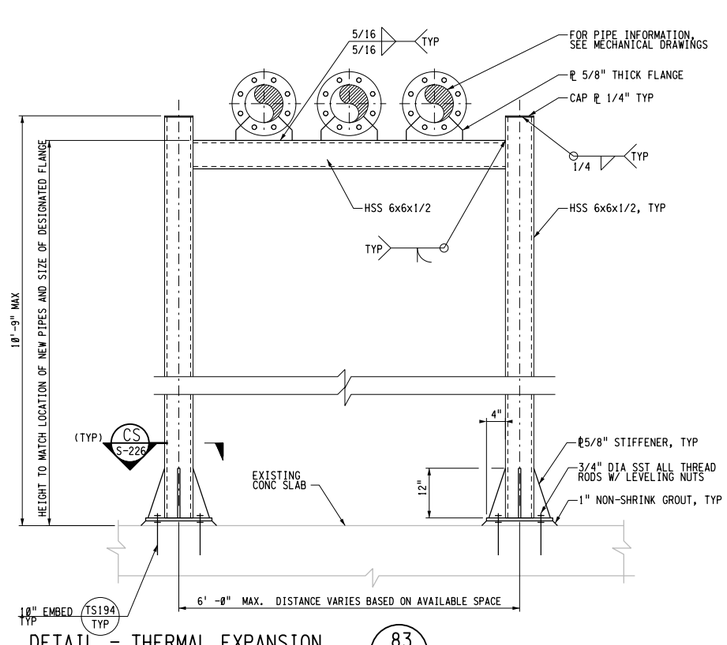
DETAIL 81
3/4" = 1'-0" M-107

GENERAL NOTES:

1. FOR INSTALLATION OF DETAILS 80,81,82,83 ON NEW CONCRETE PADS, USE 5/8"Ø SST ANCHOR BOLTS WITH 10" MIN EMBED PER TS312 TYP.
2. EACH SUPPORT FRAME IS DESIGNED TO WITHSTAND LOADS FOR 3-8" DUCTILE IRON WATER PIPES. CHANGES IN PIPE NUMBER, SIZE, MATERIAL AND HEIGHT SHALL BE REDESIGNED.
3. PRIOR TO INSTALLATION OF SUPPORT ON EXISTING SLAB, EXISTING REBARS SHALL BE LOCATED USING NON-DESTRUCTIVE METHODS. DO NOT DAMAGE EXISTING BARS.ADJUST ANCHOR LOCATION TO AVOID CUTTING EXISTING REINFORCING AS REQUIRED. KEEP 1 1/2" MIN EDGE DISTANCE.
4. FLANGED CONNECTIONS AS SHOWN ON DETAILS 81 AND 83 ARE DESIGNATED FOR ANCHOR POINTS. USE HSS 6X6X1/2 WHERE FLANGES ARE REQUIRED. SEE MECHANICAL DRAWINGS.
5. HOLD-DOWN TYPE RESTRAINTS AS SHOWN ON DETAILS 80 AND 82 ARE DESIGNATED TO ALLOW AXIAL MOVEMENT IN PIPES WHERE ANCHORED POINTS ARE NOT CALLED OUT IN MECHANICAL DRAWINGS.



DETAIL - PIPE SUPPORT ALLOWING FOR THERMAL EXPANSION 82
3/4" = 1'-0" M-107



DETAIL - THERMAL EXPANSION ANCHOR POINTS SUPPORT 83
3/4" = 1'-0" M-107

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

REGISTERED PROFESSIONAL ENGINEER WEI-THANG YZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	WTT/YN
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

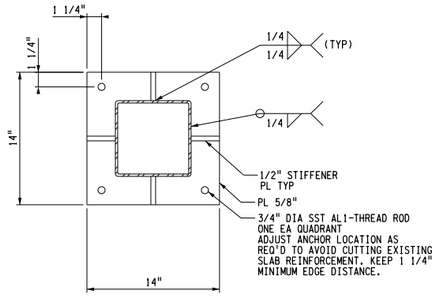
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
ABOVE GROUND PIPE SUPPORT
SECTIONS AND DETAILS 1

SCALE AS SHOWN
DATE JAN2009
W28.20-S-234 DRAWING NUMBER
1 REV.

REF 7; REF 8; REF 9;
REF 4; REF 5; REF 6;
REF 1; REF 2; W:\D-afters\SD\sd317A\ref\W2820bdr_consultant.mst REF 3;

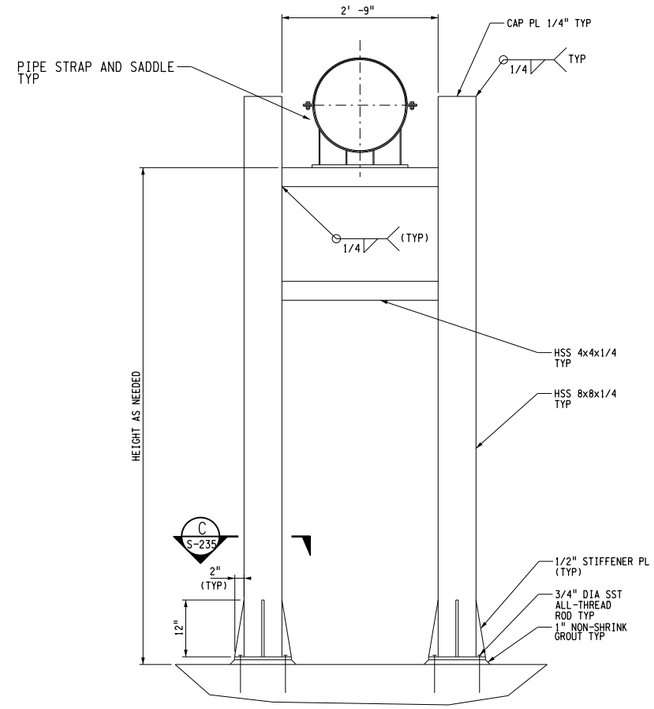
USER: fsh
DATE: 26-AUG-2013 15:37
FILE: J:\SD\sd317A\W2820S234.P01
PLOT SCALE: 2.666667:1

REF 7;
REF 8;
REF 4;
REF 5;
REF 6: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2:
REF 3:
USER: fsh
DATE: 23-AUG-2013 15:37
FILE: J:\SD\sd317A\W2820S235.R01
PLOT SCALE: 2.666667:1

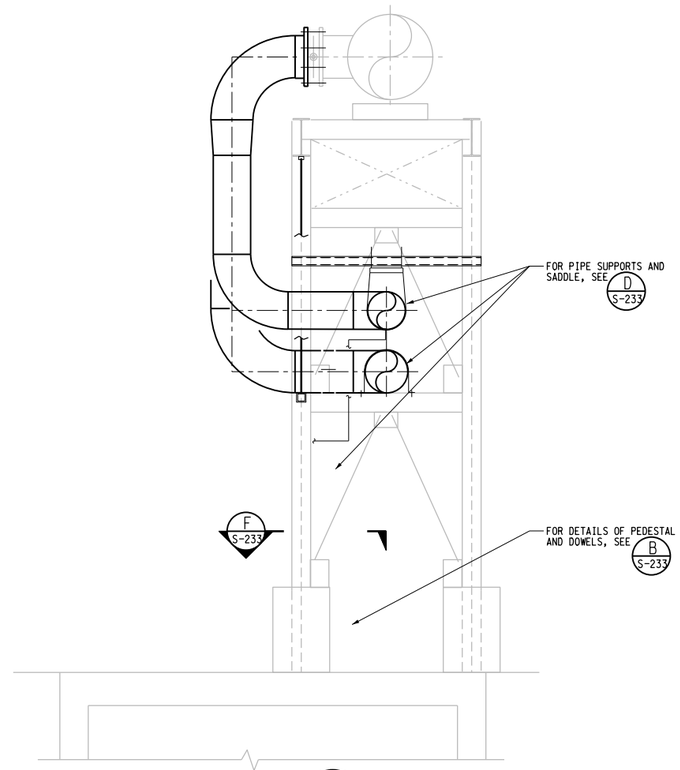


NOTE
1. HOT DIP GALVANIZED AFTER FABBRICATION.

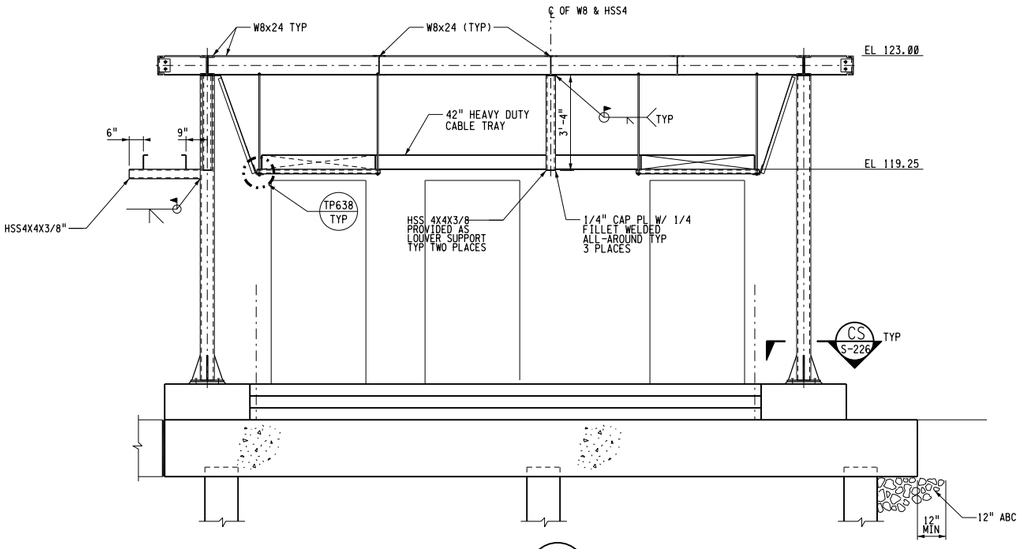
SECTION C / 3/4"=1'-0" / –



SECTION A / 3/4"=1'-0" / S-235

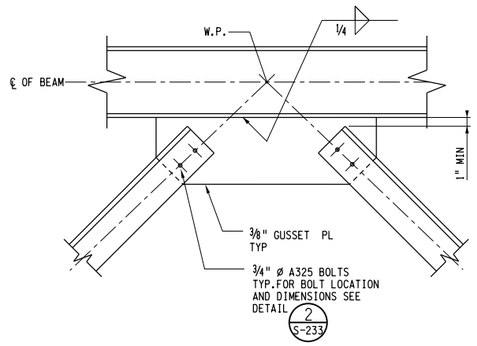


SECTION D / 3/8"=1'-0" / M-104

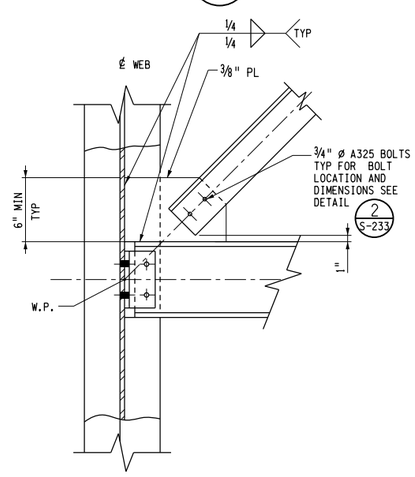


SECTION CS / 3/8"=1'-0" / S-225

NOTES:
1. SLAB REINFORCEMENT INFORMATION NOT SHOWN. SEE BU S-221.
2. LOUVERS, STEEL DECK AND ROOFING NOT SHOWN FOR CLARITY.FOR LOUVER LOCATION AND DETAILS REFER TO ARCHITECTURAL DRAWINGS.



DETAIL E / NTS / S-233



DETAIL F / NTS / S-233

REGISTERED PROFESSIONAL ENGINEER WEI-THANG YZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

EBMUD

CONSULTANT

DESIGN BY:	YOUSEF NOURI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A – PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
ABOVE GROUND PIPE SUPPORT
SECTIONS AND DETAILS 2

SCALE AS SHOWN
DATE JAN2009

W28.20-S-235
DRAWING NUMBER

1
REV.

CODE:

1. 2007 CALIFORNIA BUILDING CODE (CBC)

2. ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

PROVIDE SPECIAL INSPECTION IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE CHAPTER 17 AND THE PROJECT SPECIFICATIONS FOR THE FOLLOWING ITEMS:

1. CONCRETE - ALL STRUCTURAL CONCRETE
2. REINFORCING STEEL.
3. HIGH-STRENGTH BOLTING.
4. WELDING - ALL FIELD AND SHOP WELDING.
5. BOLTS INSTALLED IN CONCRETE - ALL EPOXY ANCHORS WEDGE ANCHORS, AND ANCHOR BOLTS.
6. PRECAST AND CAST-IN-PLACE CONCRETE PILES.
7. PREFABRICATED ITEMS.
8. SUBGRADES FOR FOOTINGS, MAT FOUNDATIONS, AND SLABS-ON GRADE.

CONCRETE REQUIREMENTS:
MINIMUM SPECIFIED 28 DAY COMPRESSIVE STRENGTH (f'c) - 4000 PSI

REINFORCING BAR REQUIREMENTS:

ALL REINFORCING SHALL CONFORM TO ASTM A 615 GRADE 60 UNLESS INDICATED OTHERWISE ON THE DWGS.

STEEL REQUIREMENTS:
1. ROLLED W AND WT SHAPES SHALL CONFORM TO ASTM A 992. PLATE, BARS, ROLLED SHAPES (EXCEPT W AND WT SHAPES), & MISCELLANEOUS ITEMS SHALL CONFORM TO ASTM A 36 UNLESS INDICATED OTHERWISE ON THE DWGS.
2. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM A 325
3. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE TYPE 316 STAINLESS STEEL OR HOT-DIP GALVANIZED CONFORMING TO ASTM A 307 OR A 36, AS SPECIFIED OR INDICATED ON THE DRAWINGS.

SEISMIC DESIGN REQUIREMENT:

SEISMIC COEFFICIENTS

DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS	S_{DS}	= 1.0g
DESIGN SPECTRAL RESPONSE ACCELERATION AT 1-SECOND PERIODS	S_{D1}	= 0.6g
SITE CLASS	D	
BUILDINGS STRUCTURAL SYSTEM		
OCCUPANCY CATEGORY	IV	
RESPONSE MODIFICATION FACTOR	R	TABLE 12.2.1 (ASCE 7)
IMPORTANCE FACTOR	I	= 1.5
NON-BUILDING STRUCTURE		
RESPONSE MODIFICATION FACTOR	R	TABLE 15.4-1 & 15.4-2 (ASCE 7)
IMPORTANCE FACTOR	I	1.5
WIND DESIGN REQUIREMENTS:		
BASIC WIND SPEED		85 MPH
EXPOSURE CATEGORY		C
IMPORTANCE FACTOR	I	1.15

GEOTECHNICAL REPORT: FOR GEOTECHNICAL DATA, REFER TO:
"GEOTECHNICAL EVALUATION EBMUD POWER GENERATION STATION EXPANSION
2020 WAKE AVENUE
OAKLAND, CALIFORNIA"
PREPARED BY: NINYO & MOOR GEOTECHNICAL AND ENVIRONMENTAL SCIENCES CONSULTANTS.

STRUCTURAL NOTES FOR 2007 CBC

TS001

1. CONCRETE CONSTRUCTION SHALL COMPLY WITH ACI "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318) AND "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES (ACI 350-01) AND COMMENTARY (ACI 350R-01)."

2. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, MINIMUM REINFORCEMENT OF CONCRETE WALLS OR SLABS SHALL BE:

10" THICK OR LESS - USE #5 @ 12" EW
MORE THAN 10" THICK - USE #5 @ 12" EWEF

3. WALL REINFORCEMENT AT CORNERS OR JUNCTIONS OF WALLS SHALL BE CONTINUOUS, LAP SPLICED, OR TERMINATED IN AN ACI STANDARD 90 DEGREE HOOK. LAP SPLICES SHALL CONFORM WITH NOTE 12.

4. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, BARS SHALL BE DOWELED. DOWELS SHALL BE THE SAME SIZE AND SPACING AS THE REINFORCEMENT WHICH IS SPLICED TO THE DOWELS.

5. SLABS, BEAMS AND COLUMN REINFORCING BARS SHALL HAVE A MINIMUM EXTENSION OR ANCHORAGE INTO SUPPORTS IN ACCORDANCE WITH ACI 318 AND ACI 350.

6. STIRRUP SUPPORT BARS SHALL BE PROVIDED TO SECURE TOP BARS AGAINST DISPLACEMENT AS REQUIRED.

7. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, CONCRETE COVER OVER #11 AND SMALLER REINF BARS SHALL BE AS FOLLOWS:

A. SLABS AND JOISTS:

FORMED CONCRETE SURFACES AND UNFORMED TOP SURFACES FOR DRY CONDITIONS:
#7 BARS AND SMALLER.....1"
#8 BARS AND LARGER.....1 1/2"
FORMED CONCRETE SURFACES AND UNFORMED TOP SURFACES EXPOSED TO WEATHER, IN CONTACT WITH SOIL OR WATER, OR LOCATED OVER WATER.....2"

B. BEAMS AND COLUMNS:

FORMED CONCRETE SURFACES FOR DRY CONDITIONS:
STIRRUPS, SPIRALS, AND TIES.....1 1/2"
PRINCIPAL REINFORCEMENT.....2"
FORMED CONCRETE SURFACES EXPOSED TO WEATHER, IN CONTACT WITH SOIL OR WATER, OR BEAMS LOCATED OVER WATER:
STIRRUPS AND TIES.....2"
PRINCIPAL REINFORCEMENT.....2 1/2"

C. WALLS:

FORMED CONCRETE SURFACES FOR DRY CONDITIONS:
#7 BARS AND SMALLER.....1"
#8 BARS AND LARGER.....1 1/2"
FORMED CONCRETE SURFACES EXPOSED TO WEATHER, OR IN CONTACT WITH SOIL OR WATER.....2"

D. FOOTINGS AND BASE SLABS:

FORMED VERTICAL CONCRETE SURFACES.....2"

AT UNFORMED CONCRETE SURFACES CAST AGAINST THE SOIL OR CONCRETE WORK MATS.....3"

TOP SURFACE OF FOOTINGS AND BASE SLABS.....SAME AS SLABS

8. KEYWAYS AND WATERSTOP SHALL END 3" BELOW THE TOP OF WALLS, UNLESS THERE IS A SLAB ON TOP OF THE WALL, IN WHICH CASE IT SHALL END AT THE BOTTOM OF THE SLAB. IN JOINTS WHERE WATERSTOP TERMINATES AT ADJOINING SLAB OR WALL, WATERSTOP SHALL BE EMBEDDED IN ADJOINING SLAB OR WALL A MINIMUM OF 6".

9. CONCRETE CURING SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WHERE WATER CURING IS REQUIRED, MEMBRANE CURING IS NOT ALLOWED. THE CONTRACTOR IS WARNED THAT WATER CURING IS DIFFICULT AT TIMES DUE TO WIND AND DRY CONDITIONS. THE CONTRACTOR SHALL STUDY REQUIREMENTS AND SHALL FURNISH ADEQUATE SYSTEMS TO PROVIDE WATER CURING WHERE REQUIRED. TOP OF WALLS SHALL BE KEPT VISIBLY MOIST AT ALL TIMES AND SHALL BE FLOODED NOT LESS THAN THREE TIMES DAILY.

10. WATERSTOP SHALL BE PLACED IN CONSTRUCTION, AND EXPANSION JOINTS IN WATERBEARING SLABS AND WALLS UNLESS OTHERWISE INDICATED ON THE DRAWINGS, AND IN WALLS AND SLABS SUBJECTED TO GROUNDWATER. WATERSTOP IN THE WALLS SHALL BE CARRIED INTO SLABS AND SHALL BE SPLICED WITH THE WATERSTOP IN THE SLABS.

11. NO BACKFILL SHALL BE PLACED AGAINST WALLS UNTIL:
A. WALLS HAVE BEEN PLACED FULL HEIGHT AND CONCRETE HAS REACHED THE SPECIFIED STRENGTH
B. THE CONNECTING SLABS AND BEAMS HAVE BEEN CAST AND CONCRETE HAS REACHED THE SPECIFIED STRENGTH.

12. LAP SPLICES:

A. WHEN MULTIPLE BARS ARE SPLICED AT THE SAME SECTION, THE CLEAR BAR SPACING IS THE MINIMUM CLEAR DISTANCE BETWEEN THE BARS OUTSIDE THE SPLICE LENGTH LESS ONE BAR DIAMETER.
B. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, THE BARS AT A LAP SPLICE SHALL BE IN CONTACT WITH EACH OTHER.
C. FOLLOWING TABULATED VALUES ARE CALCULATED FOR:
FY = 60,000 PSI FOR REINFORCING BARS
F'C = 4,000 PSI FOR CONCRETE
D. TOP BARS ARE HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

E. HORIZONTAL BARS IN CIRCULAR WALLS OF HYDRAULIC STRUCTURES SHALL BE SPLICED WITH TOP BAR LAP SPLICES. ADJACENT LAP SPLICES SHALL BE STAGGERED HORIZONTALLY BY NOT LESS THAN ONE LAP LENGTH NOR 3 FEET FROM CENTER OF LAP BELOW TO ADJACENT CENTER OF LAP ABOVE, AND SHALL NOT COINCIDE IN VERTICAL ARRAYS MORE FREQUENTLY THAN EVERY THIRD BAR.

REINFORCING BAR LAP SPLICE

BAR SIZE	MINIMUM COVER (BAR DIA)	MINIMUM CLEAR BAR SPACING (BAR DIA)	LAP SPLICE LENGTH (INCHES) TOP BARS	LAP SPLICE LENGTH (INCHES) OTHER BARS
#4	MORE THAN 1	MORE THAN 2	32 *	25 *
	MORE THAN 2	MORE THAN 4	20	15
#5	MORE THAN 1	MORE THAN 2	40 *	31 *
	MORE THAN 2	MORE THAN 4	26	20
#6	MORE THAN 1	MORE THAN 2	48 *	37 *
	MORE THAN 2	MORE THAN 4	30	24
#7	MORE THAN 1	MORE THAN 2	70 *	54 *
	MORE THAN 2	MORE THAN 4	43	33
#8	MORE THAN 1	MORE THAN 2	81 *	62 *
	MORE THAN 2	MORE THAN 4	50	38
#9	MORE THAN 1	MORE THAN 2	90 *	70 *
	MORE THAN 2	MORE THAN 4	56	42
#10	MORE THAN 1	MORE THAN 2	104 *	81 *
	MORE THAN 2	MORE THAN 4	62	48
#11	MORE THAN 1	MORE THAN 2	114 *	88 *
	MORE THAN 2	MORE THAN 4	69	54

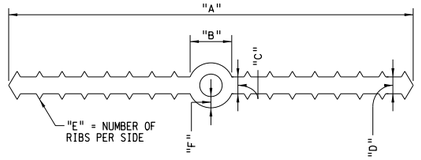
NOTES:

1. THE SPLICE LENGTH SHALL BE SELECTED ONLY WHEN BOTH REQUIREMENTS OF THE COVER AND BAR SPACING ARE SATISFIED.

2. * IF THE CLEAR SPACING IS LESS THAN OR EQUAL TO TWO BAR DIAMETERS OR THE COVER IS LESS THAN OR EQUAL TO ONE BAR DIAMETER, THE LAP SPLICE LENGTH SHALL BE INCREASED BY 50 PERCENT.

REINFORCED CONCRETE NOTES

TS101



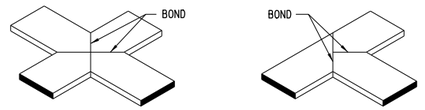
"A"	"B"	"C"	"D"	"E"	"F"
6" WATERSTOP W/O CENTERBULB	-	3/8"	3/8" OR 7/16"	7	-
6" CENTERBULB WATERSTOP *	7/8" OR 1"	3/8"	3/8"	7 OR 8	9/32"
9" CENTERBULB WATERSTOP **	1"	3/8"	3/8"	7 OR 8	1/4"
9" CENTERBULB WATERSTOP ***	2"	3/8"	3/8"	7	1/4"

NOTES:

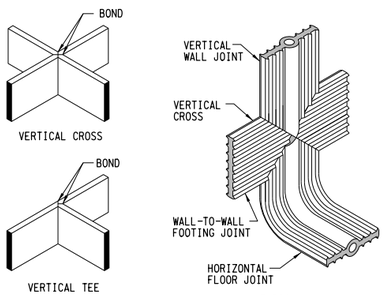
1. SEE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.
2. * FOR USE WITH TE106 TYP ONLY.
3. ** FOR EXPANSION JOINTS 1" AND NARROWER.
4. *** FOR EXPANSION JOINTS WIDER THAN 1".

PVC WATERSTOP SCHEDULE

TS106



STANDARD HORIZONTAL JOINT TYPES



STANDARD VERTICAL JOINT TYPES

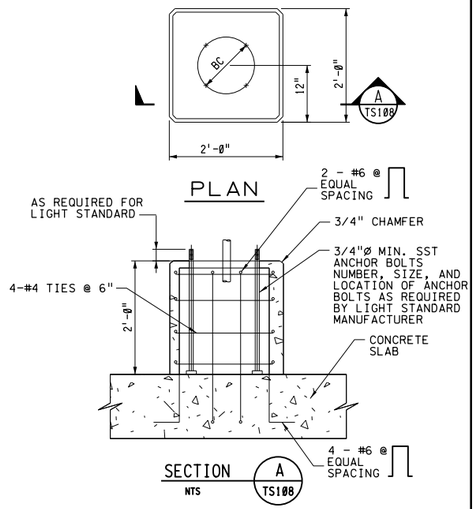
TYPICAL WALL-TO-FOUNDATION JOINT

NOTES:

1. ALL WELDS SHALL BE MADE AS SPECIFIED AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. VERTICAL CROSSES AND TEES SHALL BE FACTORY PREFABRICATED BY THE MANUFACTURER.

PREFABRICATED PVC WATERSTOP JOINTS

TS107

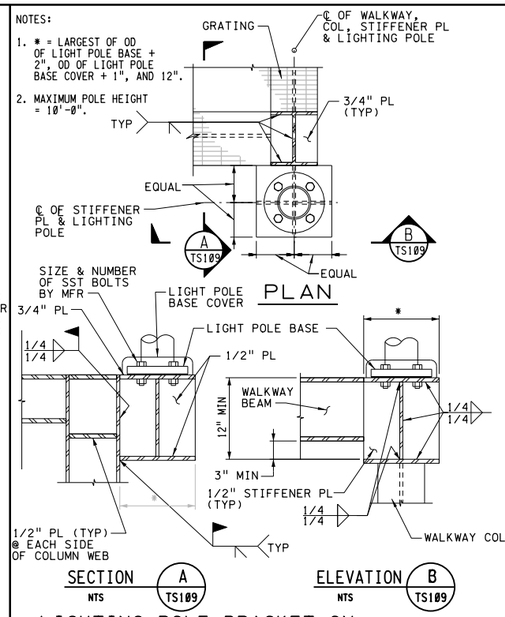


NOTES:

1. SEE ELECTRICAL DRAWINGS FOR CONDUITS.
2. B C = BOLT CIRCLE

LIGHTING STANDARD MOUNTING ON CONCRETE

TS108



LIGHTING POLE BRACKET ON METAL WALKWAY

TS109

REGISTERED PROFESSIONAL ENGINEER
WEI-HANG TZENG
No. C35597
Exp. 9/30/09
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP: MAB SD317A		JK	
1	25FEB2009	ADDENDUM NO.2 PER SD317A	DT	TGM	SKW

CONSULTANT

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

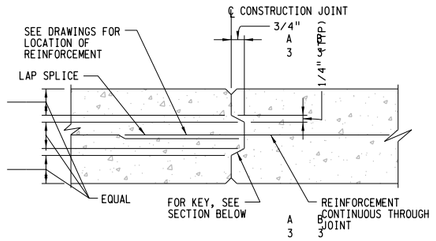
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
TYPICAL STRUCTURAL DETAILS

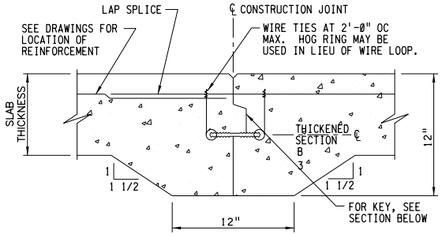
SCALE	NONE	W28.20-S-901	2
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: W:\Drafters\SD\sd317A\ref\W2820dsm.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820dsr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

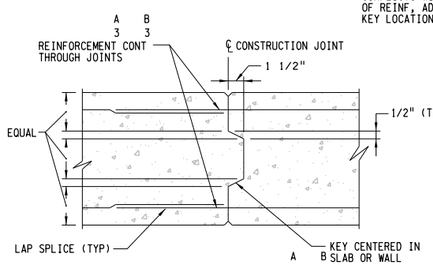
PLOT SCALE: 0.166667:1
USER: fal
DATE: 26-AUG-2013 15:37
FILE: J:\SD\sd317A\W2820S901.R02



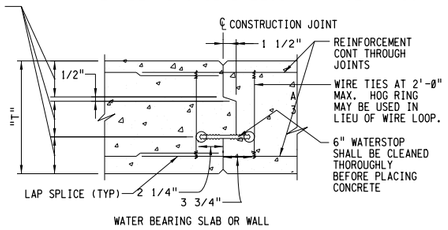
NON-WATER BEARING WALL OR SLAB



WATER BEARING SLAB LESS THAN 12" THICK



NON-WATER BEARING SLAB OR WALL



WATER BEARING SLAB OR WALL

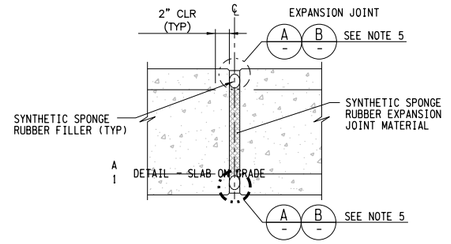
NOTES:
1. SANDBLAST JOINT AND REINFORCEMENT PRIOR TO PLACING CONCRETE FOR NEXT SLAB OR WALL.
2. FOR WALLS, FORM ALL JOINT EDGES AT 1/4" CHAMFER.
3. FOR SLABS, EDGE TOP OF EXPOSED SLAB JOINT EDGES AT 1/4" RADIUS.
4. FOR UNDERSIDE OF EXPOSED SLABS, FORM JOINT EDGES AT 1/4" CHAMFER.

S140 S130 TYP NS

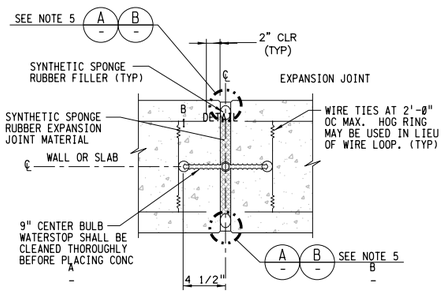
CONSTRUCTION JOINT

S140 S130 TYP NS

TS110

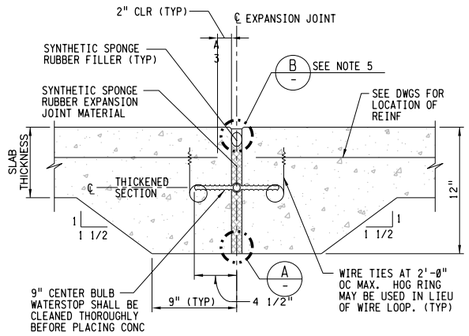


NON-WATER BEARING SLAB OR WALL



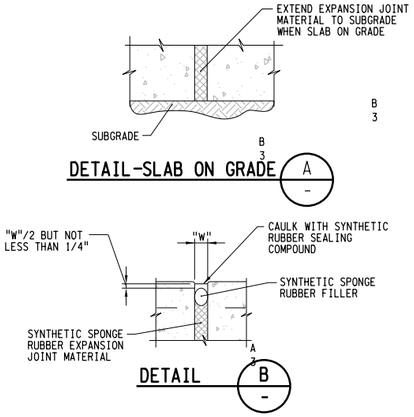
WATER BEARING SLAB OR WALL

S180 TYP NS S130 TYP NS



WATER BEARING SLAB LESS THAN 12" THICK

S110



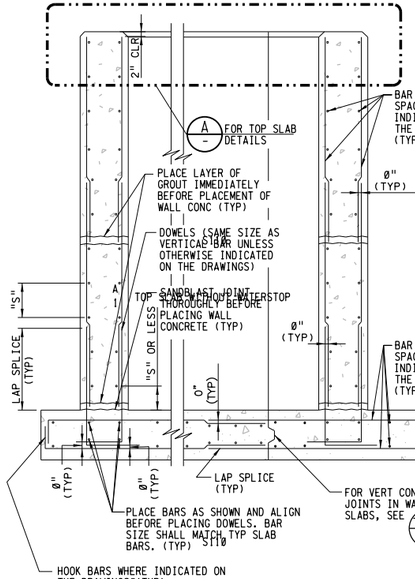
NOTES:
1. FOR WALLS, FORM ALL JOINT EDGES AT 1/4" CHAMFER.
2. FOR SLABS, EDGE TOP OF EXPOSED SLAB JOINT EDGES AT 1/4" RADIUS.
3. FOR UNDERSIDE OF EXPOSED SLABS, FORM JOINT EDGES AT 1/4" CHAMFER.
4. "W" = 1" THICK UNLESS OTHERWISE INDICATED ON THE DRAWINGS. MIN JOINT WIDTH = 3/8".
5. USE A - AT UNDERSIDE OF SLABS ON GRADE ONLY. USE B - AT ALL OTHER LOCATIONS.

S110

EXPANSION JOINT

S140 TYP S S130 TYP NS

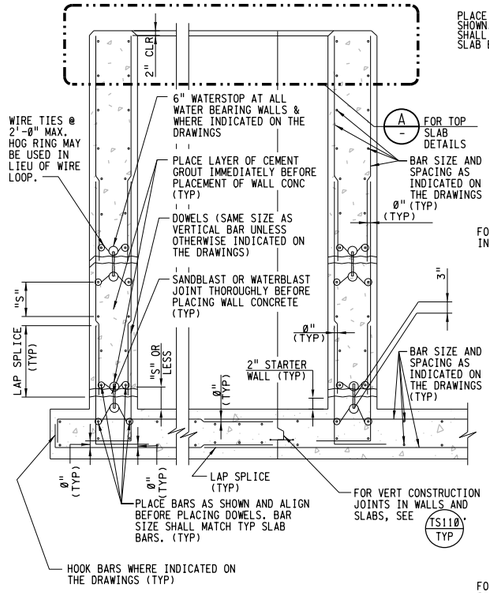
TS130



NOTE:
1. "S" = BAR SPACING INDICATED ON THE DRAWINGS.

S140 TYP S

WITHOUT WATERSTOP

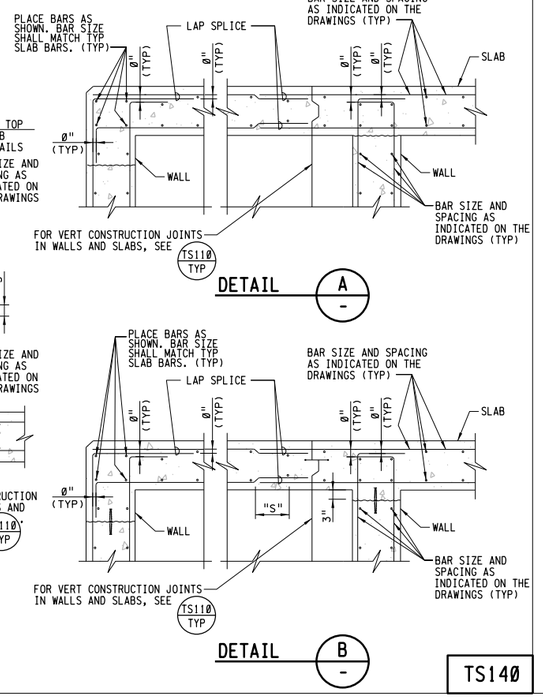


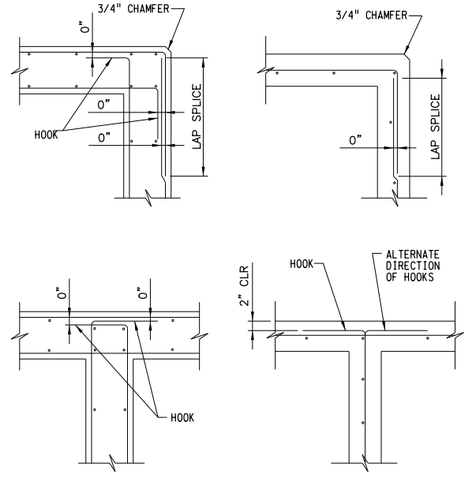
NOTE:
1. "S" = BAR SPACING INDICATED ON THE DRAWINGS.

WITH WATERSTOP

WALL AND SLAB JOINTS

TS140

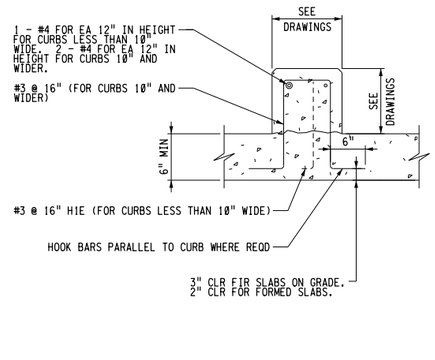




NOTE:
1. ALL HOOKS SHALL BE ACI STD 90 DEGREE HOOKS.

REINFORCEMENT AT CORNERS AND JUNCTIONS

TS144



CONCRETE CURB

TS184

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A	JK		

CONSULTANT EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

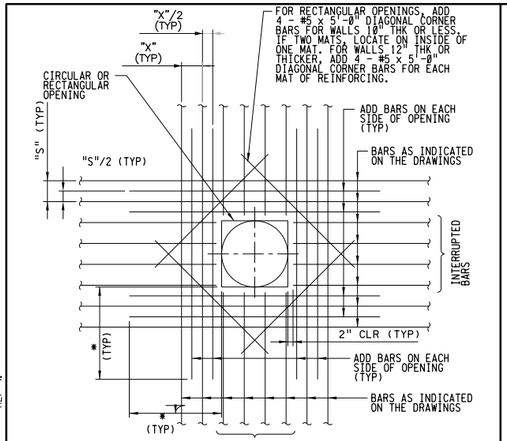
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

TYPICAL STRUCTURAL DETAILS

SCALE NONE | DATE JAN2009 | W28.20-S-902 DRAWING NUMBER | 1 REV.

REF 1: W:\Drafters\SD\sd317A\ref\W2820dsr_consultant.mst
REF 2: S1
REF 3:
REF 4:
REF 5:
REF 6:
PLOT SCALE: 0.1666671:1
USER: fa1
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\W2820S902.R01

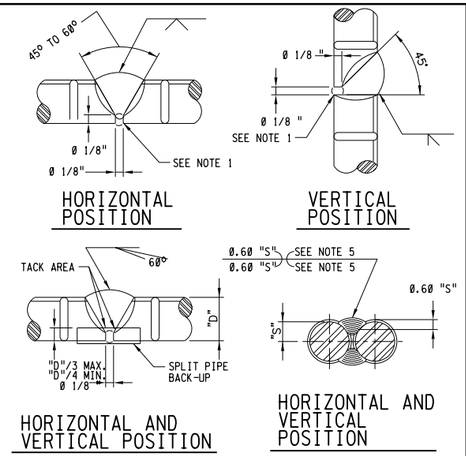


NOTES:

1. AREA OF ADD BARS AT EACH EDGE OF OPENING IN EACH DIRECTION SHALL MATCH 1/2 THE CROSS SECTIONAL AREA OF THE INTERRUPTED BARS.
2. PROVIDE STANDARD ACI HOOKS ON BARS IF STRAIGHT EXTENSION, PAST THE OPENING, CANNOT BE ACHIEVED.
3. PLACE ADD BARS IN SAME PLANES AS INTERRUPTED REINFORCING.
4. PLACE #5 DIAGONAL BARS UNDER INTERRUPTED REINFORCING.
5. * - DIMENSION EQUALS OPENING DIMENSION MEASURED PERPENDICULAR TO ADD BARS PLUS LAP SPLICE LENGTH.

ADDITIONAL REINFORCING AT OPENINGS IN CONCRETE SLABS OR WALLS

TS180

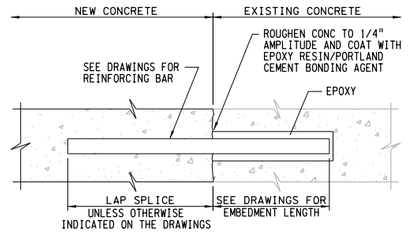


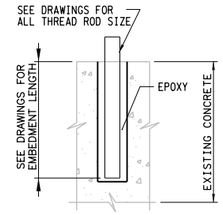
NOTES:

1. CHIP, GRIND, OR GOUGE TO SOUND METAL BEFORE WELDING OTHER SIDE.
2. USE DETAIL A & B FOR #9 & LARGER BARS. USE DETAIL C FOR #8 & SMALLER BARS. USE DETAIL D FOR #6 & SMALLER BARS.
3. E 70 ELECTRODE FOR GRADE 40; E 90 ELECTRODE FOR GRADE 60.
4. EE AWS D1.4 FOR WELDING PROCESS, PREHEAT REQUIREMENTS, AND OTHER DETAILS. SUBMIT WELDING PROCEDURE PER AWS.
5. 1 1/2" FOR #3 AND #4 BARS; 2" FOR #5 BARS; AND 2 1/2" FOR #6 BARS.

WELDED SPLICE OF REINFORCING BARS

TS190





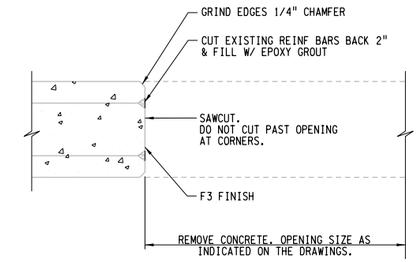
NOTE: ALL-THREAD RODS

1. INSTALLATION OF REINFORCING BARS AND ALL THREAD RODS AS INDICATED IN THE SPECIFICATIONS.

EPOXY BONDED REINFORCING BARS OR ALL THREAD RODS

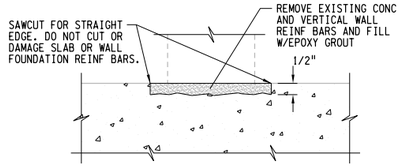
S194
TYP
N

TS194



HEAD OR JAMB DETAIL

~~HEAD OR JAMB DETAIL~~



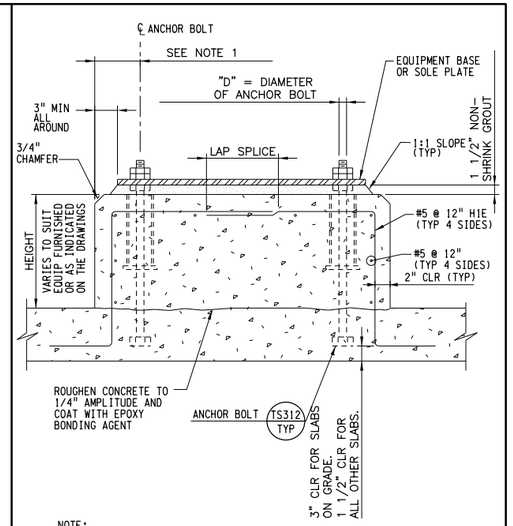
SILL DETAIL

B
SILL DETAIL

OPENING THROUGH EXISTING CONCRETE

S198
TYP
N

TS198

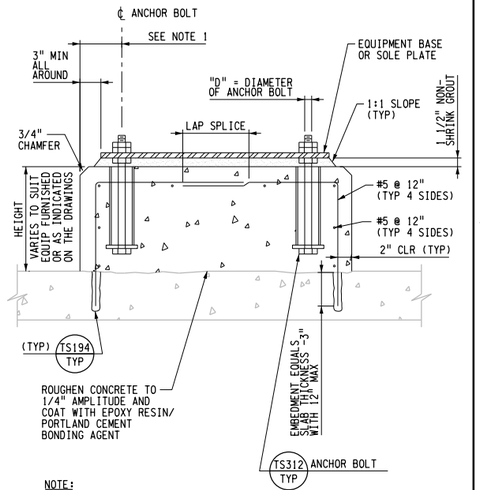


NOTE:

1. THE EDGE DISTANCE ON THE ANCHOR BOLTS SHALL NOT BE LESS THAN 6" OR 8 x "D".

EQUIPMENT BASE

TS302

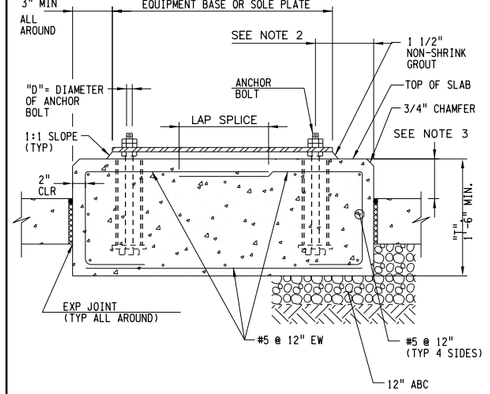


NOTE:

1. THE EDGE DISTANCE ON THE ANCHOR BOLTS SHALL NOT BE LESS THAN 6" OR 8 x "D".

EQUIPMENT BASE ON EXISTING CONCRETE SLAB

TS304

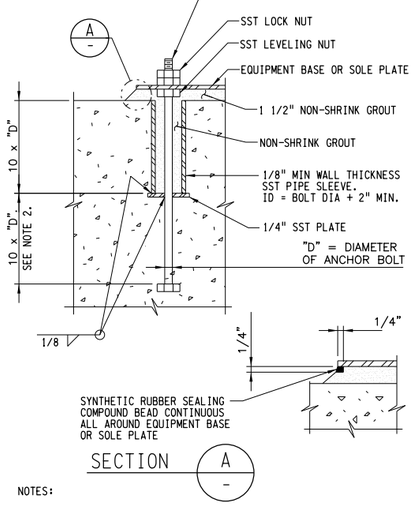


NOTES:

1. PAD DIMENSIONS AND ANCHOR BOLT SIZE SHALL CONFORM TO EQUIPMENT MANUFACTURER'S REQUIREMENTS.
2. THE EDGE DISTANCE ON THE ANCHOR BOLTS SHALL NOT BE LESS THAN 6" OR 8 x "D".
3. HEIGHT VARIES TO SUIT EQUIPMENT FURNISHED OR AS INDICATED ON THE DRAWINGS.

ISOLATED EQUIPMENT PAD

TS306

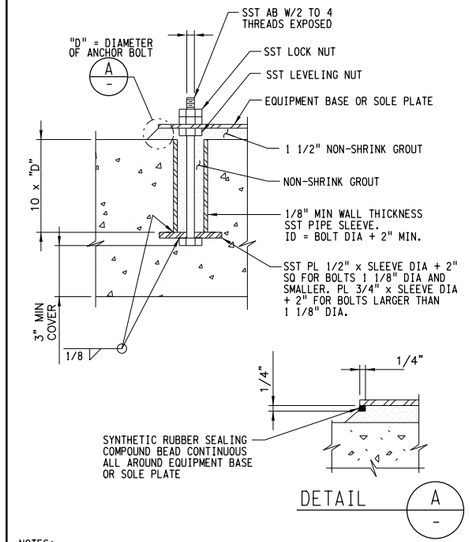


NOTES:

1. ANCHOR BOLT DIAMETER AS INDICATED ON THE DRAWINGS. IF NOT INDICATED ON THE DRAWINGS, THE ANCHOR BOLT SIZE SHALL BE AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
2. WHERE CONCRETE SLAB OR BEAM THICKNESS WILL NOT ACCOMMODATE THE ANCHOR BOLT, PROVIDE EXTRA THICKNESS OF SLAB OR BEAM.
3. PREFABRICATED PLASTIC ANCHOR BOLT SLEEVE OPTIONAL.

ANCHOR BOLT

TS310



NOTES:

1. ANCHOR BOLT DIAMETER AS INDICATED ON THE DRAWINGS. IF NOT INDICATED ON THE DRAWINGS, THE ANCHOR BOLT SIZE SHALL BE AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.

ANCHOR BOLT

TS312

REGISTERED PROFESSIONAL ENGINEER — WEI-THANG TZENG — No. C35597 — Exp. 9/30/09 — CIVIL — STATE OF CALIFORNIA

REF 1: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2828dsr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:

USER: fdi
DATE: 28-AUG-2013 15:37
FILE: J:\SD\sd317A\W2828DS903.R01
PLOT SCALE: 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT / EBMUD

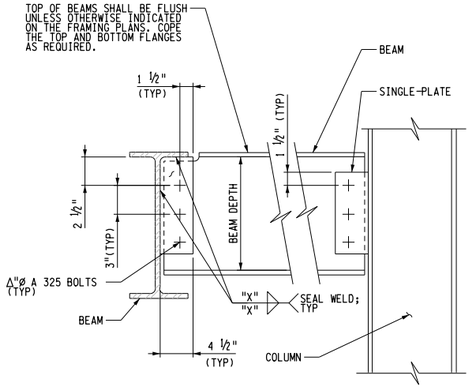
DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

TYPICAL STRUCTURAL DETAILS

SCALE NONE
DATE JAN2009
W28.20-S-903
DRAWING NUMBER
1
REV.



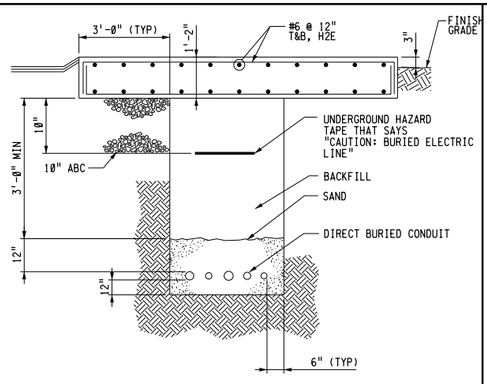
BEAM DEPTH (INCHES)	NUMBER OF BOLTS PER PLATE	PLATE THICKNESS (INCHES)	FILLET WELD SIZE "X" (INCHES)
8-10	2	1/4	1/4
12-16	3	1/4	1/4
18-21	4	3/8	5/16
24-30	6	3/8	5/16

NOTE:

1. SCHEDULE APPLIES TO ALL BEAMS UNLESS NUMBER OF BOLTS PER LEG IS OTHERWISE INDICATED ON THE FRAMING PLAN BY ⬡ .

STEEL SINGLE PLATE SHEAR CONNECTION

TS506

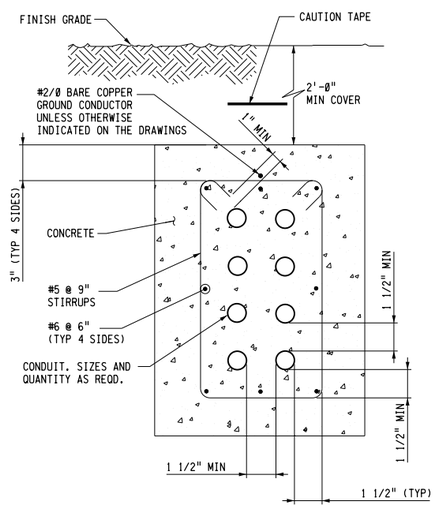


NOTES:

1. ALL DIMENSIONS ARE MINIMUM UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
2. REFER TO SPECIFICATIONS FOR TRENCH BACKFILL REQUIREMENTS.
3. FOR CONDUIT DETAIL, SEE ELECTRICAL DRAWINGS.
4. THIS DETAIL IS USED FOR PROTECTIVE COVER SLAB WHERE FLEXIBLE CONDUIT IS USED TO PROVIDE FLEXIBILITY.
5. USE 1" EXPANSION JOINT WHEN ADJACENT TO OTHER STRUCTURES (TS130)

PROTECTIVE SLAB COVER FOR DIRECT BURIED CONDUIT

TS600

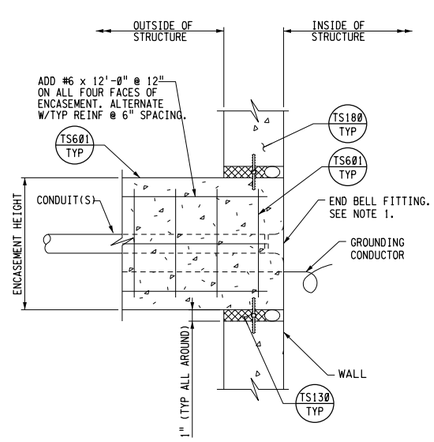


NOTE:

1. DIMENSIONS ARE MINIMUM UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

ELECTRICAL DUCTBANK

TS601

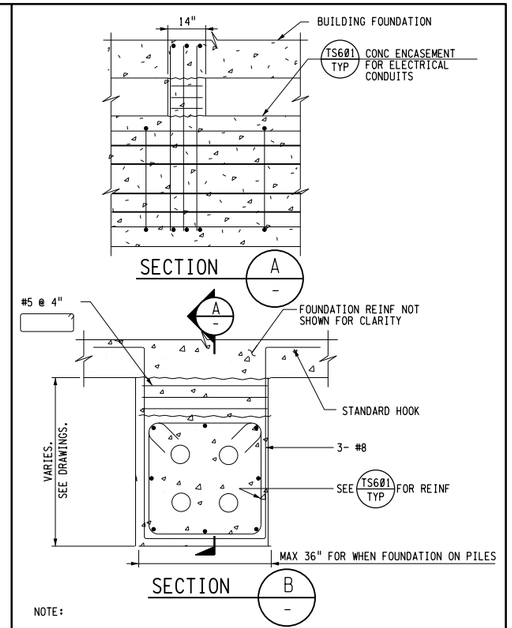


NOTE:

1. PROVIDE GROUNDING FITTING FOR METALLIC CONDUITS ENTERING MANHOLE. BOND GROUNDING FITTING TO DUCTBANK GROUNDING CONDUCTOR.

DUCTBANK AT MANHOLES OR STRUCTURES WITH WATERSTOP

TS602

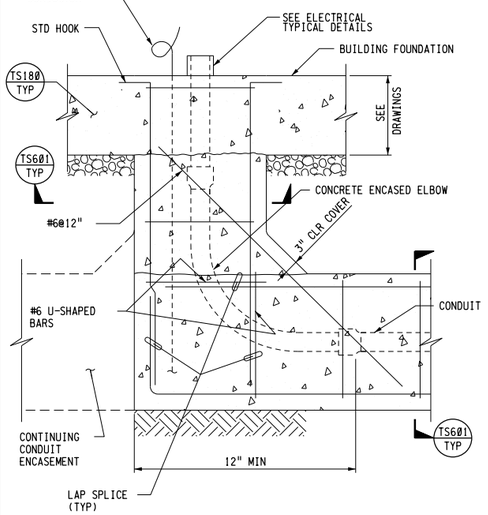


NOTE:

1. MAXIMUM SPACING BETWEEN ENCASEMENT SUPPORTS UNDER SLABS IS 7'-0".
2. FIRST SUPPORT SHALL BE MAX 4'-0" FROM THE EDGE OF THE FOUNDATION.

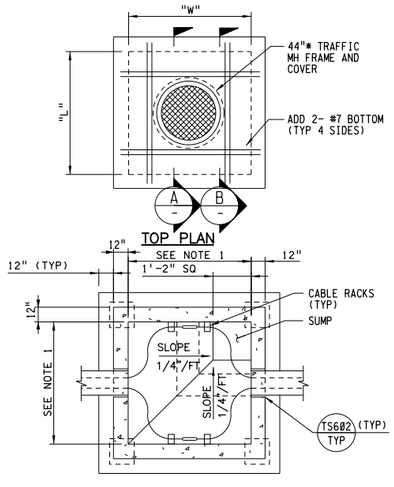
DUCTBANK SUPPORTED UNDER SLABS FOR PILE SUPPORTED STRUCTURES

TS603



RISER FROM NON-METALLIC CONDUIT FOR SLAB ON GRADE

TS604

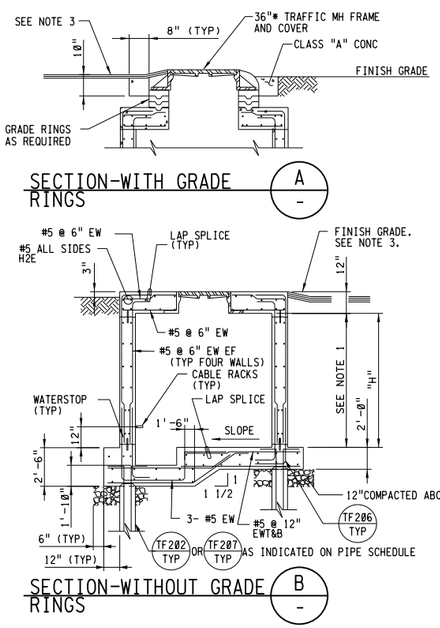


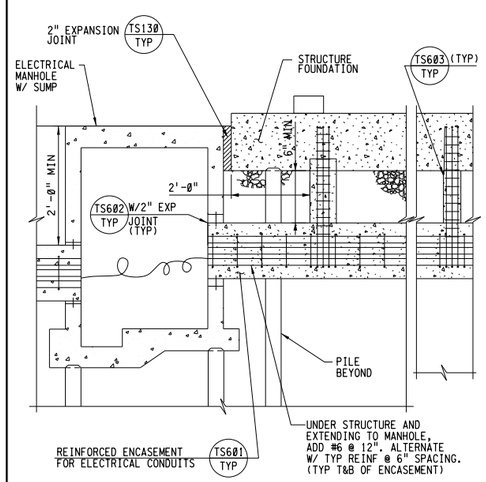
NOTES:

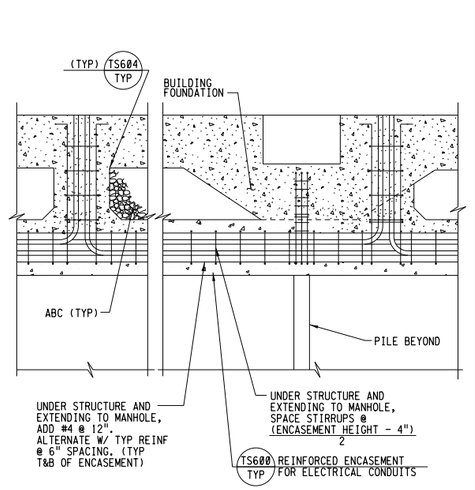
1. MAX DIMENSIONS "L" = 10'-0", "H" = 7'-0", AND "W" = 8'-0"
2. SEE TYPICAL DETAIL TS180 FOR ADDITIONAL REINFORCEMENT AT OPENINGS.
3. WHERE INSTALLED IN PAVING, THE TOP OF THE MANHOLE SHALL BE 1" ABOVE FINISH GRADE. SLOPE PAVEMENT AWAY AT 3% GRADE.
4. INSTALL NON-CORROSIVE SADDLE-TYPE CABLE RACKS AT 2'-0" INTERVALS ON INTERIOR WALLS.

ELECTRICAL MANHOLE WITH SUMP

TS605







ENCASED ELECTRICAL CONDUITS LOCATED UNDER PILE SUPPORTED STRUCTURES

TS606

REGISTERED PROFESSIONAL ENGINEER WEI-THANG YEOH No. C35593 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

TYPICAL STRUCTURAL DETAILS

SCALE NONE
DATE JAN2009

W28.20-S-904
DRAWING NUMBER

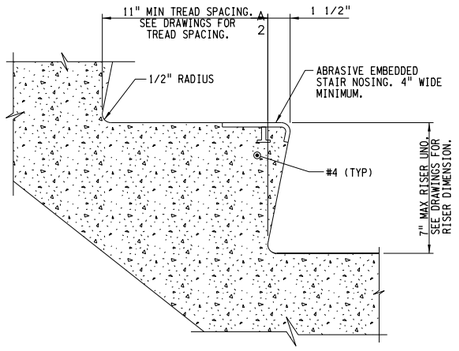
1 REV.

REF 4: REF 5: REF 6:

REF 1: W:\D-drives\SD\sd317A\ref\W2820sdr_consultant.mst
REF 2: W:\D-drives\SD\sd317A\ref\sd317dsr.mst
REF 3:

PLOT SCALE: 0.166667:1

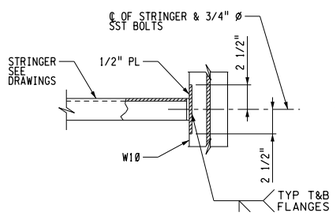
USER: fsh
DATE: 26-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820S904.R01



NOTE:
ANY FASTENERS IN THE STAIR NOSING SHALL BE TYPE 304 OR 316 SST.

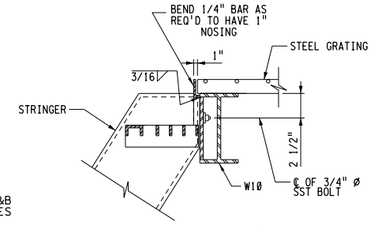
A237
TYP NS CONCRETE STEP

TA204

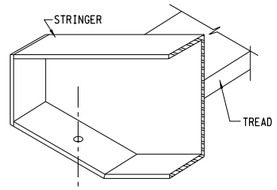


DETAIL A -

A204



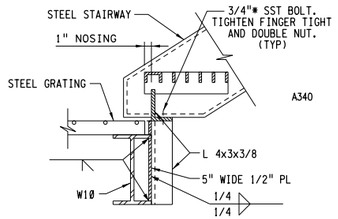
SECTION B -



A 1 SECTION

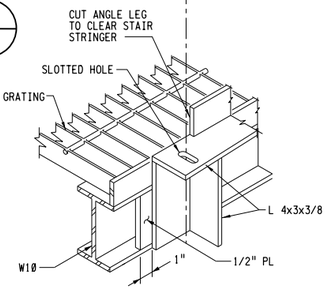
A340

A343



DETAIL C -

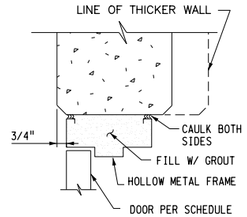
A237
TYP



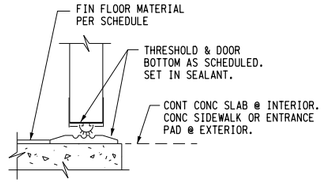
STAIR STRINGER TO PLATFORM CONNECTION

STAIR STRINGER TO PLATFORM CONNECTION

TA220



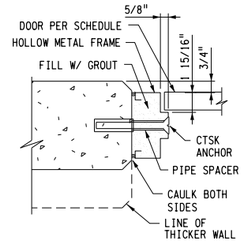
DOOR HEAD A -



NOTE:

1. DOOR CLEARANCE AT BOTTOM OF DOOR SHALL BE 1/4" MIN AND 3/8" MAX.

DOOR SILL C -



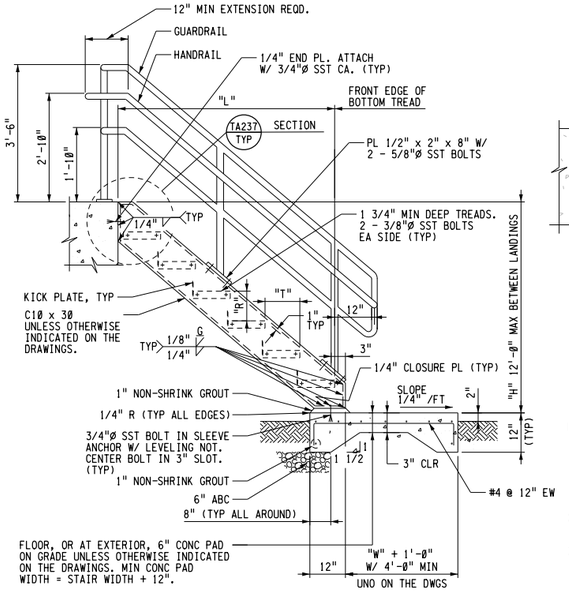
DOOR JAMB A -

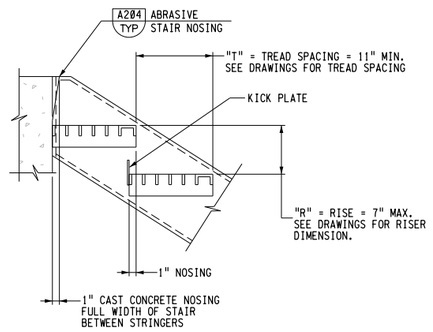
NOTES:

1. FRAME DEPTH SHALL BE 6"* UNLESS OTHERWISE SCHEDULED.
2. PROVIDE MIN 3 ANCHORS PER JAMB @ MASONRY AND 4 ANCHORS PER JAMB @ STUD OR CONCRETE CONSTRUCTION.
3. PROVIDE BACKBEND DIM AS REQD (1/2" *).

DOOR FRAMING DETAIL FOR CONCRETE WALL

TA222





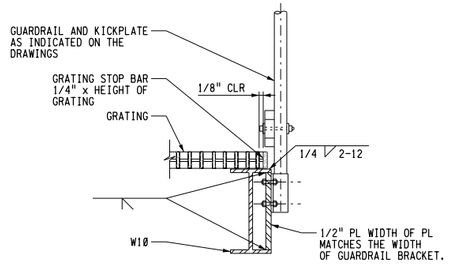
SECTION A TA237

NOTES:

1. SEE DRAWINGS FOR DIMENSIONS "H", "L", "R", "T", AND STAIR WIDTH "W". STAIR WIDTH = 3'-0" CLR BETWEEN CHANNELS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
2. SEE TA340 TYP FOR GUARDRAIL NOTES AND TA343 TYP FOR GUARDRAIL DETAILS.
3. TREAT WIDTH = TREAD SPACING + 1" (TYP ALL TREADS).

STAIRWAY W/O TOP TREAD WITH TWO RAIL GUARDRAIL FOR IBC

TA237



NOTES:

1. GRATING STOP SHALL BE INSTALLED ON ALL GRATING PLATFORMS LANDINGS AND SHALL BE CONTINUOUS ON ALL SIDES OF PLATFORMS NOT OTHERWISE COVERED BY A REBATE, SEAT, OR OTHER SIMILAR DETAIL. GRATING STOPS SHALL BE DISCONTINUOUS AT STAIRS BUT SHALL SERVE TO HOLD LANDING PANEL AT STAIRWAYS IN PLACE.
2. GRATING STOP SHALL BE OF THE SAME MATERIAL AS THE STRUCTURAL MEMBER.

GRATING STOP

TA412

1. STAIRS, WALKING SURFACES AND ROOFS (WHERE EQUIPMENT IS LOCATED <10' FROM ROOF EDGE) ELEVATED >30" ABOVE GRADE OR ADJACENT CONSTRUCTION SHALL BE PROVIDED WITH A 42" HIGH GUARDRAIL FORMING A PROTECTIVE BARRIER. A PARAPET WALL 42" OR MORE IN HEIGHT MAY BE THAT GUARDRAIL AT ROOF LOCATIONS.
2. SEE DRAWINGS OR SPECIFICATIONS FOR GUARDRAIL MATERIAL TYPE(S).
3. HANDRAIL SHALL BE PROVIDED AT BOTH SIDES OF EVERY STAIR HAVING TWO OR MORE RISERS.
4. HANDRAIL SHALL BE CONTINUOUS THE FULL LENGTH OF THE STAIR.
5. HANDRAIL EXTENSIONS SHALL BE PROVIDED AT BOTH SIDES OF STAIRS AND AT TOP AND BOTTOM. HANDRAIL EXTENSION ON STAIR MOUNTED GUARDRAIL MAY BE OMITTEDWHERE IT IS PERPENDICULAR TO AND IMPEDES EXIT FLOW.
6. INSIDE HANDRAIL ON SWITCHBACK STAIRS SHALL BE CONTINUOUS.
7. WALL MOUNTED HANDRAILS SHALL BE SINGLE RAIL WITH TOP OF RAIL AT 2'-10" HEIGHT ABOVE LANDINGS OR TREAD NOSINGS, MATCHING RAILING ON OPPOSITE SIDE.
8. ALL GUARDRAIL SHALL BE FIXED UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
9. PLACE CENTER OF EMBEDDED POSTS 4" FROM EDGE OF CONCRETE AND 6" FROM EDGE OF CONCRETE STAIR NOSINGS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
10. PLACE GUARDRAIL POSTS OPPOSITE EACH OTHER WHERE RAILINGS ARE PARALLEL.
11. FOR GUARDRAIL POSTS MOUNTED TO BEAM OR STAIR CHANNEL, PROVIDE MANUFACTURERS REINFORCED CONNECTION FROM POST TO PLATE. PLATE AND REINFORCED INSERTS SHALL BE ALUMINUM OR STAINLESS STEEL.
12. PROVIDE SLIP JOINTS AT 24' MAX CENTERS FOR EXPANSION OF RAIL AND KICKPLATE. LOCATE RAIL SLIP JOINTS AT FACE OF POST. GAP AT TIME OF INSTALLATION SHALL BE BASED ON TEMPERATURE OF GUARDRAIL (3/8" GAP AT 25°F, 0" GAP AT 100°F). AT CONCRETE EXPANSION JOINTS, PROVIDE MINIMUM OF 1" GAP IN SLIP JOINTS BUT NOTLESS THAN WIDTH OF CONCRETE EXPANSION JOINT. INSERT SLEEVES SHALL BE LONG ENOUGH TO ALLOW FOR THE FULL RANGE OF MOVEMENT.
13. MATERIAL FOR SLIP JOINT PLATE AND KICKPLATE CHANNEL SHALL BE OF THE SAME MATERIAL AS THE GUARDRAIL.
14. ALL JOINTS FOR STAINLESS STEEL GUARDRAIL AND HANDRAIL SHALL BE COPED, WELDED, AND GROUND SMOOTH.
15. PROVIDE KICKPLATE AT ALL LOCATIONS EXCEPT AT SLOPING GUARDRAIL ON STAIRS ANDWHERE GUARDRAIL IS MOUNTED ON A 4" MIN CURB. KICKPLATE MAY BE EXTRUDED OR BENT PLATE AND SHALL BE ATTACHED WITH SST BOLTS IN 5/16" x 3/4" SLOTTED HOLES. BOLT KICKPLATE TO POST WITH BOTTOM 1/4" CLEAR FROM FLOOR. FOR SIDE MOUNTED GUARDRAIL, PROVIDE STANDARD SPACER BLOCK BETWEEN POST AND KICKPLATE TO MAINTAIN 1/4" MAX CLEAR SPACING. HAND TIGHTEN AND CENTER PUNCH BOLT TO LOCK. SPLICES SHALL ACCOMMODATE TEMPERATURE EXPANSION PER NOTE 12.
16. COAT ALL SURFACES OF ALUMINUM THAT COME IN CONTACT WITH CONCRETE IN ACCORDANCE WITH SPECIFICATIONS. PLACE NEOPRENE GASKET BETWEEN ALUM AND STEEL.

GUARDRAIL/HANDRAIL NOTES FOR IBC

TA340

REGISTERED PROFESSIONAL ENGINEER
WEI-HANG TZENG
No. C35597
Exp. 9/30/09
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT / EBMUD

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

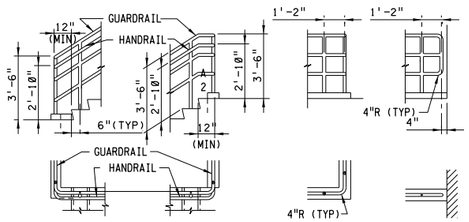
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

TYPICAL STRUCTURAL DETAILS

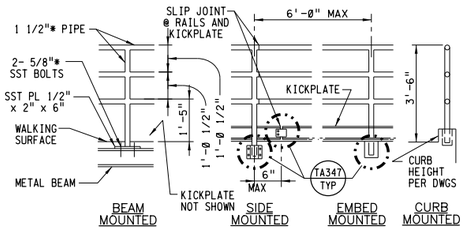
SCALE
DATE JAN2009
W28.20-S-907 DRAWING NUMBER
1 REV.

REF 1: W:\Drafters\SD\sd317A\ref\W2820dbr_consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317Adbr.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

PLOT SCALE: 0.166667:1
USER: fal
DATE: 26-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820S907.R01



BOTT OF STAIR | TOP OF STAIR | CORNER | END

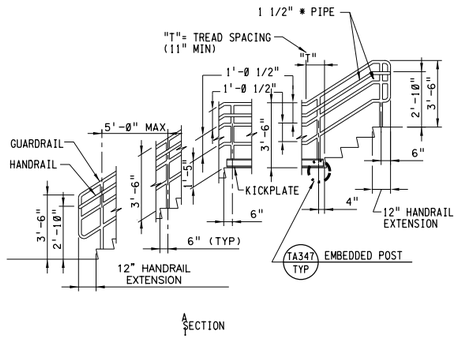


BEAM MOUNTED | SIDE MOUNTED | EMBED MOUNTED | CURB MOUNTED

GUARDRAIL ELEVATION

NOTES:
1. THIS DETAIL IS APPLICABLE AT PRIVATE STAIRS WHERE OPERATOR ONLY ACCESSIBILITY IS REQUIRED. DETAILS AND INSTALLATION SHALL COMPLY WITH THE BUILDING CODE.
2. FOR ADDITIONAL REQUIREMENTS, SEE SPECIFICATIONS AND TA340 TYP.
3. VARIOUS POST MOUNTING DETAILS ARE ILLUSTRATED. SEE DRAWINGS FOR SPECIFIC MOUNTING REQUIREMENTS.

A237 TYP NS



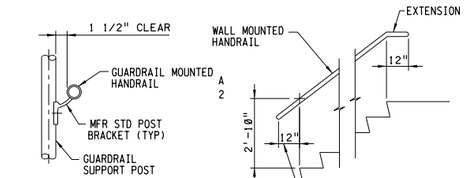
STAIR GUARDRAIL/HANDRAIL ELEVATION

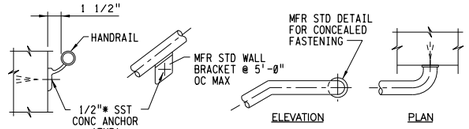
A340 A341

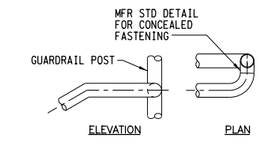
NOTES:
1. SEE SPECIFICATIONS AND TA340 TYP FOR ADDITIONAL REQUIREMENTS.
2. HANDRAIL EXTENSIONS ARE REQUIRED ON BOTH SIDES OF STAIR; THEY ARE NOT REQUIRED WHERE HANDRAIL IS CONTINUOUS.

THREE RAIL GUARDRAIL FOR IBC (PRIVATE)

A237 TYP NS



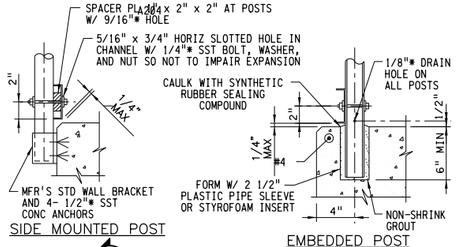


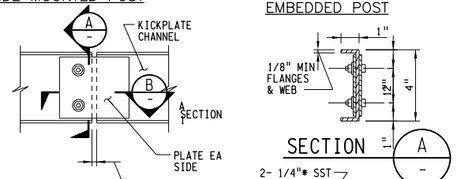


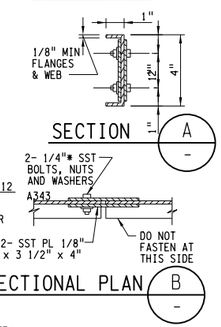
HANDRAIL DETAILS

A237 TYP NS

TA343







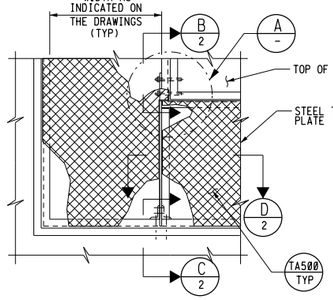
NOTE:
1. FOR ADDITIONAL REQUIREMENTS, SEE TA340 TYP.

A237 TYP NS

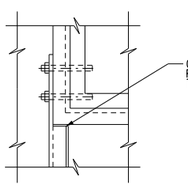
GUARDRAIL DETAILS FOR IBC

TA347

A300 TYP NS

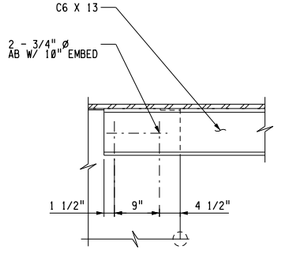


PLAN

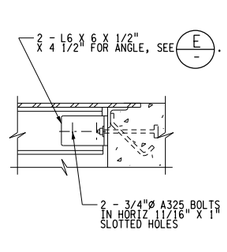


PLAN A –

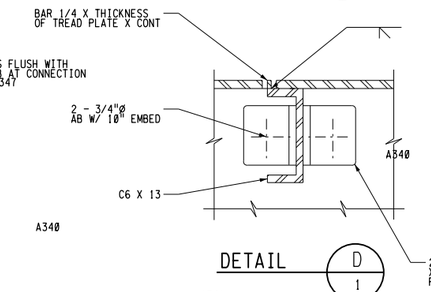
A340 TYP NS



DETAIL B 1

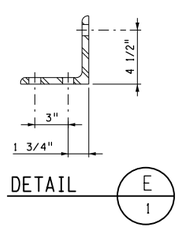


A347
DETAIL C 1



A340

DETAIL D 1

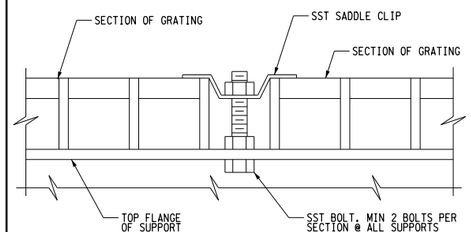


DETAIL E 1

TREAD PLATE SUPPORT

A341 TYP NS

TA408

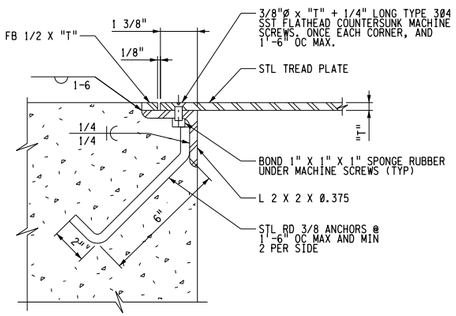


NOTES:
1. GRATING FASTENERS SHALL BE INSTALLED WHERE INDICATED ON THE DRAWINGS.
2. GRATING FASTENERS SHALL BE INSTALLED AT EACH CORNER OF EACH PANEL AND AT SPACING NOT TO EXCEED 8'-0".

A341 TYP NS

GRATING FASTENERS

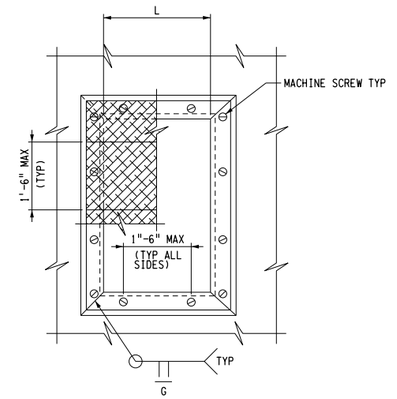
TA414



SECTION – REBATE

NOTES:
1. TREAD PLATE LIVE LOAD SHALL BE SAME AS FLOOR LIVE LOAD.
2. HOT DIP AFTER FABRICATION

STEEL TREAD PLATE



SEAT PLAN

THICKNESS OF TREAD PLATE "T" (INCH)		
LIVE LOAD (PSF)	SHORTER SPAN "L" (FT-IN)	
	10" TO 2'-6"	2'-7" TO 4'-3"
300	1/2"	3/4"

SCHEDULE FOR TREAD PLATE

STEEL TREAD PLATE

TA500

TA408

REGISTERED PROFESSIONAL ENGINEER WEI-HANG YEUNG No. C35593 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT
EBMUD

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A – PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

TYPICAL STRUCTURAL DETAILS

SCALE NONE
DATE JAN2009
W28.20-S-908
DRAWING NUMBER
1 REV.

REF 1: W:\D-rafters\SD\sd317A\ref\W2820sdr_consultant.mst
REF 2:
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

PLOT SCALE= 0.166667:1
USER: fal
DATE: 26-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820S908.R01

STRUCTURE	PILE SIZE	TYPICAL DETAIL	NO. OF PILES	PILE CAPACITY (KIPS)	UPLIFT CAPACITY (KIPS)	PILE LENGTH (FEET)
PGS 2 BUILDING	14"	TF202	77	119	51	50
GAS TURBINE GENERATOR FOUNDATION SLABS	14"	TF202	132	104	45	50
HVAC UNITS FOUNDATION SLABS	14"	TF202	4	108	43	40
CANOPY FOUNDATION SLABS	14"	TF202	6	108	43	40
GAS CONDITIONING UNITS FOUNDATION SLABS	14"	TF202	42	101	47	50
H2 SWITCHGEAR FOUNDATION SLAB	24"	TF207	12	160	52	40
STEP-UP TRANSFORMER FOUNDATION SLAB	24"	TF207	5	160	52	40
GAS COMPRESSOR PACKAGE FOUNDATION SLAB	14"	TF202	7	96	42	50
HEAT EXCHANGER/CHILLER FOUNDATION SLAB	14"	TF202	12	96	42	50
SUBSTATION FOUNDATION SLAB	14"	TF202	11	96	42	50
WET WEATHER BASIN PILE-SUPPORTED DUCTBANK	14"	TF202	29	70	30	40
WET WEATHER BASIN ELECTRICAL MANHOLES	14"	TF202	12	70	30	40
SWITCHGEAR AREA PILE-SUPPORTED DUCTBANK	24"	TF207	24	160	52	40
SWITCHGEAR AREA ELECTRICAL MANHOLES	24"	TF207	16	160	52	40

NOTES:
1. THE PILE LENGTH IS FOR BASE B10. THE PILE LENGTH WILL BE ADJUSTED AS REQUIRED AFTER THE INDICATOR PILES HAVE BEEN DRIVEN AND EVALUATED.
2. PILE CAPACITY IS THE MAXIMUM ALLOWABLE LIVE LOAD AND DEAD LOAD.
3. FOR PILE DRIVING NOTES. SEE (TF201 TYP).

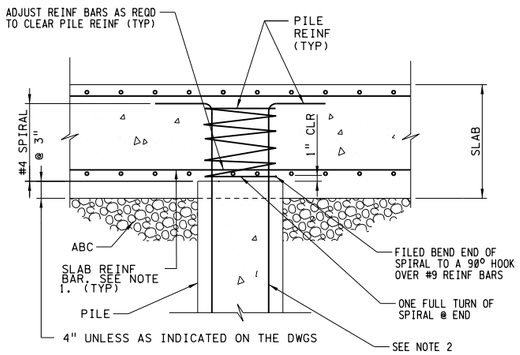
PILE SCHEDULE

TF200

1. PRIOR TO DRIVING PILES, LOCATE ALL UTILITIES SUCH AS PIPE LINES, ELECTRICAL CONDUITS, AND DUCT BANKS IN AREA WHERE PILES WILL BE DRIVEN. THE LOCATION OF UTILITIES INDICATED ON THE DRAWINGS IS APPROXIMATE AND IS PROBABLY INCOMPLETE. USE ONLY HAND TOOLS TO EXCAVATE AND LOCATE UTILITIES.
2. SURVEY LOCATION OF EXISTING UTILITIES. SUBMIT SURVEY INFORMATION AND PLAN SHOWING LOCATION OF PILES AS INDICATED ON THE DRAWINGS AND ACTUAL LOCATION OF EXISTING UTILITIES. INDICATE WHERE THERE IS A CONFLICT BETWEEN THE PILES AND THE UTILITIES.
3. IF THERE ARE CONFLICTS BETWEEN PILES AND UTILITIES AFTER SURVEY INFORMATION AND PILE UTILITY LOCATION PLAN HAVE BEEN SUBMITTED, PROVIDE 14 DAYS IN CONSTRUCTION SCHEDULE FOR REDESIGN OF PILE FOUNDATION BY ENGINEER.
4. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY DRIVING PILES AND OTHER CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED BY CONTRACTOR WITHOUT ADDITIONAL COST TO OWNER.

PILE DRIVING NOTES

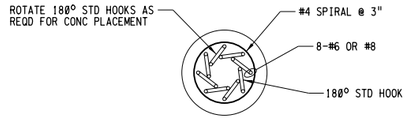
TF201



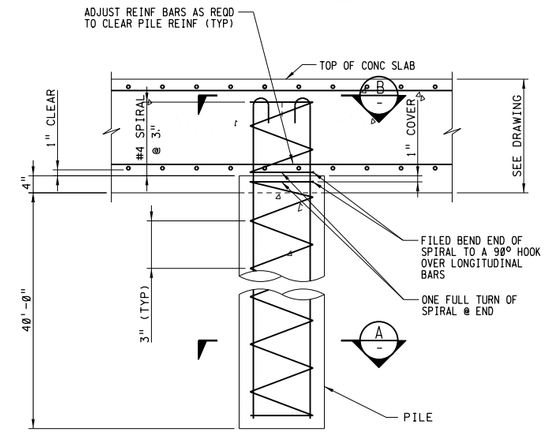
NOTE:
1. ADJUST SLAB REINF BARS AS REQUIRED TO CLEAR PILE REINF BARS.
2. GROUT REINF BARS AFTER INSTALLATION OF SPIRAL AND BOTTOM REINF BARS.

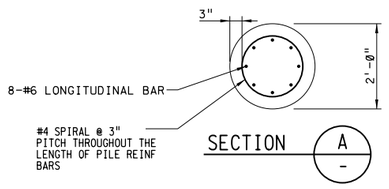
PILE EMBEDMENT

TF206



SECTION B -

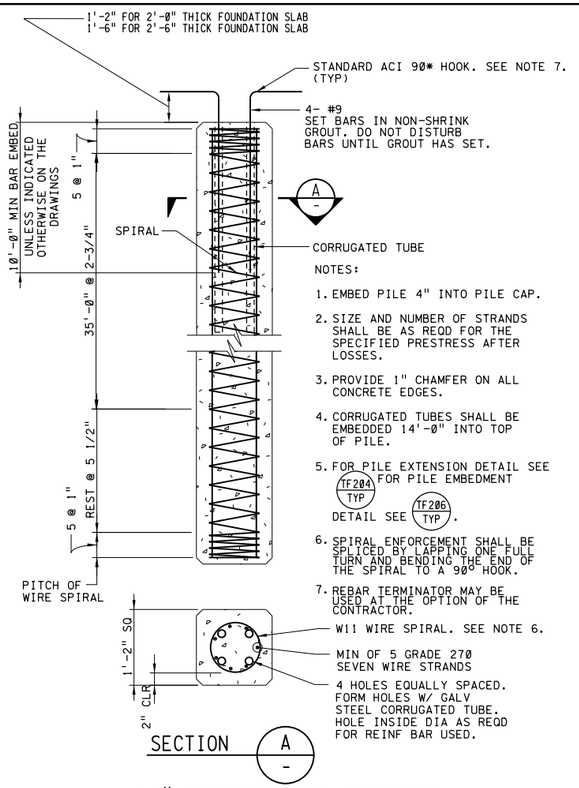




SECTION A -

24" CAST-IN-DRILLED-HOLE PILE

TF207

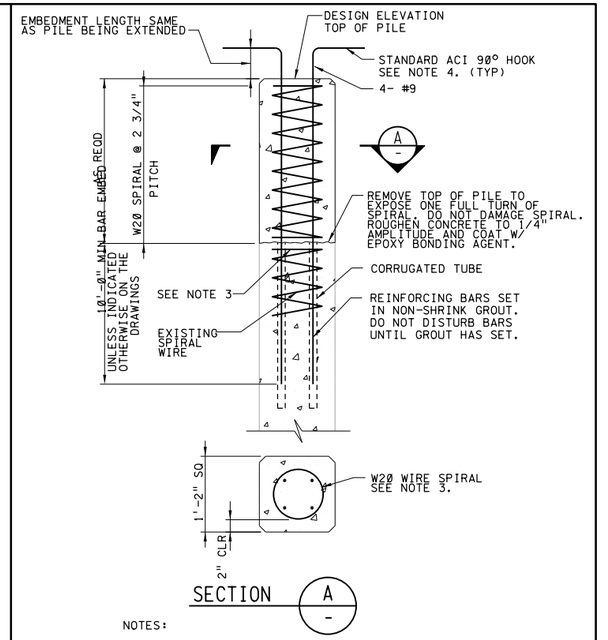


NOTES:
1. EMBED PILE 4" INTO PILE CAP.
2. SIZE AND NUMBER OF STRANDS SHALL BE AS REQD FOR THE SPECIFIED PRESTRESS AFTER LOSSES.
3. PROVIDE 1" CHAMFER ON ALL CONCRETE EDGES.
4. CORRUGATED TUBES SHALL BE EMBEDDED 14'-0" INTO TOP OF PILE.
5. FOR PILE EXTENSION DETAIL SEE (TF204 TYP) FOR PILE EMBEDMENT DETAIL SEE (TF206 TYP).
6. SPIRAL ENFORCEMENT SHALL BE SPLICED BY LAPPING ONE FULL TURN AND BENDING THE END OF THE SPIRAL TO A 90° HOOK.
7. REBAR TERMINATOR MAY BE USED AT THE OPTION OF THE CONTRACTOR.

SECTION A -

14" PRESTRESSED PRECAST CONCRETE PILE

TF202



SECTION A -

NOTES:
1. CONC FOR PILE EXTENSION SHALL HAVE f'c = 6000 PSI.
2. PROVIDE 1" CHAMFER ON ALL CONCRETE EDGES.
3. SPIRAL REINFORCEMENT SHALL BE SPLICED BY LAPPING ONE FULL TURN AND BENDING THE END OF THE SPIRAL TO A 90° HOOK.
4. REBAR TERMINATOR MAY BE USED AT THE OPTION OF THE CONTRACTOR.

14" PRESTRESSED PRECAST CONCRETE PILE EXTENSION

TF204

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

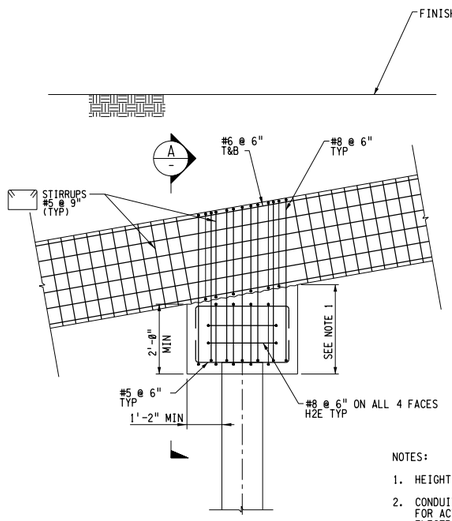
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

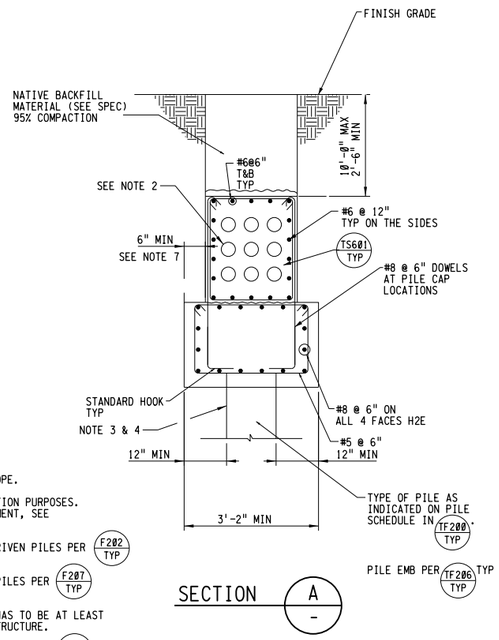
TYPICAL FOUNDATION DETAILS

SCALE NONE
DATE JAN2009
W28.20-S-910
DRAWING NUMBER
1
REV.

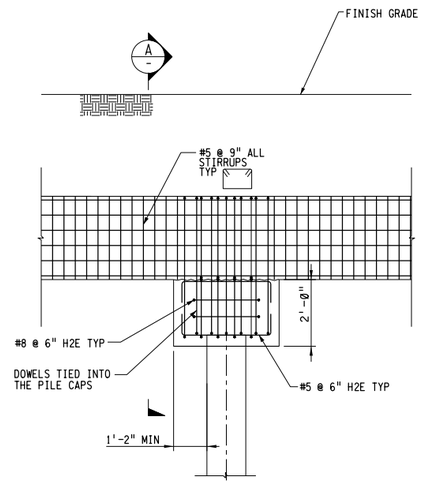
REF 7; REF 8; REF 9;
REF 4; REF 5; REF 6;
REF 1: W:\Drafters\SD\sd317A\ref\W2820dbr_consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317dbr.mst
REF 3:
PLOT SCALE: 0.166667:1
USER: fah
DATE: 28-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820S910.R01



PILE SUPPORT FOR SLOPED DUCTBANK



SECTION A -



PILE SUPPORT FOR FLAT DUCTBANK

NOTES:

1. HEIGHT TO MATCH DUCTBANK SLOPE.
2. CONDUITS SHOWN FOR ILLUSTRATION PURPOSES. FOR ACTUAL SIZE AND ARRANGEMENT, SEE ELECTRICAL DRAWINGS.
3. SPACE PRECAST PRESTRESSED DRIVEN PILES PER F202 TYP AT MAX 10'-0".
4. SPACE CAST-IN DRILLED HOLE PILES PER F207 TYP AT 15'-0" MAX.
5. LOCATION OF THE FIRST PILE HAS TO BE AT LEAST 5'-0" FROM THE CONNECTING STRUCTURE.
6. PILE DOWELS NOT SHOWN FOR CLARITY SEE TF206 TYP.
7. DEMO EXISTING BURIED SOLDIER PILES AS NECESSARY TO KEEP 6" MIN CLEARANCE.

TF208

REF 7:
REF 8:
REF 4:
REF 5:
REF 6:

REF 1: W:\D-afters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\D-afters\SD\sd317A\ref\W28208bdr_consultant.mst
REF 3:

USER: fsh
DATE: 22-AUG-2013 15:38
FILE: J:\SD\sd317A\W28208911.R01

PLOT SCALE: 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A	JK		

REGISTERED PROFESSIONAL ENGINEER WEI-THANG YZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT: EBMUD

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

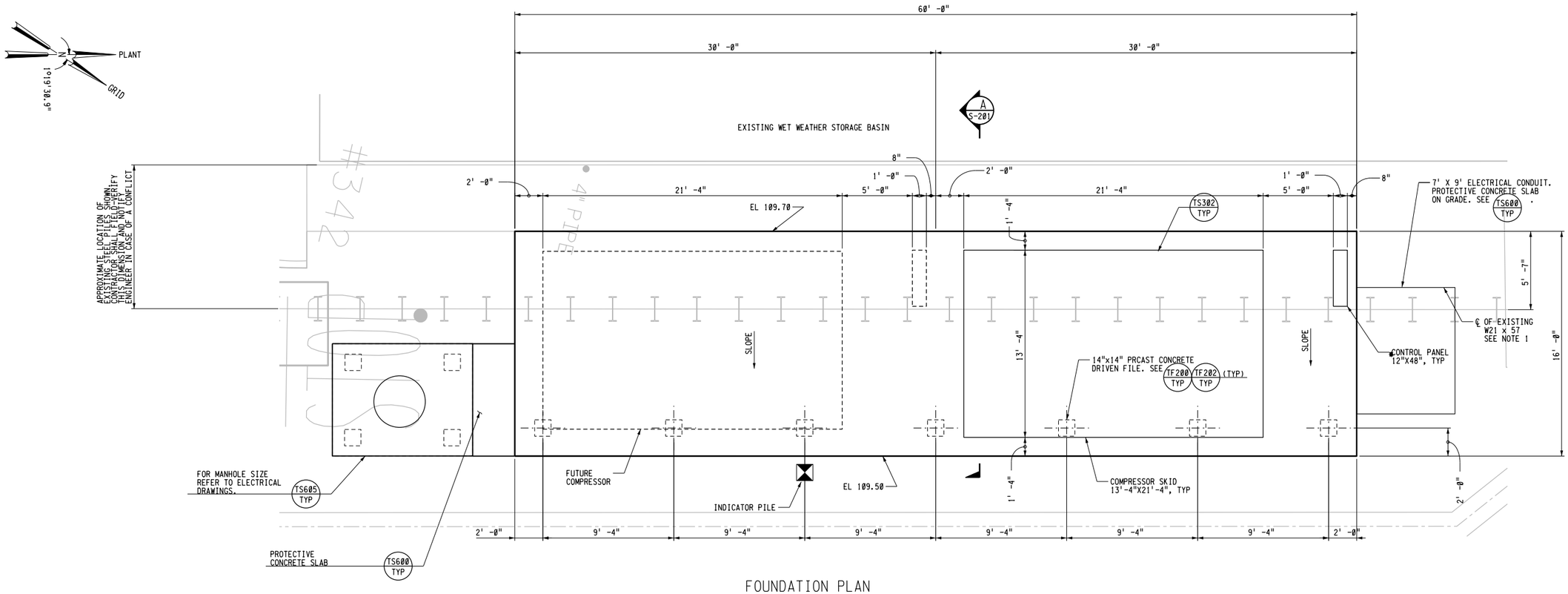
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

TYPICAL FOUNDATION DETAILS

SCALE NONE
DATE JAN2009
W28.20-S-911
DRAWING NUMBER
1
REV.

REF 4: J:\SD\sd317A\GAS-COND-TOPO-PNTS.dgn
REF 5: J:\x200_2008\x_ref_1
REF 6: J:\x428_2010\x2828s1000.mst
REF 7:
REF 8:
REF 9:
REF 1: J:\SD\sd317A\ref\sd317bor.mst
REF 2: J:\SD\sd317A\ref\x2828s_consultant.mst
REF 3: J:\SD\sd317A\x2828s800.MST
USER: rmojica
DATE: 14-NOV-2013 09:01
FILE: J:\SD\sd317A\W28305101.R01
PLOT SCALE: 8:1

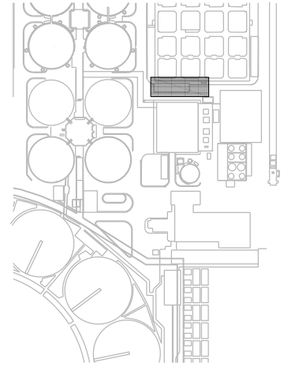


FOUNDATION PLAN

1/4" = 1'-0"

NOTES:

1. LOCATION AND ELEVATION OF TOP OF EXISTING PILES SHALL BE SURVEYED AND SUBMITTED TO ENGINEER PRIOR TO CONSTRUCTION.
2. SEE MECHANICAL DRAWINGS FOR LOCATION OF THE GAS COMPRESSOR.
3. * DIMENSIONS PER GAS COMPRESSOR MFR.



KEY MAP

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT

DESIGN BY:	WEI TZENG
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON

EBMUD

PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2

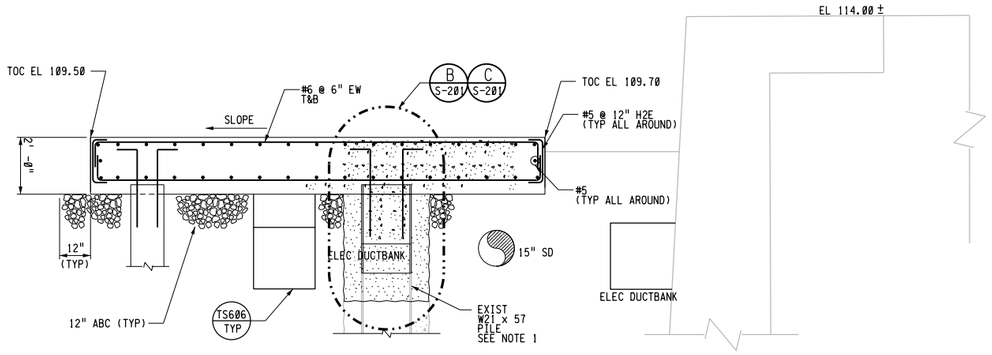
STRUCTURAL

GAS COMPRESSOR
FOUNDATION PLAN

SCALE 1/4"=1'-0"
DATE JAN2009

W28.30-S-101
DRAWING NUMBER

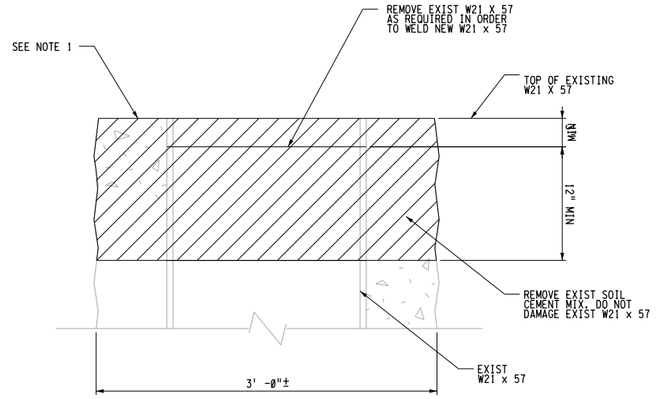
1
REV.



NOTES:

1. THE ELEVATION OF TOP OF ALL EXISTING STEEL PILES SHALL BE VERIFIED IN THE FIELD. CONTRACTOR SHALL DETERMINE LINEAR DIMENSIONS OF NEW W21x57 AFTER FIELD VERIFYING THE ELEVATION OF TOP OF ALL EXISTING STEEL PILES.
2. FOR DUCTBANK DETAIL SEE DRAWING S-228.

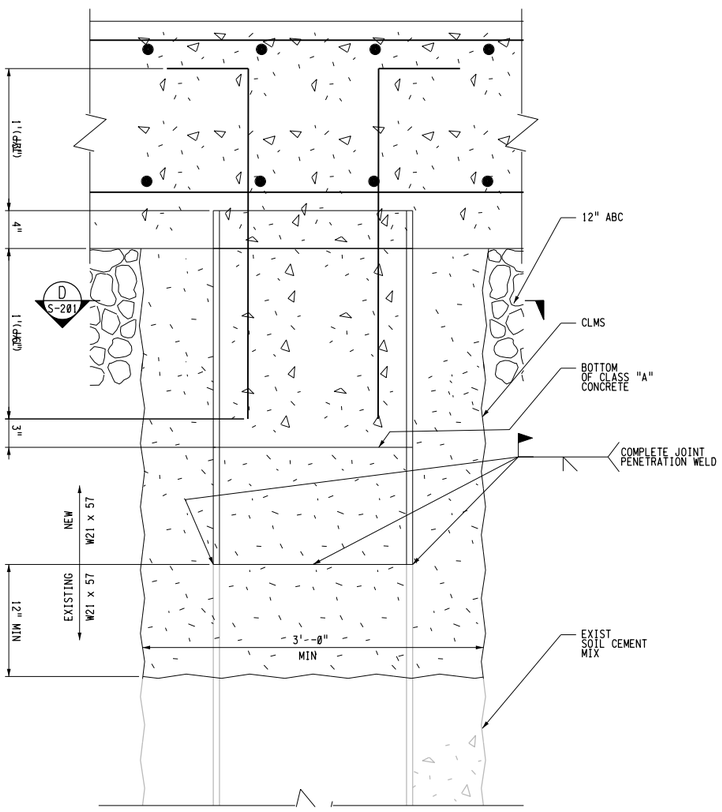
SECTION A / S-201
3/8"= 1'-0"



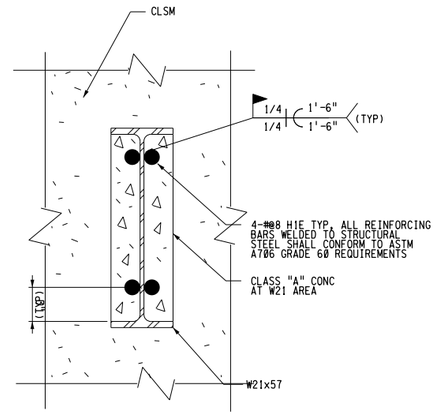
DETAIL C / –
1-1/2" = 1'-0"

NOTES:

1. THE ELEVATION OF TOP OF ALL EXISTING STEEL PILES SHALL BE VERIFIED IN THE FIELD.



DETAIL B / –
1-1/2" = 1'-0"



SECTION D / –
1-1/2" = 1'-0"

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

REGISTERED PROFESSIONAL ENGINEER WEI-THANG YZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
EBMUD PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

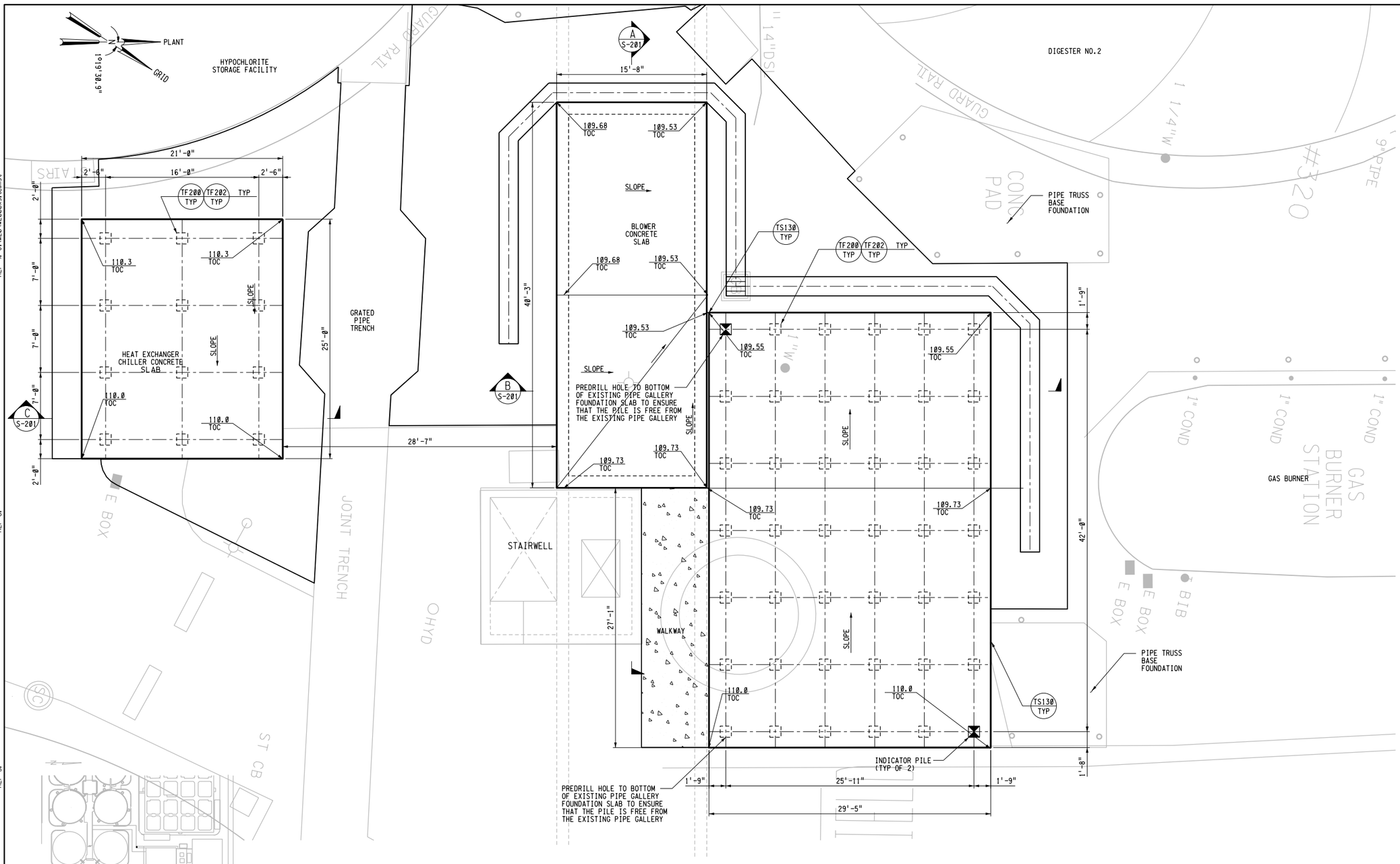
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
GAS COMPRESSOR
SECTIONS

SCALE AS SHOWN
DATE JAN2013 2009

W28.30-S-201
DRAWING NUMBER

1
REV.

REF 4; J:\SD\sd317A\w2820s800.MST
REF 5; J:\SD\sd317A\w2820s800.MST
REF 6; J:\SD\sd317A\w2830S201.R01
REF 7;
REF 8;
REF 9; J:\SD\sd317A\ref\sd317bdr.mst
REF 1; J:\SD\sd317A\ref\W2820bdr.consultant.mst
REF 2; J:\SD\sd317A\ref\W2820bdr.MST
REF 3; J:\SD\sd317A\w2820s800.MST
USER; rmojica
DATE; 14-NOV-2013 09:01
FILE; J:\SD\sd317A\W2830S201.R01
PLOT SCALE; 5.333333:1



GENERAL NOTES:

1. DESIGN LIVE LOAD = 100 PSF FOR ALL CONCRETE SLABS.
2. SEE MECH DWGS FOR EQUIP, SUPPORTS AND ANCHOR BOLTS LOCATIONS.

KEY MAP

FOUNDATION PLAN

3/16"= 1'-0"

REGISTERED PROFESSIONAL ENGINEER WEI-THANG TZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	WEI TZENG
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
GAS CONDITIONING UNITS
FOUNDATION PLAN

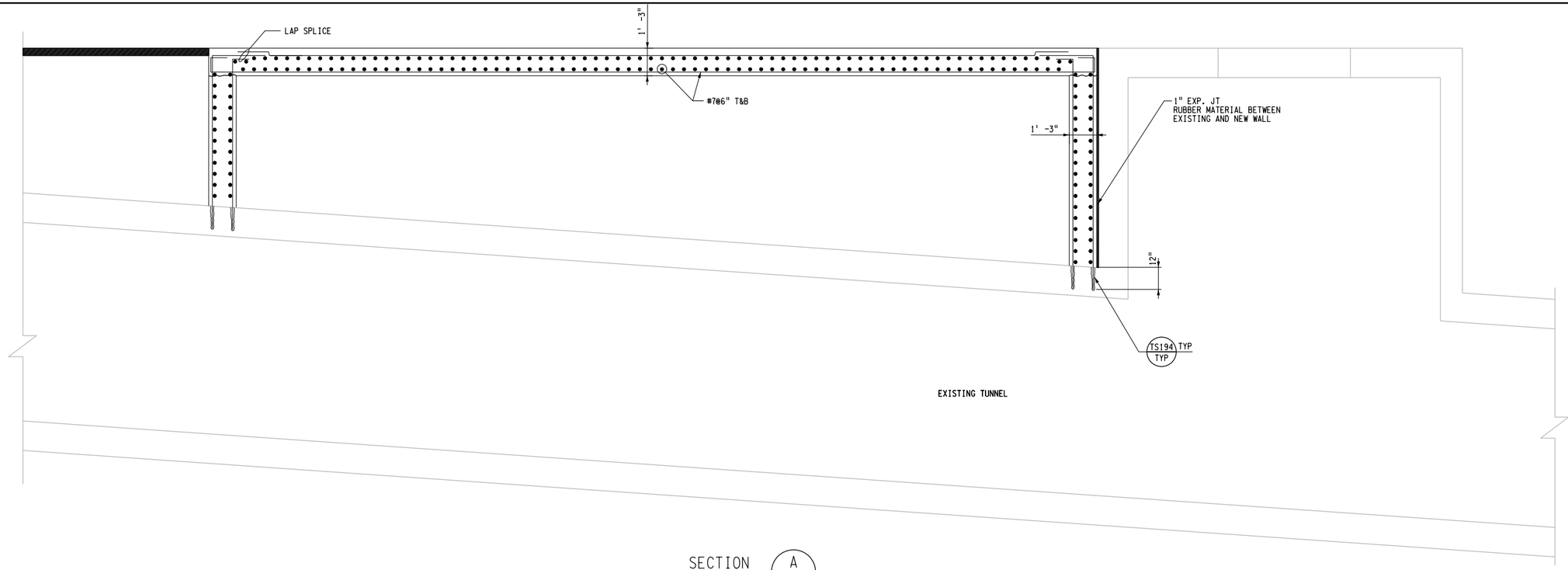
SCALE 3/16"=1'-0"
DATE JAN2009

W28.40-S-101 DRAWING NUMBER

1 REV.

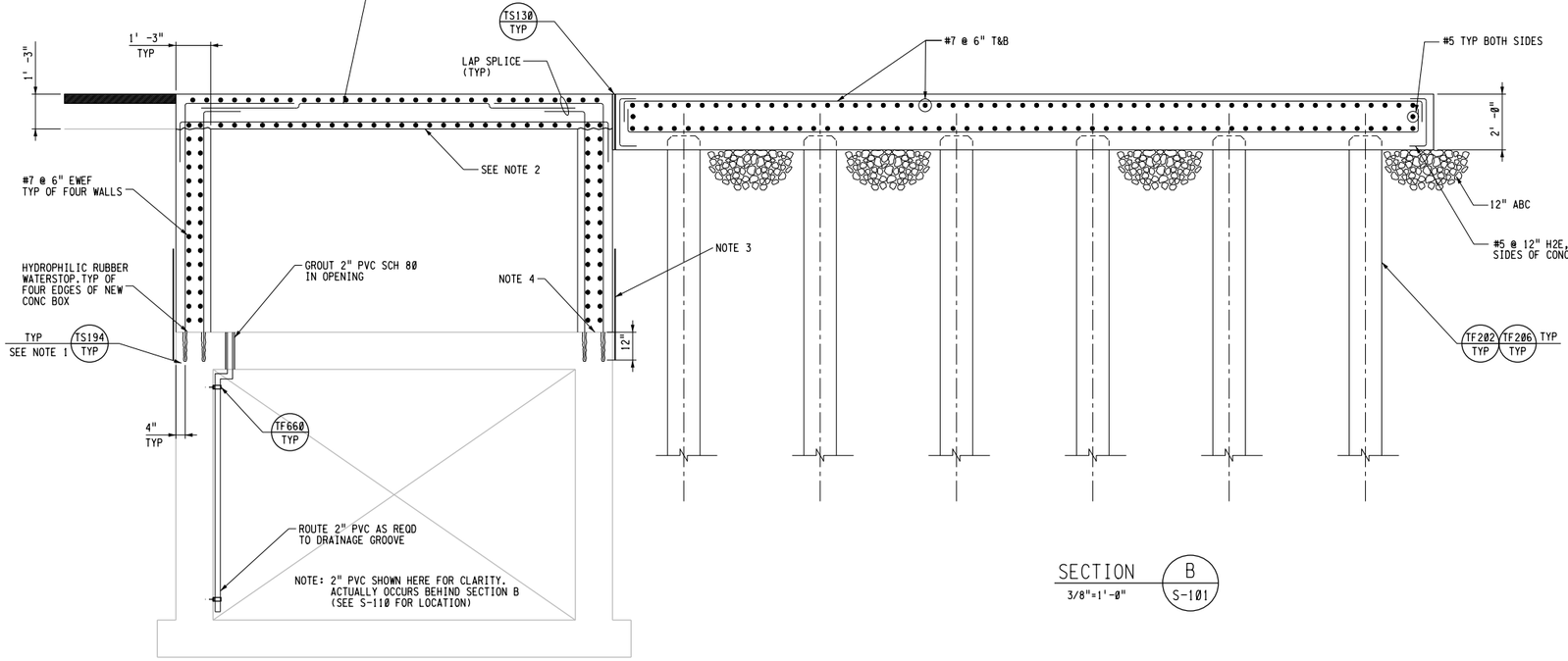
REF 7: J:\wc20\w2020c100.mst
REF 8: J:\SD\sd317A\w2820c904.mst
REF 9: J:\wc01\w2000sstem.mst
REF 4:
REF 5:
REF 6:
REF 1: J:\SD\sd317A\vef\sd317bdr.mst
REF 2: J:\SD\sd317A\vef\W2828dor_consultant.mst
REF 3:
USER: rmojica PLOT SCALE: 10.666667:1
DATE: 4/4/2013 09:02
FILE: J:\SD\sd317A\W2840S101.R01

REF 7:
REF 8:
REF 9:

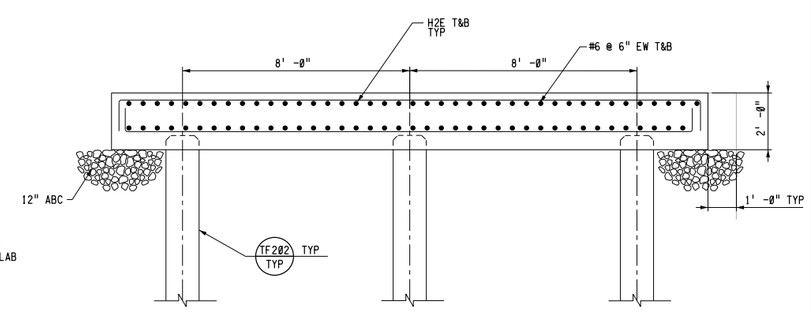


SECTION A
3/8"=1'-0" S-101

REF 4:
REF 5:
REF 6:



SECTION B
3/8"=1'-0" S-101



SECTION C
3/8"=1'-0" S-101

NOTES

1. DRILL WITHOUT DAMAGING CASTING REINFORCEMENT. LOCATE NEW BARS SUCH THAT THEY ARE PLACED IN BETWEEN EXISTING VERTICAL REINFORCEMENT.
2. CONTRACTOR SHALL CONSTRUCT THE SLAB WITH FORMWORK THAT SPANS FROM WALL-TO-WALL. NO LOADING ON EXISTING TUNNEL SLAB IS ALLOWED. CONTRACTOR SHALL NOT REMOVE FORMWORK.
3. COAT WITH COMPATIBLE MASTIC 3' ABOVE TO 1' BELOW INTERFACE. PRESERVE EXISTING WATERPROOFING TO MAXIMUM EXTENT POSSIBLE. COAT ALL AROUND.
4. EXISTING WATERPROOFING TO BE TESTED FOR ASBESTOS PRIOR TO DRILLING OR SCRAPING.

REGISTERED PROFESSIONAL ENGINEER
CARL A. GENTRY
No. C28410
Exp. 3/31/08
CIVIL
STATE OF CALIFORNIA

REF 1: J:\SD\sd317A\wrel\w2828dbr_consultant.mst
REF 2: J:\SD\sd317A\wrel\w2828dbr.mst
REF 3:

PLOT SCALE: 5.3333331
USER: rmojica
DATE: 14-NOV-2013 09:02
FILE: J:\SD\sd317A\W2840S201.R01

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP: MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT / EBMUD

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	JCI/GVV
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

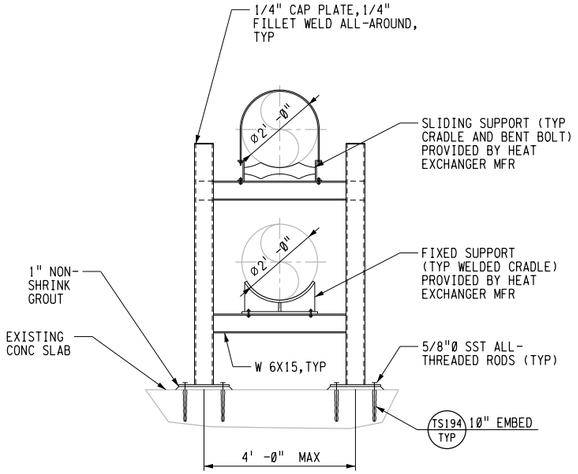
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
GAS CONDITIONING UNITS
SECTIONS AND DETAILS 1

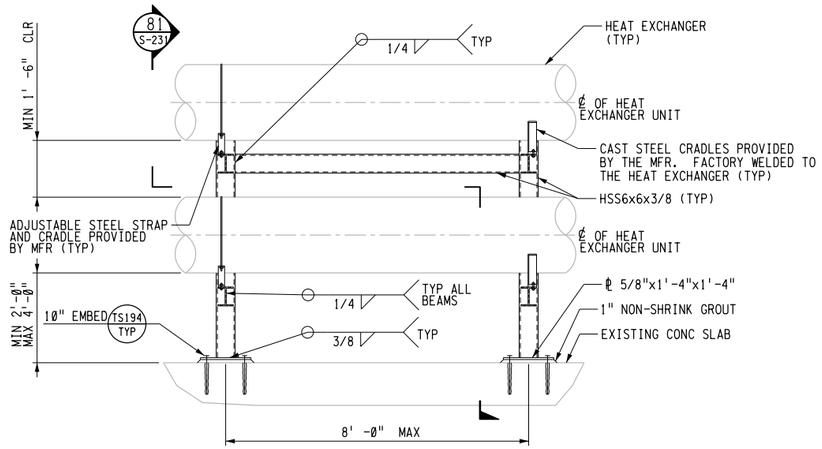
SCALE AS SHOWN
DATE JAN2009

W28.40-S-201
DRAWING NUMBER

1
REV.



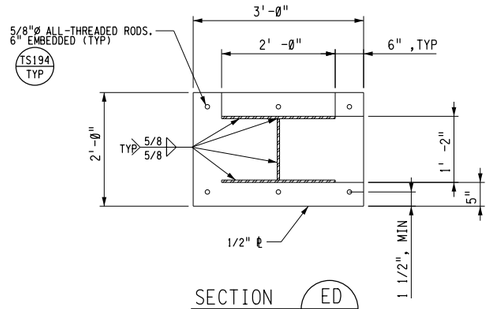
DETAIL 81 / 1/2"=1'-0" / S-231



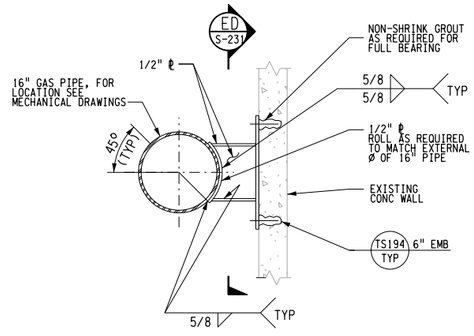
SECTION EE / 1/2"=1'-0" / M-107

NOTES

1. DIMENSIONS SHALL BE FIELD VERIFIED.
2. EXISTING CONCRETE REBARS SHALL BE LOCATED USING NON-DESTRUCTIVE METHODS BEFORE DRILLING. DO NOT DAMAGE EXISTING BARS. ADJUST ANCHOR LOCATION AS REQUIRED TO KEEP 1 1/2" MIN EDGE DISTANCE.
3. FOR LOCATION AND HEIGHT OF HEAT EXCHANGER UNIT, REFER TO MECHANICAL DRAWINGS.



SECTION ED / 3/4"=1'-0" / M-107



DETAIL 84 / 3/4"=1'-0" / M-107

NOTES:
1. LOCATE EXISTING CONCRETE BARS USING NON-DESTRUCTIVE METHODS. ADJUST ANCHOR LOCATION AS REQUIRED TO KEEP 1 1/2" MIN EDGE DISTANCE.
2. DO NOT DAMAGE EXISTING BARS.
3. DO NOT INSTALL AT LOCATION OF CONCRETE COLUMNS.
4. EXISTING ARCHITECTURAL FLUTE SHALL BE SHAVED BEFORE INSTALLATION OF BASE PLATE AND CONCRETE ANCHORS.

REGISTERED PROFESSIONAL ENGINEER WEI-THANG YZENG No. C35597 Exp. 9/30/09 CIVIL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT / EBMUD

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	MIKE GABEL
DESIGN CHECKED BY: R.P.E. No. S2940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
GAS CONDITIONING UNITS
SECTIONS AND DETAILS 2

SCALE AS SHOWN
DATE JAN2009
W28.40-S-202
DRAWING NUMBER
1
REV.

REF 1: J:\SD\sd317A\ref\W2020bdr_consultant.mst
REF 2:
REF 3:
REF 4:
REF 5:
REF 6: J:\SD\s
REF 7:
REF 8:
REF 9:

USER: rmoore
DATE: 14-MAY-2013 09:02
FILE: J:\SD\sd317A\W28405202.R01
PLOT SCALE: 4:1

PLANT GRID

1°19'30.9"

85' -6"

17' -4" | 5' -0" | 33' -7" | 29' -7"

3' -0" | 3' -0"

14" X 14" PRESTRESSED PRECAST CONCRETE DRIVEN PILE (TYP)

2" Ø WITH PLUG

EL 111.5 | EL 111.6 | EL 111.7

8" WIDE CONC CURB TS184 TYP

SLOPE | SLOPE | SLOPE

BLACK START TRANSFORMER AREA EL 112.20

C J

TS110 TYP

CONT CENTER U30 TOC EL 111.90

EXISTING SOLDIER PILES

TRANSFORMER PAD

TRANSFORMER U29 AREA TOC EL 110.5

PROTECTIVE SLAB TS600 TYP

CONSTRUCT SWALE

ELECTRICAL MANHOLE, TYP FOR MH COVER AND GRADE RINGS SEE TS605 TYP

A S-201

B S-201

D S-201

STAIRS

TS302 TYP

TOP OF CONC CURB EL 112.2 TYP

CONT CENTER U30 METAL BLDG ENCLOSURE

WET WEATHER STORAGE BASIN TOC EL 114.0

4" PIPE

'-3", APPROX LOCATION D EXIST STEEL PILE, ONTRACTOR SHALL FIELD ERIFY THIS DIM AND OTIFY ENGINEER N CASE OF CONFLICT

2' -9" | 10 EQUAL SPACES @ 8'-0" = 80' -0" | 2' -9"

SEE C-232 FOR STAIR MODIFICATION

NOTES:

1. THE ELEVATIONS AND LOCATIONS OF SOLDIER PILES SHALL BE VERIFIED PRIOR TO CONSTRUCTION.
2. DESIGN LIVE LOAD = 300 PSF
3. * DIMENSION SET PER MANUFACTURER

LEGEND

ASPHALT PAVEMENT

PROTECTIVE SLAB TS600 TYP

FOUNDATION PLAN

1/4"= 1'-0"

KEY MAP

3" ON ORIGINAL DOCUMENT

0 1 2 3

REGISTERED PROFESSIONAL ENGINEER CARL A. GENTRY No. C28410 Exp. 3/31/08 CIVIL STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1	25FEB2009	ADDENDUM NO.2 PER SD317A	DT	TGM	SKW

CONSULTANT

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

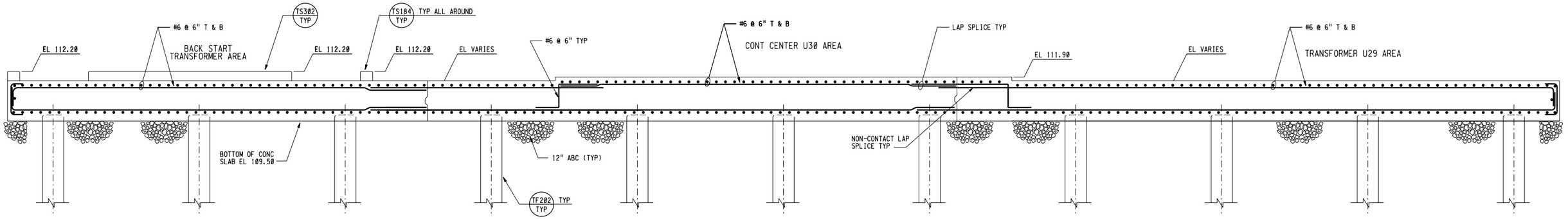
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL
SUBSTATION
FOUNDATION PLAN

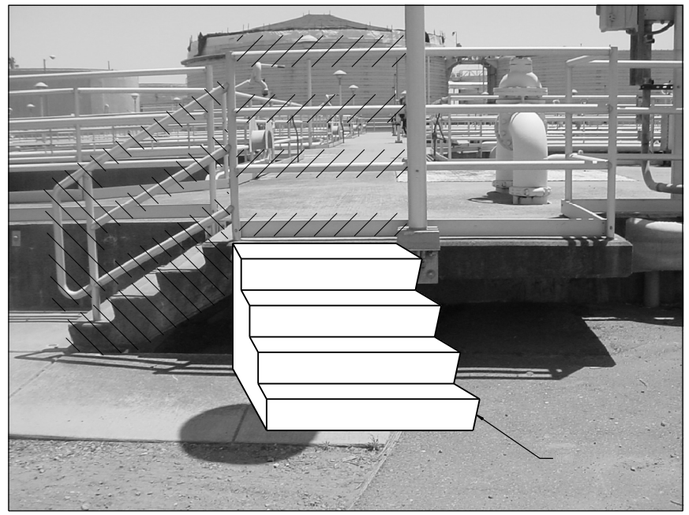
SCALE 1/4"=1'-0" | DATE JAN2009 | W28.50-S-101 DRAWING NUMBER | 2 REV.

REF 1: J:\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2: J:\w28.20\W28505011.mst
REF 3:
REF 4: J:\w28.20\w2820c100.mst
REF 5:
REF 6: J:\SD\sd317A\ref\sd317bdr_ms
REF 7: J:\SD\sd317A\w2820s107.MST
REF 8: J:\SD\sd317A\GAS CONDITION-PNTS.dgn
REF 9: J:\w28\w2820sstem.mst

USER: rmejica
DATE: 14-OCT-2013 09:02
FILE: J:\SD\sd317A\W28505S101.R02
PLOT SCALE: 8:1



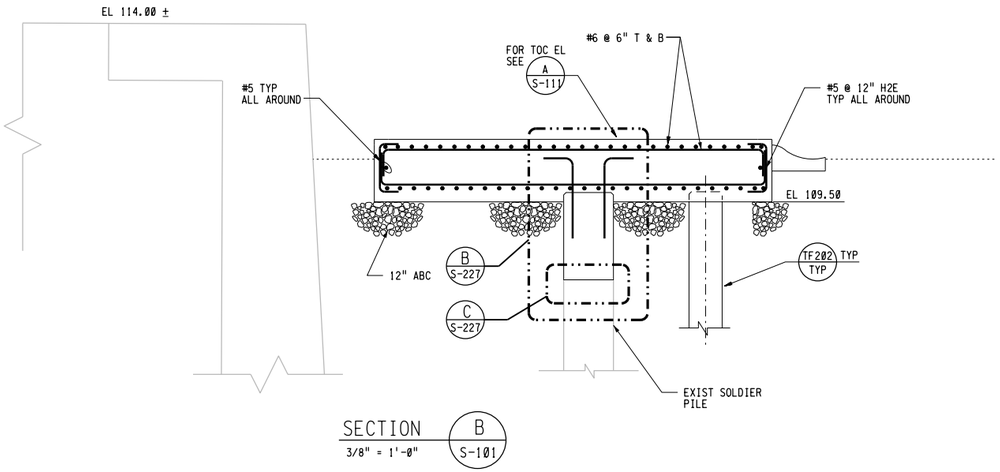
SECTION A
3/8" = 1'-0"
S-101



DETAIL P5
NTS
C040D

DEMO EXISTING STEPS PER TYPICAL DETAIL TS198 TYP, DEMO GUARD RAIL AND HANDRAIL AS SHOWN. ATTACH NEW GUARD RAIL TO CLOSE OFF OLD LANDING ENTERANCE. MATCH EXISTING RAIL. ATTACH NEW STAIRS AND HAND RAIL PER TYPICAL DETAILS TA343 TYP. STAIRS TO BE CONSTRUCTED IN ALUMINUM

WET WEATHER STORAGE BASIN



SECTION B
3/8" = 1'-0"
S-101

REGISTERED PROFESSIONAL ENGINEER
CARL A. GENTRY
No. C28410
Exp. 3/31/08
CIVIL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	SENTHIL PULIYADI
DRAWN BY:	STEPHEN WHITE
DESIGN CHECKED BY: R.P.E. No. 52940	CARL GENTRY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
STRUCTURAL

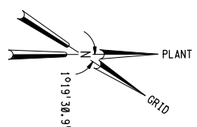
SUBSTATION SECTIONS

SCALE AS SHOWN
DATE JAN2009
W28.50-S-201
DRAWING NUMBER
1
REV.

REF 1: J:\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2:
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

USER: rmojica
DATE: 14/04/2013 09:02
FILE: J:\SD\sd317A\W2850S201.R01
PLOT SCALE: 5.333333:1

REF 7: J:\SD\sd317A\w2820m505.MST
REF 8: J:\SD\sd317A\w2820m504.MST
REF 9: J:\SD\sd317A\w2820m505.MST
REF 4:
REF 5:
REF 6: J:\SD\sd317A\w2820m504.MST
REF 1: J:\SD\sd317A\vel\W2820bdr_consultant.mst
REF 2: J:\SD\sd317A\vel\sd317bdr.mst
REF 3:
PLOT SCALE: 8:1
USER: rmojica
DATE: 14-NOV-2013 09:01
FILE: J:\SD\sd317A\W2810M101.P01



1-1A

1" PV

TO UPPER FLOOR, DRILL THRU EXST FLOOR SLAB (TP302 TYP)

1-IA

TIE-IN CONNECTION

3

1-CD

1-V

EXISTING ED 4

TM260 TYP

GENERAL NOTES
1. FOR YARD PIPING. SEE CIVIL DRAWINGS.
2. EQUIPMENT DRAINS AS SHOWN ARE ESTIMATED LOCATIONS ONLY. CONTRACTOR SHALL FIELD VERIFY & MODIFY DRAIN AS REQ'D.
3. PROVIDE CHAIN OPERATORS PER DETAIL (TM256 TYP) FOR ALL BUTTERFLY VALVES PER DETAIL LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.

KEY NOTES
1. RELOCATE CONDENSATE TRAPS AND RECONNECT TO EXISTING PIPING AND VENTS AS REQ'D.
2. PIPE SUPPORT PER DETAIL (TP658 TYP).
3. CONNECT 1-CD TO BOTTOM OF 18-LPDG ELBOW AND CONNECT 1-V TO 16-LPDG VERTICAL PIPE.
4. CONNECT 1-D TO EXISTING ED.

EXISTING NG PRESSURE REDUCING STATION

10-3W

8-3W

18-LPDG

EXISTING FUEL OIL TRANSFER PUMPS (2)

6" DUAL TYPE BASKET STRAINER

6" BUTTERFLY VALVE (TYP)

2-NG

1

M

W28-CWS-PMP-101
NO. 3 COOLING WATER PUMP 1

12x12x6 RED TEE (TYP)

B M-209

6- 3W

W28-CWS-PMP-201
NO. 3 COOLING WATER PUMP 2

FLOW METER, SEE NOTE 25 ON M-003

(TYP) 2

12-3W

18X12-RED CONNECT TO EXIST 18" TEE

10-HPDG

18-LPDG

18-3W

14-3W

EXIST 3W PUMPS

A C-209

6- 3W
SEE DWG M-107 FOR CONT

C M-209

KEY MAP

PLAN - PGS 1 BASEMENT EL 96.0
1/4" = 1'-0"

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

REGISTERED PROFESSIONAL ENGINEER THOMAS C. MOSSINGER No. M26798 Exp. 5/31/08 MECHANICAL STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

NO. 3 COOLING WATER PUMPS PLAN

SCALE 1/4"=1'-0"
DATE JAN2009

W28.10-M-101
DRAWING NUMBER

1
REV.

PIPE AND FITTING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		EXISTING PIPE
		NEW PIPE
		BELOW GRADE PIPE
		WELDED JOINT
		GROOVED END JOINT
		FLANGED JOINT
		LOCK TYPE PUSH-ON JOINT OR RESTRAINED MECHANICAL JOINT (AS SPECIFIED)
ADAPTER SIDE		GROOVED END ADAPTER FLANGE
		FLANGED COUPLING ADAPTER
		FLANGED COUPLING ADAPTER WITH THRUST TIES
		FLEXIBLE COUPLING
		FLEXIBLE COUPLING WITH THRUST TIES
		STEEL BELLOWS EXP JOINT
		ELASTOMER BELLOWS EXP JOINT
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		CAP
		ANCHOR
		ELBOW, 90 DEGREE
		CROSS
		TEE
		ELBOW, 45 DEGREE
		LATERAL OR WYE
OFFSET TEE	OFFSET TEE	OFFSET TEE
		FLOW DIRECTION

NOTES:

1. ONLY FLANGED END CONNECTIONS ARE SHOWN HERE FOR DOUBLE LINE FITTINGS. FITTINGS WITH OTHER END PATTERNS ARE SHOWN SIMILARLY ON THE CONSTRUCTION DRAWINGS. SEE PIPING SPECIFICATIONS.
2. SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE GENERIC ONLY. REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.

PRIMARY ELEMENT SYMBOLS

- STRAINER
- SIGHT GLASS
- FLEXIBLE (ELASTOMER) PIPE CONNECTION
- PRESSURE GAUGE
- PRESSURE GAUGE WITH DIAPHRAGM SEAL
- THERMOMETER
- ROTAMETER
- PIG LAUNCHER
- PIG CATCHER
- AIR SE (XX = SUPPLY PRESSURE - PSIG)
- LEVEL (ULTRASONIC)
- QUICK DISCONNECT COUPLER
- ELECTROMAGNETIC FLOWMETER
- HOSE BIBB/HOSE VALVE
- FLUSHING CONNECTION
- SPRAY NOZZEL
- ULTRASONIC FLOWMETER (CLAMP-ON)

VALVE ACTUATOR SYMBOLS

X ← LETTER DESIGNATION

W = MOTORIZED ACTUATOR
P = PNEUMATIC
H = HYDRAULIC

VALVE SYMBOLS

- GATE
- KNIFE GATE
- BUTTERFLY
- GLOBE
- BALL (OR)
- ECCENTRIC PLUG (SEATING PORT)
- PLUG OR COCK
- DIAPHRAGM
- PINCH
- SWING CHECK
- BALL CHECK
- HOSE BIBB (H/B)
- SAMPLE
- MUD
- PRESSURE RELIEF
- AIR AND/OR VACUUM RELEASE
- PRESSURE CONTROL (REGULATED SIDE)
- MULTI-PORT VALVE (BALL VALVE SHOWN. FOR OTHER VALVE TYPES, APPROPRIATE VALVE SYMBOL SHOWN.) ARROWS INDICATE FLOW PATTERN. SEATING PORTS ARE IMPLIED BY INDICATED FLOW PATTERN.
- SOLENOID VALVE

GATE SYMBOLS

- SLUICE
- BUTTERFLY
- FLAP
- FABRICATED SLIDE
- SHEAR

PIPING AND EQUIPMENT GENERAL NOTES

1. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED POINTS.
2. SIZE OF FITTINGS SHOWN ON PLANS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
3. LOCATION AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHOWN IS ONLY APPROXIMATE. NO ATTEMPT HAS BEEN MADE TO SHOW ALL REQUIRED PIPE SUPPORTS IN ALL LOCATIONS. THE ABSENCE OF PIPE SUPPORTS AND DETAILS ON ANY DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR PROVIDING THEM THROUGHOUT THE PLANT. FINAL SUPPORT REQUIREMENTS SHALL BE DETERMINED IN THE FIELD AND REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION. MAXIMUM SPACING SHALL BE AS SPECIFIED. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS ON PIPE HANGERS AND SUPPORTS.
4. ALL FLEXIBLE CONNECTORS OR FLANGED COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST TIES OR ANCHORS, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
5. SYMBOLS, LEGENDS, AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE PLANS, WHEREVER APPLICABLE. WHERE ABBREVIATIONS OR SYMBOLOGY CONFLICT WITH DRAWINGS G-005 OR G-006, THIS SHEET SHALL PREVAIL. NOT ALL OF THE VARIOUS PIPING COMPONENTS ARE NECESSARILY USED IN THE PROJECT.
6. NUMBER AND LOCATION OF UNIONS SHOWN ON PLANS IS ONLY APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
7. WHERE A GROOVED END COUPLING IS SHOWN, IT SHALL BE THE FLEXIBLE JOINT TYPE, UNLESS OTHERWISE SPECIFIED. WHERE A FLANGED COUPLING ADAPTER IS SHOWN, A STANDARD FLANGE SHALL BE JOINED TO THE COUPLING ADAPTER.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. DRAWINGS ARE DIAGRAMMATIC AND NO ATTEMPT HAS BEEN MADE TO SHOW ALL EXISTING PIPING.
9. FOR PIPING AND EQUIPMENT DESIGNATION SYSTEM, SEE DRAWING G-007.

REGISTERED PROFESSIONAL ENGINEER ★ THOMAS G. MOSSINGER ★ No. M26798 Exp. 9/30/08 ★ MECHANICAL ★ STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

GENERAL MECHANICAL LEGENDS AND SYMBOLS

SCALE	NONE	W28.20-M-001	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 7; REF 8; REF 9;
REF 4; REF 5; REF 6;
REF 1: W:\D-ofters\SD\sd317A\ref\sd317bdr.mst
REF 2: W:\D-ofters\SD\sd317A\ref\W28280bdr-consultant.mst
REF 3:

PLOT SCALE: 0.166667:1
USER: fal
DATE: 26-AUG-2013 15:38
FILE: J:\SD\sd317A\W28280M001.R01

HVAC SYMBOLS AND LEGEND

- 40x12 — SHEET METAL DUCT (1ST FIGURE, INSIDE WIDTH; 2ND FIGURE, INSIDE DEPTH)
- 20x12 — SHEET METAL DUCT WITH INTERNAL INSULATION (DIMENSION SHOWN IS NET INSIDE)
- ARROW INDICATES DIRECTION OF AIR FLOW IN DUCT
- (16x12) — HIDDEN SHEET METAL DUCT (1ST FIGURE, INSIDE WIDTH; 2ND FIGURE, INSIDE DEPTH)
- SUPPLY DUCT SECTION UP
- RETURN DUCT SECTION DOWN
- EXHAUST DUCT SECTION UP
- SUPPLY DUCT SECTION DOWN
- RETURN DUCT SECTION UP
- EXHAUST DUCT SECTION DOWN
- ROUND ELBOW UP
- ROUND ELBOW DOWN
- TV — TURNING VANES
- TURNING VANES (SMOOTH RADIUS)
- TAKE-OFF WITH ADJUSTABLE TURNING VANES
- AD — ACCESS DOOR
- AP — ACCESS PANEL
- VD — VOLUME DAMPER WITH LOCKING QUADRANT
- M — MOTORIZED DAMPER
- DUCT TRANSFORMATION, MAXIMUM 15° INCLUDED ANGLE EXCEPT WHERE SHOWN OTHERWISE
- FDC — FLEXIBLE DUCT CONNECTION
- 400 / 12x12x1 (XX) — CEILING SUPPLY DIFFUSER
- 200 / 10x10 (XX) — CEILING RETURN REGISTER
- 200 / 10x10 (XX) — EXHAUST REGISTER
- 200 / 10x10 (XX) — SIDEWALL RETURN OR EXHAUST REGISTER
- 200 / 10x10 (XX) — SIDEWALL SUPPLY REGISTER

  TOP FIGURE INDICATES CFM
  ARROW INDICATES FLOW DIRECTION
  BOTTOM FIGURE INDICATES NECK, DIFFUSER, REGISTER, OR GRILLE SIZE
  TEXT IN CIRCLE INDICATES REGISTER DESIGNATION

- 9x9 / 9"ø — RECTANGULAR TO ROUND DUCT TRANSFORMATION
- FLEXIBLE DUCT (6'-0" MAXIMUM LENGTH)
- FDR — FIRE DAMPER
- SFD — SMOKE FIRE DAMPER
- DL (CFM | WxH) — DOOR LOUVER
- (T) W25-EF-302-00 — ROOM THERMOSTAT & EQUIPMENT NUMBER (SEE EQUIPMENT SCHEDULES)
- CENTRIFUGAL FAN
- INLINE AXIAL FAN, BELT DRIVEN
- WALL MOUNTED AXIAL FAN AND BOOT
- VANE AXIAL FAN
- PROPELLER FAN
- OFM — ORIFICE FLOW METER
- VFM — VENTURI FLOW METER
- FILTER
- PARALLEL BLADE DAMPER
- OPPOSED BLADE DAMPER
- SP — STATIC PRESSURE SENSOR
- SD — SMOKE DETECTOR
- POWER OR GRAVITY ROOF VENTILATOR (EXHAUST)
- BACKDRAFT DAMPER
- Llouver
- SR — SUPPLY REGISTER
- RR — RETURN REGISTER

3" ON ORIGINAL DOCUMENT
0 1 2 3

HVAC ABBREVIATIONS

AL	ACOUSTIC LINED
DB	DRY BULB
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SEN MBH	SENSIBLE 1000 BTU PER HOUR
TSP	TOTAL STATIC PRESSURE

1. ABBREVIATIONS SHOWN HERE SUPERCEDE THOSE FOUND ON DRAWINGS SD317-G-005 AND SD317-G-006.

HVAC NOTES

1. ABBREVIATIONS SHOWN HERE SUPERCEDE THOSE FOUND ON DRAWINGS SD317-G-005 AND SD317-G-006.
2. DUCTING DESIGNATIONS SHOWN ON THE DRAWINGS ARE SIMILAR TO DEFINED PIPING SYSTEM ON DRAWING SD317-W28-M-001.

REGISTERED PROFESSIONAL ENGINEER — THOMAS C. MOSSINGER — No. M26798 — Exp. 9/30/08 — MECHANICAL — STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	MIKE GABLE
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL
HVAC SYMBOLS, LEGENDS, AND ABBREVIATIONS

SCALE
DATE JAN2009
W28.20-M-002 DRAWING NUMBER
1 REV.

REF 7: W:\Drafters\SD\sd317A\ref\sd317hdr-mst
REF 8: W:\Drafters\SD\sd317A\ref\W28Hdr-consultant.mst
REF 9:
REF 4:
REF 5:
REF 6:
REF 1:
REF 2:
REF 3:
PLOT SCALE: 0.166667:1
USER: fah
DATE: 22-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820M002.R01

GENERAL MECHANICAL AND HVAC NOTES:

1. NOTES APPLY TO ALL MECHANICAL DRAWINGS.

2. NOT USED

3. ALL PIPE PENETRATIONS THROUGH DRY WALLS SHALL BE PROVIDED WITH SLEEVES PER TYPICAL DETAIL NUMBER TP302 TYP UNLESS NOTED OTHERWISE.

4. NOT ALL THE REQUIRED PIPE SUPPORTS ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL THE PIPE SUPPORTS SHOWN ON THE DRAWINGS AND ADDITIONAL PIPE SUPPORTS AS REQUIRED PER SPECIFICATIONS.

5. SUCTION AND DISCHARGE PIPING OF PUMPS SHALL BE INSTALLED AND SUPPORTED IN SUCH A MANNER SO THAT THEY DO NOT IMPART STRAIN ON PUMPS AND PUMP BASE.

6. NOT ALL THE REQUIRED FITTINGS ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL THE FITTINGS SHOWN ON THE DRAWINGS AND ADDITIONAL FITTINGS AS REQUIRED FOR PIPING ARRANGEMENTS SHOWN ON DRAWINGS AND PER EQUIPMENT FURNISHED.

7. PIPING IS SHOWN DIAGRAMATICALLY ON THE DRAWINGS. NOT EVERY OFFSET AND FITTING OR DIFFICULTY THAT MAY BE ENCOUNTERED HAS BEEN SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL MAKE MODIFICATIONS TO PIPING ALIGNMENT WHERE NECESSARY. MODIFICATIONS SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER AND SHALL BE DONE AFTER OWNER'S APPROVAL.

8. NOT ALL THE ITEMS ARE SHOWN IN PLANS, SECTIONS, DETAILS, SCHEMATICS, ISOMETRICS AND P&ID DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL THE ITEMS EVEN IF THEY ARE SHOWN AT ONLY ONE LOCATION ON THE DRAWINGS. IN ADDITION, THE CONTRACTOR SHALL PROVIDE ALL THE ITEMS REQUIRED PER SPECIFICATIONS WHETHER OR NOT THEY ARE SHOWN ON THE DRAWINGS.

9. IN CASE OF A CONFLICT BETWEEN THE DRAWINGS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE ENGINEER.

10. OVERALL PHYSICAL SIZE OF THE EQUIPMENT SELECTED BY THE CONTRACTOR SHALL NOT EXCEED THE SIZE SHOWN ON THE DRAWING OR SPECIFIED IN THE SPECIFICATIONS. CLEARANCES, DIMENSIONS OR SCALED DISTANCES SHOWN ON THE DRAWINGS SHALL BE MAINTAINED. ALL PROPOSED CHANGES AND ADDITIONS SHALL BE SUBMITTED FOR OWNER'S REVIEW AND SHALL BE DONE ONLY IF APPROVED BY OWNER AND AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL BEAR ALL COSTS OF THE ASSOCIATED CHANGES AND ADDITIONS INCLUDING CHANGES TO BUILDINGS AND STRUCTURE SIZES AND OWNER'S ENGINEERING COSTS.

11. WARNING SIGNS SHALL BE PROVIDED PER SPECIFICATIONS ON FRONT AND BACK OF ALL REMOTELY CONTROLLED EQUIPMENT.

12. NOT USED

13. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL EQUIPMENT BASE DETAILS.

14. INSTALL HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT AND DUCTWORK TO AVOID INTERFERENCES WITH STRUCTURE, PIPING, EQUIPMENT, CONDUIT, LIGHTING, ETC. DUCT WORK/SUPPORTS MINIMUM HEIGHT SHALL BE 8'-0" ABOVE FINISHED FLOOR. DUCT WORK AND ASSOCIATED ACCESSORIES MAY REQUIRE REROUTING TO FACILITATE THE PIPING, LIGHTING AND EQUIPMENT INSTALLATION. CONTRACTOR SHALL SUBMIT THE PLAN AND DETAIL FOR REVIEW AND APPROVAL PRIOR TO THE FABRICATION.

15. WHERE AHP OR IA PIPING BRANCHES OFF TO INDIVDUAL PNEUMATIC ACTUATORS, PROVIDE A TEE FITTING ROTATED UP SO THAT BRANCH LINE COMES OFF TOP OF MAIN AHP PIPE.

16. DUCT SIZES INDICATED ARE CLEAR DIMENSIONS INSIDE THE DUCT OR DUCT LINING.

17. AIRTIGHT ACCESS DOORS SHALL BE PROVIDED TO ALLOW INSPECTION OF ALL CONTROL DAMPERS AND FILTER. THE ACCESS DOORS SHALL BE A SIZE SUITABLE FOR DUCTWORK DIMENSIONS AND SHALL NOT BE LESS THAN 12"x12" UNLESS OTHERWISE SPECIFIED OR NOTED.

18. THE LOCATION OF PIPING AND VALVES TO THE AIR HANDLING EQUIPMENT SHALL NOT INTERFERE WITH FILTER REMOVAL OR AIR HANDLING EQUIPMENT SERVICING.

19. NOT ALL HANGERS, BRACKETS, SUPPORTS OR BRACES FOR DUCTWORK ARE INDICATED ON THE DRAWINGS. REFER TO THE SPECIFICATIONS FOR SUPPORT REQUIREMENTS IN ADDITION TO THOSE SHOWN ON THE DRAWINGS.

20. DUCT CONNECTIONS TO EQUIPMENT, PIPING CONNECTIONS TO EQUIPMENT, AND EQUIPMENT SUPPORTS SHALL BE VERIFIED AND ADJUSTED TO MATCH ACTUAL EQUIPMENT FURNISHED AT NO ADDITIONAL COST TO OWNER.

21. POWER VENTILATORS SHALL BE PROVIDED WITH 1/2" MESH STAINLESS STEEL BIRDSCREEN OVER ALL OPENINGS, UNLESS NOTED OTHERWISE.

22. ALL PIPING JOINTS SHALL BE PER PIPE SCHEDULE AND IN ACCORDANCE WITH THE SPECIFICATIONS, EXCEPT WHERE MODIFIED ON THE DRAWINGS WITH A WRITTEN NOTE.

23. REFER TO SPECIFICATIONS FOR WORK RESTRICTIONS AND CONSTRAINTS.

24. VERIFY LOCATIONS, ELEVATIONS, SIZES, CONNECTIONS AND MATERIALS OF EXISTING PIPING AND EQUIPMENT BEFORE FABRICATING NEW PIPE.

25. CONTRACTOR SHALL SUPPLY ONE MATCHING SPOOL PIECE FOR EACH SIZE (DIAMETER AND LENGTH) OF MAGNETIC FLOW METER, WHICH CAN BE USED TO REPLACE THE METER WHEN MAINTENANCE IS REQUIRED. EACH SPARE SPOOL PIECE SHALL BE CLEARLY LABELED BY SIZE AND SERVICE.

26. ALL PIPING UNDER STRUCTURES OR CONCRETE SLABS SHALL BE CONCRETE ENCASED PER TYPICAL DETAIL TP840 TYP & TP842 TYP. CONTINUE ENCASEMENT BEYOND THE EDGE OF FOOTING TO A DIMENSION EQUAL TO THE DISTANCE FROM BOTTOM OF FOOTING TO TOP OF PIPE.

27. THE FIRST PIPE JOINT OUT OF STRUCTURES OR OUT OF CONCRETE ENCASEMENTS SHALL BE AT THE EDGE OF WALL, OR TWO FEET FROM THE EDGE OF WALL OR END OF CONCRETE ENCASEMENT. THE NEXT TWO JOINTS SHALL BE MAXIMUM 4 FEET ON CENTER UNLESS NOTED OTHERWISE.

28. ALL FLEXIBLE COUPLINGS SHALL BE RESTRAINED PER APPLICABLE TYPICAL DETAILS TP204 TYP UNLESS SPECIFICALLY NOTED OTHERWISE.

29. PLUG VALVES: REFER TO SPECIFICATIONS FOR SPECIFIC INSTALLATION REQUIREMENTS REGARDING ORIENTATION OF SEAT (UPSTREAM VS. DOWNSTREAM) AND ORIENTATION OF VALVE STEM.

30. PIPE AND DUCT SIZES INDICATED ON P&IDs ARE FOR GENERAL REFERENCE ONLY. IN CASE OF A CONFLICT WITH MECHANICAL OR CIVIL DRAWINGS, THE PIPE AND DUCT SIZES INDICATED ON THE MECHANICAL AND CIVIL DRAWINGS SHALL GOVERN.

31. GAS TURBINE GENERATOR (GTG) LOCATIONS,ELEVATIONS AND CONNECTIONS SIZES ARE TO BE COORDINATED WITH EQUIPMENT FURNISHED. COORDINATE LOCATIONS OF ACCESS DOORS TO PREVENT CONFLICTS WITH PIPING AND GTG AND ASSOCIATED EQUIPMENT IS PROVIDED BY OWNER FOR CONTRACTOR INSTALLATION. SEE SECTION 01630. FOR ADDITIONAL REQUIRED VALVING APPURTENANT EQUIPMENT, PIPING AND INSTRUMENTATION SEE P&ID.

32. DRAINAGE PIPING IS TO BE CONNECTED TO THE NEAREST AVAILABLE EQUIPMENT DRAIN.

33. POWER GENERATION BUILDING DRAINAGE PIPING SHALL BE INSTALLED AS A COMBINATION WASTE AND VENT SYSTEM IN ACCORDANCE WITH CPC REQUIREMENTS.

34. NOT ALL VENT PIPING SHOWN FOR CLARITY. CONTRACTOR SHALL FURNISH AND INSTALL VENT PIPING PER EQUIPMENT MANUFACTURER, SYSTEM SUPPLIER, AND PER CODE REQUIREMENTS.

35. ALL PRESSURE, FLOW, TEMPERATURE CONTROL/MONITOR INSTRUMENTS ARE SHOWN ON P&ID AND ELECTRICAL DRAWINGS.

36. CONTRACTOR SHALL DISCONNECT EXISTING 5" NG STEEL PIPE AND CONNECT TO NEW 5" NG PIPE. A TEMPORARY 5" NG BY-PASS PIPE WITH SHUT-OFF VALVES CONNECTRD TO EXISTING 5" NG AT THE EFFLUENT CHANNEL WALL MAY BE INSTALLED TO FACILITATE THE NEW WORK IN THE AREA AFFECTED. PURGE NEW 5" NG CONNECTING PIPING WITH NITROGEN PRIOR TO OPENING THE SHUT-OFF VALVES CONNECTED TO EXISTING 5" NG PIPES. SUBMIT PROPOSED PIPING INSTALLATION PLAN AND DETAILS AND OPERATING PROCEDURES FOR REVIEW.

REF 7; REF 8; REF 9;

REF 4; REF 5; REF 6;

REF 1: W:\D-afters\SD\sd317A\ref\W2820bdr-consultant.mst
REF 2: W:\D-afters\SD\sd317A\ref\sd317bdr.mst
REF 3:

USER: fsh
DATE: 26-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820M003.R01

PLOT SCALE: 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A	JK		

REGISTERED PROFESSIONAL ENGINEER
THOMAS C. MOSSINGER
No. M26798
Exp. 5/30/08
MECHANICAL
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	JCI/NP/MIKE GABLE
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

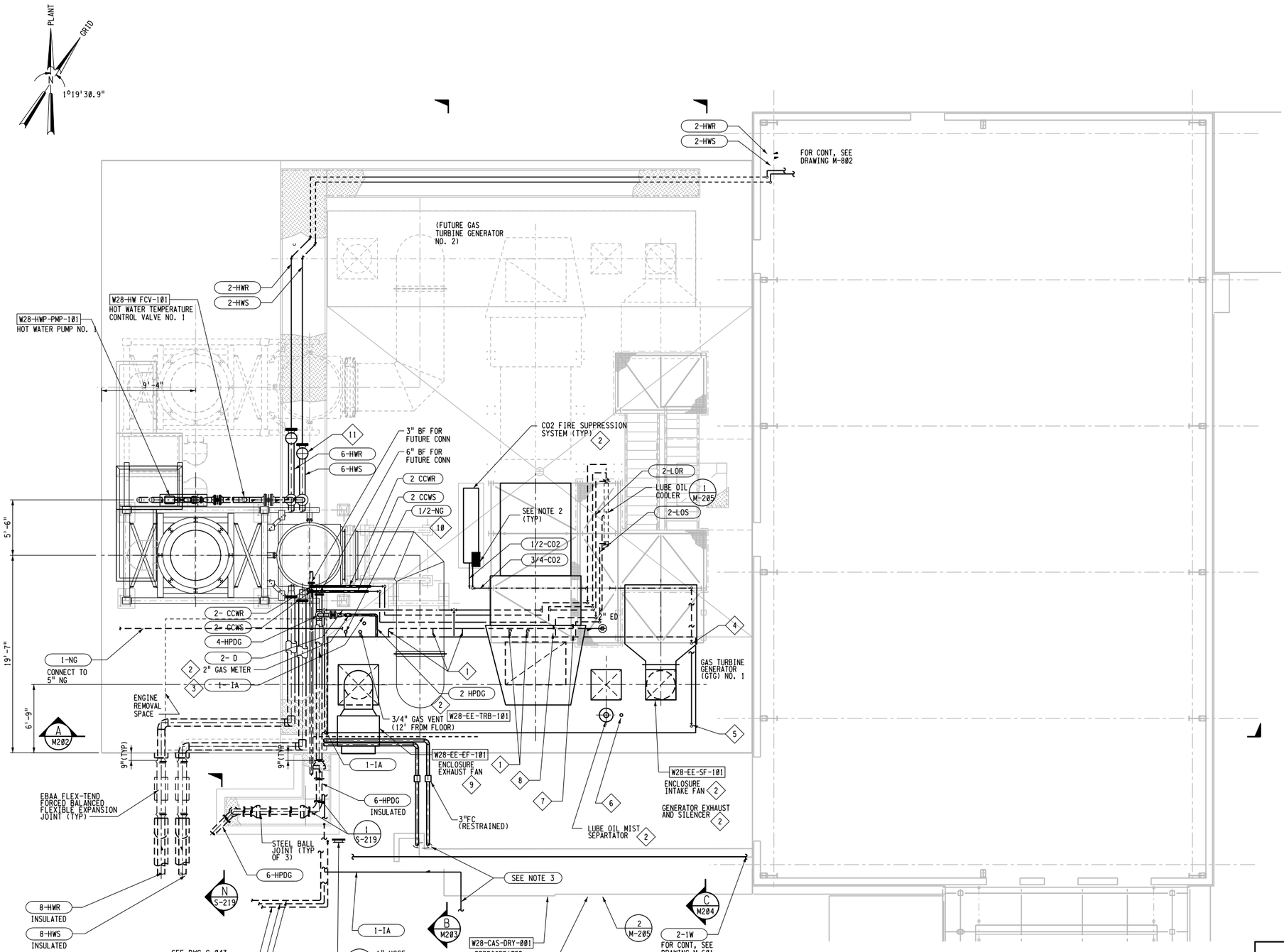
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL
MECHANICAL AND HVAC NOTES

SCALE NONE
DATE JAN2009

W28.20-M-003
DRAWING NUMBER

1
REV.

REF 7: J:\SD\sd317A\HPULMST
REF 8: J:\SD\sd317A\w2820m100.MST
REF 4: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 5:
REF 6:
REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr.consultant.mst
REF 2:
REF 3:
PLOT SCALE: 10.666667:1
USER: fal
DATE: 26-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820M101.R01

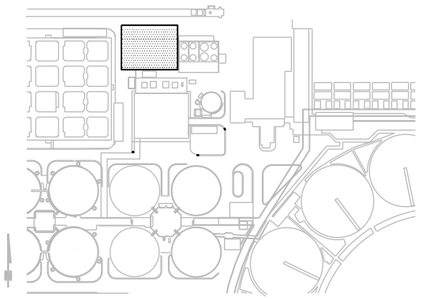


NOTES:

1. PROVIDE VENT PIPING TO OUTSIDE GTG ENCLOSURE AS REQ'D BY GAS TURBINE SYSTEM SUPPLIER.
2. 3-WAY CONTROL VALVES AND PRESSURE SWITCHES ON CO2. FIRE SUPPRESSION SYSTEM NOT SHOWN FOR CLARITY. SEE SYSTEM SUPPLIER DRAWINGS PROVIDE 1" VENT TO OUTSIDE OF BUILDING.
3. FOR CONTINUATION SEE DRAWING M-107.
4. FOR HOT WATER HEATING PIPING CONTINUATION SEE M-802.
5. FOR HVAC VAV UNITS SEE DRAWING M-802.
6. INSULATE ALL HPDG, HWR AND HWS PIPE.

KEY NOTES:

1. PROVIDE PLUGS ON 2" OIL DRAIN, 2" OIL PAN DRAIN, 3/4" LUBE OIL FILTER DRAIN, AND 2" GENERATOR OIL DRAIN AT SIDE OF GENERATOR SKID. CONNECT 3/4" AIR DUCT DRAIN, COMBUSTOR DRAIN AND 3/4" GAS DRAIN TO A 1" D AND HARD PIPE TO EQUIPMENT DRAIN.
2. DISTRICT-FURNISHED EQUIPMENT. INSTALL BY INSTALLATION CONTRACTOR. CONTRACTOR SHALL PROVIDE AND INSTALL GAS TURBINES GENERATOR ANCHOR BOLTS. FOR BIDDING PURPOSES CONTRACTOR SHALL PROVIDE 12- 1 3/4" Ø X 2'-6" EMBEDMENT HIGH STRENGTH STEEL ANCHOR BOLTS FOR GENERATOR FOUNDATION INSTALLATIONS.
3. AIR TOOL CONNECTOR. SEE TM258 TYP.
4. CONNECT 3/4" CO2 INLET.
5. CONNECT 1/2" CO2 INLET.
6. CONNECT 1" LUBE OIL RETURN FROM SEPARATOR.
7. CONNECT 2" LUBE OIL RETURN FROM COOLER.
8. CONNECT 2" LUBE OIL TO COOLER.
9. PROVIDE 1" GAS VENT WITH FLAME ARRESTER TERMINATED 12'-0" ABOVE GROUND.
10. 1/2" NG CONNECT TO 3/8" GAS FUEL TORCH CONNECTION AT SKID.
11. 6" TEE WITH BLIND FLANGE.



KEY MAP

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT
EBMUD

DESIGN BY:	DT/NT
DRAWN BY:	JCI/NP/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

PGS 2 BUILDING FLOOR PLAN

SCALE 3/16"=1'-0"
DATE JAN2009

W28.20-M-101
DRAWING NUMBER

1
REV.

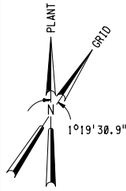
REF 7: J:\SD\sd317A\317EDIC2demo.mst
REF 8:
REF 9:

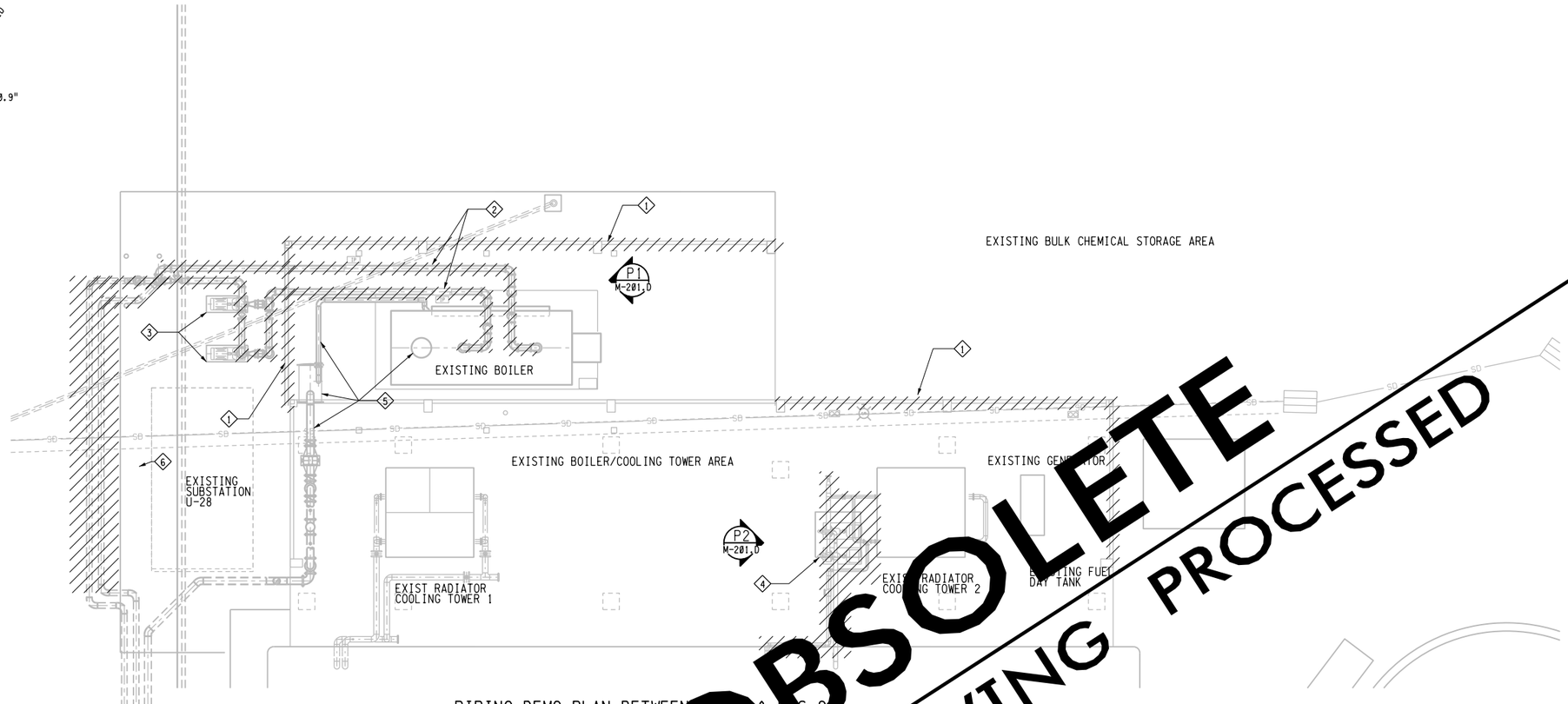
REF 4: J:\SD\sd317A\317-DIC1demo.mst
REF 5: J:\SD\sd317A\317-DIC2demo.mst
REF 6: J:\SD\sd317A\317-DIC2demo.mst

REF 1: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 2: REF: W2828xref-317.dgn
REF 3: W:\Drafters\SD\sd317A\ref\W2828bdr_consultant.mst

USER: fai
DATE: 23-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820M101D.R01

PLOT SCALE: 16:1





PIPING DEMO PLAN BETWEEN PGS-1 & PGS-2

1/8"=1'-0"

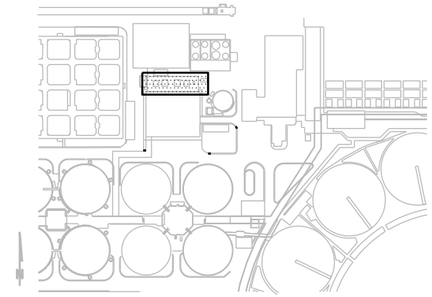
GENERAL NOTES:

1. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS.
2. EQUIPMENT PIPING AS SHOWN ARE APPROX LOCATIONS ONLY. CONTRACTOR SHALL VERIFY LOCATIONS OF PRIOR TO DEMO WORK.
3. FOR STRUCTURAL DEMO WORK SEE DRAWING S-101D.

KEY NOTES:

1. REMOVE EXISTING SCREEN AS HATCHED.
2. REMOVE 8" HOT WATER PIPING AND ASSOCIATED APPURTENEANCES, UNLESS NOTED OTHERWISE.
3. RELOCATE EXISTING HOT WATER PUMPS. SEE DWG M-107 FOR RELOCATION AND MODIFICATION.
4. RELOCATE EXISTING COOLING TOWER PIPING, VALVES AND PUMPS.SEE DWG M-107 FOR PIPING AND PUMPS MODIFICATION AND RELOCATION. REMOVE EXISTING HOT WATER PIPING, SUPPORTS AND CONCRETE PAD.
5. DO NOT DISTURB EXISTING GAS PIPING, BOILER AND BLOWER.
6. EXISTING HIGH PRESSURE GAS PIPE.

OBSOLETE
RECORD DRAWING PROCESSED



KEY MAP

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

EBMUD

DESIGN BY:	DAVE TSAI
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

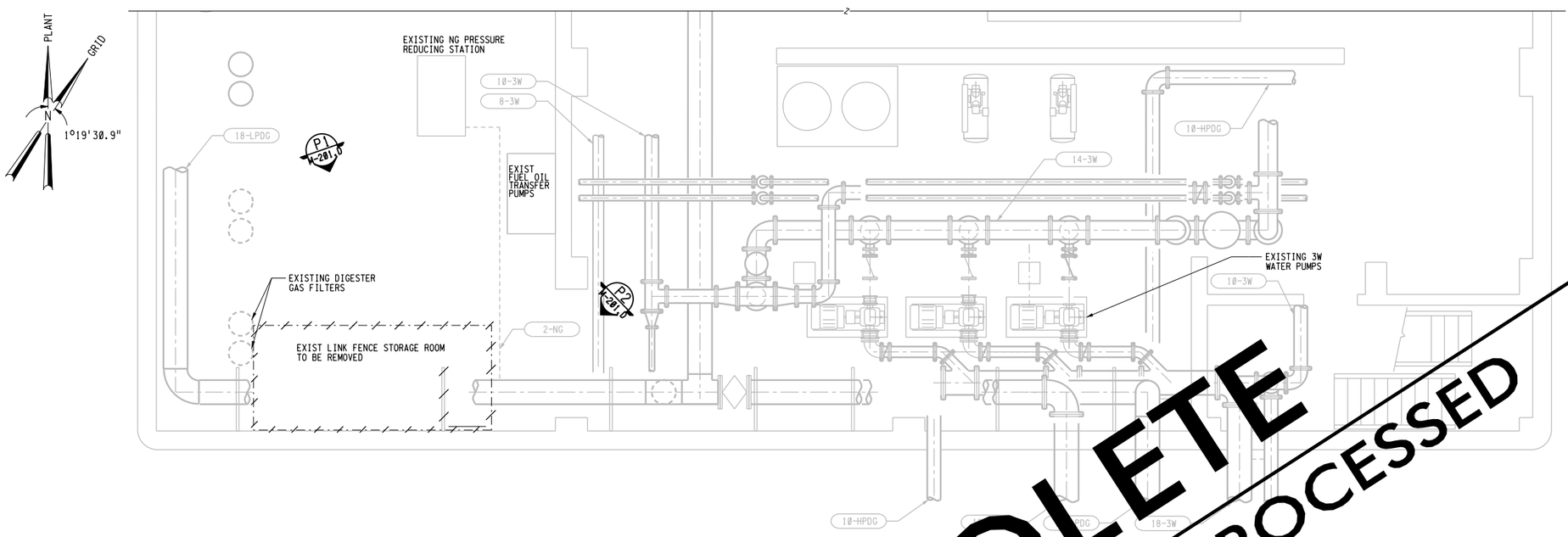
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL
MECHANICAL DEMOLITION PLAN

SCALE 1/8"=1'-0"
DATE JAN2009

W28.20-M-101.D
DRAWING NUMBER

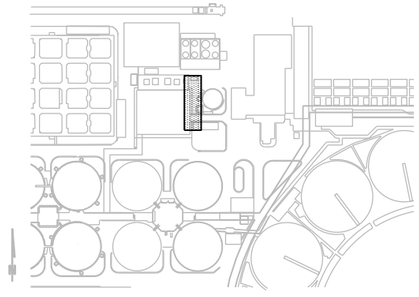
1
REV.



PARTIAL BASEMENT PLAN - PGS 1 BUILDING

1/4"=1'-0"

OBSOLETE
RECORD DRAWING PROCESSED



KEY MAP

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/09
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

MECHANICAL DEMOLITION PLAN

SCALE 1/4"=1'-0"
DATE JAN2009
W28.20-M-102.D
DRAWING NUMBER
1
REV.

REF 1: W:\Drafters\SD\sd317A\ref\W2820dwr_consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317dwr.mst
REF 3: J:\SD\sd317A\W2820m50k.MST
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

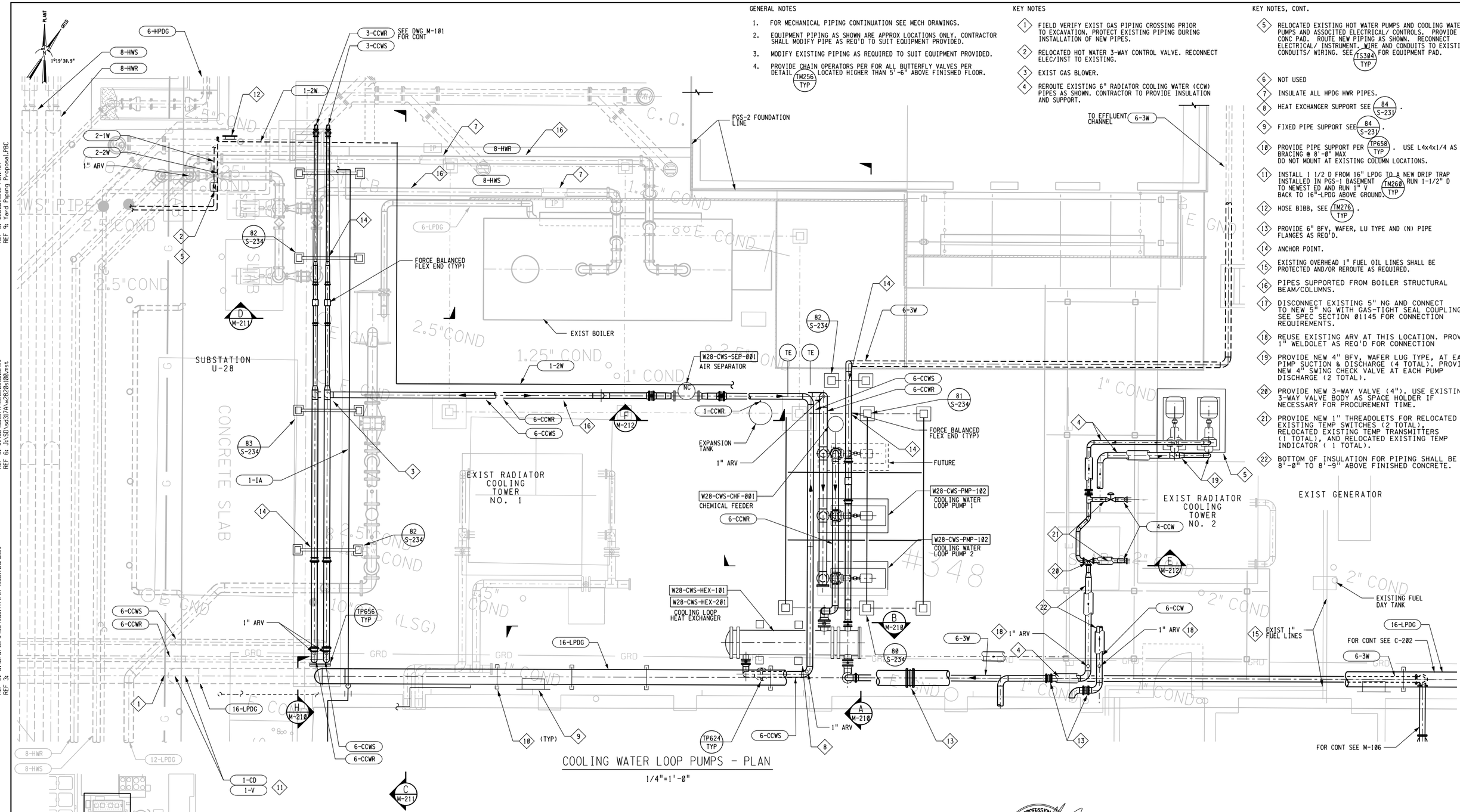
USER: fah
DATE: 22-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820M102D.R01
PLOT SCALE: 8:1

REF 7: W:\Drafters\SD\sd317A\w2820\w2000xsite.mst
REF 8: W:\Drafters\SD\sd317A\w2820\w2820xsite.MST
REF 9: Yard Piping Proposal.PRC

REF 4: J:\SD\sd317A\w2820m502.MST
REF 5: J:\SD\sd317A\w2820m100.mst
REF 6: J:\SD\sd317A\w2820s100.mst

USER: fal
DATE: 26-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820M107.R02
PLOT SCALE: 0.000034:1

REF 1: W:\Drafters\SD\sd317A\ref\W2820dub-consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317Abr.mst
REF 3:



COOLING WATER LOOP PUMPS - PLAN

1/4"=1'-0"

GENERAL NOTES

1. FOR MECHANICAL PIPING CONTINUATION SEE MECH DRAWINGS.
2. EQUIPMENT PIPING AS SHOWN ARE APPROX LOCATIONS ONLY. CONTRACTOR SHALL MODIFY PIPE AS REQ'D TO SUIT EQUIPMENT PROVIDED.
3. MODIFY EXISTING PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
4. PROVIDE CHAIN OPERATORS PER FOR ALL BUTTERFLY VALVES PER DETAIL TM256 TYP LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.

KEY NOTES

1. FIELD VERIFY EXIST GAS PIPING CROSSING PRIOR TO EXCAVATION. PROTECT EXISTING PIPING DURING INSTALLATION OF NEW PIPES.
2. RELOCATED HOT WATER 3-WAY CONTROL VALVE. RECONNECT ELEC/INST TO EXISTING.
3. EXIST GAS BLOWER.
4. REROUTE EXISTING 6" RADIATOR COOLING WATER (CCW) PIPES AS SHOWN. CONTRACTOR TO PROVIDE INSULATION AND SUPPORT.

KEY NOTES, CONT.

5. RELOCATED EXISTING HOT WATER PUMPS AND COOLING WATER PUMPS AND ASSOCITED ELECTRICAL/ CONTROLS. PROVIDE NEW CONC PAD. ROUTE NEW PIPING AS SHOWN. RECONNECT ELECTRICAL/ INSTRUMENT. WIRE AND CONDUITS TO EXISTING CONDUITS/ WIRING. SEE TS304 TYP FOR EQUIPMENT PAD.
6. NOT USED
7. INSULATE ALL HPDG HWR PIPES.
8. HEAT EXCHANGER SUPPORT SEE 84 S-237.
9. FIXED PIPE SUPPORT SEE 84 S-237.
10. PROVIDE PIPE SUPPORT PER TP658 TYP. USE L4x4x1/4 AS BRACING @ 8'-0" MAX DO NOT MOUNT AT EXISTING COLUMN LOCATIONS.
11. INSTALL 1 1/2 D FROM 16" LPDG TO A NEW DRIP TRAP INSTALLED IN PGS-1 BASEMENT RUN 1-1/2" D TO NEWEST ED AND RUN 1" V BACK TO 16"-LPDG ABOVE GROUND. TM260 TYP
12. HOSE BIBB, SEE TM276 TYP.
13. PROVIDE 6" BFV, WAFER, LU TYPE AND (N) PIPE FLANGES AS REQ'D.
14. ANCHOR POINT.
15. EXISTING OVERHEAD 1" FUEL OIL LINES SHALL BE PROTECTED AND/OR REROUTE AS REQUIRED.
16. PIPES SUPPORTED FROM BOILER STRUCTURAL BEAM/COLUMNS.
17. DISCONNECT EXISTING 5" NG AND CONNECT TO NEW 5" NG WITH GAS-TIGHT SEAL COUPLING. SEE SPEC SECTION 01145 FOR CONNECTION REQUIREMENTS.
18. REUSE EXISTING ARV AT THIS LOCATION. PROVIDE 1" WELDOLET AS REQ'D FOR CONNECTION
19. PROVIDE NEW 4" BFV, WAFER LUG TYPE, AT EACH PUMP SUCTION & DISCHARGE (4 TOTAL). PROVIDE NEW 4" SWING CHECK VALVE AT EACH PUMP DISCHARGE (2 TOTAL).
20. PROVIDE NEW 3-WAY VALVE (4"). USE EXISTING 3-WAY VALVE BODY AS SPACE HOLDER IF NECESSARY FOR PROCUREMENT TIME.
21. PROVIDE NEW 1" THREADOLETS FOR RELOCATED EXISTING TEMP SWITCHES (2 TOTAL), RELOCATED EXISTING TEMP TRANSMITTERS (1 TOTAL), AND RELOCATED EXISTING TEMP INDICATOR (1 TOTAL).
22. BOTTOM OF INSULATION FOR PIPING SHALL BE 8'-0" TO 8'-9" ABOVE FINISHED CONCRETE.

KEY MAP

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		
1	25FEB2009	ADDENDUM NO. 2 PER SD317A	DT	TGM	SKW

REGISTERED PROFESSIONAL ENGINEER THOMAS G. MOSSINGER No. M26798 Exp. 9/30/08 MECHANICAL STATE OF CALIFORNIA

CONSULTANT

DESIGN BY:	DT/NT
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

COOLING WATER LOOP PUMPS PLAN

SCALE 1/4"=1'-0"
DATE JAN2009
W28.20-M-107
DRAWING NUMBER
2
REV.

REF 7:
REF 8:
REF 9:
REF 4:
REF 5:
REF 6:
REF 1: W:\D-afters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2: W:\D-afters\SD\sd317A\ref\sd317bdr.mST
REF 3:
USER: fah
DATE: 26-AUG-2013 15:38
FILE: J:\SD\sd317A\W2820M201D.R01
PLOT SCALE: 81



REMOVE 8" HOT WATER PIPING AND PIPE SUPPORT

DETAIL P1 — NTS — M-101.D



REMOVE COOLING TOWER PIPING AND APPURTENANCES COOLING WATER PUMPS

DETAIL P2 — NTS — M-101.D

OBSOLETE
RECORD DRAWING PROCESSED



RELOCATE EXIST CONDENSATE TRAP AS REQUIRED TO CLEAR NEW 12" 3W PIPE INSTALLATION

REMOVE EXIST LINK FENCE AND CONTENTS PER OWNERS DIRECTION

DETAIL P1 — NTS — M-102.D



REORIENT/RELOCATE EXIST CONDENSATE TRAP AS REQUIRED TO CLEAN NEW 12" 3W PIPE INSTALLATION

DETAIL P2 — NTS — M-102.D

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

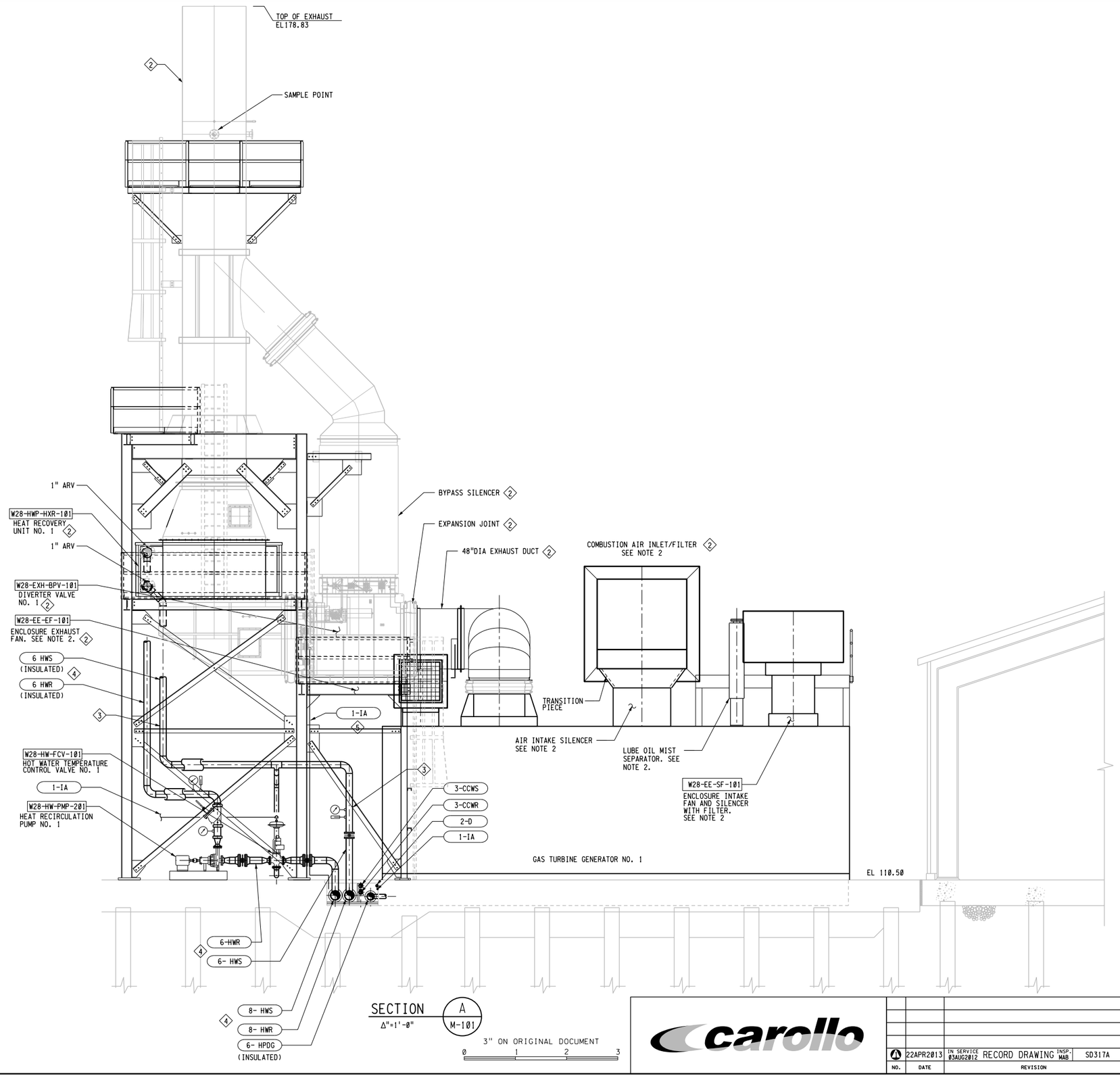
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

MECHANICAL DEMOLITION DETAILS

SCALE	NONE	W28.20-M-201.D	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 7:
REF 8:
REF 9:
REF 4: J:\SD\sd317A\x2820x200.MST
REF 5: J:\SD\sd317A\MRULMST
REF 1: W:\Drafters\SD\sd317A\ref\sd317dbf.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820dbf_consultant.mst
REF 3:
USER: fai
DATE: 26-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M202.R01
PLOT SCALE: 8:1



SECTION A
Δ"=1'-0"
M-101

3" ON ORIGINAL DOCUMENT
0 1 2 3

NOTES:

1. DRAIN PIPE SLOPE AT 1/4" PER FOOT.
2. DISTRICT-FURNISHED EQUIPMENT AND INSTALLED BY INSTALLATION CONTRACTOR.
3. ALL DUCT SIZES SHOWN ARE APPROX. ACTUAL SIZES TO BE DETERMINED BY EQUIPMENT MANUFACTURER.
4. SEE SPEC. FOR PIPE AND DUCT SUPPORT.

KEY NOTES:

1. EQUIPMENT, SUPPORT SUPPLIED BY TURBINE GENERATOR MANUFACTURER.
2. PROVIDED BY HEAT RECOVERY SYSTEM SUPPLIER (HRG) AND INSTALLED BY THE INSTALLATION CONTRACTOR.
3. PROVIDE PIPE SUPPORTS, SEE SPECS.
4. PROVIDE INSULATION. SEE SPEC 15082.
5. CONNECT 1"-IA TO BYPASS DIVERTER VALVES WITH 1" PV.

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DT/NT
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

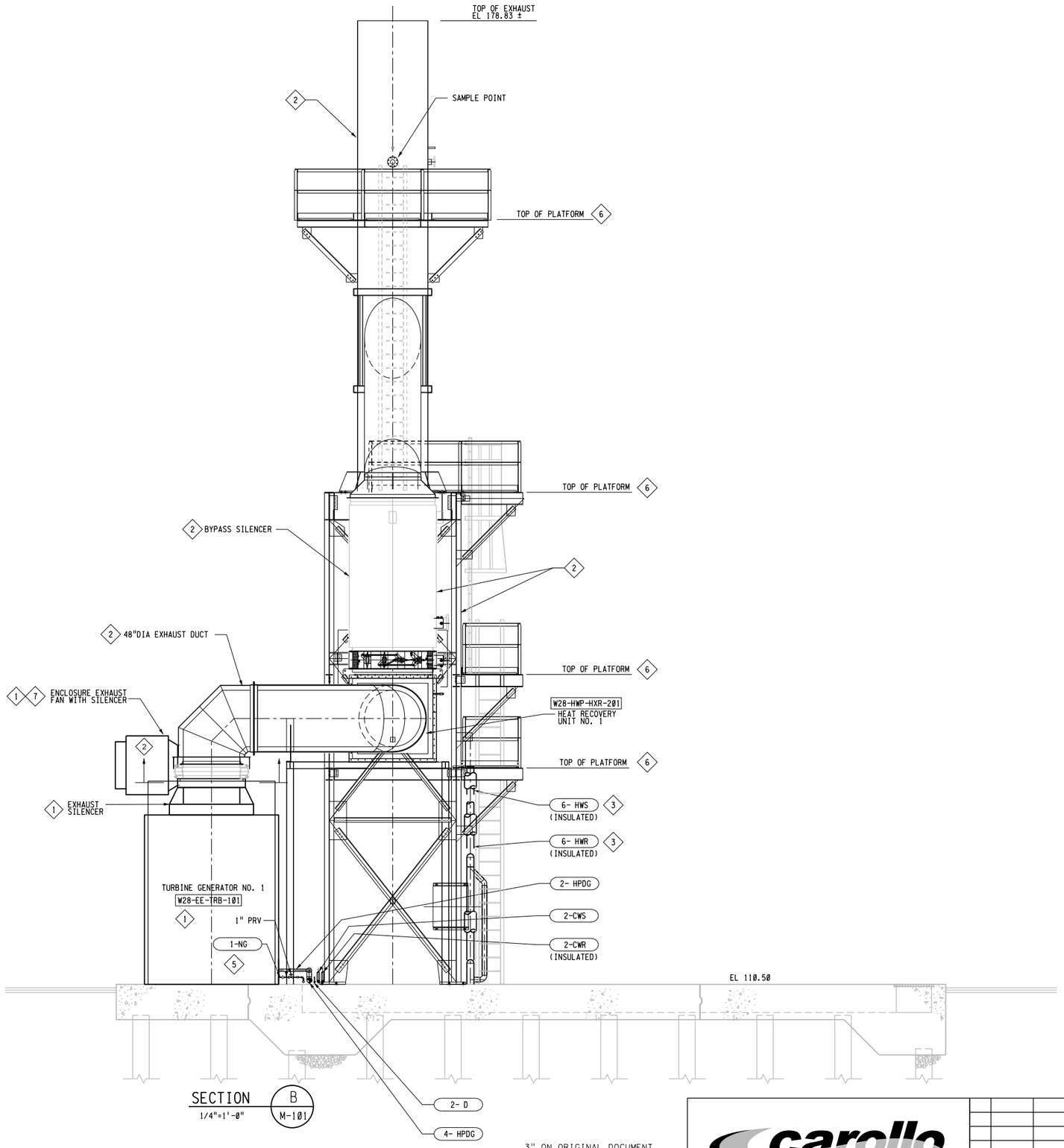
PGS 2 BUILDING SECTION 1

EBMUD

SCALE 1/4"=1'-0"
DATE JAN2009

W28.20-M-202
DRAWING NUMBER

1
REV.



KEY NOTES:

1. ITEMS FURNISHED BY DISTRICT. INSTALLED BY GENERAL CONTRACTOR.
2. ENGINE EXHAUST AND BYPASS DUCT AND SUPPORT TO BE PROVIDED BY HEAT RECOVERY SYSTEM SUPPLIER. (SEE SPEC SECTION 11004). PROVIDE SUPPORT WITH SEISMIC BRACE AND PIPE ROLLER AS REQUIRED BY SMACNA AND CODES. SUBMIT CALCULATIONS, DETAILED DESIGN & LAYOUT PLAN FOR REVIEW.
3. PIPE SUPORT, SEE SPECS.
4. PROVIDE PIPE SUPPORT PER DETAIL TM300/TYP.
5. 1"-NG CONNECT TO NEW 5"-NG.
6. PLATFORM ELEVATION AND SIZE TO BE DETERMINED BY HEAT RECOVER SYSTEM SUPPLIER.
7. SILENCER AND DUCT WORK SUPPORT TO BE PROVIDED AND INSTALLED BY CONTRACTOR. SUBMIT DESIGN /LAYOUT FOR REVIEW.

REGISTERED PROFESSIONAL ENGINEER
THOMAS C. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

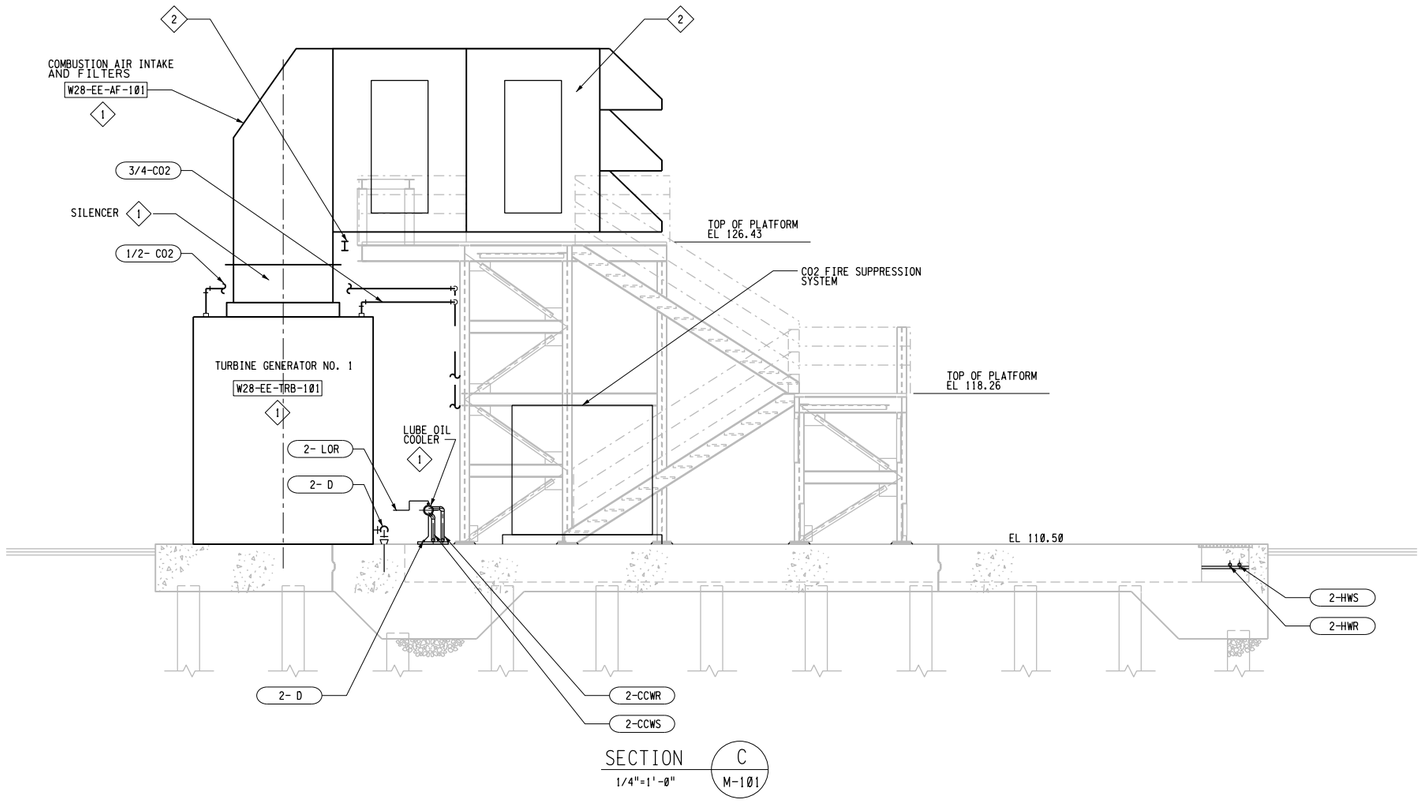
carollo

SD317A - PGS RENEWABLE ENERGY EXPANSION		
CONSULTANT	DESIGN BY: DT/NT	EAST BAY MUNICIPAL UTILITY DISTRICT SPECIAL DISTRICT NO. 1 OAKLAND, CALIFORNIA
	DRAWN BY: JCI/MJG	
	DESIGN CHECKED BY: R.P.E. No. M21977 DAN CROSBY	
	PROJECT MANAGER R.P.E.No. M26798 TOM MOSSINGER	MAIN WASTEWATER TREATMENT PLANT POWER GENERATION STATION 2 MECHANICAL
	APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392 SARWAN WASON	
EBMUD	PROJECT MANAGER R.P.E. No. C61336 JOHN A KYSER	PGS 2 BUILDING SECTION 2
	RECOMMENDED: SR. ENGINEER R.P.E. No. M30703 JOSEPH L WONG	SCALE 1/4"=1'-0" DATE JAN2009 W28.20-M-203 DRAWING NUMBER 1 REV.

REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr.consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 3: W:\Drafters\SD\sd317A\ref\sd317cdr.mst
REF 4:
REF 5:
REF 6: J:\SD\sd317A\HRLMST
REF 7:
REF 8:
REF 9:
PLOT SCALE: 8:1
USER: fal
DATE: 28-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M203.R01

KEY NOTES

1. DISTRICT-FURNISHED EQUIPMENT INSTALLED BY INSTALLATION CONTRACTOR.
2. AIR DUCT AND INTAKE FILTER SUPPORTS TO BE PROVIDED AND INSTALL BY THE CONTRACTOR. SUBMIT DESIGN/LAYOUT AND CALCULATIONS FOR REVIEW.



SECTION C
1/4"=1'-0"
M-101

REF 7: W28-EE-AF-101
REF 6: W28-EE-TRB-101
REF 4: W28-EE-AF-101
REF 5: W28-EE-TRB-101

REF 1: W:\D-afters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2: W:\D-afters\SD\sd317A\ref\sd317bdr.mst
REF 3: J:\SD\sd317A\W2820M2022.R01

USER: fah
DATE: 22-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M204.R01
PLOT SCALE: 81

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT

DESIGN BY:	DT
DRAWN BY:	MGJ
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON

EBMUD

PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

REGISTERED PROFESSIONAL ENGINEER
THOMAS C. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

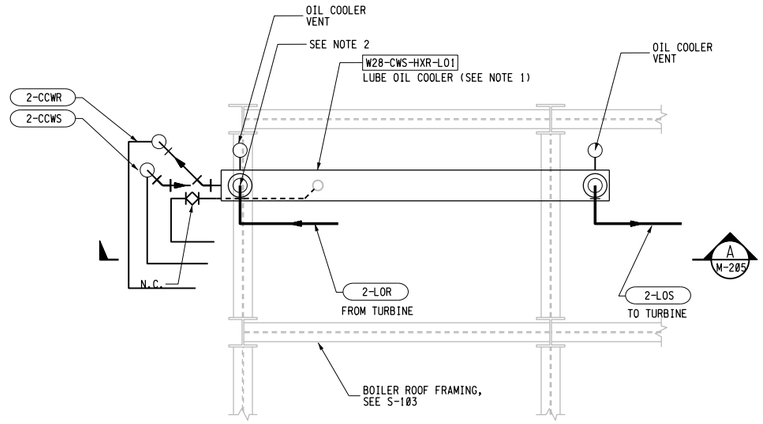
PGS 2 BUILDING SECTION 3

SCALE 1/4"=1'-0"
DATE JAN2009

W28.20-M-204
DRAWING NUMBER

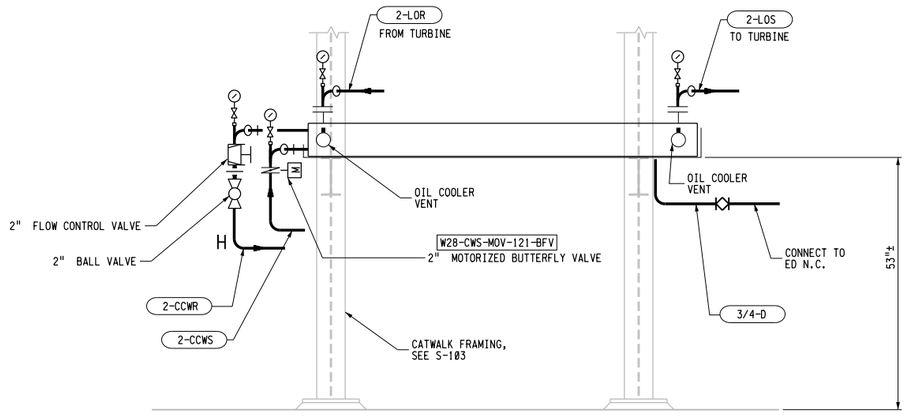
1
REV.

REF 7:
REF 8:
REF 9:
REF 4:
REF 5:
REF 6:
REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd176bf.mst
REF 3:
USER: fah
DATE: 26-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M205.R01
PLOT SCALE: 2.666667:1



PLAN- LUBE OIL COOLER DETAIL — 1 / M-101

3/4" = 1'-0"



SECTION — A / M-205

3/4"=1'-0"

GENERAL NOTES:

1. DISTRICT-FURNISHED EQUIPMENT AND INSTALLED BY INSTALLATION CONTRACTOR.
2. ALL CONNECTIONS TO THE LUBE OIL COOLER MAY REQUIRE REDUCER OR INCREASER PRIOR TO MAKING THE CONNECTION.

REGISTERED PROFESSIONAL ENGINEER — THOMAS G. MOSSINGER — No. M26798 — Exp. 9/30/09 — MECHANICAL — STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT — EBMUD

DESIGN BY:	DT/NT
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

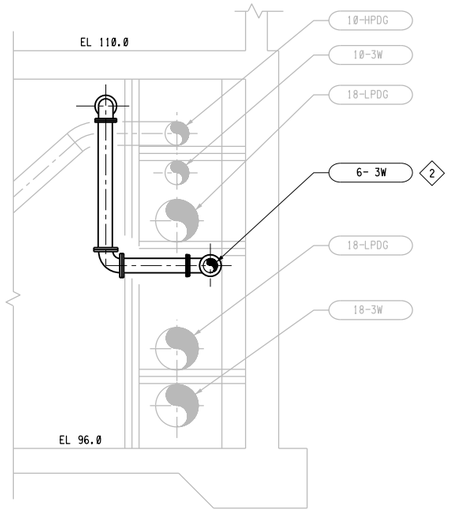
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2

MECHANICAL

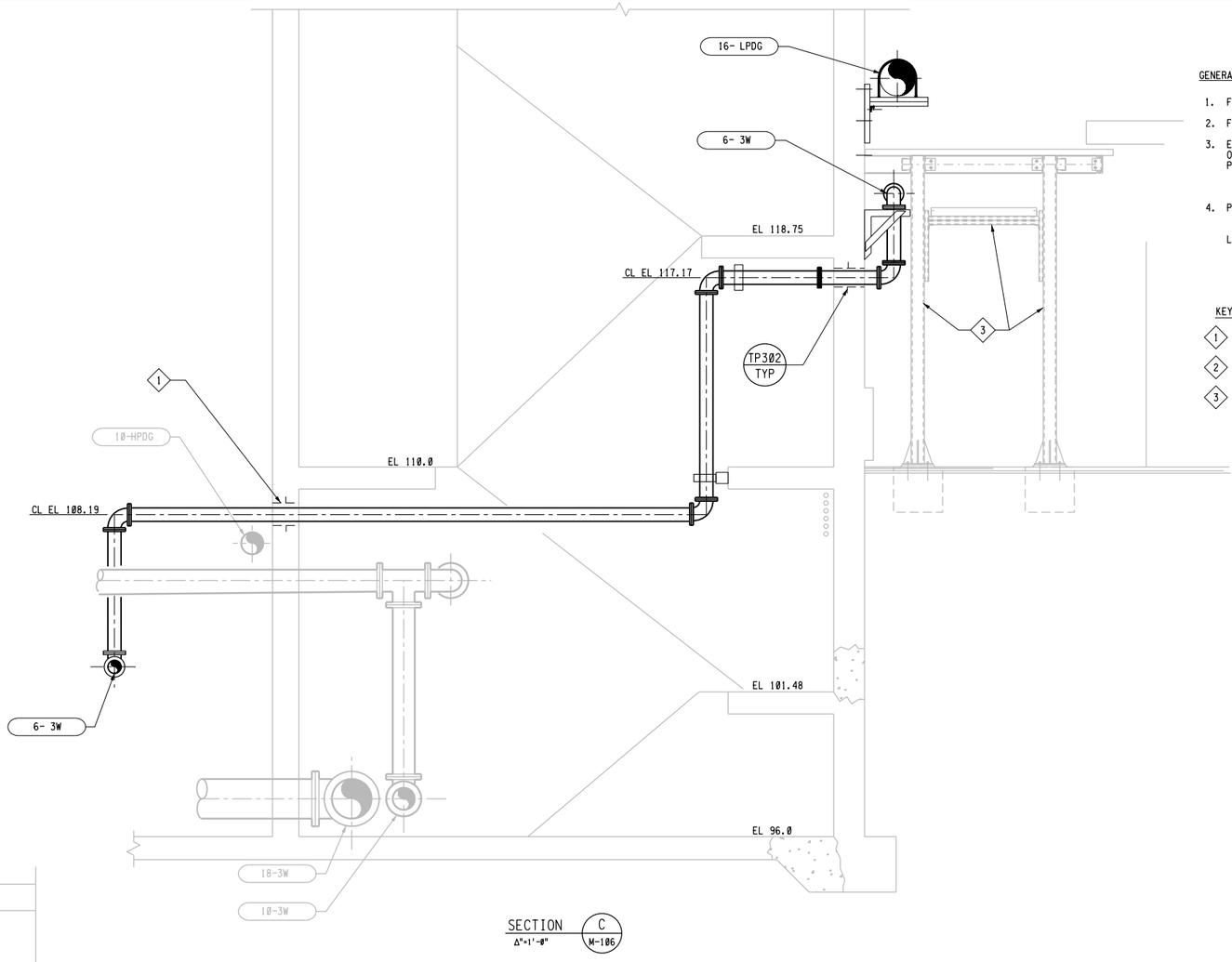
AIR COMPRESSOR/OIL LUBE COOLER DETAILS

SCALE 3/4"=1'-0"
DATE JAN2009
W28.20-M-205 — DRAWING NUMBER
1 — REV.

REF 7:
REF 8:
REF 4:
REF 5:
REF 6:
REF 1: W:\Drafters\SD\sd317A\ref\W2020dbr_consultant.mst
REF 2:
REF 3:
USER: fah
DATE: 26-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M209R01
PLOT SCALE: 5.333333:1



SECTION A
Δ"=1'-0" M-106



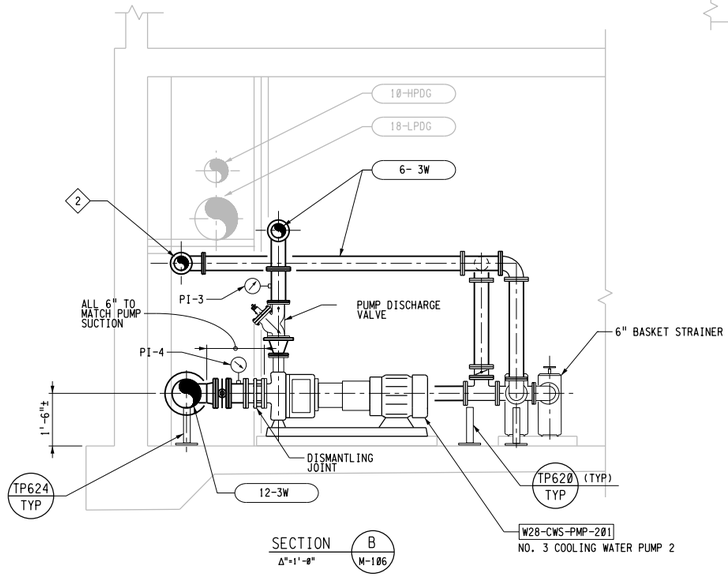
SECTION C
Δ"=1'-0" M-106

GENERAL NOTES

1. FOR MECHANICAL PIPING CONTINUATION SEE MECH DRAWINGS.
2. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS.
3. EQUIPMENT DRAINS AS SHOWN ARE ESTIMATED LOCATIONS ONLY. CONTRACTOR SHALL MODIFY LOCATIONS OF PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
4. PROVIDE CHAIN OPERATORS PER DETAIL TM256 TYP FOR ALL BUTTERFFLY VALVES LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.

KEY NOTES

1. SMOOTH CORE DRILL WALL PROVIDE LINK SEAL GROUT PACK ANNULAR SPACE WITH NON SHRINK GROUT.
2. ADJUST HEIGHT OF PIPE TO FACILITATE THE SUPPORT TO EXISTING CHANNEL SUPPORT.
3. SEE STRUCTURAL DRAWINGS FOR PIPE SUPPORTS.



SECTION B
Δ"=1'-0" M-106

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DT/NT
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

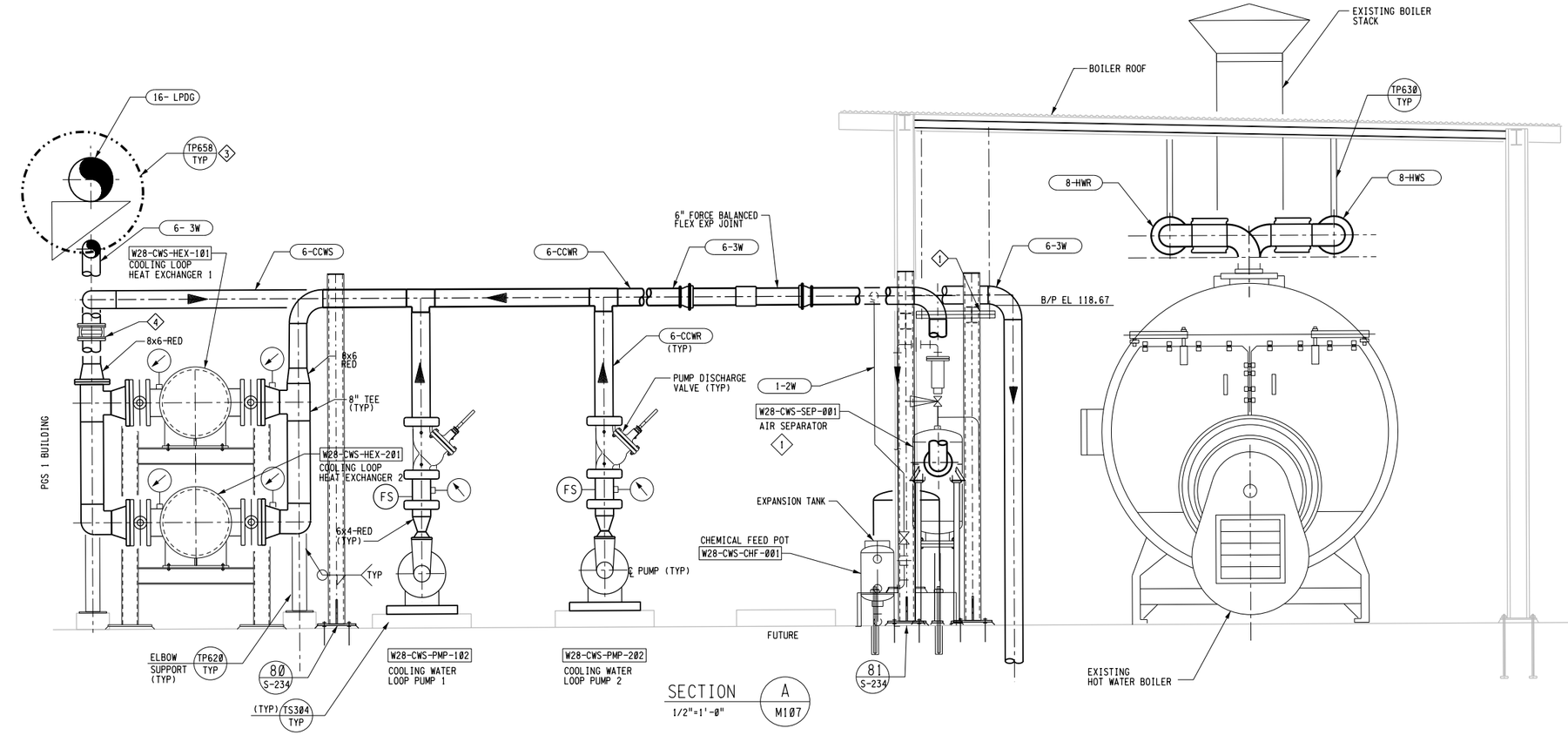
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

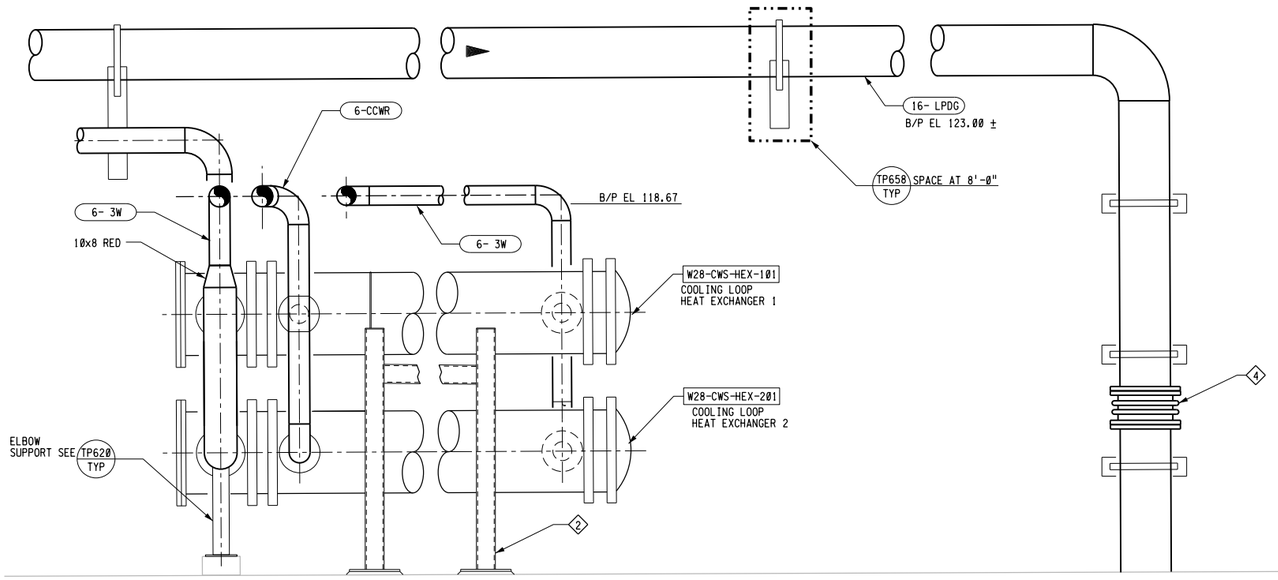
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL
NO. 3 COOLING WATER PUMP
SECTIONS AND DETAILS

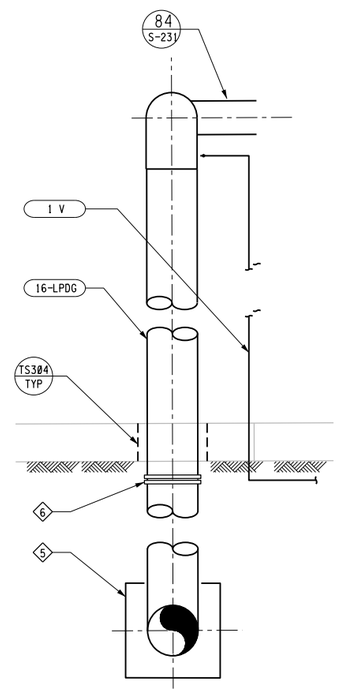
SCALE 3/8"=1'-0"
DATE JAN2009
W28.20-M-209
DRAWING NUMBER
1
REV.

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

REF 7:
REF 8:
REF 9:
REF 4: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 5:
REF 6:
REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2:
REF 3:
USER: fsh
DATE: 23-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M210.R01
PLOT SCALE: 4:1







GENERAL NOTES:

1. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS.
2. EQUIPMENT DRAINS AS SHOWN ARE ESTIMATED LOCATIONS ONLY. CONTRACTOR SHALL MODIFY LOCATIONS OF DRAIN PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
3. PROVIDE 1/4" CLEARANCE BETWEEN PIPE AND SLAB.

KEY NOTES:

1. PIPE SUPPORT SIMILAR TO TP652 TYP . WELD ALL AROUND EXISTING COLUMN.
2. HEAT EXCHANGER SUPPORT SEE EE S231 .
3. USE L4x4x1/4 AS BRACING @ 8'-0". DO NOT PROVIDE AT EXISTING COLUMN LOCATIONS. DO NOT DAMAGE EXISTING REBAR.
4. BELLOWS TYPE EXPANSION JOINT WITH GUIDES. LOCATION OF GUIDES APPROXIMATE. LOCATION AND GUIDES PER MANUFACTURER.
5. ANCHOR BLOCK, SEE TP700 TYP.
6. HDPE TO S.S. STEEL PIPE COUPLING. PROVIDE POLYPROPYLENE ENCAPSULATED DUCTILE IRON SLIP ON FLANGE AT HDPE STUB END AND DRILLED TO MATCH FLANGE ON S.S. PIPE.

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 5/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP: MAB SD317A	JK	EW	

CONSULTANT EBMUD

DESIGN BY:	DT/NT
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

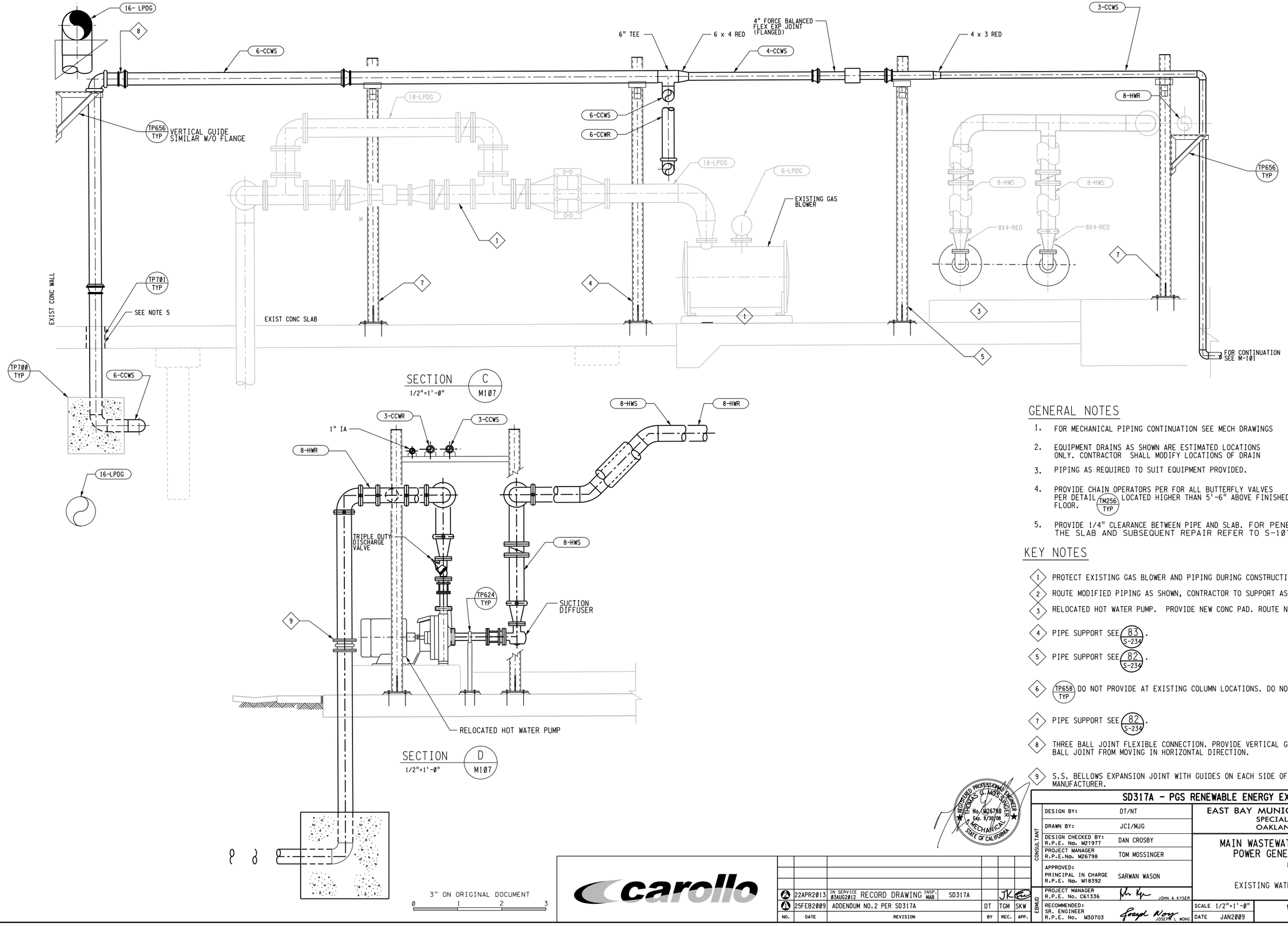
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL
COOLING WATER LOOP PUMPS
SECTIONS AND DETAILS

SCALE 1/2"=1'-0"
DATE JAN2009

W28.20-M-210
DRAWING NUMBER

1
REV.

REF 7:
REF 8:
REF 4:
REF 5:
REF 6:
REF 1: W:\Drafters\SD\sd317A\ref\W2820bdr.consultant.mst
REF 2:
REF 3:
USER: fai
DATE: 23-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M211.R02
PLOT SCALE: 4:1



GENERAL NOTES

1. FOR MECHANICAL PIPING CONTINUATION SEE MECH DRAWINGS
2. EQUIPMENT DRAINS AS SHOWN ARE ESTIMATED LOCATIONS ONLY. CONTRACTOR SHALL MODIFY LOCATIONS OF DRAIN
3. PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
4. PROVIDE CHAIN OPERATORS PER FOR ALL BUTTERFLY VALVES PER DETAIL TM256 TYP LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.
5. PROVIDE 1/4" CLEARANCE BETWEEN PIPE AND SLAB. FOR PENETRATION THROUGH THE SLAB AND SUBSEQUENT REPAIR REFER TO S-107.

KEY NOTES

1. PROTECT EXISTING GAS BLOWER AND PIPING DURING CONSTRUCTION.
2. ROUTE MODIFIED PIPING AS SHOWN, CONTRACTOR TO SUPPORT AS REQUIRED.
3. RELOCATED HOT WATER PUMP. PROVIDE NEW CONC PAD. ROUTE NEW PIPING AS SHOWN.
4. PIPE SUPPORT SEE 83 / S-234.
5. PIPE SUPPORT SEE 82 / S-234.
6. TP658 TYP DO NOT PROVIDE AT EXISTING COLUMN LOCATIONS. DO NOT DAMAGE EXISTING REBAR.
7. PIPE SUPPORT SEE 82 / S-234.
8. THREE BALL JOINT FLEXIBLE CONNECTION. PROVIDE VERTICAL GUIDE TO PREVENT THE MIDDLE BALL JOINT FROM MOVING IN HORIZONTAL DIRECTION.
9. S.S. BELLOWS EXPANSION JOINT WITH GUIDES ON EACH SIDE OF JOINT AS RECOMMENDED BY MANUFACTURER.

REGISTERED PROFESSIONAL ENGINEER THOMAS G. MOSSINGER No. M26798 Exp. 9/30/08 MECHANICAL STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
2	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	
1	25FEB2009	ADDENDUM NO.2 PER SD317A	DT	TGM	SKW

EBMUD

CONSULTANT

DESIGN BY:	DT/NT
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

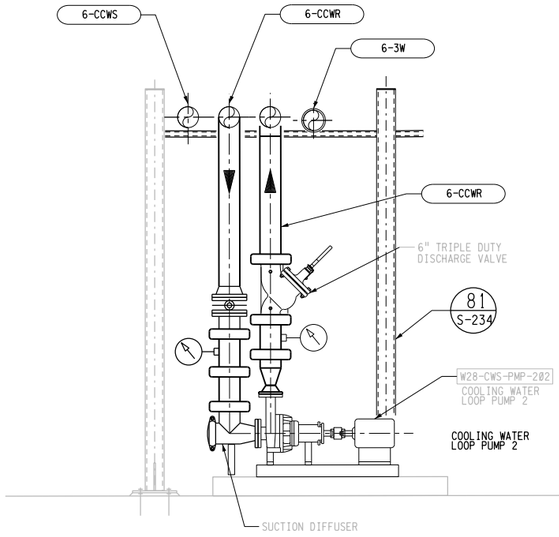
SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

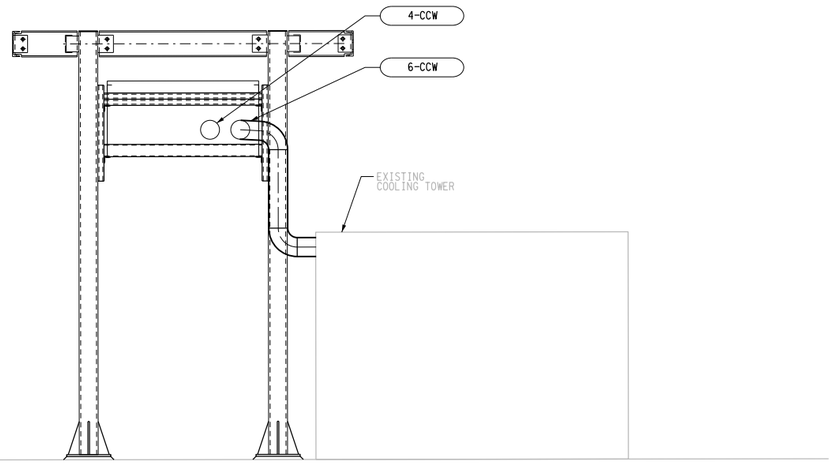
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

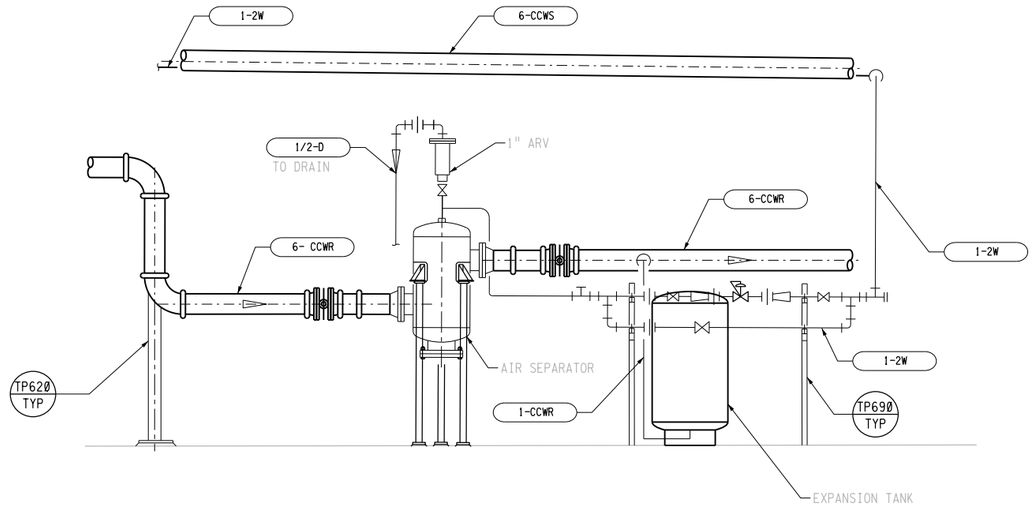
EXISTING WATER PUMPS RELOCATIONS

SCALE 1/2"=1'-0"
DATE JAN2009
W28.20-M-211
DRAWING NUMBER
2
REV.



SECTION E
1/2"=1'-0"
M-107





SECTION F
1/2"=1'-0"
M-107

REF 7:
REF 8:
REF 9:

REF 4:
REF 5:
REF 6:

REF 1: W:\Drafters\SD\sd317A\ref\W2820bar-consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317bar.mst
REF 3:

USER: fal
DATE: 28-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M212.R01

PLOT SCALE: 4:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A		JK	

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 6/30/06
MECHANICAL
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

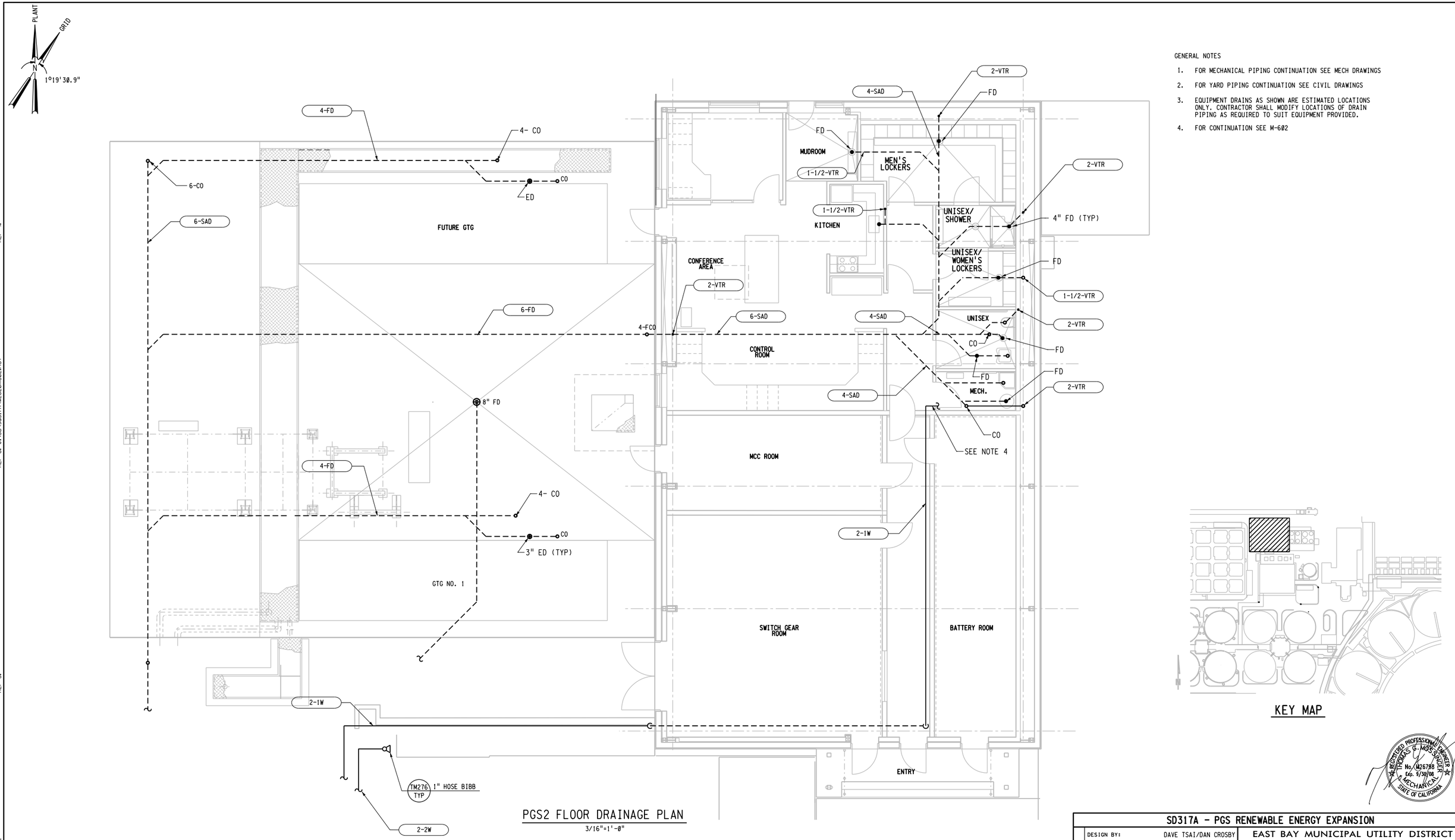
DESIGN BY:	DT/NT
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL
COOLING LOOP
SECTIONS AND DETAILS

SCALE AS SHOWN
DATE JAN2009
W28.20-M-212
DRAWING NUMBER
1
REV.



PGS2 FLOOR DRAINAGE PLAN

3/16"=1'-0"

GENERAL NOTES

1. FOR MECHANICAL PIPING CONTINUATION SEE MECH DRAWINGS
2. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS
3. EQUIPMENT DRAINS AS SHOWN ARE ESTIMATED LOCATIONS ONLY. CONTRACTOR SHALL MODIFY LOCATIONS OF DRAIN PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
4. FOR CONTINUATION SEE M-602

KEY MAP

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
M.E. No. M26798
Exp. 5/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DAVE TSAI/DAN CROSBY
DRAWN BY:	JCI/NP/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

PGS 2 FLOOR DRAINAGE PLAN

SCALE 3/16"=1'-0"
DATE JAN2009

W28.20-M-601
DRAWING NUMBER

1
REV.

REF 4: J:\SD\sd317A\w2820m602.MST
REF 5: J:\SD\sd317A\w2820m603.MST
REF 6: J:\SD\sd317A\w2820m604.MST

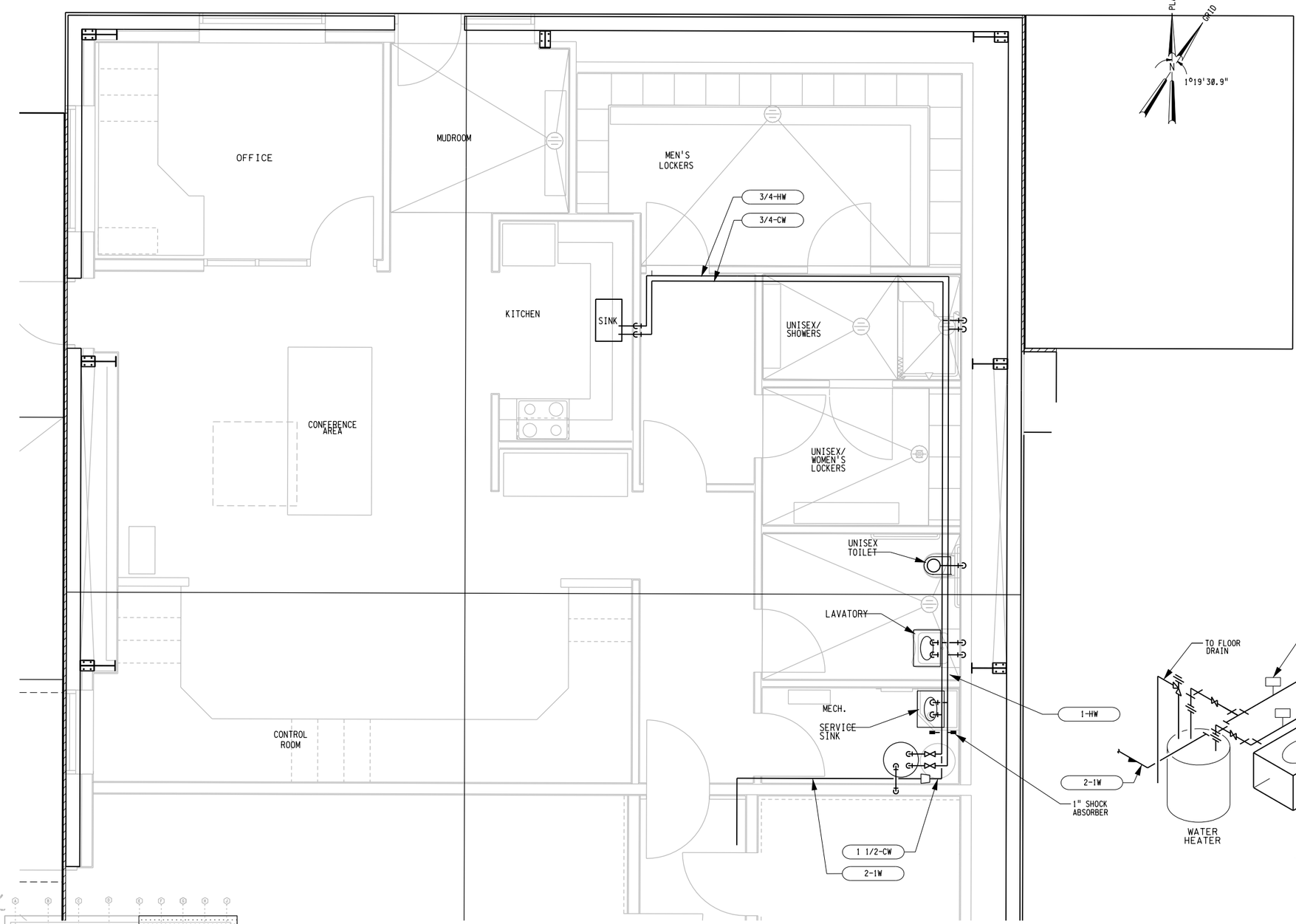
REF 1: W:\Drafters\SD\sd317A\ref\sd317bar.mst
REF 2: W:\Drafters\SD\sd317A\ref\W2820bar_consultant.mst
REF 3:

REF 7: J:\SD\sd317A\w2820ds100.mst
REF 8:
REF 9:

USER: fal
DATE: 28-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M601.DGN

PLOT SCALE: 10.666667:1

REF 7: J:\SD\sd317A\w2820s100.mst
REF 8:
REF 9:
REF 4: W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 5:
REF 6: J:\SD\sd317A\w2820m854.MST
REF 1: J:\SD\sd317A\w2820a01.MST
REF 2: W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 3:
PLOT SCALE: 5.3333331
USER: fah
DATE: 28-AUG-2013 15:29
FILE: J:\SD\sd317A\W2820M602.R01

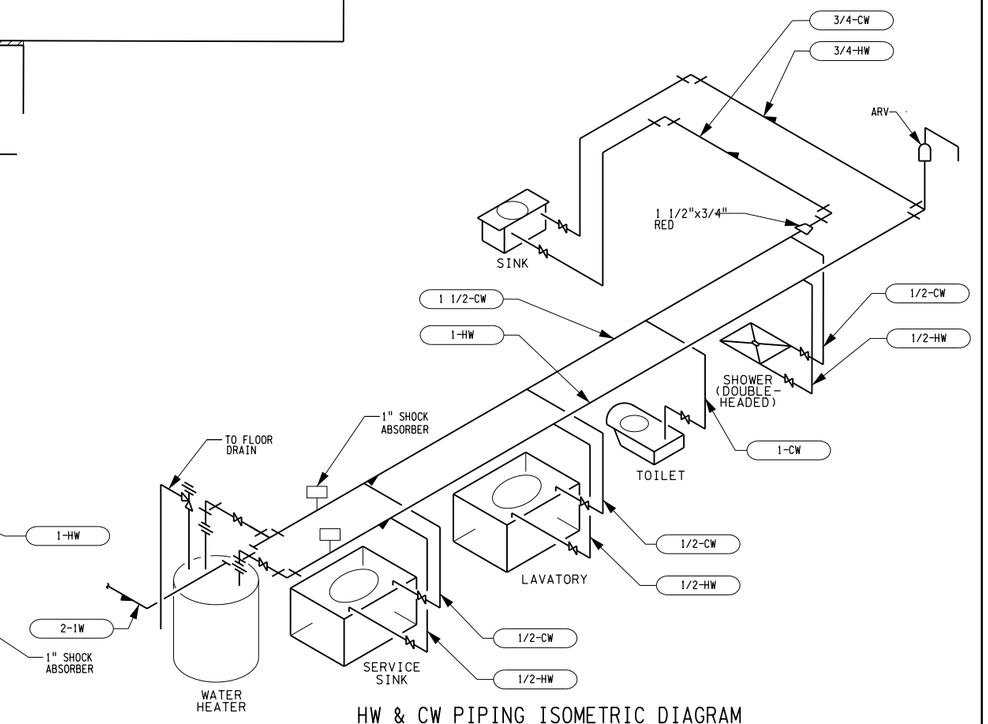


HW & CW PIPING PLAN

3/8"=1'=0"

3" ON ORIGINAL DOCUMENT

0 1 2 3



HW & CW PIPING ISOMETRIC DIAGRAM

(VENT NOT SHOWN) NO SCALE

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT
EBMUD

DESIGN BY:	DAVE TSAI/DAN CROSBY
DRAWN BY:	JCI/NP/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

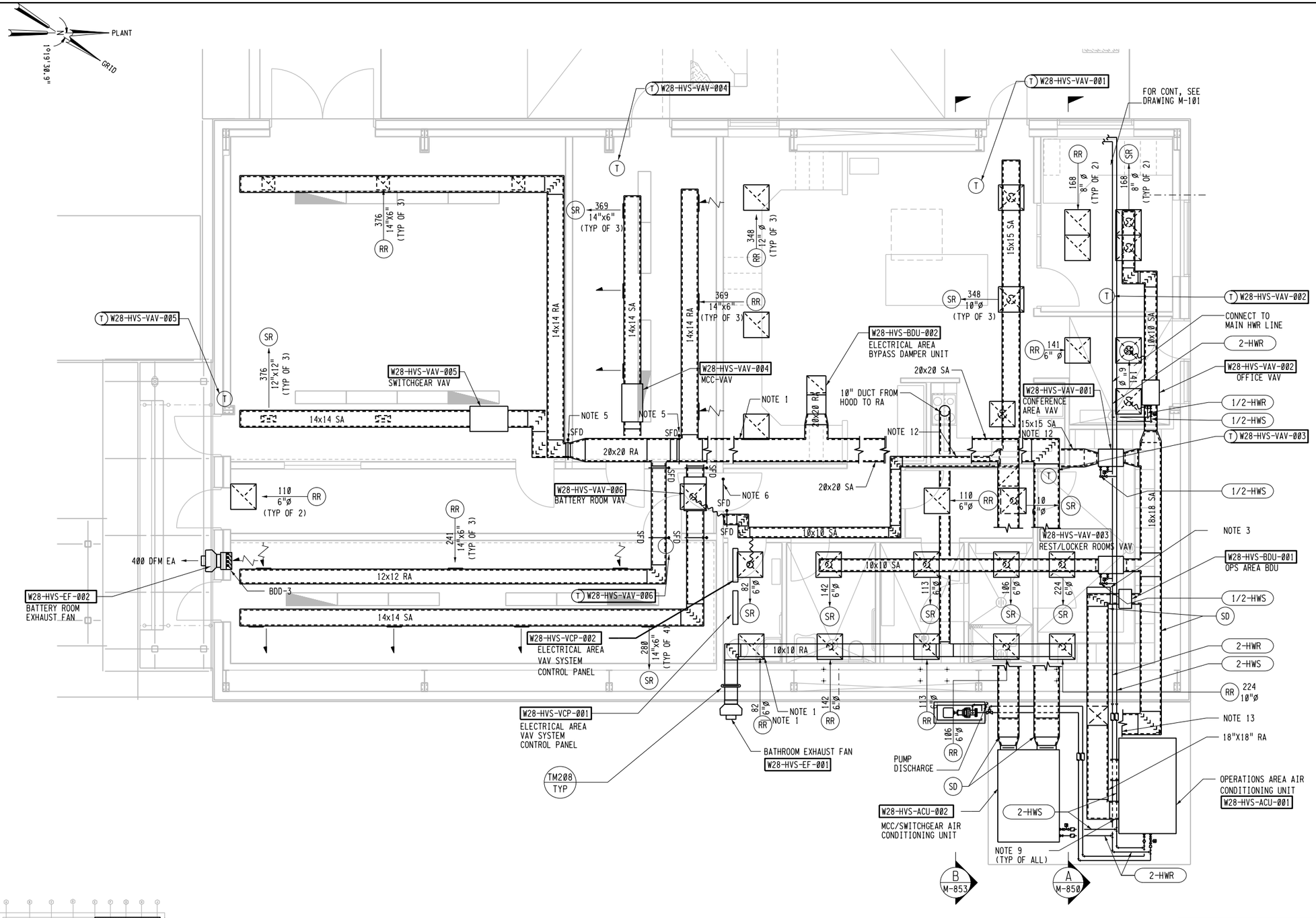
SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

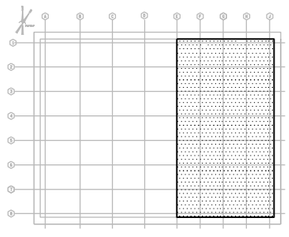
PGS 2 BUILDING PLUMBING PLAN

SCALE	AS SHOWN	W28.20-M-602	1
DATE	JAN2009	DRAWING NUMBER	REV.



NOTES:

1. REGISTER IS OPEN TO PLENUM AREA IN CEILING. NOT CONNECTED TO DUCTWORK.
2. NOT USED.
3. DUCT IS OPEN TO PLENUM SPACE.
4. INSTALL SMOKE FIRE DAMPER IN ALL PENETRATION OF D-TYPE WALLS (SEE DRAWING SD317-W28-A-101).
5. INSTALL SMOKE FIRE DAMPER IN BOTH RETURN (SHOWN) AND SUPPLY (OBSCURRED)WALL PENETRATIONS.
6. INSTALL 20"x20" SMOKE FIRE DAMPER IN FIRE RATED WALL ABOVE DROP CEILING (LOCATED ABOVE DOOR).
7. ROUTE DUCTWORK TO AVOID PASSING OVER ELECTRICAL EQUIPMENT.
8. FOR ADDITIONAL PIPING SEE TYPICAL DETAIL TM240/TYP.
9. INSERT FLEXIBLE DUCTWORK CONNECTION AS SPECIFIED IN SECTION 15812 AND BACKDRAFT DAMPER AS SPECIFIED IN SECTION 15820 FOR ALL SUPPLY AND RETURN DUCTWORK CONNECTION TO AIR CONDITIONEING UNITS.
10. REDUCE LINE SIZE TO MATCH EQUIPMENT STANDARD CONNECTION.
11. PROVIDE PIPING INSULATION FOR HWS AND HWR PIPING.
12. DUCTS MEET IN TEE BENEATH 20X20 ELBOWS (NOT SHOWN).
13. FOR CONTINUATION OF DUCTWORK, SEE M-853.



PGS 2 KEY PLAN

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

REGISTERED PROFESSIONAL ENGINEER THOMAS G. MOSSINGER No. M26798 Exp. 9/30/08 MECHANICAL STATE OF CALIFORNIA

CONSULTANT

DESIGN BY:	EVAN GOLDSTEIN
DRAWN BY:	JCI/NP/EDL
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

PGS 2 BUILDING HVAC PLAN 2

SCALE 1/4"=1'-0"
DATE JAN2009

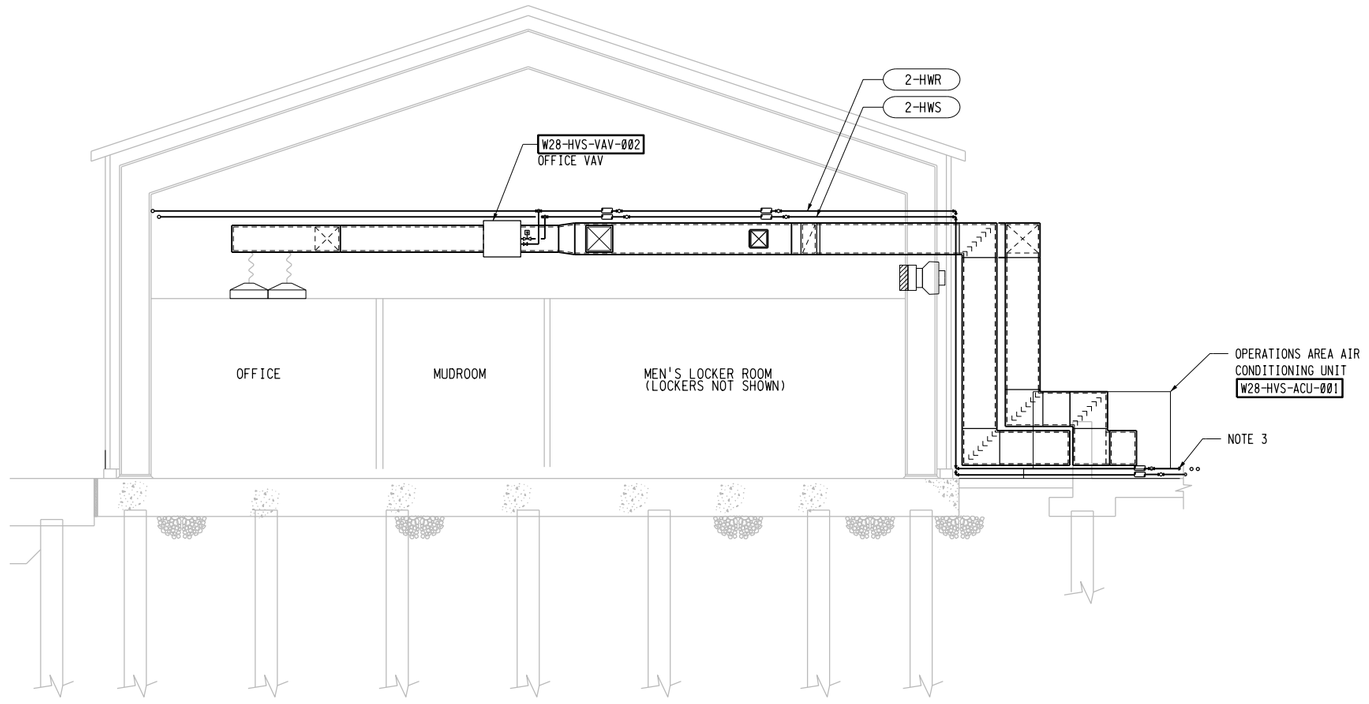
W28.20-M-802
DRAWING NUMBER

1
REV.

REF 1: W:\Drafters\SD\sd317A\w2820a101.MSI
REF 2: W:\Drafters\SD\sd317A\w2820d105.MST
REF 3: J:\SD\sd317A\w2820s100.mst
REF 4:
REF 5:
REF 6:
REF 7: J:\SD\sd317A\w2820a101.MSI
REF 8: J:\SD\sd317A\w2820d105.MST
REF 9: J:\SD\sd317A\w2820s100.mst

USER: fal
DATE: 28-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M802.R01

PLOT SCALE: 8:1



SECTION A
1/4"=1'-0" M-802

GENERAL NOTES:

1. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS
2. PROVIDED BY GTG SYSTEM SUPPLIER AND INSTALLED BY INSTALLATION CONTRACTOR.
3. FOR CONTINUATION OF PIPING, SEE M-802.

KEY NOTES:

1. EQUIPMENT, SUPPORT SUPPLIED BY TURBINE GENERATOR MANUFACTURER.
2. EQUIPMENT PAD SEE STRUCTURAL DRAWINGS.
3. FAN CURB SUPPLIED BY FAM MANUFACTURER.
4. LOUVER FRAME. PROVIDE PLATE COVER FOR FUTURE CONNECTION.
5. DUCTWORKS SUPPORT SHALL BE PROVIDED BY HVAC CONTRACTOR IN ACCORDANCE WITH SMACNA. SEE SPECS FOR MATERIALS.
6. DUCT EQUIPMENT ROOF SUPPORT SHALL BE PROVIDED BY THE CONTRACTOR.

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT EBMUD

DESIGN BY:	EVAN GOLDSTEIN
DRAWN BY:	JCI/NP/EDL
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

PGS 2 BUILDING HVAC SECTION 1

SCALE 1/4"=1'-0"
DATE JAN2009
W28.20-M-850
DRAWING NUMBER
1
REV.

REF 1: J:\SD\sd317A\W2820s200.MST
REF 2: W:\Drafters\SD\sd317A\ref\sd317hdr.mst
REF 3: W:\Drafters\SD\sd317A\ref\W2820hdr_consultant.mst
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:
PLOT SCALE: 8:1
USER: fai
DATE: 24-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M850.R01

REF 7;
REF 8;
REF 9;

REF 4; W:\Drafters\SD\sd317A\ref\sd317bdr.mst
REF 5;
REF 6;

REF 1; W:\Drafters\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2; J:\SD\sd317A\W2820s200.MST
REF 3;

USER: fdi
DATE: 28-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M853.R01

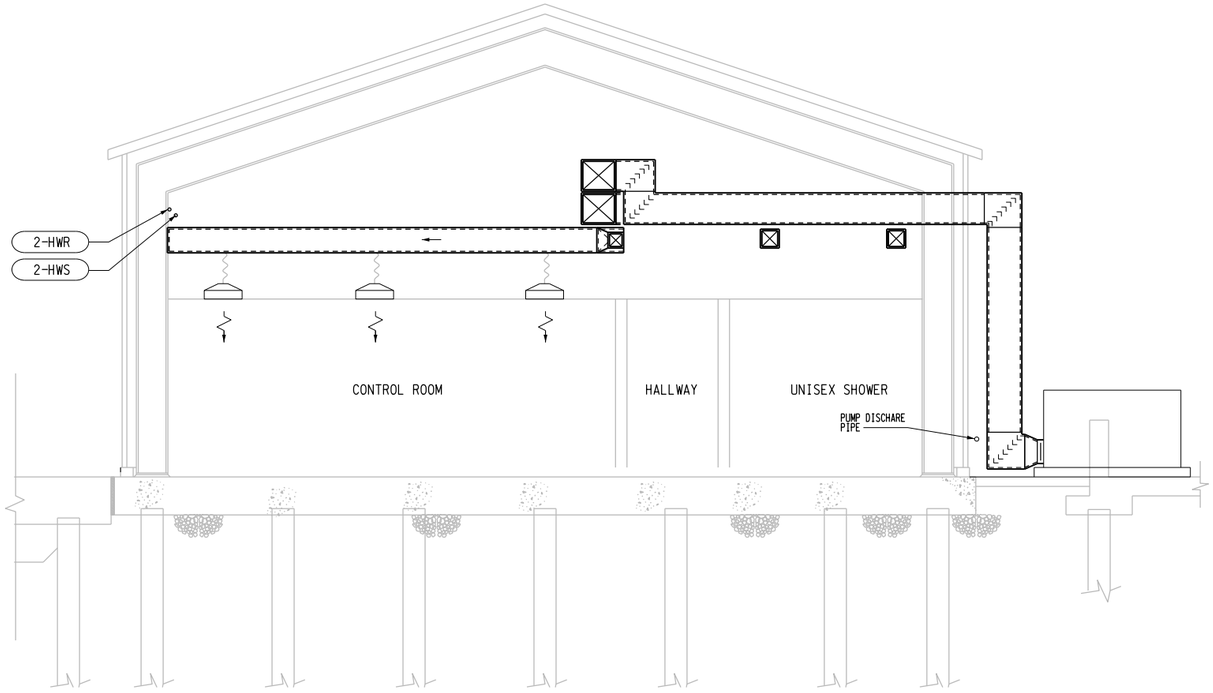
PLOT SCALE: 8:1

GENERAL NOTES:

1. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS
2. EQUIPMENT DRAINS AS SHOWN ARE ESTIMATED LOCATIONS ONLY. CONTRACTOR SHALL MODIFY LOCATIONS OF DRAIN PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.

KEY NOTES;

1. EQUIPMENT. SUPPORT SUPPLIED BY TURBINE GENERATOR MANUFACTURER.
2. EQUIPMENT PAD PER DETAIL TM-XXX
3. FAN CURB SUPPLIED BY FAM MANUFACTURER. SEE DETAIL TM-XXX
4. LOUVER FRAME. PROVIDE PLATE COVER FOR FUTURE CONNECTION.
5. DUCTWORKS SHALL BE PROVIDED BY HVAC CONTRACTOR IN ACCORDANCE WITH SMACNA. SEE SPECS FOR MATERIALS.



SECTION B / M-802
1/4"=1'-0"

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
M.E. No. M26798
Exp. 5/30/08
MECHANICAL
STATE OF CALIFORNIA

CONSULTANT: EBMUD

DESIGN BY:	EVAN GOLDSTEIN
DRAWN BY:	JCI/NP/EDL
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

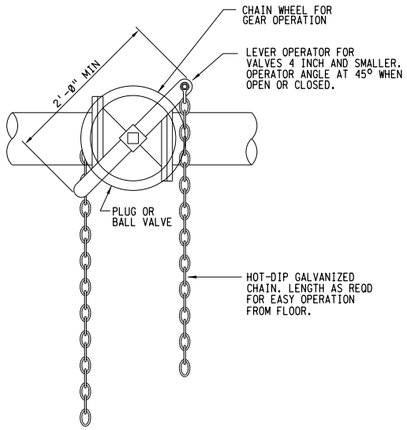
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL
PGS 2 BUILDING HVAC
SECTION AND DETAILS

SCALE 1/4"=1'-0"
DATE JAN2009

W28.20-M-853
DRAWING NUMBER

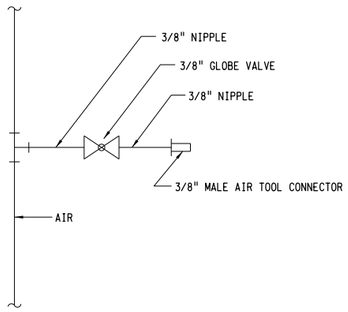
1
REV.

REF 7: W:\D-drives\SD\sd317A\ref\sd317bdr.mst
REF 8: W:\D-drives\SD\sd317A\ref\W28280dr_consultant.mst
REF 9: J:\SD\sd317A\W2820M901.R01



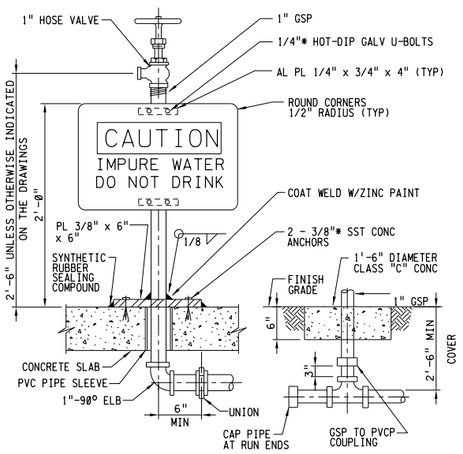
CHAIN OPERATOR

TM256



AIR TOOL CONNECTOR

TM258



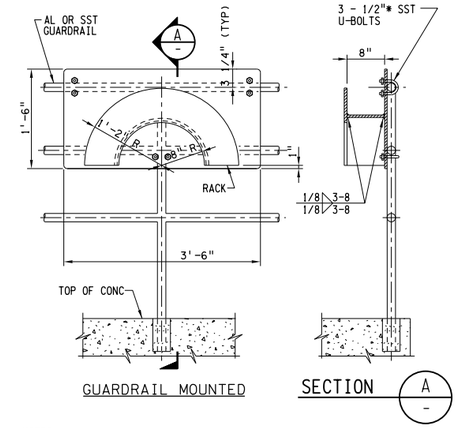
STRUCTURE INSTALLATION YARD INSTALLATION

NOTES:

1. SIGN SHALL BE 3/8" THICK PLASTIC RESISTANT TO SUNLIGHT (ULTRAVIOLET) DETERIORATION.
2. SIGN SHALL BE 7" x 10" AND SHALL CONFORM TO THE SPECIFICATIONS.
3. SIGN AS SHOWN IS ROTATED 90° OFF TRUE POSITION. SIGN SHALL BE MOUNTED TO PERMIT EASY READING.
4. INSTALL HOSE RACK (TM280 TYP) AT EACH HOSE VALVE.

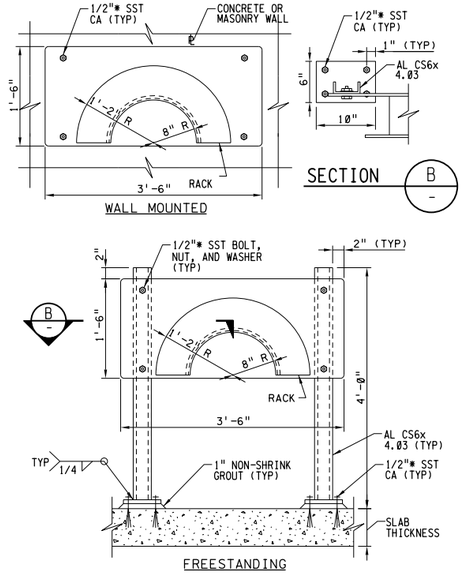
1" HOSE VALVE AND SIGN

TM276



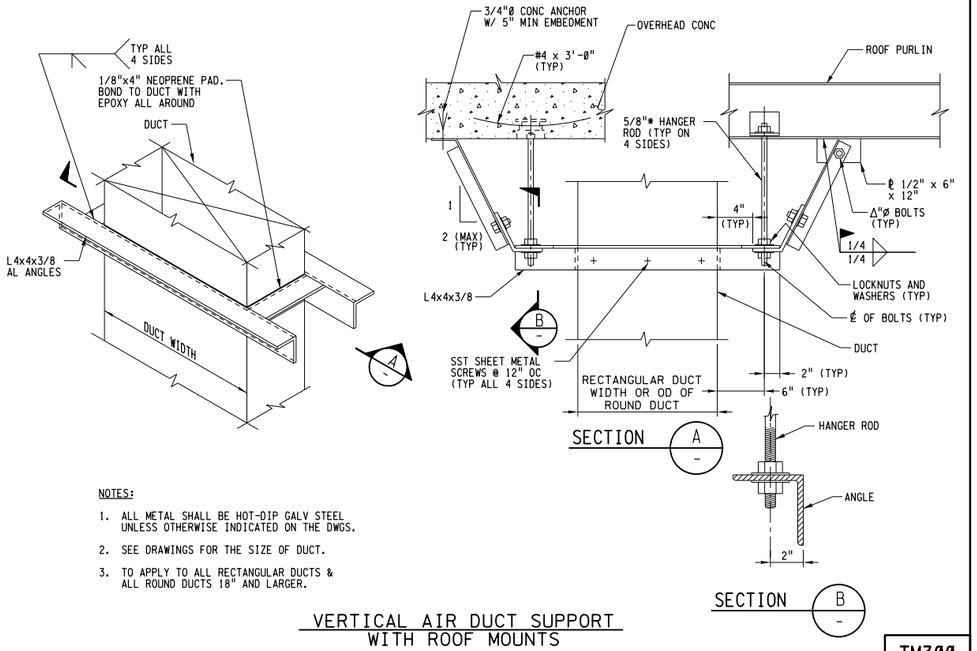
NOTES:

1. HOSE RACK SHALL BE FABRICATED FROM 3/16" ALUMINUM PLATE. ROUND ALL EDGES SMOOTH.
2. HOSE RACKS INSTALLED IN YARD LOCATIONS SHALL BE FREESTANDING A 4'-6" LONG x 2'-0" WIDE x 8" DEEP CONCRETE PAD W/#5@12" EW CENTERED.
3. WALL MOUNTED HOSE RACKS ON MASONRY WALL SHALL BE FASTEN TO GROUTED CELLS.



HOSE RACK

TM280



NOTES:

1. ALL METAL SHALL BE HOT-DIP GALV STEEL UNLESS OTHERWISE INDICATED ON THE DWGS.
2. SEE DRAWINGS FOR THE SIZE OF DUCT.
3. TO APPLY TO ALL RECTANGULAR DUCTS & ALL ROUND DUCTS 18" AND LARGER.

VERTICAL AIR DUCT SUPPORT WITH ROOF MOUNTS

TM300

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 6/30/08
MECHANICAL
STATE OF CALIFORNIA

PLOT SCALE: 0.166666:1
USER: fah
DATE: 28-AUG-2013 15:29
FILE: J:\SD\sd317A\W2820M901.R01

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT / EBMUD

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

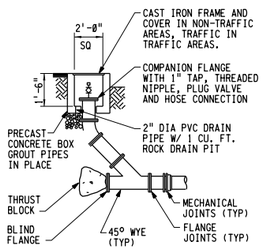
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

TYPICAL MECHANICAL DETAILS 1

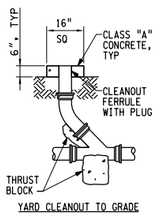
SCALE	NONE	W28.20-M-901	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 7:
REF 8:
REF 9:



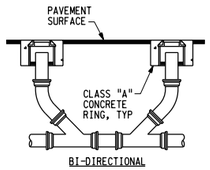
PRESSURE CLEANOUT

TYPE 1



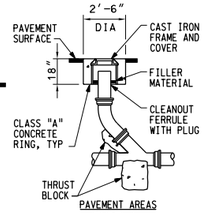
YARD CLEANOUT TO GRADE

TYPE 2



BI-DIRECTIONAL

TYPE 3



PAVEMENT AREAS

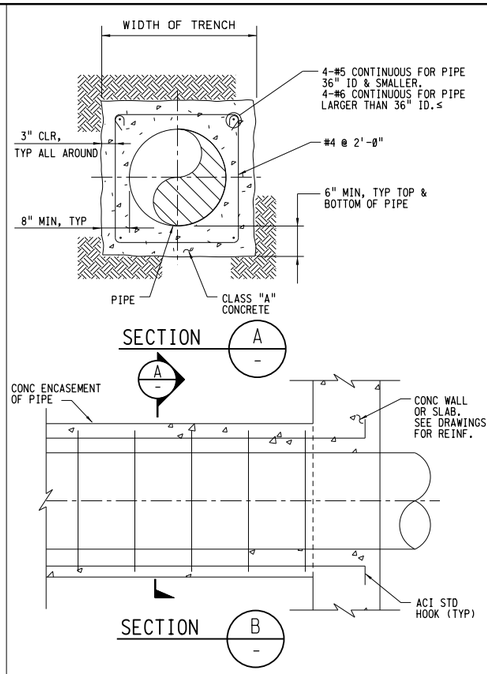
TYPE 4

NOTES

1. ALL THRUST BLOCKS SHALL BE PLACED PER TYPICAL DETAIL TM138
2. CONCRETE RING SHALL BE PLACED AFTER PAVEMENT PLACEMENT, SCORE CONCRETE SURFACE AT 90° INTERVALS

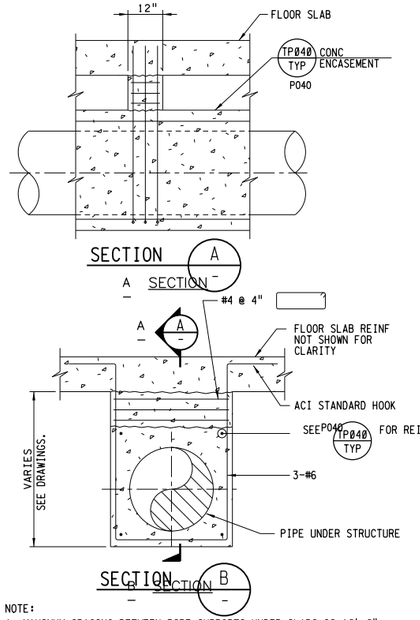
CLEANOUT TO GRADE

TP004



CONCRETE ENCASEMENT OF PIPE

TP040



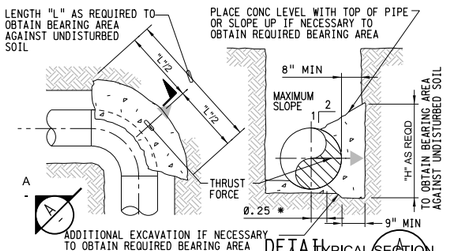
NOTE:

1. MAXIMUM SPACING BETWEEN PIPE SUPPORTS UNDER SLABS IS 10'-0".

PIPE SUPPORT UNDER SLABS FOR PILE SUPPORTED STRUCTURES

P042

TP042



NOTES:

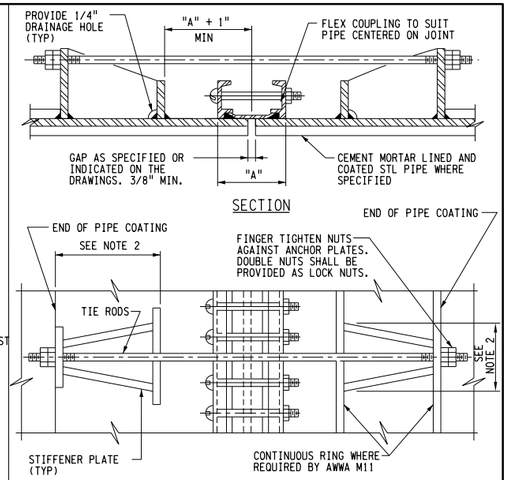
1. BEARING AREA IS THE AREA REQUIRED TO OBTAIN A MAXIMUM SOIL LOADING OF 200 PSF PER FOOT OF DEPTH TO A MAXIMUM VALUE OF 1500 PSF AT THE TOP OF THRUST BLOCK WHEN THE PIPE IS SUBJECTED TO ITS TEST PRESSURE, OR BEARING AREA INDICATED ON THE DRAWINGS.
2. CONCRETE SHALL BE CLASS "A" OR "C".
3. THRUST BLOCK SHALL BEAR ON UNDISTURBED SOIL.

PIPE THRUST BLOCK

P102

TYP NS

TP102



NOTES:

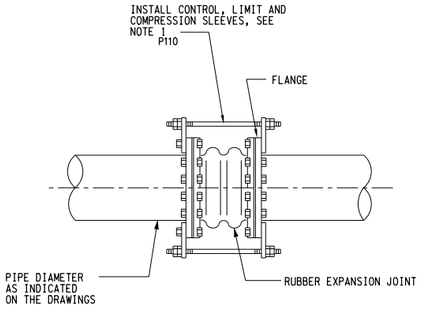
1. ALL EXPOSED FLEXIBLE COUPLINGS SHALL HAVE TIE RODS UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE DRAWINGS.
2. DESIGN SHALL BE BASED ON TEST PRESSURE.
3. ANCHOR LUGS AND TIE RODS FOR STEEL PIPE SHALL BE DESIGNED BY PIPE MANUFACTURER IN ACCORDANCE WITH AWWA M11 STEEL PIPE MANUAL.
4. GRIND ALL CORNERS SMOOTH.
5. COAT ALL EXPOSED STL SURFACES WITH EPOXY PAINT PER SPECIFICATIONS.

STEEL PIPE FLEXIBLE COUPLING TIE-DOWN

P204

TP204

REF 4:
REF 5:
REF 6:



NOTES

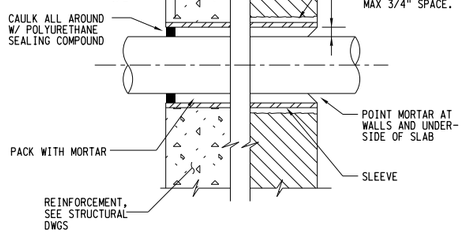
1. FOR TYPE OF CONTROL UNIT PER APPLICATION SEE DRAWINGS AND NOTE AT DETAIL CALLOUT

RUBBER EXPANSION JOINT

P220

TYP N

TP220

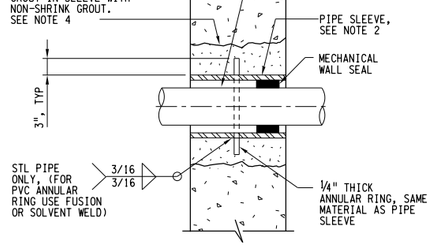


NOTES

1. 6" DIAMETER SLEEVES AND SMALLER SHALL BE SCHEDULE 40 STEEL PIPE OR SCHEDULE 80 PVC PIPE.
2. SLEEVES LARGER THAN 6"Ø SHALL BE 1/4" THICK STEEL PIPE.
3. STEEL SLEEVE SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
4. SLEEVES FOR ELECTRICAL CONDUIT SHALL BE SCHEDULE 80 PVC PIPE.

SLEEVE INSTALLATION THROUGH DRY WALLS AND FLOOR SLABS

TP302

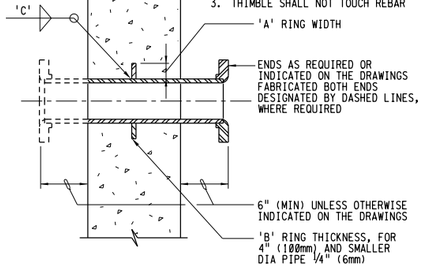


NOTES

1. FOR NEW CONSTRUCTION, SLEEVES SHALL BE CAST INTO WALL OR FLOOR SLAB WITH THERMOPLASTIC PIPE SLEEVE, LINK SEAL OR EQUAL.
2. 6" DIA SLEEVES AND SMALLER SHALL BE SCH 40 STL PIPE. AND SLEEVES 6" DIA AND GREATER SHALL BE 1/4" THICK (MIN) STEEL PLATE. ALL SLEEVE DIAMETERS SHALL BE PER SEAL MANUFACTURER'S REQUIREMENTS.
3. IN WALLS OR FLOOR SLABS THICKER THAN 12" OR WHERE SUBMERGED, LINKED SEAL SHALL BE INSTALLED AT BOTH ENDS OF PIPE SLEEVE.
4. FOR INSTALLATION IN EXISTING STRUCTURE WHERE CORE DRILLING IS ACCEPTABLE ELIMINATE PIPE SLEEVE AND INSTALL ADJUSTABLE LINKED SEAL

SLEEVE INSTALLATION THROUGH WALLS AND FLOOR SLABS

TP304

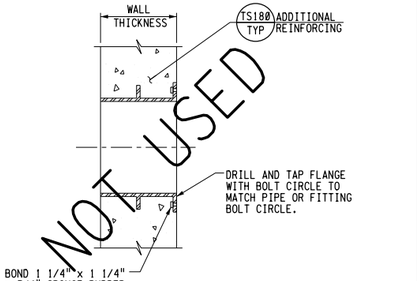


NOTES

1. PIPE THICKNESS AND LINING AS INDICATED ON THE DRAWINGS OR AS SPECIFIED.
2. ANCHOR RING PER AWWA M11 150 PSI MAXIMUM PRESSURE
3. THIMBLE SHALL NOT TOUCH REBAR

FABRICATED WALL THIMBLE

TP310



WALL THIMBLE WITH TAPPED FLANGE FOR DIP

TP314

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

USER: fah
DATE: 26-AUG-2013 15:39
FILE: I:\SD\sd317A\W2820M902.R01
PLOT SCALE: 0.166667:1
REF 1: W:\D-rfters\SD\sd317A\ref\sd317ddr-mst
REF 2: W:\D-rfters\SD\sd317A\ref\W2820ddr-consultant.mst
REF 3:

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

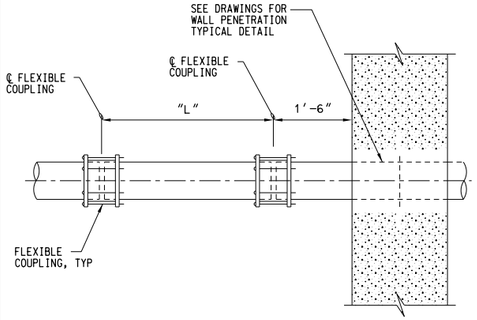
EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

TYPICAL MECHANICAL DETAILS 2

SCALE	NONE	W28.20-M-902	1
DATE	JAN2009	DRAWING NUMBER	REV.



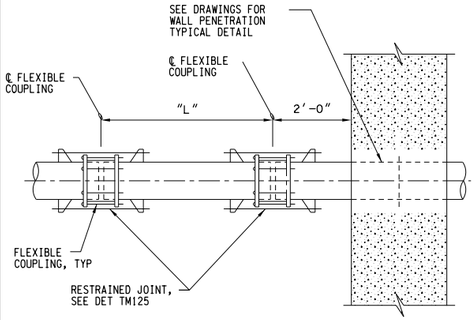
NOMINAL PIPE DIAMETER IN INCHES	"L"
LESS THAN 31"	5'-0"
GREATER THAN 31"-42"	5'-6"
GREATER THAN 42"-54"	6'-6"
GREATER THAN 54"-66"	7'-9"
GREATER THAN 66"-100"	12'-9"

NOTES:

1. PIPES SHALL BE INSTALLED STRAIGHT WITHOUT HORIZONTAL OR VERTICAL OFFSET. DO NOT USE JOINT ROTATION TO MAKE UP MISALIGNED PIPE.
2. APPLY MASTIC OR WAX TAPE TO FULLY ENCASE FLEXIBLE JOINT IN BURIED SERVICE. MASTIC OR WAX TAPE PROTECTION SHALL EXTEND 12" ON EITHER SIDE OF THE JOINT

UNRESTRAINED STEEL PIPE FLEXIBLE CONNECTION FOR PIPE AT WALL PENETRATION

TP344



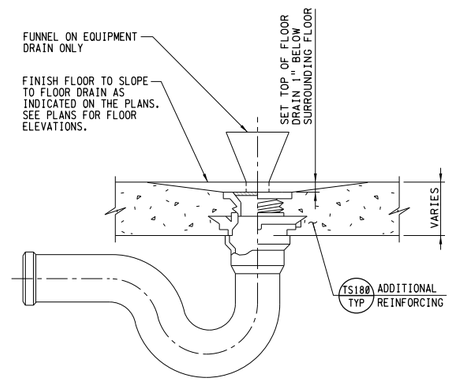
NOMINAL PIPE DIAMETER IN INCHES	"L"
LESS THAN 31"	5'-0"
GREATER THAN 31"-42"	5'-6"
GREATER THAN 42"-54"	6'-6"
GREATER THAN 54"-66"	7'-9"
GREATER THAN 66"-100"	12'-9"

NOTES

1. PIPES SHALL BE INSTALLED STRAIGHT WITHOUT HORIZONTAL OR VERTICAL OFFSET. DO NOT USE JOINT ROTATION TO MAKE UP MISALIGNED PIPE.
2. APPLY MASTIC OR WAX TAPE TO FULLY ENCASE FLEXIBLE JOINT IN BURIED SERVICE. MASTIC OR WAX TAPE PROTECTION SHALL EXTEND 12" ON EITHER SIDE OF THE JOINT

RESTRAINED STEEL PIPE FLEXIBLE CONNECTION FOR PIPE AT WALL PENETRATION

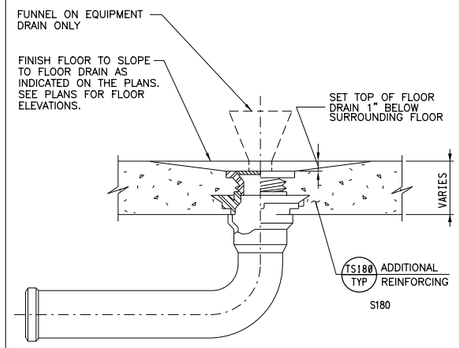
TP346



NOTE:
1. PROVIDE 12" RADIUS SLOPE TO EQUIPMENT DRAINS WHERE FLOOR DOES NOT SLOPE TO DRAIN.

FLOOR DRAIN OR EQUIPMENT DRAIN

TP410



NOTE:

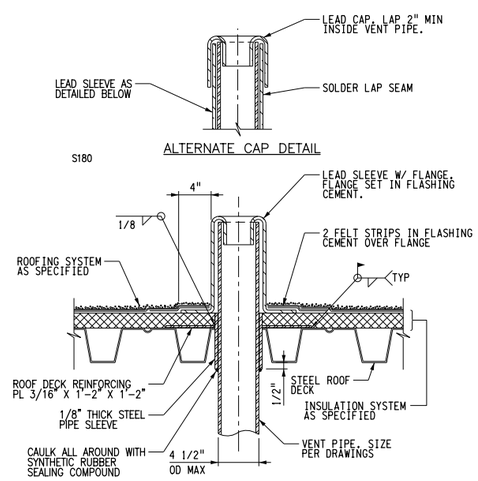
1. PROVIDE 12" RADIUS SLOPE TO EQUIPMENT DRAINS WHERE FLOOR DOES NOT SLOPE TO DRAIN.

FLOOR DRAIN OR EQUIPMENT DRAIN

P410

TYP S

TP 412



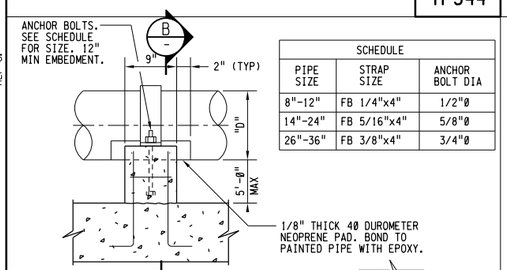
NOTES:

1. LOCATE PIPE BETWEEN WEBS ONLY. FOR INSTALLATIONS WHERE WEB IS CUT. THE CONSTRUCTION SHALL BE PER S520 (TYP) WITH RAIN SKIRT.
2. SLEEVE LENGTH VARIES WITH INSULATION SYSTEM THICKNESS.
3. SLEEVE ID SHALL BE MINIMUM OF PIPE OD + 1/4".

P506 TYP

VENT THROUGH STEEL ROOF DECK

TP508



SCHEDULE		
PIPE SIZE	STRAP SIZE	ANCHOR BOLT DIA
8"-12"	FB 1/4"x4"	1/2"Ø
14"-24"	FB 5/16"x4"	5/8"Ø
26"-36"	FB 3/8"x4"	3/4"Ø

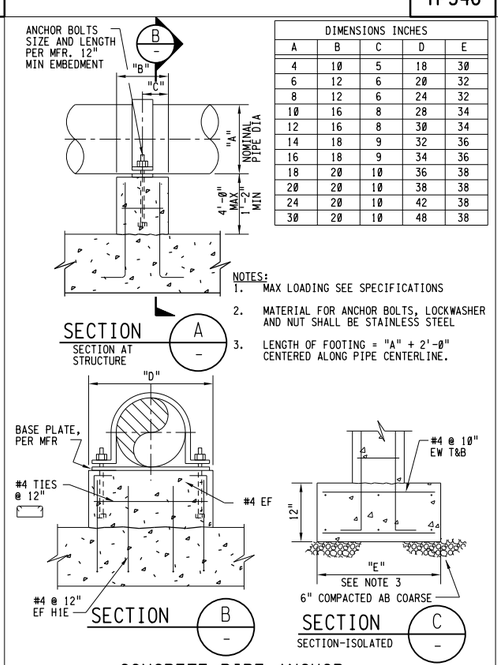
NOTES:

1. MAX VERTICAL LOAD = 6000 POUNDS.
2. MATERIAL FOR ANCHOR BOLTS, LOCKWASHER AND NUT SHALL BE STAINLESS STEEL
3. THE WIDTH OF THE FOOTING "W" = 2'-6". THE LENGTH OF THE FOOTING = "D" + 2'-0".

CONCRETE PIPE SUPPORT

TYP

TP602



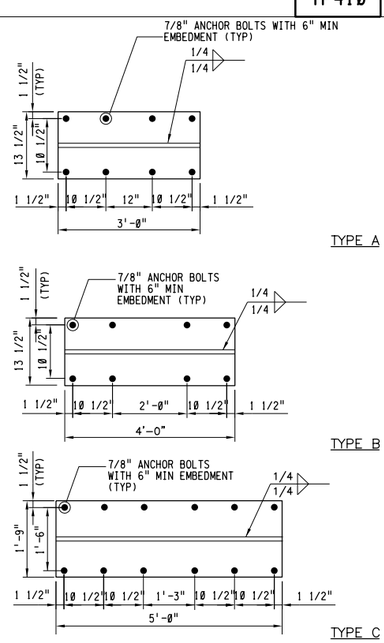
DIMENSIONS INCHES				
A	B	C	D	E
4	10	5	18	30
6	12	6	20	32
8	12	6	24	32
10	16	8	28	34
12	16	8	30	34
14	18	9	32	36
16	18	9	34	36
18	20	10	36	38
20	20	10	38	38
24	20	10	42	38
30	20	10	48	38

NOTES:

1. MAX LOADING SEE SPECIFICATIONS
2. MATERIAL FOR ANCHOR BOLTS, LOCKWASHER AND NUT SHALL BE STAINLESS STEEL
3. LENGTH OF FOOTING = "A" + 2'-0" CENTERED ALONG PIPE CENTERLINE.

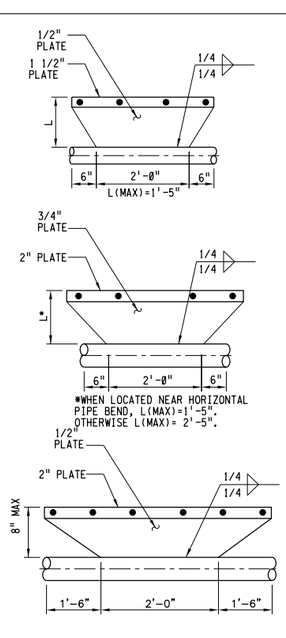
CONCRETE PIPE ANCHOR

TP606

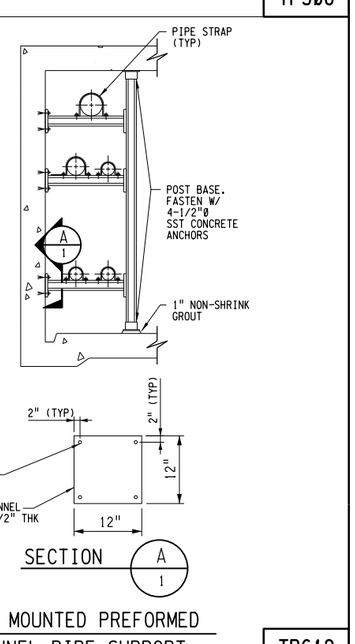


NOTE: MINIMUM EDGE DISTANCE REQUIRED FOR ANCHORS WHERE APPLICABLE.

HOT WATER PIPE ANCHOR



TP607



WALL MOUNTED PREFORMED CHANNEL PIPE SUPPORT

TP612

REGISTERED PROFESSIONAL ENGINEER THOMAS C. MOSSINGER No. M26798 Exp. 9/30/08 MECHANICAL STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

TYPICAL MECHANICAL DETAILS 3

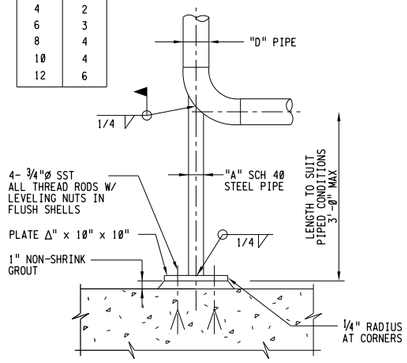
SCALE	NONE	W28.20-M-903	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: W:\Drafters\SD\sd317A\ver1\sd317ddr.mst
REF 2: W:\Drafters\SD\sd317A\ver1\W2820ddr_consultant.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:

PLOT SCALE: 0.166667:1

USER: fah
DATE: 22-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M903.R01

PIPE SIZE	
"D"	"A"
4	2
6	3
8	4
10	4
12	6

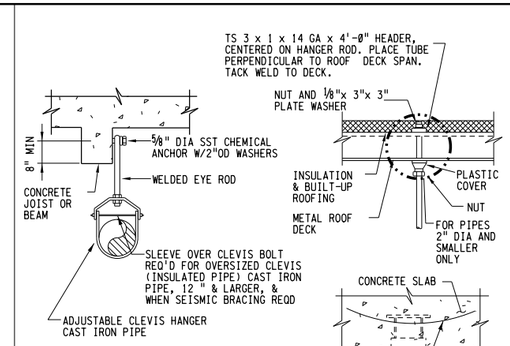


NOTES

1. FOR SST PIPE, ALL PIPE SUPPORT MATERIALS SHALL BE SST.
2. HOT-DIP GALV SUPPORT AFTER FABRICATION, UNLESS STAINLESS STEEL MATERIALS

WELDED ELBOW SUPPORT

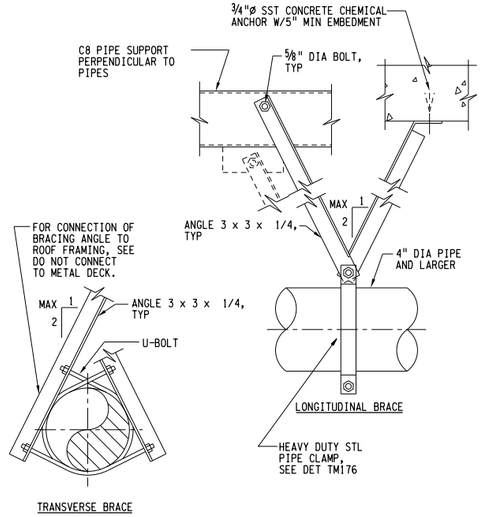
TP620



PIPE HANGER RODS AND SUPPORT SPACING		
PIPE DIA (INCHES)	ROD DIA (INCHES)	MAX SUPPORT SPACING (FEET)
2 AND LESS	3/8	7
2 1/2 TO 3 1/2	1/2	10
4 TO 5	5/8	10
6	3/4	10
8	7/8	10
10	7/8	10
12	7/8	10

NOTES:

1. SPACING PER MFR RECOMMENDATIONS, WHERE CODE ALLOWS LARGER SPACING, SEE SPECS.
2. ALL MATERIALS SHALL BE HOT-DIP GALVANIZED, UNLESS OTHERWISE SHOWN
3. PROVIDE ADDITIONAL HANGER AT EACH SIDE OF ALL VALVES 4 INCHES AND LARGER
4. HANGERS DO NOT MEET NFPA STANDARDS. PVC,FRP,CAST IRON PIPE MINIMUM SUPPORT SPACING, 5 FEET REGARDLESS OF SIZE. NFPA = NATIONAL FIRE PROTECTION AGENCY

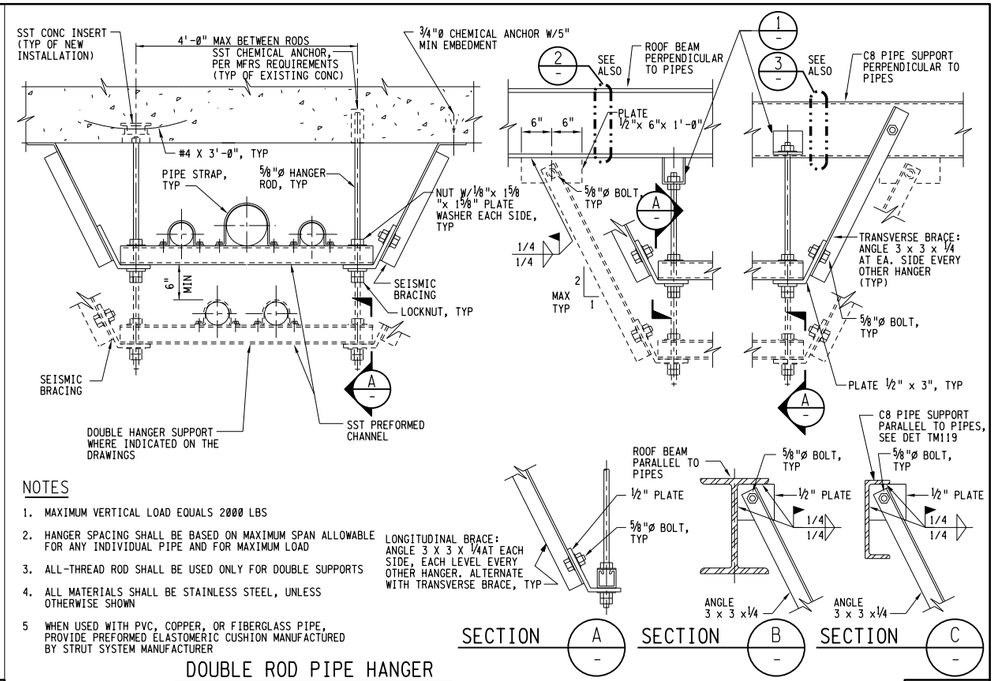


NOTES:

1. MAXIMUM LONGITUDINAL BRACE SPACING = 20'-0".
2. MAXIMUM TRANSVERSE BRACE SPACING = 20'-0".
3. DO NOT CONNECT BRACE TO BOTTOM OF ROOF BEAM OR C8 PIPE SUPPORT, EXCEPT AS SHOWN IN DET TM118
4. USE LONGITUDINAL AND TRANSVERSE BRACES FOR PIPES 4" DIA AND LARGER

PIPE HANGER

TP630

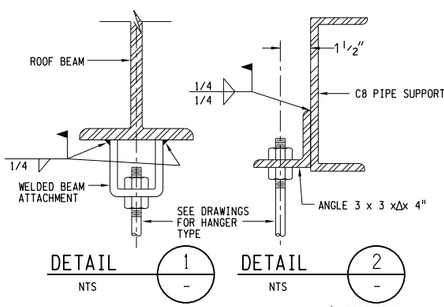


NOTES

1. MAXIMUM VERTICAL LOAD EQUALS 2000 LBS
2. HANGER SPACING SHALL BE BASED ON MAXIMUM SPAN ALLOWABLE FOR ANY INDIVIDUAL PIPE AND FOR MAXIMUM LOAD
3. ALL-THREAD ROD SHALL BE USED ONLY FOR DOUBLE SUPPORTS
4. ALL MATERIALS SHALL BE STAINLESS STEEL, UNLESS OTHERWISE SHOWN
5. WHEN USED WITH PVC, COPPER, OR FIBERGLASS PIPE, PROVIDE PREFORMED ELASTOMERIC CUSHION MANUFACTURED BY STRUT SYSTEM MANUFACTURER

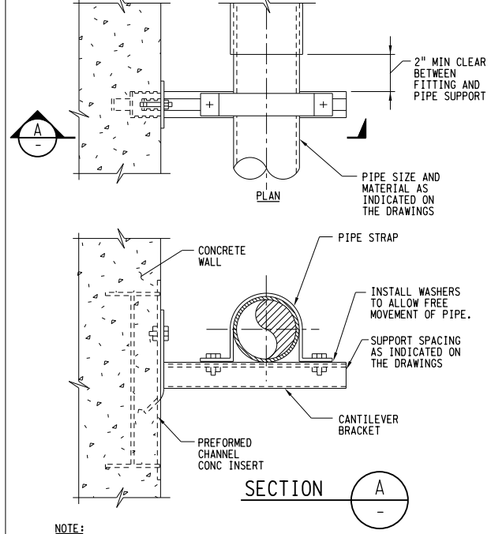
DOUBLE ROD PIPE HANGER

TP638



PIPE HANGER SUPPORT

TP636

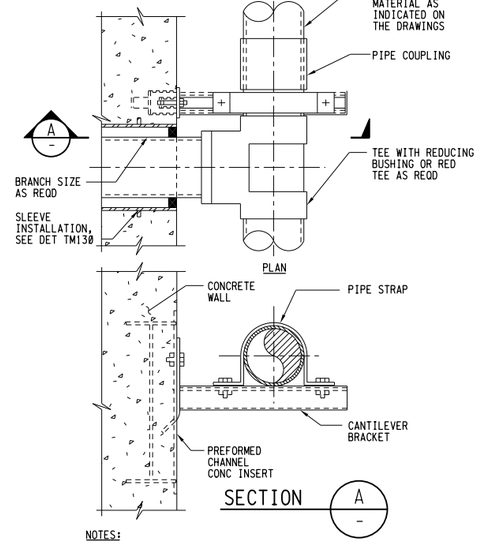


NOTE:

1. MATERIAL FOR ANCHOR BOLTS, LOCKWASHER AND NUT SHALL BE STAINLESS STEEL
2. WHEN USED WITH PVC, COPPER, OR FIBERGLASS PIPE, PROVIDE ELASTOMERIC CUSHION MANUFACTURED BY STRUT SYSTEM MANUFACTURER

PIPE SUPPORT GUIDE FOR ONE PIPE

TP652

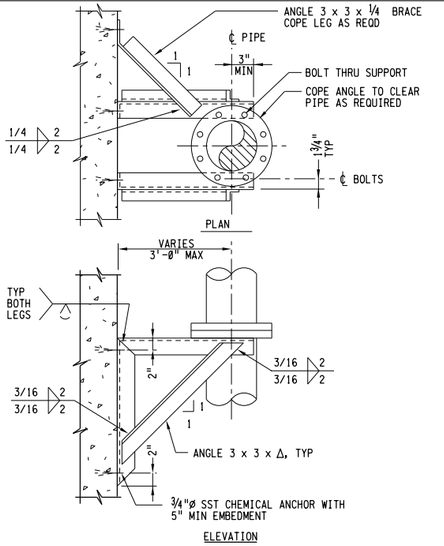


NOTES:

1. ANCHOR LOCATION AS INDICATED ON THE DRAWINGS.
2. MATERIAL FOR ANCHOR BOLTS, LOCKWASHER AND NUT SHALL BE STAINLESS STEEL
3. WHEN USED WITH PVC, COPPER, OR FIBERGLASS PIPE, PROVIDE ELASTOMERIC CUSHION MANUFACTURED BY STRUT SYSTEM MANUFACTURER

PIPE SUPPORT ANCHOR FOR ONE PIPE

TP654

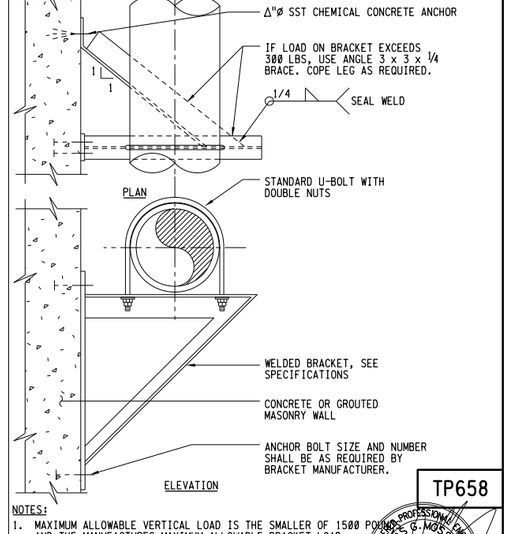


NOTES:

1. PIPE SUPPORT IS TO BE USED FOR 4" DIA AND LARGER PIPE.
2. MAXIMUM ALLOWABLE VERTICAL LOAD = 900 POUNDS.
3. MATERIAL FOR ANCHOR BOLTS, LOCKWASHER AND NUT SHALL BE STAINLESS STEEL

FABRICATED PIPE SUPPORT

TP656



NOTES:

1. MAXIMUM ALLOWABLE VERTICAL LOAD IS THE SMALLER OF 1500 POUNDS AND THE MANUFACTURES MAXIMUM ALLOWABLE BRACKET LOAD.
2. BRACKET SHALL BE HOT-DIP GALVANIZED.
3. ISOLATE ALL COPPER PIPE W/PVC TAPE.
4. MATERIAL FOR ANCHOR BOLTS, LOCKWASHER AND NUT SHALL BE STAINLESS STEEL

PIPE SUPPORT

TP658

REGISTERED PROFESSIONAL ENGINEER JOSEPH L. WONG No. M26798 Exp. 5/30/08 MECHANICAL STATE OF CALIFORNIA

REF 4: M:\D-rfters\SD\sd317A\ref\sd317bdr.mst
REF 5: M:\D-rfters\SD\sd317A\ref\M2820bdr-consultant.mst
REF 6:
REF 1: M:\D-rfters\SD\sd317A\ref\M2820M904.R01
REF 2:
REF 3:

USER: fsh
DATE: 22-AUG-2013 15:39
FILE: J:\SD\sd317A\M2820M904.R01

PLOT SCALE= 0.166667:1

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB	SD317A		JK

CONSULTANT

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

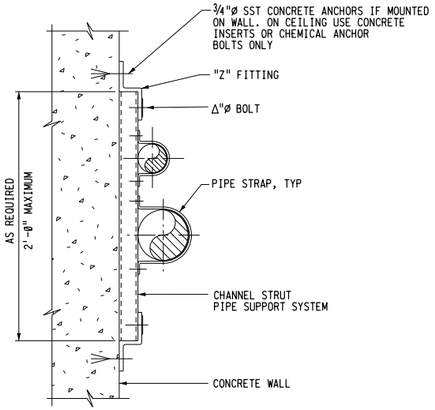
SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

TYPICAL MECHANICAL DETAILS 4

SCALE	NONE	W28.20-M-904	1
DATE	JAN2009	DRAWING NUMBER	REV.

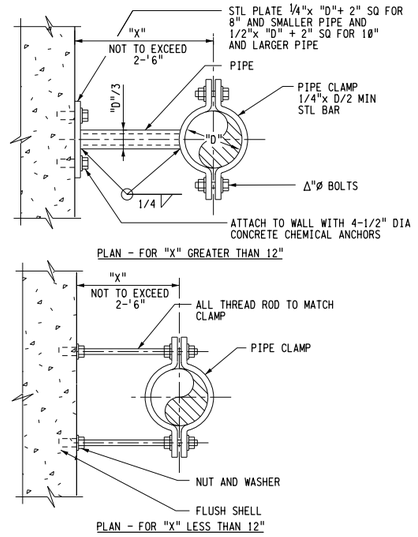


NOTES:

1. VERTICAL INSTALLATION FOR SMALL DIAMETER PIPE (4" MAX) OR ELECTRICAL CONDUIT
2. SPACE FLUSH MOUNT PIPE SUPPORTS AT 5'-0" MAXIMUM.
3. WHEN USED WITH PVC, COPPER OR FIBERGLASS PIPE PROVIDE ELASTOMERIC CUSHION MANUFACTURED BY STRUT SYSTEM MANUFACTURER

FLUSH MOUNTED PIPE SUPPORT

TP660

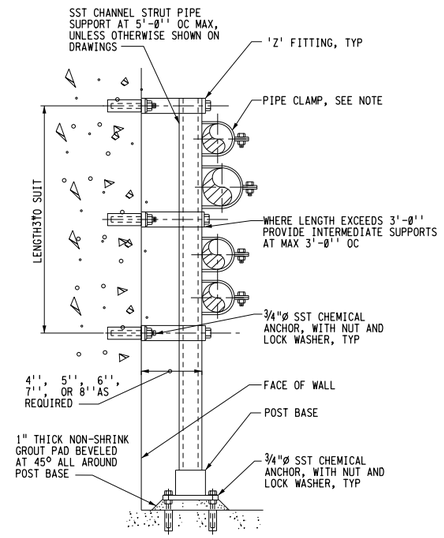


NOTES:

1. SWAY BRACE SHALL NOT SUPPORT VERTICAL LOADS.
2. SWAY BRACES SHOWN ARE FOR 12" AND SMALLER PIPE.
4. MATERIAL FOR ANCHOR BOLTS, LOCKWASHER AND NUT SHALL BE STAINLESS STEEL

VERTICAL PIPE SWAY BRACE

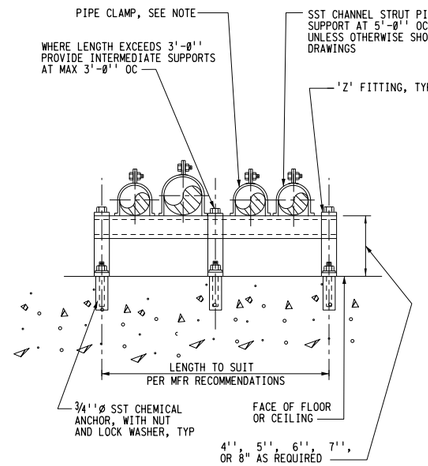
TP668



NOTE:
WHEN USED WITH PVC, COPPER OR FIBERGLASS PIPE PROVIDE ELASTOMERIC CUSHION MANUFACTURED BY STRUT SYSTEM MANUFACTURER

EXTENDED PIPE SUPPORT

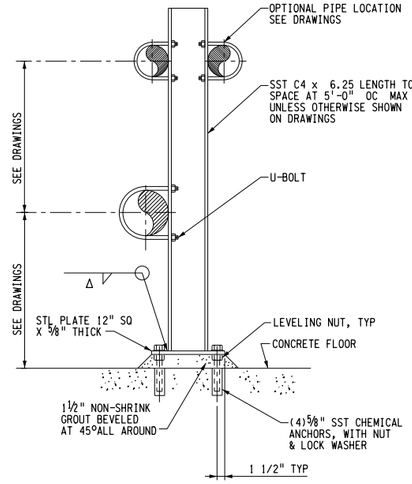
TP684



NOTE:
WHEN USED WITH PVC, COPPER OR FIBERGLASS PIPE PROVIDE ELASTOMERIC CUSHION MANUFACTURED BY STRUT SYSTEM MANUFACTURER

EXTENDED PIPE SUPPORT

TP685

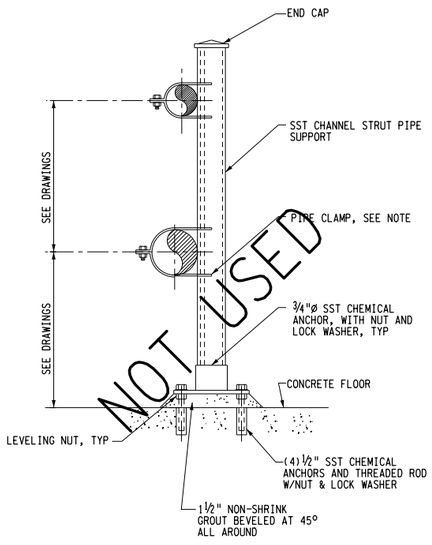


NOTES:

1. WHEN USED WITH PVC, COPPER OR FIBERGLASS PIPE PROVIDE ELASTOMERIC CUSHION MANUFACTURED BY STRUT SYSTEM MANUFACTURER

FABRICATED PIPE SUPPORT

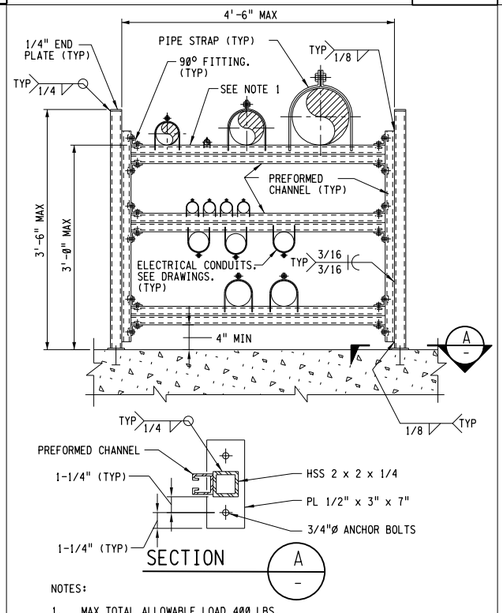
TP686



NOTE:
WHEN USED WITH PVC, COPPER OR FIBERGLASS PIPE PROVIDE ELASTOMERIC CUSHION MANUFACTURED BY STRUT SYSTEM MANUFACTURER

FLOOR PIPE SUPPORT

TP687



NOTES:

1. MAX TOTAL ALLOWABLE LOAD 400 LBS.
2. SUPPORTS SHALL BE 5'-0" MAXIMUM SPACING.
3. HOT-DIP GALV SUPPORT COLUMN ASSEMBLIES AFTER FABRICATION.

PIPE RACK

TP610

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP: MAB SD317A		JK	

CONSULTANT

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

TYPICAL MECHANICAL DETAILS 5

SCALE NONE
DATE JAN2009
W28.20-M-905
DRAWING NUMBER
1
REV.

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 6/30/06
MECHANICAL
STATE OF CALIFORNIA

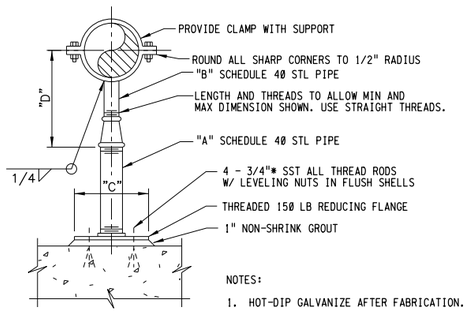
REF 7:
REF 8:
REF 9:

REF 4:
REF 5:
REF 6:

REF 1:
REF 2:
REF 3:

USER: fa1
DATE: 28-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M905.R01

PLOT SCALE: 0.166667:1



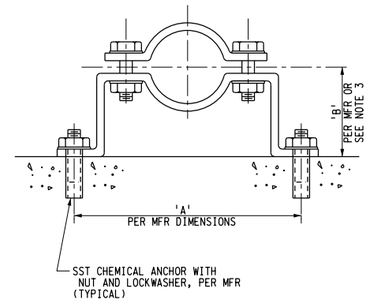
NOTES:

1. HOT-DIP GALVANIZE AFTER FABRICATION.
2. *USE 2 1/2" SUPPORTS FOR PIPES LESS THAN 2 1/2"*

ADJUSTABLE PIPE SADDLE SUPPORT SCHEDULE DIMENSIONS IN INCHES					
SIZE OF SUPPORTED PIPE	PIPE SIZE "A"	PIPE SIZE "B"	"C"	"D" MINIMUM	"D" MAXIMUM
2 1/2*	2 1/2	1 1/2	9	8	13
3	2 1/2	1 1/2	9	8 1/2	13 1/2
3 1/2	2 1/2	1 1/2	9	8 1/2	13 1/2
4	3	2 1/2	9	9 1/2	14
6	3	2 1/2	9	10 1/2	15 1/2
8	3	2 1/2	9	11 1/2	16 1/2
10	3	2 1/2	9	13 1/2	18 1/2
12	3	2 1/2	9	15	19 1/2
14	4	3	11	16 1/2	20 1/2
16	4	3	11	17 1/2	22 1/2
18	6	3 1/2	13 1/2	19 1/2	24
20	6	3 1/2	13 1/2	21	25 1/2
24	6	4	13 1/2	23 1/2	28 1/2
30	6	4	13 1/2	27	31 1/2
32	6	4	13 1/2	28 1/2	32 1/2
36	6	4	13 1/2	30 1/2	34 1/2

ADJUSTABLE PIPE SUPPORT

TP624

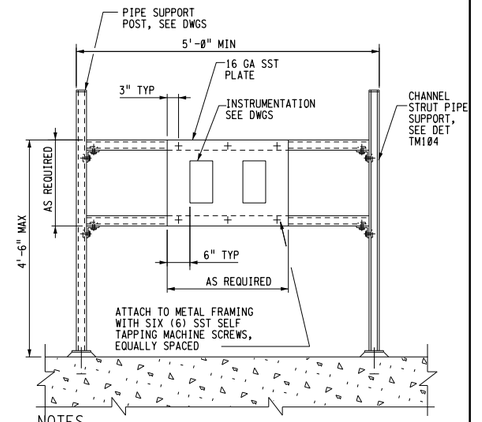


NOTES

1. PIPE CLAMP, ANCHOR, SHIELD, NUTS AND LOCKWASHER TO BE TYPE 316 STAINLESS STEEL.
2. WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STEEL SHIELD AROUND PIPE AT CLAMP, WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" STRIP OF RUBBER FABRIC.
3. FOR FLANGED PIPING, INCREASE 'B' DIMENSION AS REQUIRED PER EXTENDED PIPE CLAMP B-LINE FIG B3149, GRINNELL FIG 100 OR APPROVED EQUAL

OFFSET PIPE CLAMP

TP689

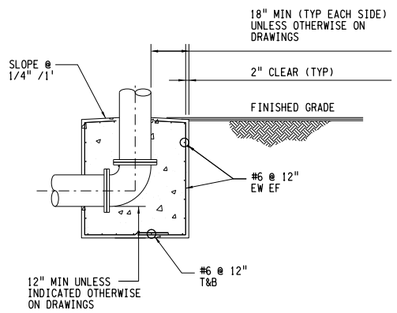


NOTES

1. ROUTE PIPING FOR INSTRUMENTATION AS REQUIRED, BEGINNING AT SAMPLE SOURCE TO INSTRUMENTATION, ROUTE DRAINAGE PIPING TO NEAREST FLOOR SINK OR HUB DRAIN, SEE DWGS
2. MOUNT INSTRUMENTATION TO SST PLATE PER MFR REQUIREMENTS.

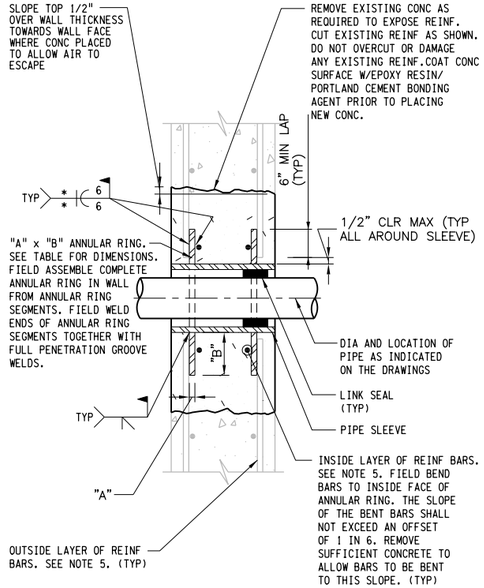
INSTRUMENT SUPPORT

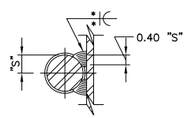
TP690



CONCRETE THRUST BLOCK

TP700





WELDED SPLICE BAR

LOCATION OF PIPE PENETRATION	THICKNESS OF ANNULAR RING "A"	WIDTH OF ANNULAR RING "B"
6" CCWS PGS 2 YARD	½"	3"

NOTES:

1. FABRICATE SLEEVES FROM 3/8" THICK SST PLATE. WELD SEAMS WITH FULL PENETRATION WELDS.
2. IN WALLS THICKER THAN 12", LINK SEAL SHALL BE INSTALLED AT BOTH ENDS OF WALL SLEEVE. SLEEVE DIAMETER SHALL BE PER LINK SEAL MANUFACTURER'S RECOMMENDATION.
3. CUT WALL REINF THAT INTERFERS W/PIPE SLEEVE. DO NOT CUT OR DAMAGE ANY OTHER BARS.
4. * 0.40 "S" REINF BAR RADIUS.
5. E 70 ELECTRODE FOR GRADE 40 REINF BARS; E 90 ELECTRODE FOR GRADE 60 REINF BARS.
6. SEE AWS D1.4 FOR WELDING PROCESS, PREHEAT REQUIREMENTS, AND OTHER DETAILS. SUBMIT WELDING PROCEDURE PER AWS.
7. USE FORMING WITH "BIRDS PEAK" TO ALLOW CONCRETE TO BE PLACED UNDER SLIGHT PRESSURE. AFTER FORMS REMOVED, REMOVE PROJECTING CONCRETE AND FINISH TO MATCH FINISH OF EXISTING WALL.

PIPE PENETRATION THROUGH EXISTING WALL

TP701

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT: EBMUD

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

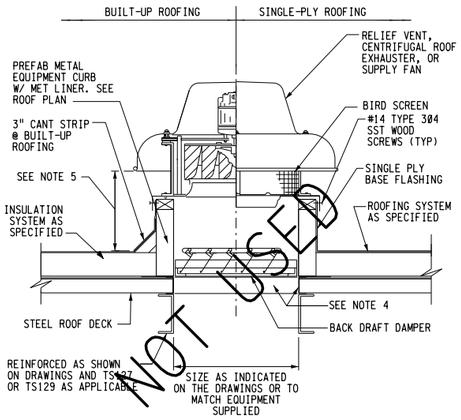
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

TYPICAL MECHANICAL DETAILS 6

SCALE: NONE
DATE: JAN2009
W28.20-M-906
DRAWING NUMBER
1
REV.

REF 4: REF 5: REF 6:
REF 1: W:\Drafters\SD\sd317A\ref\W2820dr-consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317dcf.mst
REF 3:
REF 7: REF 8: REF 9:

PLOT SCALE: 0.1666667:1
USER: fsh
DATE: 28-AUG-2013 15:39
FILE: J:\SD\sd317A\W2820M906.R01

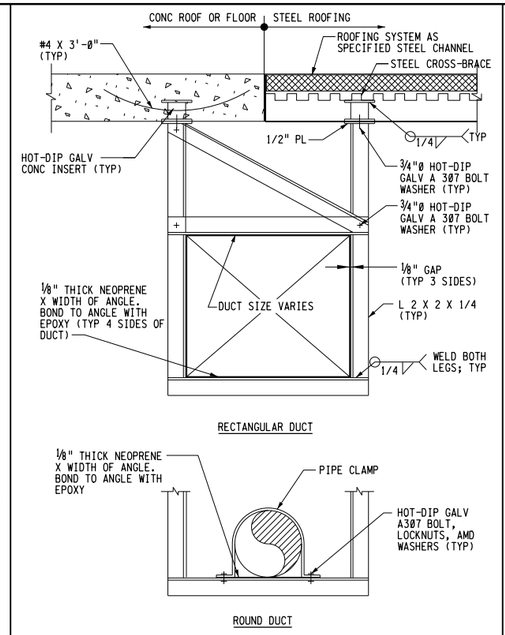


NOTES:

1. TOP OF CURB SHALL BE LEVEL. TAPER SIDES OF PREFAB CURB AS REQUIRED.
2. SIZE CURB FOR FAN AND ROOFING.
3. PROVIDE BACK DRAFT DAMPER WHERE SPECIFIED. INSTALL TO OPEN IN DIRECTION OF AIR FLOW.
4. PROVIDE SHEET METAL "C" CLOSURE AROUND DECK. TYP 4 SIDES.
5. COORDINATE REQD HEIGHT ABOVE ROOF W/ EQUIPMENT MFR.

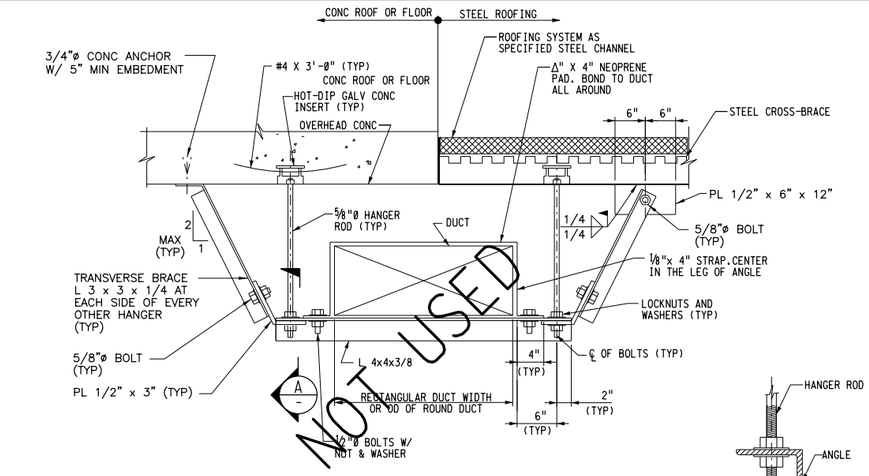
RELIEF, EXHAUST, & SUPPLY VENT FOR STEEL ROOF DECK

TM201



AIR DUCT SUPPORT, TYPE 1

TM202

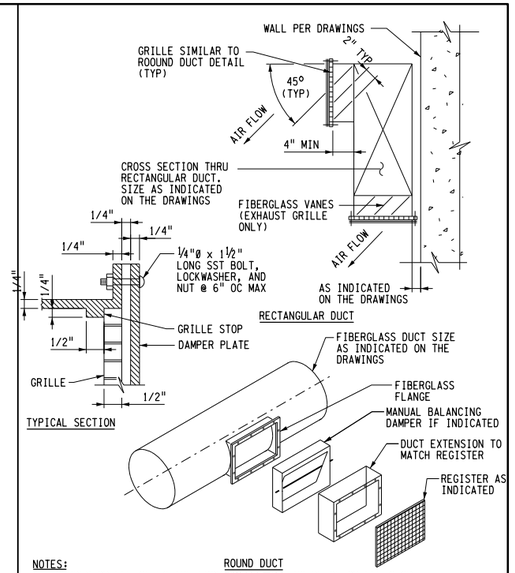


NOTES:

1. ALL METAL SHALL BE HOT-DIP GALV STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
2. SEE DRAWINGS FOR THE SIZE OF DUCT.
3. TO APPLY TO ALL RECTANGULAR DUCTS & ALL ROUND DUCTS 18" & LARGER.

AIR DUCT SUPPORT, TYPE 2

TM203

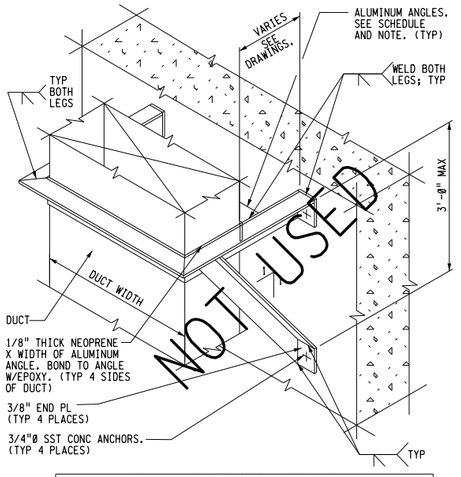


NOTES:

1. SUPPLY GRILLE SIZES ARE FROM INSIDE TO INSIDE OF GRILLE STOP, AS INDICATED ON THE DRAWINGS.
2. GRILLE LATTICE WORK TO OCCUPY NO MORE THAN 9% OF TOTAL GRILLE AREA.
3. ALL FIBERGLASS PIECES ARE TO MATCH COLOR OF FIBERGLASS DUCT.

AIR SUPPLY OR EXHAUST GRILLE

TM204



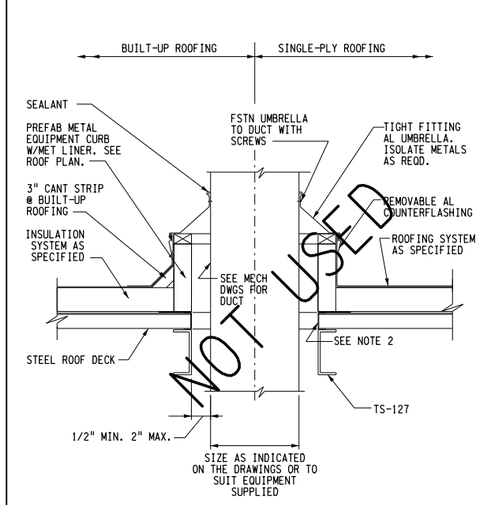
AIR DUCT HANGER AND SUPPORT SCHEDULE		
DUCT WIDTH	ANGLE SIZE	SPACING WHEN NOT INDICATED ON THE DRAWINGS
UP TO 18"	L 2X2X0.250	8'-0" OC MAX
18" THRU 40"	L 2 1/2X2 1/2X0.375	8'-0" OC MAX
OVER 40"	L 3X3X0.375	4'-0" OC MAX

NOTE:

1. DUCT WIDTH SHALL BE THE LONG DIMENSION OF RECTANGULAR DUCT OR THE OUTSIDE DIAMETER OF ROUND DUCT.

VERTICAL AIR DUCT SUPPORT

TM206

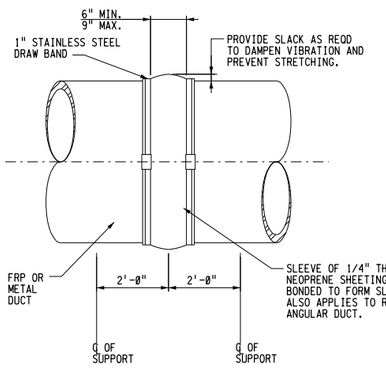


NOTES:

1. VARY HEIGHT OF SIDES OF CURB TO COMPENSATE FOR ROOF SLOPE. PROVIDE LEVEL TOP OF CURB.
2. PROVIDE SHEET METAL "C" SHAPED CLOSURE AROUND DECK. TYP 4 SIDES.

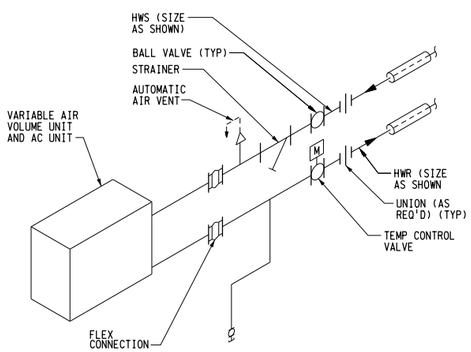
DUCT THROUGH STEEL ROOF DECK 3" AND SMALLER ASSEMBLY

TM207



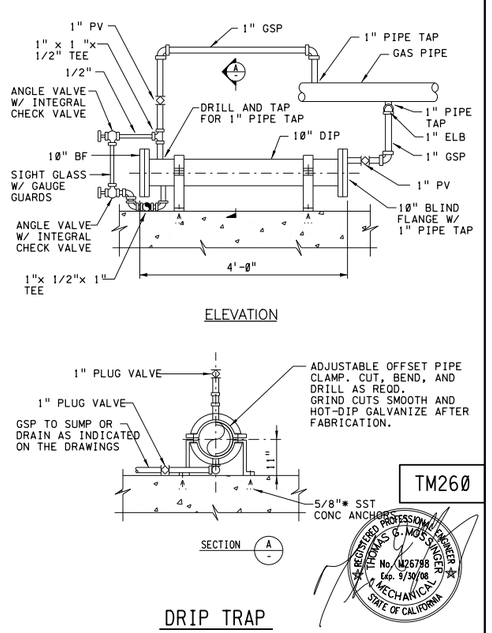
FLEXIBLE CONNECTION FOR FRP OR METAL DUCTS

TM208



HWS AND HWR PIPING CONNECTIONS AT VARIABLE AIR VOLUME BOX AND AC UNIT

TM240



DRIP TRAP

TM260

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT

DESIGN BY:	CE
DRAWN BY:	CE
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

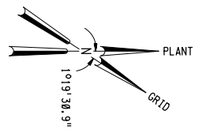
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

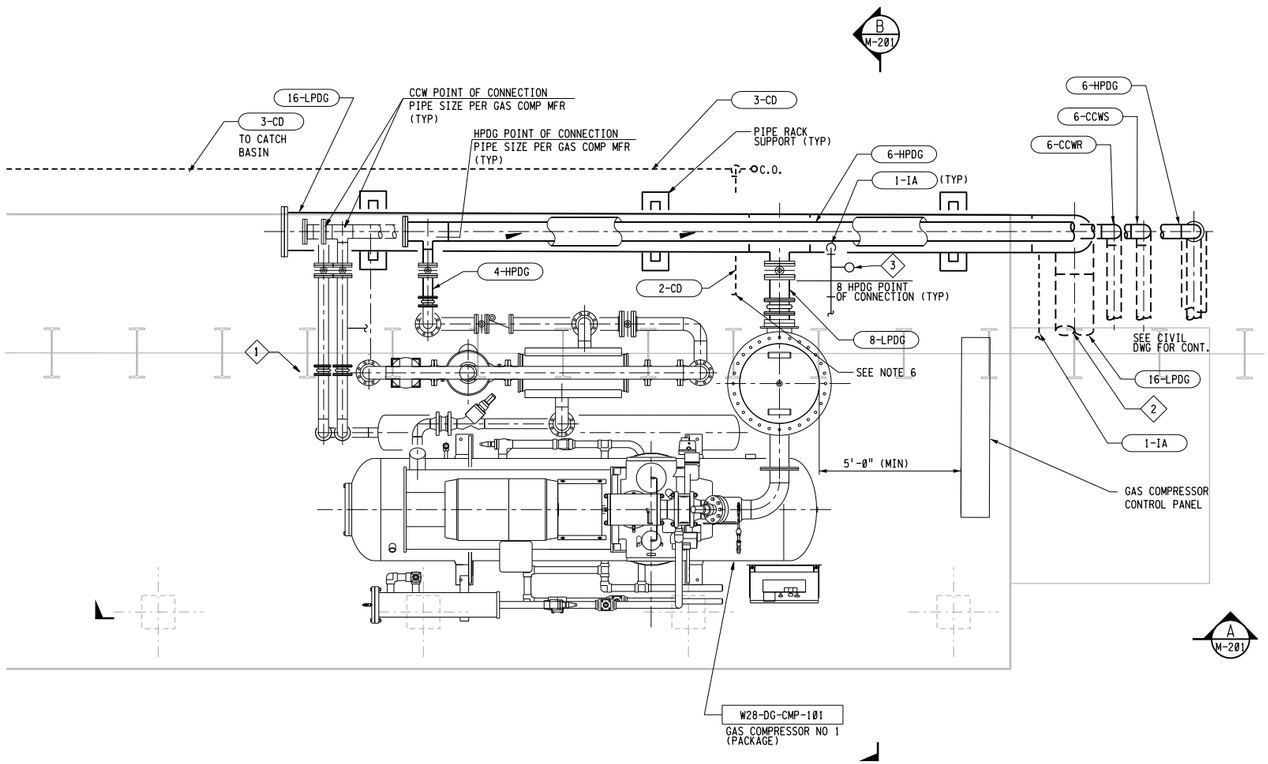
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

TYPICAL HVAC DETAILS 1

SCALE	NONE	W28.20-M-907	1
DATE	JAN2009	DRAWING NUMBER	REV.

REF 1: W:\Drafters\SD\sd317A\ref\W2820bub-consultant.mst
REF 2: W:\Drafters\SD\sd317A\ref\sd317bbr.mst
REF 3:
REF 4:
REF 5:
REF 6:
REF 7:
REF 8:
REF 9:
PLOT SCALE: 0.166667:1
USER: fal
DATE: 28-AUG-2013 15:40
FILE: J:\SD\sd317A\W2820M907.R01





GAS COMPRESSOR-PLAN

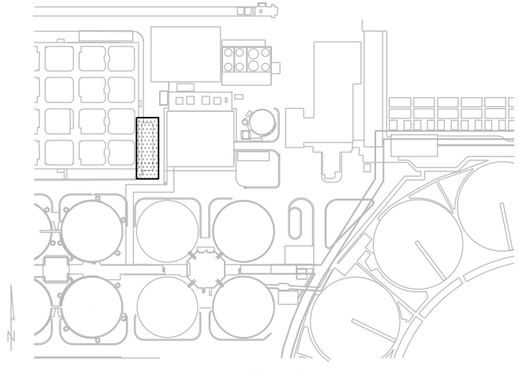
3/8"=1'-0"

GENERAL NOTES

1. FOR MECHANICAL PIPING CONTINUATION SEE MECH DRAWINGS
2. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS
3. EQUIPMENT PIPING SHOWN ARE APPROX LOCATIONS ONLY.
4. CONTRACTOR SHALL MODIFY LOCATIONS OF PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
5. PROVIDE CHAIN OPERATORS PER DETAIL TM256 TYP FOR ALL VALVES LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.
6. PROVIDE 2" CD PIPE AND PLUG ON TOP OF CONCRETE PAD.
7. ALL HPDG PIPES SHALL BE INSULATED. SEE SPEC 15082.

KEY NOTES

1. SUPPLIED BY DGCS SYSTEM SUPPLIER. SEE SPEC 11001.
2. SLOPE 16"-LPDG TOWARDS 16" LPDG VERTICAL PIPE LOCATED NEAR PGS-1 BUILDING.
3. AIR TOOL CONNECTOR TM258 TYP



KEY MAP

3" ON ORIGINAL DOCUMENT

0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT — EBMUD

DESIGN BY:	DAVE TSAI
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

GAS COMPRESSOR PLANS

SCALE 3/8"=1'-0"
DATE JAN2009

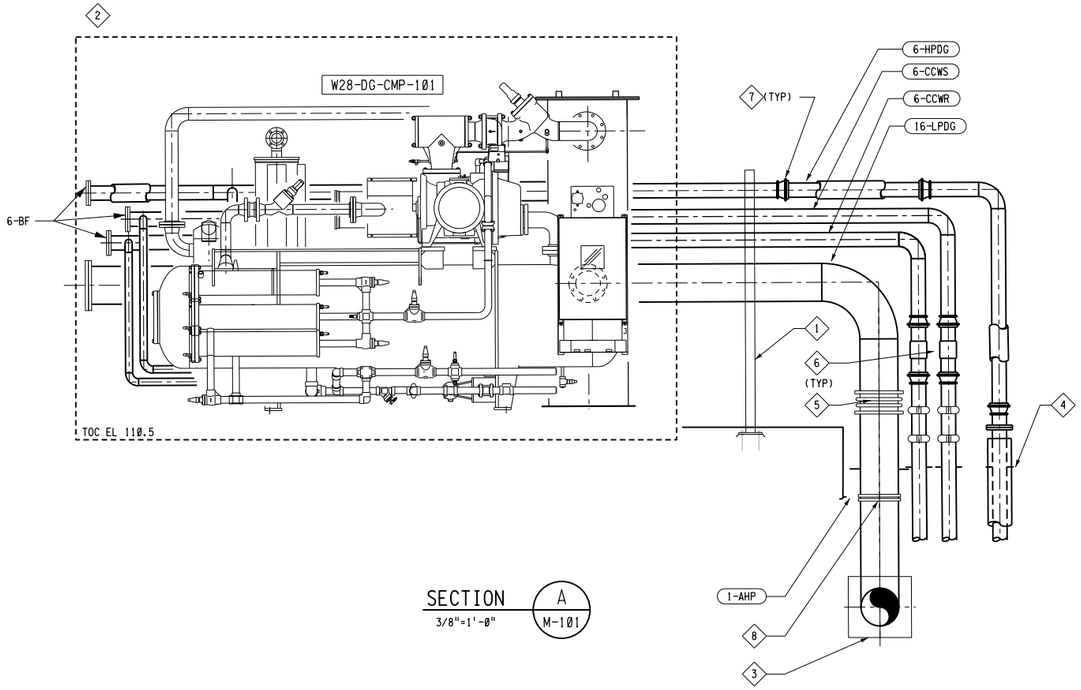
W28.30-M-101
DRAWING NUMBER

1
REV.

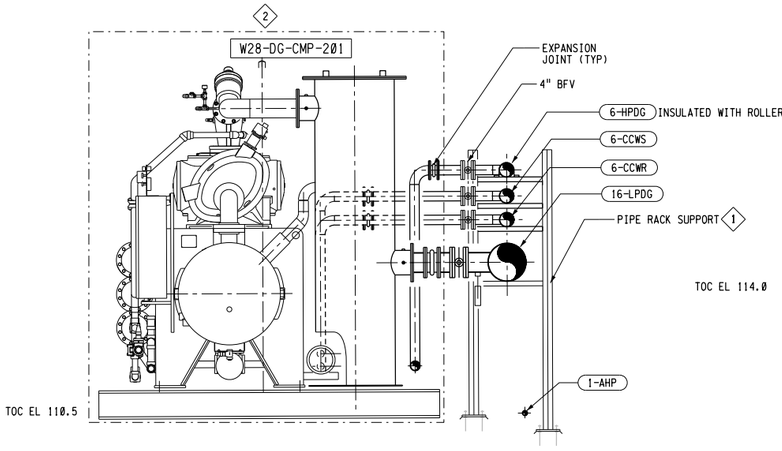
REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

REF 1: J:\SD\sd317A\w2820c301.MST
REF 2: J:\SD\sd317A\ref\w2820ref.mst
REF 3: J:\SD\sd317A\w2820m1000.MST
REF 4: J:\SD\sd317A\w2820d000.MST
REF 5: J:\SD\sd317A\ref\W2820dsf_consultant.mst
REF 6:
REF 7:
REF 8:
REF 9:
USER: rmoore
DATE: 4-Jan-2013 09:01
FILE: J:\SD\sd317A\W28300M101.R01
PLOT SCALE: 5.333333:1

REF 7:
REF 8:
REF 9:
REF 4: J:\SD\sd317A\ref\sd317bdr.mst
REF 5:
REF 6:
REF 1: J:\SD\sd317A\w28l0m1000.MST
REF 2: J:\SD\sd317A\w28l0m2000_consultant.mst
REF 3: J:\SD\sd317A\w28l2m1000.MST
PLOT SCALE: 5.333333:1
USER: rmujica
DATE: 14-OCT-2013 09:01
FILE: J:\SD\sd317A\W28J0M201.R01



SECTION A
3/8"=1'-0" M-101



SECTION B
3/8"=1'-0" M-101

3" ON ORIGINAL DOCUMENT
0 1 2 3

GENERAL NOTES:

1. FOR MECHANICAL PIPING CONTINUATION SEE MECH DRAWINGS
2. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS
3. EQUIPMENT PIPING SHOWN ARE APPROX LOCATIONS ONLY.
4. CONTRACTOR SHALL MODIFY LOCATIONS OF PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
5. PROVIDE CHAIN OPERATORS PER FOR ALL BUTTERFLY VALVES PER DETAIL TM256 TYP LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.

KEY NOTES

1. PIPE RACK SUPPORT SIMILAR TO TP610 TYP.
2. LIMITS OF PACKAGE PROVIDED BY GAS COMPRESSOR SYSTEM SUPPLIER.
3. PROVIDE ANCHOR BLOCK PER TP700 TYP .
4. TP310 TYP AS APPLICABLE.
5. BELLOWS TYPE EXPANSION JOINT. PROVIDE VERTICAL GUIDE TO PREVENT MIDDLE BALL FROM MOVING IN HORIZONTAL DIRECTION.
6. FORCE BALANCED FLEXIBLE EXPANSION JOINT.
7. STEEL BALL JOINT (TYP).
8. HDPE TO SS STEEL PIPE COUPLING; PROVIDE POLYPROPYLENE INCAPSULATED DUCTILE IRON SLIP-ON FLANGE AT HDPE STUB END AND DRILLED TO MATCH FLANGE ON SS PIPE.

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
EBMUD PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

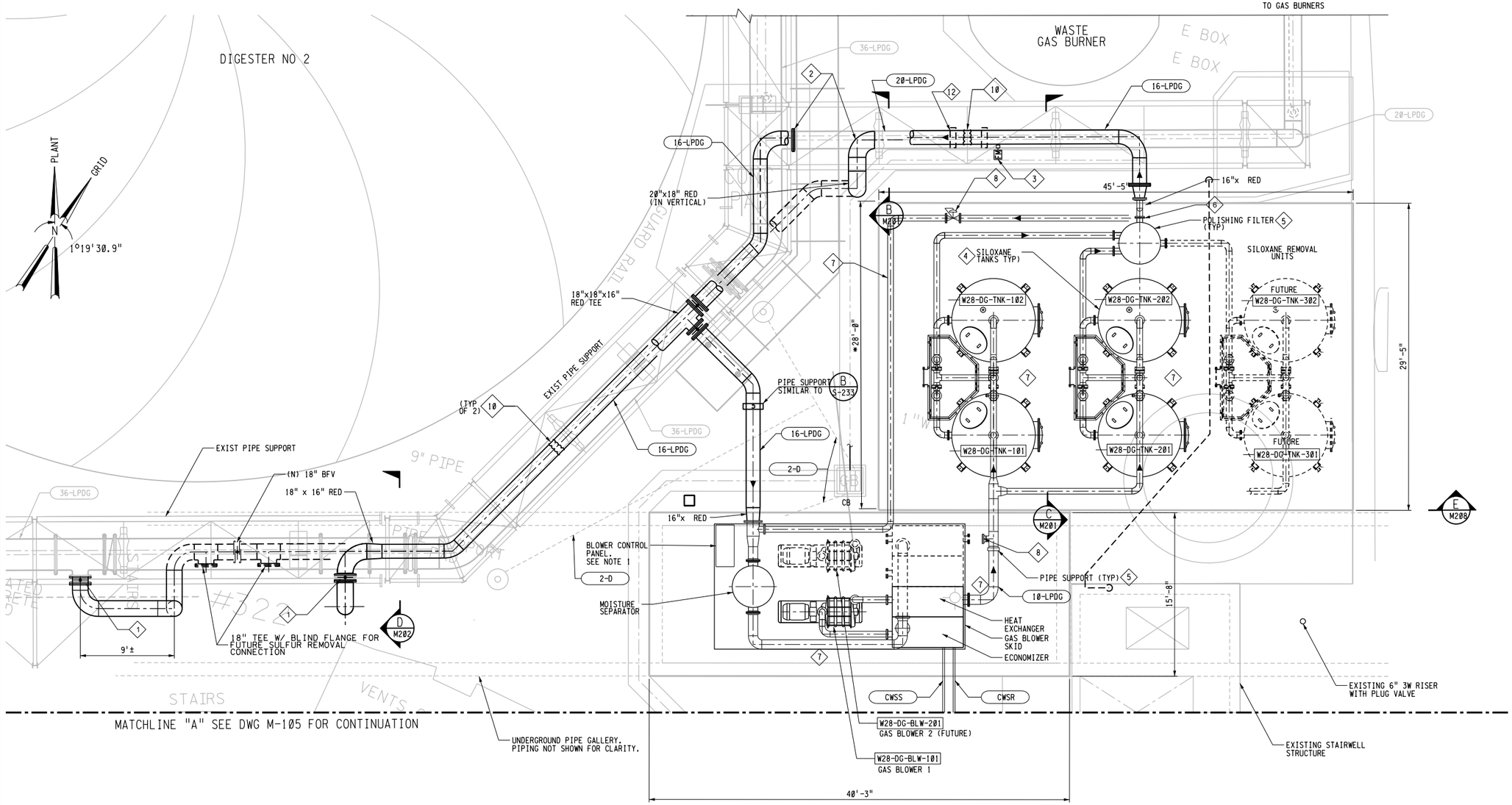
MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL
GAS COMPRESSOR
SECTIONS AND DETAILS

SCALE 3/8"=1'-0"
DATE JAN2009

W28.30-M-201
DRAWING NUMBER

1
REV.

REF 7: J:\SD\sd317A\w2820c300.mst
REF 8: J:\SD\sd317A\w2820c100.mst
REF 9: PGS Expansion.dgn
REF 4: J:\SD\sd317A\w2820m900.MST
REF 5: J:\SD\sd317A\w2820c905.MST
REF 6: J:\w2k\w2000st1.mst
REF 1: J:\SD\sd317A\w2820bdr_consultant.mst
REF 2: J:\SD\sd317A\w2820bdr.mst
REF 3: J:\SD\sd317A\w2820bdr.mst
USER: rmojica
DATE: 14-NOV-2013 09:01
FILE: J:\SD\sd317A\W2840M101.R01
PLOT SCALE: 10.666667:1

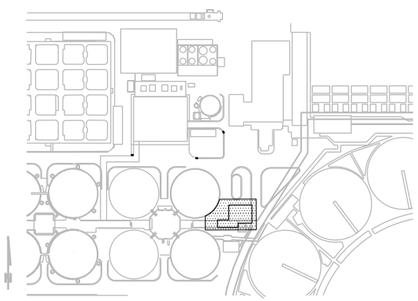


GENERAL NOTES

1. FOR ELECTRICAL, SEE ELECTRICAL DRAWINGS
2. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS
3. EQUIPMENT DRAINS AS SHOWN ARE APPROX LOCATIONS ONLY.
4. CONTRACTOR SHALL MODIFY LOCATIONS OF PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
5. PROVIDE CHAIN OPERATORS PER TM256 TYP FOR ALL VALVES LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.
6. SEE PIPE SPEC FOR EXPANSION AND SUPPORTS
7. * DENOTES THE LIMITS OF WORK PROVIDED BY GAS CONDITIONING SYSTEM SUPPLIER.

KEY NOTES

1. EXIST 18" BUTTERFLY VALVE, REMOVE EXIST 18" BF AND CONNECT NEW 18" LPDG
2. CUT EXIST 20" LPDG AND INSTALL 20" 90° ELBOW CONNECT TO EXISTING 20" LPDG. INSTALL A 20" BF ON EXISTING 36"x20" TEE.
3. PRESSUER, FLOW, TEMPRERATURE TRANSMITTER PROVIDED BY GAS CONDITIONING SYSTEM SUPPLIER. EXACT LOCATION TO BE DETERMINED BY SYSTEM SUPPLIER.
4. SILOXANE TANKS, PIPING AND SUPPORTS ARRANGEMENT SHALL BE PER GAS CONDITIONING SYSTEM SUPPLIER.
5. SUPPLIED BY GAS CONDITIONING SYSTEM SUPPLIER.
6. GAS CONDITIONING OUTLET FLANGE.
7. PIPING ARRANGEMENT SHOWN AND SIZES ARE APPROXIMATE. FINAL PIPING ARRANGEMENT PER GAS CONDTIONING SYSTEM SUPPLIER.
8. PRESSURE REGULATING VALVE PROVIDED BY GAS CONDITIONING SYSTEM SUPPLIER, SEE SPEC. PIPE/VALVE SIZE TO BE DETERMINED BY SYSTEM SUPPLIER.
9. NOT USED
10. BELLOWS SST EXPANSION JOINTS.
11. TEE WITH BLIND FLANTE FOR FUTURE CONNECTION.
12. PIPE GUIDES SUPPORTED FROM EXISTING PIPE RACK.



KEY MAP

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP: MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

REGISTERED PROFESSIONAL ENGINEER THOMAS C. MOSSINGER No. M26798 Exp. 6/30/08 MECHANICAL STATE OF CALIFORNIA

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

GAS CONDITIONING PLAN 1

SCALE 3/16"=1'-0" | DATE JAN2009

W28.40-M-101 DRAWING NUMBER | 1 REV.

REF 7: J:\SD\sd317A\w2820c305.MST
REF 8: J:\SD\sd317A\w2820m300.mst
REF 9: J:\SD\sd317A\w2820c300.mst
REF 4: w2840m104.r01
REF 5: J:\SD\sd317A\w2820m900.MST
REF 6: J:\SD\sd317A\w2840M102.R01
REF 1: J:\SD\sd317A\w2820m904.mst
REF 2: J:\SD\sd317A\ref\sd317bar.mst
REF 3: J:\SD\sd317A\ref\W2820bar-consultant.mst
USER: rmojica
DATE: 14-Nov-2013 09:01
FILE: J:\SD\sd317A\W2840M102.R01
PLOT SCALE: 10.666667:1

PLANT
GRID
N
1°19'30.9"

MATCHLINE "A" SEE DWG M-104 FOR CONTINUATION

ON SLAB

GUARD RAIL

HYPOCHLORITE
STORAGE FACILITY

4 CWSS
CWSR

SEE NOTE 6

GRATED COVER
FINE TRENCH

1-CD 3

GS

JOINT TRENCH

EXISTING STAIRWAY
STRUCTURE

HYD

GAS/CHILLED
WATER Hx

PIPE SUPPORT 1

2

21'-0"

W28-DG-CHU-001
CHILLERS (TYP)

SKID MOUNTED HEAT EXCHANGER/CHILLERS

25'-0"

ST CB

E BOX

STAIRS

GUARD RAIL

NITROGEN CYLINDER
(TYP OF 2)

PIPE GALLERY
(BELOW)

GENERAL NOTES

1. FOR ELECTRICAL, SEE ELECTRICAL DRAWINGS
2. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS
3. EQUIPMENT DRAINS AS SHOWN ARE APPROX LOCATIONS ONLY.
4. CONTRACTOR SHALL MODIFY LOCATIONS OF PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
5. PROVIDE CHAIN OPERATORS PER (TM256 TYP) FOR ALL VALVES LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.
6. CWSS AND CWSR SHALL BE INSTALLED UNDER EXISTING 3'-0" DEEP TRENCH.
7. * DENOTES THE LIMITS OF WORK PROVIDED BY GAS CONDITIONING SYSTEM SUPPLIER.

KEY NOTES

1. SUPPLIED BY GAS CONDITIONING SYSTEM SUPPLIER.
2. CUT EXIST 20" LPDG AND INSTALL 20"X18" RED TEE AND 90 DEG ELL. CONNECT 20" TEE TO EXIST 20" FLG
3. 1"-CD PIPE TO TRENCH DRAIN.
4. CWSS AND CWSR PIPE SHALL BE INSTALLED AND JACKETED. PIPE SIZES TO BE DETERMINED BY THE DGFCS SYSTEM SUPPLIER.

KEY MAP

GAS CONDITIONING PLAN
3/16"=1'-0"

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE #3AUG2012 RECORD DRAWING INSP. MAB SD317A	JK		

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT

DESIGN BY:	DAVE TSAI
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL

GAS CONDITIONING PLAN 2

SCALE 3/16"=1'-0"
DATE JAN2009

W28.40-M-102
DRAWING NUMBER

1
REV.

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

REF 7;
REF 8;
REF 9;

REF 4;
REF 5;
REF 6;

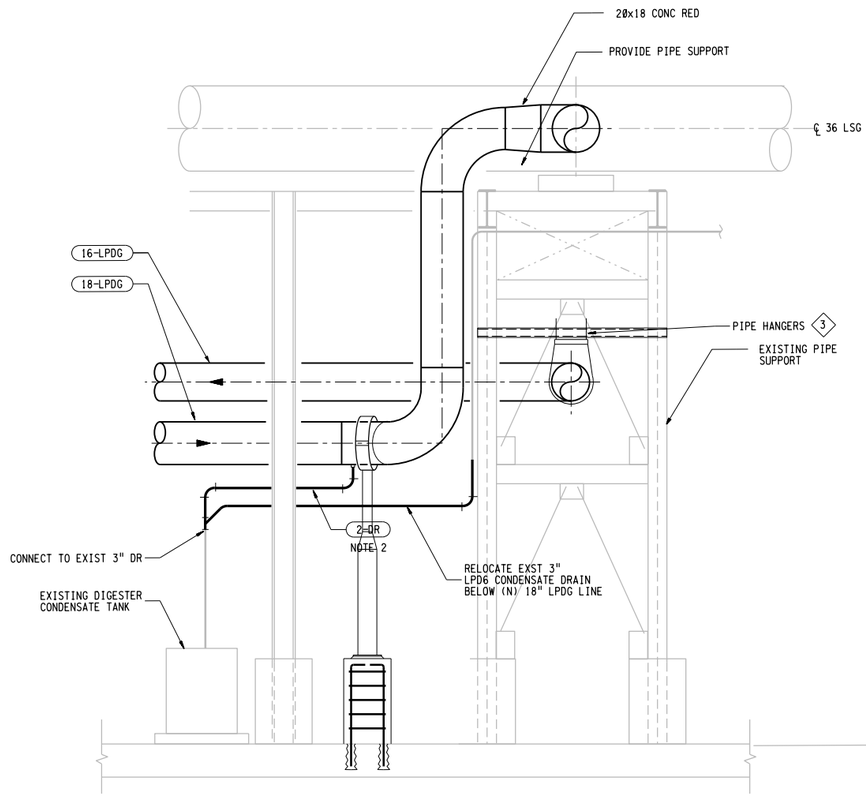
REF 1: J:\SD\sd317A\ref\W2820bdr_consultant.mst
REF 2: J:\SD\sd317A\ref\sd317bdr.mst
REF 3:

USER: rmujica
DATE: 14-AUG-2013 09:01
FILE: J:\SD\sd317A\W2840M201.R01

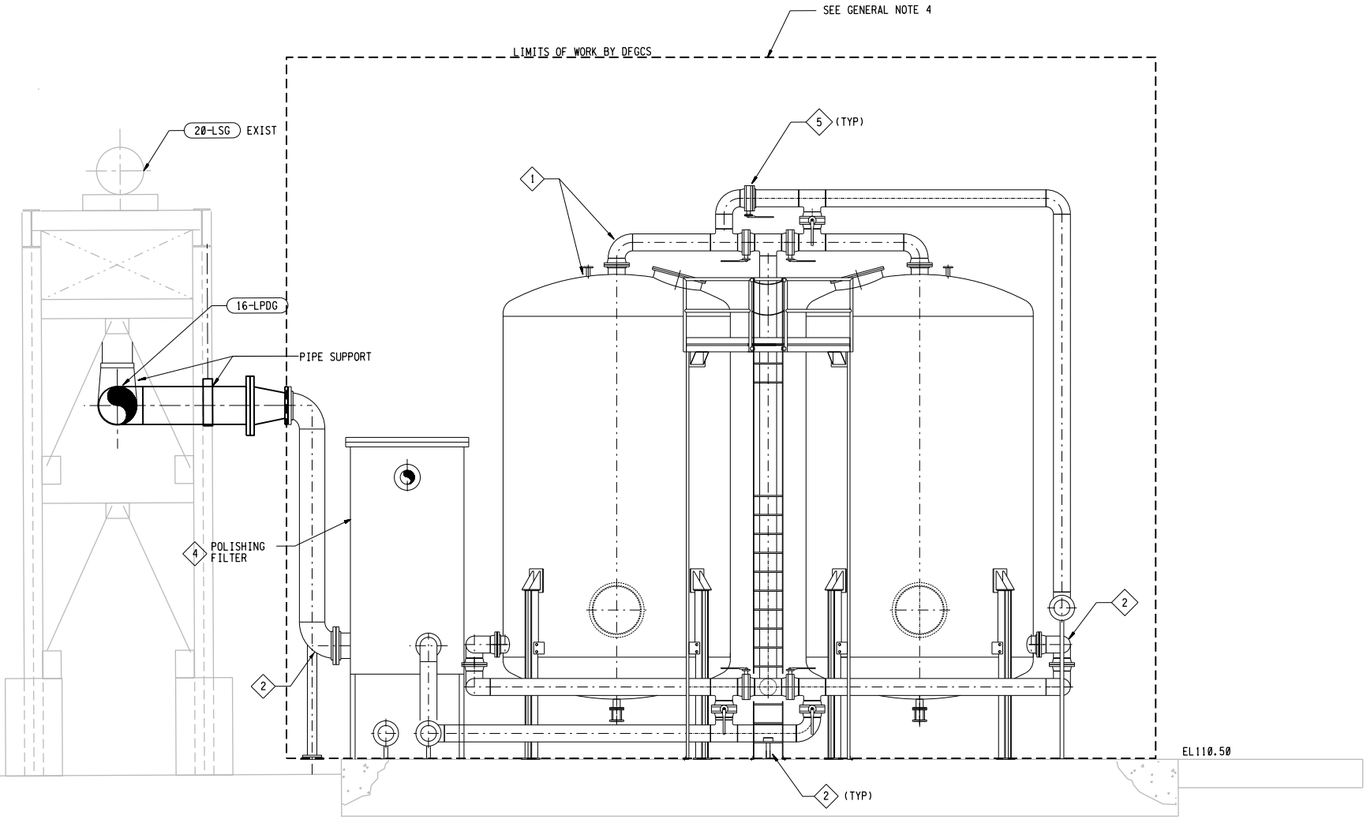
PLOT SCALE: 5.333333:1

GENERAL NOTES
1. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS
2. PIPING SHOWN ARE APPROX LOCATIONS ONLY. CONTRACTOR SHALL MODIFY PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
3. PROVIDE CHAIN OPERATORS PER FOR ALL BUTTERFFLY VALVES PER DETAIL (TM256 TYP) LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.
4. GAS CONDITIONING SYSTEM SUPPLIER (DGFCS) SHALL PROVIDE ALL EQUIPMENT INCLUDING ALL INTERCONNECTING PIPING, VALVES, PIPE SUPPORTS, INTERCONECTING WIRING/CONDUITS AND ALL ASSOSIATED EQUIPMENT. SUBMIT SUPPORTS DESIGN AND CALCULATIONS FOR REVIEW.

KEY NOTES
1. SILOZANE TANK UNITS PIPING ARRANGEMENT SHALL BE PER GAS CONDITIONING SYSTEM SUPPLIER.
2. PIPE SUPPORT TO BE PROVIDED BY GAS CONDITIONING SYSTEM SUPPLIER.
3. FOR ADDITIONAL PIPE SUPPORT, SEE STRUCTURAL DRAWINGS.
4. POLISHING FILTER TO BE PROVIDED BY GAS CONDITIONING SYSTEM SUPPLIER.
5. ALL ISOLATION VALVES ARE MINIMUM REQUIREMENTS. SYSTEM SUPPLIER SHALL PROVIDE ADDITIONAL INFO AS REQUIRED.



SECTION B M-101
3/8"=1'-0"



SECTION C M-101
3/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

SD317A - PGS RENEWABLE ENERGY EXPANSION

CONSULTANT
DESIGN BY: DT/NT
DRAWN BY: JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977 DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798 TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392 SARWAN WASON
EBMUD
PROJECT MANAGER R.P.E. No. C61336 JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703 JOSEPH L WONG

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL
GAS CONDITIONING UNITS
SECTIONS AND DETAILS 1

SCALE 3/8"=1'-0"
DATE JAN2009
W28.40-M-201
DRAWING NUMBER
1
REV.

REF 7;
REF 8;
REF 9;

REF 4;
REF 5;
REF 6;

REF 1: J:\SD\sd317A\ref\sd317bdr.mst
REF 2: J:\SD\sd317A\ref\W2828dbr_consultant.mst
REF 3:

USER: rmojica
DATE: 14-NOV-2013 09:01
FILE: J:\SD\sd317A\W2840M202.R01

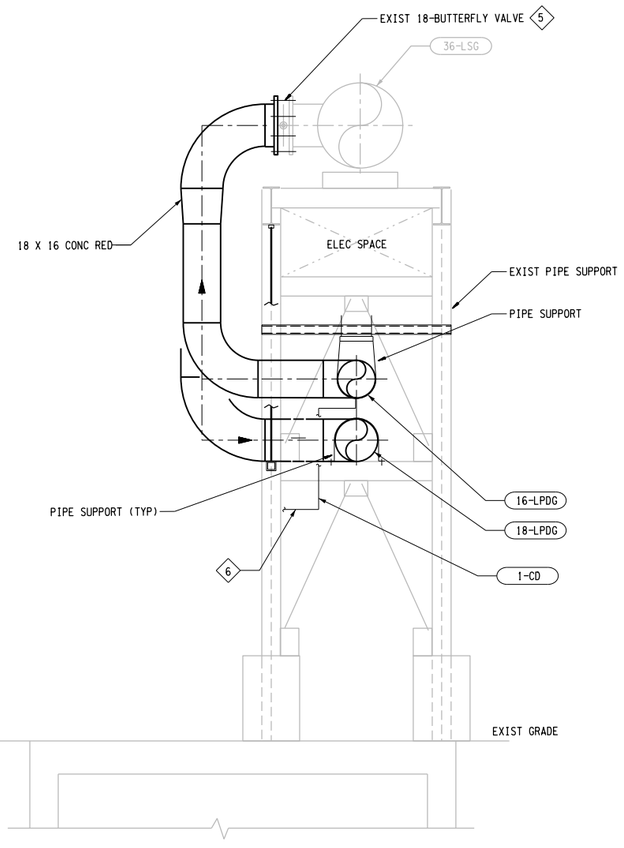
PLOT SCALE: 5.333333:1

GENERAL NOTES

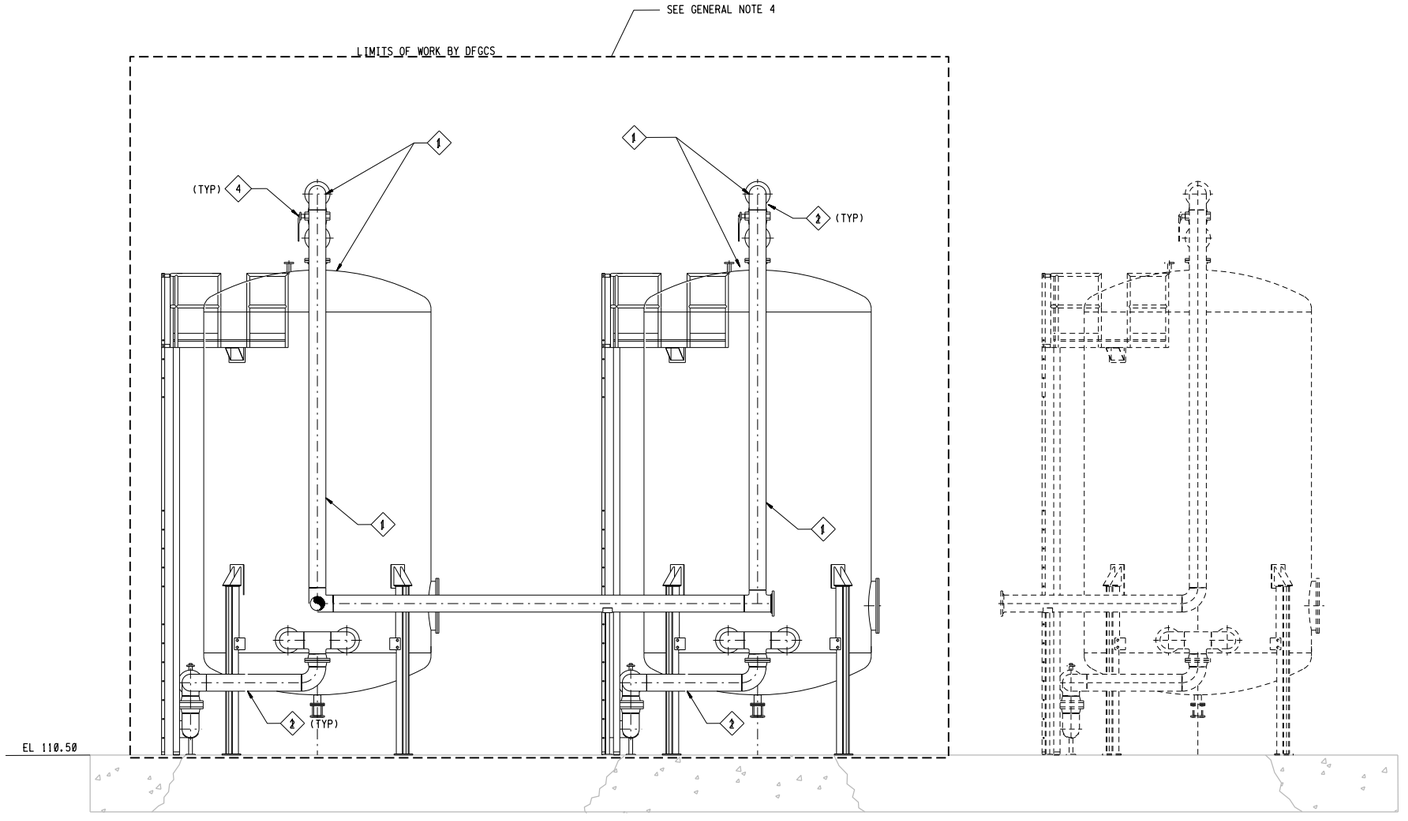
1. FOR YARD PIPING CONTINUATION SEE CIVIL DRAWINGS
2. PIPING SHOWN ARE APPROX LOCATIONS ONLY. CONTRACTOR SHALL MODIFY PIPING AS REQUIRED TO SUIT EQUIPMENT PROVIDED.
3. PROVIDE CHAIN OPERATORS PER FOR ALL BUTTERFFLY VALVES PER DETAIL (TM256 TYP) LOCATED HIGHER THAN 5'-6" ABOVE FINISHED FLOOR.
4. GAS CONDITIONING SYSTEM SUPPLIER (DGFCS) SHALL PROVIDE ALL EQUIPMENT INCLUDING ALL INTERCONNECTING PIPING, VALVES, PIPE SUPPORTS, INTERCONECTING WIRING/CONDUITS AND ALL ASSOSIATED EQUIPMENT. SUBMIT SUPPORTS DESIGN AND CALCULATIONS FOR REVIEW.

KEY NOTES

1. SILOXANE TANK UNITS PIPING ARRANGEMENT SHALL BE PER GAS CONDITIONING SYSTEM SUPPLIER.
2. PIPE SUPPORT TO BE PROVIDED BY GAS CONDITIONING SYSTEM SUPPLIER.
3. FOR ADDITIONAL PIPE SUPPORT, SEE STRUCTURAL DRAWINGS
4. ALL ISOLATION VALVES ARE MINIMUM REQUIREMENTS. SYSTEM SUPPLIER SHALL PROVIDE ADDITIONAL INFO AS REQUIRED.
5. EXIST 18" BUTTERFLY VALVE. REMOVE EXISTING BLIND FLANGE AND CONNECT TO NEW 18" LPDG
6. CONNECT 1-CD TO EXISTING CONDENSATE DRAIN BOX INLET.



SECTION D
3/8"=1'-0" M-101



SECTION E
3/8"=1'-0" M-101

REGISTERED PROFESSIONAL ENGINEER
THOMAS G. MOSSINGER
No. M26798
Exp. 9/30/08
MECHANICAL
STATE OF CALIFORNIA

3" ON ORIGINAL DOCUMENT
0 1 2 3

carollo

NO.	DATE	REVISION	BY	REC.	APP.
1	22APR2013	IN SERVICE 03AUG2012 RECORD DRAWING INSP. MAB SD317A		JK	

CONSULTANT

DESIGN BY:	DT/NT
DRAWN BY:	JCI/MJG
DESIGN CHECKED BY: R.P.E. No. M21977	DAN CROSBY
PROJECT MANAGER R.P.E.No. M26798	TOM MOSSINGER
APPROVED: PRINCIPAL IN CHARGE R.P.E. No. M18392	SARWAN WASON
PROJECT MANAGER R.P.E. No. C61336	JOHN A KYSER
RECOMMENDED: SR. ENGINEER R.P.E. No. M30703	JOSEPH L WONG

EBMUD

SD317A - PGS RENEWABLE ENERGY EXPANSION

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
POWER GENERATION STATION 2
MECHANICAL
GAS CONDITIONING UNITS
SECTIONS AND DETAILS 2

SCALE 3/8"=1'-0"
DATE JAN2009

W28.40-M-202
DRAWING NUMBER

1
REV.